U.S. Department of the Interior
Bureau of Land Management

Prineville District Office
3050 N.E. 3rd Street,
Prineville, Oregon 97754

November 1999

Draft John Day River Management Plan and Environmental Impact Statement

Volume 1

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

BLM/OR/WA/ES-00/003+1792

DRAFT
JOHN DAY RIVER
MANAGEMENT PLAN
AND
ENVIRONMENTAL IMPACT STATEMENT

November 19, 1999

Dear Friend of the John Day River,

This document is the Draft John Day River Management Plan and Environmental Impact Statement (EIS). Release of this document initiates a 90 day public comment period on its contents. The partners who developed this plan and EIS hope you consider the issues, alternatives and impacts described and let us know what you think.

Please send your comments to:
John Day River Plan
Bureau of Land Management
PO Box 550
Prineville, Oregon 97754

Deadline for comments is **March 3, 2000.** Comments received after that date can not be guaranteed to be considered in development of the final decisions.

Open house public meetings will be held from 7 pm to 9 pm in the following locations;

January 11th
Travel Lodge
521 6th Street
Redmond, Oregon

January 12th
BLM Office
1717 Fabry Road SE
Salem Oregon

January 13th
Best Western Sunnyside Inn
12855 SE 97th
Clackamas, Oregon

January 19th
Wheeler County Courthouse
Fossil, Oregon

January 20th
Senior Citizens Center
142 NE Dayton
John Day, Oregon

These meetings are designed to answer your questions and receive your comments in small groups. You may come at anytime during the open house.

Sincerely,

Harry R. Cosgriffe
Field Manager
Central Oregon Resource Area

DRAFT
JOHN DAY RIVER
MANAGEMENT PLAN
AND
ENVIRONMENTAL IMPACT STATEMENT

The following partners participated in development of this Draft Management Plan and Environmental Impact Statement and will collaborate in development of the final document.

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DRAFT
JOHN DAY RIVER MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT

1. Responsible Agency: United States Department of the Interior, Bureau of Land Management

2. Draft (**X**) Final ( )

3. Administrative Action (X) Legislative Action ( )

4. Abstract: The Draft John Day River Management Plan and Environmental Impact Statement have identified at least five alternatives for managing various resources and programs along almost 200 river bank miles of the John Day River System. The John Day River is one of the longest free flowing river systems in the continental United States. The John Day watershed is located in northeastern Oregon and encompasses all or portions of eleven counties, six of which would be directly affected by the proposed plan. This draft document has divided the John Day River system into 11 different segments for management purposes. Congress designated portions of several of these segments (147.5 miles) as Wild and Scenic in 1988. This legislation also mandated a management plan be written in cooperation with the State of Oregon and affected Native American Tribes. Consequently, this plan was written as a cooperative effort between the BLM, State of Oregon, Confederated Tribes of Warm Springs Reservation of Oregon, USDI Bureau of Indian Affairs and John Day River Coalition of Counties, which consists of Gilliam, Grant, Jefferson, Sherman, Wasco and Wheeler Counties.

Public comments during the scoping period helped the partners in this plan identify numerous issues to be resolved by this plan. The major issues addressed by this plan include livestock grazing, boating use levels, commercial services, motorized boating, and public agricultural lands and related water use. Many other issues are also addressed by this plan. Alternative A describes the existing management situation for each resource or use (no action). The other alternatives are all designed to protect and enhance the outstanding remarkable values which Congress identified for the designated Wild and Scenic segments and to protect and enhance similar river values for certain non-designated segments. Chapter IV of this document proposes rulemaking by the State of Oregon for the State Scenic Waterway segments of the John Day River, most of which overlaps with designated Wild and Scenic segments.

This draft proposes certain restrictions on each livestock grazing allotment along the segments designated Wild and Scenic and certain segments not so designated where they are situated in a way that directly affects the designated segments. Boating use levels and motorized boating restrictions, which vary by river segment, are proposed. Limitations on the number of commercial outfitter and guide permits are proposed for the river. Several small tracts of BLM administered irrigated agricultural lands are proposed either to continue to be used for commercial crops, propagating riparian vegetation, returned to native vegetation, and/or used to provide wildlife habitats. These proposals differ for each specific tract. Any decisions which reallocate land uses or change major resource allocations would also amend or revise the Bureau's Two Rivers and John Day Resource Management Plans under 43 *Code of Federal Regulations* 1610.5-5 or 5.6.

5. Date comments must be received: March 2, 2000

6. Date Draft John Day River Management Plan and Environmental Impact Statement made available to Environmental Protection Agency and public: December 3, 1999

7. For further information contact:

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Prineville, Oregon 97754

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Executive Summary

Introduction

This Draft John Day River Plan and Environmental Impact Statement has been developed by five partners who have authorities or responsibilities for management of the John Day River System. These partners are the Bureau of Land Management, State of Oregon, Confederated Tribes of the Warm Springs Reservation of Oregon, Bureau of Indian Affairs and the John Day River Coalition of Counties. This draft plan and EIS is offered for your review and comment for 90 days.

This plan includes proposed management for federally designated Wild and Scenic River Segments and State of Oregon designated State Scenic Waterways. Proposed decisions are also offered for segments that are not so designated, especially where they affect adjacent Designated segments. Some proposed decisions also are Land Use Plan Amendments for the Two Rivers RMP and the John Day RMP.

Issues/Alternatives/Impacts

The partners in this plan have identified several issues to be resolved by this planning effort, along with alternative ways of resolving these issues, preferred alternatives, and an analysis. In this Draft we have not proposed the same alternative to resolve all issues. The preferred alternative was selected for each issue by a core team made up of representatives from the partners. The BLM has also received advice from the John Day/Snake Resource Advisory Council throughout the planning process, including selection of preferred alternatives. The preferred alternative selection was based on information from the planning analysis using information derived from resource inventories, monitoring studies and interdisciplinary evaluations conducted over the past several years. The following Table 1 summarizes this information which is further explained in the document.

Major Issues

There are numerous issues of interest and importance addressed by this plan. Those of most public interest thus far include grazing, water use, agricultural leases, boating use limits and motorized boating. The effects that grazing has on river values has created the most interest. The following Table 2 summarizes the consequences of grazing on other key issues and values.

Key Findings

The effects that management actions have on riparian vegetation is a foundation to protect and enhance river values.

Monitoring shows that where riparian oriented grazing management has been implemented the riparian vegetation is increasing in density, diversity and function.

Water quantity and quality are influenced far more by natural events and human caused conditions throughout the watershed than by actions in the designated corridors.

There is a broad range of recreational opportunities within the watershed, some which can conflict with each other, and some that can conflict with other river values.

BLM administers 8% of the land within the watershed. BLM land within the designated corridors is 1% of the watershed. Land pattern has intermingled public and private within the designated corridor. There are many private land owners, various agencies, tribes and other entities who have some type of management authority within the watershed. Cooperation and coordination with all of these people is and will be necessary for successfully protecting and enhancing the river values.

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Scenery				
VRM Classification	No classification under existing RMPs	**Manage Scenery Consistent with BLM policy. Conduct Visual Resource Management Inventory to establish appropriate VRM classes. During the interim visual resources would be managed as VRM Class II except VRM Class I in Segment 2 between Butte Creek and Cottonwood Bridge.**		
Vegetation				
Special Status plants	**Continue existing management**			
Weeds	**Continue existing management**			
Fire	**Continue existing management**			
Grazing	Continue existing management by applying varying management practices that emphasize riparian oriented management that protects and enhances river values. Some allotments do not meet this goal. (See Table 2 for actions)	**Same as A, plus apply to all allotments, adjust as needed and exclude grazing from some recreation sites to reduce conflicts. Faster time frame for implementation than A.** (See Table 2 for actions)	Restrict grazing to outside of riparian areas. (See Table 2 for actions)	Restrict grazing to outside of Wild and Scenic River Boundary (See Table 2 for actions)
Agricultural Lands	Continue Existing Management	**Modify existing management as necessary to protect and enhance river values.**	Manage land with emphasis on protecting and enhancing terrestrial wildlife values and restoring native vegetation.	Manage land with emphasis on protecting and enhancing instream values and to restoring native vegetation.
Acres Irrigated for Commodity Use	221-385±	**195±**	Target = 0 in 15 years	Target = 0 in 20 years
Acres Potentially Irrigated for Non-Commodity Use	0-164± *Not all acres will be irrigated every year	**164± *Not all acres will be irrigated every year**	359±.*Not all acres will be irrigated every year	Target = 0 in 20 years

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Acres Potentially Restored to Native Vegetation	0-164	**0-164**	0-359	359± *All acres would be restored to native vegetation under this Alternative
Acres Potentially Irrigated in Public Ownership	385± *Not all acres will be irrigated every year	**359± *Not all acres will be irrigated every year**	359± *Not all acres will be irrigated every year	Target = 0 in 20 years
Acres disposed	0	**26± (assumed to be used for irrigated Agriculture)**	26± (assumed to be used for irrigated Agriculture)	26± (assumed to be used for irrigated Agriculture)
Recreation	**SEE TABLES III-D and III-I for Alternative E for Boating Use Levels and Motorized Boating.**			
Boating Use Levels				
Monitoring	**Continue existing LAC monitoring to inform future decision making**			
Interim	No restrictions on number of launches, encourage launches during off-peak periods	Maintain existing recre-ational experience Target Launches at 1998 levels.	**Provide recreational experience with less competition for campsites** **Launches equal 70% of campsites within 15 miles of launch points.**	Reduces contact with other groups over other alterna-tives. Launches equal historical average of peak period daily launches.
Interim Number of Launches per day	No Restrictions	19 from Service Creek/Twickenham 16 from Clarno/Butte Creek	**13 from Service Creek/Twickenham** **11 from Clarno/Butte Creek**	8 from Service Creek/ Twickenham 6 from Clarno/Butte Creek
Potential # of People (assumes max. party size of 16)	No Limit	maximum of 560 people launching per day	**maximum of 384 people launching per day**	maximum 224 people launching per day
Long Term	No Restrictions planned	**Future decisions based on LAC study, mandatory launch limits may be imposed.**		

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Allocation System				
Type of System	Allocation not needed	Historical Proportions	Annual common pool lottery system	**Common Pool, first-come first served.**
Experience of User	No Change	Advanced planning required for weekend use.	Some weekend launches may not be available	**Weekend launches would be difficult to obtain**
Motorized Boating				
Dates closed to motorized boating	Segments 1 and 2 closed to motorized use May 1 to October 1.	**Segments 10 and 11 (South Fork Wild and Scenic River Closed to Motorized Boating**		
		Protect Wildlife	Protect Wildlife, provide use consistent with WSA status.	Eliminate potential for conflict with other resources and uses.
		Segment 1: Closed March 1 to December 1 Segment 2: Closed March 1 to December 1. Recommend to Congress that motorized boats be excluded in WSAs if designated Wilderness. Segment 3: Except for small[1] electric motors, closed April 1 to October 1. [1]Small = 40lb. Thrust or less.	Segment 1: Closed April 1 to December 1 Segment 2: Closed year round below Clarno Rapids Closed April 1 to Oct 1 between Clarno and Clarno Rapids (electric motors ≤ 40 lb. thrust permitted) Segment 3: Except for small[1] electric motors, closed April 1 to October 1. [1]Small = 40lb. Thrust or less.	Motorized boating not permitted on any segment of the river
# of days river open to motorized use	Segments 1 and 2 = 211 Segment 3 = 365 Segments 10 and 11 = 0	Segment 1 = 89 Segment 2 = 150 Segment 3 = 181 Segments 10 and 11=0	Segments 1 = 120 Segment 2 = 0/181 Segment 3=181 Segments 10 and 11=0	0

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Dispersed Camping				
	Continue existing management, decisions made on case by case basis	**Future Management decisions would be based on LAC study**		
Actions by Segment		**Encourage dispersed use in areas that can sustain impacts of camping. Segments 1 and 3: No actions. Segment 2: Designate dispersed camping area on west bank near Clarno. Segments 10-11: Identify preferred dispersed camping areas and install signs and parking barriers to protect riparian vegetation.**	**Same as Alternative B**	Protect Sensitive Riparian Areas from dispersed camping. Segments 1-3: No Action proposed Segments 10 and 11: Close critical riparian areas to camping.
Changes in Dispersed Camping Opportunities	No Change	**Segments 1: No Change Segment 2: No Change Segments 3: No Change Segments 10-11: Reduced Opportunities**	**Same as Alternative B**	Segments 1-3: Same as A Segments 10 and 11: Reduced Opportunities
Developed Facilities				
	Continue existing management	**Improve or upgrade existing facilities when needed to protect resources**		
		Improve or upgrade existing facilities to better meet the needs of the recreational user.	Same as Alternative B plus develop new sites where needed to improve resource protection and to better meet needs of recreational user.	Reduce facilities or close sites to discourage use.

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Actions by Segment	Segment 1: Maintain Cottonwod and Rock Creek facilities. No scheduled maintenance for Oregon trail Monument.	**Segment 1: Same as A except add boat ramp and registration station at Rock Creek, provide picnic tables at Cotton-wood. Provide parking andmaintenance for Oregon Trail Monument.**	Segment 1: Same as Alternative B	Segment 1: Same as Alternative A except close existing facilities at Rock Creek.
	Segment 2: Maintain Clarno, provide limited Maintenance at Butte Creek.	**Segment 2: Same as A except add launch lane and pay phone at Clarno and grade the primitive launch ramp at Butte Creek**	Segment 2: Same as Alternative B plus make improvements to "Clarno East," improve Juniper Island camping area.	Segment 2: Same as Alternative A except close existing facilities at Butte Creek.
	Segment 3: Maintain Service Creek and Priest Hole facilities.	**Segment 3: Same as A except install toilet at Priest Hole.**	Segment 3: Same as Alternative B plus develop Lower Burnt Ranch into camping area with signs, maps, parking barriers, and toilet.	Segment 3: Same as Alternative A
	Segments 10-**11: No developed sites**		**Segment 10: Create campground at Ellingson Mill with toilet, tables, information board, signs, and parking**	Segments 10-11: No actions proposed

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Changes in condition/ # of sites				
Segment 1:	No Change	**3 sites improved**	Same as B	2 sites improved 1 site closed
Segment 2:	No Change	**2 sites improved**	4 sites improved	1 site closed
Segment 3:	No Change	**1 site improved**	1 site improved 1 site added	Same as A
Segments 10-11:	**No sites**	Same as A	**1 site added**	Same as A
Total	No Change	6 sites improved	8 sites improved 2 sites added	2 sites improved 2 sites closed
Public Access				
	Provide public access to river near Twickenham, improve road to Priest Hole, improve ditches and culverts on the South Fork Road. Clarify status of access to Oregon Trail Monument.			
	Other than actions listed above access would be maintained at existing levels	**Eliminate motorized access to existing Burnt Ranch site (maintain trail for foot access)**		
		Improve existing access by providing new access and upgrading current access routes across public land. Grade, surface, or widen gravel roads as needed.	Provide maximum reason-able public access to the river via roads and trails.	Reduce public access to protect and enhance resources that constitute river values

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Actions by Segment	See common actions.	**Segment 1: Same as Alternative A**	Segment 1: Same as Alternative B plus seek to acquire public access to Tumwater Falls and the confluence of Hay Creek and the John Day River.	Segment 1: Eliminate Rock Creek road Access.
		Segment 2: Same as Alternative A, except imprve BLM road on west bank of the river from Clarno to Clarno Homestead.	Segment 2: Same as Alternative B plus seek public access easement to the river via Butte Creek Road. Seek to acquire public access on East bank from Clarno to Clarno Rapid.	Segment 2: Close BLM road on the west bank to vehicle traffic past the Clarno Homestead.
		Segment 3: Provide access to Lower Burnt Ranch dispersed use area.	Segment 3: Same as B	Segment 3: Same as B except do not provide motor vehicle access to Lower Burnt Ranch.
		Segments 10 and 11: Same as Alternative A plus improve surface of South Fork Road.	Segments 10 and 11: Same as B	Segments 10-11: Same as Alternative A.

Changes in Access	Improve	Add	Close	Improve	Add	Close	Improve	Add	Close	Improved	Add	Close
Segment 1	No Change			**No Change**				2				1
Segment 2	No Change			**1**			1	2				1
Segment 3	1	1		**1**	**2**	**1**	1	2	1	1	1	1
Segment 10 and 11	1			**1**			1			1		
Total	2	1	0	**3**	**2**	**1**	3	6	1	2	1	3

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Commercial Service				
	Continue existing Management. Case by case review. No limit on number of permits and permits are transferrable.	**Decisions concerning commercial services would fully consider type of service, consistency with management goals and objectives, the ability applicants to provide service, opportunity to make a profit, public safety, and BLM workload. Moratorium on new permits and transfers until launch numbers are finalized in approximately 3 years**		
		1. Increase permit requirements: training in river rescue, Leave No Trace, and Interpretation. **2. Increase minimum use requirements to 20 paying customer user days every two years.** **3. Permittees subject to random audits of IRS records associated with their permitted business by BLM.** **4. Increase permit fees to cover the cost of permit administration including required monitoring.**	Permit numbers adjusted on basis of needs assessment and issued by competitive prospectus. Permits transferrable only to applicants who meet same criteria identified in the needs assessment	Limit number of permits to 34. Permits not transferrable. Available permits granted based on needs assessment and competitive prospectus. Concession permits based on needs assessment may be issued and would be in addition to 34 permits
# of outfitter guide permits	No limit	**No limit**	No limit, BLM determined need	34
Permit Transferability	Yes	**Yes**	Yes if applicant meets criteria	No

Table 1 - Summary of Alternatives and Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Minerals				
	Continue Existing Management	**Provide additional protection of river values. Same as A except:** **1. No surface occupancy restriction for Leasable Minerals in Grant County within Planning area.** **2. Where permitted mining would be subject to stipulations to protect river values.** **3. On BLM lands new sites for the production of saleable minerals would not be permitted within State Scenic Waterways or Wild and Scenic Rivers.** **4. Facilities such as established campgrounds and launches would be closed to leasing and saleable minerals and withdrawn from entry under the Mining Law of 1872 for locatable minerals.**		Eliminate possibility that mining within Wild and Scenic River boundary could adversely impact river values. Close BLM managed lands in Wild and Scenic River Segments and State Scenic Waterway segments to leasing and saleable mineral activity and withdraw locatable minerals from entry under the Mining Law of 1872.
Production Potential				None
Land Ownership, Classifications, and Use Authorizations				
	Continue Existing Management	**Same as A and identify parcels for acquisition to protect and enhance river values and to facilitate administration.**		Same as B and C plus seek to acquire additional lands in order to facilitate Alternative D for grazing.
Potential Acquisition Acreage	Not identified	**4,036 acres**		4,036 acres plus an unknown acreage acquired to Implement Alternative D for Grazing.

Table 2 - Summary of Consequences of Grazing Alternatives (Preferred Alternative is B)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Fish	Actions within the project area would continue trends in vegetation and water quality described in Chapter 2 but improved instream conditions would not be measureable due to relatively small proportion of basin affected by changes in management.	**Actions within the project area would continue and accelerate trends in vegetation and water quality described below but would not result in measurable changes in fish habitat**.	Same as B.	Same as B.
Wildlife	Actions within the project area would continue trends in wildlife habitat described in Chapter 2 and would support diverse wildlife populations.	**Changes in vegetation described below would provide increased riparian wildlife habitat compared to existing management. Grazing systems employed would provide abundant forage and cover for wildlife dependent upon upland habitat. Increases in amount of fences would create more barriers to wildlife passage and increase the potential for wildlife mortality due to entanglements in fencing Compared to Alternative A.**	Same changes in riparian and upland wildlife habitat as Alternative B. Increases in amount of fences would create more barriers to wildlife passage and increase the potential for wildlife mortality due to entanglements in fencing more than any other alternative.	Same changes in riparian and upland wildlife habitat as Alternative B. Increases in amount of fences would create more barriers to wildlife passage and increase the potential for wildlife mortality due to entanglements in fencing more than Alternatives A and B but fewer than Alternative C.
Water Quantity and Quality	No measurable change in instream conditions due to small proportion of basin affected by changes in management	**Same as A**	Same as A	Same as A

Table 2 - Summary of Consequences of Grazing Alternatives (Preferred Alternative is B)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Scenery	Less riparian vegetation would be visible on allotments without riparian oriented management than on the same allotments under Alternatives B, C, and D. 2.2 additional miles of fence would be visible from the river. Cattle would be present adjacent to more miles of the river and for a greater duration of time than under the other alternatives.	**Under proposed management more riparian vegetation would visible with little evidence of grazing in allotments that currently are without riparian oriented management. Changes in upland vegetation would usually not be visible from most viewpoints.** **As many as 8 additional miles of fencing would be visible from the river or areas adjacent to the river compared to Alternative A. The duration of time that cattle on public lands (both riparian and upland) would be visible in foreground views from the river (about 6 weeks during April and May) would be reduced compared to Alternatives A and C, but would be greater than under Alternative D (0 days).**	Changes in riparian vegetation would be the same as Alternative B except cattle trails within riparian areas not used by recreational users would gradually become revegetated. Changes in upland vegetation would usually not be visible from most viewpoints. As many as 223 additional miles of fencing would be visible from the river or areas adjacent to the river in Wild and Scenic Segments compared to the existing condition. Cattle on public up lands would be visible to river users more often than other alternatives because upland grazing strategies (outside of the fenced riparian exclusion areas) would allow for longer period of grazing than the other alternatives. There would be no cattle visible in riparian areas on public lands because of the riparian exclusion.	Changes in riparian vegetation would be the same as Alternative C. Increases in upland vegetation would usually not be visible from most viewpoints.. The number of locations where fences between public and private lands would extend into the river would increase over all other alternatives. No cattle would be visible on public lands within the boundaries of the Wild and Scenic River Segments or on public lands within 1/4 mile of the river in Segments not designated Wild and Scenic.

Table 2 - Summary of Consequences of Grazing Alternatives (Preferred Alternative is B)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Vegetation				
Special Status plants	Known populations would be maintained at existing levels	**Same as A**	Same as A	Same as A
Riparian	Riparian vegetation would continue to increase in density and diversity at or near natural rates. Increases in riparian vegetation on those 9.9 riverbank miles without riparian management would be less than natural rate with possibility for further degradation.	**Same as A except that 8 more miles of public riverbank would be increasing in vegetation density and diversity.**	Same as A except that all public riverbank miles would be increasing in vegetation density and diversity.	Same as A except that 9.2 more miles of public riverbank would be increasing in vegetation density and diversity.
Upland	Vegetation would be maintained or increased by the grazing occurring before “critical growing season’, which favors desirable cool and warm season species. The increase in vegetation would also allow for increases in litter accumulation and soil amelioration. Where no riparian oriented management is in place ...	**Except for small area tied to private land management vegetation would be maintained or increased, with increases in litter accumulation and soil amelioration**.	Same as A except that grazing may occur during a variety of seasons..	Same as A except that on some sites litter accumulation and soil amelioration may occur more quickly than under other alternatives.

Table 2 - Summary of Consequences of Grazing Alternatives (Preferred Alternative is B)

Issue	Alternative A				Alternative B		Alternative C		Alternative D	
Grazing	1986		Present							
Management in WSR Segments (1,2,3,10,11)	public	private	public	private	**public**	**private**	public	private	public	private
Grazing Excluded (miles of riverbank)	6.1	1.5	64	55.2	**66**	**54**	196	162	196	128
Riparian Oriented Mgmt. (miles of riverbank)	9.2	10.5	122	71.9	**129**	**98**	0	1.5	0	1.9
No Riparian Oriented Mgmt. (miles of riverbank)	181.1	97.3	9.9	33	**2.2**	**8.9**	0		0.7	9.6
Private Land Management not tied to BLM Allotments (miles of riverbank)	0	57	0	60.1	**0**	**60**	0	57	0	81
Miles of New Fence	n.a.		3.5	0	**12**	**0**	113	100	99	52
# New Water Developments	n.a.		0	0	**7**	**0**	113	100	99	52
Acres Closed to Grazing	unknown		387	331	**393**	**321**	881	822	65,845	15,118
AUMs cancelled	n.a.		0		**0**		9		2725	
Management in Non-Designated Segments (4,5,6,7,9)	1986		Present							
	public	private	public	private	**public**	**private**	public	private	public	private
Grazing Excluded (miles of riverbank)	not available		12	30	**15**	**30**	43	79	43	79
Riparian Oriented Mgmt. (miles of riverbank)	not available		24	31	**27**	**49**	0	0	0	0
No Riparian Oriented Mgmt. (miles of riverbank)	not available		6.9	28	**1.2**	**10**	0	15	0	0
Private Land Management (miles of riverbank)	not available		0	392	**0**	**392**	0	388	0	402
Miles of New Fence	not available		0	0	**0**	**0**	29	47	48	56
# New Water Developments	not applicable		0		**0**		29	47	48	56
Acres Closed to Grazing	not available		71	179	**89**	**179**	883	1060	4372	6116
AUMs cancelled	not applicable		0		**0**		19		390	
Agricultural Land	Grazing would have no impact on agricultural lands				**Same as A**		Same as A		Same as A	

Table 2 - Summary of Consequences of Grazing Alternatives (Preferred Alternative is B)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Recreation				
Recreation Opportunities	Grazing would not affect recreational opportunities	Same as A	Same as A	Same as A
Recreational Experience	Recreationists would experience the sight, smells, and signs of cattle more than the other alternatives due to cattle grazing within the foreground views or within dispersed campsites.	**Recreationists would experience the sight, smells, and signs of cattle less than Alternatives A due to fewer cattle grazing within the foreground views, cattle being excluded from selected dispersed campsites, and reduced duration and different timing of grazing in selected allotments. Slightly increased amount of fencing would affect recreational experience of some recreationists.**	Recreationists would not experience the sight, smells, and signs of cattle within campsites due to the exclusion of cattle from riparian areas and virtually all public dispersed campsites. As described under Scenic Quality cattle would remain visible and fencing to exclude cattle from riparian areas would also be visible on most public land near the river.	Recreationists would not experience the sight, smells, and signs of cattle on public lands due to the exclusion of cattle from public lands within the river corridor. More fencing would extending into the river would be visible compared to other alternatives.
Allocation System	Grazing would have no impact on the allocation system	Same as A	Same as A	Same as A
Motorized Boating	Grazing would have no impact on motorized boating	Same as A	Same as A	Same as A
Dispersed Camping	See discussions of Recreational Opportunities and Experience for Alternative A.	See discussions of Recreational Opportunities and Experience for Alternative B.	See discussions of Recreational Opportunities and Experience for Alternative C.	See discussions of Recreational Opportunities and Experience for Alternative C.
Developed Facilities	No effect	Same as A	Same as A	Same as A

Table 2 - Summary of Consequences of Grazing Alternatives (Preferred Alternative is B)

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Public Access	No effect	**Same as A**	Same as A	Same as A
Commercial Use	Same as Recreational Experience	**Same as Recreational Experience**	Same as Recreational Experience	Same as Recreational Experience
Minerals	No Effect	**Same as A**	Same as A	Same as A
Land Ownership, Classifications, and Use Authorizations	No Effect	**About 380 acres of public land in isolated 40 and 80 acre parcels surrounded by private land that is difficult and expensive for the BLM to manage would be disposed in exchange for private lands within the Wild and Scenic River corridor.**	No effect	Some private lands would be acquired from willing sellers in order to implement the grazing exclusion on all public lands within the river corridor

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Chapter I - Purpose, Process And Issues

Introduction

This document is the *Draft Management Plan and Environmental Impact Statement* for Oregon's John Day River system which includes the mainstem, and North, Middle and South Forks. This draft is an important step toward development of a final plan which will provide decisions for management of certain lands (identified in this document) along this river system. The *Draft Management Plan* portion of this document is the collective total of the Preferred Alternatives described in Chapter III. The *Draft Environmental Impact Statement* is the remainder of this document which identifies issues to be resolved, alternative management plans for resolving issues, and analysis of impacts of the alternative management plans.

Location

The John Day River system includes the mainstem and the North, Middle and South Forks. This system contains over 500 river miles and is one of the longest free-flowing river systems in the continental United States. The system drains a large portion of northeast Oregon **(Map I-A)**.

The mainstem and North and Middle Forks flow from the Blue Mountains and the South Fork from the Ochoco Mountains. The mainstem begins near high in the Malheur National Forest and flows west through the town of John Day to Dayville where it is joined by the South Fork. Downstream from Dayville, the river turns sharply north, flowing to Kimberly, where it is joined by the North Fork. From Kimberly, the river again turns west for another 40 miles before it makes its final turn north to the Columbia River. The Middle Fork flows into the North Fork above Monument, about 20 miles upstream from the North Fork's confluence with the mainstem.

Purpose and Need

The purpose of this planning effort is twofold:

First, to implement the direction of the Omnibus Oregon Wild and Scenic Rivers Act of 1988 for the John Day River. This Act requires BLM, in partnership with the State of Oregon and Affected Native American Tribes, to develop a management plan which will protect and enhance the identified outstandingly remarkable and significant values for federal lands within the designated Wild and Scenic segments of the John Day River.

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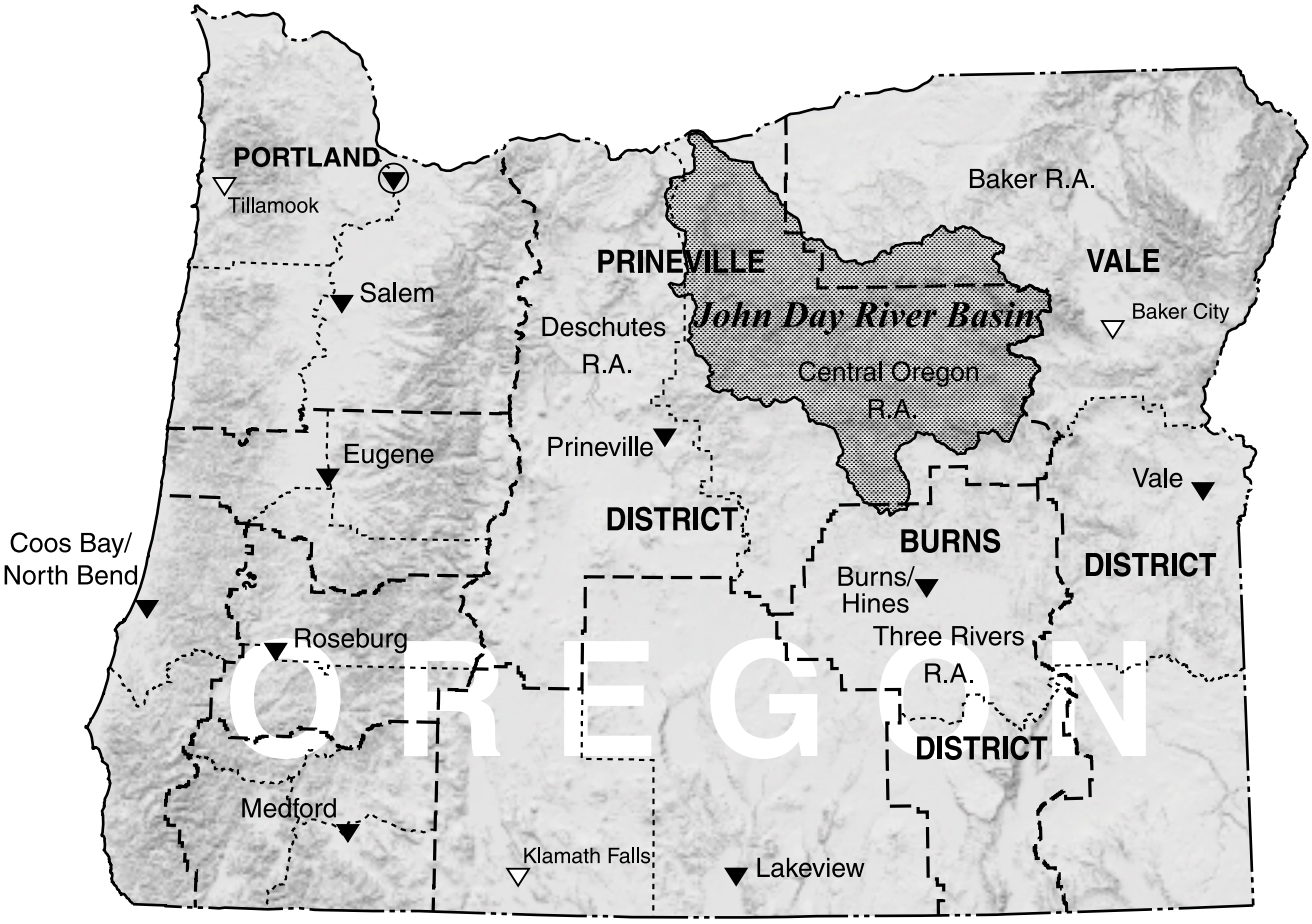

LEGEND

- BLM State Office
- BLM District Office
- BLM Resource Area Office
- BLM District Boundary
- BLM Resource Area Boundary

N
W E
S

40 0 40 80 Miles

40 0 40 80 Kilometers

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Prineville District

John Day River
Draft Management Plan
1999

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Map I-A: General Location

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Second, to amend and implement the BLM's John Day and Two Rivers Resource Management Plans (RMP's) which also call for developing a management plan for all of the John Day River system, not just segments designated as Wild and Scenic.

Proposed Action

The proposed action is to develop and adopt a river management plan for the John Day River system that will protect and enhance the "outstandingly remarkable and significant values" and "special attributes" identified for those portions of the John Day River system which were designated by federal and state legislation. The proposed action is also to resolve certain issues in segments not so designated when they have an effect on river values in the designated segments. The proposed action will strive on public lands to:

1. Increase water quantity, improve water quality and maintain instream water flows in amounts needed to protect and enhance river values, including anadromous and resident fisheries, and to support recreational uses.

2. Protect water quality by mitigating, diminishing or eliminating sources of water pollution originating on public lands to meet state water quality requirements.

3. Protect and enhance riparian and upland vegetation.

4. Manage recreation at use levels that protect and enhance river values.

The management plan is accompanied by an Environmental Impact Statement (EIS) which describes the site specific and cumulative effects of the management plan as well as alternative management plans considered. This is in accordance with requirements of the National Environmental Policy Act of 1969. To the extent that approval of the final plan requires amendments to the Prineville districts Two Rivers and John Day RMP's, this analysis also meets the Bureaus land use planning requirements (43 CFR 1610.5-5 and associated manuals).

Plan Scope

This plan and EIS is developed to provide management direction to public lands on the federally designated Wild and Scenic River (WSR) segments and public and private lands on the state designated Oregon State Scenic Waterway segments of the John Day River system. This plan also includes decisions considered for public lands on non-designated segments for certain issues including grazing, BLM agricultural lands, and recreation.

The partners in this plan recognize their extremely limited ability to affect measurable change in John Day River resource conditions such as water quality and quantity and vegetative composition. This is because this plan directly effects about 2% of land in the basin. This means that about 98% of land in the basin is managed by people and agencies which are not bound by the decisions in this plan. Decisions in this plan apply to about 10% of river and stream mileage in the basin and the partners in this plan manage about 20% of land adjacent to the river within the planning area. The partners will however, aggressively pursue improvement and enhancement of river values by improving and enhancing lands which they manage.

This plan is intended to provide a framework for improving coordinated management on all John Day River segments. This includes those designated Federal Wild and Scenic and/or State Scenic Waterway; segments with special status (such as a State Wildlife Refuge); segments with existing planning which will not change with this plan (such as the upper North Fork managed by the USFS) and segments without special designation or status.

The partners in this plan each have their own unique authorities for managing their aspects of lands and programs on the John Day River. For example, BLM is responsible for decisions on BLM administered lands, Oregon Department of Fish and Wildlife (ODFW) is responsible for decisions regarding fish and wildlife populations, Oregon Parks and Recreation Department (OPRD) is responsible for decisions on rules for lands along State Scenic Waterways, etc. While the plan is a cooperative effort by the partners, it does not affect or change existing authorities. In addition, some river segments are discussed in this plan for which no decisions are made. For example, the upper mainstem which is almost exclusively private land, and the upper North Fork managed by the USFS which already has a completed plan for that segment.

Decisions made in this plan are designed to resolve the issues described later in this chapter. These issues resulted from an extensive public scoping period. Emphasis has been given to developing

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decisions for the designated Federal Wild and Scenic and State Scenic Waterway segments of the river system.

Plan Organization

This Draft Management Plan and EIS is divided into five chapters:

Chapter I explains why the plan is being written, the purpose of the plan, who is involved, where it applies, and issues to be resolved.

Chapter II describes the river system existing environment, including resource values and uses.

Chapter III describes alternative ways of managing the river to resolve issues identified in Chapter I.

Chapter IV presents State of Oregon proposed rules for management of the State Scenic Waterways on the John Day River.

Chapter V describes the direct, indirect and cumulative impacts of the alternatives and proposals presented in Chapters III and IV.

Planning Partners, Public Involvement and Process

Partners

Many governmental agencies, Native American tribes and numerous private landowners manage various aspects of the John Day River system. These agencies, tribes and landowners have long recognized the need to coordinate river management activities. This coordination has occurred in the past and they have also expressed a desire to continuously strive to improve coordination of management actions for the river.

The principle partners in this plan and EIS are;

USDI Bureau of Land Management, Prineville District

State of Oregon, by and through Oregon Parks and Recreation Department, Oregon Department of Fish and Wildlife and Oregon State Marine Board

Confederated Tribes of the Warm Springs Reservation of Oregon

John Day River Coalition of Counties (which includes the Counties of Sherman, Gilliam, Wasco, Jefferson, Wheeler, and Grant)

USDI Bureau of Indian Affairs, Warm Springs Agency

Native American Planning Role

Certain Treaties, Federal laws, and Executive Orders give special and unique standing in this planning process to Native American Tribes. Tribes most affected by this plan include the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). The Klamath Tribe and the Burns Paiute Tribe also have interest in portions of this same area. All of these tribes have recognized traditional uses established on and/or near the John Day River. The CTWSRO is an active partner in development of this plan. Direct consultation has occurred and will continue to occur with all these tribes as this plan develops and is implemented.

Public Involvement

The partners in this plan invite your review and comment on this draft document. Your opinions, reasons and comments will play an important role in development of the final plan. This draft plan and EIS is available for public review and comment for 90 days. Public comments will be summarized, reviewed and considered in development of the final plan.

Protests and Appeals

The partners in this plan each have their own legally mandated decision process, as well as process for handling and resolving public objections to decisions. People who wish to formally object to a decision or decisions in the plan would be best served by initially contacting the Prineville BLM office. Together, a determination will be made as to which decisions are involved and therefore which agencies process will be used. Deadlines for filing objections may vary by agency so it is important for those interested in the protest and appeal process to contact the Prineville BLM office as soon as possible after release of the final proposed plan and EIS. The final EIS will describe procedures applicable to BLM proposed decisions.

Process and Schedule

The partners in this plan assembled and agreed to work together to produce a single management plan

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for their respective areas of jurisdiction on the John Day River. Staff representatives from the partners formed a "Core Team" to guide and direct the development of the plan. Members of this Core Team are listed in **Appendix A**.

During this process the BLM is advised by the John Day - Snake Resource Advisory Council (RAC) which is a citizens group appointed by the Secretary of the Interior to advise the BLM on land management issues. The RAC appointed a subgroup to focus on the development of this plan. Members of this RAC subgroup are also listed in **Appendix A.**

Development of the management plan is a multistage process ultimately leading to the publication of a final management plan and environmental impact statement for the John Day River. The progress of this process is marked by the production of the following documents:

1. A Draft John Day River Plan and EIS was developed by BLM and the State of Oregon and released for public review and comment in October, 1993. The Draft Plan and EIS proposed important decisions that primarily affected recreational use of federal land on the river and all lands on the portion of the river designated as State Scenic Waterway. Certain issues and circumstances prevented the final plan from being released.

2. The second revised Draft Management Plan and EIS is the document you are now reading. Release of this initiates a 90 day public review and comment period. Interested parties are encouraged to provide comments on this document to:

   John Day Plan
   Bureau of Land Management
   PO Box 550
   Prineville, Oregon 97754

3. The Final Plan and EIS will be developed to direct management of the river on public lands where decisions are made. It will be one which can be supported by all partners. Any land use or resource allocation decisions for BLM managed lands will be incorporated into the Two Rivers and John Day RMP amendments following State Director approval.

River Segments, Designations, and Values

Segments

This plan divides the John Day River system into eleven segments. The segments are logical divisions of the river system based upon land uses, ownership, access, and other factors. The segments are indicated on **Map I-B** and described in **Chapter II.**

Designations

The following provides an overview of the more important federal and state designations.

Federal Wild and Scenic River

The National Wild and Scenic Rivers System was created by Congress in 1968 with the passage of the Wild and Scenic Rivers Act (PL 90-542). Its purpose is to preserve certain rivers with outstanding natural, cultural or recreational features in a free-flowing condition for the enjoyment of present and future generations. As of August 1996, the system included 151 rivers or sections of rivers in 35 states.

The Omnibus Oregon Wild and Scenic Rivers Act of 1988 (Public Law 100-558) designated several segments of Oregon rivers as Wild and Scenic, including three segments of the John Day River. Each of these segments has one of three sub-classifications assigned to it by Congress. These sub-classifications are:

Wild *- Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.*

Scenic *- Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.*

Recreational *- Those rivers or sections of rivers that are readily accessible by road or railroad that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past.*

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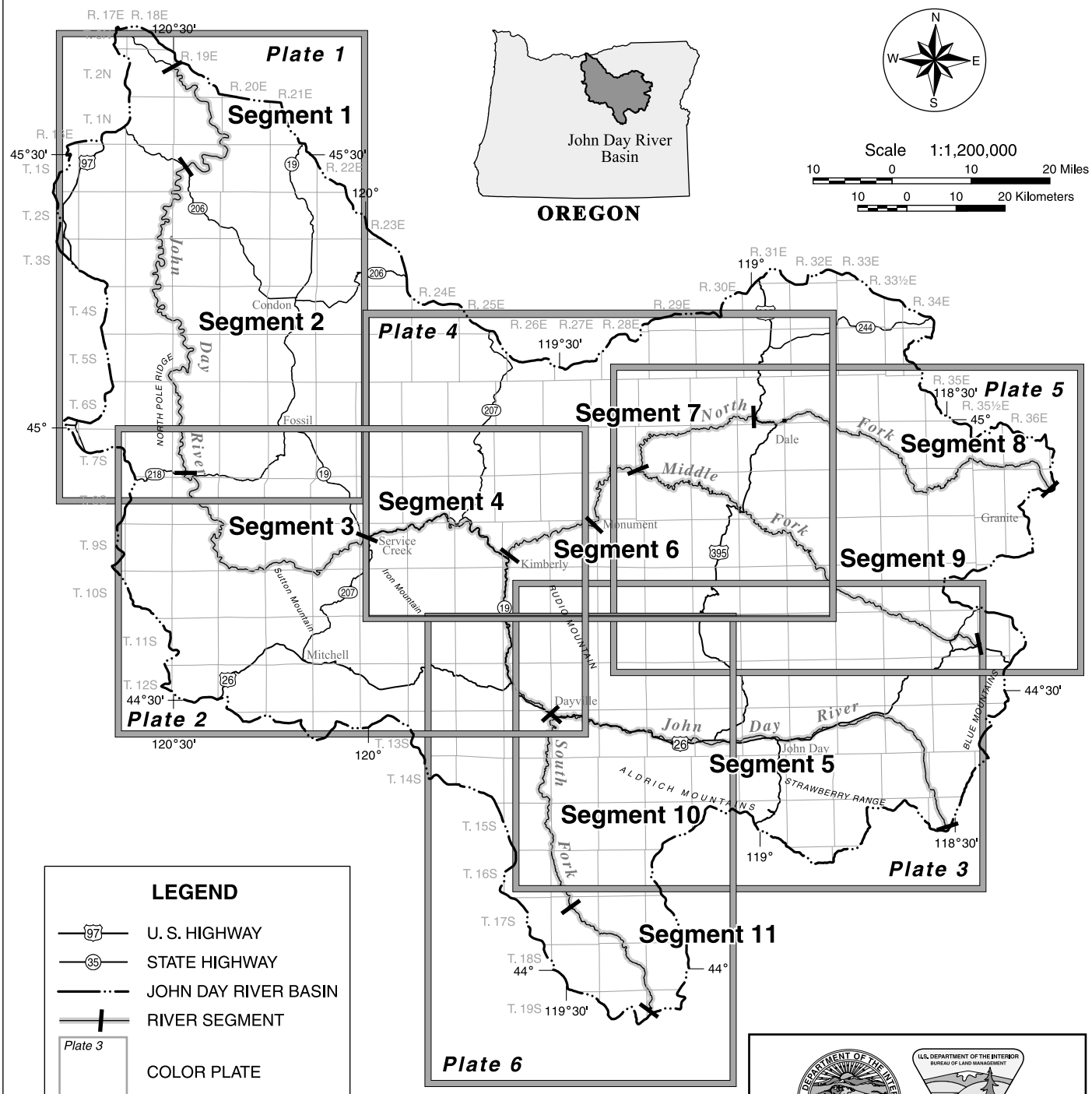

LEGEND

- U. S. HIGHWAY
- STATE HIGHWAY
- JOHN DAY RIVER BASIN
- RIVER SEGMENT
- Plate 3 — COLOR PLATE

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Map I-B: River Segments and Segment Map Index

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The three John Day River segments designated as Wild and Scenic are;

1. The lower John Day River mainstem from Tumwater Falls upstream to Service Creek, classified as *Recreational.*

2. The North Fork John Day River from Camas Creek upstream to the North Fork John Day Wilderness boundary. One portion of this segment is classified as *Wild*, two portions classified as *Scenic,* and two as *Recreational*. (This Wild and Scenic segment is managed by the USFS which has a completed management plan for it.)

3. The South Fork John Day River from Smokey Creek upstream to the Malheur National Forest boundary, classified as *Recreational*.

State Scenic Waterway

The Oregon Scenic Waterways System was created by ballot initiative in 1970 and segments of certain rivers were designated as "State Scenic Waterways". A second ballot initiative expanded the system in 1988. A total of approximately 317 miles of the John Day River are included in this system.

State Scenic Waterways are administered by the Oregon Parks and Recreation Commission, with rules that provide generic standards to all scenic waterways. Specific rules are also developed for each river during the management planning process. (This plan develops these rules for the State Scenic Waterway on the John Day River in Chapter IV). These rules are designed to manage development and uses within the Scenic Waterway corridor to maintain the natural beauty of the river. Rules vary depending on the special attributes of each river segment. This is done through the use of river classifications. Scenic Waterways are classified by segment into one of six classifications, according to the character of the landscape and the amount and type of development present within the corridor at the time of designation. The rules established for each classification do not affect development existing at the time of Scenic Waterway designation. None of the classifications are designed as prohibitions of new development. Though some types of improvements require notification, review and approval, others do not.

The State Scenic Waterway segments are located:

- On the mainstem from Tumwater Falls to Parrish Creek;

- The North Fork from near Monument upstream to the North Fork John Day Wilderness boundary;

- The Middle Fork John Day River from its confluence with the North Fork John Day River upstream to the Crawford Creek Bridge;

- The South Fork from the north boundary of Phillip W. Schneider Wildlife Management Area (formerly Murderer's Creek Wildlife Management Area) to County Road 63.

State Scenic Waterway segments that overlap with the National WSR designations are:

- Mainstem from Tumwater Falls to Service Creek.

- North Fork from Camas Creek to the North Fork John Day Wilderness Area boundary.

- South Fork from north boundary of Phillip W. Schneider Wildlife Area to County Road 63.

Other Designations

Other important designations also exist along the river including Wilderness Areas, Wilderness Study Areas, State Wildlife Refuges and the John Day Fossil Beds National Monument.

Wilderness Areas are federal lands designated by the US Congress to be part of the National Wilderness Preservation System. They have special management rules including a prohibition of motorized use and no surface disturbance. There are two Wilderness Areas along the John Day River system, both managed by the USFS. The North Fork John Day Wilderness is located on the upper North Fork John Day River and the Black Canyon Wilderness is on the South Fork.

Wilderness Study Areas are being studied for possible Wilderness designation by Congress. They may allow motorized use but must be managed in a way that preserves the possibility of future Wilderness designation. Normally this means no surface disturbing activities are allowed.

The State of Oregon established the John Day Wildlife Refuge in 1921 along the lower mainstem of the John Day River. The primary purpose of this refuge is to protect wintering and nesting waterfowl. It includes all land within 1/4 mile of the John Day River mean high water line from the Columbia River upstream to Thirtymile Creek. The area is open to

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hunting of deer and upland game birds during authorized seasons only between September 1 and October 31 but closed to all waterfowl hunting. Hunting on private lands within this refuge requires landowner permission.

The Phillip W. Schneider Wildlife Management Area (WMA), formerly the Murderer's Creek WMA, is located in Segment 10 along the South Fork John Day. This area was acquired in 1972 by the ODFW, primarily to protect and enhance a major wintering range for mule deer, but also to control wildlife damage and protect riparian zones.

River Values

The Federal Wild and Scenic Rivers Act requires WSR's to be managed to "protect and enhance" their "outstandingly remarkable and significant values" which Congress lists. Congress also invites the managing agencies to assess the designated river segment to identify any additional outstandingly remarkable and/or significant values the segment may contain.

Table 1-A - Designations on Mainstem John Day River

Segment 1 - Tumwater Falls RM 10 to Cottonwood Bridge RM 40

Designation	Location
Federal Wild and Scenic	Tumwater Falls to Cottonwood Bridge
State Scenic Waterway	Tumwater Falls to Cottonwood Bridge
John Day River State Wildlife Refuge	Tumwater Falls to Cottonwood Bridge

Segment 2 - Cottonwood Bridge RM 40 to Clarno RM 109

Designation	Location
Federal Wild and Scenic	Cottonwood Bridge to Clarno
State Scenic Waterway	Cottonwood Bridge to Clarno
Thirtymile/lower John Day Wilderness Study Area	RM 46 to RM 83
North Pole Ridge Wilderness Study Area	RM 85 to RM 95
John Day River State Wildlife Refuge	Cottonwood Bridge to Thirtymile Creek RM 84

Segment 3 - Clarno RM 109 to Service Creek RM 157

Designation	Location
Federal Wild and Scenic	Clarno to Service Creek
State Scenic Waterway	Clarno to Service Creek.
Spring Basin Wilderness Study Area	Rm 113 to Rm 119

Segment 4 - Service Creek RM 157 to Dayville RM 213

Designation	Location
State Scenic Waterway	Service Creek to Parrish Creek RM 170
National Monument	John Day Fossil Beds National Monument RM 195, 206

Segment 5 - Dayville RM 213 to Headwaters RM 284

Designation	Location
No Designations	

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Table 1-B - Designations on North Fork John Day River

Segment 6 - Kimberly RM 0 to Monument RM 16

Designation	Location
No Designations	

Segment 7 - Monument RM 16 to Camas Creek RM 57

Designation	Location
State Scenic Waterway	Rm 20 to Camas Creek
Public Access Easement	Potamus Creek RM 40 to Camas Creek RM 57

Segment 8 - Camas Creek RM 57 to Headwaters

Designation	Location
Federal Wild and Scenic*	Camas Creek to North Fork John Day Wilderness Boundary
State Scenic Waterway	Camas Creek to North Fork John Day Wilderness Boundary

**This Segment Administered by the USDA Forest Service - Not Addressed in this EIS*

Table 1-C - Designations on Middle Fork John Day River

Segment 9

Designation	Location
State Scenic Waterway	Confluence of North Fork (Rm 0) to Rm 71

Similarly, Oregon State law requires State Scenic Waterways to be managed to protect the Special Attributes" identified for those segments.

Outstandingly Remarkable and Significant Values

The federal outstandingly remarkable values of the lower mainstem John Day WSR identified by Congress are scenery, recreational opportunities, and fish. Congress also identified archaeological, paleontological, geological, and historical values as significant. In addition, the BLM found wildlife, geological, paleontological, and archaeological and historical values to be outstanding and botanical and ecological values as significant **(Table I-E)**.

The outstandingly remarkable values of the South Fork John Day WSR identified by Congress are scenery and recreational opportunities. The BLM subsequently found fish, wildlife, and botanical values to be outstanding and geological and prehistoric/traditional use as significant values.**(Table I-F)**.

While congress gives Outstandingly Remarkable Values a higher status than Significant Values, there is little management distinction between them on the river. Both are to be protected and enhanced.

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Table 1-d - Designations on South Fork John Day River

Segment 10 - Mainstem Confluence RM 0 to County Road 63 RM 35

Designation	Location
Federal Wild and Scenic	Smokey Creek RM 6 to County Road 63 (Post-Paulina Rd)
State Scenic Waterway	North Boundary of Phillip W. Schneider (Murderer's Creek) Wildlife Area RM 5 to County Road 63
Phillip W. Schneider Wildlife Area	RM 5 to RM 28
National Backcountry Byway	Dayville RM 0 to County Road 63
Aldrich Wilderness Study Area	RM 6 to RM 12
Wilderness	Black Canyon Wilderness RM 14

Segment 11 - County Road 63 RM 35 to Headwaters RM 59

DesignationLocation	
Federal Wild and Scenic	County Road 63 to Malheur National Forest Boundary RM 52

Table 1-E Outstandingly Remarkable and Significant Values for the Lower Mainstem John Day River

River Value	Congressional Values	Additional or Upgraded Values Identified by the BLM
Scenery	Outstandingly Remarkable	
Recreational Opportunities	Outstandingly Remarkable	
Fish	Outstandingly Remarkable	
Wildlife		Outstandingly Remarkable
Geological	Significant	Outstandingly Remarkable
Paleontological	Significant	Outstandingly Remarkable
Archeological	Significant	Outstandingly Remarkable
Historical	Significant	Outstandingly Remarkable
Botanical		Significant
Ecological		Significant

State Scenic Waterway Special Attributes

Oregon Parks and Recreation Department (OPRD) found that scenery, recreation opportunities, fish, wildlife, geological, paleontological, botanical, and cultural resources are special attributes on the John Day River mainstem from Tumwater Falls to Service Creek. The OPRD found that fish and wildlife are special attributes for the mainstem from Service Creek to Parrish Creek, based upon information from ODFW.

The OPRD found that scenery, recreation opportunities, fish, and wildlife are special attributes on the North Fork between US 395 and Monument. More inventory is needed to evaluate the importance of historic, prehistoric, geologic, and other values for this river segment.

The OPRD found that scenery, fish, and wildlife are special attributes on the Middle Fork from Crawford Bridge to the confluence with the North Fork. More

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Table 1-F Outstandingly Remarkable and Significant Values for the South Fork John Day River

River Value	Congressional Values	Additional or Upgraded Values Identified by the BLM
Scenery	Outstandingly Remarkable	
Recreational Opportunities	Outstandingly Remarkable	
Fish		Outstandingly Remarkable
Wildlife		Outstandingly Remarkable
Botanical		Outstandingly Remarkable
Geological		Significant
Prehistoric and Traditional Uses		Significant

inventory is needed to evaluate the relative importance of historic, prehistoric, geologic, and other values for this river segment.

Issues To Be Resolved

This section describes the significant environmental issues which were used to develop the alternatives in Chapter III. An “issue” is a situation, problem or area of concern which must be resolved by the alternatives and final decisions of the plan.

1. What management actions need to be taken to protect and enhance vegetation related values?

The soil-vegetation complex has been manipulated by management practices associated with agriculture, fire, forestry, grazing, irrigation, mining, noxious weeds, recreation, roads, stream bank erosion, and wildlife populations. Management of vegetation affects botanical, hydrological, ecological, wildlife, fisheries, scenery, and recreation values within the John Day River basin.

Some lands have been exposed to disturbances that exceeded the threshold of tolerance which the soil-vegetation complex could endure intact. Such disturbances have led to erosion and often opened these lands to invasion by exotic species, further altering the ecology of the site. In these cases, nutrient cycling, energy capture, and watershed function have been disrupted and some rare plant species may have become extirpated.

The John Day River corridor contains several special status plant species. (Special status plants are those which are officially listed as endangered or threatened by either the Federal or State government, plants proposed for listing as such, or plants which are otherwise designated by the State Director as “sensitive”. This latter designation includes plants which may not be listed or proposed for listing, but which are considered by the Oregon Natural Heritage Data Base to be either endangered or threatened throughout their range or in Oregon, as well as other plants which may need protection on a district-by-district basis.) Plant communities vary from high-desert grasslands to mixed-conifer forests to agricultural fields. Disturbance regimes vary from almost untouched to areas which have felt the impact of almost every disturbing force in the watershed. The Resource Assessments (USDI, BLM, 1991a,b) state that the vegetative conditions which existed following designation provided outstanding botanical, ecological, aesthetic and wildlife values.

The biggest challenges for vegetation management are associated with riparian areas and exotic weedy species (see Weeds issue below). While the complete recovery of the river system is likely to take centuries, some of the benefits of improved riparian vegetation can be realized almost immediately. There has been an increased awareness among land owners and land managers of the unique value and benefits of healthy watersheds and riparian areas. Changes in land management which specifically target watershed functioning have led to improved conditions on the uplands and tributaries and to the recent expansion in riparian vegetation along the banks of the John Day River.

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Issue 1a *How should grazing be managed to protect and enhance river values?*

Improper or unregulated grazing, overgrazing and heavy grazing have been identified as primary causes of declines in scenic, wildlife, botanical and fisheries values (Kauffman and Krueger, 1984; ODFW 1990; BLM, 1991a,b). Applications of proper grazing strategies have contributed to recovery of desirable conditions along portions of the John Day River (BLM, 1996; National Wildlife Federation v. Cosgriffe, 21 F. Supp.2d 1211, 1222 (D. Or. 1998)).

Grazing is most likely to influence Congressionally designated outstandingly remarkable values of scenery, recreation opportunities, fisheries and wildlife, primarily through the alteration of riparian areas. Improper grazing can suppress riparian vegetation and compromise many of the associated physical and biological processes (Kauffman and Krueger, 1984). Carefully managed grazing can allow riparian areas and uplands to recover and function unimpeded (Elmore, personal communication; Ehrhart and Hansen, 1997).

BLM grazing allotments on the John Day River contain mostly private land over which BLM has no authority. BLM can and does make rules for grazing BLM land. But, successful management of a grazing allotment containing primarily private land requires cooperation of the private land owner.

BLM administers 196.4 or 47% of river bank miles (64 active grazing allotments) in the WSR segments of the John Day River system. BLM also administers 56 active grazing allotments in non-designated segments. BLM has been in the process of evaluating, updating and revising grazing management on these allotments for the past several years. This effort was given emphasis by recent programs to promote salmon recovery, including "Salmon Summit" (Collette and Harrison, 1992a,b), PACFISH (USDA, Forest Service and USDI, BLM, 1995), and Standards for Rangeland Health (BLM, 1997). The allotment evaluation process, which included new data gathering and interdisciplinary planning, resulted in many changes in grazing management on BLM administered lands along the John Day River.

The results of the grazing allotment evaluation process was that by June 1999, 94% of river bank miles administered by the BLM within WSR segments had grazing management in place (for example, spring grazing) which was designed to protect and enhance outstandingly remarkable values. At that time, another 3% of BLM administered WSR bank miles had grazing changes planned which would protect and enhance outstandingly remarkable values, but the plans were not yet implemented. The remaining 3% of BLM administered WSR bank miles had grazing management which was not compatible with WSR management objectives and required further work to arrive at a solution. This plan reviews the previous decisions and management agreements and makes the balance of the needed decisions .

1b. How should noxious weed invasions be managed to protect and enhance river values?

The expansion of noxious weeds is a serious threat to the biodiversity and watershed health along the John Day River.

Noxious weed infestations are becoming well established along all segments of the John Day River. These infestations now occur mainly along the valley bottoms and drainages, but are spreading outward onto slopes. The most common noxious weeds are diffuse knapweed, spotted knapweed, Russian knapweed, yellow starthistle, Dalmatian toadflax, Rush skeleton weed, scotch thistle, white-top, poison hemlock, medusahead, Canada thistle, and field bindweed. Recently found species that are of concern include leafy spurge and sqarrose knapweed. Noxious weeds are spread by wind, water, horses, motor vehicles, recreation users, wildlife, and livestock.

Noxious weeds are increasing and threaten native vegetation and established uses of the land. Watersheds are being invaded at an accelerating rate, jeopardizing river values associated with scenery, vegetation, wildlife and fish. The use of herbicides is highly controversial, but at present appears to be the most time/cost efficient and effective way of controlling many problem weed species. Weed establishment in many areas, has long passed the point where eradication of individual plants by hand pulling or cutting is possible.

1c. How should fire be managed to protect and enhance vegetation, scenery, recreation, and wildlife resources on public lands?

Fire management in the John Day River system currently focuses on prevention and suppression of wildfire to protect public values and private lands. Relatively successful prevention and suppression

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efforts have not allowed fire to play a natural role in the vegetative ecosystem, sometimes causing unintended consequences which have damaged resource values.

While fires are a natural component of a healthy ecosystem, modern fires can cause problems by threatening private enterprises, promoting the spread of weeds, killing plants, and altering recreation and scenic resources. Some fire suppression techniques, such as bulldozing, further add to the disturbance caused by fire. Prescribed fires or wildfire for resource benefit (fires that ignite naturally are monitored instead of actively suppressed) may be useful in meeting multiple use objectives. In areas with interspersed land ownership patterns, considerable coordination and cooperation with private land owners is necessary.

“Flashy” fuel types (such as fine dry grasses that burn quickly) and steep terrain, contribute to the severity of fire hazards. Of particular concern to private landowners are the high value wheat fields located just above the lower John Day River canyon. Although the majority of wildfires are lightning caused, numerous visitors float the John Day River every year, creating additional hazard.

1d. How should public agricultural (cultivated) lands be managed to protect and enhance river values while considering the needs of local citizens and communities?

The BLM manages several agricultural sites with water rights along the John Day River totaling about 385 acres. The amount being leased for commodity production (220 acres) accounts for approximately 57 percent this acreage.

The disturbance of soil and vegetation and/or water use associated with agricultural lands raises concern in the protection and enhancement of river values. The reduction in continued existing use of agricultural lands has also been identified as a concern.

The result of agricultural use is less acreage of native vegetation along river terraces and reduced quantities of surface water during the irrigation season while providing for other beneficial uses.

2. How can management actions best contribute to the protection and enhancement of fisheries values in the John Day River system?

There has been an overall decline in fish populations and distribution in the John Day River basin. This decline is due in part to the reduction in the quality and quantity of fish habitat. Other factors outside the scope of this plan that affect fish populations include ocean and estuary conditions, climate, dams, predation, and commercial and sport fishing. The quality and quantity of fish habitat has been directly and indirectly affected by past human habitation and subsequent land use practices.

The John Day basin provides habitat for a variety of native and non-native fish populations. Population and distribution of some key species, particularly anadromous salmonids (spring chinook salmon and summer steelhead), have declined from historic numbers and range. These species are highly significant for their ecological, cultural, economic, and recreational values, and are the primary concern of the Confederated Tribes of the Warm Springs and Confederated Tribes of the Umatilla. Managers believe improved irrigation systems and restoration of the uplands and riparian systems would provide the greatest long-term natural benefits to fish (ODFW, 1990). Anadromous salmonids and their habitat have been the focus of many local, state, federal, and tribal management directives. Continued improvement of fish habitat throughout the basin has been realized through these management and restoration efforts. Efforts to protect and enhance these species benefit other native species (for example, Pacific lamprey and suckers) that coexist in the basin.

Smallmouth bass, a non-native species introduced in the 1970’s, are identified as an outstandingly remarkable value (Congressional Record, 1988) and the primary recreational fishery (ODFW personal communication, 1997) of the John Day River. Concern has been expressed by management biologists (Shrader and Gray, 1998) and anglers, over the apparent reduction in numbers of large (>12 inches) smallmouth bass, over the past few years.

Steelhead in John Day River system have been listed as “threatened” (FR 64:14517), bull trout have been listed as “threatened” (FR 63:111), and Westslope cutthroat trout have been petitioned for review as “threatened” (FR 63:111) under the Endangered

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Species Act. In addition, chinook salmon and steelhead populations are currently less than production goals established by the ODFW and Columbia Intertribal Fish Commission.

3. How can management actions best contribute to the protection and enhancement of wildlife in the John Day River basin?

Forestry, grazing, wildfire suppression, agriculture, and recreation have contributed to a change in the extent and composition of wildlife along the John Day River system.

Wildlife are important for both social (for example, hunting or viewing) as well as ecological (for example, nutrient cycling) functions. The diversity of wildlife species and habitat in the John Day basin has noticeably changed in the past several decades. Wildlife species have reacted differently to these changes; some populations have expanded while other populations have decreased.

Wildlife species are very diverse in the basin. The quality and diversity of habitat in the John Day River caused BLM to rate wildlife values as outstandingly remarkable for designated Wild and Scenic segments (BLM Wild and Scenic River Resource Assessment, 1991).

4. How should the John Day Wild and Scenic River be managed so that federal trust responsibilities to recognized Native Americans Indian tribes are honored?

The John Day River basin encompasses lands ceded to the U.S. Government in 1855 in treaties between various Native American Indian bands, specifically the legal predecessors in interest of the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). The Burns Paiute and Klamath Tribes, both federally recognized, have current and/or potential valid interests in protecting certain public lands within the geographic area for traditional values and uses.

The CTWSRO and CTUIR treaties provide for continuation of traditional subsistence activities, including tribal access to usual and accustomed fishing stations. The heritage-related interests of contemporary Native American Indian peoples include the protection of graves and burial grounds and archaeological sites, as well as the perpetuation of traditional practices. Federal court decisions, federal legislation, secretarial and executive orders and BLM policy define the continuing responsibility of federal land-managing agencies to honor the terms of the treaties and to protect the rights and interests of Native American Indian tribes.

5. What land management activities can address water quantity relative to the protection and enhancement of river values?

The variation in seasonal precipitation, semi-arid nature of the John Day basin, and lack of dams or other impoundments, results in a historically wide range of water levels in the river. The use of the watershed's resources to satisfy consumer demand for forest products, cattle, grains, minerals, and other commodities probably has accentuated the natural late winter/early spring runoff pattern at the cost of decreasing summer and fall flows (OWR, 1986). Oregon Water Resources Department further identifies groundwater discharge as the main contributor to stream flow during the dry summer and fall months. Channel down-cutting, as exhibited on many tributaries of the John Day River, has been shown to result in lowering of stream and groundwater levels (Jensen et al., 1989).

Seasonally low water levels for the John Day River have caused concern for certain river values, such as fisheries and recreation, which are dependent upon minimum water flow levels. The seasonal distribution of stream discharge, particularly regarding low summer and fall flows, and irrigation use are the primary water quantity concerns. Managers believe improved irrigation systems, and restoration of uplands and riparian systems would provide the greatest long-term benefits for fish, and improved late season stream flow as well (ODFW, 1990).

Water levels in the John Day River range from extreme highs of greater than 40,000 cubic feet per second (cfs) in the winters of 1964 and 1997 to extreme lows resulting in spatial interruption of surface flow in the summers of 1966, 1973 and 1977.

6. How can water quality be protected and enhanced to meet the requirements of the Clean Water Act, Endangered Species Act, and Wild and Scenic Rivers Act?

The status of water quality in the John Day River system is a function of basin conditions, both natural and human induced. Basin orientation and climatic factors naturally influence stream temperature. The legacy of forestry, livestock, agriculture, mining, road construction, fire suppression, and recreation

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practices have further influenced water quality in the John Day River system.

Improved water quality would better support water-dependent river values in the John Day River system. Temperature and sediment are generally recognized to be the two most significant water quality concerns for the river system, particularly as they relate to cold-water fisheries. Fecal coliform levels have also been identified as a water quality concern for the John Day River system.

The John Day River and many tributaries have been identified as "water quality limited" streams by the Oregon DEQ under section 303(d) of the Clean Water Act. The primary factor for this determination is summer stream temperatures relative to salmonid fish species rearing habitat. The John Day River and South Fork John Day River WSR segments are on the 303(d) list under the criteria summer temperature (64 F).

7. How will paleontological resources within the river corridor be protected and enhanced, while allowing for other uses?

Fossils and fossil localities are exceedingly sensitive and may be damaged or depleted by unauthorized or inadvertent disturbance. The recent increased popularity of dinosaurs and fossils has caused increased interest in fossils, either for recreational collecting, education, scientific study, or commercial purposes.

The John Day River basin is unique in the world for its time sensitive, fossil bearing exposures. It is one of the few areas on the planet where a continuous span of geologic history, covering 40 million years, is exposed. The combination of a long, continuous sequence of geology, its time sensitive nature, and the vertebrate and botanical fossil records make the paleontology of the John Day basin both nationally and internationally significant for understanding ecosystems generally and geologic processes and mammal evolutions specifically. The John Day Fossil Beds National Monument was established to protect some fossil localities in its three separate units near the river. The majority of the fossil bearing rock, however, is actually found on private and BLM lands. Exposures on BLM and other lands are important because they provide significant time periods, specimens and geographic settings not found or protected on the John Day Fossil Beds National Monument.

8. How will cultural resources within the corridor be protected and enhanced, while allowing for other uses?

Unauthorized disturbance, either intentional or inadvertent, of cultural resources by other resource uses has been and continues to be a serious concern along some segments of the river.

Significant cultural sites are concentrated along some portions of the John Day River. The actual numbers and location of sites in general along the river corridor, however, are not yet fully understood. Access to many sites is a recognized problem. For example, the remoteness of some stretches of the river make monitoring or preventing unauthorized excavation of sites difficult. On the other hand, the same remoteness makes the possibility of mitigating impacts problematic due to constraints imposed by logistical considerations.

The use of cultural resources for education/tourism purposes is on the increase within the region. Increasing exposure of the resource to the public in this manner opens up a multitude of potential protection and preservation issues such as looting and vandalism of sites. How does one use the resource in this context without identifying specific locations? Can this make the resources vulnerable to continued or new unauthorized disturbance? Does providing general information contribute to cumulative impacts? These are not easily solved by common management practices, such as avoiding, recording, or salvage excavation. Managing agencies must consider alternative strategies to protect cultural resources within different segments of the John Day River. For example, alternative management strategies might involve using local Native American tribal members, historians, or permitted commercial outfitters as interpreters, monitors and/or site stewards, offering interpretive training for commercial outfitters, and providing interpretive brochures for the general public. To the extent possible all site locations would be kept confidential, though a case could be made for using some damaged sites as negative examples of information sharing and access.

9. How and where should public information and education efforts be concentrated?

There is increasing public demand and need for John Day River visitor information, education, and interpretation.

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Visitors to the area need to know land status, public access points, and other information to help facilitate a safe and enjoyable experience. Visitor information is also needed to increase resource protection, especially in the areas of low impact camping techniques, fire regulations, respect for private property rights, and noxious weed control.

The appropriate level of information, education, and interpretation needed on any given river segment needs to be determined. Input from state agencies, local counties, and local businesses is needed to identify efficient and effective means of providing this information to the public.

10. How should law enforcement and emergency services be provided as visitation increases on the John Day River?

Current public use of the John Day River has grown beyond the ability of local counties to provide law enforcement and emergency services.

BLM Law Enforcement officers have the authority to enforce natural resource regulations on public lands. Search and rescue, emergency medical and law enforcement assistance are the responsibility of local County Sheriff Departments. Local county budgets and personnel are already stretched thin without the added responsibility of meeting needs associated with the John Day River.

Medical emergencies that occur in a remote setting sometimes require highly trained response personnel and complicated and expensive methods of rescuing, stabilizing and transporting the victim to a medical facility.

Local landowners report the need for law enforcement assistance to deal with trespass and vandalism problems. But more frequent is the visitor's need for motor vehicle assistance, especially towing. It is common in some areas of the river for local landowners to receive pleas for vehicle assistance from visitors.

Illegal activities including trespass, vandalism, game and fish violations, illegal fires, guiding without a commercial permit and drug use are known to occur along the river corridor. It is difficult to address these problems with the level of law enforcement coverage currently available.

11. How should the outstanding scenic qualities of the river corridor be protected and enhanced?

Potential influences to the river's scenic quality include road construction, timber harvest, mining, changes in land use, private and commercial development, noxious weeds, improper grazing, erosion, and utility right-of-ways.

Scenery was identified by Congress as an outstandingly remarkable value in all WSR segments. The State Scenic Waterways Program classified several John Day River segments as "Scenic River Areas". This designation overlaps most of the National Wild and Scenic river miles. Scenery is an important value in non-designated river segments as well, and segments of highways which parallel the John Day River have been identified as State Scenic Byways. In managing scenic qualities, including those of the John Day River, the BLM uses a Visual Resource Management (VRM) system to inventory and manage these values. See the Glossary (**Appendix G)** for a brief VRM description.

Currently, changes in land use and the development of structures for private or commercial use pose the greatest potential for change to the river's scenic quality, especially in the less developed segments of the mainstem and the North Fork. The BLM uses the VRM process to preserve scenic qualities on public lands, but has no control over development of private lands along any portion of the river. Scenic qualities can be preserved to some degree on private lands that are located in State Scenic Waterway segments under the provisions of the State Scenic Waterways System. County agencies have the option of addressing future riverside development through local land use plans.

12. How should increasing recreation use be managed to protect and enhance river values?

Visitors to the John Day River come to participate in many types of activities and seek a variety of recreation experiences. There has been a significant increase in public use of the John Day River system in recent years. The amount and type of recreation use may be degrading river values in some areas. Some visitors report that it is becoming increasingly difficult to find the type of experience they are seeking or have enjoyed in the past due to increased use and types of use. Other visitors, especially those visiting the area for the first time, tend to be satisfied with the present recreation experience and opportunities.

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The very large and diverse John Day River system allows managers to provide a wide variety of recreation opportunities and experiences, while emphasizing the protection of river values.

Increased use on all river segments has led to the need to determine, for each river segment, which recreation activities and social experiences are most compatible with the protection and enhancement of river values. These determinations will then guide recreation management decisions.

12a. How should boating use levels be managed to protect and enhance river values and minimize social conflict?

The amount of recreation boating use is increasing steadily on all segments of the lower mainstem and North Fork John Day River. There were approximately 18,000 boater days (one boater using the river for one day) recorded between Service Creek and McDonald Crossing during 1998. Boating use tends to be concentrated on weekends from mid-May through early July. This concentrated recreation use may have an effect on outstandingly remarkable values in the designated WSR segments, including fish habitat, wildlife habitat, vegetation, water quality, scenery, and paleontological and cultural resources. The quality of recreation opportunities, also an outstandingly remarkable value, may be affected by the resource and social conditions encountered by the user. The BLM began collecting visitor use data in 1998, comparing the number of recreation visits to the condition of river campsites. Additional visitor use data collected over time should be extremely useful in determining appropriate boating use levels.

Some boaters feel that boating use should be limited to protect resource conditions and to ensure that a “primitive” or “semi-primitive” boating experience remains available in certain river segments. Other boaters are willing to accept frequent contact with other parties as long as limits on boating use are avoided.

Increased boating use is of particular concern in less developed river segments such as the mainstem from Service Creek to Cottonwood Bridge, and the North Fork from Camas Creek to Monument, where the effects of increased use are particularly noticeable.

12b. How should boating use be limited if boating use limits are needed in a river segment, and non-permit measures to adjust use are unsuccessful?

Limiting boating use may ultimately require application of a permit system which uses one of several allocation methods to determine who does or does not receive a permit. Each allocation system has its own strengths and weaknesses and no single allocation system has emerged over the years as being the most fair to all users. Selection of an allocation system on other rivers has consistently involved intense public debate.

12c. How should motorized boating be managed to minimize social conflicts and protect river values?

Water levels make it possible to use motorized boats on the lower mainstem and lower North Fork for most, but not all, of the year. (Water levels are often too low for motorized boating during late summer and early fall.) Motorized boating is allowed on all segments of the John Day River, except for a seasonal closure on the mainstem from Clarno to Tumwater Falls, May 1 to October 1, which was imposed to protect wildlife.

Motorized boats observed on the John Day River include jet boats, gasoline-powered outboard motors and electric motors (used in conjunction with a drift boat or a raft). The total number of jet boat user days was estimated at less than 50 from Service Creek to Cottonwood Bridge in 1998. Observations by BLM river patrol personnel indicate that the use of outboard and electric motors is much more common than use of jet boats, although definitive data on this has not been collected.
Although motorized boating use is very low on the John Day River, this is one of the most controversial issues on the river. The effects of motorized boating on resource conditions on the John Day River are difficult to measure, and effects on social experiences have not been systematically studied.

People who favor the use of motorized boats point out that their use makes the river more accessible for the disabled, elderly, and people who have limited time available. They also point out that there is no credible evidence that motorized boating harms fish, wildlife or other river values.

People who oppose motorized boating argue that the noise created by motorized boats, especially jet

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boats, is disturbing to wildlife and people, and reduces the opportunity to experience solitude in the more primitive river segments. They also argue that the wake created by motorized boats may accelerate bank erosion, disturb shoreline cultural sites and impair fish spawning. Local land owners feel that increased access via motor boats is associated with increased vandalism during winter months.

The affects of motorized boating on these resources varies according to factors such as the type and size of motor, water level, stream structure, bank soil type, and fish species involved. These variables make research especially difficult and expensive. And when a study is concluded, the results may not be applicable to another river or even another segment of the same river.

12d. How should camping be managed to protect resource and social conditions, and if visitor facilities are developed, where and what type of facilities should be developed?

Impacts of camping can affect river values in areas where dispersed camping (camping where no facilities are provided) is popular. River values affected include fish habitat, wildlife habitat, vegetation, water quality, scenery, paleontological and cultural resources and recreation opportunities.

Both dispersed camping and camping in developed campgrounds, occur on most river segments. Drive-in dispersed camping occurs along the river banks in areas where road access is available, and on hills overlooking the river. Boat-in dispersed camping occurs on public and private land along the river, as part of multi-day river trips. Camping in developed sites occurs at four BLM campgrounds along the river and at Clyde Holiday State Park located on the upper mainstem near the town of Mt. Vernon.

Some campers practice low impact camping techniques and do not severely impact camping areas. Other campers leave varying degrees of human impacts behind when they vacate their camp.

Vegetation at some dispersed sites is trampled by foot or vehicle, leaving the soil more prone to erosion and weed infestation. Trees are sometimes limbed or cut down for use as firewood. Trash, campfire pits, human waste, and animal gut piles are sometimes left behind on land or in the water. Camping furniture may be constructed of off-site materials, reducing the natural appearance of an area. Many of these impacts make a campsite less desirable for the next visitor. The new visitor often chooses to camp in a new site rather than use a site left in an undesirable condition, thus increasing the area of human impact.

Developed campgrounds can handle the impacts of high visitor use much better than undeveloped sites. The nature and extent of facilities such as parking areas, toilets, boat launches, garbage cans, tables, and signs are a concern of visitors and local land owners. Facilities are expensive to build and even more expensive to maintain. Such facilities enhance the experience of some visitors and degrade the experience for others who prefer more primitive settings. Facilities also often provide an unintended attraction which increases and concentrates visitation.

Disturbed soils and vegetation caused by camping in some areas, may fully or partially recover prior to the following use season, but certain areas have sustained long periods of damage and are not able to naturally recover with continued use.

12e. How much and where should public access be provided to the John Day River and how should trespass problems be addressed?

There is much public land in the John Day River system, yet access to the river lands is extremely limited in some river segments due to the lack of public roads and trails leading to the river. The issue of ownership of the bed and banks of the John Day River has yet to be determined. A future decision on the river's navigability will determine whether the bed and banks fall under public or private ownership.

Legal public access is defined as access that is completely across BLM or other public lands or via public roads. There is no legal public access to the river in some segments where public land is completely surrounded by private land. Some sections of river can only be accessed by boat or by permission to cross private land. Several landowners are currently charging an access fee to visitors to use or cross private land to access the river and associated public lands that are not otherwise accessible to the public.

Most of the boundaries between BLM land and private land are not marked on the ground. Some of the boundaries that are marked with fences and/or "Private Property" signs are not marked in the correct location. Whether or not private property lines are marked, private landowners often report public trespass problems. The trespass problems occur where private land either borders the John Day River, borders public land or lies between public land and a

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public road. Sometimes the trespass problems also involve vandalism of private property. In addition, visitors often report that public lands are incorrectly signed as private lands.

Public viewpoints on this issue range from those who want increased public access within the John Day basin, allowing more public use, to those who want public access to remain limited, as a way to protect resource and social conditions from the effects of increased recreation use.

The Confederated Tribes of the Warm Springs Indian Reservation of Oregon and the Confederated Tribes of the Umatilla Indian Reservation have treaty rights to access usual and accustomed fishing stations and to utilize public lands traditionally used for hunting, gathering and grazing on ceded lands within the John Day Basin. These tribes wish to exercise their treaty rights by preserving or increasing access to public lands for these purposes.

Public access and public trespass on private lands have been strong concerns voiced during the public planning process in nearly all segments of the river system.

12f. How much and what type of commercial recreation use should be permitted on the John Day River?

Commercial use is defined as recreational use of the public lands and/or related waters for business or financial gain. The BLM issues Special Recreation Permits to authorize specific commercial recreation uses. The objectives of the BLM recreation permitting program are to satisfy recreational demands within allowable use levels in an equitable, safe, and enjoyable manner while minimizing adverse resource impacts and user conflicts (BLM Handbook H-8372-1, Special Recreation Permits for Commercial Use, 9/9/87).

A Special Recreation Permit must be obtained from the BLM to operate a commercial business on the John Day River. Permit holders must meet application requirements, pay annual permit fees and agree to follow permit stipulations.

Prior to 1996, there were no limitations on the number of commercial permits issued by the BLM for the John Day River. In January 1996, a temporary moratorium was placed on the issuance of new commercial permits until completion of this plan, to allow the desired level of commercial use to be determined by the planning process. Since the planning moratorium began in 1996, 28 individuals have expressed interest in obtaining a commercial permit for the John Day River.

There were 34 commercial permit holders in 1998 which reported 2,647 commercial customer user days, and 968 guide or employee days, or 19.7% of the total John Day River boating use. Approximately 20% of the total permittees reported 70% of the commercial use. Eleven of the 34 permittees reported running one, or less than one trip, with paying customers during 1998. Based upon the low number of user days reported by many permittees, the supply of commercial services may currently exceed the public demand for these services. Most permittees are unable to sustain a living by operating solely on the John Day River, but use this business to supplement other sources of income or run the John Day in conjunction with other rivers. Some existing commercial permit holders and some non-commercial boaters feel that the BLM should limit the number of new permits issued, while persons hoping to obtain a new permit do not want to see commercial permits limited.

Non-profit organizations such as religious, conservation, school or social groups, are looking for special consideration to allow the issuance of “institutional” permits despite current or future limits on traditional commercial permits.

Vehicle shuttle services used by John Day River boaters are not currently under BLM permit, although such services meet the definition of “commercial services” under BLM policy.

In addition to guided and outfitted services, the BLM has received inquiries from individuals interested in setting up commercial vending operations at BLM launch points to sell food, souvenirs, and boating equipment. The sale of fire pans and portable toilets at launch sites could greatly improve compliance with BLM low impact camping regulations. A concession operation would require compliance with State Scenic Waterways stipulations and may not be allowable in some river segments.

The BLM currently administers a limited number of permits for the operation of commercial services on the public lands in most river segments. In the past two years, the number of requests for new permits has nearly equaled the number of existing permits, with some requests involving new locations or types of activities.

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13. How will the BLM manage mineral and energy resource exploration and development while protecting and enhancing river values?

The mineral program currently in the John Day River system protects other resources through regulations requiring mitigation of impacts on other resources and to prevent unnecessary or undue degradation of public lands. There may be opportunities to use more restrictive requirements to enhance the outstandingly remarkable values in the designated WSR segments.

Currently all public lands within the river corridor are open to mining under the 1872 Mining Law. The BLM 43 CFR 3809 regulations make it necessary to submit a plan of operations for lands within WSR corridors. Stipulations are also imposed under the Two Rivers and John Day RMP's State regulations pursuant to ORS 468B.050 apply to dredging.

Minerals are classified as locatable (value minerals such as gold, mercury, etc.), salable (common rock and clay), and leasable (such as oil and gas).

Mineral and energy development within the WSR Corridor is uncommon. The potential for the occurrence of locatable minerals in the WSR Corridor is low. The potential for the occurrence of leasable minerals ranges from low to moderate. The potential for the occurrence of salable minerals in high.

14. What type and where should new utility or transportation facilities be permitted, or land acquisitions, exchanges, or disposals be authorized along and across the John Day River?

Land use authorizations and actions may affect the John Day River's scenic and other resource values. Utility and transportation rights-of-way already exist in many places along and across the John Day River. The BLM regularly receives new requests to build or improve roads, place pipelines, buried cables, overhead lines, other utility lines or communication sites along or across the John Day River on BLM administered land. The BLM must decide whether or not to approve these land use authorizations, and if so, what stipulations should be attached to minimize adverse impacts to resources. Utility and transportation facilities are also related to the issue of protecting and enhancing scenic quality. Requests for utility and transportation rights-of-way have been minimal in recent years, but requests for communications (notably cellular phone) sites are expected to increase in the future.

The BLM completed a Final Environmental Impact Statement for the Northeast Oregon Assembled Land Exchange (NOALE) in June, 1998. This land exchange, if implemented, would mean that over 5,000 acres of public land would be acquired along the North Fork John Day River. Land acquisitions in addition to the NOALE exchange could further increase public lands along the river creating additional opportunities to protect and enhance river values, and facilitate management. Potential acquisitions identified in this plan would protect and enhance resource values, including recreation, wildlife/fisheries, and wilderness. These acquisitions may be implemented if landowners are willing to participate in land exchanges or provide easements. Legal authority does not exist for the direct purchase of land, other than through the Land and Water Conservation Fund. Potential acquisitions of up to 3200 acres have been identified. Acquiring these lands through exchange would require disposal of enough public lands from other areas to meet the value of acquired lands.

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Chapter II - River System Environment

River System Description

Overview

General Description

The John Day River basin is located in a semi-arid area in northeastern Oregon and is characterized by diverse land forms which range from plateaus in the northwest to glaciated alpine peaks in the southeast. The basin includes portions of the Deschutes-Columbia Plateau and the Blue Mountains physiographic provinces. The Deschutes-Columbia Plateau Province is a broad upland plain formed by floods of molten basalt overlain with wind deposited loess. In contrast, the Blue Mountains Province is a diverse assemblage of older sedimentary, volcanic and metamorphic rock which was uplifted, tilted, and faulted to form rugged hills and mountains. These two physiographic provinces roughly divide the basin in half near Service Creek. The mountainous upper basin lies to the south and east and the plateau-like lower basin to the north and west. The Blue Mountain anticline, a broad up-arching of the earth's crust, forms part of the divide between the John Day basin and Columbia River tributaries to the north.

The upper basin is one of Oregon's most physiographically diverse regions, containing mountains, rugged hills, plateaus cut by streams, alluvial basins, canyons, and valleys. Many alluvial stream bottoms and adjacent benchlands are suitable for irrigated agriculture. In contrast to the upper basin, the lower basin is a plateau of nearly level to rolling, loess-covered Columbia River Basalt deeply dissected by the John Day River and tributaries.

Approximately 127,000 people live in or near the John Day basin. Communities include Arlington, Condon, Monument, Dayville, Fossil, Dale, Spray, Mitchell, Mount Vernon, Izee, Kimberly, John Day, Canyon City, and Prairie City. Major population centers within travel distance of the John Day basin are shown on **Map I-A**. The basin includes major portions of Gilliam, Grant, and Wheeler counties and small portions of Crook, Harney, Jefferson, Morrow, Sherman, Umatilla, Union and Wasco counties.

Livestock production and agriculture are important sources of income throughout the basin. Cattle ranching and associated hay crops are major components of these activities. Grass and alfalfa hay, grown mostly along stream bottoms upstream from

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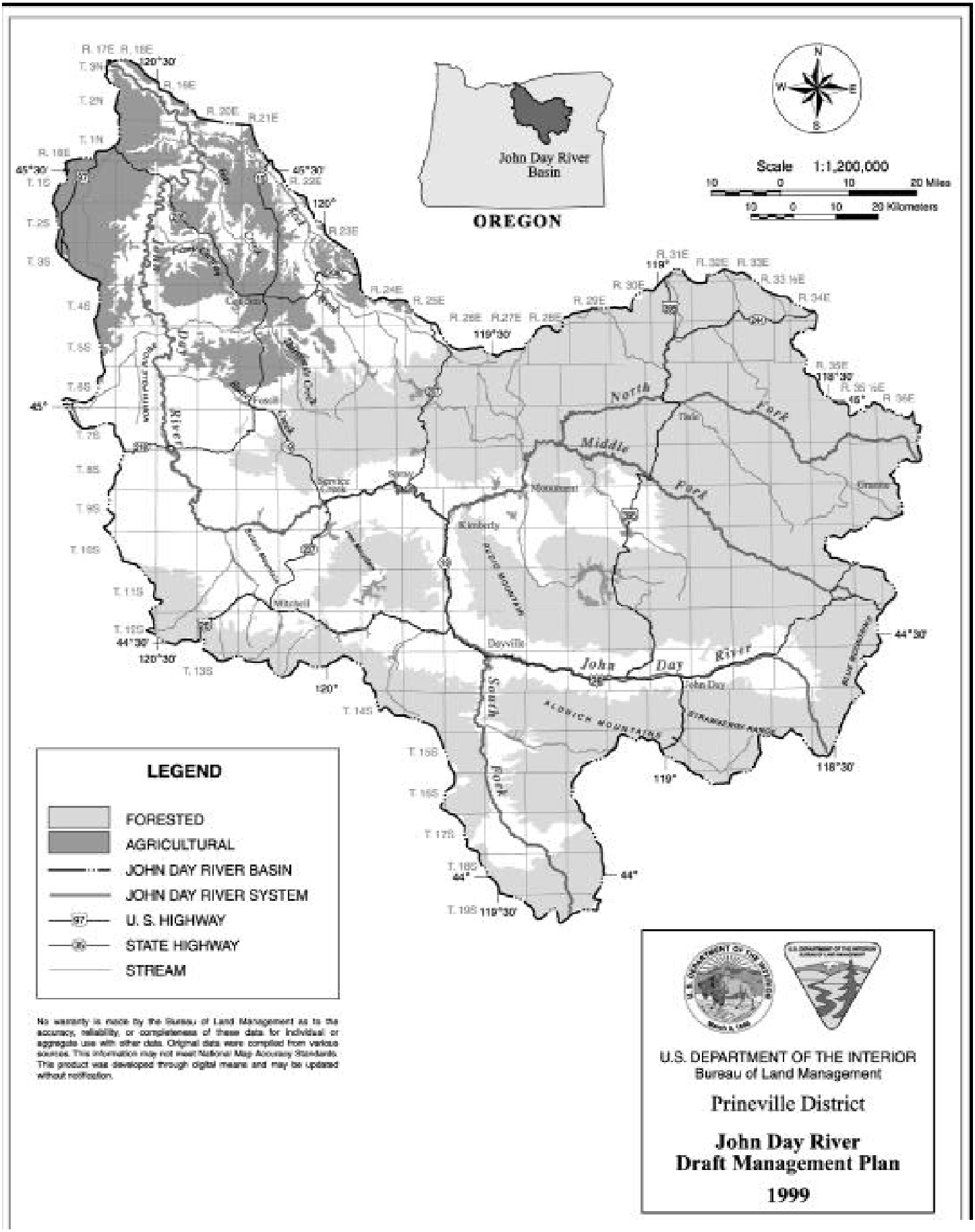

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Service Creek, are the predominant irrigated crops in the basin. The forest products industry is most important in the forested upper portions of the basin around Spray, John Day, and Prairie City. Land uses in the John Day basin are shown on **Map II-A**. While dryland production of grain crops remains the major economic activity, tourism and recreation are growing and contribute significantly to the basin's economy.

Climate

The climate ranges from sub-humid in the upper basin to semi-arid in the lower basin. Mean annual temperature is 38° F in the upper basin to 58° F in the lower basin. Throughout the basin, actual temperatures vary from sub-zero during winter months to over 100° F during the summer. Seventy percent of the annual precipitation falls between November and March. Only 5% of annual precipitation occurs during July and August. The upper elevations receive up to 50 inches of precipitation annually, while 12 inches or less fall in the lower elevations. The average frost-free period is 50 days in the upper basin and 200 days in the lower basin.

River System Description

The John Day basin has tremendous variability in the natural environment. Geology, soil, vegetation, hydrologic characteristics, geomorphology, fauna, etc., vary widely. The John Day River is typical of free flowing rivers in semi-arid environments in that it's annual range of flows is extreme. The mean annual hydrograph of the John Day River at McDonald Ferry (Figure II-A) shows the average annual high and low flows on the John Day River vary by a factor of 40.

A detailed description of the John Day River sub-basin has been prepared by the Columbia Basin Fish and Wildlife Authority (CBFWA 1990). The following is a summary of the general environment taken from that plan.

The major tributaries of the John Day River are the North, Middle, and South Forks. Average annual discharge of the John Day River into the Columbia River is slightly more than 1.5 million acre-feet. The basin drains nearly 8,100 square miles of an extensive interior plateau lying between the Cascade Range in the west and the Blue Mountains in the northern section of Oregon. Elevations range from about 265 feet at the confluence with the Columbia River to over 9,000 feet in the Strawberry Range.

The mainstem John Day River flows 284 miles from its source at an elevation near 9,000 feet in the Strawberry Mountains to its mouth at River Mile (RM) 218 on the Columbia River. The largest tributary in the John Day basin is the North Fork John Day River, which originates in the Blue Mountains at elevations near 8,000 feet and flows for 117 miles in a southeast direction until it joins the mainstem near Kimberly. The Middle Fork John Day River originates just south of the North Fork and flows in a similar direction for 75 miles until they merge about 31 miles above the community of Kimberly. The South Fork John Day River, tributary to the mainstem near Dayville (RM 212), extends 60 miles from its headwaters east of the Strawberry Mt. Wilderness Area at an elevation of about 6,000 feet.

Streamflow extremes for the 1906 - 1996 period of record at the McDonald Ferry gaging station are 42,800 cubic feet per second (cfs) on December 24,

Figure II-A. Mean monthly hydrograph of the John Day River at McDonald Ferry, Oregon for the period 1904-1992).

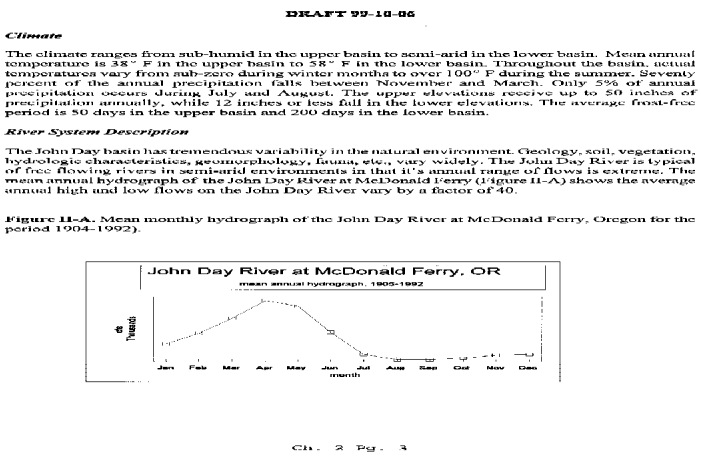

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Figure II-A. Mean monthly hydrograph of the John Day River at McDonald Ferry, Oregon for the period 1904-1992).

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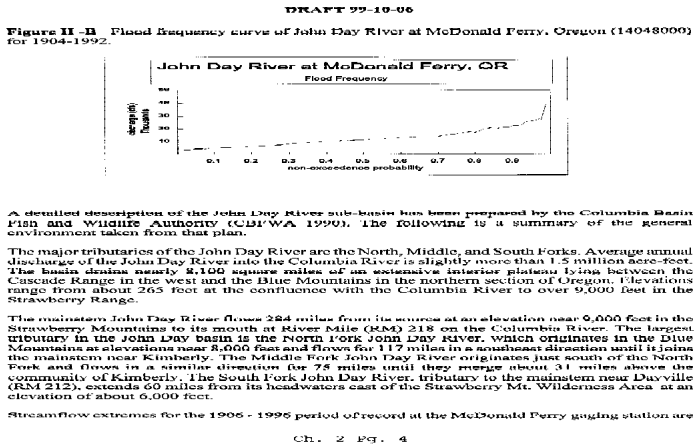
Figure II-B. Flood frequency curve of JohnDay River at McDonald Ferry, Oregon (14048000) for 1904-1992.



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Streamflow extremes for the 1906 - 1996 period of record at the McDonald Ferry gaging station are

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1964 and no flow for part of September 2, 1966, August 15 through September 16, 1973, and August 13, 14, and 19-25, 1977. Peak discharge usually occurs from March through May. Seasonal low flows typically occur in August and September. Extreme flood events tend to occur in December and January when warm, moist weather systems result in rain on snow events which lead to rapid increases in stream discharges. Mean annual daily discharge is 2,103 cfs.

The connection between hydrologic characteristics of the basin (especially the wide ranging flow regimes) and other natural conditions/potentials is significant due to the free flowing nature of the John Day River. Riparian plant communities are strongly influenced and limited by the changing flow levels during the active growing season. Flow regimes limit the season that recreationists can use the river. The majority of water produced in the watershed is from the upper basin portion of the watershed. Water quantity and quality parameters in the lower river below Kimberly are determined more by inputs from the upper basin (such as the North Fork, South Fork and upper mainstem) than by conditions of inputs originating in the lower basin below Kimberly.

The river system was identified as having non-point source pollution issues which include turbidity, high water temperatures, low dissolved oxygen, fecal bacteria, sediment, erosion, toxic effluents, nutrients, and low flow concerns in some or all segments of the river during some or all parts of the year (OWRD, 1986; ODEQ, 1988; ODEQ, 1998). However, water temperature is the only parameter that has been measured intensively throughout the basin.

River History Overview

Human use of the John Day River basin spans at least 10,000 years. Prehistoric peoples found sheltered areas with dependable water for their occupations in the basin. Resident fish, shellfish and runs of anadromous fish provided ready food sources, especially from late spring through summer. Food, water and shelter attracted many animals which in turn provided meat and furs for hunters. Riparian vegetation provided food and materials for baskets, tools, clothing and houses. The intensity of prehistoric use undoubtedly varied over time based on environmental factors, human population levels and technology, and the culture of different human groups who used the river canyon.

During the 1850's, the U.S. government negotiated several treaties with Native American Indian bands occupying the John Day basin. Most of the lands occupied or used by these bands were ceded to the government, but reserved rights for the continuation of off-reservation subsistence activities (**Map II-B**). Specifically, each treaty provides that:

> *"the exclusive right of taking fish in the streams running through and bordering said reservation is hereby secured to said Indians; and at all usual and accustomed stations, in common with citizens of the United States, and of erecting suitable [structures] for curing the same; the privilege of hunting, gathering roots and berries, and pasturing their stock on unclaimed lands in common with citizens, is also secured to them"*

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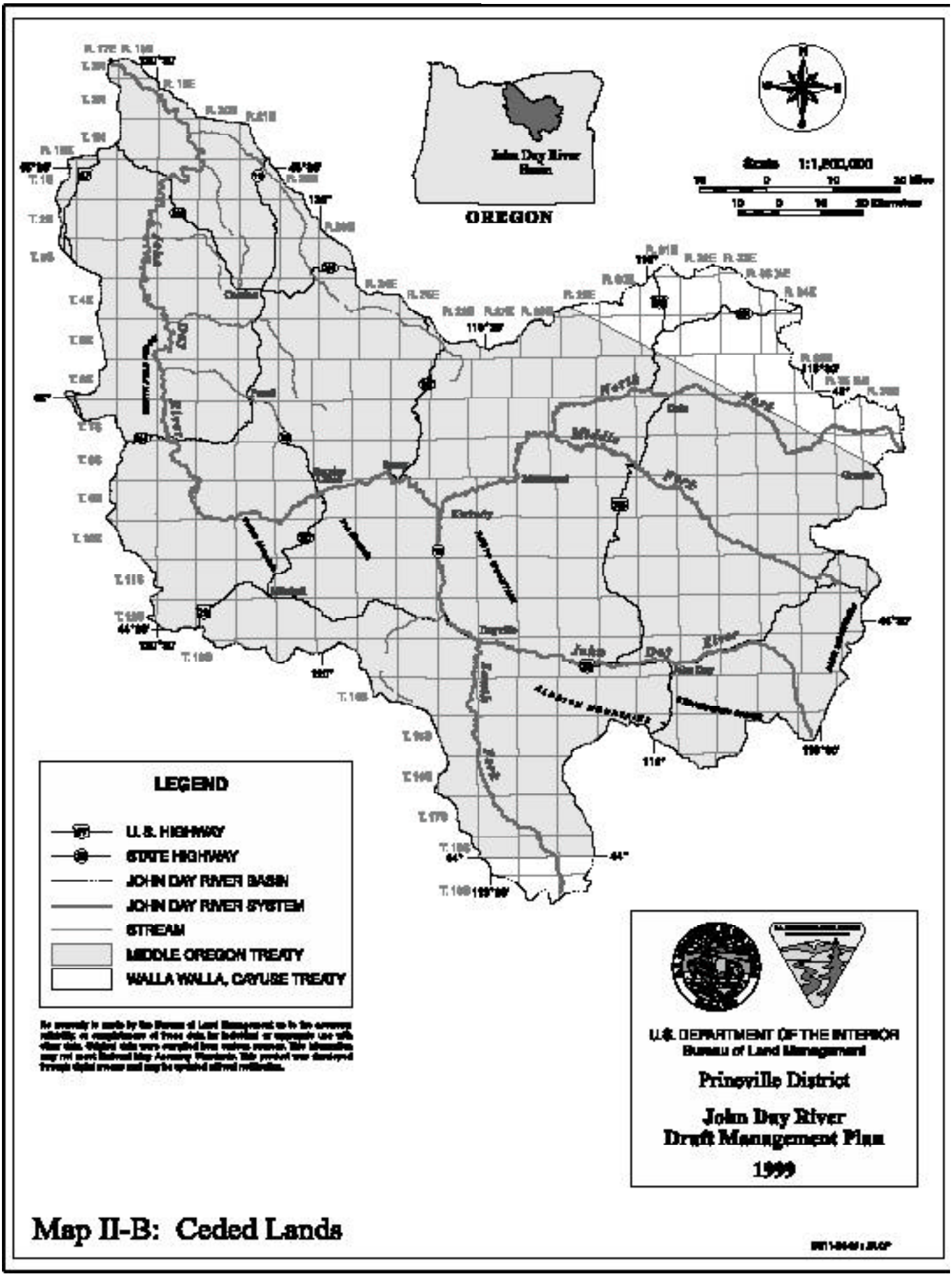

Map II-B: Ceded Lands

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(Treaty with the Tribes of Middle Oregon, 1855 and Treaty with the Wallawalla, Cayuse, Etc., 1855) These rights and privileges remain in effect and federal agencies have trust responsibilities to provide for the continuation of their practice.

Historic use of the John Day River began in the early nineteenth century with fur trapping expeditions. In fact, the river is named for an early fur trapper. Emigrants bound for the Willamette Valley crossed the John Day River beginning in the 1860's.

Conflicts between the native populations and the newcomers led to military actions against the Indians and their relocation to reservations. Homesteads and ranches were established on the river corridor where fertile bottom lands could be farmed and water was available for irrigation and livestock.

Small communities eventually were established along the river to provide goods and services for mines, homesteads and ranches. Road networks were expanded and improved as population increased. Agriculture and eventually timber harvesting, became important sources of income in the area.

The latter half of the twentieth century has seen a great increase in the use of the John Day River for leisure activities. Hunting, fishing, boating, camping, wildlife observation, photography, hiking, swimming, and scenic viewing are among the most common recreational activities.

Human Uses and Values

Introduction

Human uses of public resources of the John Day River generate private economic activity. Recreational visitors spend money at local retail stores, service stations, and lodging places. Numerous service businesses (such as guides and shuttle operators) exist or operate in the basin. BLM-administered lands within the river corridor are available for grazing of privately owned cattle, through a permit system. Mineral resources on public land in the basin are available for location, sale, or lease (depending on commodity) by private individuals or companies. Water from the river is diverted for agricultural uses on private and some public lands. Water rights filed with the state govern the use of the water resources. Lastly, small amounts of BLM managed timber within the basin are sold to private companies. The following discussion estimates and profiles the amount of economic activity generated by current use levels of John Day River resources.

Population

The John Day River basin is not a highly populous area. The 1998 population in the eight county region was 127,650. Major population centers such as Pendleton, The Dalles, Hermiston, Milton-Freewater, and Madras are located within the multi-county region, but outside the basin **(Map II-C)**. Wasco County boasts the largest population which is concentrated along the Columbia River at the mouth of the John Day and Deschutes Rivers. The 1998 population for incorporated communities is provided in Table II-A.

Age distribution within the counties varies significantly. As of 1997, six of the eight John Day River counties had high proportions of citizens 65 or older, with Sherman and Wheeler counties having the highest proportions. Statewide average percent population over 65 was 13.6%. Percent population 65 or older for the eight counties in 1997 is provided in Table II-B.

Jefferson, Umatilla, and Wasco counties have strong Native American and Hispanic populations. Protection of cultural sites, hunting, fishing, mushroom gathering, and gathering of other special forest and range products, may be of importance to minority populations.

Employment

The diversity and amount of wage and salary employment in the John Day basin is limited. Total employment for the eight county region was 48,615 people in 1998. Much of this employment is located in population centers located outside the basin, but within a county that is partially within the basin. For example, Hermiston, Pendleton, and Milton-Freewater in Umatilla County; The Dalles in Wasco County; and Madras in Jefferson County.

Total wage and salary employment in Gilliam County was 760 during 1998. Gilliam County leads the region in percentage employment growth since 1990, at 52.0%. Given the small amount of initial employment (only 500 wage and salary jobs in 1990), the 195 new jobs added by the Arlington landfill in 1992, was a substantial percentage increase in jobs in the county.

Jefferson County increased employment slightly more than Oregon as a whole, with increases of 25.6%. Jefferson County showed increases in most economic sectors, even in Lumber and Wood Products. The Other Manufacturing sector (other than Lumber and Wood Products) is still recovering from a large decrease in 1991, and remains slightly down. The Services sector was down 55.2% due to the

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Table II - A Populations for John Day River Communities (1998)

Condon	830	Monument	165
Moro	340	Dayville	185
Antelope	65	Mt. Vernon	650
Fossil	530	John Day	2015
Spray	165	Canyon City	725
Mitchell	200	Prairie City	1195

Source: Center for Population Research and Census, 1998

Table II - B Percent Population over 65, by County (1997)

Sherman	20.3%	Wheeler	21.4%
Gilliam	18.1%	Grant	15.8%
Jefferson	14.4%	Morrow	12.8%
Umatilla	13.3%	Wasco	18.1%

Source: Wineburg, 1998

reclassification of over one thousand tribal jobs from individual sectors to the Government Employment sector, resulting in a 125.7% increase in government employment.

Morrow County also increased employment, attaining a 29.1% increase. Morrow County had a stellar employment increase of 166.7% for the Construction and Mining sector. Other non-manufacturing sectors also showed strong growth, particularly the Services sector which increased 213.3%. Morrow County's Manufacturing sector lost 40 Lumber and Wood Products jobs, (a 16.7% reduction) and the Other Manufacturing sector, primarily food processing, did not change.

In addition to Gilliam County, Sherman and Wheeler Counties each have less than one thousand people employed with a wage and salary of 700 and 325, respectively.

The Trade and Government sectors were by far the largest employers in Sherman County, employing 330 and 280 people respectively. No employment has been recorded for Sherman County in the Construction and Mining sector, since 1996.

Employment is very limited in Wheeler County. Government is by far the largest employer, at 210 jobs, representing 65% of all employment. An estimated 10 people are employed in the Manufacturing sector and none in Lumber and Wood Products. The Trade sector (wholesale and retail) employs about 55 people.

Umatilla County has the highest population and employment of the eight counties in the John Day River basin. Most people and jobs are concentrated in Hermiston, Pendleton and Milton-Freewater, communities located outside the John Day River basin. Umatilla County boasted 26,260 wage and salary jobs in 1998. This was a 25% increase since 1990. The strongest growth sector was Construction and Mining (143.5%) with Finance, Insurance, and Real Estate (17.6%), Services (33.7%) and Government (26.2%), showing good growth. As in Jefferson County, tribal employment was reclassified in 1995, shifting about 500 jobs into the Government sector.

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U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

Prineville District

John Day River Draft Management Plan

1999

Map II-C: Counties Affected by Management and Uses Along the John Day River Corridor

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Grant County wage and salary employment totaled 2,770 people in 1998, a decrease of 3.1% since 1990. Grant County had 670 Lumber and Wood Products jobs in 1990, representing 23.4% of total county employment. In 1996, there were 440 Lumber and Wood Products jobs, representing 15.3% of total county employment. Lumber and Wood Products employment was not disclosed in 1997 or 1998 for confidentiality reasons (there was only one company). Growth in other sectors was good between 1990 and 1998, but not enough to offset the losses in the Lumber and Wood Products sector. Sectors with employment increases were; Construction and Mining (75.0%), Transportation, Communication and Utilities (25.0%), Trade (18.2%), and Services (26.9%).

Wasco County employment totaled 8,860 in 1998, mostly concentrated in The Dalles, which is located outside the John Day River basin. In 1990, there were 310 Lumber and Wood Products jobs, representing 4.1% of total county employment. By 1998, Wasco County had 180 Lumber and Wood Products jobs representing 2.0% of total county employment, a decline of 41.9%. However, this loss was offset by increases in other sectors such as; Construction and Mining (68.8%), Trade (18.8%), and Services (16.1%). Like Jefferson and Umatilla counties, tribal employment was reclassified in 1995, shifting 170 jobs into the government sector.

Income

Wages and salaries are an important source of income for an area. However, income is derived from other sources as well, such as dividends, interest, rents and transfer payments (such as Social Security). An examination of all these income sources, and poverty rates, helps to understand the overall wealth of an area.

Wages and Salaries

The 1995 percent of income from wages and salaries for five of the eight John Day River counties was near the statewide average of 64.7% **(Table II-C)**. However, the 1995 percent of income from wages and salaries for Gilliam, Sherman, and Wheeler Counties is significantly lower than the statewide average. This is not unusual for rural counties with wage and salary employment under 1,000 and no major business or population centers.

Dividends, interest, and rents are also important income sources for individuals who have accumulated assets. This includes business owners and many retirees. The 1995 statewide percent of income from dividends, interest and rents was 18.3 %. Percentage of 1995 income from dividends, interest and rents for each John Day River county is as follows:

Transfer payments are another important source of income in many areas. This includes government payments such as Social Security, Medicare/ Medicaid payments and a variety of income maintenance payments to low income individuals and families. Transfer payments represent 16.6% of income in Morrow County, which is near the statewide average of 17.0%. Transfer payments for other John Day River counties are higher, however. They represent over 20% of total income in Gilliam, Grant, Jefferson, Umatilla, and Wasco Counties, and over 30% in Sherman and Wheeler Counties (Oregon Employment Department, No Date). It is not unusual for rural counties with employment under 1000 and no major business or population centers to have high levels of transfer payments. Sherman and Wheeler counties fit this profile. Social Security payments are the major component of transfer payments, so high percentages are typical in counties with large populations over age 64.

The estimated number of people living at or below the poverty level, termed poverty rates **(Table II-E)** are another important indicator of wealth in an area. Poverty in 1993 was defined as an income of $7,518 or less for one person. For a two-parent family of four, the threshold was $14,654, and for a single parent with two children it was $11,642. Statewide, the poverty rate was 13.2% in 1993.

Travel and Tourism

Travel and tourism dollars spent in the John Day basin are low when compared to other Oregon counties. However, these dollars play an important economic role in John Day River counties which have low populations.

Annual estimates of travel expenditures for Oregon and it's counties are made by Dean Runyan and Associates for the Oregon Tourism Department. This includes travel for business and pleasure. **Table II-F** displays estimates for 1996 for Oregon and each of the eight counties. The estimates can not differentiate to sub-county levels and do not address the John Day River basin specifically.

Common recreational activities on the John Day River include boating, angling from boat and bank, hunting, camping, nature study (especially paleontological resources), sightseeing by car, and general day uses like picnicking.

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Table II - C Percent of Income from Wages and Salaries For John Day River Counties (1995)

Grant	**60.0%**	**Wasco**	**59.4%**
Jefferson	**61.2%**	**Gilliam**	**46.6%**
Morrow	**69.0%**	**Sherman**	**34.8%**
Umatilla	**63.8%**	**Wheeler**	**30.3%**

Source: Oregon Employment Department , No Date

Table II - D Percent of Income from Dividends, Interest, And Rents for John Day River Counties (1995)

Gilliam	**29.5%**	**Sherman**	**31.8%**
Grant	**14.7%**	**Umatilla**	**14.1%**
Jefferson	**15.7%**	**Wasco**	**18.6%**
Morrow	**14.4%**	**Wheeler**	**38.9%**

Source: Oregon Employment Department, No Date

Table II - E Estimated Poverty Rates for John Day River Counties (1993)

Gillian	**6.2%**	**Sherman**	**10.2%**
Grant	**12.3%**	**Umatilla**	**17.1%**
Jefferson	**17.4%**	**Wasco**	**13.4%**
Morrow	**7.3%**	**Wheeler**	**9.5%**

Source: McGinnis, et. al, September, 1996

Table II - F Travel Related Spending and Employment For John Day River Counties (1996)

County	Travel Spending (000's)	Employment (Jobs)
Gilliam	**2,900**	**43**
Grant	**18,270**	**266**
Jefferson	**43,810**	**660**
Morrow	**11,700**	**186**
Sherman	**11,040**	**146**
Umatilla	**54,950**	**941**
South Wasco	**18,130**	**276**
Wheeler	**2,980**	**40**
Regional Total	**163,780**	**2,558**
Oregon Total	**4,483,200**	**68,539**

Source: Oregon Tourism Commission. December, 1997.

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Thirty-four individuals hold John Day River outfitter and guide permits, primarily for boating and fishing. Many are wide ranging firms, located as far away as Eugene and Portland. Eighteen of these guides and outfitters also hold permits for the nearby Deschutes River, which is also administered by the Prineville District BLM.

There are no studies which specifically address visitor spending in the John Day basin. However, estimates of expenditures per visitor day for specific activities in Oregon are available. **Table II-G** displays expenditures per person per day estimated by Johnson, Litz, and Cheek (1995).

Only a few communities in the basin are large enough to offer a full spectrum of services. Visitors who know this, make purchases before arriving in the basin. Approximately 3% of dollars spent on camping reaches the destination county while 97% is spent in the county or origin (Meyer, Harp 7 McGuire, 1999).

Agriculture and Grazing

Agriculture sales in the eight counties fully or partially with the John Day River basin totaled over $628 million in 1997 (Oregon State University Extension Service, Various Years). This represented 19 % of all agricultural sales in Oregon. Umatilla and Morrow counties were the leading agriculture producers in the basin, with $308 million and Morrow with $110 million in sales respectively. In Umatilla County, grain crops were the most valuable ($93 million), followed by field crops ($57 million), and vegetable crops ($54 million). Sales of Cattle and Calves in Umatilla County totaled $33 million in 1997. Field crops were the most valuable in Morrow County ($39 million), followed by grain crops ($36 million). Sales of Cattle and Calves totaled $16 million. Morrow and Umatilla counties benefit significantly from irrigation form the Columbia and Umatilla Rivers, and only small portions of these counties are drained by the North Fork John Day River.

Sherman, Gilliam, and Wasco Counties abut the lower John Day River. Grain crops are the leading cash crop in Sherman ($24 million) and Gilliam ($19 million) Counties. Wasco County sales from grain crops ($14 million) are surpassed by tree fruit and nut crops ($33 million). This production is centered around The Dalles, somewhat distant from the John Day River. Sales of cattle and calves for these three counties are as follows: Sherman, $1.6 million; Gilliam, $3.6 million; and Wasco, $6.8 million. Jefferson County abuts the mainstem John Day River at its eastern border but the majority of agricultural lands in the county are located in the Deschutes River basin. Total farm sales in 1997 for Jefferson county were $50.9 million. Field crops ($14 million) and Cattle and Calves ($7.7 million) were the leading products. Wheeler County has limited agricultural activity with total 1997 agricultural sales of $6.98 million. Sale of Cattle and Calves represent more than half of this total with $4.3 million in sales.

Grant County is located at the headwaters of the John Day River. Livestock is the primary agricultural activity with $19.8 million in sales for 1997. A variety of other agricultural products brought total sales of $27.3 million in 1997.

BLM lands contribute to agricultural activity in all the counties by allowing livestock grazing. Private livestock owners are authorized to graze a specified number of cattle for specific periods of time in exchange for a fee. Access to this public forage increases productivity for ranchers. The USFS has a similar permitting process for National Forest (NF) lands.

Grazing management changes are being considered within the John Day River corridor. There are 119 grazing allotments fully or partially within the corridor. Sixty-four of these are within the designated Wild and Scenic River (WSR) segments affecting a total of 22,781 Animal Unit Months (AUM's). An AUM is the amount of forage necessary to sustain one cow and calf for one month. Given the existing inventory of cattle (estimated at a total 328,370 head, including 95,300 calves and 233,00 adults and yearlings) within the eight county region, AUM's attached to BLM lands within the corridor comprise approximately 1% of the total forage consumed by livestock. This

Table II - G Expenditures by Activity (1993 Dollars)

Downhill Skiing	**$57.46**
Snowplay	**$25.04**
Camping	**$15.95**
General Day Use	**$37.08**
Water Recreation	**$25.30**
Fishing	**$26.80**
Hunting	**$33.22**
Motorized Recreation	**$23.89**
Non-motorized Dispersed	**$10.04**
Nature Study/ Interpretive	**$26.52**

Source : Johnson, R., Litz, and Cheek. February 1995.

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represents a very marginal economic contribution to the region. Detailed financial information on individual operators is proprietary, therefore specific outcomes cannot be estimated.

BLM leases approximately 210 acres of irrigated agricultural/cultivated land. The majority of these lands were acquired through land acquisitions, however some were created a result of historic unauthorized agriculture use on public land as part of a larger private land field or production area. These lands are leased to adjacent land owners who cultivate the lands in conjunction with their private lands. Six individuals hold these leases. These lands are generally used to grow grains, hay, alfalfa, dry beans, and some speciality crops. Specialty crops include mint, onion seed, carrot seed and corriander. BLM does not currently dictate the type of crop grown.

Lumber and Wood Products

The John Day River basin is an important timber producing area, particularly in Grant County. There is no significant timber harvest in Sherman and Gilliam Counties. Forest industry companies and other private timber managers own a significant land base in these counties. Harvest from private lands in 1996, by county, is provided in Table II-H.

Timber harvest also occurred on tribal lands in Wasco, Jefferson, and Umatilla counties. These lands are all located in portions of the counties outside the John Day basin.

Historically, harvests from National Forests were the largest portion of total harvest in counties along the John Day River. Since a harvest peak in 1989, harvest from these lands has fallen precipitously and is now a relatively minor portion of the total harvest. For example, in Grant County, 1989 National Forest harvest totaled 256.1 mmbf, or 87% of total harvest. By 1996, harvest volume had dropped to 21.3 mmbf, or 30% of total harvest.

Table II- H Timber Harvest from Private Lands by County (1996)

Grant	**49.3 million board feet (mmbf)**
Jefferson	**2.5 mmbf**
Morrow	**20.1 mmbf**
Umatilla	**16.5 mmbf**
Wasco	**2.9 mmbf**
Wheeler	**82.2 mmbf**

Source: Oregon Department of Forestry, Various Years

Total BLM harvest within the basin between 1987 and 1997 was 20.5 mmbf, with 16.1 mmbf of this harvest occurring in 1987 and 1988. Harvests have been concentrated in the Rudio Mountain and Dixie Creek areas. Dixie Creek, a tributary of the mainstem John Day River, is located north of Prairie City and Rudio Mountain is located between the communities of Dayville and Kimberly east of the river.

Much smaller salvage and selective harvests have been the emphasis of BLM's timber management program since implementation of the John Day Resource Management Plan (RMP) of August, 1985.

Puchasers of sales since 1987 have included Malheur Lumber Company of John Day, Ochoco Lumber Company of Prineville , Ellingson Lumber Company of Baker City, Widows Creek Timber of Mt. Vernon, and D.R. Johnson Lumber of Prairie City. As of December, 1998, estimated hourly earning in the lumber and wood products industry in Oregon was $13.63 (Oregon Employment Department, February, 1999)

Land Ownership and Withdrawals

Ownership

The ratio of private to public land in the basin has changed little within the last decade, although some federal-private land exchanges have occurred involving willing sellers. The NPPC (1991) reported that 62 % of the land in the basin is private (5,027 square miles), 29.6 percent is USFS (2,396 square miles), 7 percent is BLM (587 square miles) and 1.4 percent is state and ODFW (83 square miles).

The Northeast Oregon Assembled Land Exchange (NOALE) and Final Environmental Impact Statement (1998), proposes to change the amount and distribution of public lands administered by the BLM in the upper part of the basin. The preferred alternative involves the exchange of approximately 90,000 acres of BLM lands for as much as 70,000 acres of private land. The distribution would change, with public lands becoming more consolidated and higher-value lands bordering rivers and streams transferred to public ownership.

Tables II-I, J, K and L list the land ownership on the banks of the John Day River mainstem, North Fork, Middle Fork, and South Fork.

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Table II - I Mainstem Land Ownership, Tumwater Falls To Dayville

Owner	River Miles	% of Total	River Frontage Miles	% of Total	Acres Within 1/4 Mile of River	% of Total
BLM*	84.25	(42)	170.7	(42)	26,960	(42)
State	3.75	(02)	1.8	(02)	1,200	(02)
Private	114.00	(56)	232.1	(56)	36,480	(56)
Total	**202.00**		**404.6**		**64,640**	

**23,700 acres of BLM land are withdrawn for potential hydroelectric development.*

Table II - J North Fork Land Ownership, Kimberly to USFS Boundary Near Camas Creek

Owner	River Miles	% Of Total	River Frontage Miles	% of Total	Acres within 1/4 mile of river	% of Total
BLM	12.3	(23)	24.6	(23)	4,760	(24)
State	0.6	(05)	1.2	(05)	1,040	(05)
Private	47.7	(72)	95.4	(72)	14,000	(71)
Total	**60.6**		**121.2**		**19,200**	

Table II - K Middle Fork Land Ownership, North ForkConfluence to Highway US395

Owner	River Miles	% of Total	River Frontage Miles	% of Total	Acres within 1/4 Mile of River	% of Total
BLM	1.0	(05)	2.0	(05)	640	(09)
Private	21.0	(95)	42.0	(95)	6,400	(91)
Total	**22.0**		**44.0**		**7,040**	

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Table II - L South Fork Land Ownership, Mainstem Confluence to USFS Boundary

Owner	River **Miles**	% of **Total**	River **Frontage** Miles	**% of Total**	Acres **Within 1/4** Mile of River	% of **Total**
BLM	12.00	(29)	24.0	(29)	4,800	(29)
USFS	0.8	(01)	1.5	(01)	240	(01)
State	5.9	(09)	11.8	(09)	1,440	(09)
Private	56.3	(61)	92.7	(61)	10,160	(61)
Total	**65.00**		**130.0**		**16,640**	

Ownership of the River Bed and Banks

State ownership of the beds of navigable water bodies was granted to Oregon in 1859 as an incidence of statehood and as an inherent attribute of state sovereignty protected by the U.S. Constitution. The beds of non-navigable waterbodies remained in the ownership of the United States or its grantees. Under state law, the Oregon Division of State Lands (ODSL) is responsible for the management of the beds and banks of navigable waterbodies. These assets are to be managed for the greatest benefit of the people of this state under sound techniques of land management. Protection of public trust values of navigation, fisheries and public recreation are of paramount importance.

The navigability of the John Day River has not been established. Currently, both the state and federal governments, and in some cases private property owners, claim ownership of the river's bed and banks.

The original federal test for determining navigability was established in the Daniel Hall Case over 100 years ago. The U.S. Supreme Court case clarified that rivers *"are navigable in fact when they are used, or susceptible of being used, in their ordinary condition, as highways of commerce..."* Interpreting this requirement, subsequent court decisions have adopted this test and have ruled that a water-body is navigable if it was capable of use, at the time of statehood, as a public highway for transporting goods or for travel in the customary modes of trade and travel on the water.

The ODSL has determined that there is sufficient evidence to support a claim of navigability of at least part of the John Day River System. However, no such claim has officially been made.

Withdrawals

A "withdrawal" is a land classification that removes involved lands from actions under various public land laws, including the mining laws. Withdrawn lands may ultimately be transferred from BLM jurisdiction to other federal agencies. Numerous "withdrawals" have been made along the John Day River for more than 100 years. The most common withdrawals along the river were made over 50 years ago to reserve areas for future hydroelectric power projects. However, there are no such developments or current proposals. The Wild and Scenic Rivers Act caused the remaining federal lands within the designated Wild and Scenic segments to be withdrawn from entry, sale, or other disposition. Future withdrawals, if any, would most likely occur with additions to WSRs to protect resource values. Similar withdrawals would also occur if existing Wilderness Study Areas (WSA) along the river are designated as Wilderness. Withdrawals are shown on the Map Plates which accompany this document.

Resource Values

Geology/Geomorphology

The John Day basin has a complicated geologic history which has resulted in a complex and diverse assemblage of rocks. These rocks include masses of oceanic crust, marine sediments, a wide variety of volcanic materials, ancient river and lake deposits, and recent river and landslide deposits. Distribution of the basin's major geologic units has largely been controlled by the structural evolution of the basin.

More than 65 million years ago, during pre-Tertiary time, sediments and volcanic rocks of the oceanic

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crust were contorted, uplifted and eroded. Roughly 54 to 37 million years ago, a series of widespread volcanic eruptions produced the lava, mudflows, and tuffs of the Clarno Formation. As this activity waned, new eruptions in the area of the present day Cascade Range began depositing thick layers of volcanic ash which resulted in the John Day Formation. During a period approximately 19 to 12 million years ago, the region (along with much of Northern Oregon, Southern Washington and Western Idaho) experienced volcanic eruptions which resulted in a series of flood basalts known collectively as the Columbia River Basalt Group. Sometime after these basalt flows blanketed the region, fine-grained volcanic sediments of the Mascall Formation were deposited locally atop the basalts. Finally, the Rattlesnake Formation, a thick sequence of sand and gravel, was deposited in the ancestral John Day Valley. An east-west fault zone, which includes the John Day fault, probably controls the location of the John Day River upstream of Picture Gorge.

The basin includes portions of two major physiographic provinces; the Deschutes-Columbia Plateau and the Blue Mountains. The Deschutes-Columbia Plateau Provence is a broad upland plain formed by floods of molten basalt overlain with wind deposited loess, in contrast, the Blue Mountains Province is a diverse assemblage of older sedimentary, volcanic and metamorphic rock which was uplifted, tilted, and faulted to form rugged hills and mountains. These two physiographic provinces roughly divide the basin in half near Service Creek. The mountainous upper basin lies to the south and east and the plateau-like lower basin to the north and west. The Blue Mountain anticline, a broad up-arching of the earth's crust, forms part of the divide between the John Day basin and Columbia river tributaries to the north.

The upper basin is one of Oregon's most physiographically diverse regions, containing mountains, rugged hills, plateaus cut by streams, alluvial basins, canyons, and valleys. Many alluvial stream bottoms and adjacent bench-lands are suitable for irrigated agriculture. In contrast to the upper basin, the lower basin is a plateau of nearly level to rolling, loess-covered Columbia River Basalt deeply dissected by the John Day River and tributaries. The naturally incised river channel of the lower basin has been further down cut. The floodplains which the river historically accessed every 3 to 5 years are now accessed only with extraordinary floods (50 to 100 year flow events).

The bedload materials in the river channel now consists of large gravels, cobbles and boulders. The amount of bedload is so large in some cases that the river cannot accommodate the load in the normal erosion and deposition processes. During large flow events the bedload is moved and deposited downstream, either as part of a new gravel bar or eventually as part of the Columbia River. When the bedload is deposited in mid channel, hydrologic forces are exerted against river banks, causing more lateral expansion and adding more sediment and gravel to the system.

This process has some implications for many different aspects of the WSR outstandingly remarkable values (ORVs). For example, the widening of the river channel and addition of gravels affects the ability of boaters to navigate the river during low flows. The widening of the channel also allows greater heating of the water through greater exposure to air and sunlight. The widening of the channel also affects the vegetation which can grow on the banks of the river, which affects fish and wildlife habitat and scenery.

Water Quantity

The general description of the river system at the beginning of this chapter describes the hydrologic characteristics of the John Day basin. Stream flow varies from year to year and has shown multi-year cycles over the course of the period of record. The 10 year moving average for annual discharge measured at McDonald Ferry peaked in the early 1920's at nearly 1.8 million acre-feet (af). It hit a low around 1940 at about 1 million af and peaked again in the late 1950's at 1.8 million af. In the 1960's it again hit lows near 1.2 million af and has been erratically creeping upward since that time. The frequency of peak flow has also changed. All the peak flows over 25,000 cfs have occurred since 1964. Peaks during the 1964 and 1997 floods exceeded any recorded flow before or after by roughly 35%.

As previously described, the runoff and climatic variability of the basin create tremendous fluctuations in flow levels and are an inherent characteristic of a free flowing river of this extremely large size. The majority of water produced by the watershed is from the upper basin portion (OWRD, 1986). Water quantity and quality has little opportunity to be influenced once it enters the lower basin.

Water Quality

Water quality is a valued resource of the John Day River system, most importantly in terms of fisheries

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and recreation. The Oregon Department of Environmental Quality (ODEQ) has identified much of the river system and tributaries as "water quality limited," relative to salmonid fishes spawning and rearing. Water contact recreation has also been identified as a concern for a portion of the river under the criteria of bacteria. Temperature and sediment are generally recognized as the two most significant water quality concerns for the river system. Fecal coliform levels have also been identified as a water quality concern. Other non-point source pollution issues have been identified in some segments during some years. They have included: turbidity, low dissolved oxygen, erosion, toxic effluents, nutrients and low flow concerns (OWRD, 1986; DEQ, 1988; DEQ, 1996). Most water quality problems stem from a legacy of historic activities such as mining and dredging, improper livestock grazing, cumulative effects from timber harvest and road building, and water withdrawals (OWRD, 1986; ODEQ, 1988). The river had a toxic chemical spill in 1990 that was the result of a truck accident.

Some soil/geologic areas contribute naturally high sediment amounts to runoff which create inherent water quality limitations.

Water Rights and Agricultural Leases

Agriculture is the basin's primary private sector economic activity. Most irrigation in the northern half of the basin occurs along narrow stream bottoms for hay and alfalfa production. In the upper basin above Service Creek irrigation is confined to valley and stream bottoms and productive benchlands, with surface water providing nearly all irrigation water. There are over 60,000 acres in the basin irrigated with surface waters (OWRD 1986). A small percentage of this irrigated land falls within the lower John Day River corridor below Kimberly, most is located along tributaries to the mainstem outside the river corridor.

Surface waters within the basin are valued for irrigation and increasingly valued for instream uses to protect or enhance values such as fisheries or recreational use.

Water Monitoring

Water quality is being monitored directly and indirectly within the basin. Directly through water temperature monitoring sites which record continuous water temperatures and indirectly utilizing existing and ongoing riparian studies on the John Day River. A network of United States Geological Survey (USGS) and OWRD gaging stations are present in the John Day basin, which provide stream flow data and in some cases water and air temperature data. In addition, BLM monitors water temperature across the basin including: the mainstem John Day River down to Clarno, South Fork, North Fork and Middle Fork John Day Rivers. The BLM utilizes data from all these sources as it is available to manage for river values.

Riparian area trends were chosen to be monitored because the riparian zone affects many of the designated uses for water. Riparian vegetation is a contributing factor for stream temperature, bank erosion, channel morphology, fish rearing habitat and large woody debris input, and controlling the amount of sediment and nutrients reaching the stream from upslope sources. Each of the above has been identified as being a concern on the John Day River. The BLM's approach is that by monitoring trends in the John Day River riparian areas, and being able to demonstrate an upward trend based on potential of the site, the BLM is maintaining or improving water quality on a non-point source basis. Riparians areas have been monitored including: the mainstem (to river mile 15.0), South Fork, North Fork and Middle Fork John Day Rivers. New study sites will be installed as needed.

Fish

The John Day River system provides habitat for a variety of native and non-native fish populations **(Table II-M)**. Information on population trends and distribution has focused primarily on anadromous salmonids, and to a lesser extent on resident salmonids and warm water game species. Native, non-game species have received less attention. However, it is presumed that activities designed to benefit anadromous and resident salmonids will be advantageous to these species that evolved under similar environmental conditions. Special status fish species present in the John Day River basin include Mid-Columbia Steelhead (Threatened) and Bull trout (Threatened).

The John Day River system supports one of the few remaining wild runs of spring chinook salmon (*Oncorhynchus tshawytscha*) (Lindsey, et al., 1986; OWRD, 1986; Quigley and Arblbide, 1997) and summer steelhead (*Oncorhynchus mykiss*) (Quigley and Arbelbide, 1997; OWRD, 1986) in the Columbia Basin, providing approximately 1,800 miles of spawning habitat for summer steelhead and 117 miles for spring chinook (Unterwegner, 1997). Although historic population estimates are

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Table II-M Fish species occurring in the John Day System (Oregon Department of Fish and Wildlife, 1989)

Common Name	Scientific Name
chinook salmon	*Oncorhynchus tshawytscha*
rainbow trout (resident and steelhead)	*Oncorhynchus mykiss*
West slope cutthroat trout	*Oncorhynchus clarki lewisi*
Yellowstone cutthroat trout	*Oncorhynchus clarki bouvieri*
mountain whitefish	*Prosopium williamsoni*
bull trout	*Salvelinus confluentus*
brook trout	*Salvelinus fontinalis*
Paiute sculpin	*Cottus beldingi*
shorthead sculpin	*Cottus confusus*
bridgelip sucker	*Catostomus columbianus*
largescale sucker	*Catostomus macrocheilus*
mountain sucker	*Catostomus platyrhynchus*
carp	*Cyprinus carpio*
chiselmouth	*Acrocheilus alutaceus*
Northern squawfish	*Ptychocheilus oregonensis*
longnose dace	*Rhinichthys cataractae*
speckled dace	*Rhinichthys osculus*
redside shiner	*Richardsonius balteatus*
peamouth	*Mylocheilus caurinus*
small mouth bass	*Micropterus dolomieui*
largemouth bass	*Micropterus salmoides*
bluegill	*Lepomis macrochirus*
channel catfish	*Ictalurus punctatus*
brown bullhead	*Ictalurus nebulosus*
Pacific lamprey	*Lampetra tridentata*
Western brook lamprey	*Lampetra richardsoni*

speculative, data indicates average annual run size for anadromous fish have declined. Oregon Water Resources Department (1986) reports historic populations for spring chinook salmon and summer steelhead to be over 6,000 and 35,000, respectively. Oregon Department of Fish and Wildlife (ODFW) data from 1959 to present indicate annual populations ranging from 370 to 5,000 for spring chinook salmon and 3,000 to 35,000 for summer steelhead. Reasons for the decline include a variety of natural and human induced factors within and outside of the John Day River system. Lindsey (1986) and Chilcote (1997) identify adult and smolt mortality associated with mainstem Columbia River dams as a major cause of the decline in anadromous fish populations. Within the John Day basin, the highest priority problems affecting anadromous fish are directly related to degradation of riparian habitat and watershed by improper mining, agriculture, forest and range practices (ODFW, 1990). The ODFW (1990) identified factors limiting anadromous fish production as: (1) poor quality juvenile rearing habitat and few adult holding areas for spring chinook, and (2) juvenile rearing areas for summer steelhead. In spite of these constraints, the John Day basin maintains wild runs of anadromous fish for three primary reasons:

(1) fish passage is almost totally uninhibited from the river's mouth to the headwaters,

(2) runs have not experienced the gene pool alterations which have occurred in other basins,

(3) habitat diversity needed to support spawning and rearing populations continues to exist in

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many parts of the basin during most years (OWRD, 1986).

The lower (RM 0 to RM 109) and middle (RM 109 to RM 213) sub-basins (Segments 1 through 4) function primarily as a migration corridor for anadromous salmonids. This portion of the basin accounts for an estimated 6% of the steelhead production in the John Day basin and a small run of fall chinook salmon in the lower most reaches. The upper mainstem John Day River sub-basin (RM 213 to headwaters) produces an estimated 18% of the spring chinook salmon and 16% of the summer steelhead in the John Day basin. (OWRD, 1986). Data indicates that the increasing population trends of spring chinook salmon are occurring in the upper mainstem John Day River sub-basin and is attributed to management and restoration efforts implemented over the last few decades (Unterwegner, 1997). The South Fork subbasin (Segments 10 and 11) produces approximately 7% of the summer steelhead population in the John Day basin. The North Fork and Middle Fork sub-basins (Segments 6 through 9) produce approximately 82% of the spring chinook salmon and 73% of the summer steelhead population in the John Day basin. (OWRD, 1986). There has been no sport fishing of spring chinook salmon since 1977 and steelhead have been limited to catch and release of "wild" fish from 1996 to the present. Steelhead Production in the basin is associated primarily with tributaries to the river and headwater streaches of the river, mostly located outside the river corridor.

Several species of resident salmonids inhabit the John Day River system. Redband trout (*Oncorhynchus mykiss*) occur throughout the John Day River system. The primary habitat is found in the upper subbasins and tributaries. Hatchery supplementation with rainbow trout has occurred in the past but the ODFW no longer conducts releasing of hatchery fish in streams associated twith the John Day River. Two subspecies of cutthroat trout, yellowstone (*Oncorhynchus clarki bouvieri*) and westslope (*Oncorhynchus clarki lewisi*), are found in tributary streams of the upper John Day River. Yellowstone cutthroat trout were introduced in the 1900's and have not been stocked since (ODFW, 1989). The westslope cutthroat trout is indigenous to the North Fork and upper mainstem John Day River. The current distribution is confined to headwater tributaries in the upper mainstem and North Fork sub-basins (Duff, 1996). Bull trout (*Salvelinus confluentus*) occupy habitat in the upper mainstem John Day subbasin, North Fork subbasin, and Middle Fork subbasin. The primary habitat occurs upstream of Mallory Creek in the North Fork subbasin, upstream of Dairy Creek in the Middle Fork subbasin, and upstream of Canyon Creek in the upper mainstem John Day River subbasin (ODFW Bull Trout distribution Map, 1996). Winter distribution in the North Fork includes Segments 6 and 7, downstream to Rudio Creek (Unterwegner, 1999).

The John Day River also supports an increasingly popular warm water sport fishery. A review of habitat requirements revealed the river exhibits good conditions for both smallmouth bass (*Micropterus dolomieui*) and channel catfish (*Ictalurus punctatus*). Upon assurance that warm water predation on salmonids would be minimal, these species were introduced into the John Day River in the early 1970's (ODFW, 1999). Smallmouth bass are distributed throughout the mainstem from Tumwater Falls to Picture Gorge (Segments 1,2, 3, and the lower portion of Segment 4) and in the North Fork from Kimberly to Wall Creek (RM 0 to RM 22 - lower portion of Segment 6). Diet studies support the idea that smallmouth bass in the John Day River are not feeding upon migrating salmonids (ODFW, 1999).

Efforts to correct fish habitat degradation and promote restoration have proceeded for the past several years in response to concerns over the decline in fish populations. Recent planning efforts directed through the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program generated the Columbia Basin System Planning Salmon and Steelhead Production Plan - John Day River Sub-Basin (ODFW, 1990). The John Day River Subbasin Plan and The Columbia River Anadromous Fish Restoration Plan (CRITFC, 1995) established spring chinook salmon and summer steelhead production goals and objectives for the John Day subbasin. Production goals are listed in **Table II-O.** Spring chinook salmon and summer steelhead will be managed exclusively for wild fish under the Wild Fish Management Policy (OAR 635-07-525) (ODFW, 1990). An amendment to the Columbia River Basin Fish and Wildlife Program known as Strategy for Salmon (Collette and Harrison,1992) called upon resource management entities to implement measures designed to rebuild Columbia Basin anadromous fish populations. Subsequent to Strategy for Salmon, the BLM adopted PACFISH (Implementation of Interim Strategies for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California 1995) designed to halt the degradation and promote restoration of riparian areas. Parallel to state, federal, and tribal actions, individual and coordinated efforts among private landowners in the John Day basin have made progress in the restoration of watersheds and fish

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Table II-N Steelhead and Chinook Salmon in the John Day River.

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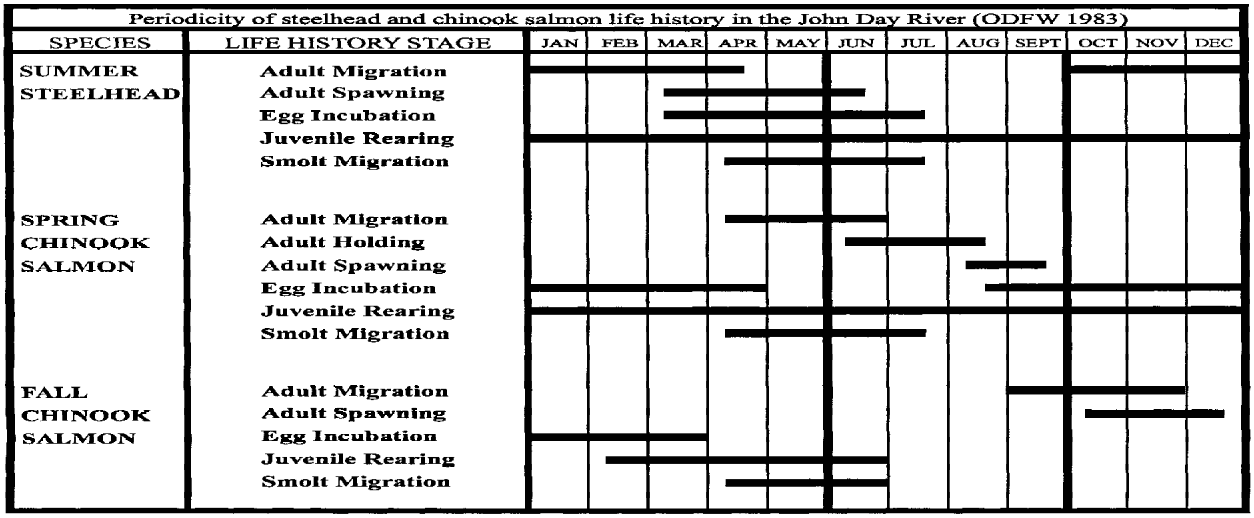
TABLE II-N STEELHEAD AND CHINOOK SALMON IN THE JOHN DAY RIVER



habitat. Pacific lamprey (*Lampetra tridentata*) and a small run of fall chinook salmon inhabit the John Day River as well. Although much less is known of these runs, restoration efforts designed to protect and restore habitat for spring chinook salmon and summer steelhead will benefit these anadromous species, as well as, native resident species in the John Day River system. Smallmouth bass have successfully filled a niche in the John Day River which has developed into a nationally recognized sport fishery.

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Direct fisheries habitat restoration actions would follow guidance identified under Riparian and Aquatic Habitat Restoration and would be subject to public review and appropriate federal, state, and tribal consultation. Alternatives for managing public land vegetation, grazing, and agricultural lands and water quality and water quantity would be utilized to protect and enhance fisheries resources. With regard to anadromous salmonids additional guidance from PACFISH and applicable Biological Opinions from the National Marine Fisheries Service will continue to be implemented as an additional screen towards maintenance and improvement of existing conditions.

Vegetation

Synecology is the field of plant ecology which studies plant communities, or assemblages of species. Order is made of the landscape by dividing it into plant communities, describing characteristics by which one community is unique, and describing how these unique communities change over time or in

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Table II - O John Day Basin Spring Chinook Salmon and Summer Steelhead Average Annual Production Goals

Species	Sport and Tribal Harvest Estimate	Natural Reproduction Escapement Estimate	Total Escapement Goal	Average Escapement 1989-1998
Spring Chinook Salmon	1,050	5,950	7,000	2,310
Summer Steelhead	11,250	33,750	45,000	8,370

Source; (ODFW, 1990).

response to environmental stimuli (Oostings, 1956). The basic unit of division is the ecological site. An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. Potential vegetation is a function of soil, parent material, relief, climate, flow regime (for riparian communities), biota (animals), and time (time for the biotic community to approximate a dynamic equilibrium with soil and climate conditions) (USDA, Natural Resource Conservation Service, 1997). Ecological sites along the John Day River can be broadly categorized into four basic divisions according to the topographic position which they occupy: riparian, riverine terrace, upland and forest-woodland. (See **Appendix M**).

Riparian

The riparian zone is that area which normally receives some degree of inundation (or saturated soil conditions) during the growing season (for more information refer to Army Corps of Engineers, 1987 and BLM, 1993). In most of the John Day River, the majority of the riparian zone is flooded during part of the growing season and dry during the mid to late summer. There are several riparian ecological sites that have distinct potential plant communities. Some of these sites have potential for dense riparian plant communities, others do not. In areas where the soils are not developed enough to moderate the annual wet - dry cycle, vegetation is either lacking completely or restricted, above normal high water line, to plants like service berry, hackberry, mock orange and various annual and perennial grasses and forbs. In areas where soils are developed and well-drained, more shrubs occur which are traditionally considered ‘riparian’, such as willow and alder. Where water flow is slow or where saturated soil conditions last longer into the growing season, sedges and rushes occupy more of the plant composition. General descriptions of the ecological sites are presented in **Appendix M**.

The BLM currently uses several techniques for monitoring riparian conditions on the John Day River. Proper Functioning Condition (PFC) ratings by an interdisciplinary team have covered most of the river segments (results are presented in river segment descriptions). An inventory of willow communities along the river in segments 2 and 3 was completed in 1981 and 1995 (BLM, 1996a). Willow communities expanded from unmeasurable in 1981 to 15.56 river bank miles (35.84 acres) in 1995. Photopoint monitoring at 51 random sites along river Segments 1, 2, 3, 10 and 11. Photos are taken at 1 to 5 year intervals. Results of this monitoring show variations depending on site potential and water flow, but overall, where riparian-oriented management has been implemented, vegetative structure, density and diversity have increased (results by allotment are summarized in **Appendix L**, examples are shown in **Appendix M**). An additional 329 photopoints are arranged at 1/4 mile intervals along public land portions of the river. These photopoints were established in 1980 and re-visited in 1990, prior to the implementation of most riparian-oriented management.

Riverine Terrace

Riverine terraces are formed from abandoned floodplains. When the John Day River channel eroded, the water table dropped and the soils

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drained. Vegetation on the abandoned floodplain changed because of lack of surface water to more xeric plants such as sagebrush and annual grasses. Leopold and Vita-Finzi (1998) documented riverine terraces of similar ages throughout broad geographic areas and correlated them with climate cycles. Depositional periods were wet, or were periods of small rainfall events, while erosional periods were dry, or periods of large, infrequent storms. Two, and in many cases, three such deposition and erosion cycles are represented by remnant terraces in stream and river valleys throughout the semi-arid western United States. The latest erosional event could have been exacerbated by land management activities which increased the susceptibility of the basin to erosion and disrupted the hydrological functioning of the watershed. The period of adjustment which follows downcutting of a channel includes a widening of the channel and the construction of a new floodplain within the confines of the eroded channel.

The riverine terrace includes the primary terrace immediately adjacent to the river as well as any secondary or tertiary terraces above. Depending on the subsurface water regime, the zone is more or less a transition between riparian and upland vegetation. The vegetation on these (typically) deeper soils is sagebrush, annual grasses, Great Basin wild rye, a mix of perennial bunchgrass and forb species, and western juniper.

Upland

The upland zone is often characterized by steep slopes with shallow soils on ridges, south and west facing slopes, deeper but well-drained soils on the north and east facing slopes. The plant communities may include an overstory which consists of scattered juniper, a layer of low shrubs such as sagebrush and snakeweed, and an herbaceous layer dominated by cool season species (such as bluebunch wheatgrass and Idaho fescue), cheatgrass, and various amounts of mosses and lichen.

Formal inventories of the upland vegetation were completed in 1974 (range surveys) and 1982 (ecological site inventories). The range surveys determined the amount of harvestable forage and the ecological site inventories determined the condition class of vegetation (see discussion below). The results of both inventories are presented by allotment in **Appendix L**. Monitoring includes photopoints and species composition measurements using such sampling techniques as line intercept, Daubenmire and nested frequency. There are 117 monitoring sites in pastures which lie partially within the WSR boundaries, results show variations depending on site potential and climate, but overall, where management has been applied conditions have improved.

Forests and Woodland

Higher elevational sites have greater effective precipitation and cooler temperatures which can support deeper soils and larger trees. Half of the basin's uplands are forested. On the southerly aspects there are ponderosa pine-mountain mahogany/ elk sedge-Idaho fescue communities. Steep north facing slopes support Douglas fir/elk sedge communities. Western juniper occur throughout these communities (BLM, 1991c).

Ecological Condition and Trend

Among the scientific community, vegetative condition expresses the similarity of a site with an 'undisturbed' ideal. Vegetation condition and trend is a concept which was created out of succession concepts pioneered by Clements near the turn of the century and elaborated upon by others (Smith, 1989). The model predicted that all effects of abusive grazing or drought (changes in the vegetative community away from the undisturbed ideal, stable state or climax) could be reversed by reduced grazing or increased precipitation (Westoby et al., 1989). In spite of these concepts being challenged early on by plant ecologists, until recently range managers have ignored the controversy (Smith, 1989). Today, a second concept on plant succession has gained acceptance (Quigley and Arbelbide, 1997). The 'multiple stable states' or 'state and transition' model recognizes that a site may be capable of supporting numerous stable vegetative communities. This new model recognizes relatively stable groups of species that change once a threshold of tolerance has been exceeded (Laycock, 1991; Friedel, 1991). The results of this change persist, in spite of removal of the forces which caused the change. For example, in a stable sagebrush-bunchgrass community where heavy livestock grazing has occurred for many years, the bunchgrass component may have been removed, thus allowing sagebrush to take advantage of the opportunity and occupy the vacated site (Laycock, 1991). A threshold has been crossed into a new stable state now dominated by sagebrush, and although livestock may be completely removed, the community will remain in this new stable state.

So far, the 'state and transition' model is assumed to be the most accurate model for arid and semi-arid ecosystems. Where water is less limiting, the Clementsian model is thought to be the more

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accurate representation (Quigley and Arbelbide, 1997). Inventory, monitoring and research techniques vary depending on the model which is assumed to be operable (Westoby et al., 1989) and interpretation of data would vary widely depending on which model were used as the underlying concept of ecosystem processes. For example, climax was thought to be the most productive state and early seral the least productive. Recent studies have shown there to be little or no correlation between production and seral state (Tiedeman and others, 1991; Frost and Smith, 1991). Climax was thought to provide the best wildlife habitat, but wildlife are more likely to respond to stand structure than to species composition (Smith, 1989). The lower John Day basin range conditions and trends were inventoried in the late 1970's and early 1980's, at a time when the 'state and transition' model was not a recognized model. The results of the inventory are presented in **Appendix L** on an allotment by allotment basis. In interpreting the data, it is important to remember that a 'low seral' ecological status does not imply that there are necessarily opportunities for improvement to 'mid seral' or 'high seral' status through changes in grazing management alone (Friedel, 1991).

Riparian areas are one example of where the Clementsian model is still thought to be operable (Quigley and Arbelbide, 1997). BLM technical reference 1737-7 (USDI, BLM, 1992a) describes the procedure for inventorying riparian conditions. So far, in the John Day basin, seven different site types have been identified: basalt ledge/cliff, colluvium, cobble/gravel bar, terrace edge, non-riparian terrace, alluvial fan, and hill slope (see descriptions in **Appendix M**). Potential vegetation communities vary not only with each site type, but also with topographic position within a site type (that is, whether the plant community is covered by water at river flows of 15,000 cfs, 2000 cfs or 200 cfs). For example, basalt cliffs do not produce the same vegetation communities as areas of alluvial fan. Similarly, sites with free water in August but covered by 5 feet of water in April support a different vegetative community than sites with free water in April and dry soils in August (see **Appendix M** photos 11-14). The rates of successional change could vary within and between site types as well. With respect to river management, resource objectives and monitoring standards must take into account the differences in site potentials.

The condition of the vegetative communities of the John Day River has been improving due to the joint efforts of private landowners in cooperation with local, Tribal, state and federal agencies. Examples of the improvement include an increase in the amount of woody riparian vegetation along the river (see BLM, 1996a, monitoring studies presented in **Appendix L** and before and after photo sequences in **Appendix M**). The plant communities along the John Day River express a broad range of potentials ranging from sagebrush flats to ponderosa pine forests, from basalt cliffs adorned with toe-holds of moss and monkey flowers to riparian soils with willow and alder thickets. The un-dammed, free-flowing nature of the river has created some conditions within which plant communities cannot thrive. Gravel bars can wash away and reform several times a year, depending on flooding patterns. Ice flows can shear off established woody plants at ground level. Where management has been implemented which meets the physiological needs of plants, vegetative communities are coming into balance with the potential of the site.

Special Status Species

The John Day River basin supports several special status plants which are normally associated with a specific, limited habitat. These special status plants contributed to the finding that botanical values are an 'ORV' of the South Fork. A Bureau Sensitive species, *Astragalus diaphanus* var. *diurnus* (South Fork John Day milkvetch) is found in Segment 10 and is suspected to occur in Segment 11 (the South Fork). Another Bureau Sensitive species, *Thelypodium eucosmum* (arrowleaf thelypody) is found within Segments 3, 4 and 6 and is suspected to occur in Segments 10 and 11. *Rorippa columbiae* (Columbia cress), another Bureau Sensitive species, has not been found on the John Day River, but is suspected to occur along the entire river since one of its known habitats is river gravels subjected to ephemeral flooding.

Mimulus jungermannioides (hepatic monkeyflower) is a Bureau Sensitive species found on moist rock walls in segment 2 and is suspected to occur anywhere there are moist cliffs, particularly on the lower river. *Astragalus collinus* var. *laurentii* (Lawrence's milkvetch) is a Bureau Sensitive species found east of the Prineville District, but is suspected to occur within the basin. *Carex hystericina* (porcupine sedge) is an Assessment Species that has been found within the basin but not within the WSR corridor. Another Assessment Species, *Juncus torreyi* (Torrey's rush), is found in segments 2 and 3 and is suspected to occur along the entire river.

Noxious Weeds

"Noxious" is a legal classification rather than an ecological term. Plants that can exert substantial

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negative environmental or economic impact can be designated as noxious by various government agencies. The single greatest threat to the native rangeland biodiversity and recovery of less than healthy rangelands and watersheds is the rapidly expanding invasion of noxious weeds (Asher 1993). Both forestland and rangeland are being invaded by noxious weeds at an accelerating rate, jeopardizing public expectations, consumptive and non-consumptive uses, including livestock grazing, timber production, and wildlife and scenery viewing. Noxious weeds reduce these uses by displacing native plant species and lessening natural biological diversity; degrading soil integrity, nutrient cycling, and energy flow; and interfering with site-recovery mechanisms, such as seed banks, that allow a site to recover following disturbance (Quigley and Arbelbide, 1997).

The weeds causing the most concern now in the John Day River basin are diffuse, spotted and Russian knapweeds, Dalmatian toadflax, yellow starthistle, Scotch thistle, purple loosestrife, rush skeletonweed, leafy spurge, poison hemlock, and medusahead rye. Some weeds are a special concern in that many are beginning to occupy very small niches with just a few plants along the high water line to small patches on islands (mainly diffuse knapweed and dalmatian toadflax) that could spread very rapidly. Also, small infestations on the upper sheltered alluvial flats (Russian knapweed and dalmatian toadflax) are becoming more common. This is especially noted on almost all riparian zones below the confluence of Thirtymile Canyon at RM 84, but a few plants of both purple loosestrife and rush skeletonweed have also been found and hand pulled. In the Clarno area, medusahead rye is very prevalent on the west side of the river to the north and south of Hwy. 219, in the fairly recent burn areas. It is also prevalent in the Murderer's Creek drainage, a tributary of the South Fork John Day River. Diffuse knapweed is found along the road right-of-way, south of Clarno. Russian knapweed is also very prevalent in the Clarno and Bridge Creek areas, but has also been found in many very small patches along the river almost always on the upper alluvial flats. Dalmatian toadflax is also found on these flats and is beginning to move up slopes in a few spots especially below Thirtymile Canyon. The thistles (Scotch, bull and Canada) along with poison hemlock are found most commonly near the small tributaries near and in riparian areas. Yellow starthistle has been found in several locations in the Clarno area and is especially prevalent in the upper Bridge Creek area near Mitchell. It is also prevalent around the Columbia River near Biggs and the Horn Butte Area of Critical Environmental Concern, an area north and east of the John Day/Columbia River confluence. Leafy spurge is found in Grant County in the upper watersheds (Fox Valley and Cottonwood Creek) of the North Fork of the John Day. Four sites found and treated in 1995 and 18 sites were found and treated between Monument and Spray in 1996. A very serious threat is noted in the recent increased infestations of perennial pepperweed in the Bridge Creek drainage.

Federal and state laws require certain actions be directed at the management of noxious weeds. In large part the "invasion of alien plants into natural areas" and the crowding "out of native flora and fauna has been stealthy and silent, and thus, largely ignored" (Cheater 1992).

Wildlife

General Description

The *Oregon Wildlife Diversity Plan* (Puchy and Marshall 1993) separates Oregon into physiographic provinces based on geologic and vegetative patterns. The John Day basin lies within the Blue Mountain and High Lava Plains provinces. Community types associated with these two provinces include: coniferous forest, juniper steppe, sagebrush steppe, riparian, and marshes. The portion of the John Day basin within the Blue Mountains province has average wildlife diversity. Fish and herptile diversity is below the state province average, but bird and mammal diversity is above average. The coniferous forest community type adds to this diversity, as it is a major habitat component. Relative species use is shown in **Table II-P** for habitat types that are prominent in the Blue Mountains and High Lava Plains provinces. The High Lava Plains province's open nature, combined with canyons, rimrocks, sagebrush and juniper provides modest habitat diversity. This province has below average vertebrate diversity in all animal groups (Puchy and Marshall 1993) when compared to other provinces in the state.

Both the quantity and quality of natural wildlife habitat in the John Day basin have declined since pre-settlement times. There are many causes including inappropriate logging or grazing practices, wildfire suppression, drought, agricultural conversion, weed invasion, human expansion, and recreational activities. Wildlife species tend to be fairly resilient, and their habitats are constantly changing with new disturbances, both natural and unnatural. Some species have increased with these disturbances, while others have declined.

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Table II-P Usage Levels of Selected Communities Regularly Used by Native Species of Herptiles, Birds, and Mammals by Province in the John Day Basin[1].

Species Type Using Province	Total Number of Species Using the Province	Community Type				
		Sagebrush Steppe	Coniferous Forest[2]	Juniper Steppe[3]	Riparian Area	Marshes
High Lava Plains Province						
Herptiles	20	65%	-	50%	35%	25%
Birds	194	22%	-	24%	49%	45%
Mammals	56	54%	-	46%	63%	32%
Blue Mountains Province						
Herptiles	17	76%	42%	-	29%	29%
Birds	231	19%	34%	-	51%	37%
Mammals	75	38%	62%	-	65%	32%

[1]Excludes irregular and accidental species
[2]Not a selected community type for the High Lava Plains Province
[3]*Not a selected community type for the Blue Mountains Province*

Wildlife habitat needs vary significantly by wildlife species. It is generally true, however, that healthy and sustainable wildlife populations can be supported where there is a diverse mix of plant communities to supply structure, forage, cover and other specific habitat requirements.

Large ungulates such as mule deer, elk and antelope are common as year-round residents in the John Day River basin. Many of the foothills along the John Day River are used as winter range by these species. The ODFW sets population and species management goals within the state. The BLM cooperates with ODFW in helping to meet these goals by providing an appropriate amount and quality of habitat on public land that is consistent with multiple-use management.

The Phillip W. Schneider Wildlife Management Area (WMA) (formerly Murderers Creek WMA) was established along a portion of the South Fork John Day River in 1972 by the ODFW and the BLM to better manage mule deer winter range. The area is now used by mule deer, elk, and bighorn sheep year-round and pronghorn during all but the winter season. Several thousand mule deer use the area during severe winters.

The State of Oregon established the John Day Wildlife Refuge in 1921 along the lower mainstem of the John Day River. The primary purpose of this refuge is to protect wintering and nesting waterfowl. It includes all land within 1/4 mile of the John Day River mean high water line from the Columbia River upstream to Thirtymile Creek. No waterfowl hunting is allowed in this area. The area is open to hunting of deer and upland game birds during authorized seasons but this hunting on private lands within the refuge requires land owner permission.

Special Status Wildlife

“Special Status Wildlife Species” refers to all species receiving special attention by state or federal programs or laws. The John Day basin has a variety of special status species that are either known or thought to occur within its boundaries. For a complete list of special status species that are known to occur or may occur within the John Day basin, see **Appendix E**.

The bald eagle *(Haliaeetus leucocephalus)*, is currently the only federally listed wildlife species in the John Day basin and is listed as Threatened as

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described in the Endangered Species Act (ESA). However, on July 6, 1999 the US Fish and Wildlife Service (USFWS) published a proposed rule to remove the bald eagle from the list of Endangered and Threatened Wildlife in the lower 48 states (50 CFR Part 17, FR 64:128 / July 6, 1999 / 36454-36464). The action was proposed because the available data indicate that the bald eagle has recovered. This species occurs primarily as a winter inhabitant of the John Day basin utilizing the John Day River corridor as a primary use area from November through March. Numerous nocturnal roost areas, as well as a few known nest sites, occur in the basin. The primary night roosts are large cottonwood and conifer trees located throughout the river corridor. Most foraging occurs from Service Creek to the Blue Mountain Hot Springs on the mainstem John Day River, with the North Fork John Day also receiving significant use. Carrion, fish, ground squirrels and waterfowl are the primary food sources utilized.

The Canada Lynx *(Lynx canadensis)* is currently proposed for listing as threatened across the contiguous United States by the USFWS, pursuant to the Endangered Species Act of 1973, as amended (50 CFR Part 17, FR 63:130 / July 8, 1998 / 36993-37013). The Canada lynx likely have never been abundant in the lower 48 states as they were in northern Canada and Alaska because there is less lynx and snowshoe hare habitat at the southern part of their range. Potentially suitable habitat in the John Day basin include those plant communities above 4,500 feet in elevation that could support vegetation capable of providing denning, forage, or travel habitat for lynx. There is one lynx travel management zone in Segment 10 along the South Fork approximately between Smokey Creek and up river to Wind Creek. The drier plant communities at lower elevations in this area are not considered as potentially suitable lynx denning and foraging habitat.

The Peregrine falcon (*Falco peregrinus)*, an “Endangered” species as described in the ESA, may occur as a seasonal migrant through the John Day basin. However, there are no known nesting or roosting sites in the basin.

The John Day River historically was home to a large population of California bighorn sheep. The ODFW and the BLM have reintroduced California bighorn sheep to several locations throughout the John Day basin since 1978. These populations are expanding as expected and one of the reintroduced populations is now used as reintroduction stock for other locations throughout the West.

Paleontology

Paleontological resources are known to occur throughout the middle reaches of the John Day River system. These portions of the basin are considered some of the richest Tertiary plant and animal fossil localities in the world. Significant paleontological locations occur on the mainstem between Butte Creek and Service Creek. Many of these localities are on lands administered by the BLM and a few occur in or adjacent to the river corridor. However, only a few formally conducted inventories have been performed within or near the river corridor. The John Day Fossil Beds National Monument, administered by the National Park Service (NPS), has 3 separate units interpreted. Two of these, Clarno and Sheep Rock, are located adjacent to the river. Only the Clarno Unit, however, occurs in close proximity to the WSR corridor.

Cultural Resources

The John Day River drains a large portion of the interior of the Blue Mountain Range and the Deschutes-Umatilla Plateau. As such, it encompasses a wide range of physiographic and environmental settings used by various peoples over at least the last 10,000 years.

Archaeological data from this vast region is limited and is restricted primarily to the lower 100 miles of the river. Several sites were formally excavated near the confluence of the John Day and Columbia Rivers (Dumond and Minor 1983; Schalk 1987), but most of that which is known about the archaeology of the river comes from an extensive inventory conducted by Polk (1976) along the lower mainstem. Archaeological research along the remaining portions of the river is meager. This is due, in part, to the large percentage of river frontage in private ownership and the development which has taken place in those areas considered as high potential for prehistoric sites.

However, limited archaeological data provides some information about the various peoples who occupied this area. Prehistoric occupation of the region appears earliest near the Colombia River, dating back at least 10,000 years.

Ethnographically, there appear to have been 2 or 3 main users of the John Day River system. The primary and traditional aboriginal groups were the Sahaptian-speaking Tenino and the Numic speaking Northern Paiute. Cayuse and Umatilla groups, both Sahaptian-speakers, also are known to have

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occupied a portion of the John Day River system, but much later in time and for a shorter duration than the Tenino or the Northern Paiute. Ethnographic villages are reported to have occurred near the mouth of the river and on the Middle Fork. The exact location of most of these sites is unknown, but none appear to have occurred within the WSR corridors.

A variety of prehistoric site types occur along the river. Evidence of tool making, food preparation, storage and shelter building are present at some of these sites. Influences of the Columbia Plateau and Great Basin cultures are evident in the archaeological record.

The earliest evidence of substantial historic use in the region dates to the 1840's with the Oregon Trail crossing. Settlement of the region began in earnest in the 1860's and was related to mining, homesteading, and transportation.

Recorded historic sites on the John Day River center on the themes of homesteading, ranching, gold mining, and transportation. The sites date from the late 19th through the early 20th centuries. The most common sites are wooden homestead or line cabins or their remains, along with associated features such as wells, outhouses, trash dumps, and non-native trees. Corrals, fences, flumes, canals, and farm equipment also are present on some sites.

Roads, pack trails, and features associated with ferries and fords comprise the transportation sites. The Oregon Trail crossing at McDonald Ford located at River Mile 21 is the earliest and most famous historical site in the John Day River basin. Segments of The Dalles Military Road occur within the river corridor between Clarno and Service Creek.

About half of the known cultural resource sites are in fair to poor condition. The greatest threat to these fragile sites is the continued illegal digging and surface collection of artifacts. Livestock trampling, recreational activities, farming, and erosion also have had an impact on cultural resources. None of the cultural sites on the mainstem John Day River have been evaluated for their eligibility to the National Register. However, most are considered significant because of the overall lack of understanding of the regional prehistory, and to a lesser degree, the history.

Cultural resources, both historic and prehistoric, are identified as ORVs on the John Day mainstem WSR and potentially significant on the South Fork John Day WSR. The Oregon Parks and Recreation Department (OPRD) found that both historic and prehistoric resources are special attributes within some State Scenic Waterways. Insufficient cultural information exists to make this determination on all State Scenic Waterway segments.

Scenery

The John Day River system contains an abundance of high quality scenery which contributed to the state and federal river designations and is extremely important to visitors and residents of the area. Scenery is identified as an ORV for WSR segments by both Congress and the BLM. The OPRD has also identified scenery as a "Special Attribute" for state designated Scenic Waterways along the mainstem, North Fork, Middle Fork, and South Fork John Day Rivers. Canyons along these rivers include vertical cliffs more than 500 feet high composed of dramatic basalt rock outcrops. Sandy beaches and gravel bars appear at low water flows. Diverse vegetation, from fir and pine trees in the uplands to high desert communities of sagebrush and juniper in the lowlands, dot the landscape along the South, North, and Middle Forks of the John Day River. Ranches, intermingled with public lands, add an interesting contrast. No Dams or major developments impair the visual resource values in the basin.

The BLM uses the Visual Resource Management (VRM) system to classify scenery and provide a framework for managing visual impacts. A portion, but not all, of the lands within the John Day River system have been inventoried in accordance with the VRM process. Lands within Wilderness Area and WSAs are automatically classified as VRM Class I which requires that natural processes dominate the landscape while allowing limited management activity **(Appendix O)**.

Wilderness

Two federally designated Wilderness Areas fall within the river corridor, the North Fork John Day Wilderness, located along the upper North Fork, and the Black Canyon Wilderness Area, located on the west side of the South Fork John Day River. Both are managed by the USFS.

Five Wilderness Study Areas (WSA's), which could become federally designated Wilderness, have been identified by the BLM on the lower mainstem and South Fork John Day Rivers. The Aldrich Mountain WSA (9,395 acres) is located In the east side of the South Fork John Day River near Dayville. The Spring Basin WSA (5,982 acres) is located south of Clarno on the mainstem John Day River. The North Pole

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Ridge WSA (7,609 acres) is located north of Clarno. Further north along the mainstem is Thirtymile WSA (7,538 acres) and Lower John Day WSA (19,587 acres). Two additional WSAs, Sutton Mountain (29,400 acres), and Pat's Cabin (9,970 acres), are located just south of the mainstem John Day River, near Bridge Creek.

BLM submitted the Wilderness Study Report to Congress in 1991. It contained BLM's recommendations on which WSA lands should be designated by Congress as Wilderness, and which lands should be dropped from further wilderness consideration. Lands acquired through land exchanges since 1991 have been inventoried for wilderness characteristics according to BLM's Wilderness Inventory Process. Acquired lands found to meet the WSA criteria have been designated as WSAs through earlier planning documents. These WSAs include Sutton Mountain, Pat's Cabin, and a 1,240 acre addition to the North Pole Ridge WSA. These WSA additions must now be acknowledged in either a RMP or a document amending a current RMP, such as this plan. In the future, a detailed wilderness study must be completed on these WSA additions, resulting in recommendations and a report to Congress.

Federal law requires all lands within WSA boundaries be managed so as not to impair their Wilderness suitability until a decision is made by Congress concerning their future status. Management of WSAs is described in detail in the BLM Interim Management Policy (IMP)and Guidelines for Lands Under Wilderness Review dated July 5, 1995. See **Appendix N** for more details on the Wilderness Review Process and WSA additions.

Recreation

Recreation has been determined to be an ORV on all designated WSR segments of the John Day River. Recreation has been found to be a special attribute by OPRD along all segments of John Day State Scenic Waterways except the Middle Fork. These determinations are due to the diversity and quality of opportunities such as hunting, fishing, boating, camping, wildlife observation, photography, hiking, swimming, and scenic viewing.

Caves

The Federal Cave Resources Protection Act of 1988 (FCRPA) requires federal agencies to identify and manage, to the extent practical, cave resources determined to be significant. Procedures for determining the significance of caves are found in 43 CFR Part 37. Significance is determined based on criteria for biotic, cultural, geologic, mineralogic, hydrologic, recreational, educational, or scientific values, features, or characteristics as defined in 36 CFR, Part 290.3 (c) and (d). The FCRPA defines a cave as any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge, including any cave resource therein, that is large enough to permit a person to enter, whether or not the entrance is naturally formed or manmade. Rock shelters, less than fifty feet in length and containing no dark zone, are not considered to meet the definition of a cave.

One cave has been listed as significant within the John Day River corridor. This small cave is located within a cliff overlooking the South Fork and receives limited use by the western big-eared bat. No public nominations have been received and no other caves are documented within the planning boundary. Caves inventories have not been extensive along the John Day River system; therefore, it is possible that undocumented cave passages are present, this is particularly likely within the cliffs and ledges above the river, although a majority of "caves" in the area are likely rock shelters that do not meet the definition of a cave. If additional cave nominations are received, or unknown cave passages are discovered, these caves would be considered "potentially significant" and would be evaluated for listing under the FCRPA.

Significant and potentially significant caves in Oregon and Washington would be managed in accordance with BLM's interim management policy for caves until management plans are prepared to provide specific management prescriptions. The policy provides protective management of all cave resource values, procedures for authorizing human uses, and restriction of specific human activities. Public input would be pursued and incorporated into cave management plans.

Resource Uses

Agriculture

Agriculture has been and continues to be one of the most significant land uses in the basin. Hay is the most common crop in the upper basin. These hay fields are located very near the river where they usually are irrigated with John Day River water. Wheat is the most common commercial crop in the

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lower basin and is not irrigated. Hay is still grown along the river in the lower basin, but the number of acres devoted to hay are minor when compared to the number of acres of wheat grown on the plateaus near the John Day River. (See the previous Human Uses and Values portion of this chapter for a more complete discussion of the importance of agriculture in the basin.)

BLM manages numerous small tracts of irrigated lands which total about 700 acres along the John Day River System. They are currently used to grow wildlife food and cover, native hardwoods for transplanting along the river, or crops such as grain, alfalfa, or specialty seed crops such as onion, carrot, coriander or beans. When in use, the fields generally have buffer/filter strips where applicable and are managed using water and soil conservation practices consistent with local farming practices. These cultivated tracts were acquired through land exchanges, historic unauthorized agricultural use, and a foreclosed estate that reverted back to the federal government. In the late 1970's, the BLM began a nationwide effort to identify historic unauthorized agricultural use and to manage that use under agricultural leases. There are 4 sites along the river where public land is a small part of a larger privately owned field. These fields were developed as part of a private enterprise before land ownership boundaries were clearly identified.

The BLM also has several upland agricultural leases. With one exception at river mile 86 on the east side of the river, they are located outside of the river corridor and are typically operated in conjunction with dryland farming on fields with which they have been historically adjoined.

Water Rights and Use

Water rights and use in the John Day basin consists of three primary components; consumptive use, instream flow rights, and Federal and State Scenic Waterway recommended flows.

Consumptive Use

Consumptive use occurs when water is removed from the stream and used for purposes such as irrigating crops and mining. Water has been used for consumptive purposes in the John Day basin since the early 1860's (The John Day River Basin Report, OWRD, 1986). Competition for limited river water increased as population and acres under cultivation increased in the basin. These established water uses were adjudicated by 4 court decrees; Cochran Creek and its tributaries in the North Fork subbasin in 1910, Cherry Creek and its tributaries in 1922, Bridge Creek and its tributaries in 1937, and the remainder of the John Day basin in 1956. These adjudication efforts resulted in legal assignment of "water rights". Since the 1860's about 4,500 rights have been established for 6,200 cubic feet/second (cfs) flow. Approximately 800 have been canceled covering about 3,600 cfs. Sixty percent of historical water right appropriations occurred between 1860 and 1920. A moderate increase in water rights allocation occurred from 1920 to 1970 with a larger increase occurring during the 1970's. Recently, the number of applications for water rights has been declining. **Table II-Q** shows current rights by cfs and the use by subbasin.

The Oregon Water Resources Commission is responsible for setting policy and making long range plans for the use and control of the state's water resources. The Oregon Water Resources Department (OWRD) is responsible for administering state water laws and insuring the wise use and conservation of water. Obtaining a water right requires application and permit issuance through the OWRD. Additional water right permits for consumptive uses are issued based upon the availability of water to satisfy the permit. Available water is determined by the OWRD using a model called the Water Availability Resource System. This model is based on an 80% exceedence value for stream flows within segments by month (80% of the time flow meets or exceeds this level). Available water is equal to the 80% value less current authorized use, less the state determined scenic flow requirements (Diack flows), less any instream water rights (see following discussion). This means new water right permits would only be issued in months where a surplus exists after all current uses, Diack flows and instream water rights are satisfied. No water is available during the irrigation season on the John Day River so OWRD has ruled that no additional water rights will be issued within the basin for the period from May to October.

The total basin permitted water diversions are 76% (1,100,000 acre-ft. or 1,549 cfs) of the John Day basin's average annual discharge (1,475,000 acre-ft. or 2,036 cfs). Actual consumption undoubtedly is less than that permitted. Basin discharge is adequate to satisfy all water rights on an average annual basis, even in a critically low flow years. However, because of the wide variance in seasonal distribution of runoff, there is insufficient stream flow

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Table II-Q Summary of Existing Water Rights for the John Day Basin by CFS and Beneficial Use (OWRD 1986).

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established for 6,200 cubic feet/second (cfs) flow. Approximately 800 have been canceled covering about 3,600 cfs. Sixty percent of historical water right appropriations occurred between 1860 and 1920. A moderate increase in water rights allocation occurred from 1920 to 1970 with a larger increase occurring during the 1970's. Recently, the number of applications for water rights has been declining. **Table II-Q** shows current rights by cfs and the use by subbasin.

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TABLE II-Q Summary of Existing Water Rights For The John Day Basin By CFS and Beneficial Use (OWRD 1986)

Table II-Q Summary of Existing Water Rights For The John Day Basin by CFS and Beneficial Use (OWRD 1986)

Beneficial Use	Lower John Day	Middle Mainstem	Upper Mainstem	North Fork	Middle Fork	South Fork	Total
Agriculture			*				0
Commercial				3.7			3.7
Domestic (lawn & garden)	0.2	0.2	0.2	0.1	*		0.7
Domestic	0.1	1.3	1.6	1.2	1.8	0.1	6.1
Fish Life	0.1	0.7	12.8	2			15.6
Fire Protection		*	0.2		0.1		0.3
Industrial/Manufac	0.8		7.3	2.1	2.2		12.4
Irrigation	229	405.5	627	201.5	88.5	67.5	2120
Livestock	4	0.8	0.8	1.7	0.8	0.3	8.3
Mining		30.8	40.7	202.2	49.8		323
Municipal	15.4	5.4	6.3	3.9	3.1	5.1	42.2
Power			13.9	25	0.8		39.7
Quasi-Municipal	2.5	2.8					5.3
Recreation	0.2		*	2	*		2.2
Temperature Contro	3.3						3.3
Wildlife		*	*				0
Other	9.6	6.8	4.3	0.7			21.4
							0
Total	265.2	544.1	1018	538.1	146.8	103	2613.2

flows within segments by month (80% of the time flow meets or exceeds this level). Available water is equal to the 80% value less current authorized use, less the state determined scenic flow requirements (Diack flows), less any instream water rights (see following discussion). This means new water right permits would only be issued in months where a surplus exists after all current uses. Diack flows and instream water rights are satisfied. No water is available during the irrigation

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during late summer to satisfy all water rights when they are most needed (OWRD 1986).

Incidental, short duration water uses such as recreation site maintenance or wildlife guzzler refills do not require water rights, although they should be coordinated with OWRD. These uses do not involve continuous water removal that would have an associated rate or duty, as would consumptive or instream waters rights. Irrigation accounts for over 69% (by volume) of all water used in the basin. Mining is the next dominant use with 12%.

Water rights associated with BLM managed lands are potentially responsible for approximately 0.8% of the total John Day River basin water used for irrigation (OWRD 1986). Currently about 50% of BLM water rights are diverted for irrigation (0.4% of basin irrigation water). The other 50% is retained instream.

The John Day basin contains approximately 60,103 acres of irrigated lands and 477,682 acres of non-irrigated **(Table II-R)** which comprises 1.2% and 9.2% of the basin respectively (OWRD 1986). The majority of the irrigated acres occurs along alluvial bottom lands in the northern portion of the basin for hay production, while the southern portion of the basin is dominated by non-irrigated grain production on the plateaus. Consumptive use varies among crops (**Figure II-B, Table II-S**) and with seasonal precipitation. Surface and subsurface return flow are additional factors in determining the amount of water removed from the John Day River for irrigation

The method of water application on irrigated agriculture land in the John Day basin varies. Oregon State University Extension Economic Information Office summarized irrigation methods with respect to total number of acres in 1984 **(Table II-T)**:

Instream Flow Rights

Instream flow rights are water rights reserved to remain in the stream to benefit specified resource values such as fish, wildlife, recreation, and water quality. Three state agencies are authorized to request instream water rights. The Oregon Department of Fish and Wildlife may request instream rights for public uses relating to the conservation, maintenance, and enhancement of aquatic and fish life, wildlife, and fish and wildlife habitat. The Oregon Department of Environmental Quality may request instream rights to protect and maintain water quality standards established by the Environmental Quality Commission. The Oregon State Parks and Recreation Department may request instream rights for public uses related to recreation and scenic attraction. These agencies presently have 41 instream water rights and 17 pending applications for instream rights. These rights are

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Table II- R Irrigated And Non-Irrigated Agriculture In Counties Of The John Day Basin (OWRD 1986).

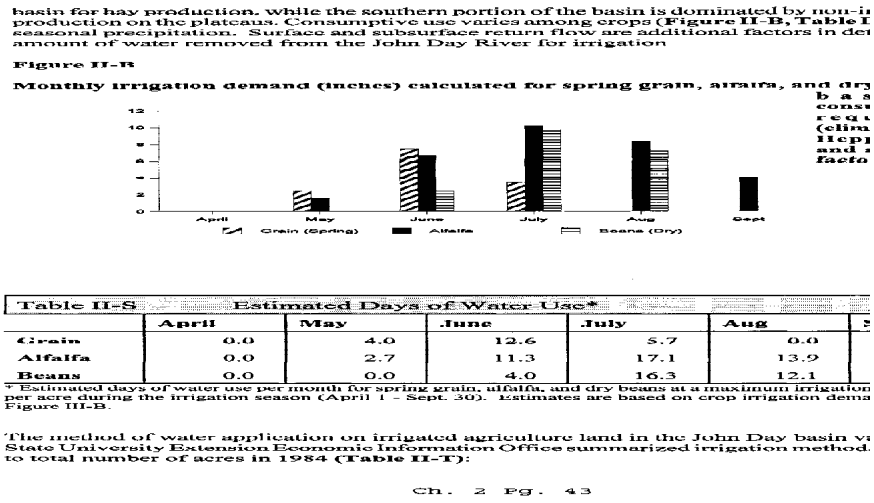
County	Irrigated (acres)	Non-irrigated (acres)
Crook		45
Gilliam	3,476	251,034
Grant	40,277	14,480
Jefferson	194	607
Morrow	2,940	16,741
Sherman	428	165,899
Umatilla	trace	765
Wasco	823	3,298
Wheeler	11,965	24,813
Total	**60,103**	**477,682**

Table II-S Estimated Days of Water Use*

	April	May	June	July	Aug	Sept
Grain	0.0	4.0	12.6	5.7	0.0	0.0
Alfalfa	0.0	2.7	11.3	17.1	13.9	6.7
Beans	0.0	0.0	4.0	16.3	12.1	0.0

** Estimated days of water use per month for spring grain, alfalfa, and dry beans at a maximum irrigation rate of 1/40 cfs per acre during the irrigation season (April 1 - Sept. 30). Estimates are based on crop irrigation demand presented in Figure III-B.*

Figure II-B Monthly irrigation demand (inches) calculated for spring grain, alfalfa, and dry bean crops based on consumptive use requirements (climate zone 3 - Heppner, OR) and an efficiency factor of 65%.



basin for hay production. While the southern portion of the basin is dominated by non-ir
production on the plateaus. Consumptive use varies among crops (**Figure II-B, Table I**
seasonal precipitation. Surface and subsurface return flow are additional factors in det
amount of water removed from the John Day River for irrigation

Figure II-B

Monthly irrigation demand (inches) calculated for spring grain, alfalfa, and dry

Table II-S Estimated Days of Water Use*

	April	May	June	July	Aug
Grain	0.0	4.0	12.6	5.7	0.0
Alfalfa	0.0	2.7	11.3	17.1	13.9
Beans	0.0	0.0	4.0	16.3	12.1

* Estimated days of water use per month for spring grain, alfalfa, and dry beans at a maximum irrigation
per acre during the irrigation season (April 1 – Sept. 30). Estimates are based on crop irrigation dema
Figure III-B.

The method of water application on irrigated agriculture land in the John Day basin va
State University Extension Economic Information Office summarized irrigation method
to total number of acres in 1984 (**Table II-T**):

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Table II - T Irrigation Methods in the John Day Basin (acres)

Center Pivot	299	Big Gun	800
Hand Line	5950	Gravity Flood	39,075
Wheel Line	13,163	Drip	30
Solid Set	450		

Source: OWRD 1986

regulated essentially the same as consumptive water rights, according to priority.

The federal government is not allowed to apply for and hold Oregon state instream water rights under State of Oregon water laws. They may instead lease or purchase an existing water right for conversion to an instream water right to be held by the OWRD in trust for the people of Oregon. In order to improve instream flows to protect and enhance river values, the BLM may; 1) Consult and coordinate with state agencies that can apply for and hold an instream water right, or 2) Acquire land with a consumptive water right and transfer that right to an instream right to be held in trust by the OWRD. About 50% of BLM's existing water rights are maintained instream through non-use or instream lease agreements with OWRD.

State and Federal Scenic Waterway Recommended Flows

The Oregon Supreme Court ruled in 1988, that before authorizing any new diversion of water from or above a State Scenic Waterway, or from a tributary to it, the Oregon Water Resources Commission must find that the needs of the Scenic Waterways are met. State Scenic Waterways are managed for the "Special Attributes" which are identified in the legislation which established the particular State Scenic Waterway. Typically, these are recreation, fish, wildlife, and water quality.

The OWRD (1990) identified minimum flows necessary for managing special attributes in the John Day River State Scenic Waterway **(Table II-U)**. For example, OWRD found that a minimum of 1,000 cfs is needed for rafting and drift boating, and a minimum of 500 cfs is needed for canoes, kayaks, and other small water craft. These minimum flows are referred to as the "Diack" flows.

The right of the federal government to John Day River water was established when segments of the John Day River were designated by the US Congress as Wild and Scenic. In this case, the managing federal agencies are entitled to the amount of water necessary to accomplish the purposes for which the river segments are designated. The priority date of these rights is the date of the particular WSR designation, which is 1988 in for the designated John Day River segments.

The purpose of these federal water rights is similar to the state Diack flows in that they are needed to protect the outstanding, remarkable or significant values identified in the legislation designating a WSR. The state listed Special Attributes are basically the same values requiring protection under the WSRs designation for the John Day River. Therefore, for the purposes of this plan, the BLM adopts the existing Diack flows as the minimum flows necessary to protect and enhance the ORVs of the WSR segments.

Grazing

Background

Congress passed the Taylor Grazing Act (TGA) in June 1934. This Act established the basic legislative authority governing the management and protection of the vacant public lands of the US. The TGA made a distinction between public lands contained within a grazing district (referred to as Section 3 lands) and those "so situated as not to justify their inclusion in any grazing district" (referred to as Section 15 lands). Geographic areas in which public lands consisted of mostly scattered tracts fell into this second group. All of the public lands in the John Day basin were Section 15 lands.

Lands administered under Section 15 of the TGA were leased by the acre prior to 1969. Following publication of new regulations, a conversion was made to leasing on an Animal Unit Month (AUM) basis. The number of AUM's available were determined by range surveys which were completed between 1967 and 1974 in the John Day River basin. Several of these surveys were contested when they appeared in the mid 1970's, because they resulted in deep cuts in authorized use. For example, in Gilliam county, AUMs on allotment #2597 were reduced by decision to 183 from 621 or 71%, (IBLA 75-36) and on allotment #2512, in Jefferson county, AUMs were reduced to 635 from 2684, or 76%. These surveys established the grazing use levels which continue to be authorized today.

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The Natural Resources Defense Council sued the BLM in Washington DC in 1973, alleging that BLM's broad scale "programmatic" grazing Environmental Impact Statements (EIS) did not comply with the requirements of the National Environmental Policy Act. As a result of the suit, BLM agreed to prepare site specific grazing EISs. Preparation for this effort caused the BLM Prineville District to complete an Ecological Site Inventory of the public lands in the lower John Day River basin in 1982. This inventory developed ecological sites (see explanation of ecological sites under Vegetation in this chapter), delineated geographical areas across the basin on the basis of these ecological sites, and assessed the ecological condition of the geographical areas with respect to what was believed to be their potential (see explanation of ecological condition and trend under Vegetation in this chapter).

Prior to the issuance of Records of Decision for the Two Rivers RMP (BLM, 1986a) and the John Day RMP (BLM, 1985), almost all Section 15 lands were managed by the BLM as 'custodial' grazing allotments. Custodial means that BLM collected grazing fees for the use of these lands, but grazing management was left to the livestock operators. Enforcement of the use levels or seasons of use dates that were specified in the lease was done only in unusual cases. The two RMPs prescribed monitoring, evaluation, and planning efforts to improve resource conditions in these scattered tracts. The RMPs also prescribed priorities based on the presence of sensitive public resources, rating grazing allotments as 'improve' (I), 'maintain' (M) or 'custodial' (C). Most of the range monitoring studies available in the basin were installed after 1986.

The Northwest Power Planning Council completed the Strategy for Salmon (Collette and Harrison, 1992)to outline and guide salmon recovery efforts in the Northwest. In response to this strategy, BLM placed emphasis on completing allotment evaluations and adjusting grazing management for all grazing allotments in the John Day basin which would affect anadromous fisheries habitat. Priority was placed on grazing allotments which contained substantial public land riparian areas either on the John Day River or on important tributaries.

The Secretary of the Interior approved and began implementation of the Oregon / Washington Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM, 1997a) in August 1997. These standards and guidelines are intended to form the basis for all livestock grazing management that occurs on all BLM-administered lands. They provide specific goals to be addressed in grazing permits and leases, and identify an array of indicators that should be considered in the design of monitoring plans used to track progress in achieving standards.

Current Situation

There are a total of 52 grazing allotments which lie partially within the mainstem John Day WSR corridor. There are 12 grazing allotments which lie partially within the South Fork John Day WSR corridor. Few pastures and no allotments lie completely within the corridor.

The following occurred in the John Day River basin by June 1999;

- Allotment evaluations were conducted on 92 allotments within the basin, encompassing 91% of the public land river bank miles within the designated WSR segments.

- Grazing management adjustments occurred in cooperation with private land owners on 31 of the 64 grazing allotments in the WSR segments.

- Grazing management was in place for protecting and enhancing ORVs for 184.9 public land river bank miles (94%) in the WSR corridor.

- Planning processes were underway for protecting an additional 5.4 public land river bank miles (3%).

- Significant vegetative improvement is occurring on allotments where riparian-oriented grazing management was implemented. An inventory of willow communities was conducted on Segments 2 and 3 of the river in 1980 and 1995. The willow communities on those segments were unmeasurable in 1980. By 1995 there were 15.56 river bank miles of willow communities (BLM 1996a). While the entire John Day River is not suitable for willow growth, further expansion of willow and other riparian plant communities is expected to occur with continued upland and riparian restoration throughout the basin. (See **Appendix L** for a summary for those studies near the river, photographic examples are shown in **Appendix M**).

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Table II-U. Monthly natural stream flow estimates, consumptive use estimates, net stream flow estimates, and State Scenic WaterwayFlow values (OWRD); recommended minimal and optimal instream flow for anadromous fish (Lauman, 1977); and instream water rights at or near John Day River (RM 21 and RM 156.5), South Fork John Day River (RM 0.0), and North Fork John Day River (RM 0.0).

Stream	Category	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
John Day River	Natural (50%)	1250	2440	3250	4860	5050	2700	715	340	271	380	542	940
River Mile 21	Natural (80%)	626	1050	1680	2920	3020	1440	470	246	194	283	393	513
McDonald Ferry	C.U. & Storage	16.7	23.9	32.8	157.6	321.4	292.8	265.6	192.6	128.5	51.6	12.1	14.7
	Net. Flow (50%)	1233	2416	3217	4702	4729	2407	449	147	142	328	530	925
	Net. Flow (80%)	609	1026	1647	2762	2699	1147	204	53	65	231	381	498
	Scenic Flow	500	1000	2000	2000	2000	2000 ~ 1000	500	500	500	500	500	500
	Fish Flow (opt.)	500	500	500	500	500	500	500	500	500	500	500	500
	Fish Flow (min.)	390	390	390	390	390	390	390	390	390	390	390	390
	Instream Right	20	20	20	20	20	20	20	20	20	20	20	20
John Day River	Natural (50%)	1130	2060	2860	4610	4770	2410	652	312	260	385	508	859
River Mile 156.5	Natural (80%)	556	953	1506	2710	2860	1270	420	242	203	280	384	473
Service Creek	C.U. & Storage	12.5	16.5	25.8	100.5	192.2	189.6	230.3	176.3	119.3	50.1	9.6	11.3
	Net. Flow (50%)	1118	2043	2834	4510	4578	2220	422	136	141	335	498	848
	Net. Flow (80%)	544	936	1480	2610	2668	1080	190	66	84	230	374	462
	Scenic Flow	500	1000	2000	2000	2000	2000 ~ 1000	500	500	500	500	500	500
	Fish Flow (opt.)	500	500	500	500	500	500	500	500	500	500	500	500
	Fish Flow (min.)	390	390	390	390	390	390	390	390	390	390	390	390
	Instream Right	30	30	30	30	30	30	30	30	30	30	30	30
John Day River	Natural (50%)	649	1240	1820	3170	3500	1650	353	159	141	169	243	490
North Fork	Natural (80%)	293	523	952	1830	2130	813	215	120	109	127	165	216
River Mile 0.0	C.U. & Storage	4.0	4.8	9.4	36.1	72.2	52.5	60.9	46.9	31.9	13.9	3.2	3.8
	Net. Flow (50%)	645	1235	1811	3134	3428	1597	292	112	109	155	240	486
	Net. Flow (80%)	289	518	943	1794	2058	760	154	73	77	113	162	212
	Scenic Flow	380	380 ~ 600	1300	1300	1300	800	235	235	235	235	380	380
	Fish Flow (opt.)	380	380 ~ 600	600	600	600	380	235	235	235	235	380	380
	Fish Flow (min.)	235	235 ~ 380	380	380	380	235	175	175	175	175	235	235
	Instream Right	55	55	55	55	55	55	55	55	55	55	55	55
	Instream Right	235	235 ~ 380	380	380	380	235	175	157	140	168	235	235
John Day River	Natural (50%)	110	177	245	358	267	147	42.6	31.9	29.1	38.3	54.2	72.3
South Fork	Natural (80%)	53	84	132	197	146	72.8	24.1	18.8	18.1	31.6	37	44.2
River Mile 0.0	C.U. & Storage	0.5	0.6	0.6	3.9	7.8	10.1	14.6	11.4	7.7	3.1	0.4	0.5
	Net. Flow (50%)	53	83	131	193	138	63	10	7	10	28	37	44
	Net. Flow (80%)	110	176	244	354	259	137	28	21	21	35	54	72
	Scenic Flow	133	133 ~ 225	225	225	225	133	90	90	90	90	90	133
	Fish Flow (opt.)	133	133 ~ 225	225	225	225	133	90	90	90	90	90	133
	Fish Flow (min.)	100	100 ~ 133	133	133	133	100	50 ~ 25	25	25	25	50	100
	Instream Right	100	100 ~ 133	133	133	133	100	50 ~ 25	25	25	25	50	1

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Forest Products

Forest products are the second greatest source of income (agriculture is the first) in the John Day River basin. Almost all timber harvested within the basin is cut into lumber at local mills. Forest products other than lumber are also sources of income. These include Christmas trees, firewood, posts and poles, boughs, and wild mushrooms.

Approximately 1.6 million acres of forest land within the basin are classified as commercial. Commercial lands are suitable for and capable of producing sustainable levels of marketable timber.

About 200,000 acres of forest land within the basin are withdrawn from commercial use. These lands are capable of producing marketable timber, but are protected from harvest. Stream and road side buffers, campgrounds, wilderness areas, research natural areas, and areas of critical environmental concern are examples of commercially-withdrawn forest land.

Approximately 60% of the commercial forest land and more than 67% of the potential merchantable timber volume in the system is in public ownership. The potential for increased use of the forest resources is limited due to their location which is far from existing and potential manufacturing sites and population centers.

Energy and Minerals

Agencies Regulating Mining

BLM administers mining on BLM lands within the Wild and Scenic River corridor. Those wishing to mine locatable minerals on these lands must submit a detailed plan of operations with the Prineville District Office and receive the approval of that office before mining. A reclamation bond must be obtained in an amount determined by BLM for any mining operations in the river corridor.

The law does not require BLM to be notified for "casual use" mining operations. Casual use is when prospecting or mining activity will cause only negligible disturbances to the land and resources, does not require the use of mechanized earth moving equipment or explosives, and/or does not involve the use of motorized vehicles in areas designated as closed to off-road vehicles.

The ODSL issues Prospecting Permits for exploration and mining activities which occur within the state on private, state or federal lands, including the beds and banks of navigable rivers. The ODSL also issues Removal-Fill Permits for activities occurring in waters of the state. Individual Removal-Fill permits and Land Board approval are required in Oregon State Scenic Waterways, except that no permit is required for gold panning if less than 5 cubic yards per year per stream are moved. Other permits may be required depending on the nature and location of the proposed activity. Refer to ODSL bulletin, "Placer Mining In The State Of Oregon."

The ODEQ, Quality issue two permits to protect water quality: NPDES General Permit 700-J is required to operate an in-stream suction dredge of no more than 40 HP, and to discharge the resulting wastewater into the waters of the state; WPCF 600 is required for small scale, non-chemical, off-stream, placer mining activity.

The ODFW publishes the brochure "Oregon Guidelines For Timing to Protect Fish and Wildlife Resources." The information contained in this brochure is necessary to ensure that the requirements of the ODEQ's General Permit 700-J (to not dredge when fish eggs could be in the gravel) are met.

Other permits may be required by other agencies depending on the proposed activity.

Mining in BLM WSAs is regulated under the 43 CFR3802 regulations. Any claims filed in a WSA would be subject to the guidelines of the IMP. No leasing or disposal of saleable minerals is permitted in WSAs.

Locatable Minerals

Mining has been an important use in the upper John Day basin for over a century. Mining for gold and other locatable minerals continues or has occurred recently, on the upper North Fork and Middle Fork, and on tributaries of the upper mainstem John Day River. Bentonite is currently being mined along the lower mainstem John Day River near Clarno, but not within the river corridor.

Salable Minerals

Salable minerals, primarily rock and gravel used for road construction, is mined throughout the basin. There are several of these operations on private, State and public land close to the river in the upper mainstem John Day River. In Segment 4, an operation exists across the highway from the river but within the State Scenic waterway boundary near

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Muleshoe Creek. Operations on the South Fork are separated from the river by BLM or county roads and are located at Smokey Creek and Cougar Creek. Rock and gravel operations occur in the lower part of the basin but are restricted to areas outside of the river corridor.

Leasable Minerals

There is no leasing of fluid minerals within sections of the corridor that are WSAs. In other parts of the corridor, a restrictive "no surface occupancy" stipulation for fluid minerals exploration and development is maintained on lands identified as nationally significant or visually sensitive in the Two Rivers RMP area and with standard stipulations in the upper John Day River (and South Fork) basins.

Exceptions to the no surface occupancy stipulation would be evaluated using the following criteria:

(1)Evidence of exploration or similar activities would not be visible from the surface of the John Day River.

(2)All activities involving exploration would use existing roads to the fullest extent possible.

(3)Any proposed exploratory drilling pad or road construction for access to a drilling site would be located to avoid canyon slopes and areas of high visibility. In these areas, roads and drilling sites would be fully rehabilitated when operations have been completed.

If leases are issued with the no surface occupancy stipulation, the criteria for exception would be included in the stipulation.

Utility Corridors

Six major electric power lines cross the mainstem of the John Day River **(Map II-D)**. A Pacific Power and Light Company 69 KV line crosses the river approximately one and one-half miles downstream from McDonald Ford (RM 19). The Bonneville Power Administration (BPA) McNary-Maupin 230-KV steel tower line No.2 and the Slatt-Marion 500-KV double circuit line cross the river between Scott Canyon and Hay Creek (RM 28). The BPA DeMoss-Fossil 115-KV wood pole line crosses the river at Cottonwood Canyon (RM 40). The Columbia Power Cooperative 69-KV line crosses the river south of Clarno near Pine Creek between RM 110 and 111. Numerous other smaller power lines (estimated near 100) cross the river, mostly along upper portions of the river system, primarily to provide power to homes and irrigation pumps.

Two pipelines belonging to the Pacific Gas Transmission company cross beneath the river upstream from Thirtymile Creek near RM 85.

Recreation

The Setting

The John Day River system offers more rustic and unconfined recreation opportunities than the neighboring Deschutes River, as well as fewer river users and less technically difficult rapids. There are many recreation opportunities throughout the John Day River basin, but few recreation developments. Recreational experiences range from those which are easily accessible to those which are extremely remote and found in primitive to rural settings. A primitive experience can be found on the river between Butte Creek and Cottonwood Bridge, which is characterized by an essentially unmodified natural environment of fairly large size, low user evidence or interaction, and minimal restrictions and controls.

The upper South Fork, lower North Fork and upper mainstem John Day Rivers provide a more rural setting which includes farms and ranches and cultivated fields and pastures. Sights and sounds of humans are readily evident and the interaction between users occurs with moderate frequency.

Kinds of Use

The kinds of recreation use vary widely on the John Day River system due to wide variations in the river flow, character, topography, and availability of public access. The system is best known for its fishing, boating, and hunting opportunities, with activities varying by river segment.

The most popular activities on the mainstem John Day River are boating and fishing for smallmouth bass and steelhead. The mainstem John Day River from Kimberly to Tumwater Falls, offers some whitewater boating opportunities with numerous Class II rapids, 4 Class III rapids and 1 Class IV rapid. Rafts, drift boats, canoes, and kayaks are the most popular watercraft on the John Day River. Some motorized boat activity occurs on the lower mainstem. The mainstem John Day River between Clarno and Tumwater Falls, is closed to motorized boats from May 1 to October 1.

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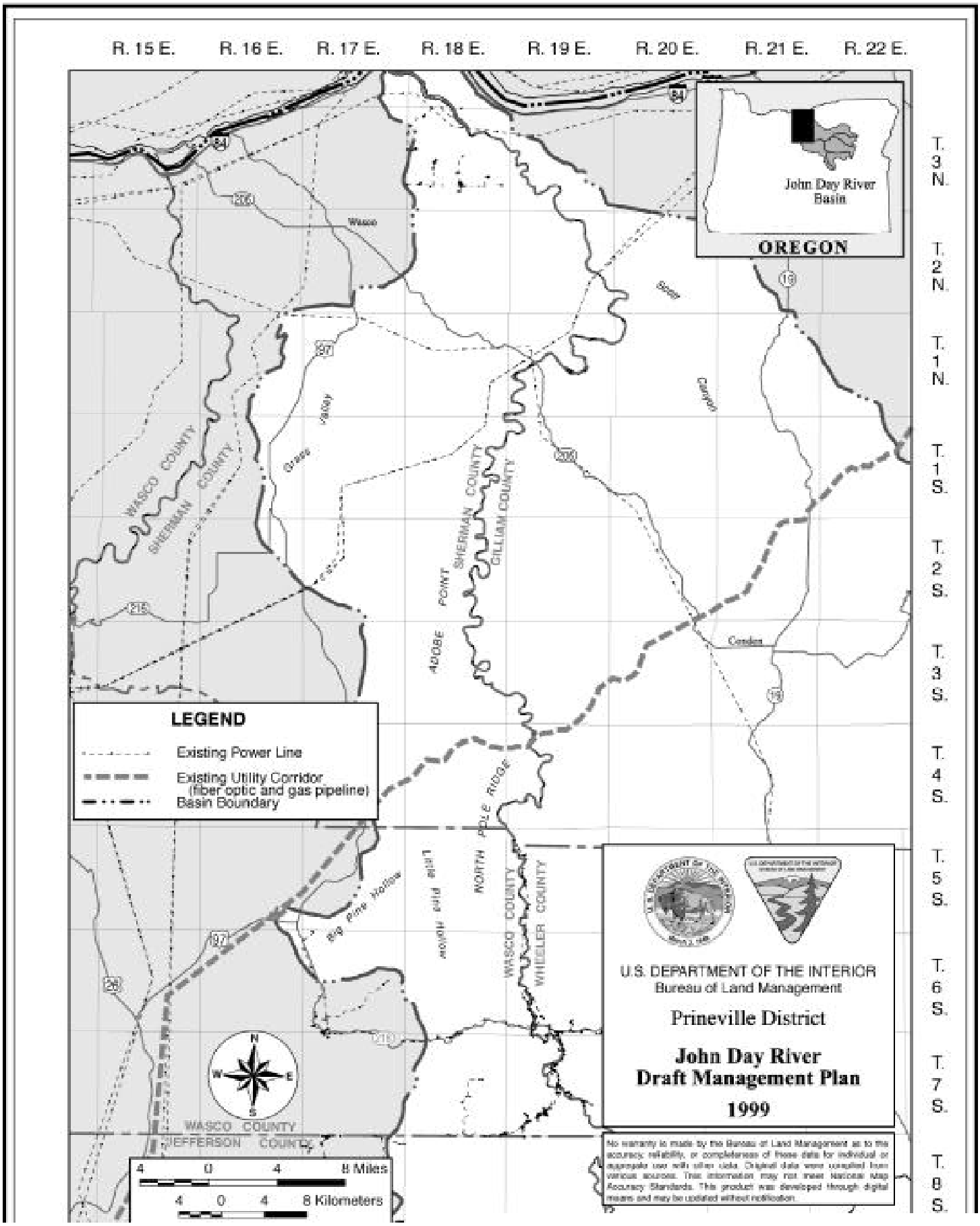

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Camping, hunting for chukar, pheasant, geese, ducks, and deer, and viewing fossils in the John Day Fossil Beds National Monument are also popular. Secondary activities associated with float boating, fishing, and hunting include relaxation, photography, wildlife viewing, swimming, hiking, and sightseeing. Upland hunting and camping usually require the use of four-wheel drive vehicles.

All river segments have some forms of day use such as swimming, picnicking, and general sightseeing.

Seasons of Use

The amount of water flow in the river system varies widely by season and year, primarily depending on the snow depth in the mountains and irrigation withdrawals. There are no dams controlling water flow. The mainstem John Day River from Kimberly to Tumwater Falls, can potentially be floated during most of the year, but cold winters and very low summer and fall flows discourage most boaters from floating the river during those times. Canoes, inflatable kayaks, and small rafts can be used during low water flows, but larger rafts and drift boats can be used only during the high water season which is usually from February through mid-July. The main boating season downstream of Kimberly is from early May to mid-July with weekends between Memorial Day and Fourth of July receiving the highest use. Boaters with the equipment and experience necessary to navigate low water levels, float the river to access hunting and fishing in August, September and early October.

Motorized boats are used upstream of Clarno from March through July, and downstream of Clarno in March and April for access to fishing. Motorized use occurs in both areas in October for access to hunting. Lower flows do not appear to effect motorized use as boaters familiar with the river can maneuver a jet boat at flows below 1,000 cfs and boaters with outboard motors can operate at low flows by raising the motor up when passing through shallow water. Some motorized boaters also own non-motorized boats, so they can alternate craft according to restrictions and river conditions.

The North Fork John Day River provides a very short floating season, usually from April to mid-June, and sometimes shorter. A few attempts have been made to float the Middle Fork during its highest flows, which are rarely high enough to float a boat downstream. The South Fork does not flow enough water to support boating.

Fishing for smallmouth bass occurs primarily during the warm summer months on the mainstem and the North Fork John Day River downstream of Wall Creek. Fishing for steelhead occurs from October through March throughout much of the basin. Bank fishing for trout occurs on the North, Middle and South Forks from May through October.

Hunting is popular throughout the basin. Hunting seasons are from September to mid-January for waterfowl and upland birds, and from late August through November for deer and elk.

Camping primarily occurs during the summer months, and in the spring and fall associated with boating, fishing, and hunting.

Commercial Use

Commercial recreation use of the John Day River occurs when a guide or outfitter uses public lands or waters to make a profit by providing goods or services to paying clients. A “Special Recreation Permit” must be obtained from BLM to operate a commercial business on the John Day River. A guide or outfitter must meet application requirements, pay annual permit fees and agree to follow permit stipulations. Float trips have been the primary focus of commercial recreation use of the John Day River. Specifically, guided fishing trips, with scenic and heritage trips gaining in popularity.

A moratorium was placed on issuing new commercial guide and outfitter permits for the John Day River in 1996. This was done to allow the ultimate number of permitted commercial guides and outfitters to be determined by this planning process. There were 34 permitted guides and outfitters at the time of the moratorium. Since then, 28 individuals have expressed interest in obtaining a new commercial guide and outfitter permit for the John Day River.

Outfitter and guide services offered may currently exceed public demand, based upon the low number of user days reported by guides and outfitters. Most permitted guides and outfitters are unable to generate adequate income by operating solely on the John Day River. Their income from the John Day River is used to supplement other sources of income including guiding and outfitting on other rivers or income derived from other than river guiding and outfitting.

An estimated 15 vehicle shuttle services are used by John Day River boaters. None are currently under BLM permit, although such services meet the definition of “commercial services” under BLM policy.

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In addition to guided and outfitted services, the BLM has received inquiries from individuals interested in starting commercial vending (concessions) operations at BLM launch points in order to sell food, souvenirs, and boating equipment. Currently no permits have been issued to operate concessions on BLM lands within the John Day River basin.

Amounts of Use

--Visitation Estimates

Visitors spend an estimated 100,000 use days (one person visiting the area for one day) annually participating in recreation activities on public land within the John Day River corridor. Popular recreation activities in or near the John Day River include driving for pleasure, fishing, boating, camping, picknicking, hunting, hiking, biking, horseback riding, viewing scenery, nature study, photography, swimming, rockhounding, and driving off-road vehicles.

An estimated 3,200 visitors spent approximately 4,800 use days in 1998 at the four BLM developed campgrounds along the John Day River. This same year, car counters recorded 5,700 visits (estimated 14,300 visitor use days) at Clarno Recreation Site and 14,700 visits (estimated 36,800 visitor use days) at Cottonwood Recreation Site. However, most of these visits were travelers using these sites as roadside rest areas.

The BLM estimates approximately 5,500 boaters, accounting for 18,300 boater use days, floated the mainstem John Day River from Service Creek to McDonald Crossing during 1998. Approximately 41 of these boaters used motorized boats accounting for 57 motorized use days. This data is based on information collected at boater registration stations, the observations of BLM river personnel, and use reports submitted by commercial permittees. (It is likely that some boaters attach electric or gasoline-powered outboard motors to driftboats or rafts, without noting the specific use of a motor when registering.) Use figures acquired before 1998 are less reliable because boaters before then were not required to register. Earlier use estimates were primarily based upon BLM staff observations and data from car counters placed at key river access points.

Historically, Memorial Day weekend received the highest concentrations of boating use on the John Day River. Detailed use data collected during Memorial Day weekend of 1989, indicates that 35 boating parties, totaling 312 people, launched between Service Creek and Cottonwood Bridge over the three day period. Data collected in subsequent years show that use on Memorial Day weekend remained nearly static, (43 parties, totaling 309 people in 1998) but use on other weekends, both before and after Memorial Day, grew heavily. Unseasonably high water flows in 1997 and 1998 extended the normal floating season so that Fourth of July weekend received heavy use. Launches were concentrated over 8 weekends from Memorial Day weekend through mid-July in 1998, with the majority of launches occurring on Fridays and Saturdays.

Commercial guides and outfitters permitted with the BLM reported 2,647 commercial customer use days, and 968 guide or employee days in 1998. This was 19.7% of the total John Day River boating use during that year. Approximately 20% of the total permitted guides and outfitters reported 70% of the commercial use. Eleven of the 34 permitted guides and outfitters reported running one trip, or less than one trip, with paying customers during 1998.

The ODFW estimated total angler visitor use days in 1987 to be about 12,000 for the North Fork John Day River, 3,000 for the South Fork and the Middle Fork combined, and 31,500 for the entire John Day River system. The same study estimated that there were 7,500 visitor use days for sightseeing, hiking, and photography and over 500 visitor days for swimming and other day use activities in the river system. More recently, ODFW estimated angler visitor use days (by boat and bank) on the mainstem John Day River, to be 9,600 in 1992 and 11,500 in 1993 for Service Creek to Tumwater Falls, and 14,250 in 1992 and 15,100 in 1993 for Kimberly to Service Creek.

The BLM estimates that hunting for chukars, grouse, other upland birds, geese, ducks, deer and elk within the John Day River corridor accounted for about 8,000 visitor use days in 1998.

--Length of Stay

The estimated average length of stay on the John Day River is 1.5 days for visitors to developed campgrounds and 2.7 days for boaters, based upon sample observations and interviews. However, the actual length of stay for any particular group or individual can vary with the type of activity and environmental factors (especially weather). For example, the length of stay for boaters is primarily determined by the number of river miles covered each day (which in turn is influenced by how fast the water is flowing). The length of stay for hunters is generally at least 5 days depending on the success of the hunt.

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--Group Size

Group size in the John Day River system varies greatly depending on the type of activity occurring and the season of use. Average group size for boaters on the John Day River over Memorial Day weekend in 1989 was 9 people, and for the same weekend in 1998 it was 7 people. Average group size for the 1993 season was 6.2 people, declining to 5.1 people in 1998. Commercial rafting group sizes vary from 2 to 16 people with an average of 7.4 people per group. The special recreation permits issued by the BLM for commercial boating use stipulate that the maximum group size is 16, and BLM Special Recreation Rules allow a maximum group size of 16. Boater registration data shows that boating groups of 20 to 45 people are occasionally launching in violation of maximum group size rules.

Origins of Use

Boater registration data collected in 1998 found that 33% of trip leaders came from Central Oregon, 64% from outside Central Oregon but within the tri-state area of Oregon, Washington, and California, and 3% from other states.

Public Access

Roads and Trails

Public access to the river by roads and trails varies widely depending on the river segment or portion of river segment. Some river segments, such as the South Fork and middle mainstem John Day River, have frequent and easy public access due nearby public highways and numerous tracts of public land. Other segments, such as the lower mainstem and portions of the Middle Fork, have infrequent and difficult public access due to the lack of public roads and trails.

Private road access to the river that was historically open for public use, is now being gated and locked in many areas, resulting in frustration for people who had grown accustomed to using the private roads. In addition, rural counties are abandoning some sections of county roads in an effort to save maintenance costs, leaving sections of road inaccessible to the public.

Boat Launching and Landing Sites

Primary public boating access sites are at Monument, Muleshoe, Service Creek, Clarno, Cottonwood Bridge, and McDonald's Crossing. Primitive, undeveloped launch sites are available on public land from a wooden bridge 2.5 miles upstream of Muleshoe Recreation Site, between Twickenham and Cherry Creek from a county road, and at Rock Creek. Other primitive launch sites are available, but most require permission from private landowners and many require four-wheel drive vehicles for access.

Information and Education

Public information sources for the John Day River system presently include the Prineville BLM office and river staff, three river guide books and information bulletin boards provided at most launch sites.

The BLM provides an information packet addressing camping and boating opportunities on the John Day River in response to public requests. The packet includes information on minimum impact camping requirements, boating and fire regulations, and preventing the spread of noxious weeds. Two BLM maps are available showing the Upper and Lower John Day River basin. These 1:100,000 scale maps show public and private roads, topography, location of launch sites and land ownership.

The John Day River is covered in three river guidebooks, Oregon River Tours by John Garren (1979), Soggy Sneakers by the Willamette Kayak and Canoe Club (1994), and the John Day River Drift and Historical Guide by Arthur Campbell (1980). These books can be ordered by request at most bookstores, and contain maps showing river miles, rapids, popular campsites, and information on season of use and projected water flows.

Native American Uses

There is little information available on specific current Native American Indian use within any of the river segments. Information regarding areas visited by individual Indian families for root collecting, hunting, fishing or religious practices is not formally shared within a tribe or with agencies. For many segments, access is an issue due to land ownership or geography. Ethnographically, however, it is known that the river corridor was used by various tribal groups to conduct all these activities. More specific information, when known, is provided in the Cultural Resource section above or in individual segment descriptions.

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Table II-V Comparison of Boating Use Levels 1998, Segment 1, 2, and 3 - Tumwater Falls to Service Creek

Month	Non Motorized				Motorized				Total			
	Launches	Boats	People	Use Days	Launches	Boats	People	Use Days	Launches	Boats	People	Use Days
January	1	1	3	3	0	0	0	0	1	1	3	3
February	6	10	25	66	0	0	0	0	6	10	25	66
March	14	27	54	227	1	1	4	4	15	28	58	231
April	43	71	173	525	3	3	17	21	46	74	190	546
May	137	363	812	2659	0	0	0	0	137	363	812	2659
June	341	803	1789	6436	3	3	8	12	344	806	1797	6448
July	198	487	1028	3045	3	3	8	8	201	490	1036	3053
August	36	89	188	470	0	0	0	0	36	89	188	470
September	19	33	76	152	0	0	0	0	19	33	76	152
October	45	74	151	835	2	2	4	12	47	76	155	847
November	11	20	43	107	0	0	0	0	11	20	43	107
December	0	0	0	0	0	0	0	0	0	0	0	0
Total*	851	1978	4342	14525	12	12	41	57	862	1991	4383	14582

Data does not include administrative trips conducted by BLM, OSP, Co. Sheriff, etc.
Based on field checks approximately 80% of parties register. Multiply the above figures by 1.25 for a corrected estimate of actual use.
Average party size for Segment 1, 2 & 3 = 5.1 persons.
Average trip length for Segment 1, 2 & 3 = 3.3 days.
Average number of persons per watercraft for Segment 1,2 & 3 = 2.3 persons.
*Totals do not necessarily equal the sum of data shown in tables for Segment 1-3, as some trips were counted in more than one segment if direction of travel was uncertain.

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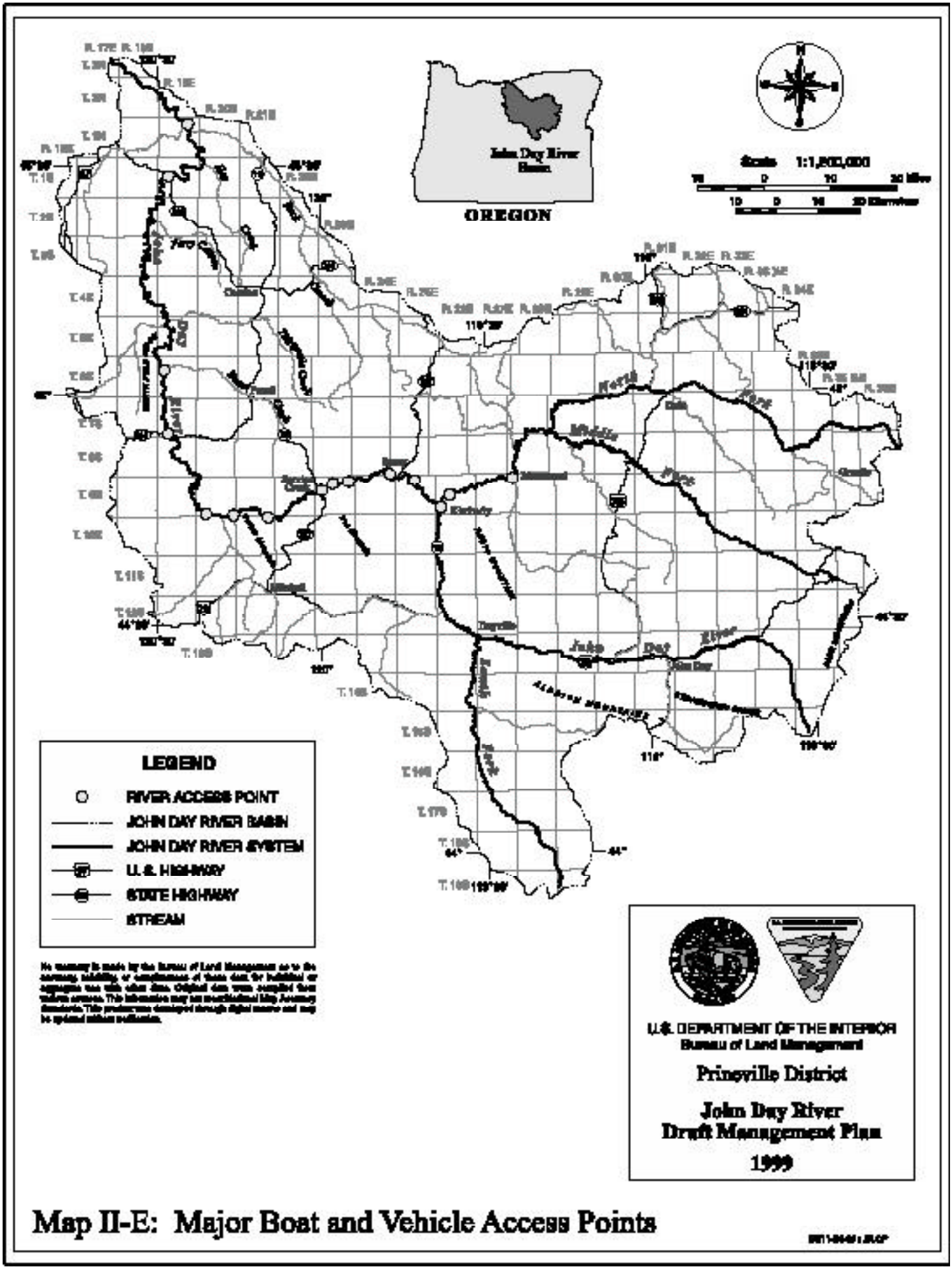

Map II-E: Major Boat and Vehicle Access Points

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River Segment Descriptions

SEGMENT 1: Mainstem - Tumwater Falls to Cottonwood Bridge

Location and Characteristics

This segment is the lowest in elevation of the John Day River. It lies between Tumwater Falls (RM 10) and Cottonwood Bridge (RM 40), where State 206 crosses the John Day River.

The lower subbasin, which includes this segment, drains an area of about 2,030 square miles. It is physiographically different from the upstream segments in that it generally lacks the mountainous terrain and high elevations which accumulate significant snow pack.

Land Ownership and Classification

The BLM administers about one-quarter of the 30 miles of river frontage in this segment. The remaining three-quarters is private land. River front ownership is mixed, so along many stretches, one side of the river is private, and the other side is BLM land. The area at McDonald, on the east side of the river, is primarily private land. But there is BLM land in the immediate vicinity and a county road provides public access to the river. The BLM regularly receives inquiries from visitors who want to fish or hunt in this river segment, and are confused about the ownership of the river's bed and banks. The BLM also receives occasional complaints from land owners about trespass by recreation users.

The river corridor between Thirtymile Creek and the Columbia River is a State of Oregon Wildlife Refuge which prohibits waterfowl hunting. The entire segment has been designated as a WSR by Congress in 1988 and as a State Scenic Waterway in 1970 by the State of Oregon. This segment contains no designated Wilderness Area and no WSAs. The Oregon Trail crosses the river near RM 21.

This segment of the John Day River serves as the boundary between Sherman and Gilliam Counties. Sherman County has planned and zoned the private lands adjoining the west bank of the river as "Exclusive Farm Use". The purpose of Exclusive Farm Use is to protect agricultural uses from encroachment by other incompatible uses and to provide tax incentives to assure that agricultural land is retained in agricultural uses. The minimum lot size for this zone is 40 acres. Subdivisions and major partitions are prohibited.

Gilliam County has also planned and zoned private lands along the east bank of the river as Exclusive Farm Use. A lot or parcel of 160 acres or more is considered a farm unit. A lot or parcel of less than 160 acres, but not less than 100 acres, may be approved as a farm unit if approved through the conditional use process. The Gilliam county Comprehensive Plan recognizes the existence of the State Scenic Waterway designation along the John Day River and county policy states they will cooperate with OPRD when development is proposed on private lands along the river.

Access

This river segment is accessible to the public by boat or by two public roads; one at Cottonwood Bridge (RM 40) and the other at McDonald (RM 21), also called McDonald Ferry, McDonald Ford and McDonald Crossing.

The primary public access to this segment is at the recreation site (which contains a boat launch) next to Cottonwood Bridge, where State 206 crosses the John Day River. Once float boaters leave Cottonwood Bridge, there is no public road access until they reach McDonald, where the river's east bank is accessible by a county road. Conflicts between visitors and private land owners sometimes on both sides of the river here, often due to confusion over ownership of the bed and banks of the John Day River which has yet to be determined. There is no further public road access to the river downstream of McDonald Crossing, and boat access to the Columbia River is blocked by Tumwater Falls (RM 10). The downstream end of Tumwater Falls is accessible only by boat from Lake Umatilla, which backs up to Tumwater Falls from the John Day Dam on the Columbia River.

Vegetation

The vegetation types in Segment 1 are among the driest found within the basin. The average yearly precipitation is 9 to 12 inches and the river elevation rises from 270 feet to 520 feet above sea level and

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the canyon walls rise to 1,600 feet above sea level. Most upland soils are stony and well drained and the hill slopes tend to be steep (35 - 70%).

Segment 1 lies entirely within the Columbia Basin ecoregion (Oregon Biodiversity Project (OBP)1998). Upland plant communities have been described as 'dry grass' and 'dry shrub' by ICBEMP (Quigley and Arbelbide, 1997) The plant communities are generally dominated by bluebunch wheatgrass on south facing slopes and Idaho fescue on north facing slopes. Where sagebrush grows, it is usually low sagebrush or Wyoming big sagebrush. Some of the historic bunchgrass communities are now occupied by cheatgrass, Russian thistle, fiddleneck, snakeweed and shrubs such as gray rabbitbrush. The most common noxious weed species in this segment are knapweeds and salt cedar.

Rorippa columbiae (Columbia cress), *Mimulus jungermannioides* (hepatic monkeyflower), *Carex hystericina* (porcupine sedge) and *Juncus torreyi* (Torrey's rush) are all suspected to occur in this river segment, but have not been found.

The riparian soils tend to be highly stratified fluventic alluvial material and riverwash deposits from flood events which deposit materials from upriver or side canyons (USDA, SCS 1977 and USDA, SCS, 1964). The alluvial sources from further up the river tend to be silty and clayey while the material from the side canyons is more silty and sandy soils mixed with gravel, cobble and boulders. Riverwash mainly consists of sand, well rounded gravel, stones and boulders, although, varying amounts of silt and clay material may be present, due to redeposition from cutbanks.

Riparian plant communities vary from sedge and rush colonies to areas of willow. Some areas which have received riparian-oriented management have developed dense stands of coyote willow. Occasionally these willows show a stunted growth form due to flooding, a mobile substrate and ice flows. Some areas have responded to riparian-oriented management with increased vigor in sedge and rush communities, in other areas, no response has been detected. Photos 13 and 14 in **Appendix M** were taken at the mouth of Hay Creek (in this river segment) and illustrate the variations in river flow between May and September.

The functionality of the riparian area in this segment was rated in 1997, using the PFC Assessment method (USDI, BLM, 1993 and USDI, BLM, 1998c). The functional rating for Segment 1 was 'functional - at risk', which means, the riparian zone is in a functional condition, but susceptible to degradation from significant natural events or excessive man caused influences. The trend rating was 'upward' which means the riparian area is improving in it's overall condition. The assessment found the riparian vegetation lacked in diverse age-class distribution and composition of vegetation. Plant species which indicate good riparian soil moisture holding characteristics were well represented, but lacked the continuity along the river to make this characteristic fully functional. In addition, this same lack of continuity existed with species which produce root masses capable of withstanding high flows. Also, there was a lack of vegetation cover present to protect banks and dissipate flow energy during high water events. The riparian vegetation, which is present, exhibits high plant vigor.

Agriculture

Non-irrigated wheat production is the dominant agricultural use of this area which occurs on the plateaus outside of the canyon. There are some irrigated fields on private land along the river in this segment which are primarily used for pasture and hay production.

Segment 1 contains 8.7 acres of BLM lands with water rights leased in association with private land agriculture at approximately river mile (RM) 23. This field is located on the adjacent terrace and parallels approximately 1,650 feet of the John Day River and separated from the active flood plain by an access road.

Grazing

This segment contains 14 grazing allotments (see maps and **Table III-E**). One allotment (#2597) continues into Segment 2. Public land acreage in allotments in this segment varies from 40 to 4743 acres and public land forage varies from 3 to 155 AUMs. There are approximately 29.6 river miles (59.2 river bank miles) in Segment 1 and about one third of the river frontage is public land. For detail regarding management of the allotments, refer to **Appendix L**.

Allotment evaluations have been completed for 11 of the 14 grazing allotments in the segment and changes in grazing management have occurred on 8 allotments. The changes have been that grazing use has moved from primarily grazing during the warm season (late spring and summer) to cool season grazing (winter or early spring) or exclusion of grazing in some cases. Previous livestock trespass

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issues, associated with the inability of the river to act as a barrier to livestock movement during low flows, have been largely resolved by the shift in use to periods of high flows (see photos 11-14 in **Appendix M**). As a result, riparian areas which are separated from uplands by a fence are not being grazed, whereas previously they were grazed by a neighbor's livestock.

Current grazing management practices were judged by an interdisciplinary team to be appropriate for protecting and enhancing river values on 66% (12.7 miles) public river bank miles in this segment. Implementation of grazing decisions resulting from this plan will enhance ORV's on the remaining 34% of the public river bank miles.

Water Quantity and Quality(For Segments 1 and 2)

The 29.5 miles of Segment 1 and 57.5 miles of Segment 2 were listed in 1996, on the State of ODEQ 303(d) list of water quality limited streams as exceeding the state criteria for summer water temperatures. The inclusion of these segments on the ODEQ 303(d) list is not the result of a recent decline in water quality in the John Day basin but instead part of ODEQ's implementation of non-point pollution components of the Clean Water Act. In fact, none of the listed stream segments within the John Day basin are a result of recent declines in water quality.

Water quality problems in these segments are the result of an accumulation of pollutants carried into the subbasin and locally produced conditions. Water samples collected from the mainstem at McDonald indicate turbidity, temperature, and fecal bacteria problems have occurred at sampling sites on the river. These problems may impair beneficial uses of the river. Little water quality data are available from the tributaries (OWRD, 1986). Segments 1 and 2 were included as part of the WSR system in 1988 despite these ongoing problems.

The stream gauge at McDonald records discharge for over 95 percent of the John Day basin. It has been in operation since 1905 and provides an excellent record of stream flow variability. Discharge varies seasonally, from year to year, and from decade to decade (OWRD 1986). Peak discharge occurs between late March and early June, with 22 percent of runoff occurring in April and 21 percent in May. Low flows occur between July and November. The average monthly high flow is during April (5,710cfs). Minimum monthly low flow occurs during September (87 cfs); no flow occurred for part of September 2, 1966, August 15 to September 16, 1973, and August 13, 14 and 19 to 25, 1977.

Frequency of peak flows has changed. The number of flow events exceeding 6,900cfs (defined by the USGS as a peak flow for the gauge at McDonald Ferry) was greater from 1980 to 1985 than any other five year period since 1948. The flows during the 1964 and 1997 floods of 40,200 and 35,200 cfs respectively, exceeded any other flows on record by 35 percent. Changes in discharge may be caused by climatic variation or watershed alteration (OWRD 1986). The average annual flow for the period of record is 1,524,000 af. On some occasions, such as in 1966, 1973 and 1977, the river ceased flowing.

The lower subbasin can be characterized as an area that receives water, as opposed to one that produces it. Most tributary streams in the sub-basin are nearly ephemeral, many ceasing to flow in summer.

There are three main tributaries to the lower mainstem; Rock Creek, Hay Creek, and Grass Valley Canyon. Rock Creek is the largest with a mean monthly flow ranging from 120 cfs in March to less than 1 cfs in September. Lone Rock Creek, a tributary to Rock Creek, stopped flowing at some time in at least 10 out of the 13 years between 1966 (first year of record) and 1978 (last year of published record). Generally, non-flow conditions last from August through September. In especially dry years, flows can stop as early as July and not resume until October.

The ODEQ non-point source assessment maps (August 1988) identify severe stream bank erosion and sedimentation on some of the major tributaries to the main river. This information demonstrates a threat to anadromous fish. OWRD (1986) has reported that water quality for cold water and warm water fish ***"....is on a downward trend threatening continued use of the water by that use"***. Water Quality parameters affecting fish are temperature, suspended solids, and turbidity.

Fisheries

This segment is within the lower John Day River subbasin and produces approximately 2% of the summer steelhead of the John Day basin (OWRD, 1986). Tributary spawning and rearing produces steelhead in this segment in tributaries such as Grass Valley, Rock Creek and Hay Creek. The river functions primarily as a migration corridor for adult and juvenile anadromous salmonids (summer

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steelhead and spring chinook) during fall and spring and year round habitat for smallmouth bass. Adult salmon and steelhead use the lower river as a migration corridor typically from September to June. During the summer months the mainstem does not provide habitat for anadromous salmonids. Young smolts will migrate downstream from rearing areas in the tributaries during the spring, eggs will hatch and fry will rest in the tributaries during the summer, and adults will migrate to spawning areas in tributaries of headwater areas during the fall. In addition, a small run of fall chinook spawn in this segment. The most notable fishery in this segment is the smallmouth bass population.

Wildlife

Wildlife species diversity in this river segment is restricted primarily by the present riparian habitat conditions. Many areas lack woody riparian vegetation which provides vertical structure which is important to many wildlife species. However, dense stands of coyote willow have developed in many areas, especially where riparian oriented grazing management has been implemented. The condition of riparian habitat influences the presence of many wildlife species that rely on riparian diversity and structure for nesting and rearing of young. Riparian habitat conditions also influence the production of food sources (e.g. flying insects) which contribute to the variety and numbers of species such as bats or flycatchers.

Some wildlife species that would be expected to occur in riparian habitat, such as many species of neotropical migratory birds, utilize this segment on a very limited basis because of the relatively small area that can be inhabited. Beaver and river otter continue to utilize the river and may be increasing, but use is restricted to suitable habitat. A few species, such as the introduced Chukar, thrive here by primarily utilizing upland habitats away from the river. Although limited in this segment, irrigated agricultural fields provide mule deer with forage high in protein, especially in the late summer and early fall when many native forb species lose their nutrients. Typical species found presently along this segment of river are great blue herons, beaver, mule deer, bobcats, Western rattlesnakes, nighthawks, cliff swallows, Canada geese, Brewer's blackbird, Pacific treefrog, spotted sandpipers, Chukar, and golden eagles. This segment also has one of the very few known populations of spotted bat *(Euderma maculatum*) in the state of Oregon. The spotted bat is a special status species.

The State of Oregon established the John Day Wildlife Refuge for all of this segment in 1973. This refuge includes a one-quarter mile corridor on each side of the river, measured from the high water mark. The primary purpose is to protect wintering and nesting waterfowl. This area is open to deer and upland bird hunting during authorized seasons between August 30 and October 31. No waterfowl hunting is allowed.

Scenic Quality

Part of this river segment flows through a deep canyon with some steep walls next to the river, especially near Cottonwood Bridge. More often, however, the river flows through a wide valley with agricultural fields near the river. This segment is more rural than wild in most places. There are agriculture - related structures such as fences, fields, and farm equipment frequently visible from the river. Signs of human activities in this area are those generally expected in a rural setting. The most significant visual intrusion in this segment is the large power line crossing the river upstream from Hay Creek.

Cultural Resources

Segment 1 has been selectively inventoried for cultural resources by Polk (1976). This small sampling revealed the occurrence of only a few prehistoric sites. Based on this small sample and subsequent discoveries along the river, it appears that human occupation in the lower part of the canyon extends back at least 8,000 years (Schalk 1987). It has been suggested that the interior portion of the canyon was most heavily used after about 5,000 years ago, although no formal testing and evaluation has been conducted since the 1970's to substantiate this theory.

Ethnographically, this segment of the river canyon is known to have been utilized by the Tenino group of Sahaptian-speakers, primarily for fishing. Several villages are known to have existed in the lower reaches of the river, although their exact locations have not been identified. Little is known about other or more current uses of the canyon by Native American groups.

The primary historic use of this river segment occurred at what is now called McDonald Ford (McDonald). This was the only crossing point of the river for thousands of Oregon Trail emigrants between the 1840's and 1860's. In 1858 a ferry was built at the crossing. Later transportation routes used this same crossing

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Recreation

The small amount of public access and public land in Segment 1 restrict recreation opportunities. Where public land and access do exist, recreation opportunities include hunting, fishing, boating, swimming, wildlife watching, and exploring the Oregon Trail. Boats can be used to access this area via the launch sites at Cottonwood Bridge and McDonald Crossing, and boaters primarily visit this segment to fish for smallmouth bass and steelhead, or to hunt for deer and chukar. The river in this segment is characterized by long quiet stretches broken by a few Class I and II rapids, and floating between the two access points normally takes about two days.

Cottonwood Bridge serves as a major take-out point for multi-day boating trips originating upstream at Clarno and Butte Creek, with an estimated 1,900 boaters using this site as a take-out point in 1998. In 1998, an estimated 150 boaters traveled downstream from Cottonwood Bridge to McDonald Crossing, or launched motorized boats or canoes from Cottonwood, returning to Cottonwood by traveling back upstream. At Cottonwood, two motorized trips were registered in 1998, one each in April and October, however, the direction of travel for these trips is unknown. Based on the assumption that both of the trips traveled into Segment 1, the two trips represent 6 motorized use days in April, and 2 motorized use days in October, accounting for 8 motorized use days launching from Cottonwood in 1998. No motorized use was recorded from Cottonwood during November, 1998.

Very few boaters travel downstream of McDonald, as there is no public take-out below this point. The only way to access the river between McDonald (RM 21) and Tumwater Falls (RM10) is to use a motorized boat to return upstream, or to seek permission for access from a private land owner. The BLM has no estimate of boating use below McDonald Crossing.

Cottonwood Bridge Recreation Site (J.S. Burres State Park) is the most developed recreation site in this segment. It is owned by OPRD and managed cooperatively with BLM under a long-term agreement. The site is maintained by the BLM and volunteers. This site is used for boat launching and landing, fishing, picnicking, swimming, and as a popular highway rest area. Facilities at this site include a primitive boat launch, a boater registration station, parking, a picnic table, vault toilets, and a river-toilet dump station. Overnight camping is not allowed.

There is a small recreation site accessible by county road at Rock Creek which contains several picnic tables and limited parking. Camping is allowed, and the site is currently maintained by volunteers.

A comprehensive inventory of dispersed river campsites has not been completed for this segment, but map surveys and general knowledge of the area indicate that there are approximately 30 places along the river that could be used for camping, approximately 10 of which are on public land. Primitive river campsites are generally in good condition due to very low use.

Commercial permittees reported 28 use days in Segment 1 during 1998, all of which occurred in November for steelhead fishing.

Information and Education

An informational bulletin board and boater registration station is located at Cottonwood Bridge Recreation Site. Posted information includes fire regulations, Oregon Marine Board (OMB) regulations, and minimum impact camping requirements. Also included are signs discouraging shooting and garbage dumping, two of the main management problems occurring at this site. BLM personnel and volunteers are present at this site on peak river use days to instruct boaters in the use of the new river-toilet dump station located here.

The BLM has constructed a monument on the west side of the river at McDonald Crossing (RM 21), to commemorate the Oregon Trail Emigrants who crossed the John Day River at this location. Interpretive displays describe the harsh life of pioneers along Oregon Trail. Access to the monument is only available from the west side of the river by road from Wasco. A 1/4 mile strip of private land between the monument and the river prevents public foot access from the river, and vehicle access from the east side via the low water ford.

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Table II-W Comparison of Boating Use Levels 1998, Segment 1 - Tumwater Falls to Cottonwood Bridge

Month	Non Motorized				Motorized				Total			
	Launches	Boats	People	Use Days	Launches	Boats	People	Use Days	Launches	Boats	People	Use Days
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	1	1	2	6	1	1	2	6
May	2	2	5	5	Closed				2	2	5	5
June	4	7	15	21	Closed				4	7	15	21
July	8	11	26	45	Closed				8	11	26	45
August	4	8	23	29	Closed				4	8	23	29
September	1	2	2	2	Closed				1	2	2	2
October	6	6	16	26	1	1	2	2	7	7	18	28
November	9	10	30	34	0	0	0	0	9	11	30	34
December	0	0	0	0	0	0	0	0	0	0	0	0
Total	34	46	117	164	2	2	4	8	36	48	121	170

The direction of travel of motorized launches is unknown, therefore motorized launches occurring at Cottonwood Bridge, with potential travel in Segment 1 are included.
Data does not include administrative trips conducted by BLM, OSP, Co. Sheriff, etc.
Based on field checks approximately 80% of parties register. Multiply the above figures by 1.25 for a corrected estimate of actual use.
Average party size for Segment 1 = 3.4 persons.
Average trip length for Segment 1 = 1.4 days.
Average number of persons per watercraft for Segment 1 = 2.5 persons.

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SEGMENT 2 : Cottonwood Bridge to Clarno

Location and Characteristics

This river segment lies from Cottonwood Bridge on State 206 (RM 40) and winds 70 miles upstream in a southerly direction to the Clarno bridge at State 218 (RM 109). This segment is well known for spectacular scenery and contains very high canyon walls. This segment is also very remote and contains no public road access except for roads reaching the segments beginning and end.

Land Ownership and Classification

The majority of land in this segment is administered by the BLM which manages approximately 50 of the 70 miles of river frontage. Private lands are in several small tracts scattered throughout the length of this segment.

Land designations include three BLM WSAs and a State of Oregon wildlife refuge from Thirtymile Creek downstream to the Columbia River.

The mainstem of the John Day River serves as the boundary between Sherman and Gilliam Counties and also as the boundary between Wasco and Wheeler Counties.

Land use guidelines and county zoning are the same for this segment as in Segment 1.

This river segment is presently classified as a State Scenic Waterway “Scenic River Area” from Cottonwood Bridge to Ferry Canyon. It is classified as a “Natural River Area” from Ferry Canyon to Thirtymile Creek, and once again as a “Scenic River Area” from Thirtymile Creek to Clarno. The state guidelines under the existing Oregon Administrative Rules (OAR 736-040-0065) describe how lands should be managed under these classifications.

Access

Public road access to the river within this segment is available only in the Clarno area. Clarno Recreation Site, located where SR 218 crosses the John Day River, is managed cooperatively by the Oregon State Parks and Recreation Department and the BLM under long-term lease agreement. Maintained by the BLM, this site is used for boat launching and landing, fishing, picnicking, and as a highway rest area. Facilities at this site include a primitive boat launch, a boater registration station, vault toilets, and a river-toilet dump station. Overnight camping is not allowed.

No public river access exists from Clarno to Cottonwood Bridge (RM 40), a distance of about 70 miles.

About a dozen primitive dirt roads reach the river in this segment, but there is no legal public access.

A dirt road provides access to 3.5 miles of BLM managed land along the rivers west bank, just north of SR 218 and across from the Clarno Recreation Site. This area is managed by the BLM for wildlife habitat and recreation use. It is popular for bird hunting, camping and fishing, and has no developed facilities.

Several primitive private roads pass to or near the river in a few locations including Penny Spring, Butte Creek, Thirtymile, Buckskin, Pine Hollow, and Ferry Canyons. Currently, private landowners of Butte Creek Road allow access across to the river for a fee.

Public access was historically available via county road to 7 miles of public river frontage on the east side of the river downstream of Clarno Bridge, but the county has since abandoned ownership of the lower 4 miles of the road, resulting in a loss of public access to the river and surrounding public lands at this location.

Vegetation

Segment 2 receives an average yearly precipitation of 11 to 15 inches. The river elevation rises from 520 feet to 1,380 feet above sea level and the canyon walls rise to 2,600 feet above sea level. Canyon slopes in this segment are extreme, often exceeding 70%.

Segment 2 lies within both the Columbia Basin and the Lava Plains ecoregions, with the break being near Butte Creek (OBP, 1998). The upland plant communities have been described by ICBEMP (Quigley and Arbelbide, 1997) as ‘dry grass’ and ‘dry shrub’, with the ‘cool shrub’ type beginning at Butte Creek and progressing upstream. Stiff sage communities become common on ridges, sagebrush stands become denser on the hill slopes and juniper forms occasional, sparse stands in draws and on low terraces. An example of an increase in bunchgrass, on a riverine terrace site, is shown in **Appendix M**, Photos 23 and 24.

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Riparian vegetation and soils are the same as those in Segment 1 (USDA, SCS, 1977, 1964 and 1970). Two extensive willow surveys were completed on public land in this segment and Segment 3, in 1980 and 1995 (BLM, 1996a). In Segment 2, *Salix exigua* (Coyote willow) increased from zero linear miles in 1980 to 9.50 miles in 1995, and the number acres covered increased from zero to 22.69. For a description of the willow increases on individual allotments in this segment, refer to **Appendix L**. Examples of existing riparian sites are shown in **Appendix M**, Photos 1 through 12.

Special status species known to occur in this river segment are *Juncus torreyi* (Torrey's rush) and *Mimulus jungermannioides* (hepatic monkeyflower). Species suspected to occur in the segment are *Astragalus collinus* var. *laurentii* (Lawrence's milkvetch), *Carex hystericina* (porcupine sedge), and *Rorippa columbiae* (Columbia cress).

The functionality of the riparian area in Segment 2 was rated in 1997, using the PFC Assessment method (USDI, BLM, 1993 and USDI, BLM, 1998c). The functional and vegetation ratings were the same as Segment 1, 'functional - at risk'.

Agriculture

Non-irrigated wheat production is the dominant agricultural use of this area which occurs on the plateaus outside of the canyon. Irrigated agriculture occurs along the terraces of the John Day River primarily in the vicinity of Cottonwood Bridge, Butte Creek and Clarno. Alfalfa hay is the most common crop.

Segment 2 contains approximately 278.5 acres of public lands with water rights which parallel approximately 2.5 miles of the John Day River ranging from 350 feet to 4,000 feet per location. These lands are associated with or adjacent to private agricultural lands. Activities include leased commodity production, riparian tree and shrub propagation and restoration, wildlife food and cover week control, and non-use **(Table II-X)** About half of the leased area is used for alfalfa hay and the other for specialty seed crops such as carrot, onion, coriander, or beans.

Water rights associated with these lands are limited to 1/40 cfs per acre or less, and total use is not to exceed 5 af per acre during the irrigation season. However, actual use generally falls below the limits, depending upon actual precipitation and crop type. The following Table shows estimated use for 1998.

Grazing

This segment contains 16 grazing allotments. A portion of one allotment (#2597) continues into Segment 1 (see maps and **Table III-E**). Public land acreage in allotments in this segment varies from 343 to 14,683 acres and public land forage varies from 6 to 789 AUMs. There are approximately 69.6 river miles (139.2 river bank miles), almost four fifths of which is on public land. For detail regarding management of the allotments refer to **Appendix L**.

Allotment evaluations have been completed on all but four allotments in this segment, one of which has no active grazing. Grazing decisions have been awaiting implementation on three allotments (#2538, 2591 and 2619). Grazing management changes have occurred on 13 of the 16 allotments. The changes have been that grazing use has moved from primarily grazing during the warm season (late spring and summer) to cool season grazing (winter or early spring). Previous livestock trespass issues, associated with the inability of the river to act as a barrier to livestock movement during low flows, have been largely resolved by the shift in use to periods of high flows (see photos 11-14 in **Appendix M**). As a result, riparian areas which are separated from uplands by a fence are not being grazed, whereas previously they were grazed by a neighbor's livestock.

Current grazing management practices were judged by an interdisciplinary team to be appropriate for protecting and enhancing river values on 98% (106.7 miles) public river bank miles in this segment. Implementation of grazing decisions resulting from this plan will enhance ORVs on the remaining 2% of the public river bank miles.

Riparian and Streambank Restoration

Approximately 3 miles of public land river bank along the John Day River (RM 106 - RM 109) immediately down stream of Clarno exhibits excessive erosion and lateral movement. Primary evidence are cutbanks, and limited recruitment and establishment of riparian vegetation (USDI, BLM, 1996c).

Water Quantity and Quality

The hydrologic characteristics of this segment are similar to those in all segments within the lower basin. Discharge patterns, peak flows, and duration are comparable with Segments 1 and 3 except that the river meanders more in this segment.

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TABLE II - X Estimated Public Agricultural Land and Water Use in Segment 2 (1998)

Location	Use / Acreage			
Max. Water Use (cfs)*				
River Mile (RM)	Non-use/Instream	Restoration/Enhancement	Lease	Total
RM 106.5-109.5	107.1/2.7	65/1.6	**60/1.5	232.1
RM 101.5	0	0	43/1.0	43
RM 98.75	0	0	***3.4/.08	3.4
Total	107.1/2.7	65/1.6	106.4/2.6	278.5

* Approximate maximum potential water withdrawal based on 1/40 cfs per acre.
** 10 acres of a 70 acre lease were retained for wildlife food and cover in coordination with the Oregon Department of Fish and Wildlife.
*** Recently discovered incidental agricultural use associated to private land agriculture production.

Butte Creek, Thirtymile Creek, and Pine Hollow Creek are the significant tributaries to this segment. Butte Creek flow averages from one to five cfs from July through October.

Water quality of this segment is impaired due to stream bank erosion and sedimentation. In addition, Condon and Fossil municipal sewage treatment facilities have been discharging poor quality effluent into Thirtymile and Butte Creek, respectively (OWRD 1986). Oregon ODEQ is pursuing correction of problems at both facilities.

Water temperature is a parameter of focus for anadromous fish and many Watrshed Councils are funding temperature monitoring in tributaries. Within the mainstem the BLM recorded temperature for a short period in 1994 at Clarno. This data shows that the ODEQ temperature standard in 1994 was not exceeded through June 3.

Fisheries

This segment also serves primarily as a migration corridor for adult and juvenile anadromous fish. Thirtymile Creek and Butte Creek provide steelhead and rainbow trout spawning habitat. Butte Creek is important for improving water quality in the mainstem due to its colder water temperatures (Claire 1991). Pine Hollow Creek provides spawning and rearing habitat for steelhead intermittently, dependent upon water flows. Two other tributaries, Jacknife and Little Ferry Canyons, may still produce steelhead intermittently, but direct observations have not been made. Productivity of smallmouth bass in this segment is considered to be excellent and is a nationally known fishery (Claire 1991). Channel catfish are also present in this segment.

Wildlife

The majority of this segment, from Thirtymile Creek to Cottonwood Bridge, is within the State of Oregon's John Day Wildlife Refuge. Canada geese, the main species of concern in the wildlife refuge, occupy this segment year-round. Wildlife diversity and occurrence within Segment 2 is similar to Segment 1, with a slight increase due to an increase in willow communities, which can be partially attributed to riparian grazing systems, an increase in the occurrence of shrub communities, and increased features such as cliffs and more pronounced canyon formations. The same wildlife species found in Segment 1 occur in this segment, with additional representative species being prairie falcons, violet-green swallows, canyon wrens, red-tail hawks, osprey, and flickers. In addition, California bighorn sheep have been successfully reintroduced into this segment on both sides of the river and populations are expanding. This segment also has one of the very few known populations of spotted bat *(Euderma maculatum*) in the state of Oregon. The spotted bat is a special status species.

The Farmers Home Administration (FmHA) transferred title of a 512 acre property north of Clarno, OR to the BLM in 1992. Technical experts from the USFWS found unusually high fish, wildlife, and other environmental values associated with the land. Because of those values, the FWS, in

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consultation with the ODFW, recommended FmHA protect and enhance these values for the public by transferring title to the BLM, which manages adjacent public land. Since that title transfer much wildlife habitat improvement has occurred on this property. Weed control efforts, wildlife food and cover plots, wildlife guzzlers, as well as cottonwood plantings are all part of the efforts that have been accomplished since the properties acquisition.

Scenic Quality

The primitive and largely natural scenery of this segment provides river visitors with a sense of wildness and remoteness. It is an area of high plateaus bisected by the river and its tributaries. The river winds through majestic basalt cliffs that reach heights of over 1,000 feet above the river, and steeply sloped hills covered with grass, sagebrush, and juniper.

These high cliffs are impressively scenic, especially in the early morning or late afternoon when lighting is at is best. In contrast to the rugged, golden hills, riparian vegetation laces the river's edge and rocky side canyons with a lush green hue. Scattered juniper trees produce a sprinkling of color and fragrance. Erosion and oxidation of some of the basalt columns and pillars have created interesting formations and colors that have become scenic landmarks for river visitors.

A visitor survey conducted by OPRD in 1983/84 found that solitude, scenery and wildlife were very important aspects of their visit to the John Day River. This portion of the mainstem exemplifies those qualities. Outstanding scenic qualities have been identified as a special feature of all three WSAs that fall within this river segment. Additionally, Congress and the BLM determined the scenery of the John Day River to be an ORV of the mainstem John Day WSR.

Signs of human activity in this segment are either temporary or not significant enough to seriously affect the scenic values and are mostly products of ranching and farming. These include such things as fences, spring developments, livestock, irrigation pumps, and a few private airstrips and primitive dirt roads. State Road SR 206 crosses the river at Cottonwood Bridge and a powerline can be seen for approximately four miles from Devils Canyon to Cottonwood Bridge. Some evidence of an underground pipeline and a fiber optics line is present at Thirtymile Canyon.

There are seven designated military overflight routes which cross or closely parallel the John Day River between Cherry Creek and the Columbia River. There are two more military routes which cross the river at Kimberly. The types of aircraft vary, as do the allowed elevations of flight. In addition, privately owned aircraft occasionally fly over the John Day River, sometimes at very low elevations.

Cultural Resources

Polk (1976) conducted a fairly intensive cultural inventory of this segment. Within this particular stretch of the river, Polk recorded 59 prehistoric sites. An additional 5 prehistoric sites have been located since that time. Others are expected to exist but have yet to be discovered. The nature of several of the prehistoric sites is undetermined because they are buried by river sediments. Many of the sites are good condition, but those nearest to access points, and a few which are not, have been badly damaged by vandals. Recent formal excavations at a prehistoric site adjacent to the corridor has resulted in the hypothesis that occupation and use increased dramatically between 4000 and 2000 Before Present, then steadily declined thereafter (Atwell et al. 1995). Historic use of this segment is oriented primarily towards post-1900 farming and ranching, though there are a few sites related to transportation, prohibition, and entertainment.

Ethnographically, the area was utilized by the Tenino group of the Sahaptian-speaking language family. Few of the ethnographic studies specifically mention the use of the canyon specifically. Suphan (1974) indicates that the canyon was used for fishing, hunting and plant gathering. A few village and resource use locations are noted in this manuscript, though none can be correlated with known archaeological sites. Current use of the canyon by the Tenino or other Native American groups is unknown.

Paleontology

The lower two thirds of this segment is considered to have low potential for both vertebrate and invertebrate fossils. The upper third, however, is in the vicinity of the Clarno Unit of the John Day Fossil Beds National Monument. Fossil-bearing exposures occur within and adjacent to this portion of the segment. No formal inventories have yet been conducted within the corridor but several locations are known to contain or are considered highly likely to contain significant vertebrate and botanical specimens.

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Recreation

Oregon River Tours, a guidebook for Oregon rivers, states that the lower John Day River rates high on the list as a “scenic desert wilderness river tour” (Garren, 1979). This description is especially applicable to Segment 2, where a combination of abundant public land, outstanding scenery, and limited road access, creates excellent opportunities for recreation in a primitive setting. The undeveloped, largely natural viewshed provides visitors with a sense of wildness, in fact two-thirds of this river segment flows through designated WSAs. Since road and foot access is extremely limited, recreationists primarily access this remote segment by boat for fishing, camping, hunting, wildlife watching, photography, hiking, and swimming. Fishing for smallmouth bass and steelhead is the most popular activity, followed by scenic floats, and hunting for deer and chukar. Floatboating is popular during late spring and early summer when optimum weather, fishing conditions, and ideal river flows overlap, and in the fall to access hunting areas. Primary public access is by boat via BLM launch sites at Clarno and Butte Creek, where the current landowner allows use of the private access road for a fee. Motorized users can also access this segment from October 1 to May 1 by traveling upstream from Cottonwood Bridge, located in Segment 1. Motorized boating use is not permitted in this segment between May 1 and October 1. The river in this segment is characterized by long quiet stretches broken by one Class III/IV rapid (Clarno), one Class III rapid (Basalt), and occasional Class I and II rapids. Floating this 70 mile segment generally takes about 5 days.

Clarno Bridge serves as a major launch point for the 70 mile Clarno-to-Cottonwood float trip, and in 1998, most of the estimated 1,900 people making the trip launched from this site. A small percentage of boaters floating this segment chose to pay the private landowner for road access to a BLM launch point approximately 12 miles downstream at Butte Creek. Launching at Butte Creek provides the opportunity for a shorter trip, and the option to avoid Clarno rapid which can be an obstacle at low water levels or to boaters with less whitewater experience. In 1998, an estimated 386 groups floated this segment, averaging 4.9 persons per group. The average trip length for this segment was 4.7 days, accounting for approximately 8,800 boater use days in 1998.

Six motorized trips were registered at Clarno and Cottonwood combined in 1998, one in March, and two each in April and October. The direction of travel for these trips is unknown. Based on the assumption that each of the trips traveled into Segment 2, the six trips represent 4 motorized use days in March, 21 use days in April, and 12 use days in October, accounting for 37 motorized use days in Segment 2 in 1998. No motorized use was recorded in Segment 2 during November, 1998. The most popular fishing seasons are May through July for smallmouth bass and September and October for steelhead. Hunting seasons run from late August through mid-January for waterfowl/upland birds and from October through November for big game. The portion of this segment from Thirtymile Creek to Cottonwood Bridge falls within the John day river Wildlife Refuge. No waterfowl hunting is allowed inside the refuge.

Clarno Recreation Site is the most developed recreation site in this segment. It is owned by OPRD and managed cooperatively by OPRD and BLM under a long-term agreement, and maintained by the BLM. The site serves as the major launch point for trips to Cottonwood Bridge, and also as the main take-out point for multi-day boating trips originating upstream at Service Creek and Twickenham Bridge. The site is also used by local residents for fishing, picnicking, swimming, and by travelers as a highway rest area. Facilities at this site include a primitive boat launch, a boater registration station, parking, vault toilets, and a river-toilet dump station. Overnight camping is not allowed On busy weekends during boating season, the demand for launch lanes and parking space far exceeds the available facilities and boaters must wait in line to launch or take-out and park along the highway right-of-way.

The only other developed recreation site on public land in this segment is at Butte Creek, where the BLM maintains a primitive launch and a boater registration station. Access to this site is via a private road which can currently be used by paying a fee to the landowner.

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Table II-Y Comparison of Boating Use Levels 1998, Segment 2 - Cottonwood Bridge to Clarno

Month	Non Motorized				Motorized				Total			
	Launches	Boats	People	Use Days	Launches	Boats	People	Use Days	Launches	Boats	People	Use Days
January	0	0	0	0	0	0	0	0	0	0	0	0
February	2	6	17	55	0	0	0	0	2	6	17	55
March	7	17	35	194	1	1	4	4	8	18	39	198
April	17	30	68	269	3	3	17	21	20	33	85	290
May	57	142	308	1351	Closed				57	142	308	1351
June	129	323	683	2927	Closed				129	323	683	2927
July	55	121	229	1234	Closed				55	121	229	1234
August	2	14	24	140	Closed				2	14	24	140
September	3	3	17	45	Closed				3	3	17	45
October	30	55	110	730	2	2	4	12	32	57	114	742
November	1	9	10	70	0	0	0	0	1	9	10	70
December	0	0	0	0	0	0	0	0	0	0	0	0
Total	303	720	1501	7015	6	6	25	37	309	726	1526	7052

Travel direction of motorized launches is unknown, therefore motorized launches occurring at Clarno or Cottonwood Bridge, with potential travel in Segment 2, are included.
Where a trip took place in more than one segment, the number of days in each segment is estimated.
Data does not include administrative trips conducted by BLM, OSP, Co. Sheriff, etc.
Based on field checks approximately 80% of parties register. Multiply the above figures by 1.25 for a corrected estimate of actual use.
Average party size for Segment 2 = 4.9 persons.
Average trip length for Segment 2 = 4.7 days.
Average number of persons per watercraft for Segment 2 = 2.1 persons.

Two undeveloped areas are popular sites for recreation activities. On the west side of the river, downstream of Clarno Bridge is a BLM maintained road accessing approximately 3 miles of river frontage and the neighboring uplands, in the vicinity of the “Clarno Homestead”, and Sorefoot Creek. This area is currently used for dispersed camping, fishing, waterfowl hunting, nature study, boat landing, and off-road vehicle use. Resource damage attributed to off-road vehicle use is an increasingly common occurrence in this area. The second area, known as Juniper Island, is located on the east side of the river, 10 miles downstream of Clarno. It is accessed via the private Butte Creek Road and is popular for drive-in camping. Garbage dumping and human waste are recurring problems at this site.

In a preliminary survey of sites suitable for dispersed camping within this segment, the BLM identified approximately 78 sites located on public land, a few of which may be large enough to accommodate more than one group. Some popular dispersed campsites were found to be located on private land. Most of the campsites in this segment are in good condition, but some of the most popular sites are subject to bank erosion, soil compaction, loss of vegetation, tree cutting, trash, constructed furniture, fire rings scars, and human waste.

Most commercial boating trips within this segment begin at Clarno or Butte Creek, but some outfitters have agreements with private landowners to launch from private lands, which offer the flexibility to run shorter trips that take less time, to meet customer desires. In 1998, commercial use of this segment included 28 trips, totaling approximately 899 customer use days and 185 guide days, during the time period of March through August, and October and November.

Wilderness

There are three WSAs (WSAs) along this segment of the John Day River. The North Pole Ridge WSA is 7,609 acres, Thirtymile WSA is 7,538 acres and the Lower John Day WSA is 19,587 acres.

The wilderness values identified in the wilderness review process for these three WSAs are naturalness, opportunities for solitude and primitive

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and unconfined recreation, critical anadromous fish habitat, Columbia River Basalt Formations, outstanding scenic qualities, cultural sites, a potential natural community of bluebunch wheatgrass, and protected plants and wildlife. Detailed Wilderness inventory information on each of these WSA's is available from the BLM in Prineville.

The BLM acquired 1,240 acres of land adjacent to North Pole Ridge WSA in 1998. Subsequent inventory found these new lands to possess wilderness characteristics similar to those of the adjacent WSA. These new lands were then added to the existing WSA.

The Wilderness review process requires BLM to recommend to the US Congress which WSA's are suitable for Wilderness Area designation and which are not. Congress then makes the final decision as to which WSA's are designated as Wilderness Area and which are released from further consideration. The BLM recommended to congress that the three WSA's in this segment are suitable for designation. These areas will be managed so as not to impair their suitability for protection as wilderness until congress decides whether or not to designate them. The management of the WSA's is discussed in detail in the *BLM Interim Management Policy and Guidelines for Lands Under Wilderness Review* dated July 5, 1995.

Information and Education

An informational bulletin board and boater registration station is located at Clarno Recreation Site and at the BLM launch site at Butte Creek. Posted information includes fire regulations, OMB regulations, and minimum impact camping requirements. At Clarno, signs also discourage shooting and garbage dumping, two of the main management problems occurring at this site and an interpretive display encourages boaters to help pull noxious weeds. BLM personnel and volunteers are present at the Clarno Recreation Site on peak river launch days to contact boaters and instruct them in minimum impact camping requirements.

SEGMENT 3 : Clarno to Service Creek

Location and Characteristics

This is a 48 mile segment between Clarno and Service Creek. This segment is designated as a State Scenic Waterway and WSR, as are Segments 1 and 2. The WSR designation ends at Service Creek, but the State Scenic Waterway extends into Segment 4 to Parrish Creek. This segment contains wide valleys with high, colorful hills and rimrock in some areas. The segment contains agricultural lands, especially hay fields and pastures. This segment is in a remote setting but roads and man-made structures are more numerous than in Segment 2.

Land Ownership and Classification

The BLM administers about half of the river frontage and most of the land near the river in this segment. BLM lands are scattered along the river, separated by private land tracts of various sizes. Private lands on the river in this segment are often cultivated and irrigated, especially near Twickenham and Clarno.

The entire segment is designated as a WSR. This segment also was designated as a State Scenic Waterway in 1970. The existing State Scenic Waterway classification for this segment is Scenic River Area. The state guidelines under the existing Oregon Administrative Rules (OAR 736-40-065) describe how lands should be managed under these classifications.

The river serves as a boundary for Sherman, Gilliam, Wasco, Jefferson and Wheeler Counties, between RM 95 (about two river miles above Butte Creek's confluence with the John Day) and RM 130 (Cherry Creek). Wheeler County has planning and zoning jurisdiction for all the lands east of the river from RM 95 to RM 130 (Cherry Creek). Wheeler county has planning and zoning jurisdiction along both the north and south sides of the river between Service Creek and Cherry Creek.

Wasco county has planning and zoning jurisdiction for private lands on the west side of the river between RM 95 upstream to Rhodes Creek at RM 122. These lands have been zoned for agricultural use. The purpose of this zone is to protect agricultural uses from encroachment by other, incompatible uses. The lot size minimum for this zone is 80 acres and there is no administrative mechanism for allowing a variance to this standard.

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The Wasco county Comprehensive Plan, Goal 5, acknowledges that the John Day River is a state Scenic Waterway. Because Wasco County has recognized the John Day Scenic Waterway as a Goal 5 resource, they have adopted a special overlay zone entitled the "Natural Areas Overlay". This overlay zone is designed to protect identified natural values along the river by allowing "only uses which will not permanently destroy the natural value."

Wheeler county has planning and zoning jurisdiction on private lands on the east side of the river between RM 95 and RM 130. These lands have also been zoned for agricultural use. The purpose is to provide areas for the continued practice of agriculture and permit only new uses which are compatible with agricultural activities. Lands in this zone may be subdivided when lots or parcels created are 160 acres or more in size. Wheeler County's Comprehensive Plan includes a policy that recognizes the existence of the state Scenic Waterway designation in their county. The policy also states that the County will notify OPRD prior to the issuance of any land use or building permits proposed within a scenic waterway for compatibility review.

Jefferson County has planning and zoning jurisdiction on the west side of the river from Rhodes Creek at RM 122 upriver to Cherry Creek. These lands have also been zoned for agricultural use. The purpose of this zone is to protect agricultural uses from encroachment by other incompatible uses. The lot size minimum for this zone is 80 acres and there is no administrative mechanism for allowing a variance to this standard. The Jefferson County Comprehensive Plan acknowledges the fact that the John Day River is a State Scenic Waterway. The county passed an ordinance in May of 1993 stating that it will develop a program to protect cultural and natural resources in the scenic waterway corridor within six months of the completion of the plan. In the meantime, the county will rely on the state Scenic Waterway program, and existing standards for stream and rim setbacks of the county's zoning ordinance, to protect resources along the John Day River. Presently, Jefferson County Plan Policy states that the county will coordinate with OPRD staff when proposals for development are made along the John Day River.

Access

State 218 crosses the John Day River at Clarno. Here boaters can enter or exit the river at Clarno Recreation Site, co-managed by BLM and OPRD. Clarno Road, a county gravel road, runs south from SR 218, paralleling the river on the east side for approximately five miles. The majority of the river frontage along this road is privately owned, but two small sections of public river bank can be reached via the road, including Clarno East, located approximately one mile south of SR 218. At the end of the county road , the road turns private for 1/4 mile before intersecting with a public travel route to Spring Basin WSA. Until 1999, the public was allowed to cross the 1/4 mile of private road to access the WSA (5,982 acres) and surrounding public lands, but this piece of private road has recently been closed to public use by the landowner.

Except for Clarno Road, there is no public river access between Clarno and Cherry Creek for a distance of 20 miles. Between Cherry Creek and Twickenham a gravel county road roughly parallels the south side of the river for 16 miles, accessing two primitive public access points jointly referred to as Burnt Ranch (RM 132-133), and a primitive vehicle and boat access point at Priest Hole (RM 137). Except for one rough four-wheel drive access point, there is no public road access to the river between Priest Hole and Service Creek (20 miles), though a few private roads are visible from the river. There is a popular river access point on private land at Twickenham Bridge where a paved county road crosses the river. The landowner has allowed boats to be taken out or launched here in the past, but this practice will be discontinued on January 1, 2000. The BLM is working to acquire an alternative river access site in the Twickenham area, ideally by Spring of 2000.

Vegetation

Segment 3 averages 11 to 15 inches of precipitation annually. River elevations rise from 1,380 feet above sea level to 1,640 feet above sea level and the canyon walls rise to around 3,500 feet above sea level. The soils are generally a clay-loam type with interspersed areas of clay, gravel and random basalt outcrops. The canyon slopes are similar to Segment 1 (35 to 70%) except for one section between RM 119 and RM 126 where the slopes can vary from 50 to 90%.

Segment 3 lies entirely within the Lava Plains ecoregion (OBP, 1998). Upland plant communities have been described by ICBEMP (Quigley and Arbelbide, 1997) as 'dry shrub' and 'cool shrub'. The vegetation communities are similar to Segment 1 and western juniper is scattered throughout the segment with dense stands occurring in some of the tributary

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drainages to the John Day. The most common noxious weed species are diffuse, Russian and spotted knapweeds, yellow starthistle and isolated dense stands of bull and Canada thistle.

The riparian vegetation and soils (USDA, SCS, 1970) are also similar to Segment 1 with one exception, there appears to be an increasing amount of reed canary grass. In addition, two extensive willow surveys were completed on public land in this segment and Segment 2, in 1980 and 1995 (BLM, 1996a). In Segment 3, *Salix exigua* (Coyote willow) increased from zero linear miles in 1980 to 6.06 miles in 1995, and the number acres covered increased from zero to 13.15. For a description of the willow increases on individual allotments in this segment, refer to **Appendix L**. An example of existing riparian vegetation on one of the main tributaries to the John Day, in this segment, is shown in **Appendix M**, Photos 15 and 16.

Special status species known to occur in this river segment are *Thelypodium eucosmum* (arrowleaf thelypody) and *Juncus torreyi* (Torrey's rush). Species suspected to occur in the segment are *Carex hystericina* (porcupine sedge), *Mimulus jungermannioides* (hepatic monkeyflower) and *Rorippa columbiae* (Columbia cress).

The functionality of the riparian area in this segment was rated in 1997, using the PFC Assessment method (USDI, BLM, 1993 and USDI, BLM, 1998c). The functional rating for Segment 3 was 'functional - at risk', which means, the riparian zone is in a functional condition, but susceptible to degradation from significant natural events or excessive man caused influences. The trend rating was 'upward' which means the riparian area is improving in it's overall condition. The assessment found the riparian vegetation lacked in diverse age-class distribution and composition of vegetation. Plant species which indicate good riparian soil moisture holding characteristics were well represented, but lacked the continuity throughout the segment to rate this characteristic fully functional. In addition, this same lack of continuity existed with species which produce root masses capable of withstanding high flows. Also, there was a lack of vegetation cover present to protect banks and dissipate flow energy during high water events. The riparian vegetation, which is present, exhibits high plant vigor.

Agriculture

Agriculture is an important economic use of this segment. Hay is the primary crop grown in the cultivated fields along the river, which are irrigated with water drawn from the river.

Segment 3 contains approximately 97 acres of public lands with water rights which parallel approximately 0.75 mile of the John Day River. Ninety five acres are leased for production, generally alfalfa and oat hay; and 2 acres are utilized for the production of cottonwood trees for restoration purposes. Twenty-five acres are scattered parcels incorporated into private agriculture lands and are separated from the river by private property. Approximately 71.5 acres are subject to BLM imposed irrigation restrictions which require termination of irrigation when John Day River flows drop below 390 cfs at the Service Creek Gauging Station (USDI, BLM, 1996d).

The following **Table II-Z** shows estimated use for 1998.

Grazing

This segment contains 22 grazing allotments. Public land acreage in these allotments vary from 80 to 20,410 acres and public land forage varies from 3 to 1020 AUMs. There are approximately 48 river miles (96 river bank miles), one third of which are on public land.

Allotment evaluations have been completed on all but two allotments (#2641 and #2649, neither of which has John Day River riparian areas). Allotment #2649 has public land within the WSR corridor and #2641 has some private land and no public land in the corridor. Grazing management changes have occurred on 16 of the 22 allotments. The changes have been that grazing use has moved from primarily grazing during the warm season (late spring and summer) to cool season grazing (winter or early spring) or exclusion of grazing in some cases. Previous livestock trespass issues, associated with the inability of the river to act as a barrier to livestock movement during low flows, have been largely resolved by the shift in use to periods of high flows (see photos 11 - 14 in **Appendix M**). As a result, riparian areas which are separated from uplands by a fence are not being grazed, whereas previously they were grazed by a neighbor's livestock.

Current grazing management practices were judged by an interdisciplinary team to be appropriate for protecting and enhancing river values on 94% (30 miles) of public river bank miles in this segment. Implementation of grazing decisions resulting from this plan will enhance ORV's on the remaining 29% of the public river bank miles.

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Table II - Z Estimated Public Agricultural Land and Water Use for Segment 3 (1998)

Location	Use / Acreage			
Max. Water Use / cfs*				
River Mile (RM)	Non-use/Instream	Restoration/Enhancement	Lease	Total
RM 112	0	0	15.3/0.38	15.3
RM 119	0	0	10.3/0.25	10.3
RM 136	0	0	23.4/0.58	23.4
RM 137	0	2/0.05	46/1.15	48
Total	0	2/0.05	95/2.36	97

*Approximate maximum potential water withdrawal based on 1/40 cfs per acre.

Water Quantity and Water Quality
(For Segments 3 and 4)

This segment and the portion of Segment 4 between Service Creek and the North Fork John Day River confluence, in 1996 were placed on the ODEQ 303(d) list as exceeding state criteria for summer water temperatures. The part of Segment 4 from the North Fork John Day River confluence to Dayville was listed on the ODEQ 303(d) list as exceeding state criteria for dissolved oxygen, fecal coliform, flow modification, and summer water temperatures.

Water quality in these segments are primarily the result of upstream water quality. Turbidity, erosion, and sedimentation problems may occur during high flows, and elevated temperatures occur during low flows. Tributaries generally exhibit high temperatures during the summer months and may transport high sediment loads during heavy rain events. High summer water temperatures are a concern regarding cold water fisheries (OWRD, 1986).

This segment of the subbasin drains an area of about 1,431 square miles, and also carries contributions from the upper segments. Peak discharge occurs from late March to early June and low flows occur from July through November. Major tributaries are Bridge, Muddy, Service, Rowe, and Pine Creeks.

There is no gauge near Clarno, so the amount of water flowing out of this segment is unknown. Water volume entering this segment is measured by a gauge at Service Creek. Flood data at that gauge, which is roughly at the midpoint of the subbasin and provides a good record of water production above that point, indicate that the subbasin above the gauge produces about 200,000 af of water per year.

The maximum discharge, or flood flow, recorded at Service Creek was 40,200 cfs on December 23, 1964. The minimum recorded was 6.0 cfs on August 23 and 24, 1973.

The estimated annual discharge at Clarno, using standard U. S. Geological Survey methodology, is predicted to equal or exceed 1,106,450 af, in eight out of ten years. However, using the same methodology, August discharge is estimated to be only 9,570 af, or 13.2 cfs (OWRD 1986).

The basin discharge pattern has changed somewhat from historic times, in that now more discharge occurs in the winter months, and with higher peak flows. High peak flows have great erosive power and can change the stream profile. Evidence suggests that stream banks have suffered more undercutting that in the past.

Water Quality in this segment is primarily the result of flow from the upper John Day and South Fork John Day watersheds. Water quality generally exhibits satisfactory chemical, physical, and biological parameters, except during water flow extremes (OWRD 1986). Turbidity, erosion, and sedimentation problems occur during high flows. Higher temperatures with concurrent lower dissolved oxygen occur during the low-flow periods. BLM water temperature data measured at Service Creek shows that water entering this segment exceeded State

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Water Quality standards for most of the summer months when high water temperatures are a concern **(Table II-AA)**. Decreasing instream water temperatures occurs in two main ways: 1) radiative (heat) loss from water when surrounding environment is cooler than stream (this occurs mainly at night when air temperatures lower); or, 2) input from groundwater or surface flow (i.e. stream confluences) in which the new water input is lower temperature than the water already instream. During the summer months there is very little input of other water into the system between Service Creek and McDonald Crossing, so decreases in temperature within stream are not likely below Service Creek.

Tributaries also exhibit high temperatures during the summer months. These tributaries carry high sediment loads during heavy rain storms. Portions of the basin contain soils of the fossil formations. When heavy rains occur, stream turbidity increases because these are very fine soils and they remain in suspension, giving the appearance of a serious sediment loading problem.

High temperatures create the most serious threat to beneficial uses of the water. Fecal bacteria in the main river occasionally threaten the safe use of the main river for water contact recreation. Bacteria are most prevalent after rain storms.

There are no permitted waste discharges to the streams of this segment. The town of Mitchell has no municipal sewage treatment facilities and relies on individual septic systems to dispose of domestic wastes

Ground water quality is unknown for this subbasin due to lack of water quality information. The landfills at Mitchell (Bridge Creek Drainage) and Muddy Creek Ranch could cause future ground water problems.

Fisheries

This segment is part of the middle mainstem subbasin which produces approximately four percent of the John Day basin summer steelhead. As many as 800 adult summer steelhead return annually to spawn. The mainstem serves primarily as a migration corridor for anadromous runs to spawning and rearing habitat in the upper subbasins.

Populations of rainbow trout, smallmouth bass and channel catfish exist in the subbasin. Good spawning habitat conditions for steelhead and resident trout exist in Bridge, Service, and Cherry Creeks. However, production within these streams is limited due to high water temperature and low flows during the summer.

Habitat for salmonid production in the mainstem John Day River is limited. The river is generally wide and shallow. Flow and water temperatures are marginal for salmonid production. Poor riparian conditions and inadequate food and cover limit the number of fish during the summer when low flows are prevalent. During this time salmonids are typically present within tributaries and do not use the mainstem river as summer habitat. Smallmouth bass reproduction and population numbers do not limit salmonid populations in this area because these fish populations as typically geographically separated due to differences in habitat preferences (such as water temperatures). However, stream flows between fall and spring are adequate to support migration to tributary spawning and rearing areas and to quality habitat in the upper subbasins.

Wildlife

Use of this segment by wildlife is similar to that in Segments 1 and 2, with a few exceptions. Year long use by Canada geese increases along this segment

Table II-AA. Water Temperature % of Days Exceeding The State Water Quality Standard of 64º F for Seven Day Running Maximum Temperature.

Year	Beginning Date	Ending Date	Percent of Days Exceeded Standard
1993	6/23/93	9/9/93	73%
1994	5/12/94	6/18/94	27%
1995	7/27/95	9/26/95	98%
1997	6/2/97	10/1/97	90%
1998	6/16/98	9/07/98	100%

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due to increased forage availability from agricultural lands and the more open nature of the canyon. Irrigated agricultural fields also provide mule deer, elk, and pronghorns with forage high in protein, especially in the late summer and early fall when many native forbs and grass species have lost their nutrients. Year long use by osprey, California quail, Western kingbird, and porcupines also increases from here upriver. In addition, winter use by goshawks, robins, and bald eagles increases in this segment.

Scenic Quality

The river flows through both rural and primitive settings in this segment. In the vicinity of Clarno, agricultural fields are seen along the river, and a few ranch houses are visible. Upstream of Clarno, the agricultural uses gradually lessen until at RM 120, the river begins a 10 mile primitive stretch of meandering curves that wind through a visual backdrop of steep canyon walls and high, grassy hillsides.

Upstream of Cherry Creek (RM 130), agricultural fields are intermittently visible for 15 miles, especially where the river valley widens at Twickenham. In this area, the river flows through the colorfully scenic "painted hills", an extension of the formation found in the nearby Painted Hills Unit of the John Day Fossil Beds National Monument. They are composed of multi-colored layers of clay soil with little or no vegetation.

Between Twickenham and Service Creek the river flows through both rural and natural settings, passing sandy beaches, juniper flats, and vivid riparian vegetation contrasting with black basalt river rock.

Cultural Resources

River Segment 3 was partially inventoried for cultural resources by Polk (1976). A few prehistoric and historic sites were located during the examination of this segment. Cressman (1937, 1950) recorded several pictograph sites and tested a rock shelter on private lands within a portion of this segment. The results of the testing were inconclusive and provided little data. Archaeological work conducted outside the corridor in the Cherry Creek area (USDI, BLM,1986) revealed intensive occupation occurring after 2000 years ago. Few inventories have been conducted within the corridor of this segment.

Ethnographically, this segment falls on or near the boundary between the Tenino group of Sahaptian language speakers and the Northern Paiute who are part of the Numic language group (Ray et al. 1938; Stewart 1939). It currently is within the ceded lands of the Confederated Tribes of the Warm Springs (CTWSRO). (Farmer et al. 1973) indicates that an aboriginal trail paralleled the river along this segment that joined another trail near Clarno. The BLM knows of no known religious sites or traditional use areas within this particular segment.

This segment contains some interesting historic sites related to transportation and settlement. The route of The Dalles Military Road passed along the west side of this segment between Cherry and Bridge Creeks in the 1860's. Clarno was established in the 1860's by a rancher, Andrew Clarno. A post office was established at this location in the 1870's, although it was under another place name. The post office was discontinued in 1949. The floodplain zone of this segment has been subjected to farming and ranching activities since this early era.

Paleontology

This segment is located near the Clarno Unit and the Painted Hills Unit of the John Day Fossil Beds National Monument. Fossil-bearing exposures occur within the river corridor throughout this segment. No formal inventories have yet been conducted within the corridor but several locations are known to contain or are considered highly likely to contain significant vertebrate and botanical specimens.

Recreation

Small and medium sized blocks of public land, some accessible by vehicle and others by boat, provide a variety of recreation opportunities in this segment. Primary recreation opportunities in this segment include fishing, boating, dispersed camping, hunting, hiking, swimming, photography and wildlife viewing. Fishing for smallmouth bass is very popular, as are scenic float trips, dispersed camping and deer hunting. Boating generally occurs between April and July when water levels and fishing conditions are best. Water levels normally drop below aODEQuate boating levels in August, September and early October.

Boating provides the only public access to the river between Service Creek and Twickenham and from Cherry Creek to Clarno East. Motorized boating is permitted on this segment year-round. Public vehicle access to the river is available between Priest Hole and Cherry Creek, and at Clarno Recreation Site providing opportunities for vehicle assisted outdoor

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recreation activities. Public boat launches occur in this segment at Clarno, Priest Hole, Burnt Ranch (undeveloped) and Service Creek. The river in this segment is characterized by long calm stretches interspersed with numerous Class I and II rapids. There are three Class III rapids (Russo, Homestead and Burnt Ranch).

Service Creek Recreation Site serves as a major launch point for the popular 48 mile float trip to Clarno. The privately-owned Twickenham Bridge, 13 miles downstream of Service Creek has been used as a launch point by the public in the past, but this site will no longer be available for public use beginning January 1, 2000. The majority of boaters access the river at Service Creek or Twickenham, but primitive boat access is available at Priest Hole and at Upper Burnt Ranch (requires four-wheel drive vehicle). Clarno East, 3.5 miles upstream of Clarno, is occasionally used as a take-out point. In 1998, an estimated 3,400 boaters boated this river segment, averaging 5.3 persons per group. The average trip length for this segment was 2.7 days, accounting for approximately 9,200 boater use days (one boater using the river for any portion of one day). This segment of the river is especially popular for one-day or weekend float trips, for canoeing, and for boaters with limited whitewater experience.

Nine motorized trips registered as launching at Clarno in 1998, one each in March, April, and October, and three each in June and July. The direction of travel for these trips is unknown. Based on the assumption that each of the nine motorized trips traveled into Segment 3, these trips represent 4 motorized use days each in March and April, 12 use days in June, 8 use days in July, and 10 use days in October, accounting for a total of 38 motorized use days in Segment 3 in 1998.

The most popular fishing seasons are April through September for smallmouth bass, and October for steelhead. Hunting occurs in the fall with deer and chukar hunting the most popular. Hunting seasons run from late August through mid-January for waterfowl/upland birds and from August through November for big game. Hunting in this segment is concentrated where vehicle access is available between Twickenham and Cherry Creek and near Clarno. Low flows do not normally allow for hunting access by boat during the fall and early winter months.

Service Creek Recreation Site is the most developed recreation site in this segment. It is owned by Oregon Department of Transportation and is managed and maintained by BLM under a lease agreement. The site serves as the major launch point for trips to Twickenham and Clarno, and as a take-out pont for one-day trips originating upstream in Segment 4. The site is also used for overnight camping (walk-in sites only), picnicking, fishing, swimming, and by travelers as a highway rest area. Facilities at this site include a primitive boat launch, a boater registration station, parking, vault toilet, picnic tables and campfire grates.

The only other developed recreation site on public land in this segment is at Priest Hole where the BLM maintains a primitive boat launch and a boater registration station. This site has recently become very popular for dispersed camping, picnicking, fishing, swimming and tubing. The presence of illegal campfires, shooting and human waste is an increasing problem. Several undeveloped recreation sites are also popular for recreation activities. Upper Burnt Ranch, which is accessible by foot or four-wheel drive vehicle, is used for dispersed camping, picnicking, fishing, swimming, and for boat access. Recreational use of ATV's at this site is creating vehicle ruts which have resulted in erosion of scenic red clay soils. Local landowners are frequently called upon by recreationists to assist with stuck vehicles at this site. Clarno East is used for camping, picnicking, fishing, and boat access.

In a preliminary survey of sites suitable for dispersed camping within this segment, the BLM identified approximately 51 sites located on public land, a few of which may be large enough to accommodate more than one group. In the Twickenham area, there is a 10 mile section of river with no campsites available on public land, and several popular campsites were found to be located on private land. Most of the campsites in this segment are in good condition, but some of the most popular sites are subject to bank erosion, soil compaction, loss of vegetation, tree cutting, trash, constructed furniture, fire rings scars, and human waste.

This is the most popular river segment for commercial boating trips, probably because a variety of launch points allows flexibility in scheduling the length and location of trips. In 1998, commercial use of this segment included 118 trips, totaling approximately 1,999 customer use days and 898 guide days, during the time period of January through October.

Wilderness

The Spring Basin WSA (5,982 acres) lies to the east of the river and southeast of Clarno Bridge in this segment. The BLM recommended to Congress that

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Table II-BB Comparison of Boating Use Levels 1998, Segment 3 - Clarno to Service Creek

Month	Non Motorized				Motorized				Total			
	Launches	Boats	People	Use Days	Launches	Boats	People	Use Days	Launches	Boats	People	Use Days
January	1	1	3	3	0	0	0	0	1	1	3	3
February	4	4	8	11	0	0	0	0	4	4	8	11
March	7	10	19	33	1	1	4	4	8	11	23	37
April	26	41	105	256	1	1	4	4	27	42	109	260
May	78	219	499	1303	0	0	0	0	78	219	499	1303
June	208	473	1091	3488	3	3	8	12	211	476	1099	3500
July	135	355	773	1766	3	3	8	8	138	358	781	1774
August	30	67	141	301	0	0	0	0	30	67	141	301
September	15	28	57	105	0	0	0	0	15	28	57	105
October	9	13	25	79	1	1	2	10	10	14	27	89
November	1	1	3	3	0	0	0	0	1	1	3	3
December	0	0	0	0	0	0	0	0	0	0	0	0
Total	514	1212	2724	7348	9	9	26	38	523	1221	2750	7386

The direction of travel of motorized launches is unknown, therefore motorized launches occurring at Clarno Bridge, with potential travel in Segment 3 are included.
Data does not include administrative trips conducted by BLM, OSP, Co. Sheriff, etc.
Based on field checks approximately 80% of parties register. Multiply the above figures by 1.25 for a corrected estimate of actual use.
Average party size for Segment 3 = 5.3 persons.
Average trip length for Segment 3 = 2.7 days.
Average number of persons per watercraft for Segment 3 = 2.3 persons.

this WSA is suitable for designation as Wilderness, but no further legislative action has occurred. This area will be managed so as not to impair its suitability for designation as Wilderness, until congress decides whether or not to designate is as such. Detailed information on the Spring Basin WSA is available from the BLM Prineville District Office. The management of WSAs is discussed in the *BLM Interim Management Policy and Guidelines for Lands under Wilderness Review* dated July 5, 1995.

Public access to the Spring Basin WSA has historically been available by traveling south from SR 218 near Clarno via county road. At the end of the county road , the road turns private for 1/4 mile before intersecting with a public travel route to the WSA. Until 1999, the public was allowed to cross the 1/4 mile of private road to access the WSA (5,982 acres) and surrounding public lands, but this piece of private road has recently been closed to public use by the landowner. Future public access into this WSA is uncertain.

Information and Education

Informational bulletin boards are located at Service Creek, Priest Hole, and on private land at Twickenham Bridge. These boards contain boater registration stations, fire regulations, OMB regulations, and minimum impact camping requirements. Signs also discourage shooting and garbage dumping, common management problems especially at Priest Hole. BLM personnel and volunteers are present at Service Creek Recreation Site and Twickenham Bridge on peak days for boat launching to contact boaters and instruct them in minimum impact camping requirements.

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SEGMENT 4 : Service Creek to Dayville

Location and Characteristics

This river segment lies between the Service Creek/ John Day River confluence and the South Fork/ mainstem John Day River confluence near Dayville. This segment is not designated a WSR, but is designated a State Scenic Waterway between Service Creek and Parrish Creek. There are some tourist facilities, and two developed public campgrounds. Oregon State 19 and US 26 are located beside the river in this segment. This area is rural with some cultivated fields near the river and high rugged hills off the river, often covered with juniper trees.

Land Ownership and Classification

Lands along the river in this segment are predominantly private but tracts of BLM-administered land occur frequently, providing public river access in many locations. The National Park Service (NPS) administers about seven miles of river frontage in the Picture Gorge area, which is part of the Sheep Rock Unit of the John Day Fossil Beds National Monument.

The North Fork/mainstem John Day River confluence occurs near the middle of this segment at Kimberly, Oregon. This confluence marks a significant change in the character of the mainstem. From this point downstream, the river often contains enough water to sustain boating during the spring and early summer. From this point upstream, the river rarely contains enough water for boating.

The WSR designation on the mainstem, ends at Service Creek and does not extend into this segment. However, the lower twelve miles of this river segment were designated as a State Scenic Waterway (Service Creek to Parrish Creek) in 1988. The State Scenic Waterways Classification for this segment is “Recreation River Area”. The state guidelines affecting private lands may be found in Chapter IV of this document.

Wheeler County has planned and zoned lands adjoining the river for farm use, from Service Creek upstream to Kimberly. The purpose of this zone is to provide areas for the continued practice of agriculture and permit only those new uses which are compatible with agricultural activities. Lands in this zone may be subdivided only when lots or parcels created are 160 acres or more in size. Wheeler County’s Comprehensive Plan includes a policy that recognizes the existence of the Scenic Waterway designation of the John Day along the lower river. The Wheeler County policy states that the county will notify OPRD prior to the issuance of any land use or building permits proposed within a scenic waterway for compatibility review.

Grant County has planned and zoned lands adjoining the river for farm use from Kimberly upstream to John Day Fossil Bed National Monument. The purpose of this zone is also to preserve the best farm land for agricultural use. This zone is applied to the prime-intensive agricultural lands for farm use consistent with existing and future need for agricultural products, open spaces and resource protection. A lot or parcel of 160 acres is considered a farm unit. A lot or parcel of less than 160 acres can be approved through a conditional use process.

Access

State 19 follows along the river for the majority of this segment until it meets 26 which follows the river for the segments final five miles. This river segment intersects several public land parcels and over 4 miles of NPS land within the Picture Gorge Unit of the John Day Fossil Beds National Monument (RM 206) where access to the river is permitted. Public boat access is available at Muleshoe Recreation Site, at the “Wooden Bridge” at River Mile 162 (undeveloped), at Shady Grove Recreation Site, and at Kimberly. River access is available from private land for a fee at the John Day River bridge in Spray.

Vegetation

The precipitation in this segment varies by location. The portion from Service Creek to Spray receives an average of 12 to 24 inches annually and from Spray to Dayville 10 to 12 inches as described in ICBEMP (Quigley and Arbelbide, 1997). The river elevation rises from 1,640 feet to 2,340 feet above sea level and the canyon walls rise to 3,700 feet above seal level. Most upland soils are stony and well drained, and the hill slopes tend to be steep (40 - 80%) with the steepest slopes occurring in the Picture Gorge area (60 - 90%).

This segment lies entirely within the Lava Plains ecoregion (OBP, 1998). Upland plant communities have been described by ICBEMP (Quigley and Arbelbide, 1997) as ‘dry shrub’ and ‘cool shrub’. The most common noxious weed species are diffuse, Russian and spotted knapweeds, yellow starthistle and isolated patches of purple loosestrife.

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The riparian plant communities are dominated by sedge and juncus species with groups of Siberian elm, ponderosa pine, clumps of willow and mockorange, clematis and reed canarygrass. Upstream from Kimberly, cottonwoods are present with an increasing number upriver from Picture Gorge along with the number of agricultural fields.

The only special status species known to occur in this river segment is *Thelypodium eucosmum* (arrowleaf thelypody). Species suspected to occur in the segment are *Carex hystericina* (porcupine sedge), *Juncus torreyi* (Torrey's rush), *Mimulus jungermannioides* (hepatic monkeyflower) and *Rorippa columbiae* (Columbia cress).

The functionality of the riparian area in this segment was rated in 1997, using the PFC Assessment method (USDI, BLM, 1993 and USDI, BLM, 1998c). The segment was divided into two sections. The functional rating for the section from Service Creek to Kimberly was 'functional - at risk', which means, the riparian zone is in a functional condition, but susceptible to degradation from significant natural events or excessive man caused influences. The trend rating was 'upward' which means the riparian area is improving in it's overall condition. The assessment found the riparian vegetation lacked in diverse age-class distribution and composition of vegetation. Plant species which indicate good riparian soil moisture holding characteristics were well represented, but lacked the continuity throughout the segment to rate this characteristic fully functional. The vegetation which produces root masses capable of withstanding high flows was rated as functional; however, there was a lack of vegetation cover present to protect banks and dissipate flow energy during high water events. The riparian vegetation present, did not exhibit the high plant vigor necessary for a functional rating. In addition, the assessment indicated this part of the segment would benefit from the presence of large woody material to capture bedload, help develop floodplains and dissipate energy during high water; however, the material was not present in sufficient quantities to be a benefit and the riparian area was not an adequate source of this material for the near future.

The functional rating for the section from Kimberly to Dayville, was 'functional - at risk'; however, the trend was 'not apparent' which means it could not be determined if the functionality of the riparian zone is improving or worsening. The assessment rating found the riparian vegetation on the borderline between lacking and not lacking in diverse age-class distribution and composition of vegetation. The same borderline rating existed between plant species which indicate good riparian soil moisture holding characteristics and vegetation which produces root masses capable of withstanding high flows. There was adequate vegetation cover present to protect banks and dissipate flow energy during high water events and the riparian vegetation exhibited high plant vigor. Large woody material was not present in sufficient quantities to be a benefit.

Agriculture and Grazing

Agriculture traditionally has been the principle industry of this river segment. Livestock grazing is predominant on both private and public lands. Cultivated fields are common on private lands along this segment. They are used primarily for growing hay and are irrigated by water from the John Day River.

There are 21 BLM administered grazing allotments along this river segment (see maps, **Table III-E and Appendix L).**

Water Quantity and Quality

The hydrologic features of this segment are similar to those in Segment 3. The gauging station at Service Creek has recorded discharge since 1934. Extremes for the period of record range from a maximum discharge of 40,200 cfs to a minimum discharge of 6.0 cfs with a mean annual discharge of 1,960 cfs. Over 70 percent of annual runoff occurs from March to June, with peak runoff during April or May (OWRD 1986). Major tributaries affecting the Service Creek gauging station are Alder Creek, Kahler Creek, Bologna Creek, Horseshoe Creek, and Parrish Creek. Extreme low flows occur from August to September.

Water quality of this segment is strongly influenced by discharges from the North Fork, Middle Fork, and South Fork John Day Rivers. Turbidity, erosion, and sedimentation occur during high flows. High water temperature and low dissolved oxygen occur during the low- flow periods.

This segment drains a watershed that is about 1,680 square miles in size. A gauging station is located at Picture Gorge and has a period of record of 61 years. Extreme discharge has ranged from a maximum of 8,170 cfs on December 22, 1964, to a minimum of 1.0 cfs in August and September, 1930. Over 76 percent of annual runoff occurs between February and June. Less than one percent of annual runoff occurs during August. Mean annual flow is 503 cfs. Rock Creek, Holmes Creek, Branson Creek, Dick

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Creek, and Cottonwood Creek are tributaries affecting the Picture Gorge gauging station. However, streams in the subbasin are likely to stop flowing in the late summer and fall. For example, flows have ceased on Mountain Creek, a tributary to Rock Creek, in seven out of thirteen years (OWRD 1986).

Sedimentation and high water temperatures continue to be the water quality parameters that are threatening fish populations (OWRD 1986).

Fisheries

The river in this segment is generally wide and shallow with flow and water quality low for salmonid growth parameters and survival. Good riparian conditions and instream structure are lacking, which limits food production, spawning success and rearing survival. This segment serves primarily as a migration corridor for spring chinook and summer steelhead. (About 18 percent of the John Day River spring chinook and 23 percent of summer steelhead are produced in subbasins upstream from this segment). Resident populations of rainbow trout, smallmouth bass and channel catfish also exist. The smallmouth bass production is not as great as downstream areas due to less favorable habitat conditions (water temperatures and low flows).

Wildlife

Wildlife use along this segment is quite similar to Segment 3, with a slight increase in species diversity and numbers due to the increase in woody riparian habitat.

Scenic Quality

This river segment is located in a setting of deep narrow valleys with varied colors and vegetation. The area is highly scenic with Picture Gorge being an outstanding example. The NPS manages much of the land in Picture Gorge. This management places a high priority on preserving the scenic quality of the area while accommodating visitor use. The remainder of the river segment also contains high scenic values with frequent rural and pastoral settings. Livestock grazing is a common land use of the area and hay fields often are seen on the private lands along the river.

Portions of State Road 19 and US 26 follow the length of this segment, and both routes are recognized as State Scenic Byways for to their outstanding scenery. Homes, outbuildings and the highway can occasionally be seen from the river along with other farm-related developments such as fences and water pumps.

Cultural Resources

This segment includes relatively little public lands with a small percentage having been inventoried for cultural resources. One prehistoric site and a lithic scatter have been identified on BLM lands in this area. Several pictograph sites occur in Picture Gorge, but have been only partially recorded. These sites are on lands administered by the NPS. Based on landforms that occur in the area, additional lithic scatters and pit house villages could be present. However, past agricultural practices as well as erosional processes may have covered any surface evidence.

Prior to 1830, the area was occupied by Northern Paiute groups (Ray et at. 1938). It was only after this period, due to the introduction of the horse, firearms and disease, that the Umatilla and Cayuse pushed south to the John Day River. The pictograph sites at Picture Gorge may be related to this transitional period. Today, this area is within the ceded lands of the CTWSRO and also within what the Confederated Tribes of the Umatilla (CTUIR) consider traditional use areas. There are no known Native American religious sites or traditional use areas within this segment.

Historic use of this segment appears to have been principally related to farming and ranching. No historic settlements or travel routes have been recorded.

Paleontology

This is the only segment to have received a BLM inventory for paleontological resources (Hanson and Allen n.d).This segment passes through the NPS's Sheep Rock Unit between Kimberly and Picture Gorge. Several significant vertebrate fossil localities occur in this stretch of the river. Other significant vertebrate fossil localities also may occur further downstream in the segment between Spray and Kimberly. These areas have not been formally inventoried.

Recreation

Even with mixed public and private ownership, many recreation opportunities are available in this segment including driving for pleasure, dispersed and developed camping, picnicking, fishing, boating, hunting, wildlife viewing, swimming, tubing and

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nature study. Public access is available at frequent locations along SR 19 and US 26, although many of these public tracts are not marked on the ground. Boating is feasible below Kimberly, and boating access is available at Muleshoe, the "Wooden Bridge"(RM162), private launch in Spray, Shady Grove and Kimberly. Many visitors are attracted to the Sheep Rock Unit of the John Day Fossil Beds National Monument. State Route 19 and US 26 and have been designated as State Scenic Byways. The river in this segment is characterized by mostly calm water with occasional riffles and Class I rapids.

Boating use of this segment consists mostly of day-trips of varying lengths and locations between Kimberly and Service Creek. Although information collected from boater registration stations is incomplete in this segment due to the many possible launch points, 55 groups registered in 1998, accounting for 284 boater use days (a boater using the river for any portion of one day). Motorized use is permitted on Segment 4 although no motorized use days were registered.

Bank and boat fishing are popular for both smallmouth bass and steelhead, as is hunting for chukar and deer. Some hiking occurs in the National Monument but no public hiking trails exist in the remaining river segment. Viewing of vertebrate fossils is possible, but they are protected under the Antiquities Act and collection is not permitted.

Developed camping is available at Muleshoe Recreation Site, located 2 miles east of Service Creek. Facilities include a picnic tables, campfire grates, vault toilets, a bulletin board, primitive boat launch and boater registration station. A day use area is available at Shady Grove, about 5 miles east of Spray, and includes a picnic table, vault toilets and a primitive boat launch. A private recreation site at the John Day River bridge in Spray allows boat launching for a fee and includes a boater registration station. Developed recreation sites, managed by NPS and BLM, are popular and well used, as are many of the undeveloped sites on public land.

An inventory of dispersed river campsites has not been completed for this segment since it is primarily used for day trips. However, using maps and general knowledge of the area it is estimated that there are 36 undeveloped areas along the river that could be used for camping, 16 of which are on public land.

Commercial permittees reported 13 trips on Segment 4 in 1998, accounting for 123 use days, primarily in August and September, when low water levels make it difficult to negotiate the rapids in Segments 2 and 3.

Information and Education

Informational bulletin boards are located at Muleshoe, and on private land at the John Day River bridge in Spray. These boards contain boater registration stations, fire regulations, OMB regulations, and minimum impact camping requirements. Signs also discourage shooting and garbage dumping. Public information and education is provided by the NPS at John Day Fossil Beds National Monument including a visitor center and interpretive displays.

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SEGMENT 5 : Dayville to Headwaters

Location and Characteristics

This segment lies between the South Fork/mainstem confluence and the mainstem headwaters in the Malheur NF. The John Day River originates in ponderosa pine-covered mountains and flows into the John Day Valley of grass and sagebrush, passing the towns of Prairie City, John Day, Mount Vernon, and Dayville. Livestock grazing and growing hay are the primary agricultural uses in this segment**.**

This segment and its tributaries make up the upper mainstem John Day River subbasin, draining an area of approximately 1,070 square miles. Subbasin elevations start above 9000 feet and drop to 2,230 feet and range from forest and range land in the Blue Mountains to lower benchlands and irrigated valleys. Major tributaries to this segment include Dixie Creek, Strawberry Creek, Canyon Creek, and Beech Creek. The South Fork, a separate subbasin, marks the boundary between Segments 4 and 5.

The John Day River has been gauged since 1926 in Segment 4 at Picture Gorge, about 6 miles from the beginning of Segment 5 at the mainstem/ South Fork John Day River confluence. Annual average discharge at Picture Gorge is 346,600 af. Not including the South Fork, Segment 5 and its tributaries contribute about 246,600 af annually. Peak discharge from the subbasin generally occurs between March and early June, while the lowest flows occur during August and September.

Water quality tends to be good in the upper subbasin, aside from the late summer months when water temperatures are prone to be high. Irrigation return flow is a major source of nutrient non-point source pollution. Cattle feedlots along the stream have been identified as point sources of pollution. Cattle grazing, road building, and timber harvesting have altered the watershed by compacting soils and reducing vegetative cover, increasing soil erosion potential, decreasing precipitation infiltration and storage, and increasing runoff. Management methods such as range improvements, vegetation manipulation, and riparian enhancement projects would improve watershed conditions. The most developed area in the basin consists of the upper John Day River valley from Dayville to Prairie City. There are no municipal sewage point source discharges to the streams of the subbasin although Mount Vernon does have a discharge permit.

Land Ownership and Classification

The headwaters of this segment begins the Malheur NF and flows for eight miles to the National Forest boundary. The river then flows through mostly private lands through the rest of this segment. A few small tracts of BLM land are scattered among the private lands, but these tracts do not involve river frontage. ODFW manages two small tracts of river frontage in this segment. One is near Dayville and the other near Mt. Vernon. There are no state Scenic Waterways or WSR designations on this segment. OPRD operates the 21-acre Clyde Holliday State Park, located on the river seven miles west of the town of John Day on US 26.

All of this river segment is located in Grant County which has planned and zoned lands adjoining the river for forest use from RM 284 to RM 276, and as exclusive farm use from RM 276 upstream to the headwaters.

Lands zoned for forest use in this segment are designated Forest 80 (160) which is applied to the highest and best producing forest lands. Its purpose is to conserve and protect forest lands for commercial growing and harvesting of timber and to protect other forest uses such as watersheds, wildlife habitat, scenic and recreational values and livestock grazing. In an F-80 (160) zone, the minimum lot size for new farm or forest parcels is 80 acres and the total number of homesites cannot exceed an overall density of one dwelling for every 160 acres.

Land zoned for farm use is designated either EFU-40 or EFU-80. The purpose of this zone is to preserve the best farm land for agricultural use. This zone is applied to the prime intensive agricultural lands for farm use consistent with existing and future needs for agricultural products, open spaces and resource protection. A lot or parcel of 160 acres or greater is considered a farm unit. A lot or parcel of less than 160 acres can be created as per the numerical value provided after the letters EFU (80) or (40) if approved through a conditional use process.

Access

Public river access is limited in this segment due to the extensive private land surrounding the river. US 26, however, follows the river for 53 miles from Prairie City to Dayville. It intersects one mile of state land just east of Dayville, a small parcel of public land 8 miles east of Dayville, and a small state parcel near Mt. Vernon. Clyde Holliday State Park (7 miles west of John Day on US 26) provides limited access to the

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river. A paved county road follows the river through private land for 10 miles southeast of Prairie City before entering about 4 miles of a mixture of USFS and private lands. A paved USFS road (#14) then follows the river to near the headwaters. This road and the river are mostly bordered by USFS land for 14 miles but they do intersect a few parcels of private land.

A forest road parallels the headwaters (RM 284) in the Malheur NF. Outside the forest a county road follows the river to Prairie City at RM 263. There US 26 begins a westerly route near the river through John Day (RM 249), Mt. Vernon (RM 239), and Dayville (RM 213). There is no public land or public access to the river in this segment.

Vegetation

The precipitation in Segment 5 varies depending on location, in the section from Dayville through Prairie City to the Blue Mountain Hot Springs area, precipitation averages between 12 to 24 inches annually. Beyond the hot springs, precipitation increases to greater then 24 inches as described in ICBEMP (Quigley and Arbelbide, 1997). River elevation rises from 2,340 feet to around 5,800 feet above sea level at the headwaters. The majority of this segment consists of canyon walls rising gradually (25 - 40%) from a broad valley bottom to elevations of 4,000 to 5,000 feet above sea level. The river generally flows through cultivated fields until reaching the Deardorff Creek area and from this point the hill slopes become steeper (30 - 45%) with some slopes reaching 80%. As the mainstem gets closer to the headwaters, the drainage narrows greatly and the surrounding slopes reach elevations of 7,000 feet or more. The soils are generally well drained, gravelly loamy sands and gravelly clay loams with slight erosion hazard.

Segment 5, between Dayville and Prairie City, lies within the Lava Plains ecoregion and the portion between Prairie City and the headwaters is in the Blue Mountains ecoregion (OBP, 1998). Upland plant communities have been described by ICBEMP (Quigley and Arbelbide, 1997) as ‘dry shrub’ and ‘cool shrub’.

The wide meadows along this segment are historic floodplains, used primarily for agriculture and ranching activities. Much of the original riparian vegetation of cottonwoods and willows has been replaced by meadow grasses and alfalfa. Some areas along the river, such as Dayville and Prairie City, still retain large cottonwood and willow stands.

The functionality of the riparian area for a portion of this segment, from Dayville to John Day, was rated in 1997, using the PFC Assessment method (USDI, BLM, 1993 and USDI, BLM, 1998c). The functional rating was ‘functional - at risk’, which means, the riparian zone is in a functional condition, but susceptible to degradation from significant natural events or excessive man caused influences. The trend rating was ‘upward’ which means the riparian area is improving in it’s overall condition. The assessment rating found the riparian vegetation on the borderline between lacking and not lacking in diverse age-class distribution and composition of vegetation. The same borderline rating existed between plant species which indicate good riparian soil moisture holding characteristics and vegetation which produces root masses capable of withstanding high flows. There was adequate vegetation cover present to protect banks and dissipate flow energy during high water events and the riparian vegetation did exhibit high plant vigor. The assessment indicated this part of the segment would benefit from the presence of large woody material to capture bedload, help develop floodplains and dissipate energy during high water; however, the material was not present in sufficient quantities to be a benefit and the riparian area was not an adequate source of this material for the near future.

Agriculture, Grazing, and Other Land Uses

The private land along this segment is primarily used for livestock grazing and hay production. The few small scattered parcels of BLM land in this segment are not located on the river and also are used primarily for livestock grazing. Lands in the uppermost portion of this segment in the National Forest are predominantly used for livestock grazing, timber harvest and recreation.

There are 3 BLM administered grazing allotments on this segment (see maps and **Table III-E** and **Appendix L**).
Mining is also a common use in the upper portion of this segment. Placer mining occurs on Canyon Creek from the mouth upstream and there is potential for moderate-sized operations to mine the bench gravel. Most lode mines have ceased operation.

Water and Fisheries

The part of Segment 5 from Dayville to Reynolds Creek was listed on the ODEQ 303(d) list as exceeding state criteria for dissolved oxygen, fecal coliform, flow modification, and summer water

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temperature. The rest of Segment 5 was listed on the basis of summer water temperatures for bull trout.

Water quality generally exhibits satisfactory chemical, physical, and biological quality. Higher than normal turbidity and temperatures are associated with high and low streamflows, respectively. Streams with low elevation headwaters are more likely to have elevated water temperatures. Depending upon soils, geology, and land use, some tributaries exhibit erosion and sedimentation problems. High bacterial levels downstream from John Day threaten swimming uses (OWRD, 1986).

The most common anadromous fish found in this segment are summer steelhead, Spring Chinook salmon, and Pacific lamprey. Resident fish include bull trout, rainbow (redband) trout, mountain white fish and westslope cutthroat trout in tributaries.

Mining, road building, logging, livestock grazing and other resource uses have contributed to stream sedimentation and turbidity, causing fish habitat degradation. Channelization of the river for agriculture and repair of the 1964 flood damage has reduced habitat diversity, causing the major reduction in fish habitat. Livestock grazing and road building also have contributed to a decrease in streamside shading, contributing to elevated summer stream temperatures that limit fish production, growth and distribution. The optimum water temperature for fish purposes in the John Day River is 55° F with a maximum daily average temperature of 60° F. However, water temperatures average 68° F daily in normal years. Also, instream flows in August and September often are too low to support healthy fish populations. The BLM monitors water temperature in this segment at the National Forest boundary.

Wildlife

Wildlife diversity in this segment is somewhat improved over diversity in the lower river segments due to increased cottonwood stands and other riparian tree and shrub species. Raptor use along this segment increases dramatically, due to the availability of perches and prey species such as Townsend's ground squirrels and mice. Redtail hawks are commonly found yearlong. Rough-legged hawks, goshawks, Coopers hawks, migrants such as pine grosbeaks, Oregon juncos, mountain bluebirds and robins are known to occur in the area.

Bald eagle use in this segment is high due to the presence of cottonwood stands for nocturnal roost sites and an increase in food supply. Several roost sites have been documented as consistently used, although it appears that use of particular trees may not be critical due to the availability of additional trees.

The agricultural lands and native range in this segment are used heavily by mule deer throughout the year. The most concentrated use on agriculture lands occur in late fall and early winter. Native winter range has the most concentrated use in winters with increased snow accumulations at the higher elevations.

Scenic Quality

Most of this segment is in a rural setting. The river begins in the forested Blue Mountains but soon enters a wide, flat, agricultural valley bordered to the south and north by mountains. To the south, the peaks of the Strawberry and Aldrich Ranges make impressive backdrops, especially when snow-laden. The valley itself is mostly comprised of irrigated, green pasture-lands and livestock-grazed hills of grass and, sagebrush. The river passes through four small towns, the city of John Day being the largest.

Cultural Resources

Little cultural resource inventory has been done along this segment, due to the limited amount of public land. No prehistoric sites have been recorded. Few, if any, sites would be expected based on the landforms present on public lands within this segment. However, several sites have been documented north of Long Creek Ranger District and south of Bear Valley Ranger District on USFS managed lands in the subbasin. Prehistorically, the upper basin was a transition area between peoples of the Great Basin and the Columbia Plateau.

Prior to 1830, this area was occupied by Northern Paiute groups (Ray et al. 1938). It was only after this period, due to the introduction of the horse, firearms and disease, that the Umatilla and Cayuse were able to push south to the John Day River. Today, this area is partially within the ceded lands of the CTWSRO. It is also within what the CTUIR and the Warm Springs consider a usual and accustomed joint use area. There are no known Native American religious sites or traditional use areas within this segment.

Gold mining is historically important to this area. The discovery of gold in the 1860's promoted settlement of the area, especially at Dayville and Prairie City.

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Kam Wah Chung State Park is located in the City of John Day. It is a museum preserving the site building and supplies of a nineteenth-century Chinese pharmacy.

Recreation

Little public recreation occurs on this segment due to the lack of public land. Private lands offer some recreation opportunities such as hunting, fishing, gold panning and swimming to the friends and family of the landowners. Some hunting and fishing also may occur in the upper reaches on the parcels of USFS land or within the state land parcel near Dayville. OPRD operates Clyde Holliday State Park, located on the river seven miles west of John Day on US 26. This park is a 21-acre park with 30 campsites with electric hookups, restrooms and showers, a hiker/ biker primitive camping area, dump station and an 8-acre day use area with over a quarter mile of river frontage. OPRD also manages Kam Wah Chung State Park.

Information and Education

Public information and education within this segment is primarily provided at Clyde Holliday State Park.

SEGMENT 6 : North Fork - Kimberly to Monument

Location and Characteristics

This segment lies between the mainstem/North fork John Day River confluence (at Kimberly, Oregon and the community of Monument, a distance of 16 miles. The river valley in this segment is very wide with much of the bottomland in cultivated fields. State 19 parallels the river here for 14 miles.

There are several farms and ranches along the river and large fruit orchards near Kimberly. There are three BLM recreation sites on the few tracts of public land in this segment that provide river access .

Land Ownership and Classification

Land along the river in this segment is predominantly private. The BLM administers a total of about 3 miles of river frontage in this 16 mile segment. The BLM administered lands primarily occur near Kimberly where two BLM campgrounds are located.

All of this river segment is located in Grant County and is planned and zoned for farm use to preserve the best farm land for agricultural purposes. This zone is applied to the prime-intensive agricultural lands consistent with existing and future needs for agricultural products, open space and resource protection. A lot or parcel of 160 acres or greater is considered a farm unit. A lot can be created as per the numerical value provided after the letters EFU (20) if approved through a conditional use process.

Access

Grant county 402 closely follows this river segment for 14 miles from Kimberly to Monument. It intersects two parcels of BLM - administered land which contains Big Bend and Lone Pine campgrounds. Big Bend has a primitive boat launch. The balance of river frontage in this segment is privately owned. A river access park is located at Monument.

Vegetation

The annual precipitation in this segment averages 12 to 24 inches as described in ICBEMP (Quigley and Arbelbide, 1997). The river elevation rises from 1,820 feet to around 2,000 feet above sea level. Most of this segment is characterized by agricultural and pasture land rising gradually (3 - 10%) from the

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river and reaching canyon slopes (45 - 75%) which reach 3,200 to 3,500 feet above sea level. The soils are generally well drained, gravelly loamy sands and gravelly clay loams with slight erosion hazard.

This segment lies within the Lava Plains ecoregion (OBP, 1998). Upland plant communities have been described by ICBEMP (Quigley and Arbelbide, 1997) as 'dry shrub' and 'cool shrub'.

Land adjacent to the river is used primarily for agriculture and ranching activities. The riparian conditions vary widely, some areas have an extensive overstory of willow, alder, and water birch with an understory of grasses, sedges, and rushes. Other locations have little vegetation and consist of mainly rock and gravel shorelines. Other vegetation associated with the riparian areas include clovers, clematis, horsetail, rose, bluegrass, and cottonwoods. A PFC Assessment has not been completed for Segment 6.

The only special status species known to occur in this river segment is *Thelypodium eucosmum* (arrowleaf thelypody). Species suspected to occur in the segment are *Juncus torreyi* (Torrey's rush), *Mimulus jungermannioides* (hepatic monkeyflower) and *Rorippa columbiae* (Columbia cress).

Agriculture and Grazing

Livestock grazing and growing hay in fields along the river are the principal economic uses of this river segment. Lands just off the river, both public and private, are used for livestock grazing during the spring and summer. Livestock, primarily cattle, are fed in concentrated feed lot operations during the winter. These operations occur along the river where cattle are fed the hay grown in the area during the summer. There are 16 BLM administered grazing allotments on this segment (see maps, **Table III-E** and **Appendix L**).

Water Quantity and Quality (For Segments 6, 7, and 8)

The North Fork has the best chemical, physical, and biological water quality in the John Day basin. Water quality problems such as elevated temperatures, low dissolved oxygen, low flows, sedimentation, bank erosion, and debris accumulation do occur in localized areas and can be partially attributed to historic and present land management practices such as dredge mining, channelization, logging, road construction, irrigation, and improper livestock grazing. Leaching of toxic mine effluent into Granite Creek is a localized problem being addressed by ODFW, USFS and BPA in a fish habitat restoration project. Water quality is adequate for most beneficial uses. However, elevated stream temperatures and sediment problems are a concern regarding cold-water fisheries (OWRD, 1986).

Segments 6 and 7 are listed on the ODEQ 303(d) list on the basis of summer water temperatures. All of Segment 8 is listed on the 303(d) list for summer water temperatures for bull trout. BLM monitors water temperature within these segments at various points. For Segment 6, one is above Kimberly at Lone Pine recreation site and one is downstream of Monument. For Segment 7&8 water temperatures are monitored at the National Forest boundary near Dale and at Wrightman Canyon

The North Fork subbasin encompasses an area of about 1,800 square miles in Morrow, Umatilla, and Grant Counties. The North Fork John Day River flows westward from the Blue Mountains for over 100 miles before entering the mainstem John Day River at Kimberly (RM 184). Subbasin elevations range from about 1,900 feet near the mouth to over 8,000 feet in the Blue Mountains.

The North Fork is the most important subbasin in terms of water quality and flow contribution to the John Day River. It contributes over 60 percent of the average annual discharge of the John Day basin. Major North Fork tributaries are Cottonwood, Fox, Big Wall, Potamus, Camas, Desolation and Granite Creeks, and the Middle Fork John Day River.

The North Fork has been gauged at Monument since 1925, and was gauged upstream near Dale from 1929 to 1958. Additional gauged tributaries include Camas, Fox and Desolation Creeks. Average annual discharge at Monument is 903,200 af. Peak discharge occurs between March and early June, and lowest flows generally are during July, August, and September. Records indicate flows have been below 10 cfs on North Fork tributaries, but only Fox Creek experiences periods of no flow.

National Forests are important watersheds. Forest canopy, soils, slope, elevation, and land use help to determine how much water is produced in the subbasin. Gauging stations located in the upper watershed provide a good indication of water yield from the surrounding National Forests. The average annual water yield for the subbasin above Monument is 359 af per square mile. Average annual water yield is considerably greater in the upland forest areas than for the rest of the subbasin.

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Camas Creek, upstream from the town of Ukiah, continually exhibits high nitrate levels regardless of the time of year. The source is unknown.

According to the ODEQ, the lower North Fork tributaries of Rudio, Fox, Upper Big Wall, and Cottonwood Creeks have periodic water quality problems in various stream sediments. The elevated temperatures, low dissolved oxygen, low flows, siltation, bank erosion, and debris accumulation in these streams can be partially attributed to grazing, channelization, logging practices, road construction, and irrigation withdrawals. Overall, the North Fork and its upper tributaries of Camas, Granite, and Clear Creeks have moderate problems. The remainder of the subbasin's streams are in good condition.

Fisheries

The North Fork subbasin is the major producer of wild spring chinook and summer steelhead in the John Day basin. Approximately 58 percent of the total basin spring chinook population and 43 percent of the total summer steelhead population are produced in this drainage. In recent years, as many as 1,555 adult spring chinook and 8,000 adult summer steelhead have returned annually to the subbasin to spawn. In addition, the lower North Fork is the migratory route for runs traveling to and from the Middle Fork subbasin. The North Fork drainage also supports resident fish populations. Smallmouth bass reside in the North Fork below RM 22.6 and resident trout are found throughout the subbasin.

Steelhead, resident trout and smallmouth bass populations provide a substantial recreational fishery for anglers. Annually about 10,000 recreation days are spent fishing for steelhead on the North Fork. Trout and bass fishing generate another 2,500 to 5,000 angler recreation days each year.

Streams in the Middle Fork and upper North Fork drainage generally have good channel structure, riparian and instream cover and water quality and quantity. Consequently, the subbasin contains approximately 72 miles of spring chinook spawning and rearing habitat and 700 miles of steelhead habitat. Spring Chinook habitat lies between Camas and Baldy creeks on the North Fork and in the Granite Creek system. Granite Creek usually produces more spring chinook per mile than any other area in the John Day basin. Located in the North Fork headwaters, this system, which includes Clear and Bull Run Creeks, produces 20 percent of the total John Day Spring Chinook population. Major steelhead producing streams in the North Fork Subbasin are Cottonwood, Rudio, Deer, Wall, Potamus, Desolation, Granite, Ditch, Mallory, Trout, Meadow Brook, Trail, Olive, Clear, Bull Run, Camas, Beaver, and Big Creeks.

The long term trend for spring chinook production is flat in the North Fork subbasin. However, Granite Creek has declined dramatically, especially since 1974. Increased logging, road building and poaching activities in the forested uplands probably have contributed to the declining populations through degradation of spawning and rearing habitat. High summer water temperatures limit juvenile spring chinook distribution and survival. In addition, declines are also partially attributable to dam mortality in the Columbia River. Summer steelhead production also has declined slightly.

Wildlife

Wildlife habitat diversity in this segment is quite high due to riparian habitat condition and surrounding agriculture fields with species use being similar to that found in Segment 5.

Scenic Quality

This river segment has high scenic values. Many people discover this area while driving for pleasure on nearby SR 19 which follows the mainstem of the John Day. This is a rural setting containing farm and ranch houses, barns, orchards and cultivated fields near the river. The river valley here is wide and the adjacent hillsides are covered with grasses, rock outcrops, and occasional juniper trees.

Cultural Resources

This segment has a very small amount of public land within the river corridor. Several small cultural resources inventories have been conducted within this segment, but no sites were found. Given the land forms occurring on public lands within the river corridor, expectations are low for discovering significant prehistoric cultural resources. Prior to 1810, this segment was occupied by Northern Paiute groups (Ray et al.1938). It was only after this period that the more northern Sahaptian-speaking groups (specifically the Umatilla and Cayuse) were able to push south to the John Day River. Today, this area is within the ceded lands of the CTWSRO and also within what the CTUIR consider traditional use areas. There are no known Native American religious sites or traditional use areas within this segment.

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Historic use of this segment appears to have been principally related to farming and ranching. No historic settlements or travel routes are recorded for this segment.

Recreation

Public recreation opportunities on this segment are limited to the few tracts of BLM-administered lands on the river. These public lands, accessible by a paved highway, provide important river-related recreation opportunities such as boating, fishing, camping, wildlife viewing, swimming and picnicking. BLM manages two developed campgrounds, Lone Pine and Big Bend, and one day-use site at Monument. Primitive boat ramps are available at Big Bend campground, and at Monument River Access Park, which serves as a take-out point for day and overnight boating trips originating at various points upstream. Vandalism is a problem at these sites, particularly at Big Bend and Monument.

This river segment has received relatively low public recreation use in the past, but use is increasing. Primary recreational activities include driving for pleasure, fishing, and camping. The campgrounds in the area receive the most use during the fall hunting season when hunters use them as base camps while using other public lands in the area. Boating in this segment is primarily associated with fishing and occurs from April through early July, with use levels very low. No commercial use was reported in this segment during 1998.

Information and Education

Informational bulletin boards are located at Big Bend, Lone Pine and Monument Recreation Sites and a boater registration station is located at Monument.

SEGMENT 7 : North Fork - Monument to Camas Creek

Location and Characteristics

This very remote river segment stretches 41 miles between the community of Monument and Camas Creek near the community of Dale. There is a primitive road adjacent to most of this segment, but it occasionally is impassable in inclement weather and often passable only by four-wheel-drive vehicle. The river flows through some of the finest scenery in Oregon, with abundant wildlife and interesting white water. The river valley is bordered by steep rugged hills covered with park-like stands of ponderosa pine, grass-covered clearings and rock outcrops. The riparian zone and side canyons are forested with ponderosa pine and Douglas fir trees.

There are a few dwellings and commercial structures near the communities of Monument and Dale with a few ranches in the mid-portion of the segment.

Land Ownership and Classification

There are 41 river miles in this segment. The lands along approximately 26 river miles (66%) are privately owned; approximately 14 miles (32%) are administered by BLM, and only about one mile (2%) is administered by the State of Oregon.

Most of this segment is designated as a State Scenic Waterway. This designation begins at RM 20.2, which is about 3.5 miles upstream from Monument, and continues upstream to the boundary of the North Fork John Day Wilderness Area (NFWA) at RM 76 in the Umatilla NF. The State Scenic Waterway classification for this segment is proposed as Accessible Natural River Area. The state guidelines for managing lands within the state Scenic Waterway in this segment are found in Chapter IV.

Lands adjoining the river are planned and zoned by Grant County for use as rangeland from RM 20.2 to approximately RM 40. The zone designation is “Multiple Use Range” MUR-40 (1601) and is applied to agricultural and non-productive forest lands, managed primarily for range and grazing use. A lot or parcel of 160 acres or more is considered a farm unit In this zone . A lot or parcel of less than 160 acres, but not less than 40 acres, can be approved its a farm unit through a conditional use process. The total number of dwellings allowed in the zone are not to exceed an overall density of one unit for every 160 acres.

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Upstream from RM 40 the river meanders north and south between Grant and Umatilla Counties. In Grant County (above RM 40) the lands adjoining the river are planned and zoned for forest management. The zone designation between RM 40 and RM 51 is Forest 80 (160). This zone is applied to the highest and best-producing forest lands. Its purpose is to conserve and protect forest lands for commercial growing and harvesting of timber and to protect other forest uses such as watersheds, wildlife habitat, scenic and recreational values and livestock grazing. In an F-80 zone, the minimum lot size for new farm or forest parcels is 80 acres and the total number of principal and secondary home-sites cannot exceed an overall density of one dwelling for every 160 acres.

The remaining upstream segment of the river (above RM 51) is adjoined by lands planned and zoned by Umatilla County for grazing, farm use and big game winter range. There are two zones that affect the use of these lands. The primary zone designation is Grazing/ Farm. (GF) and the overlay zone designation is Critical Winter Range (CWR) overlay zone. The purpose of the GF zone is to protect grazing lands and other uses such as agricultural cultivation, watersheds, wildlife habitat and scenic values. In a GF zone the minimum lot size is 160 acres and parcels less than 160 acres may be allowed through a conditional use process. The density of dwellings allowed in this zone cannot be more than one dwelling for every 160 acres.

The purpose of the overlying CWR zone is to conserve and protect important elk and deer winter range. The dwelling unit density is limited to a maximum of three dwellings within a radius of one-half mile of any proposed dwelling. All requests for dwellings or land divisions that will result in eventual placement of a dwelling are referred to the ODFW for review and recommendation.

Access

There are 6 miles of county paved and gravel road from Monument to Wall Creek. This road passes through 1.5 miles of BLM-administered land providing river access. A privately-owned dirt road crosses private land and several tracts of BLM land from Wall Creek to Potamus Creek (approximately 15 miles). This is a limited season road due to wet weather conditions and not a public access route. ODFW has acquired a public access easement along a graveled road which follows the river closely from Potamus Creek to Camas Creek (17 Miles) and provides easy access to the river and the lands between the road and the river. From Camas Creek to Dale, the North Fork follows US 395 for 3 miles through private land, then follows an all-weather road for one mile, crossing BLM land to the forest boundary. The access easement is for private lands between the river and the road as well, according to ODFW.

Vegetation

The average annual precipitation is 12 to 24 inches in this segment, as described in ICBEMP (Quigley and Arbelbide, 1997). The river elevation rises from about 2,000 feet at Monument to 2,715 feet above sea level at the confluence with Camas Creek. The canyon is generally narrow in this segment with slopes (40 - 65%) rising to around 4,400 feet above sea level.

This segment lies within the Blue Mountains ecoregion (OBP, 1998). Upland plant communities have been described by ICBEMP (Quigley and Arbelbide, 1997) as ‘dry shrub’ and ‘cool shrub’. Upland plant communities, adjacent to the river, consist of a ponderosa pine and Douglas fir mix with some sites predominately ponderosa pine. Both Western juniper and mountain maple are present. Sagebrush and bitterbrush are prevalent with various grasses including cheatgrass. Weed species present are Dalmation toadflax, bull thistle, and Scotch thistle.

In the riparian zone, various willow species, including coyote willow, are present (BLM 1996a). A variety of other woody species are present consisting of ninebark, dog wood, hawthorn, water birch, chokcherry, cottonwood and some alder. Rose, serviceberry and syringa are present in the lower part of Segment 7. Sedges, rushes and reed canary grass are found throughout the segment. A PFC Assessment has not been completed for Segment 7.

Grazing

There are 12 BLM administered grazing allotments along this river segment (see maps, **Table III-E** and **Appendix L**).

Water and Fisheries

See Segment 6 for a discussion of water and fisheries in the North Fork John Day River.

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Wildlife

Wildlife on this segment is similar to that on Segment 6, with elk and Lewis' woodpeckers being notable additions. Wintering bald eagle use increases in this segment with several documented nocturnal roost sites.

Scenic Quality

This segment contains diverse scenic values that include a wide variety of vegetation, color and interesting land forms. It is noted for its extremely steep hillsides covered with a mosaic of ponderosa pine groves, grassy meadows, wildflowers, rock outcrops and abundant wildlife.

The mid portion of this segment between RM 25 and RM 50 is a primitive setting with only a few man-made structures and primitive roads. Rural settings, with farms, fields, and livestock occur near the communities of Monument and Dale. Timber harvesting is occurring in the upper segment where a gravelled county road facilitates log-hauling. The primitive road which follows this segment is frequently visible from the water but does not generally attract attention unless it is being used by a vehicle.

There are two distinct landforms that dominate the landscape within this segment. From Monument to Potamus Creek (RM 40) the river (elevation 2,100 feet) flows through a wide valley with mountain peaks between 3,000 and 3,800 feet in height close by. This area is mostly rangeland with steep hillsides containing stands of ponderosa pine. Upstream from Potamus Creek towards Dale, the river corridor narrows and the hills rise to as much as 4,400 feet. Ponderosa pine stands here are more dense than those at lower elevations, especially on the north-facing slopes.

Cultural Resources

This segment has the most public land base of all the North Fork John Day River segments, although much of this is scattered in a patchwork fashion. No formal inventories of cultural values have been conducted. In 1992, however, an informal examination of selected public lands within the corridor did discover one small pit house village. Much of the public land within this corridor exhibits landforms not conducive to high probability for significant cultural resources.

Prior to 1830, this segment was occupied by Northern Paiute groups (Ray et al. 1938). It was only after this period, due to the introduction of the horse, firearms and disease, that the more northern Sahaptian-speaking groups (specifically the Umatilla and Cayuse) were able to push south to the John Day River. The North Fork then became the exclusive domain of the Umatilla. Today, this area is partially within the ceded lands of the CTWSRO. It also is within what the CTUIR and the Warm Springs consider a usual and accustomed joint use area. There are no known Native American religious sites or traditional use areas within this segment.

Historical use of public lands within the corridor has been limited to some farming as evidenced by an occasional irrigation feature found on the flats next to the river. All historic structures located along this segment are on private lands.

Recreation

Limited public lands and a remote location have traditionally resulted in low recreation use of this river segment, but during the last few years the scenic quality, low use, and good fishing have become known to many more people, and use has increased steadily. A 17-mile primitive road provides public access to the north bank of the river from Potamus Canyon to US 395, where recreational opportunities include driving for pleasure, fishing, dispersed camping, and picnicking. Boating use of this segment is seeing a dramatic increase. While there is are no developed launch points, boaters use numerous areas with low banks to access the river, on both public and private lands near Camas Creek, Wrightman Canyon, and Wall Creek, creating the potential for trespass problems. The developed Monument River Access Park in Segment 6 often serves as a take-out point. Water levels are generally sufficient for floating between March and mid-June, although most people find the weather in March too harsh for enjoyable boating. The river in this segment is characterized by a rocky channel with shallow, fast-flowing water and many Class 1 and 2 rapids.

Boating use of this segment includes one to three day trips at various locations, primarily occurring in May, June and early July. Due to a lack of developed launch points or boater registration stations, reliable use data is not available for this segment. Motorized boating is permitted in Segment 7, but it is uncertain how much motorized use is currently taking place.

Fishing for trout, steelhead, and smallmouth bass and hunting for deer and elk are considered to be good in this segment, but use is low, due in part to the small size of public land tracts. Fishing access is

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available to the north bank from a 17-mile public easement and a portion of US 395, however the large percentage of private land limits fishing and hunting for most of the surrounding area. The BLM is currently seeking to acquire lands along 13 miles of river in the upstream portion of this segment under the proposed NOALE. Acquisition of these lands would greatly increase public recreation opportunities in this area.

There are no developed facilities within this river segment. A recent inventory of dispersed campsites has not been completed, however historical data indicates that there are approximately 53 dispersed sites that have potential for camping, approximately 19 of which are on public land.
Commercial use occasionally occurs in this segment, but in 1998 there were no commercial trips reported.

Information and Education

Public information and education are not provided in this segment.

SEGMENT 8 : North Fork - Camas Creek to Headwaters

Location and Characteristics

This segment covers the upper stretch of the North Fork from its confluence with Camas Creek to its headwaters in the NFWA. Much of this segment lies in Grant County, with the last 7 miles flowing through Umatilla County. Mountainous forest land comprises most of the surrounding area in this segment.

Land Ownership and Classification

The majority of land in this segment is within the boundaries of the Umatilla NF. A few small parcels, totaling less than three miles in length, comprise the only existing private land along the lower portion of this segment.

The North Fork John Day River from its headwaters to its confluence with Camas Creek was designated a WSR in 1988. The upper portion of this segment flows through the NFWA. This segment also is designated as an Oregon State Scenic Waterway beginning at the Wilderness Area boundary at Big Creek and ending downstream far below Segment 8 at RM 20.2 near Monument. The state Scenic Waterway classification for this segment is Accessible Natural River Area. The state guidelines for how private land should be managed within this state Scenic Waterway can be found in Chapter IV.

A USFS proposed Cougar Meadows Research Natural Area also encompasses a portion of the river drainage. The paved road which parallels part of the river was administratively designated a National Scenic Byway by the USFS.

This segment is located in Umatilla County which has lands along the river zoned for grazing, farm use and to protect critical big game winter range. The primary zone designation is for this segment is Grazing Farm (GF). The purpose of the GF zone is to protect grazing lands and other uses such as agricultural cultivation, watersheds, wildlife habitat and scenic values. The minimum lot size is 160 acres in a GF zone and parcels less than 160 acres may be allowed through a conditional use process. The density of dwellings allowed in this zone cannot be more than 1 dwelling for every 160 acres. The other zone in this segment is CWR. The purpose of this zone is to conserve and protect important elk and deer winter range. The dwelling unit density in this zone is limited to a maximum of three dwellings

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within a radius of one half mile of any proposed dwelling. All requests for dwellings or land divisions that will result in eventual placement of a dwelling are referred to the ODFW for review and recommendation.

Access

The river is quite accessible in most places due to the extent of federal land. A USFS all-weather road (#41) follows the North Fork upstream for 11 miles from US 395. Most of the road runs through National Forest land providing good access. The road number changes to #42 and becomes a dirt road for about 7 miles, where it is adjacent to the river. From the end of the dirt road, a foot trail follows the river through the Wilderness Area for approximately 14 miles, where a side trail then diverts to the southeast. This trail ends at a gravel road, which parallels Granite Creek, a major tributary, for seven miles. The main trail continues to follow the North Fork northeast through the Wilderness Area to the headwaters.

Vegetation

This segment receives over 24 inches of precipitation annually as described in ICBEMP (Quigley and Arbelbide, 1997). The river elevation rises from 2,715 feet to approximately 6,300 feet above sea level at the headwaters. The river canyon is predominately narrow, heavily forested and almost entirely on land managed by the USFS. A management plan for this segment was developed by the Umatilla NF. Copies of the management plan may be obtained by contacting the Umatilla NF Supervisor's office in Pendleton, Oregon or the North Fork John Day Ranger District.

The river segment lies within the Blue Mountains ecoregion (OBP, 1998). Upland plant communities have been described by ICBEMP (Quigley and Arbelbide, 1997) as 'dry forest' type at lower elevations changing to a 'moist forest' type above 4,000 feet.

The upper reaches of this segment are characterized by stands of lodgepole pine interspersed with mixed conifer as described in the North Fork EA (USDA, FS, 1993). Englemann spruce and western larch are present near the river below 6,000 feet and above this elevation subalpine fir occur. A deciduous component of alder and willow are present along the river in spots. Farther downstream, rock outcrops and rimrock topography becomes more prevalent which provides habitat for entirely different plants. Ponderosa pine, Douglas fir and western larch become dominate. One known special status species exists, *Botrychium minganense* (grapefern). A PFC Assessment has not been completed for this segment.

Land Uses

The Umatilla NF administers the majority of land and water in this river segment which is designated as a WSR. The management goal of the Forest Service Plan for this area is to maintain and enhance water quality and maintain high levels, of anadromous fish habitat on an area-wide basis. The Oregon State Scenic Waterway, below the Wilderness Area boundary is administered by the OPRD. A few small parcels of private land are concentrated at the lower elevations and patented mining claims form small, private enclaves within the federally-managed land.

Recreation is the major use of this river segment. It flows through or past several specially-designated areas such as the Wilderness Areas and the National Scenic Byway. Livestock grazing also takes place while, downstream from the Wilderness Area boundary, some timber harvest occurs as well. Mining historically has been an important economic activity in the subbasin and exploration activities continue.

Water Quantity and Quality

(See Segment 6 for a discussion of water in the North Fork John Day)

The North Fork subbasin provides the most important water quality and flow contribution to the John Day River System. This subbasin contributes more than 60 percent of the average annual discharge in the John Day basin. The North Fork was gauged near Dale from 1929 to 1958. Lowest discharge generally occurs during July, August and September and peaks between March and early June. Precipitation, occurring mostly as snow, can exceed 40 inches annually at high elevations in the Blue Mountains. Granite Creek is the major tributary in this segment. Elevations range from over 8,000 feet in the Blue Mountains to about 2,500 feet near Dale.

The North Fork has the highest level of water quality in the John Day basin. Most of the subbasin streams of this segment are considered to be in good condition with generally satisfactory chemical, physical and biological ratings, except for too high temperatures during the late summer months. Land management practices such as cattle grazing, timber harvesting, road construction, mining exploration

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activities in the headwaters and roadless areas significantly influence watershed conditions. Water quality in Granite Creek is affected by leaking and leaching of toxic mine effluents. Several government agencies have been working to try to lessen the continuing impacts of past dredging activities. The natural floodplain functions (meandering, pool formations, etc.) have been reduced due to the constraints from dredge tailing piles. Portions of the river in this segment have been identified as having high potential for soil erosion which coincides with a high degree of stream sedimentation.

Fisheries

The North Fork subbasin is the major producer of wild spring chinook salmon and summer steelhead in the John Day basin. Approximately 58 percent of the total basin spring chinook and approximately 43 percent of the steelhead are produced in this subbasin. These are the largest spawning populations of wild spring chinook and summer steelhead remaining in the Columbia River System.

This segment and its tributaries contain many miles of spawning and rearing chinook habitat. The chinook runs are native to the John Day basin and have never been supplemented with hatchery stock. The run contributes to commercial, sport and tribal harvests. However, sport harvest has been closed since 1978, and tribal harvest has been very limited. Declines are at least partially due to logging road building and poaching. Habitat improvement projects, however, have been underway since the late 1980s in an attempt to counteract these problems.

Granite Creek is the most important wild spring chinook spawning and rearing tributary in the North Fork drainage. The Granite Creek System, including Clear and Bull Run Creeks, produces 20 percent of the total John Day basin spring chinook. Granite Creek also supports a healthy population of native wild steelhead, one of the last major populations of native bull trout (Dolly Varden) and a viable rainbow trout population, The bull trout is listed on the USFS Region 6 and State Sensitive Species List, and is in Category 2 according to the USFWS. The North Fork meets the bull trout's specific habitat requirements and is thought to have one of the few remaining healthy bull trout populations in the state. An important subspecies of rainbow trout, the redband trout, exists in the North Fork.

Other major species which historically occupied this drainage include Pacific lamprey, sculpin, and mountain whitefish. Less is known about their current population sizes and distribution, although whitefish generally are abundant throughout western North America. Whitefish and Pacific lamprey have not been an important commercial or sport harvest species, but have contributed to tribal harvests.

The importance of the fish and associated habitat present in the North Fork made it a high priority for inclusion in the Oregon Wilderness Act of 1984. Additionally, fish have been found to be an ORV by Congress and by the North Fork John Day WSR Resource Assessment. There are more fish spawning sites inside the designated Wilderness Area than outside. This is due to the highly-oxygenated, cold, clear water flowing over excellent spawning gravel plus the adequate amount of large woody material in the river creating diverse habitat for fish. The large amount of river drainage under Wilderness protection contributes to the maintenance of cold water temperatures in the lower North Fork as well. Inside the Wilderness the 1992 chinook index count was the highest on record at 28 redds per mile.

Overall, the spawning, rearing and holding habitat for anadromous and resident salmonid fish is good throughout this river corridor. There is a fair amount of granitic spawning gravels and cobble, and boulder-sized substrate, the latter contributing to the habitat for invertebrate fish food. Sufficient finer substrate conditions exist due to the granitic parent material in the headwaters. There is a plentiful amount of large woody debris in the river which helps to diversify habitat and create pools.

Wildlife

The wildlife population is diverse and thought to be generally stable. The North Fork John Day River drainage serves as a major migration route for big-game species. Approximately 2,500 Rocky Mountain elk use the drainage to migrate from their summer range in the Elkhorn Mountains to their winter range in Bridge Creek WMA. Another 1,000 mule deer utilize the drainage for a similar migration route. A small population of whitetail deer resides in the dense, brushy habitat found at lower elevations. Documented sightings of black bear, cougar, bobcat, and wolverines have been made in the drainage. By the number and frequency of sightings, it is thought that both the black bear and bobcat populations are moderate. Less is known about the others, but populations most likely are low.

Threatened bald eagles, golden eagles, and osprey, have been observed near the lower boundary of this section and may well be found within this segment

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well. There is a variety of woodpeckers found in the river corridor, including pileated woodpeckers, an indicator species of old growth habitat. Goshawks and great gray owls also utilize the area as do mammals such as mink and beaver. It is probable that river otters also reside in the corridor.

In general, the Wilderness Area exhibits excellent wildlife habitat and the rest of the corridor tends to be in fair condition. In the upper reaches, a 20,000 acre sheep allotment has been vacant for many years, having last been grazed by domestic livestock in the 1950s. Therefore, the natural wet meadows in this upper portion are near pristine, and provide high quality habitat for big game, hawks, owls, and small mammals. The riparian condition is very good in the Wilderness Area.

Impacts from resource use and management such as timber harvest, mining, road building, and fire suppression have degraded portions of the river corridor, generally outside of the Wilderness Area. Some of the flat, open meadows and riparian areas have been impacted by recreational activities. The amount of dead and dying trees due to insect infestations and recent fires have created very good habitat for a variety of woodpeckers and great gray owls. The burned areas also provide a diversity of habitat which is excellent for foraging deer and elk. Wildlife is considered to be an ORV by Congress and the North Fork John Day WSR Resource Assessment.

Scenic Quality

The headwaters area is located in the glaciated Elkhorn Mountains. The river flows through stands of lodgepole pine, interspersed with fingers of mixed conifers. Spruce and western larch also are found near the river. Subalpine fir is present above 6,000 feet in elevation. There is evidence of past mining and ponderosa pine harvest activities outside the Wilderness Area on the north side of the river. Huge piles of dredge tailings, caused by historic mining operations are visible. Today, active mines near Dale, Granite and the headwaters are not nearly as degrading. Several large meadows and other smaller wetland areas provide diverse scenery and outstanding wildlife habitat. An old growth aspen stand along the river corridor is a notable plant community feature.

Progressing downstream, a similar species mix is found, with some rock outcrops and steep side slopes into the river canyon. Below the Wilderness Area boundary, rimrock topography is common, with scattered fingers of trees. Below Horse Canyon there is a sheer rock cliff area confining the river for about 3/4 of a mile. The tree species, where present, are typically ponderosa pine, Douglas fir and western larch. Scenery is considered an ORV by Congress and in BLM's North Fork John Day WSR Resource Assessment.

Cultural Resources

The North Fork corridor had been used by the Southern Plateau Indians. The drainage is included within the ceded boundaries of the CTUIR Indians who have provided information indicating that they have an extensive array of documented usual and accustomed sites for fishing, hunting, camping, root digging, berry picking, and other cultural and traditional uses. The CTWSRO are said to have pursued "usual and accustomed" activities in this area as well.

Gold mining is a long and well-established activity along the North Fork and it continues to this day. It was the primary activity which first brought substantial numbers of people to the Blue Mountains in the 1860's, and evidence of this gold rush still exists along the river. Gold occurs in the sand and gravel deposits along the river. Many of the mounds of hand-stacked boulders and thousands of feet of ditches and flumes are testimony to the 1860's gold rush that produced an estimated $5,000,000. Additional evidence of this rich history includes various structures for habitation and use, such as mines and prospect holes. Other minerals such as silver, copper, lead, zinc, chrornite, and manganese also have been produced in small quantities.

Peavy Cabin, just outside the Wilderness Area boundary, is eligible for the National Register of Historic Places. It was built around 1934 by the Dean of the School of Forestry of Oregon State University, who conducted experimental forestry studies on a 40-acre tract of surrounding forest. It is currently used as a Forest Service administration site. The historic value of the North Fork drainage is considered an Outstandingly Remarkable cultural value by Congress and by the North Fork John Day WSR Resource Assessment.

Recreation

This segment of the North Fork is primarily bordered by public land managed by the USFS, and offers many recreational opportunities, both within and outside of a Wilderness Area setting. The portion of this river segment outside of the Wilderness Area is

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easily reached by gravel roads. Visitors to the area often travel the Elkhorn Drive National Scenic Byway, which is adjacent to a portion of the North Fork John Day WSR. It is the main route by which visitors enter the entire area to recreate. Within the NFWA, much of the river is paralleled by trails for both hiking and horseback riding. Several of these trails lead to the Elkhorn Crest National Recreation Trail. This trail follows the crest of the glaciated Elkhorn Mountains and affords spectacular views of the North Fork John Day River headwaters.

The heaviest recreational use in the river corridor occurs in the summer and fall seasons, and is primarily associated with camping and big-game hunting. Fishing along the banks of the North Fork also is very popular, while recreational gold panning is another activity pursued by visitors. Steelhead and resident trout provide a substantial recreational fishery for anglers. Only during the spring runoff period are the last few miles of this segment occasionally floated by rafts, canoes, or kayaks continuing downstream into Segment 7. Some snowmobiling occurs during the winter months.

A number of campgrounds have a primitive or limited level of development, and dispersed camping in open areas and flat spots along the river is popular. Big game hunters utilize these areas heavily during the fall in search of the high quality hunt for which this area is known.

The USFS administers the commercial use of this river segment.

Information and Education

Public information and education within this segment is provided at USFS camping areas and trailheads.

Wilderness

The USFS manages the NFWA in the upper reaches of the North Fork John Day River.

SEGMENT 9 : Middle Fork John Day River

Location and Characteristics

The Middle Fork John Day River, a tributary to the North Fork John Day River, is located entirely within Grant County, draining a subbasin of approximately 806 square miles. The Middle Fork flows northwest from its source in the Blue Mountains of the Malheur NF for over 75 miles before entering the North Fork at RM 32.2. The subbasin has highly variable terrain with elevations ranging from about 2,200 feet near the mouth to over 8,100 feet in the headwater areas.

The largest community near the Middle Fork is Long Creek, with a population of 245. Other communities closer to the river include Ritter, Galena, Susanville, Austin, and Bates. Route US 395 passes north to south through the western portion of the subbasin and US 26 through the southeastern headwater area. In addition, an improved road parallels the Middle Fork for most of its length.

Land Ownership and Classification

The vast majority of river frontage of the Middle Fork is privately owned, even though the first thirty miles are located within the Malheur NF Boundary. Lands along the river in the National Forest are primarily privately owned “inholdings”. These private lands are used primarily for livestock grazing. After leaving the National Forest, the river flows another 45 miles to its confluence with the North Fork. Land along this portion of the river is almost totally privately owned. BLM administers four small tracts that total about two miles out of these 45 river miles. There are no BLM grazing allotments in this segment.

The Middle Fork is a designated as a State Scenic Waterway from its confluence with the North Fork to Crawford Bridge (RM 71).

Lands adjoining the river between RM 27 and RM 33 and from Crawford Creek bridge downstream to Big Creek (RM 39) are zoned by Grant County for forest management. The zone designation is Primary Forest (F-8O (160)) which is applied to the highest and best producing forest lands in Grant County. The zone is intended to protect forest lands for commercial growing and harvesting of timber and conserve and protect watersheds, wildlife habitat and scenic and recreational values. The minimum lot size for new farm or forest parcels is 80 acres in this zone

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and the total number of principal and secondary homesites cannot exceed an overall density of one dwelling for every 160 acres.

Lands adjoining the river between Big Creek (RM 39) and RM 33, and the lower segment of the river from RM 27 to the Middle Fork and North Fork confluence, are zoned for use as rangeland. The zone designation is MUR-40 (160) and it is applied to agricultural and non-productive forest lands which are managed primarily for range and grazing use. A lot or parcel of 160 acres or more is considered a farm unit in this zone. A lot or parcel of less than 160, but not less than 40 acres, can be approved as a farm unit through a conditional use process. The total number of dwellings allowed in the zone are not to exceed an overall density of one unit for every 160 acres.

Access

The Middle Fork flows through a canyon with no vehicle access for the first 10 miles upstream of the North Fork confluence. This section flows through 97 percent private land with 2 small sections of public land near the confluence. A paved county road follows the river for the next 3 miles to Ritter Hot Springs through private land. From Ritter to US 395 (10 miles), the county paved road follows the Middle Fork through private land except for two small parcels of public land. There is a county all-weather road from US 395 for 11 miles to the USFS boundary. It travels through 3 small parcels of BLM land. From the USFS boundary there is an all-weather gravel and paved road (County #20) for the entire length to Austin Junction, with many good public access points to the river on USFS land. Middle Fork and Deer Horn Campgrounds are two National Forest river access points. Part of this section flows through private land and access to the river there is by permission only. Near Austin Junction on US 26, the river flows through USFS land along the highway from its source near Rock Creek Springs near Blue Mountain Summit.

Vegetation

Annual precipitation in this segment varies from an average of 12 inches at lower elevations to greater than 24 inches at the higher elevations as described in ICBEMP (Quigley and Arbelbide, 1997) and the Malheur NF Final EIS (1990). The river elevation rises from 2,190 feet, at the confluence with the North Fork, to approximately 6,600 feet above sea level at the headwaters. The canyon is generally narrow in this segment with slopes (20 - 70%) rising to around 3,600 feet above sea level at the lower end and around 7,000 feet near the headwaters. The Middle Fork above RM 43, to the headwaters, is administered by the Malheur NF.

This segment lies within the Blue Mountains ecoregion (OBP, 1998). Upland plant communities have been described by ICBEMP (Quigley and Arbelbide, 1997), with the lower elevations containing ‘dry shrub’ and ‘cool shrub’ communities and the river segment on the NF transitions into ‘dry forest’ and moist forest’ types.

The upland vegetation communities adjacent to the river, below 3,600 feet, consist mostly of ponderosa pine overstory, but with some sites having a mix of ponderosa pine with either white fir, lodgepole pine or western juniper (BLM 1998b). The understory is dominated by pinegrass in the denser tree stands and in the more open areas, bunchgrass, cheatgrass and some sagebrush. The associated riparian zone primarily consists of an overstory of coyote willow, a mix of other willow species, water birch, dogwood, ninebark and a herbaceous component of sedges, rushes, reed canary grass and miscellaneous riparian grasses. Rock/gravel bars are common in this segment. A PFC Assessment has not been completed for Segment 9.

Land Uses

The vast majority of river frontage of the Middle Fork is privately owned, used primarily for livestock grazing. Past land management practices, especially on private lands, have included using heavy equipment to cut channels for the river. The natural riparian vegetation was removed by these actions, and recovery from the present situation is occurring, but will take many years.

Recreation use occurs primarily along the uppermost 30 miles of this river in the National Forest. Peak use periods are the spring and summer for fishing and the fall for hunting. Use of this area is generally light, but increasing.

Water Quantity and Quality

This segment is listed on the ODEQ 303(d) list on the basis of summer water temperature and flow modification from Crawford Creek to the mouth.

Water quality in the Middle Fork subbasin generally exhibits satisfactory chemical, physical, and biological quality. Elevated stream temperatures is the most serious concern throughout the subbasin.

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The stream occasionally exhibits temperatures that may threaten optimum use by cold water fisheries. Meadow areas may have localized streambank erosion and sediment problems.

The stream gradient of the Middle Fork John Day River averages 40 feet per mile, but steeper gradients are present in the upper reaches and in tributaries. Long Creek is the major tributary. Other tributaries include Big, Vinegar, Bridge, Camp, Clear, and Squaw Creeks.

The Middle Fork has been gauged at Ritter since 1929. Mean annual discharge at Ritter is 186,464 af annually. This accounts for about 25 percent of the estimated flow of the North Fork. Based on the Ritter gauge, peak discharge generally occurs between March and early June, and lowest flows occur during the months of August and September (OWRD 1986).

Sediment and erosion problems generally are not serious, although localized streambank erosion does occur in some meadow areas where streams meander (OWRD 1986).

Most tributaries of the subbasin drain higher elevations and are shaded. Thus, high temperatures are not extensive and do not represent long term problems. The mainstem Middle Fork of the John Day, however, often exhibits high temperatures that threaten optimum use by coldwater fish. The main cause is riparian habitat degradation through overgrazing by livestock. Higher than optimum temperatures for salmonids will continue to occur as a result of natural low flows and irrigation withdrawals in the late summer. Past mining and dredging of the main river also has created some damage to riparian vegetation. Dredge tailings limit the rate of re-vegetation. BLM monitors water temperatures in this segment at the National forest boundary and at the mouth.

Some tributaries exhibit elevated fecal bacteria counts during summer months, probably as a result of use of surrounding areas for cattle grazing. Water-contact recreation or use of these streams for domestic purposes poses potential health risks.

Fisheries

The Middle Fork subbasin produces 24 percent of the total spring chinook and 30 percent of the total summer steelhead populations in the John Day basin. Currently as many as 770 adult spring chinook and 6,000 adult steelhead migrate annually into the subbasin to spawn. The Middle Fork also supports a productive trout fishery. A healthy resident trout population is supplemented in some years with 3,000 legal hatchery rainbows, however, all supplementation stopped in 1994.. Trout and steelhead provide 2,000 to 3,000 and 300 to 500 annual recreational angling days respectively on the Middle Fork.

Habitat for salmon and steelhead has improved in recent years, primarily because of the removal of a diversion dam and the Bates Sawmill which was blocking fish passage and causing water pollution. Consequently, anadromous fish production, particularly that of Spring Chinook, has increased as fish now are able to use the upper Middle Fork System. Approximately 30 miles of spawning and rearing habitat for Spring Chinook are available in the Middle Fork between Armstrong and Summit Creeks. An estimated 295 miles of spawning and rearing habitat also are available in the Middle Fork and tributaries to support steelhead production. Major steelhead-producing streams in the drainage include Camp, Indian, Granite, Boulder, Deep, Beaver, Clear, Big Boulder, Deerhorn, Vinegar, Vincent, Davis, Long, Butte, Big, Huckleberry, Granite, boulder, and Slide Creeks.

In low water years, both salmon and steelhead production in the subbasin are affected by low flows and high stream temperatures in the Middle Fork below US 395. These conditions restrict passage and limit the amount of useable habitat within potential spawning, rearing, and adult holding areas. For example, in Clear Creek, one of the major producing streams in the subbasin containing both salmon and steelhead, rearing for spring chinook often is limited during low water years. Clear Creek supports annual production of 40 to 80 adult steelhead and 6 to 15 adult spring chinook spawners as well as a wild trout population. Bull trout are found in Big, Granite, Boulder and Clear creeks.

Wildlife

Wildlife diversity on this segment is high, due to the variety of vegetative structure found here. Common species include beaver, river otter, robins, kingfishers, mule deer, elk, great blue herons, killdeer, garter snakes, spotted sandpipers, rattlesnakes, Pacific tree frogs, redtail hawks, prairie falcons, chuckar, Lewis woodpeckers, raccoons, and great horned owls. Bald eagles utilize the area as winter range, with several nocturnal roost sites documented.

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Scenic Quality

This segment exhibits broad scenic values including a great variety of vegetative communities and dramatic landforms. Most of the Middle Fork flows through private lands used primarily for grazing, with occasional ranches, barns and range developments visible. Much of the riparian vegetation has been removed and replaced by pasture. Some portions of the river have had the channel altered by heavy equipment. The upland areas vary form dense, tree-covered mountain settings in the upper portion, to alternating grass and juniper-covered hills in the lower portion. The river and surroundings are very scenic despite the often poor riparian conditions.

The visual character of this river subbasin changes as one moves downstream. From Crawford Creek bridge (RM 75) downstream to Vinegar Creek (RM 65) the terrain adjoining the river is generally hilly with elevations ranging from 5,000 feet to 4,000 feet. This part of the basin includes clearings with irrigated fields and grazing in the river floodplain. The surrounding hills are forested, with mixed stands of pine and fir, white fir, Douglas fir and larch.

The terrain in the stretch below Vinegar Creek to Big Creek (RM 39) is visually more dramatic than the terrain above Vinegar Creek. This part of the river corridor is more defined as a broad valley between mountain ridges 10 miles apart. These ridges include the Greenhorn Mountains northeast of the river that reach elevations of 8,000 feet. The mountains, southwest of the river generally range from 4,000 feet to 6,000 feet in height with the exception of Dixie Butte which is almost 8,000 feet.

The river corridor from Big Creek (RNI 39) to the Middle Fork/North Fork confluence, narrows from 6 to 8 miles (from ridge to ridge) to 2 to 3 miles. This part of the segment is more arid than the upper part. The vegetation here is composed of grasses and shrubs with a scattering of trees near creek bottoms. The river bank and terraces contain willows, water birch and ponderosa pine that provide beauty, color and texture to the landscape,

Cultural Resources

This segment has little public land within the river corridor. No cultural resource inventories have been conducted. The landforms within these few public lands, however, indicate that a moderate potential for significant cultural resources exists.

Prior to 1830, this segment was occupied by Northern Paiute groups (Ray et al. 1938). It was only after this period, due to the introduction of the horse, firearms, and disease, that the more northern Sahaptian-speaking groups (specifically the Umatilla and Cayuse) were able to push south to the John Day River. The Middle Fork then became the exclusive domain of the Umatilla. Today, this area is partially within the ceded lands of the CTWSRO. It also is within what the CTUIR and the Warm Springs consider a usual and accustomed joint use area. There are no known Native American religious sites or traditional use areas within this segment.

Historic use of this segment appears to have been principally related to farming and ranching No historic settlements or travel routes are recorded for this segment.

Recreation

Recreation opportunities are primarily limited to the National Forest lands located on the river. There are a few widely dispersed recreation sites in this area which provide public river access for fishing, camping, hunting, and hiking, but no inventory of campsites has been made. Water levels usually are not sufficient for boating on this segment. Two developed campgrounds (Middle Fork and Deer Horn) are managed by the USFS.

Public recreation opportunities are limited downstream from the National Forest due to private land and limited public access.

Information and Education

Public information and education within this segment is primarily provided by the USFS at developed campgrounds and dispersed camping areas.

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SEGMENT 10 : South Fork - Mainstem Confluence to County Road 63

Location and Characteristics

This 35 mile segment lies between the mainstem/ South Fork John Day River confluence and County Road 63, near the community of Izee, Oregon.

This segment flows through a narrow canyon with high steep hillsides. The hillsides and riparian areas are forested with frequent rock outcrops.

The South Fork road follows the river for the full length of this segment. It has an all-weather surface and is open year-round.

This river segment does not contain enough water for boating but is popular for fishing, hunting and camping.

Land Ownership and Classification

Most of the land along the river in this segment is administered by BLM, with occasional tracts of private land scattered throughout its length. The USFS administers about one mile of river frontage, and ODFW also manages tracts of land along the river.

Most of this segment (from the Malheur NF boundary to Smokey Creek) was designated as a WSR in 1988 and classified as “Recreational”. The entire WSR portion of the South Fork is administered by the BLM through interagency cooperation with other federal, state, and local government agencies.

A portion of this segment (29 miles between the north boundary of Phillip W. Schneider WMA to County Road 67) was designated a State Scenic Waterway in 1988. State Scenic Waterway boundaries are located one quarter mile from the mean high water line on both sides of the river. The entire length of the State Scenic Waterway lies within the WSR.

The State Scenic Waterway classification for this segment is Accessible Natural River Area. State rules that apply to this segment are found in Chapter 4.

Portions of the Aldrich Mountain WSA are included within the WSR boundaries. The WSR boundaries also include a small portion of the Black Canyon Wilderness Area managed by the USFS. A 50 mile BLM National Back Country Byway follows the South Fork from Dayville upstream to the Malheur NF boundary. There are approximately 20 acres of commercial forest land classified as fragile restricted and approximately 100 acres classified as withdrawn, within this segment

A proposed addition to the Oregon State Recreation Trails System would pass through the river corridor on an east-west route near the Murderer’s Creek drainage. Murderer’s Creek Wild Horse Herd Management Area, administered jointly by the USFS and the BLM, is adjacent to a portion of the river and consists of 143,000 acres. In addition, the 26,000 acre Phillip W. Schneider WMA adjoins a portion of the river and is a cooperative federal, state, and private effort managed by the ODFW.

The lands adjoining the river from Dayville upstream to County Road 67 are zoned by Grant County for use as rangeland. The “Multiple Use Range” MUR-40(160) zone is applied to agricultural and non-production forest lands of Grant County managed primarily for range and grazing use. A lot or parcel of 160 acres or more is considered a farm unit in this zone. A lot or parcel of less than 160, but not less than 40 acres can be approved as a farm unit through a conditional use. The total number of dwellings allowed in the zone is not to exceed an overall density of one unit for every 160 acres.

The county Significant Resource Overlay Zone extends from the north boundary of the Phillip W. Schneider WMA, upstream to RM 33. The purpose of this zone is to protect significant mineral resources, scenic areas, natural areas and fish and wildlife habitat in Grant County, and to permit development which is compatible with such protection. This zone is applied to those sites worthy of protecting against conflicting uses. Grant County will consult with OPRD when a use or activity is proposed.

Access

A paved county road follows the South Fork through approximately 4 miles of private land from Dayville upstream, then through 6 miles of mixed state and BLM land ownership. The road continues and becomes a BLM road at this point. There is good access to the river for hiking, camping, and fishing on the public land portions. After the paved road segment, an all-weather gravel road continues along the river for 20 miles, with frequent river access points on public land.

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Vegetation

The average precipitation in this segment varies from 12 to 24 inches annually as described in ICBEMP (Quigley and Arbelbide, 1997). The river elevation rises from 2,340 feet, at the confluence with the mainstem, to 3,880 feet above sea level at the County Road 63 bridge. The canyon is narrow in this segment with slopes (25 - 65%) rising to between 4,000 and 4,500 feet above sea level with the highest reaching around 5,900 feet.

This segment lies within two ecoregions. The section from the confluence to about RM 25 is in the Lava Plains ecoregion and from RM 25 to the County Road 63 bridge is in the Blue Mountains ecoregion (OBP, 1998). Upland plant communities have been described as 'dry shrub' and 'cool shrub' by ICBEMP (Quigley and Arbelbide, 1997).

The riparian plant communities are well represented with an overstory of coyote, Mckenzie and whiplash willows (BLM 1992). Other woody riparian species include dogwood, alder, water birch, cottonwood, chokecherry and elderberry. Shrub and vine species are represented by syringa, clematis, rose, snowberry, gooseberry and poison ivy. The herb component contains horsetail, goldenrod, sweet clover, water hemlock, speedwell and thistle. Dominate along the segment is a sedge/rush group along with reed-canary grass and to a lesser extent, red top grass and Kentucky bluegrass. Examples of existing riparian vegetation are shown in Appendix M, Photos 17 through 22.

The upland plant communities have not been well described, but scattered ponderosa pines dominate the overstory (BLM 1992). Also present are Douglas fir, Western juniper and sagebrush. The grass portion contains tall wheatgrass, bluegrass, bluebunch wheatgrass, Great Basin wildrye and cheatgrass.

Two special status species known to exist in Segment 10 are *Astragalus diaphanous* var. *diurnus* (milkvetch) and *Mimulus washingtonensis* (Washington mokeyflower). *Rorippa columbiae* (Columbia cress) and *Theylpodium eucosmum* (arrowleaf thelypody) are suspected to occur in the segment.

The functionality of the riparian zone in this segment was rated in 1997, using the PFC Assessment method (USDI, BLM, 1993 and USDI, BLM, 1998c). The assessment rated was 'PFC', which means, the riparian zone is in a functional condition. The trend rating was 'upward' which means the riparian area is still improving in it's overall condition, even though it is presently functional. All seven components of the vegetative section of the assessment rated as functional. The vegetation had a diverse age-class distribution and composition of plants. The species present indicated good riparian soil moisture holding characteristics and production of root masses capable of withstanding high flows. In addition, there was adequate vegetation cover present to protect banks and dissipate flow energy during high water events and the riparian vegetation did exhibit high plant vigor. Also, this segment benefits from the presence of large woody debris to capture bedload, help develop floodplains and dissipate energy during high water. The existing riparian plant communities are an adequate source of this material.

Agriculture and Forestry

Agricultural use in this river segment is almost exclusively limited to livestock grazing. Photo points originally were established to monitor range conditions in the early 1980's. These photos, and other vegetative inventory data, show that grazing conditions along the river were poor in the early 1980's. Since that time, grazing management has been adjusted and vegetative conditions have improved to fair or good, and are continuing to improve. Grazing exclusion and restrictive grazing have met with great success in improving riparian vegetation on state-owned lands of the lower South Fork and Murderer's Creek.

Forest lands within the WSR boundaries are classified as commercial and generally suitable for forest harvest and management. However, certain areas on the river are withdrawn from consideration for harvest. Timber harvest in the remainder of the corridor is subject to restrictions that protect scenery and water quality.

Forest management on the east side of the river is guided by a plan which outlines forest practices for the next 10 years. There are no planned forest management practices for lands within the corridor of the river.

Past timber management activities have had no long-term impacts to scenery, wildlife habitat or water quality. The timber east of the river and upstream from Izee Falls has been subjected to previous harvesting. Timber removal has been by partial cutting (removal of 50 percent to 70 percent of the

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overstory) and commercial thinning (removal of selected trees over 10 inches diameter breast height to a 24 to 36 foot spacing).

Grazing

This segment contains 7 grazing allotments, one (#4038) falls outside of the designated portion of this segment (see maps and **Table III-E**). Public land acreage in allotments in this segment vary from 2213 to 17,315 acres and public land forage varies from 600 to 2000 AUMs. There are approximately 35 river miles (70.0 river bank miles), one half of which are on public land (state or federal). For detail regarding management of the allotments, refer to **Appendix L**.

Allotment evaluations have been completed on all but two allotments in this segment (#4124 and #4119). Grazing management changes have occurred on 3 of the 7 allotments. The changes have been that grazing use has moved from primarily grazing during the warm season (late spring and summer) to cool season grazing (winter or early spring) or exclusion of grazing in some cases.

Current grazing management practices were judged by an interdisciplinary team to be appropriate for protecting and enhancing river values on 100% (34.4 miles) public river bank miles in this segment.

Water Quantity and Quality (For Segments 10 and 11)

Surface water quality in these segments is generally satisfactory for chemical, physical, and biological quality. Primary concerns have been identified as sediment loading during high flow periods, and high water temperatures during low flow periods. High sediment loads occur as runoff events associated with both spring runoff and localized, intense thunderstorms. Timber removal, road construction, stream channel disturbance, improper livestock grazing, and natural conditions have also contributed to sedimentation.

This segment is listed on the ODEQ 303(d) list for summer water temperatures.

Flowing northward from its headwaters in the Ochoco and Aldrich Mountains, the South Fork John Day River drains an area of approximately 607 square miles, entering the mainstem John Day River at Dayville. Subbasin elevations range between about 2,300 feet to 7,400 feet above sea level. Most of the subbasin is located in Grant County.

The stream gradient over the 60 mile course of the river is about 47 feet per mile. Major tributaries are Murderers Creek, Black Canyon Creek, and Deer Creek.

The South Fork near Dayville was gauged intermittently for 10 years between 1910 and 1930. Average annual discharge at the mouth is an estimated 100,000 af. A permanent gauging station was installed on the lower South Fork in 1989.

Subbasin discharge is greatest during the winter months. Discharge generally peaks in late April, which coincides with maximum snowmelt runoff, and is lowest in September. During the low flow period of July through October the demands for irrigation, fish maintenance, and water quality are greatest.

On an annual basis, the surface water of the South Fork subbasin generally exhibits satisfactory chemical, physical, and biological quality. Seasonal high and low streamflows create periodic surface water quality problems. The primary problems are sediment loading during high-flow periods and extreme high water temperatures during low-flow periods. These may be partly the result of vegetation disturbances and riparian zone degradation.

High sediment loads are present in the subbasin's streams during peak runoff and as a result of intense thunderstorms. The major impacts of sediment loading affect fish habitat. Sediment alters the material composition of the stream channel by smothering spawning gravels and by filling pools used for rearing. No individual factor is solely responsible for producing the conditions leading to vegetation removal, erosion, and sediment loading. According to ODFW, livestock grazing has had a significant impact. However, timber removal, road construction, farm practices, stream channel disturbance (dredge and fill activities), and natural conditions also have contributed.

Headwater areas of the upper South Fork have severe to moderately severe sheet, gully and streambank erosion, with resultant sedimentation problems. The most severe problems are in the Lewis Creek, Corral Creek, and Flat Creek areas.

Water temperatures as high as 77° F have been recorded in the South Fork subbasin near Izee and are the result of low streamflows, lack of streamside shade and the broad shallow nature of the river. Livestock grazing and noxious weed spraying in the upper watershed have reduced the vegetation which is needed for streambank stability and shading the

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water. Excessively high water temperatures deplete the dissolved oxygen content in the water and seriously affect fish rearing, particularly salmonids. High water temperatures are conducive to the growth of disease-causing bacteria. BLM monitors water temperatures in both segments 10 and 11 at the National Forest boundary above Izee, at county road 63 and at the Dayville gauging station upstream of Dayville.

Fisheries

Resident trout populations generate 3,000 to 5,000 recreation days annually with a sport catch of up to 10,000 fish. Trout have not been stocked in the basin since 1994. Wild rainbows were supplemented each year prior to 1994 with stocking of legal-sized and fingerling rainbows. Historically, the subbasin never supported a spring chinook population.

Generally, fish production in the South Fork is maintained by good water quality and habitat diversity, particularly in the middle reaches. In the lower reaches of the subbasin, however, fish production declines when water temperature increases due to low flows and broad shallow channels, High water temperature is the most significant limiting factor to fish production in the South Fork. Steelhead runs are restricted to habitat below Izee Falls at river mile 27.5. Sunflower, Indian, Flat, Lewis, Corral, and Venator Creeks enter the South Fork above Izee Falls. These streams are important to the maintenance of wild trout populations in the subbasin. Fish resources in this segment are considered to be an ORV by the BLM.

Wildlife

The improved vegetative condition along this segment provides a greater diversity of wildlife habitats and species. This segment of the John Day River probably has the highest diversity of wildlife species, due to the riparian vegetative condition and diversity. Much of this segment is managed within the BLM/ODFW Phillip W. Schneider WMA is critical mule deer and elk winter range. Species commonly found along this segment are Lewis' woodpeckers, ash-throated flycatchers, Pacific treefrog, violet-green swallows, house wrens, mountain bluebirds, and lesser goldfinches. Yearlong residents are beaver, mule deer, elk, California bighorn sheep, red-tail hawks, Stellar jays, kingfishers, kestrels, magpies, blue grouse and California quail. Bald eagles utilize the area in winter with several documented winter nocturnal roost sites recorded along the river. Goshawks, California bighorn sheep, and Clark's nutcracker also commonly occupy the area during winter.

Also in this segment is the Murderer's Creek "Watchable Wildlife" corridor. "Watchable Wildlife" is a BLM program designed to increase opportunities to photograph, study, or simply watch wildlife on federal land that the BLM administers. The Murderer's Creek Watchable Wildlife corridor begins about 5 miles south of Dayville along the South Fork of the John Day River. The corridor follows the WSR for approximately 20 miles to the end of segment 10.

Scenic Quality

The South Fork John Day River contains striking and unique scenic values with a wide variety of vegetation, color, and interesting landforms. Scattered ponderosa pines and an occasional Douglas fir or white fir intermix with juniper, sagebrush, and native bunchgrasses to create a distinct vegetative pattern on the steep canyon slopes. Lined with a colorful assortment of streamside vegetation, the river's edge makes a picturesque centerpiece to the rugged scene. In the upper reaches of the river, relatively level agricultural land forms a more pastoral setting.

The canyon is geologically scenic as well. Exposures of columnar jointing and feeder dikes are very impressive at places along the river, particularly between Smokey and Oliver Creeks, and in the gorge near Black Canyon Creek.

Cultural Resources

A majority of the river corridor in Segment 10 is public land. Cultural resource inventories have been conducted on a limited portion of these lands, mostly with negative results. However, land-forms along the corridor suggest that there is a moderate probability for locating significant archaeological sites. Prior to 1830, Segment 10 was occupied by Northern Paiute groups (Ray et al. 1935). After the introduction of the horse, firearms, and disease, Sahaptian speaking groups from the north (specifically the Tenino, Umatilla and Cayuse) pushed south and utilize parts of this segment. Today, this area is within the ceded lands of the CTWSRO. It is also within what the CTWSRO and Umatilla consider a joint use area. Though the BLM knows of no known Native American Indian religious sites within the corridor, Izee Falls has been identified as a traditional use area for fishing. Historic use of this segment of the South Fork has been primarily for homesteading, farming, or ranching.

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Paleontology

In the northern end of this segment there are only a few items of paleontological interest. These are interbasalt casts of tree roots and trunks. There is potential for significant marine invertebrates to occur at the southern end of the segment, though none are known from within the corridor.

Recreation

The South Fork John Day River offers the visitor excellent opportunities for sightseeing, camping, fishing, swimming, picnicking, hiking and hunting. Other forms of dispersed recreation such as photography and wildlife watching also can be enjoyed by visitors. The South Fork Backcountry Byway offers opportunities for scenic drives and mountain biking. The river's rustic character provides the visitor with a feeling of isolation and remoteness despite its road accessibility. The Black Canyon Wilderness Area (USFS) provides hiking trails and back-packing opportunities. Cross-country hiking is available in the Aldrich Mountain WSA. The water flows in this segment are generally insufficient to support motorized or non-motorized boating

The rugged geologic formations of the canyon offer excellent sightseeing opportunities. The John Day Fossil Beds National Monument, and other areas in the vicinity, contain outstanding fossils of international significance. Collection of these fossils on public lands is not permitted, having protection under the FLPMA, but visitors can still enjoy the experience of hunting for and viewing these glimpses of the past.

At this time there are no recreational developments along the river; however, there is a total of 228 undeveloped sites that could be used for camping in Segment 10, 104 of which are on public land. Since many of these sites are located along the river's edge, riparian vegetation is frequently trampled by recreationist's vehicles. Fishing trips are usually one-day in length and camping and hunting trips during the summer and fall months are an estimated 2 to 4 days in length. The BLM does not currently administer any commercial use permits within this segment.

The BLM is currently seeking to acquire several parcels of land adjacent to the river under the proposed NOALE. Acquisition of these lands would greatly increase public recreation opportunities in this area.

Wilderness

The Ochoco NF manages the Black Canyon Wilderness Area which has one of its trailheads on the South Fork John Day River. This trailhead is located in the northern portion of the segment. The Aldrich Mountain WSA (9,395 acres) is located in the same general area on the opposite side of the river from the Black Canyon Wilderness Area. This area is managed by the BLM and has been studied for possible Wilderness Area designation by Congress. The BLM recommendation to Congress was that it is not suitable for Wilderness Area designation because of the poor boundary configuration (making management difficult) and incompatible uses on adjacent lands. Congress, however, will make the final decision for this area.

Information and Education

Public information and education within this river segment is primarily provided by ODFW.

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SEGMENT 11 : South Fork - County Road 63 to Headwaters

Location and Characteristics

This river segment is about 25 miles long with 17 miles designated as WSR. The WSR designation and the National Backcountry Byway continue upstream from Segment 10 into this segment and end at the Malheur NF boundary. The BLM administers about 1/2 mile of river frontage in three widely separated parcels in this segment. The remaining upper 9 miles of this segment is within the Malheur NF.

This is a rural, agricultural area where the paved County Road 63 follows the river upstream for about nine miles. At that point, a good gravel road follows the river for another eight miles to the National Forest boundary and continues into the forest. Approximately seven miles of the South Fork headwaters flow through land managed by the USFS.

Some private pastures along the river are used as winter feed lots for livestock. These areas are devoid of vegetation and are obvious sources of water pollution.

River characteristics for the entire South Fork John Day River, including this segment, are described in the discussion for Segment 10. This segment differs from Segment 10 in that it is not contained in a narrow canyon and the stream character is normally slow, wide and shallow, with little riparian vegetation present from the National Forest boundary to County Road 63.

Land Ownership and Classification

Grant County has zoned land adjoining the river as MUR 40 (160) from County Road 63 upstream to RM 37, and as “Primary Forest” F-80(160) from RM 37 to the National Forest boundary. The F-80(160) zone is intended to protect forest lands for commercial growing and harvesting of timber and to conserve and protect watersheds, wildlife habitat and scenic and recreational values. The lot size minimum in this zone for new farm or forest parcels is 80 acres and the total number of principal and secondary home sites cannot exceed an overall density of one dwelling for every 160 acres.

Access

The river is adjacent to paved County Road 63 for approximately 10 miles. The county road changes to gravel and continues upstream along the South Fork to the USFS boundary, a distance of 7 miles. These 17 miles of county road travel mostly through private ranch land and access to the river is limited. At the USFS boundary the gravel road becomes USFS Road 47 for approximately 8 miles. It continues along the South Fork to its headwaters, mostly on USFS land, providing good public access to the river.

Vegetation

The average precipitation in this segment varies from about 12 inches annually at the lower elevations, to above 24 inches at the higher elevations, as described in ICBEMP (Quigley and Arbelbide, 1997). The river elevation rises from 3,880 feet at the County Road 63 bridge to approximately 5,200 feet above sea level at the headwaters. The canyon bottom averages over 1,300 feet in width until the juncture with Donivan Creek where it narrows considerably. The slopes at the lower end of this segment are mostly moderate (10% to 30%) and rise to between 4,500 and 5,000 above sea level; however, above Donivan Creek the slopes become steeper (20% - 60%) and rise to about 5,600 feet above sea level.

This segment lies almost entirely in the Blue Mountains ecoregion, although the section between Antelope and Venator Creeks lies within the Lava Plains ecoregion (OBP, 1998). Upland plant communities have been described as ‘dry shrub’ and ‘cool shrub’ by ICBEMP (Quigley and Arbelbide, 1997).

The river flows primarily through agricultural fields from County Road 63 bridge to Donivan Creek. Most of the natural riparian vegetation has been replaced by pasture grasses. Much of the segment has either downcut below the original floodplain or been channelized by mechanical means. Little of the historic riparian vegetation is present, although willows can be found. From Donivan Creek to the headwaters, the river enters the Malheur NF. The Malheur has been conducting riparian inventories which will be released upon completion of their next forest plan. A PFC Assessment has not been completed for this segment.

Three special status species are suspected to occur in this segment; *Rorippa columbiae* (Columbia cress), *Theylpodium eucosmum* (arrowleaf thelypody) and *Astragalus diaphinous* var. *diurnus* (milk vetch).

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Agriculture

The WSR portion of this segment (below the National Forest) is used for livestock grazing. The lands on the river here are almost totally privately owned. They provide an important location for local ranches to hold and feed their livestock over the winter months (see **Table III-E).**

Grazing

This segment contains 5 active grazing allotments and one that extends into Segment 10 (see maps and **Table III- E**). Public land acreage in allotments in this segment varies from 2023 to 3637 acres and public land forage varies from 292 to 927 AUMs. There are approximately 25 river miles (50.0 river bank miles), 1.4 river bank miles (3%) of which are on public land. For detail regarding management of the allotments, refer to **Appendix L**.

No allotment evaluations have been completed on the five allotments because of a land exchange which has slated these public lands for disposal.

Water Quantity and Quality

See Segment 10 for Water Quantity and Quality on the South Fork John Day River

Fisheries

See Segment 10 for fisheries discussion of entire South Fork John Day River.

Wildlife

Wildlife use of this segment differs from the use on Segment 10 of the South Fork. The canyon opens up and much more agricultural use is observed. The structure and diversity of riparian habitat also decreases and is somewhat confined by agriculture fields. Therefore, many wildlife species that use riparian habitat are restricted by these conditions, especially outside the national forest boundary. Irrigated agricultural fields in this segment provide mule deer, elk, and pronghorns with forage high in protein, especially in the late summer and early fall when nutrients in many native forb and grass species decrease. Species commonly observed within this segment are mule deer, red-tail hawks, Townsend's ground squirrels, American kestrels, American robins, house wrens, swallows, mallards, and beaver.

Scenic Quality

Most of this river segment is in a rural setting of tree-covered hillsides and a wide valley bottom containing occasional ranching structures and livestock. Some lands along both sides of the river are segregated into pastures by wire fences. These pastures have been used for many years for containing and feeding livestock year-round.

Cultural Resources

The only known cultural resource inventory for this segment was done in conjunction with the burying of a telephone cable along the highway. No cultural sites or artifacts were found. Land forms within the corridor suggest moderate potential for discovering significant cultural resources.

Historic use of this segment of the South Fork has been primarily for homesteading, farming, or ranching. A lumber mill was established near Izee in 1946 and operated until 1967. The mill was dismantled in 1969.

Prehistorically this segment was traditionally occupied by the Northern Paiute. The Burns Paiute still have a vested interest in this same area, though most of it is within the ceded boundary of the CTWSRO Indian Reservation of Oregon. The BLM knows of no known religious sites or traditional use areas within this segment.

Paleontology

South of Izee the South Fork has cut through a Jurassic sequence of marine volcanic lastics. This sequence of the Suplee, Nicely, Hyde, Snowshoe, Trowbridge and Lonesome Formations contain ammonites, bivalves and rhyconellid brachiopods. No exposures, however, are known to occur within the river corridor.

Recreation

Public recreation opportunities are limited to driving for pleasure on the National Backcountry Byway portion of this segment. Here, a lack of public land precludes traditional activities of hiking, fishing, and picnicking. Bicycling could be accommodated on the road. There is a total of eleven undeveloped campsites on this segment, only one of which is on public land. Public outdoor recreation opportunities increase on the National Forest portion of this segment. This area is not designated as a WSR but

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the land along the river is open to public use. Water and riparian conditions in the National Forest are good, providing better wildlife habitat and a pleasant outdoor recreation setting. The water flows in this segment are insufficient to support motorized or non-motorized boating.

Information and Education

Public information and education within this river segment is primarily provided by USFS.

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Chapter III
Desired Conditions, Alternatives, and Impacts

Introduction

A range of alternatives was developed in accordance with the National Environmental Policy Act (NEPA) to represent different combinations of resource conditions and management actions which would address the issues described in Chapter 1. As discussed in Chapter 1, uses along the John Day River are governed by multiple federal, state, and local authorities. The alternatives contained in this section are described with little distinction between the specific authorities which would implement individual elements of an alternative. Following the final decision, each agency will take whatever steps are necessary to implement their own decision (See Chapter 1). Specific discussion of the effects on other agencies, their plans, and policies is included in Chapters 1 and 5.

How This Chapter is Organized

1. Description of the desired conditions for resources that constitute river values in the Wild and Scenic River segments 1, 2, 3, 10, and 11). The interdisciplinary planning and the interagency core teams agreed that there was consensus concerning the desired conditions for the John Day Wild and Scenic River. Some of the issues resolved in the following discussion do not have desired conditions. This occurs because the issues are not directly linked to river values and resolutions may be mandated by law, e.g. Native American uses, or actions are necessary to the administration of the river corridor, e.g. education and information. In both of these situations the planning partners agree that protecting native American uses and providing the appropriate level of education and information would serve to protect and enhance the values associated with the Wild and Scenic River and resources associated with the non-designated segments. In principle the desired condition for alternatives and actions that do not have desired conditions is that these alternatives and actions provide for review and administrative actions that protect river values and resources that support river values.

2. Presentation of Alternatives, including proposed actions and standards for future management decisions. There are three groupings of actions or standards.

A. **Continuing Existing Management--** Existing management was considered to be the only viable alternative for several areas of management concern (e.g. the legally defined

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role of tribal governments in river management and the processes for ensuring native American interests are considered when making management decisions).

B. **Continuing Existing Management and Additional Actions--**This second group of actions can best be described as "continue existing management but do more of it." The intent of the additional actions emphasize the commitment of the BLM and its Planning Partners to resolve important issues and protecting and enhancing Outstandingly Remarkable Values while building upon existing management.

C. **Issues Resolved by Alternatives--**These include:
How should scenic quality be managed?
How should vegetation be managed to protect and enhance river values (with a focus on grazing and alternatives to grazing on BLM managed lands and use of irrigated agricultural land managed by the BLM)?
How should recreation be managed to protect and enhance river values?
How should mining be managed while still protecting and enhancing river values?
How should land ownership, classifications, and use authorizations be organized?

When consideration of a range of alternatives is necessary Alternatives A thru D (Except for Scenic Quality which has only a single alternative and Boating Use Levels and Motorized Boating which have 5 alternatives) are considered for each issue. Even where a range of alternatives is considered to resolve management issues and protect and enhance river values some existing management direction may remain in place as Actions Common to All Alternatives. Alternatives B through D are presented in a sequence that generally (but not always) reflects a trend from least to greatest changes from existing management.

Each Action Alternative (B, C, D, and E) is designed to protect and enhance river values. Actions proposed are guided by existing laws and regulations, including the Wild and Scenic Rivers Act. Where conflicts occur in direction it is assumed that the Wild and Scenic Rivers Act takes precedence. Because Alternative A represents existing management some elements of Alternative A have preceded Wild and Scenic River Designation. When this is the case protecting and enhancing river values may not have been the primary concern of management. On the other hand some existing management direction, e.g. recent allotment management plans, has been developed with a concern for protecting and enhancing river values.

3. A summary of the Immediate impacts of the Alternatives

4. Review of monitoring necessary to ensure implementation takes place and that goals and objectives are met.

Preferred Alternative

Whenever existing management or existing management and additional actions constitute the only alternative considered these are the preferred alternative. When issues are resolved by an alternative or multiple alternatives the planning partners chose a preferred alternative. This environmental impact statement does not identify a single alternative that resolves all issues. Instead the planning partners selected the preferred alternatives by issue and sometimes by segment. Table III-A (pg 115) identifies the preferred alternatives identified by the planning partners. To compare the Preferred Alternative with other alternatives for a given issue see Table III-D and the presentation of the Issues Resolved by Alternatives later in this chapter.

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Table III-APreferred Alternative for Issues with Multiple Alternatives

Issue	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Key Elements
Scenery		X				Interim Management: VRM class II except Class I between Butte Creek and Cottonwood Creek. Conduct Visual Resource Management Inventory and establish VRM management classes within the river corridor
Vegetation						
Forestland	X		X			Apply existing John Day RMP guidelines for the management of riparian areas to all public land in Segments 7 and 10. Timber removal only to reduce the risk of catastrophic timber losses due to insect infestation, disease or wildfire.
Grazing		X				Utilizes variety of management strategies to protect and enhance ORVs including use restrictions and riparian exclusion.
Agricultural Lands		X				Identifies 25.6 acres of public land for disposal in exchange for more suitable lands within the river corridor. Commits 164 acres of public lands with associated water rights to non-commodity uses, including food and cover crops or restoration of natural vegetation. Maintains approximately 195 acres in leased commodity production.
Recreation						
Boating Use Levels					X	Base future decisions on LAC. Seg.1, No overall Launch targets. Segments 2 and 3, overall launch limit equal 70% of campsites within 15 miles of launch points. Motorized boat launch target of 1 per day in March and 2 per day in April in Segments 1 and 2.
Allocation				X		Common Pool, First come first served
Motorized Boating					X	Base future decisions on LAC. Segments 1, 2, and 3: Motorized boating permitted December 1 to end of April. Segments 10 and 11 closed to Motorized Boating. Recommend Segment 2 below Clarno Rapids be closed to motorized travel if WSA's become designated wilderness.
Dispersed Camping		X				Use LAC as basis for future decisions. Segments 1 and 3: No action. Segment 2: Designate area for dispersed camping on w. bank near Clarno. Segments 10 and 11: Identify preferred dispersed camping areas, install signs and parking barriers to protect riparian vegetation.
Developed Facilities	Segment 11	Segment 1-3	Segment 10			Segment 1: Add boat ramp and boater registration station at Rock Creek and provide picnic tables at Cottonwood. Provide parking and provide regular maintenance for Oregon Trail Monument. Segment 2: Add launch lane and pay phone at Clarno. (Preferred Alternative does not include grading Butte Creek Launch Site as considered under Alternative B) Segment 3: Install toilet at Priest Hole (Preferred Alternative does not include developing Lower Burnt Ranch Site as considered under Alternative B) Segment 10: Create campground at Ellingson Mill. Segment 11: No action.
Public Access		X				Segment 1: Clarify status of access to Oregon Trail Monument, Segment 2: Improve BLM road on west bank of the river from Clarno to Clarno Homestead. Segment 3: Provide public access to river near Twickenham, improve road to Priest Hole, Eliminate motorized access to existing Burnt Ranch site, (Alternative does not develop access to Lower Burnt Ranch site as considered under Alternative B). Segments 10 and 11: Improve ditches, culverts, surface of South Fork Road.
Commercial Use		X				No limit on # of outfitter guide permits, increase permit requirements, increase minimum use requirements to 20 paying user days every 2 years, random audits of IRS records, increase permit fees.
Minerals		X				Mining activity must meet screening regulations prescribed in Chapter 4 (State Scenic Waterway Regulations). No Surface Occupancy for leasable minerals, Stipulations to protect river values, no new sites for production of salable minerals on BLM lands. Developed facilities closed to leasing and salable minerals and withdrawn from entry for locatable minerals
Land Ownership, Classifications, and Use Authorizations	X	X				All existing guidance would continue under all alternatives. Alternatives B and C are the same and propose specific acquisitions. Alternative D includes guidelines from A plus acquisitions of B-C, plus acquisitions needed to implement Alternative D for grazing.

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Desired Condition for Public Lands

Fish

Provide diverse aquatic habitat, including sufficient water quantity and adequate water quality, to sustain wild populations of native and desirable non-native (smallmouth bass) fish species. Population goals for summer steelhead and spring chinook salmon are sustained or exceeded to provide for species integrity, and sport and tribal harvest. Maintain a "Quality fishery" for smallmouth bass in Segments 1 through 3.

The John Day River provides aquatic habitat for runs of wild anadromous steelhead trout and spring chinook salmon. The river provides adequate water quantity to allow anadromous fish passage upstream and into tributaries and to dilute any pollutants present in the river to a level not harmful to fish. The river provides spawning areas where adequate flows and spawning gravels exist and are available to spawning anadromous fish during spawning times. Water quality is sufficient to provide optimal temperatures, pH, dissolved oxygen and other trace chemicals needed for the development of hatching and rearing fish.

Salmon and steelhead escapement in the basin meets population targets of 7,000 adult spring chinook and 45,000 adult steelhead trout. Bass population numbers and age structure support a "Quality fishery" in the John Day River in segments 1 through 4.

The river provides sufficient flows and riparian vegetation provides structure when submerged to facilitate bass spawning and rearing in areas where substrate and vegetative composition are present to support bass.

Aquatic habitat within the John Day River meets goals of PACFISH, the Interim Strategy for Managing Anadromous Fish-Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California. The following is taken from PACFISH:

> The goals establish an expectation of the characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats. The goals are to maintain or restore:
>
> 1) water quality to a degree that provides for stable and productive riparian and aquatic ecosystems;
> 2) stream channel integrity, channel processes, and the sediment regime (including the elements of timing, volume, and character of sediment input and transport) under which the riparian and aquatic ecosystems developed;
> 3) instream flows to support healthy riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges;
> 4) natural timing and variability of the water table elevation in meadows and wetlands;
> 5) diversity and productivity of native and desired non-native plant communities in riparian zones;
> 6) riparian vegetation to:
> A) provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems;
> B) provide adequate summer and winter thermal regulation within the riparian and aquatic zones; and
> C) help achieve rates of surface erosion, bank erosion, and channel migration characteristic of those under which the communities developed.
> 7) riparian and aquatic habitats necessary to foster the unique genetic fish stocks that evolved within the specific geo-climatic region; and
> 8) habitat to support populations of well-distributed native and desired non-native plant, vertebrate, and invertebrate populations that contribute to the viability of riparian dependent communities.

Wildlife

The diversity of wildlife habitat and the resulting wildlife species diversity, which includes special status species, are protected and enhanced.

The river corridor provides wildlife habitat where adequate forage, water, cover, structure, and security necessary for wildlife species are available and related to appropriate soil, climate and landform conditions.

Upland sagebrush-grassland habitat includes a mosaic of multiple aged shrubs, native and non-native desirable perennial grasses, and forbs to support species that utilize these habitat types. Wildland and prescribed fire are an integral part of maintaining diverse landscapes in this habitat type. Western juniper dominance is limited to those areas where fire frequency is limited by site productivity.

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Riparian habitat is characterized as having a diversity of shrub/tree species and age classes to provide habitat structure for those species that utilize this habitat type, providing the site can support this type of vegetation. The herbaceous component of riparian/wetland areas is also stable and diverse to support species that use this component for nesting and/or foraging activities.

Forested habitats are healthy, disease and insect resistant, and have a variety of structural stages. Fire is an integral part of this habitat type, and management is focused on keeping this habitat type diverse and healthy.

Noxious weed populations are controlled in all habitat types to reduce the threat to wildlife habitat and populations.

Human disturbance to wildlife and wildlife habitat are not detrimental to populations or wildlife species viability.

Water Quantity and Quality

Instream flows meet interim minimum flow goals (Table II-O) or a level determined through further analysis sufficient to support outstandingly remarkable values and accommodate beneficial uses.

Water quality meets state standards or is in balance with basin capabilities, satisfies obligations of the Clean Water Act, and is adequate to protect and enhance outstandingly remarkable values, especially anadromous salmonids.

The John Day River meets or exceeds the flow guidelines (Diak Flows) established in the OWRD report of 1990. Upland and riparian conditions provide groundwater storage and delayed release sufficient to maintain late season flow. Peak flow remains below historic peaks. Water quantity is sufficient to protect and enhance outstandingly remarkable values.

Water quality complies with the criteria specifically listed by DEQ in OAR 340-41-0605.
Water temperature does not exceed 50 °F (10 °C) where the designated beneficial use is for Oregon Bull Trout habitat. Segments where salmonid fish rearing is a designated beneficial use, surface water temperatures do not exceed 64°F (17.8°C).

Large portions of the contributing watersheds are outside the control of the partners in this plan. Cooperation with other land holders within the basin enables both public and private land managers to take actions that reduce the introduction of pollutants and improve water quantity and temperature. Water quality levels are sufficient to protect and enhance the health and survival of wildlife and aquatic species. The John Day Wild and Scenic River would be a fit source of drinking water and food for wildlife, and provide excellent habitat for aquatic species.

Paleontology

Paleontological resources are preserved, protected and made available for viewing, education and research purposes, as appropriate.

The area within the river corridor and entire basin is nationally and internationally important due to the exposure of 40 million years of datable geologic sequence which provides a rare glimpse of changing ancient ecology, geologic structure and mammal evolution. These conditions offer researchers unique opportunities to test evolutionary theories. Fossil localities within and adjacent to this corridor segment have important interpretive and educational values.

In Segments 1, 2, and 3, vertebrate and botanical fossils occurring in exposures of the Clarno and John Day Formation offer ecological perspective not available in other parts of the John Day basin. This is due to the relatively recent exposure of fossil bearing strata that has resulted from the erosion of harder, overlaying rock.

Cultural Resources

The integrity of cultural resources (both historic and prehistoric) is preserved and protected. These resources are made available for cultural, educational and/or research purposes, as appropriate.

In Segments, 1, 2, and 3, prehistoric and historic cultural resources on public lands have the potential to provide insights into past human land use patterns within a restricted geographic setting (the lower John Day River canyon). This geographic area played an important role in the development of both prehistoric and historic cultures in northern and central Oregon.

Limited information is available concerning historic and prehistoric resources in Segments 10 and 11. The geography, however, suggests that there is

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moderate potential for discovering significant prehistoric or historic sites/features. It is likely that prehistoric and historic travel routes crossed this segment.

Scenic Quality

Natural landscapes are preserved and maintained. Further development of modified landscapes are avoided or minimized. Modified landscapes are restored to natural character where opportunities allow.

The designated river corridor for the Lower John Day River is largely primitive and undeveloped, containing a diversity of land-forms, vegetation, and unique features. As it slices through a high basalt plateau, the river winds alternately through gentle farm valleys, 1,000 foot high basalt cliffs, and steep rugged hills. Lush green riparian vegetation at the river's edge contrasts with the golden hills of grass, sagebrush, and juniper. Exposed volcanic ash deposits and the erosion and oxidation of basalt columns have created unusual colors and interesting formations that have become scenic landmarks for river visitors.

Vegetation

Plant communities and special status plant species are providing aspects of habitats, visuals, and communities that support watershed function, healthy ecosystems, other river values, and human uses.

Rangeland vegetation includes a mosaic of multiple-aged shrubs, forbs, and native and desirable nonnative perennial grasses. Shrub overstories are present in a variety of spatial arrangements and scales across the landscape level, including some large contiguous blocks, islands, and corridors. Shrub overstories are present in predominantly mature, late structural status. Plant communities not meeting 'desired future conditions show upward trends in condition and structural diversity. Desirable plants continue to improve in health and vigor. New infestations of noxious weeds are not common across the landscape, and existing large infestations are declining. Populations and habitat of rare plant species are stable or continue to improve in vigor and distribution.

Upland soils have sufficient vegetation cover to support infiltration (equal to or less than a 25 year, 5 hour event) and to minimize accelerated soil erosion. Physical and chemical soil properties are adequate for vegetation growth and hydrologic function appropriate to the specific soil type, landform, and climate.

Large portions of the landscape have a protective soil cover of deep-rooted plants and litter which supports proper hydrologic function.

Western juniper dominance is limited to rock outcrops, ridges, mesas, or other sites where wildfire frequency is limited by site productivity. Western juniper generally occurs in low densities in association with vigorous shrub, grass, and forb species, consistent with site potential. Historic juniper sites retain old growth characteristics. Quaking aspen communities occupy their historic range and are stable or improving in vigor.

Wildland and prescribed fire play an active role in defining the composition of vegetation and limit the dominance of woody species.

Forest stands in Segment 7 would contain mixed conifers. Since these stands are primarily located on north facing slopes they would contain ponderosa pine as well as Douglas fir and white fir. In time, all species would attain age classes ranging from 150-300 years.

In Segment 10 forest stands would be dominated by ponderosa pine with some areas containing Douglas fir and white fir. Other areas of Segment 10 would contain ponderosa pine with juniper and grasses in the understory. Generally, ponderosa pine ages would range from 100-300 years while Douglas fir and white fir ages would range from 80-200 years.

In both segments, some areas of dense vegetation (seedlings, brush, grasses) would be present and would provide wildlife habitat, support hydrologic function, stabilize soils, and protect and enhance visual and recreation values. In other areas older stands of larger (>20 inches dbh) ponderosas would provide suitable habitat for some wildlife species and provide conditions less favorable for catastrophic fires.

Riparian areas and stream habitat conditions have improved as a result of protection and management. Watersheds are stable and provide for capture, storage, and safe release of water appropriate to soil type, climate, and landform. Most riparian/wetland areas are stable and include natural streamflow and sediment regimes related to contributing watersheds. Soil supports native riparian/wetland vegetation to allow water movement, filtration, and storage.

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Riparian/wetland vegetation structure and diversity are significantly progressing toward controlling erosion, stabilizing streambanks, healing incised channels, shading water areas, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater, and increasing recharge of ground water appropriate to climate, geology, and landform. Stream channels are narrower, water depth and channel meanders are increasing, and floodplains are developing. Stream channels and floodplains are making significant progress in dissipating energy at high-water flows and transporting and depositing sediment as appropriate for geology, climate and landform. Riparian/wetland vegetation is increasing in canopy volume (height and width) and in healthy uneven-aged stands of key woody plants, increasing in herbaceous ground cover, and shifting toward late succession. Surface disturbances inconsistent with the physical and biological processes described above have been reduced. Disturbances from roads, dispersed campsites, and inappropriate livestock use are decreasing as vegetation and soils recover naturally. There is no downward trend in riparian condition and function.

Recreation Opportunities

A variety of boat-in, drive-in, and walk-in recreation experiences are provided, including motorized and non-motorized boating on specific segments, and wheelchair accessible opportunities in developed sites. Commercial outfitters provide public service based on assessed need.

Within the river corridor, dispersed recreation occurs in semi-primitive sections with developed recreation concentrated in roaded natural and rural areas. User impacts on resources are periodically monitored, and management actions to protect resources are taken such as site closures, site rehabilitation and where appropriate, site development. Use is managed using a combination of approaches including on and off-site information, education, enforcement and if needed, limits on use. Appropriate boating use levels are based on the availability and condition of campsites and the user's perception of crowding at key locations such as river access points, rapids, and within Wilderness Study Areas. As boating use approaches identified maximum use levels, sequenced management actions to control use are implemented at designated locations along the river, with periodic monitoring conducted to assess site impact and user perception. Future development of recreation facilities is limited to existing areas of development (recreation nodes), and new areas that replace sites closed for resource protection.

The John Day River offers excellent opportunities for boating, fishing and hunting. Visitors and residents also enjoy camping, picnicking, sightseeing, swimming, photography, rock-hounding, and viewing wildlife and cultural sites. Boating opportunities, requiring beginning to intermediate skill levels, range from one day trips to week-long excursions through a scenic and mostly primitive landscape. The John Day River offers a rare opportunity to boat 235 continuous river miles, 147 miles of which are designated as Wild and Scenic. Most boating use is concentrated from April through July when weather and water flows are optimal. Superior steelhead and smallmouth bass fishing has brought the lower John Day River national acclaim. Hunting for deer and upland birds is also popular. Three WSA's are located along the lower John Day and provide the opportunity for a primitive and unconfined recreation experience.

Issues Resolved by Continuing Existing Management

After review of existing management standards and guidelines it was determined that continuing existing management was appropriate for resolving certain issues (see Table III-B).

Riparian and Aquatic Habitat Restoration

Desired condition: Most riparian/wetland areas are stable and include natural streamflow and sediment regimes related to contributing watersheds. Soil supports native riparian/ wetland vegetation to allow water movement, filtration, and storage. Riparian/wetland vegetation structure and diversity are significantly progressing toward controlling erosion, stabilizing streambanks, healing incised channels, shading water areas, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater, and increasing recharge of ground water appropriate to climate, geology, and landform.

Riparian and Aquatic habitat restoration includes direct actions such as bioengineering and the

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Table III-B Issues Addressed by Continuing Existing Management

Riparian and Aquatic Habitat Restoration
Fish
Wildlife
Native American Uses

introduction of large woody material or other structural materials to improve riparian or instream habitat. Other activities, such as management of grazing, that may impact riparian conditions are addressed in the appropriate sections of this document.

The 1997 Technical Report of the Interagency Wild and Scenic Rivers Coordinating Council (IWSRCC) states: "Construction and maintenance of minor structures for the protection, conservation, rehabilitation, or enhancement of fish and wildlife habitat are acceptable, provided they do not have a direct and adverse effect on the values of the river, including the free-flowing nature. Structures should be compatible with the river's classification, allow the area to remain natural in appearance, and harmonize with the surrounding environment." Activities involving ground disturbance further require consultation with the ODFW, ODSL and OPRD, State Scenic Waterways Division.

Proposed riparian and aquatic habitat restoration on public lands would be subject to public review and appropriate federal, state and tribal consultation. In addition, prescriptions within the Wild and Scenic segments would be designed and evaluated for concurrence with guidance from the IWSRCC.

Fish

Desired Condition: Provide diverse aquatic habitat, including sufficient water quantity and adequate water quality, to sustain wild populations of native and desirable non-native (smallmouth bass) fish species. Population goals for summer steelhead and spring chinook salmon are sustained or exceeded to provide for species integrity, and sport and tribal harvest. Maintain a "Quality fishery" for smallmouth bass in segments 1 through 3.

The Endangered Species Act, Clean Water Act, Strategy for Salmon (Collate and Harrison, 1992), and Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (USDA and USDI, 1995) provide public land management direction for the protection and enhancement of the fisheries resources of the John Day River, particularly anadromous salmonids. Ongoing implementation of conservation measures by federal, state, county, tribal, and private entities has resulted in notable improvement of fish habitat within the John Day basin. The Oregon Department of Fish and Wildlife manages the John Day River system for "wild" fish production and administers harvest regulations.

Summer steelhead and spring chinook salmon production goals have been jointly established by the ODFW, Confederated Tribes of the Warm Springs Reservation (CTWSRO), and Confederated Tribes of the Umatilla Indian Reservation (CTUIR). These goals are 17,038 and 7,124 respectively. Modification of these production goals would be based on analysis by these designated managers.

The ODFW manages smallmouth bass in segments 1-3 for a "Quality Fishery." This means that at least 20% of the catch is greater than or equal to 12 inches. Upstream of Segment 3 the river is managed as a "Basic Yield Fishery," allowing anglers to harvest a variety of sizes.

Alternatives for managing public land vegetation, grazing, and agricultural lands; and water quantity and water quality would be utilized to protect and enhance fisheries resources. Direct fisheries habitat restoration actions would follow guidance identified under Riparian and Stream Restoration and would be subject to public review, and appropriate federal, state, and tribal consultation.

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Wildlife

Desired Condition: The diversity of wildlife habitat and the resulting wildlife species diversity, which includes special status species, are protected and enhanced.

Existing management for wildlife habitat is described in the Two Rivers RMP, the John Day RMP, other supplemental Coordinated RMP's, Habitat Management Plans, Environmental Assessments and the Endangered Species Act. This existing guidance would continue to implement the following management:

1) Improve and maintain vegetative condition to benefit livestock and wildlife.
2) Maintain all existing improvements and continue existing activity plans.
3) Manage upland habitat for diversity to provide for a variety of wildlife species.
4) Manage upland vegetation through grazing management and range/wildlife habitat development to achieve maximum wildlife habitat diversity.
5) Intensively manage commercial forestlands suitable for timber production while recognizing harvest restrictions or exclusions to protect wildlife and wildlife habitats.
6) Monitor, maintain, or improve habitat for threatened and endangered species.
7) Monitor maintain, or improve winter range for deer and elk.
8) Maintain existing water developments
9) Utilize existing road systems and limit new permanent road entries to protect wildlife habitat.

Informal and formal consultation with the U.S. Fish and Wildlife Service will be initiated on all proposed actions which may effect any Federally listed threatened or endangered species. No activities will be permitted in habitat for threatened, endangered, or sensitive species that would jeopardize the continued existence of such species. Habitat for threatened and endangered and special status species will continue to be monitored, maintained, and/or improved.

Forage would be provided to meet ODFW management objective numbers for deer and elk. Additional forage may be allocated to livestock whenever present big game population objectives are exceeded.

Wildlife habitat would continue to be managed to provide for wildlife species and habitat diversity. Crucial habitats would be monitored for forage production, habitat condition changes, and overall effectiveness of improvements. Existing improvements that relate to wildlife habitat would be maintained. Habitat management plans would be written for selected areas of wildlife habitat and specific wildlife objectives would be included in all activity plans. Seasonal restrictions would continue to be applied to mitigate impacts of human activities on important seasonal wildlife habitat.

In order to protect California Bighorn Sheep, no active domestic sheep permits are allowed on BLM allotments in Segment 2, nor would conversion of permits from cattle or horses to sheep (domestic or exotic) be allowed in the future.

Native American Uses

The BLM and other federal agencies have a trust responsibility to Native American Indian tribes. This responsibility derives from the historical relationship between the federal government and Native American Indian tribes as expressed in treaties and other components of federal Indian law. The trust responsibility requires BLM to conduct its activities consistent with the obligations set forth in treaties, federal court decisions, federal legislation, and in various secretarial and executive orders. Although the exact extent of BLM's trust responsibility with regard to tribes' off-reservation rights and privileges has not been defined, BLM recognized that meaningful consultation with the tribes is essential to carrying out this trust responsibility.

Listed below are some of the many components of the relationship between the BLM and Native American Indian tribes in the context of Native American Indian uses:

- Ratified Treaties of 1855
- American Indian Religious Freedom Act (1978)
- National Environmental Policy Act (1966)
- Secretarial Order 3206 (1995)
- Secretarial Order 1326 (1996)

In addition, Executive Order 13007 directs federal bureaus and offices to consult with tribal representatives in early planning stages to identify religious values of American Indian people that could be affected by proposed actions on federal lands.

Finally, a Memorandum of understanding (MOU) has been signed between the Oregon/Washington BLM

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and the CTUIR, and another MOU has been drafted and is under consideration between the OR/WA BLM and the CTWSRO. Both agreements address the appropriate level and timing for consultation, as well as other coordination issues between these tribes and the BLM. BLM is also pursuing a similar MOU with the Burns Paiute Tribe.

Continuing existing management would require different levels of consultation between the federal agencies and the appropriate tribal group(s). Improving relations and understanding between the BLM and the tribes would be stressed at all levels.

Issues Resolved by Continuing Existing Management with Additional Actions

This section describes actions that resolve issues and protect and enhance river values by continuing existing management. Continuing existing management would be based on the John Day and Two Rivers RMPs, as amended. The current land use laws, policies, and directions would apply on private lands. All additional actions are consistent with and build on existing management direction. Table III-C summarizes the Issues Resolved by Continuing Existing Management and Additional Actions.

Water Quantity and Quality

Desired Condition: Instream flows meet provisional minimum flow goals (see Table II-O) or a level determined through further analysis sufficient to support outstandingly remarkable values and accommodate beneficial uses.

Water quality meets state requirements, satisfies obligations of the Clean Water Act, and is adequate to protect and enhance outstandingly remarkable values, especially anadromous salmonids.

Existing Management

As the designated administering agency, BLM is required by Section 7 of the Wild and Scenic Rivers Act (WSRA) to review all federally assisted water resource projects within designated segments to ensure that such projects would not have “a direct and adverse effect” on the values for which these Wild and Scenic Rivers segments were established. The BLM is also required to review federally assisted or approved projects above or below these designated segments to ensure that such projects would not “invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area . . . “ Because these reviews are legally mandated by the WSRA, BLM would complete the reviews under all alternatives

Table III-C Issues addressed by Continuing Existing Management and Additional Actions

(Existing Management)	Additional Actions
Water Quantity and Water Quality Continue Existing management	Improving cooperative planning and management, Target Diack Flows
Paleontological Resources Continue Existing Management	Additional coordination, protection, and enhancement.
Cultural Resources Continue Existing Management	Additional coordination, protection, and enhancement.
Public Information and Education Continue Existing Management	Increase programs for communicating information and providing educational opportunities for the public.
Law Enforcement and Emergency Services Continue Existing Management	Increase cooperation

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There are currently many independent and cooperative efforts underway to improve water quantity and quality in the John Day basin. These would be continued under existing management. The following paragraphs describe the regulatory context of water quantity and quality management and provide examples of the types of independent and cooperative projects that are being implemented to improve water quantity and quality in the basin.

Protection of instream flows in the John Day River system relies on two mechanisms; instream water rights and John Day River State Scenic Waterway (SSW) flows. Instream water rights for fish have been issued for some segments of the John Day River system. These rights are subject to senior priority appropriations and do not actually ensure that flows are present for fish protection during critical life cycle stages. However, when flows are available, existing instream rights protect that flow from junior priority consumptive use. Desired flow levels to protect recreation, fish and wildlife in the John Day River and its forks have been identified by the Oregon Water Resources Department (1990). State Scenic Waterway flows are not water rights, rather, flow levels included by the OWRD in its calculations of water availability for future consumptive uses. Like instream water rights, State Scenic Waterway flows do not ensure live flow in the river during low flow times but they do serve as a goal to strive for through better resource management.

The Clean Water Act requires the DEQ to establish water quality standards, evaluate conditions relative to these standards, and develop strategies for water bodies not in compliance with established standards. The complex nature of fulfilling this task has necessitated coordinated efforts among management entities to address this issue at the watershed scale. The primary agencies directing this effort are the DEQ and Oregon Department of Agriculture in association with the Oregon Department of Fish and Wildlife, Oregon Department of Water Resources, BLM, US Forest Service, Natural Resources Conservation Service, Soil and Water Conservation Districts, Tribal Governments, Watershed Councils, and private land owners. Existing DEQ policy requires that a Water Quality Management Plan (DEQ, 1997) be formulated for all water quality limited rivers and streams in Oregon. The DEQ is scheduled to establish total maximum daily loads (TMDLs) for the Middle Fork, North Fork, Upper, and Lower John Day River sub-basins in the years 2003, 2003, 2004 and 2005, respectively.

Further protection and enhancement of water quantity and quality at the basin scale would be achieved through ongoing directives and programs such as the Strategic Plan for Managing Oregon's Water Resources 1999-2001 (OWRD, 1999), Water Resources Department - John Day basin Program (OAR, 1998), Oregon Conservation Reserve Program (USDA, 1998), Accelerating Cooperative Riparian Restoration and Management (USDA and USDI, 1997), Environmental Quality Incentives Program (USDA, 1996), Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (USDA and USDI, 1995), and Strategy for Salmon (Collette and Harrison, 1992).

In recent years state and federal resource management agencies have engaged in cooperative and coordinated efforts at the watershed scale to improve riparian and aquatic conditions. The following are examples of recent efforts that would individually or cumulatively protect and enhance water quantity and water quality, and fisheries.

- Establishment of instream water rights.
- Water sharing agreements between private landowners, OWRD and ODFW.
- Push-up dam removal and diversion modification (e.g., infiltration galleries).
- Irrigation efficiency projects - conversion from flood to sprinkler or gated pipe.
- Riparian fencing projects.
- Fencing and spring developments to implement grazing systems that improve and maintain riparian and upland vegetation.
- Fish screening of irrigation systems.
- Off-channel or headwater check dams.
- Juniper and noxious weed control.
- Prescribed burning.
- Wildlife food and cover seeding.
- Riparian plantings.

These activities may be implemented by individual landowners and agencies or through various levels of coordination of individuals, watershed councils, and local, state, federal, and tribal governments.

Additional Actions

A new action would adopt recommended flows identified in the John Day River Scenic Waterway Flow Assessment (see Table II-O) as provisional instream flow goals for the John Day River Plan. These flow levels were identified to support recreation needs (OWRD, 1990), and meet or exceed optimal flows for anadromous fish (Lauman, 1977).

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The managing agencies would use a two-pronged approach to achieve these flow goals and meet state water quality requirements First, the agencies would continue their present individual and cooperative efforts to improve instream flows and water quality in the John Day River basin as described in Alternative A.

Second, John Day River partners (Bureau of Land Management, State of Oregon, and Confederated Tribes of the Warm Springs) would coordinate to identify, prioritize, and facilitate actions that would help achieve the identified flow goals and state water quality requirements. The information sharing process would be open to tribal, local, state, federal, business/industry, recreational, and conservation/ environmental representation to:

- Develop basin-wide priorities and recommendations for water quantity and quality improvement projects and practices.
- Provide guidance and technical assistance to cooperative individuals and groups, such as Watershed Councils.
- Coordinate funding sources to assist in implementing identified projects.
- Modify long-term goals and specific management practices based on results of monitoring, new information, or meaningful changes in conditions.

Alternatives for management of grazing, agricultural lands, and recreation have been formulated to protect and enhance river values. The effects of these actions on water quantity and quality would be addressed in the description of environmental consequences (Chapter 5).

Paleontological Resources

Desired Condition: Paleontological resources are preserved, protected and made available for viewing, education and research purposes, as appropriate.

Existing Management

The management of fossil resources on public lands in the John Day basin is directed by existing laws, regulations, and agreements, including the Federal Lands Policy and Management Act (FLPMA), National Environmental Policy Act (NEPA), BLM manual sections 8270 and 8270-1, the BLM OR/WA strategy document for managing vertebrate fossil resources (Martin, 1995), and an interagency agreement to co-manage fossil resources with the National Park Service(NPS), John Day Fossil Beds National Monument. Through these directives, fossils are divided into different classifications with each treated in a different manner. Of the various groups, vertebrates, normally the rarest of fossil groups, may be collected only by bona fide scientific researchers and institutions under permit authority. Collection of vertebrate fossils, or any fossils commercially, without a permit, constitutes unauthorized use, and violations may be dealt with under appropriate statute(s). Common invertebrates and most botanical fossils may be collected for noncommercial purposes without a permit. Limited quantities of petrified wood may also be collected for noncommercial purposes under terms and conditions consistent with the preservation of significant deposits as a public recreational resource. A permit for collection of petrified wood is required for single specimens over 250 pounds, for removal of more than 25 pounds per day per person and for removal of more than 250 pounds per year. A special commercial permit must be obtained for the collection of petrified wood for sale.

Existing management would continue in accordance with current laws, policy and agreements to protect and enhance paleontological resources and to prevent unauthorized disturbances. This means reactive inventory, recording and evaluation on a project specific level, maintenance of files and maps, monitoring on an irregular basis for unauthorized disturbances and locality condition, periodic public outreach and education efforts, and consulting with the NPS at John Day Fossil Beds National Monument on all proposed actions which might affect fossil resources.

Additional Actions

This alternative would manage paleontological resources in the same manner as Alternative A except that it would also include the following tasks that would contribute to the protection and enhancement of paleontological resources and the prevention of unauthorized disturbances:

- Conduct inventory and cyclic prospecting of all potential fossiliferous exposures
- Coordinate with the NPS and other outside entities to conduct appropriate scientific research on identified localities within the corridor
- Develop and implement appropriate interpretive/ public outreach/educational techniques
- Pursue the development of partnerships with external entities to accomplish any or all of the above

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Cultural Resources

Desired Condition: The integrity of cultural resources (both historic and prehistoric) are preserved, protected, and made available for cultural, educational and/or research purposes, as appropriate.

Existing Management

Management of cultural resources consists of applying protection and preservation measures in accordance with treaty trust responsibilities, federal law (e.g., Section 106 of NHPA 1966, Executive Order 11593, ARPA 1979 amended), and BLM policy. For example, on a project specific level a common approach is to consult with the appropriate tribal group(s), identify any potentially eligible historic properties within the Area of Potential Effect (APE), evaluate the potential effects, and then make recommendations as to the proper disposition. Also, there are specific laws which deal with Native American religious freedom and graves protection. On larger planning efforts, however, protection and preservation measures incorporate not only basic compliance methods but include broader management strategies, as well. Examples might include such actions as increased site monitoring and law enforcement patrols to discourage vandalism and check site conditions, increased involvement by tribal groups (beyond that required by law) in on-the-ground management actions, development of partnerships to gather information about or protect key resources, general or site-specific interpretation, and public outreach/education efforts. Previously recorded sites in some portions of the river are monitored on an annual or biennial basis. Some portions of the river receive less frequent monitoring, especially where information is lacking.

Cultural resources would continue to be managed in accordance with current laws, policy and agreements for the protection and enhancement of cultural resources, and to prevent unauthorized disturbances. This means reactive inventory, recording and evaluation on a project specific level, maintenance of files and maps, monitoring for ARPA violations and site condition on an irregular basis, periodic outreach and education efforts, and consulting with appropriate tribal groups on specific proposed actions.

Additional Actions

Additional actions would include the following tasks (not necessarily in order) that would contribute to the protection and enhancement of cultural resources and prevent unauthorized disturbances:

- Re-recording known sites
- Evaluating sites for appropriate BLM Use Categories/National Register eligibility
- Conducting Class III inventory in areas of high probability and/or potential high use not previously inventoried and which are not necessarily associated with specific projects
- Conduct limited site testing/salvage excavation where appropriate
- Apply appropriate rehabilitation/stabilization techniques to sites as needed
- Develop and implement appropriate interpretive/ public outreach/educational techniques
- Pursue the development of a more active role for tribal involvement (beyond that required by law) in any or all of the above (e.g., participating in the rehabilitation of a damaged site)
- Pursue the development of partnerships with various internal and external entities to accomplish any or all of the above

Information and Education

Existing Management

The current level of information and education dissemination which includes efforts to educate the public in Leave No Trace outdoor ethics, respect for private property rights, controlling the spread of noxious weeds, reducing the threat of wildfire, and general information and regulations pertaining to the use of public lands. This information is disseminated through information boards at major access points, responses to written and telephone information requests, outfitter and guide meetings, and visitor contact with BLM employees and volunteers stationed in the office, on public lands and on the river. Presentations to schools and interest groups are conducted by request. The BLM would continue the current policy of not seeking out advertising opportunities or media coverage that is intended to bring more users to the John Day River.

Additional Actions

BLM would increase the level of information and education that is disseminated to the public compared to existing management. In addition to continuing the actions listed in Alternative A, the BLM would install information boards at more public access points, increase personnel contacts with visitors, and create new user brochures, detailed land ownership maps, and interpretive signs. An information Kiosk would be constructed on the South Fork John Day Backcounry Byway to educate the

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public about wildlife riparian and weed management programs. Where trespass is a problem, the BLM would install ownership identification markers between BLM, state, and private lands, to clearly identify land ownership and reduce trespass potential.

Law Enforcement and Emergency Services

Existing management

Guidance for law enforcement and emergency services on public lands and waters includes federal guidance from FLPMA and the Code of Federal Regulations; State guidance from Oregon State Law including Oregon Administrative Rules, Oregon Revised Statutes, Oregon Vehicle Code, Criminal Code of Oregon, ODFW Regulations and Fire Regulations; in addition to county regulations and the department policy and guidelines for each agency.

Under this alternative the BLM would maintain the existing level of law enforcement coverage. This consists of law enforcement personnel conducting one to two on-river patrols each season to enforce BLM regulations concerning the use of public lands and responding to requests for law enforcement assistance from non-law enforcement BLM personnel whenever possible.

Additional Actions

The BLM would improve coordination with state and local agencies by organizing a work group comprised of representatives of the agencies providing law enforcement and emergency services along the John Day River. The purpose of the group would be to set common goals and determine how each player can best contribute to these goals. Common goals and implementation strategies would be sought in areas such as radio communications, law enforcement on public lands, search and rescue efforts, and emergency response along the John Day River. The BLM would encourage joint emergency service training exercises for agencies, fire districts, outfitters and private individuals.

Issues Resolved by Alternatives

The following discussion describes a range of alternative actions for resolving issues associated with vegetation management, recreation, commercial services, and minerals. Table III-D displays the key elements, indicators, and themes of each alternative as it applies to these management concerns.

Scenic Quality

Desired Condition: Natural landscapes are preserved and maintained. Further development of modified landscapes are avoided or minimized. Modified landscapes are restored to natural character where opportunities allow.

Alternative A

According to BLM's Visual Resource Management (VRM) policy, the agency has a basic stewardship responsibility to identify and protect visual values on public lands. This policy includes preparing an inventory of visual values on all public lands, developing visual management objectives (classes) for these lands, and using these VRM objectives and standards for the design and development of future projects and for rehabilitation of existing projects. The John Day RMP (1985) and the Two Rivers RMP (1986) recognize the John Day River canyon as an area of high visual quality. Current State Scenic Waterway regulations allow new structures or improvements that are visible from the river only in connection with agricultural uses, public recreation, or resource protection.

This alternative would continue the existing management of recognizing the public lands adjacent to the John Day River as lands of high scenic quality, but would not designate the lands under BLM's Visual Resource Management System. Proposed actions and activities would be evaluated on a case-by-case basis to determine their impact to visual resources. Proposed actions and activities that would have significant, long-term adverse effects on visual qualities along the river would not be permitted.

Alternative B (Preferred Alternative)

Under this alternative, interim VRM Classes would be identified based on RMP data, BLM policy, and the personal experience of interdisciplinary team members. These interim classes would guide visual resource management decisions until the lands within the viewshed are analyzed through a VRM inventory process using BLM manual procedures. During the interim all river segments would be classified as VRM Class II, except for that portion of Segment 2 that falls within Wilderness Study Area boundaries, which would be classified as VRM Class 1, as required by BLM policy, to protect wilderness values. A VRM

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Table III-D Issues Addressed by Multiple Action Alternatives (Preferred Alternative in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Scenery					
VRM Classification	No classification under existing RMPs	**Interim VRM Management Class II except Class 1 in WSAs prior to Visual Resource Inventory.**			
Vegetation					
Special Status plants	Continue existing management				
Weeds	Continue existing management				
Fire	Continue existing management				
Forestlands	Continue existing management	**Same as A plus substitute RMP guidelines for management of riparian areas for existing management guidelines for upland areas within the planning area in Segments 7 and 10.**			
Grazing	Continue existing management, varying management practices.	**Modify existing management to protect and enhance river values. Considered Alternatives C and D on an allotment by allotment basis.**	Restrict grazing to outside of riparian areas.	Restrict grazing to outside of Wild and Scenic River Boundary	
Agricultural Lands	Continue Existing Management	**Modify existing management as necessary to protect and enhance river values.**	Manage land insofar as practical to protect and enhance terrestrial wildlife values and restore native vegetation.	Manage land insofar as practical to protect instream values and to restore native vegetation.	

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Table III-D Issues Addressed by Multiple Action Alternatives (Preferred Alternative in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Recreation					
Boating Use Levels					
Goal		Maintain existing recreational experience	Provide recreational experience with less competition for camp-sites	Emphasize solitude	**Reduce conflicts between motorized and non-motorized users.**
Monitoring	**Continue existing LAC monitoring to inform future decision making**				
Interim	No restrictions on number of launches, encourage launches during off-peak periods	Segment 1: Same as A Segments 2 and 3: Target Launches at 1998 levels.	Segment 1: Same as A Segments 2 and 3: Launches equal 70% of campsites within 15 miles of launch points.	Segment 1: Same as A Segments 2 and 3: Launches equal historical average of peak period daily launches.	**Launch targets same as C except: Segments 1 and 2: March: Target of launch of 1 motorized boat per day. April: Target of 2 launches of motor-ized boats per day.**
Long Term	No Restrictions planned	**Future decisions based on LAC study, mandatory launch limits may be imposed.**			
Allocation System					
Type of System	Allocation not needed	Historical Proportions	Annual common pool lottery systeM	**Common Pool, first-come first served.**	
Motorized Boating	Goal	Protect Wildlife	Protect Wildlife, provide use consistent with WSA status	Eliminate potential for conflict with other resources and uses.	

Table III-D Issues Addressed by Multiple Action Alternatives (Preferred Alternative in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Monitoring	**Continue existing LAC monitoring to inform future decision making**				
	Segments 10 and 11: Open	**Segments 10 and 11 (South Fork of the John Day Wild and Scenic River) Closed to Motorized Boating**			
n.a. **Protect anadromous fish. Promote consistency with future wilderness designations, limit potential user conflicts.**	Segments 1 and 2 closed to motorized use May 1 to October 1.	Segment 1: Closed March 1 to December 1 Segment 2: Closed March 1 to December 1. Recommend to Congress that motorized boats be excluded in WSAs if designated Wilderness.	Thrust or less. Segment 1: Closed April 1 to December 1 Segment 2: Closed April 1 to Oct 1 between Clarno and Clarno Rapids (electric motors ≤ 40 lb. thrust permitted) Closed year round below Clarno Rapids	Motorized boating not permitted .	**Segments 1, 2 and 3: Motorized boating permitted only December 1 to end of April.** **Recommend closure to motorized travel in Segment 2 below Clarno rapids if WSAs become designated wilderness.**
	Segment 3: Open to motorized river travel all year	Segment 3: Except for small[1] electric motors, closed April 1 to October 1. [1]Small = 40lb.	Segment 3: Except for small[1] electric motors, closed April 1 to October 1. [1]Small = 40lb. Thrust or less.		
Dispersed Camping					
Goal		**Encourage dispersed use in areas that can sustain impacts of camping.**			Protect Sensitive Riparian Areas from dispersed camping.
Actions	Decisions made on case by case basis	**Future Management decisions would be based on LAC study**			

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Table III-D Issues Addressed by Multiple Action Alternatives (Preferred Alternative in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	Segments 1 and 3: No actions. **Segment 2: Create a designated area on west bank near Sorefoot Creek for dispersed camping.** **Segments 10-11: Identify preferred camping areas and install signs and parking barriers to protect vegetation.**			Segments 1-3: No Action proposed Segments 10 and 11: Close critical riparian areas to camping.	
Developed Facilities					
Goal	Continue existing management	Improve or upgrade existing facilities to better meet the needs of the recreational user.	Same as Alternative B plus develop new sites to provide better resource protection and better meet needs of recreational user.	Reduce facilities or close sites to discourage use.	
Actions		**Improve or upgrade existing facilities when needed to protect resources**			
Segment 1	Maintain Cottonwood and Rock Creek facilities. No scheduled maintenance for Oregon trail Monument.	**Same as A except add boat ramp and boater registration station at Rock Creek and provide picnic tables at Cottonwood. Provide parking and maintain Oregon Trail Monument.**	Same as Alternative B	Same as Alternative A except close existing facilities at Rock Creek.	
Segment 2	Maintain Clarno, provide limited Maintenance at Butte Creek.	**Same as A except expand launch capability and add pay phone at Clarno and grade the primitive launch ramp at Butte Creek**	Same as Alternative B plus improve Juniper Island camping area.	Same as Alternative A except close existing facilities at Butte Creek.	

Table III-D Issues Addressed by Multiple Action Alternatives (Preferred Alternative in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Segment 3	Maintain Service Creek and Priest Hole facilities.	**Same as A except install toilet at Priest Hole.**	Same as Alternative B plus make improvements to "Clarno East," develop Lower Burnt Ranch into camping area with signs, information board, parking barriers, and toilet.	Same as Alternative A and discourage use at "Clarno East"	
Segments 10	No developed sites	Same as A	**Create campground at Ellingson Mill with toilet, tables, information board, signs, and parking barriers.**	No actions proposed	
Segment 11	**No developed sites**	Same as A			
Public Access					
Goal	Continue Existing Management	I**mprove existing access to protect resources and meet recreational needs by providing new access and upgrading current access routes across public land. Grade, surface, or widen gravel roads as needed.**	Provide maximum reasonable public access to the river via roads and trails.	Reduce public access to protect and enhance resources that constitute river values	

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Table III-D Issues Addressed by Multiple Action Alternatives (Preferred Alternative in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Actions	**Segment 1: Clarify status of access to Oregon Trail Monument.** **Segment 3: Acquire public access to river near Twickenham, improve road to Priest Hole** **Segments 10 and 11: Improve ditches and culverts on the South Fork Road .**				
	Continue existing management	**Eliminate motorized access to existing Burnt Ranch site (maintain trail for foot access)**			
		Segment 1: Same as Alternative A	Segment 1: Same as Alternative B plus seek to acquire public access to Tumwater Falls and the confluence of Hay Creek and the John Day River	Segment 1: Eliminate Rock Creek road Access.	
		Segment 2: Same as Alternative A, except improve BLM road on west bank of the river from Clarno to Clarno Homested.	Segment 2: Same as Alternative B plus seek public access easement to the river via Butte Creek Road. Seek to acquire public access on East bank from Clarno to Clarno Rapid.	Segment 2: Close BLM road on the west bank to vehicle traffic past the Clarno Home-stead.	
		Segment 3: Provide access to Lower Burnt Ranch dis-persed use area.	Segment 3: Same as B	Segment 3: Same as B except do not provide motor vehicle access to Lower Burnt Ranch.	
		Segments 10 and 11: Same as Alternative A plus improve surface of South Fork Road.	Segments 10 and 11: Same as B	Segments 10 and 11: Same as B	

Table III-D Issues Addressed by Multiple Action Alternatives (Preferred Alternative in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Commercial Use					
	Continue existing Management. Case by case review. No limit on number of permits and permits are transferrable.	**Decisions concerning commercial services would fully consider type of service, consistency with management goals and objectives, the ability applicants to provide service, opportunity to make a profit, public safety, and BLM workload. Determinations made through A needs assessment process. Moratorium on new permits and transfers until launch numbers are finalized in approximately 3 years.**			
		1. No Administrative limit on number of permits. **2. Increase permit requirements: training in river rescue, Leave No Trace, and Interpretation.** **3. Initially increase minimum use requirements to 20 paying customer user days every two years.** **4. Permittees subject to random audits of IRS records associated with their permitted business.** **5. Increase permit fees to cover the cost of permit administration including required monitoring.** **6. Permits Transferable**	Permit numbers adjusted on basis of needs assessment. Permits transferrable only to applicants who meet same criteria identified in the needs assessment	Limit number of permits to 34. Permits not transferrable. Available permits granted based on needs assessment and competitive prospectus. Concession permits based on needs assessment may be issued and would be in addition to 34 permits	

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Table III-D Issues Addressed by Multiple Action Alternatives (Preferred Alternative in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Minerals					
Goal	Continue Existing Management	**Provide additional protection of river values.**		Eliminate possibility that mining within Wild and Scenic River boundary could adversely impact river values.	
		Same as A except: **1. No surface occupancy restriction for Leasable Minerals in Grant County within Planning area.** **2. Where permitted mining would be subject to stipulations to protect river values. Adopts State Scenic Waterway rules (Ch. 4).** **3. On BLM lands new sites for the production of saleable minerals would not be permitted within State Scenic Waterways or Wild and Scenic Rivers.** **4. Facilities such as established camp-grounds and launches would be closed to leasing and saleable minerals and withdrawn from entry under the Mining Law of 1872 for locatable minerals.**		Close BLM managed lands in Wild and Scenic River Segments and State Scenic Waterway segments to leasing and saleable mineral activity and withdraw locatable minerals from entry under the Mining Law of 1872.	
Land Ownership, Classifications, and Use Authorizations					
	Continue Existing Management	**Same as A and identify parcels for acquisition to protect and enhance river values and to facilitate administration.**		**Same as B and C plus seek to acquire additional lands in order to facilitate Alternative D for grazing.**	

Class 1 rating, the most restrictive of VRM classifications, limits management activity by requiring that it cannot attract attention. When classified VRM Class II any management activities may be seen but should not attract the attention of the casual observer and changes must repeat the basic elements of form, line color, and texture found in the predominant natural features of the characteristic landscape. Any management activity within the Wild and Scenic River Corridor would be consistent with the appropriate VRM Class.

Vegetation

Desired Condition: Plant communities and special status plant species provide aspects of habitats, visuals, and communities that support watershed function, healthy ecosystems, other river values, and human uses.

Guidance Common to All Alternatives

The Federal Land Policy and Management Act of October 21, 1976 (43 USC 1701).

This act declares that it is the policy of the United States that the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

Clean Water Act

The Clean Water Act requires the DEQ to establish water quality standards, evaluate conditions relative to these standards, and develop strategies for water bodies not in compliance with established standards.

Endangered Species Act of 1973 (16 USC 1531 et seq.), as amended.

This act directs the BLM to conserve threatened and endangered species and the ecosystems upon which they depend, and not contribute to the need to list a species.

BLM Manual 6840 - Special Status Species Management (9/16/98).

For federally listed and proposed threatened and endangered species, BLM shall conserve the species and the ecosystems upon which they depend; ensure that all actions authorized, funded or carried out by BLM are in compliance with the Endangered Species Act (ESA); and retain in Federal ownership all habitat essential for the survival or recovery of any threatened and endangered (T/E) species. For candidate species, BLM shall determine the distribution, abundance, reasons for current status and habitat needs for species occurring on lands administered by BLM and manage the habitat to conserve the species. For sensitive species, the minimal level of protection will be the level of protection provided to candidate species.

Oregon Washington Special Status Species Policy, IM No. OR-91-57, issued 11/5/90, as amended by IM No. OR-91-57 change 1, issued 8/5/91.

This policy provides protection for plants which are not federally listed, proposed or candidates, and assigns these species to one of three lists: *Bureau Sensitive, Assessment and Tracking*. Relies in part on Oregon rules, which includes the Oregon Endangered Species Act, and on lists prepared by the Oregon Natural Heritage Data Base.

For *Bureau Sensitive Species*, the BLM is to protect, manage and conserve the species and their habitats such that any Bureau action will not contribute to the need to list any of these species. For *Assessment Species*, BLM is to conduct clearances prior to activities, and where possible, take steps to protect them. *Tracking species* are not considered “Special Status” and are afforded no special protection.

The BLM is currently ‘in limbo’ related to some of the above direction since the USFWS has changed its policy on candidates for listing as endangered or threatened. Many of our special status plants were formerly Category 2 candidates for listing and this category no longer exists. All such species automatically became Bureau Sensitive but we are directed to manage them as before, under the old guidance pertaining to candidates.

Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington. **(See Appendix J)**

These standards are intended to meet the objectives of 43 CFR, Subpart 4180. These objectives are to promote healthy sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; and to provide for the sustainability of the western livestock

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industry and communities that are dependent upon productive, healthy public rangelands. These standard apply to all uses of public rangelands.

Noxious Weed Control

The Prineville District uses an Integrated Weed Management Program (IWM) approach to control noxious weeds. This IWM approach is documented in the District-wide IWM EA # OR-053-3-062 and in the Lower John Day River IWM, EA # OR-054-3-063. These IWM efforts are focused on reduction or containment of larger infestations and control of new sites when found. They are a collaborative, cooperative effort with adjacent land owners and agencies. The approved IWM practices in these two EA's are tiered to BLM's Northwest Area Noxious Weed Control Program FEIS (Dec 1985) and Supplemental FEIS (March 1987) and their respective Records of Decision. In addition, the EA's also tier to the Vegetative Management (Thirteen Western States) FEIS (1991) for the use of additional chemicals when approved for Oregon. Noxious weed control efforts are also guided by weed management plans for the John Day / Bridge Creek Weed Demonstration Management Area. Coordination and cooperation with and between county weed control offices/districts are ongoing. The control efforts and practices in the IWM program include preventative practices, biological control such as competitive seedings, or release of Oregon Department of Agriculture biological agents (mainly insects), prescribed burning, mechanical practices, manual practices and chemical (herbicide and fertilization) applications.

Fire Management

Wildfire suppression direction is given in the Two Rivers RMP (1986) and the John Day RMP (1985). Additional direction to minimize impacts are given in the Prineville District's fire management plan, BLM Manual H-8550-1 (interim management policy for lands under wilderness review, 1995), BLM Manual 8351 (Wild and Scenic Rivers - policy and program direction for identification, evaluation, and management, 1992). Fire control actions in the John Day River basin are usually selected to minimize visual and ecological impacts and, when needed, aggressively suppress wildfire. The entire John Day basin occurs within the Prineville District BLM's Fire Management Zone #3. Fire management will be guided by the Fire Management Plan written for Zone #3 and representative locations within this fire management zone. Additional fire management and rehabilitation efforts will be covered in supplemental Environmental Assessments or Fire Management Plans.

The document "Wildland and Prescribed Fire Management Policy: Implementation Procedures Reference Guide (1998)," represents an effort by Federal wildland fire management agencies to establish standardized procedures to guide immediate implementation of the policy described in the 1995 Federal Wildland Fire Management Policy and Program Review. This document represents the latest stage in the evolution of wildland fire management and recommends policy changes that associate suppression and management of wildland fires into a single direction achieving multidimensional objectives. This policy directs Federal agencies to achieve a balance between suppression to protect life, property, and resources, and fire use to regulate fuels and maintain healthy ecosystems.

Grazing

Taylor Grazing Act, 43 USC 315.

This act was passed in 1934 to stop injury to the public grazing lands by preventing overgrazing and soil deterioration; to provide for their orderly use, improvement, and development; to stabilize the livestock industry dependant upon the public range; and for other purposes.

43 CFR 4100 Regulations.

The purpose of these regulations is to provide uniform guidance for administration of grazing on the public lands exclusive of Alaska.

Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington. **(See Appendix J)**

BLN guidance for implementation of Standards and guidelines requires that all grazing allotments in the John Day River basin receive interdisciplinary team review by December, 2008 to determine if the standards and guides are being met. The BLM will take appropriate action (see CFR subparts 4110, 4120, 4130 and 4160) as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management needs

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to be modified to ensure that the following conditions are met or significant progress is being made toward their attainment:

1. Upland soils exhibit infiltration and permeability rates, moisture storage and stability that are appropriate to soil, climate and landform.
2. Riparian-wetland areas are in properly functioning physical condition appropriate to soil, climate and landform.
3. Healthy, productive and diverse plant and animal populations and communities appropriate to soil, climate and landform are supported by ecological processes of nutrient cycling, energy flow and the hydrologic cycle.
4. Surface water and groundwater quality, influenced by agency actions, complies with State water quality standards.
5. Habitats support healthy, productive and diverse populations and communities of native plants and animals (including special status species and species of local importance) appropriate to soil, climate and landform.

Assessment of riparian conditions would follow BLM approved procedures (detailed in BLM (1993); BLM (1998); and Interpreting Indicators of Rangeland Health (in press)). If after five years of implementation it is shown that non-compliance on the part of the grazing operator (for example, willful trespass, failure to maintain facilities, or other violations of the CFR) is a significant contributor to non-attainment, or lack of significant progress, livestock grazing authorization shall be discontinued for a period to be determined by the authorized officer.

Wild and Scenic Rivers Act, 16 USC 1271.

Guidance for grazing comes from the part of the Wild and Scenic Rivers Act that states, rivers "shall be administered ... to protect and enhance the (river) values ... without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values... Management plans for ... (Wild and Scenic Rivers) ... may establish varying degrees of intensity for protection and development, based on the special attributes of the area. "

In interpreting the Act with respect to grazing, the Oregon District of the US District Court has stated that grazing was not a 'grandfathered' use and that the managing agency may eliminate grazing from the river and surrounding lands. "This does not mean, however, that cattle grazing must be excluded from the river area. Rather, cattle grazing may continue, but only in accordance within the strictures of the Act to protect and enhance" (Civil No. 95-2013-HA, 31 January '97, Oregon Natural Desert Association v. Green). This opinion was reiterated in a subsequent case (Civil No. 98-97-RE, 3 November '98, Oregon Natural Desert Association v. Singleton), "if grazing proves to be detrimental to soil, vegetation, wildlife, or other values, or is inconsistent with the "wild" designation, then clearly the BLM has the right--indeed, the duty-- not only to restrict it, but to eliminate it entirely".

The standard for what constitutes acceptable grazing practices was similarly clarified. Where problems exist, continuation of standards, such as utilization, which are not substantially different from those which created the problems is insufficient. The court has recognized that past grazing practices have adversely impacted the river values on the John Day (Civil No. 97-853-ST, 6 August '98, Oregon Natural Desert Association v. Cosgriffe). However, the court found that the BLM has changed course, toward more ecological grazing practices, and is moving in the right direction by limiting grazing and negotiating with private landowners.

Vegetation Management Alternatives

Forestlands

Alternative A (Existing Management) (Preferred except as modified by Alternative B)

Existing management within Segments 7 and 10 is focused on protecting riparian areas for the benefit of water quality, soil stabilization, scenic values, fish and wildlife enhancement.

Current John Day RMP standards and guidelines require "no cut" buffers adjacent to all perennial and ephemeral streams. A 100-300 foot buffer (distance is dependant on steepness of side slopes) is required adjacent to perennial streams. A 50 foot buffer is required adjacent to ephemeral streams.

Other current forest management guidelines related to riparian management are:

1. Special harvest techniques (cable and (or) aerial logging) are required when harvesting timber within to riparians areas. New road construction within riparian areas should be avoided when possible.
2. Skid trails should be located parallel to and outside of all drainages.
3. Timber removal may take place only when necessary to reduce the risk of catastrophic timber losses due to insect infestation, disease, or wildfire.

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Outside of the riparian areas and within the corridor boundaries of Segments 7 and 10 forestland is managed as either commercial or non- commercial forestland. Commercial forestlands are those lands that are capable of producing 20 cubic feet of commercially valuable wood (per acre) per year. In the John Day basin commercial tree species include pine, fir, spruce, Douglas fir, and larch. Current management for commercial forest land is for the production of timber. Outside of riparian buffer zones timber is actively managed to prevent conditions that support insect and/or disease outbreaks. Management techniques include overstory removal and commercial and noncommercial thinning.

Noncommercial forestlands do not have the capability to produce 20 cubic feet of wood from commercially viable species. Primary vegetation management direction for noncommercial forestlands is the management of vegetation that provides food and cover for wildlife and provides forage for cattle.

Common to All Action Alternatives (Preferred)

In order to attain the desired condition of both Segments 7 and 10, the existing John Day RMP guidelines for the management of riparian areas (See Alt. A) would be applied to all areas within the river corridor. Timber removal would take place only when necessary to reduce the risk of catastrophic timber losses due to insect infestation, disease, or wildfire.

Grazing

Alternative A (No Action)

Since designation, grazing management has been changing under the directions of the Two Rivers RMP, the John Day RMP, the Northwest Power and Planning Council's Strategy for Salmon, PACFISH, the Clean Water Act, the Endangered Species Act, the Wild and Scenic Rivers Act, and Rangeland Standards and Guides. The management approach has been to learn about local conditions, to discuss concerns and seek cooperation with local agencies, land owners and governments. The process is ongoing, appropriate management practices have not been implemented in all allotments. As a result the image of grazing management for Alternative A summarized in Table III-E (with greater detail in **Appendix L**) is merely a snapshot in time. Of the 196.4 public land river bank miles on the Wild and Scenic River (WSR) designated segments (1, 2, 3, 10 and 11), 64.5 are excluded from livestock grazing, 122.0 have other riparian-oriented grazing practices in place, and 9.9 do not have riparian oriented grazing in place.

The majority of the changes have been adjustments to season of use, from season long to spring and/or winter. Other adjustments include riparian fences (exclusion), reductions in the duration of use, and rotation grazing.

Alternative B (Preferred)

This alternative would accelerate the management changes necessary to meet the directives, guidance, and management approach outlined in Alternative A on Allotments that are not now in compliance. The goal of this alternative is to protect and enhance river values, such as riparian vegetation, water quality, scenery, recreation, wilderness and other river values. This goal would be achieved by adjusting grazing practices (for example, length of grazing season, season of use, stocking levels, access to camp sites or riparian areas) in cooperation with private land owners to eliminate impacts that are inconsistent with enhancement of river values. Popular campsites where conflict with cattle use has occurred would be excluded from grazing by constructing fences. Several sites have been identified and are located as described below.

River Left 47.5
River Right 59.0 (Owl Rock) w/in WSA
River Left 76.7 (Chisholm Canyon) w/in WSA
River Right 77.8 (Cordwood Canyon) w/in WSA
River Left 81.5 w/in WSA
River Left 99.5 (Juniper Island)
River Left 119.3
River Right 125.7
River Left 138.7

Campsites which would be closed to recreation use for recovery would also be closed to grazing. This alternative would rely on the results of the Limits of Acceptable Change (LAC) study (described under Recreation Opportunities and **Appendix K**) to identify further areas of conflict between recreation users and livestock. Existing fences and water developments would be incorporated into the livestock operation to the extent possible. Natural river discharge patterns (such as high water levels) and livestock grazing behavior (such as avoidance of cool air drainages during winter months) would be used instead of fences to protect the majority of the riparian areas from grazing. Existing guidance would continue to provide standards and guides for livestock management throughout the basin.

Changes in management from the current situation and some direct impacts of those changes are detailed in Table III-E and **Appendix L**. Of the 196.4 public land river bank miles on the WSR designated

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segments (1, 2, 3, 10 and 11), 65.5 would be excluded from livestock grazing, 128.7 would be under other riparian-oriented grazing management, and 2.2 would await exchange for other lands within the Wild and Scenic River corridor. The alternative requires the construction of 11.5 miles of fence in designated segments.

The majority of the actions change the lease to confine the grazing period to winter and/or spring (November 1 to June 1) on pastures with access to riverbank. Dates of annually authorized use would be determined by plant phenology, herd size, and available forage, but would be restricted in most cases to not more than 60 days during the December 15 to May 1 period and often to the March 1 to May 1 period. In some cases this is a restriction or a shift in the grazing period, typically away from hot season or season long grazing. In many cases the current authorized grazing season is winter and/or spring, in these cases the action would be limited to adjusting grazing leases in order to formalize the current arrangement. These actions would establish a relatively standard grazing period for the public lands along the river. A uniform season, during which river flow levels are sufficient to permit the river to be used as a barrier to livestock movement, reduces the incidence of trespass from livestock which, during low flows, are able to travel up and down the river banks and freely cross the river (see **Appendix M**, photos 11-14).

In segment 1, pasture division fences would create riparian pastures on allotments 2595 and 2597. Grazing on the new riparian pastures would be limited to winter and/or spring, with grazing occurring most often in March and April. On 2597, a large pasture would be divided into four smaller pastures, restricting access to the river from three of the pastures and allowing a rotation grazing system to be implemented. Fence construction on 2520 and 2560 would exclude grazing from public land river bank. In allotment 2598, two corners of public land extend across the river and occupy river 0.7 river bank miles in a pasture which is dominated by private land. This land would be difficult to manage efficiently and is recommended for exchange for other lands within the Wild and Scenic River corridor.

In segment 2, a pasture division fence would create a riparian pasture on allotment 2591. Grazing on the new riparian pasture would be limited to winter and/or spring, with grazing occurring most often in March and April. On 2538 and 2619 small gap fences would bridge steep cliffs to restrict livestock access from 1.3 and 3.5 public land river bank miles respectively. In allotment 2584, scattered tracts lie on or near river bank in a pasture dominated by private land. This land would be difficult to manage efficiently and is recommended for exchange for other lands within the WSR corridor.

In segment 3, 0.8 miles of fence on allotment 2512 and 0.3 miles on 2588 would prevent livestock from entering an isolated terrace along the river where they tend to remain. Then fencing would create a livestock exclusion for 0.4 miles of river bank. The 0.6 miles of fence on allotment 2530 would create a riparian exclusion fence for the entire length of the allotment.

Alternative C

The goal of this alternative is to protect and enhance river values such as riparian vegetation, water quality, public-land campsites, and other river values from livestock impacts. This goal would be achieved by excluding livestock from the riparian area through use of fencing and topographic barriers. Existing fences would be incorporated to the extent reasonably possible. The primary factors taken into account in locating new fences would be (1) effectiveness in excluding livestock; (2) ability to withstand high water events; (3) visibility from river, campsites, or other recreational settings; (4) accessibility and ease of maintenance. Where fencing the riparian area is impractical and topographic barriers are absent, the goal of this alternative may be accomplished through modification of pasture boundaries or cancellation of livestock grazing privileges for individual pastures, or other measures which would effectively prevent livestock from accessing the riparian area. Existing guidance would continue to provide standards and guides for livestock management throughout the basin.

Changes in management from the current situation and some direct impacts of those changes are summarized in Table III-E and **Appendix L**. Of the 196.4 public land river bank miles in the designated WSR segment (1, 2, 3, 10 and 11), all of them would be excluded from grazing. Nearby uplands would continue to be grazed.

Alternative D

Alternative D - The goal of this alternative is to protect and enhance river values by protecting riparian areas and surrounding, publicly owned upland areas from the impacts of livestock. This goal would be achieved by cooperators taking whatever actions are necessary to eliminate livestock grazing on public lands with the Wild and Scenic River

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boundaries and within 1/4 mile in non-designated segments of the mainstem, North, Middle, and South Forks of the John Day River. Existing guidance would continue to provide standards and guides for livestock management elsewhere in the basin.

The actions necessary to implement this alternative would extend outside WSR boundaries (or more than 1/4 mile in non--designated segments). When grazing allotments encompass both public and private lands, this alternative would require either the elimination of grazing from private lands or some means of preventing trespass from private lands to public lands. The cooperators would utilize a range of options to implement this alternative:

1. Request that current permittees voluntarily refrain from grazing their cattle on unfenced lands adjacent to public lands.

2. Purchase of or exchange for private lands within grazing allotments or purchase of conservation easements from willing sellers.

3. Exchange small tracts of public lands within the WSR boundary and surrounded by private land for other private land within the Wild and Scenic River boundary.

4. When permittees do not voluntarily stop grazing and are not willing to sell adjacent private lands, permittees would be precluded from grazing livestock on public lands within the river corridor or Wild and Scenic River boundaries.

Some direct impacts on private and public lands due to implementation of this alternative are summarized in Table III-E and **Appendix L**. Of the 196.4 public land river bank miles on the WSR designated segments (1, 2, 3, 10 and 11), 195.7 would be excluded from livestock grazing, and 0.7 river bank miles would await exchange for other lands within the WSR corridor. 65,845 public land acres would be closed to grazing, eliminating 2725 AUMs from grazing allotments which lie partially within the WSR designated segments. In order to fully implement the alternative, the approximately 15,000 acres of private land fenced in with the closed public lands would have to be dealt with, either by acquiring title or a conservation easement for those lands.

Agricultural Lands

Alternative A

Recreational designated rivers under the Wild and Scenic Rivers Act may be managed for a full range of agriculture, consistent with current practices (BLM, 1992).

BLM managed agricultural lands are now managed for a variety of purposes. These lands have associated water rights. The Oregon Water Resources Department is responsible for administering state water law and application of water right restrictions. Water rights associated to these public agricultural lands are restricted to a rate not to exceed 1/40 cfs (cubic feet per second) per acre and withdrawal from the river during the irrigation season (April 1 to September 30), not to exceed from 3 to 5 acre-feet per acre, depending on the specific water right associated with each property.

The BLM would continue to manage the public agricultural lands and utilize water rights under the existing guidance for a combination of instream leasing, non-use, riparian shrub/tree propagation (cottonwood, willow, alder), wildlife food and cover, weed control, vegetation restoration (riparian and upland), and commodity agriculture in a manner consistent with the overall goal of ecosystem management.

Segment 1

The BLM would continue to lease the 8.7 acres of public agricultural lands and associated water right at approximately river mile (RM) 23 for commodity production associated to adjacent private irrigated lands. Use in 1998 was for alfalfa hay.

Segment 2

This alternative would retain a full range of management opportunities of the 278.5 acres of public agriculture lands and associated water rights. Examples of use include instream leasing, non-use, riparian shrub/tree propagation (cottonwood, willow, aspen), wildlife food and cover, weed control, vegetation restoration (riparian and upland), and commodity agriculture. Use in 1998 (Table III-F) consisted of approximately 46.4 acres alfalfa hay, 82 acres spring wheat, 17 acres wildlife food and cover mix, and 26 acres cottonwood.

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Table III-E Grazing Alternative Comparison Segment 1 (TUmwater Falls to Cottonwood, 30 river miles)

Allotment Number & Name	Miles of River Bank private	public	Current Riparian Grazing Mgt. Alt. A	NEPA #s	Restricted Grazing Alternative B	Required Actions	No Riparian Grazing Alt. C Miles of Fence Pvt/Pub	Acres Excluded Pvt/Pub	No-Grazing Alt. D, Required Actions Miles of Fence Pvt/Pub	AUMs Canceled	Acres Included Pvt	Pub
2617 Emigrant Cn	2.8	0.6	7		**2, 5**	**a**	2.8/0.6	34/7	0.6/0.1	10	300	200
2604 Philippi	1.5	0.0	2, 5		**2, 5**	**a**	n/a		0.0/0.7	1	0	40
2648 Hartung	2.9	0.7	9	96-009	**2, 5**	**a**	2.9/0.7	35/8	0.0/3.7	13	40	560
2594 Morehouse	0.4	1.0	9	96-009	**2, 5**	**a**	0.4/1.0	5/12	0.5/0.3	3	200	65
2555 Hoag	0.3	0.9	9		**2, 5**	**a**	n/a		n/a			
2562 J Bar S	0.0	0.9	1, 2, 5	96-009	**2 ,5**	**a**	0.0/0.4	0/11	0.0/1.0	4	0	120
2513 Big Sky	5.4	1.2	1, 2, 5	96-009 93-067	**2, 5**	**a**	2.1/0.7	12/3	0.0/3.3	30	580	680
2637 VO West	1.4	0.3	1, 5		**1, 2, 5**	**a**	0.4/0.3	2/2	0.0/0.5	12	30	160
2595 Morris	3.0	1.5	1,2		**1, 2, 5**	**a, 0.7 miles fence**	1.4/1.3	8/8	0.5/0.7	14	100	440
2540 Persimmon	1.1	0.0	**8, 9**		**same as existing**		n/a		n/a			
2560 Baseline	3.0	1.6	1, 2, 3		**1**	**1.1 miles fence**	0.4/0.7	3/9	0.0/0.5	5	20	160
2598 Hay Crk	3.0	1.7	1, 2, 3	95-080	**same as existing**	**pursue exchange**	1.6/1.2	10/7	0.0/2.5	8	80	320
2520 Boynton	1.1	4.1	1, 2	90-005 89-058 98-100*	**same as existing**	**1.8 miles fence**	n/a		0.0/0.0	93	200	2596
2597 Murtha	7.0	4.2	1, 6	99-117	**1, 2, 5, 6**	**a, 4.5 miles fence**	6.3/2.8	80/36	1.8/1.0	99	1680	3560
unleased	7.2	0.7	n/a									
Totals	40.1	19.3	=59.4			8.1 miles fence	18.3/9.7	189/103	3.4/14.3	292	3230	8901

1: exclusion 4. autumn 7. season long
2: spring 5. winter 8. no public land riparian area
3: summer 6. rotation 9. voluntary non use
* changes described in NEPA document awaiting implementation.
a. adjust the leases to confine grazing period, see Appendix L for greater detail.

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Table III-E Grazing Alternative Comparison Segment 2 (Cottonwood Bridge to Clarno, 59 river miles)

Allotment Number & Name	Miles of River Bank private	public	Current Riparian Grazing Mgt. Alt. A	NEPA #s	Restricted Grazing Alternative B	Required Actions	No Riparian Grazing Alt. C Miles of Fence Pvt/Pub	Acres Excluded Pvt/Pub	No-Grazing Alt. D, Required Actions Miles of Fence Pvt/Pub	AUMs Canceled	Acres Included Pvt	Pub
2597 Murtha	3.5	17.3	6, 2, 5	99-117	**6, 2, 5**	**b**	3.3/6.7	39/83	3.0/0.0	125	520	3800
2636 Weedman	0.0	0.1	9		**2, 5**	**a**	0.0/0.1	0/1	0.0/1.3	1	0	100
2553 Willow Spring	0.0	0.3	9		**2, 5**	**a**	0.0/0.3	0/1	0.0/0.0	20	560	1127
2591 Miller	0.7	4.0	2	99-080*	**2, 5**	**a, 1.3 miles fence**	0.7/4.3	4/26	0.0/1.3	42	420	1780
2509 Belshe	0.0	1.5	2	97-137	**2, 5**	**a**	0.0/1.5	0/9	0.0/0.0	48	160	1440
2572 Laffoon	0.0	8.4	1, 2, 9	96-058 96-024 94-078	**1, 2, 9**	**a**	0.0/7.5	0/56	0.0/0.0	50	120	3095
2522 J Brown	1.4	5.7	1, 2	96-058	**1, 2**	**a**	0.5/6.5	3/39	0.3/0.0	24	680	2200
2521 H Bend	1.2	1.8	2	97-062	**2, 5**	**a**	1.0/1.5	6/9	0.0/0.0	10	140	380
2538 Decker	0.4	6.5	2	97-038*	**2, 5**	**a, 0.2 miles fence**	0.4/5.6	2/33	1.0/0.0	93	0	2000
2629 Tatum	0.0	2.1	2		**2, 5**	**a**	0.0/2.1	0/13	0.0/0.0	45	160	1240
2518 Pine Ck	0.7	0.0	2	93-037	**2, 5**	**a**	0.7/0.0	4/0	0.0/0.0	51	172	760
2619 Sid Seale	2.5	31.4	9, 1, 2, 5	95-008*	**1, 2, 5**	**a, 0.2 miles fence**	0.8/6.8	4/36	4.4/3.9	545	2430	11,916
2608 Rattray	2.0	16.0	1, 2, 5, 6	93-037 96-110	**1, 2, 5, 6**	**a**	0.4/7.1	2/43	2.8/0.0	148	165	3720
2623 Steiwer	4.9	5.0	1, 2, 7	87-033	**1, 2, 7**	**a, pursue exchange**	2.2/4.2	10/24	0.0/6.6	53	0	1280
2584 Maurer	10.3	6.5	1, 2, 7	97-014 95-009 91-038	**1, 2, 5**	**b, pursue exchange**	6.9/6.3	42/38	0.3/6.7	109	880	5036
2614 Clarno	0.0	2.8	9	96-060 95-009	**9**		n/a		same as existing			
unleased	2.2	-										
Totals	29.8	109.4	=139.2			1.7 miles fence	16.9/60.5	116/411	11.8/19.8	1364	6407	39,874

1: exclusion 4. autumn 7. season long
2: spring 5. winter 8. no public land riparian area
3: summer 6. rotation 9. voluntary non use
* changes described in NEPA document awaiting implementation
a. adjust the leases to confine grazing period, see Appendix L for greater detail.
b. develop an allotment management plan (AMP) or an allotment management agreement.

Table III-E Grazing Alternative Comparison Segment 3 (Clarno to Service Creek, 48 river miles)

Allotment Number & Name	Miles of River Bank private	public	Current Riparian Grazing Mgt. Alt. A	NEPA #s	Restricted Grazing Alternative B	Required Actions		No Riparian Grazing Alt. C Miles of Fence Pvt/Pub	Acres Excluded Pvt/Pub	No-Grazing Alt. D, Required Actions Miles of Fence Pvt/Pub	AUMs Canceled	Acres Included Pvt	Pub
2633 Amine Peak	5.7	3.9	2		87-003	**2, 5**	**a**	5.7/3.9	34/24	0.8/2.1	35	174	800
2512 Big Muddy	8.0	5.6	2			**2, 5**	**a, 0.8 mi fence**	6.9/3.2	42/19	1.6/3.2	30	396	1280
2577 Byrd's Point	1.6	2.0	**1**		87-003 98-058	**same as existing**	**none**	same as existing		0.0/1.6	25	80	360
2545 Cherry Creek	2.6	0.9	2, 5			**2, 5**	**a**	3.9/1.1	24/7	0.0/0.9	6	0	200
2544 Circle S	1.5	0.8	2		98-058	**2, 5**	**a**	n/a		0.0/0.0	3	0	240
2587 Corral Canyon	1.7	0.1	2			**2, 5**	**a**	1.7/0.1	14/4	1.2/0.3	0	52	4
2537 Dead Dog C.	1.2	1.4	**1**		92-044 98-058	**same as existing**	**none**	same as existing		0.0/0.3	7	91	90
2656 Dry Knob	3.2	0.8	2, 4, 5			**2, 5**	**a**	1.8/0.4	9/2	0.1/1.1	2	30	34
2535 Hayfield	0.9	0.7	2		90-089 87-010	**2, 5**	**a**	1.2/1.2	7/7	0.0/0.0	0	0	90
2592 Misener	1.4	0.0	**1**		92-044	**same as existing**	**none**	same as existing		n/a			
2556 M. Howard	3.2	2.6	**1**		98-058	**same as existing**	**none**	same as existing		0.2/2.4	16	189	320
2641 North 80	0.2	0.0	**8**			**same as existing**	**none**	0.2/0.0	2/0	n/a			
2659 Packsaddle	1.0	0.0	**1**			**same as existing**	**none**	same as existing		n/a			
2536 Spring Basin	0.0	0.0	**1**			**same as existing**	**none**	same as existing		0.1/1.1	2	0	100
2588 Spud	3.2	0.6	1, 2, 5		90-035	**1, 2, 5**	**a, 0.3 miles fence**	0.0/0.3	0/1	0.0/0.4	5	494	148
2533 Sutton Mtn	0.0	5.2	2		92-044	**2, 5**	**a**	0.0/1.8	0/11	0.0/2.3	45	0	1240
	0.2	1.5	**1**		92-021	**same as existing**	**none**						
2532 T. Cole	1.1	0.7	5			**2, 5**	**a**	1.2/0.6	7/4	0.0/2.8	17	42	520
2624 Burnt Ranch	0.0	1.4	**2, 6**			**same as existing**		0.0/1.4	0/8	0.0/0.9	2	0	180
2630 Tripp	0.4	0.2	7			**1**	**0.6 miles fence**	0.4/0.2	2/1	0.0/0.3	7	18	80
2570 Zack Keys	0.6	0.2	**1**		98-058	**same as existing**	**none**	same as existing		0.0/0.6	2	0	90
2649 Rim	0.0	0.0	**8**			**same as existing**	**none**	n/a		0.1/0.7	3	0	300
2569 Zack Keys	3.8	2.2	**1**		98-058	**same as existing**	**none**	same as existing		0.0/1.0	12	107	440
Unleased	22.6	1.1	n/a										
Totals	64.1	31.9	96.0				0.9 miles fence	23.0/14.2	141/88	4.1/22.0	219	1673	6516

1: exclusion 4. autumn 7. season long
2: spring 5. winter 8. no public land riparian area
3: summer 6. rotation 9. voluntary non use

a. adjust the leases to confine grazing period, see Appendix L for greater detail.
b. develop an allotment management plan (AMP) or an allotment management agreement.
c. develop a management agreement for those pastures within the wild and scenic corridor.

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Table III-E Grazing Alternative Comparison Segment 4 (Service Creek to Dayville, 55 river miles)

Allotment Number & Name	Miles of River Bank private	public	Current Riparian Grazing Alt. A	NEPA #s Mgt.	Restricted Grazing Alternative B	Required Actions	No Riparian Grazing Alt. C Miles of Fence Pvt/Pub	Acres Excluded Pvt/Pub	No-Grazing Alt. D, Required Actions Miles of Fence Pvt/Pub	AUMs Cancelled	Acres Included Pvt	Pub
2589 McQuinn	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
2578 Logan	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
2517 Borschawa	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
2625 D. Stirewalt	0.0	2.7	1		**1**	**b**	same as existing		0.0/3.2	43	0	432
2626 Harper Mtn.	2.2	2.0	1		**1**	**b**	same as existing		2.7/2.9	43	432	464
2613 F. Robinson	0.0	0.3	2, 3		**2, 5**	**a**	0.0/0.3	0/3	0.0/2.3	3	0	115
2585 Seek Peek	1.4	0.0	**1**		**same as existing**		same as existing		same as existing			
2627 R.W. Straub	0.0	1.4	1		**1**	**b**	0.0/1.4	0/17	0.0/3.3	22	0	224
2563 Horseshoe Ck	8.8	3.0	1, 4, 5		**1, 4, 5**	**a**	8.8/2.5	107/36	8.8/2.5	48	1408	480
2575 A. Leckie	0.0	0.5	1		**1**	**b**	same as existing		0.0/1.0	1	0	160
2554 C. Hill	7.3	0.8	2, 3		**2, 3**	**a**	7.3/0.8	88/10	7.8/1.3	13	560	128
2528 Sentinel Peak	3.0	1.0	1, 2	91-018 88-088 88-062	**1, 2**	**a, b**	3.0/1.0	18/6	3.5/1.5	8	240	80
2662 Johnson Ck	2.5	0.5	1		**1**	**b**	same as existing		same as existing			
4145 Two County	10.6	1.4	1	91-060 88-030	**1**	**b**	same as existing		same as existing			
2501 H. Asher	4.0	0.3	1		**1**	**b**	same as existing		same as existing			
4001 Johnny Crk	1.5	0.5	1		**1**	**b**	same as existing		same as existing			
2558 Squaw Crk	1.6	0.0	**1**		**same as existing**		same as existing		same as existing			
4076 Cottonwood	4.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4007 Windy Point	1.2	0.0	**8**		**same as existing**		same as existing		same as existing			
4068 Sheep Gulch	2.6	0.0	**8**		**same as existing**		same as existing		same as existing			
4041 Franks Crk	0.3	0.0	**1**		**same as existing**		same as existing		same as existing			
unleased	44.5											
Totals	95.6	14.4	=110			1.4 miles fence	19.1/6.0	116/72	22.8/18.0	181	2640	2083

a. adjust the leases to confine authorized use, details presented in Appendix L.

b. Adjust use authorizations to prohibit grazing on public lands within riparian exclosure. Reactivation of use would be dependant upon recovery as evaluated by an interdisciplinary team and subject to management prescription to sustain functioning condition.

Table III-E Grazing Alternative Comparison Segment 5 (Dayville to Headwaters, 72 river miles)

Allotment Number & Name	Miles of River Bank private	public	Current Riparian Grazing Mgt. Alt. A	NEPA #s	Restricted Grazing Alternative B	Required Actions	No Riparian Grazing Alt. C Miles of Fence Pvt/Pub	Acres Excluded Pvt/Pub	No-Grazing Alt. D, Required Actions Miles of Fence Pvt/Pub	AUMs Cancelled	Acres Included Pvt	Pub
023 Triple Fork	0.1	0.0	**1**		**same as existing**		same as existing		same as existing			
4084 L Damond	0.8	0.0	**8**		**same as existing**		same as existing		same as existing			
4168 Grub Crk	4.4	0.0	**1**		**same as existing**		same as existing		same as existing			
Unleased139.8												
Total144.0												

SEGMENT 6. (Kimberly to Monument, 16 river miles)

4101 L Cupper	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4094 Dry Crk	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4080 S Stonehill	1.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4127 Kimberly	0.2	0.3	1		**1**	**b**	same as existing		same as existing			
4037 Juniper	0.6	0.0	**8**		**same as existing**		same as existing		same as existing			
4031 Coyote Fields	1.2	0.0	**8**		**same as existing**		same as existing		same as existing			
4030 Powersite	1.2	0.0	**8**		**same as existing**		same as existing		same as existing			
4025 Portuguese	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4011 CG	1.5	0.0	**8**		**same as existing**		same as existing		same as existing			
4009 Birch Crk	4.8	1.2	7		**2, 5**	**a**	6.0/2.3	764/193	6.0/2.3	19	764	193
4035 Rim	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4178 Cheatgrass	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4069 Big Spring	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4185 Cockran Crk	1.4	0.0	**8**		**same as existing**		same as existing		same as existing			
4082 Jack-of-Clubs	1.5	0.9	1		**1**	**b**	same as existing		same as existing			
4012 River	1.0	0.8	1		**1**	**b**	same as existing		same as existing			
unleased14.4												
Total	28.8	3.2	=32.0				6.0/2.3	764/193	6.0/2.3	19	764	193

1: exclusion	4. autumn	7. season long
2: spring	5. winter	8. no public land riparian area
3: summer	6. rotation	9. voluntary non use

a. Adjust the leases to confine grazing period, see Appendix L for detail.
b. Adjust use authorizations to prohibit grazing on public lands within riparian exclosure. Reactivation of use would be dependant upon recovery as evaluated by an interdisciplinary team and subject to management prescription to sustain functioning condition.

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Table III-E Grazing Alternative Comparison Segment 7 (Monument to Dale, 44 river miles)

Allotment Number & Name	Miles of River Bank private	public	Current Riparian Grazing Mgt. Alt. A	NEPA #s	Restricted Grazing Alternative B	Required Actions	No Riparian Grazing Alt. C Miles of Fence Pvt/Pub	Acres Excluded Pvt/Pub	No-Grazing Alt. D, Required Actions Miles of Fence Pvt/Pub	AUMs Cancelled	Acres Included Pvt	Pub
4003 Slickear Mtn.	3.0	7.1	2		**2, 5**	**a**	1.3/6.3	15/20	04.0/10.0	41	200	620
4028 Neale Butte	6.0	4.0	2, 7		**2, 5**	**a**	3.2/1.2	19/7	3.7/1.7	16	592	160
4029 North Fork	11.3	9.1	**2**		**same as existing**		11.3/9.1	68/55	11.8/9.6	72	896	720
4125 Umatilla	4.1	1.0	7		**2, 5**	**a**	4.1/1.0	50/12	4.6/1.5	16	656	160
4083 19-20	0.8	0.6	2		**2, 5**	**a**	0.8/0.6	10/7	1.3/1.1	10	128	96
4042 J. Cake Mtn.	1.5	1.0	2		**2, 5**	**a**	1.5/1.0	18/12	2.0/1.5	16	240	160
4139 Bone Yard	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4122 Big Bend	0.2	0.8	1		**1**	**b**	same as existing		same as existing			
4089 East Monument	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4027 Top Road	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4015 Mud Springs	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4169 Sheepshed Can	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
Unleased	37.5											
Total River Bank	64.4	23.6	=88.02				2.2/19.2		27.4/25.4	171	2712	1916

SEGMENT 8 (North Fork, Camas Creek to Headwaters, 54.1 river miles)

Forest Service	4.0	95.2	**1**		**same as existing**		same as existing		same as existing			
Baker R.A	.7.0	2.0	**7**		**same as existing**		same as existing		same as existing			
Total Riverbank	11.0	97.2										

SEGMENT 9 (MIddle Fork, North Fork Confluence to Headwaters, 75 river miles)

4135 Gibson Crk	0.0	0.2	7		**2, 5**	**a, pursue exchange**	0.0/0.2	0/5	0.0/1.2	6	0	40
4046 Three Mile	3.4	0.8	7		**2, 5**	**a, pursue exchange**	0.0/0.8	0/40	0.0/0.8	3	0	40
4014 Middle Fork	5.8	0.7	7		**2, 5**	**a, pursue exchange**	0.0/0.5	0/100	0.0/0.5	10	0	100
Unleased	139.1											
Total Bank Miles	148.3	1.7	=150.0						0/2.5			

1: exclusion	4. autumn	7. season long
2: spring	5. winter	8. no public land riparian area
3: summer	6. rotation	9. voluntary non use

a. adjust the leases to confine grazing period, see Appendix L for detail.
b. Adjust use authorizations to prohibit grazing on public lands within riparian exclosure. Reactivation of use would be dependant upon recovery as evaluated by an interdisciplinary team and subject to management prescription to sustain functioning condition.

Table III-E Grazing Alternative Comparison Segment 10 (Mainstem to County Road 63, 35 river miles)

Allotment Number & Name	Miles of River Bank private	public	Current Riparian Grazing Mgt. Alt. A	NEPA #s	Restricted Grazing Alternative B	Required Actions	No Riparian Grazing Alt. C Miles of Fence Pvt/Pub	Acres Excluded Pvt/Pub	No-Grazing Alt. D, Required Actions Miles of Fence Pvt/Pub	AUMs Cancelled	Acres Included Pvt	Pub
4038 Dayville	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
4020 Murderers Crk	0.0	8.0 State 5.2 BLM	**1, 2, 6**	96-075 94-083 93-100 89-054	**same as existing**		0.0/7.8	0/71	0.4/7.1	182	188	3885
4103 Rockpile	9.8	3.8 State 8.0 BLM	**2, 3, 6**	97-040 92-050 91-004 90-069 88-011	**same as existing**		9.8/11.8	60/143	3.0/14.0	278	840	2780
4052 Big Baldy	8.8	7.2	**2, 6**	92-032 89-027 88-048	**same as existing**		8.8/7.2	53/44	2.0/9.0	278	470	2780
4124 Smokey Creek	3.0	0.2	2		**2, 5**	**a**	3.0/0.2	36/3	3.0/0.2	2	480	32
4119 Black Canyon	2.4	0.0	**1**		**same as existing**		2.4/0.0	15/0	3.0/0.8	1	80	10
4186 Big Flats	2.0	2.0	1, 2		**1, 2**	**a**	2.0/0.4	24/4	3.0/4.0	31	260	310
Unleased	9.6											
Total	35.6	34.4	=70.0				26.0/27.4	188/265	14.4/35.1	772	2318	9797

1: exclusion
2: spring
3: summer
4. autumn
5. winter
6. rotation
7. season long
8. no public land riparian area
9. voluntary non use

a. adjust the leases to confine grazing period, see Appendix L for details.

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Table III-E Grazing Alternative Comparison Segment 11 (Coundy Road 63 to Headwaters, 22 river miles)

Allotment Number & Name	Miles of River Bank private	public	Current Riparian Grazing Mgt. Alt. A	NEPA #s	Restricted Grazing Alternative B	Required Actions	No Riparian Grazing Alt. C Miles of Fence Pvt/Pub	Acres Excluded Pvt/Pub	No-Grazing Alt. D, Required Actions Miles of Fence Pvt/Pub	AUMs Cancelled	Acres Included Pvt	Pub
4186 Big Flats	5.5	0.8	4, 5		**4, 5**	**a**	2.8/0.8	34/10	4.0/2.0	14	180	140
4106 Izee	1.5	0.2	1		**1**	**b**	same as existing		1.0/1.0	20	190	197
4067 Sheep Ck Butte	9.3	0.3	3		**2, 5**	**a**	4.8/0.3	58/3	6.2/3.0	28	480	280
4155 Blackhorse D	1.5	0.0	1		**1**	**a**	same as existing		1.4/1.0	8	40	60
4044 Soda Creek	8.0	0.0	**1**		**same as existing**		same as existing		same as existing			
4104 South Fork	7.9	0.1	5		**2, 5**	**a**	7.9/0.1	96/1	6.0/0.8	8	600	80
4154 Morgan Crk	0.0	0.0	**8**		**same as existing**		same as existing		same as existing			
unleased	14.8											
Total	48.5	1.4	=50.0		0.3 miles fence		15.5/1.2	188/14	18.6/7.8	78	1490	757

1: exclusion
2: spring
3: summer
4. autumn
5. winter
6. rotation
7. season long
8. no public land riparian area
9. voluntary non use

a. adjust the leases to confine grazing period, see Appendix L for greater detail.
b. Adjust use authorizations to prohibit grazing on public lands within riparian exclosure. Reactivation of use would be dependant upon recovery as evaluated by an interdisciplinary team and subject to management prescription to sustain functioning condition.

Table III-F Acres of BLM Managed Agricultural Land and Associated Water Use in Segment 2

Location River mile (RM)	Actual Use Estimates 1998			
	Acres	Acres Not Used	Acres used for Restoration and Enhancement	Acres Leased for commodity production
RM 106.5-109.5	232.1	107.1*	65.0**	60.0
RM 101.5	43.0	0.0	0.0	43.0
RM 98.75	3.4	0.0	0.0	3.4
Total	278.5	107.1	65.0	106.4

*Water retained instream is the result of instream lease, non-use, water use efficiency, and particular crop water demand while meeting the beneficial use criteria of Oregon water law.
**10 acres of a 70 acre agricultural lease were retained for wildlife food and cover in coordination with the Oregon Department of Fish and Wildlife. These 10 acres are included with Restoration and Enhancement acres.

Segment 3

The BLM would continue to manage approximately 97 acres of public agricultural lands and associated water rights in River Segment 3. Estimated use in 1998 (Table III-G) consisted of approximately 33.7 acres alfalfa, 46 acres oats, 15.3 onion seed, and 2 acres cottonwoods.

This alternative would maintain approximately 95 acres for leased agriculture production and 2 acres to generate riparian vegetation (such as cottonwood, willow and aspen) for restoration and enhancement purposes.

Segments 10 and 11

There are no public agricultural lands in Segments 10 and 11.

Management Common to All Action Alternatives

Annually evaluate, as necessary, irrigation use on agriculture fields that are entirely publicly owned and managed by the BLM when John Day River flows (McDonald USGS Gage Station) record 246[1] cfs after August 15. The potential steelhead adult immigration is from Aug 15 - May 31. BLM would coordinate evaluation process with ODFW, CTWSR, and lessee

Table III-G Acres of BLM Managed Agricultural Land and Associated Water Use in Segment 3

Location River mile (RM)	Actual Use Estimates 1998			
	Acres	Acres Not Used	Acres used for Restoration and Enhancement	Acres Leased for commodity production
RM 112	15.3	0	0	15.3
RM 119	10.3	0	0	10.3
*RM 136	23.4	0	0	23.4
*RM 137	48.0	0	2	46.0
Total	97.0	0	2	95.0

* Irrigation is seasonally terminated when John Day River flows drop below 390 cfs measured at the USGS Gauging Station near Service Creek (Sutton Mountain CRMP/DR, BLM, 1996).

[1]*The Oregon Water Resources Department reports the average monthly "natural" stream flow in August on the John Day to equal or exceed 246 cfs 80% of the time.*

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and would reserve the right to cease or restrict irrigation at that time. This would be a BLM imposed water use restriction, independent of and in conjunction with Oregon water law and Water Master regulation, on BLM lands and associated leases.

Dispose of public parcels and associated water rights that constitute a portion of a larger agricultural field owned by a private party and which do not have reasonable access by public road or river. Such parcels would be disposed through the land exchange process for lands of equal or greater value within the designated Wild and Scenic River boundary: Segment 3 (RM 112 and RM 119); T8S, R19E, Section 4, SE/14 (15.3 acres) and T8S, R19E, Section 25, NW1/4 (10.3 acres). Pending any exchange, these lands would continue to be leased.

The agriculture fields that are entirely publicly owned as they relate to this Alternative include the following: 1) 182.4 acres of agriculture land currently leased for commodity production. This total does not include the 25.6 acres described above that are identified for disposal or the 8.7 acres in Segment 1 and the 3.4 acres in Segment 2 that would be excluded from this Alternative as those acres are not identified for disposal and constitute a portion of a larger agriculture field that is privately owned and operated. 2) 164.1 acres of BLM agriculture land that is currently not in commodity production.

Alternative B (Preferred)

1. Commit approximately 164 acres of public agricultural lands and associated water rights along the John Day River to non-commodity use, such as riparian vegetation propagation for restoration, wildlife habitat enhancement (food and cover plots, tree and shrub plantings), or conversion to perennial vegetation. The actual non-commodity use on each field would be determined by a number of factors which include but are not limited to: The noxious weed control efforts needed to prepare the field for a non-commodity use, the ability of the site to support riparian vegetation to be used for restoration or propagation, and specific wildlife habitat enhancement projects to benefit certain species (i.e. shrub and tree plantings to benefit upland game birds and neotropical migratory birds). For those water rights not being used for irrigation, beneficial use would be maintained by leasing or transferring those water rights intstream with the OWRD.

2. Maintain approximately 195 acres of public land for leased commodity production. The BLM would further coordinate with lessees to evaluate activities and opportunities to enhance ORVs. Options may include but are not limited to increasing irrigation efficiency and planting vegetation buffers along fields to create wildlife habitat, visual screening and color contrast, and filter potential nutrients and pesticides. Where public agricultural lands along the river terrace are immediately adjacent to the active floodplain, a buffer or filter strip between the agriculture field and the active floodplain would be maintained. The buffer or filter strip may be planted along the edge of the field adjacent to the active floodplain, or may occur as perennial vegetation that naturally occurs between the field and the active floodplain. The minimum strip width shall be 20 feet and would be determined by multiplying the appropriate LS factor (LS=Length-Slope value) from the Revised Universal Soil Loss Equation (RUSLE) by 10 (USDA NRCS 1998).

If a portion of the 195 acres goes out of leased status, the BLM would reserve the option to implement restoration and enhancement activities (weed control, food and cover plots, perennial vegetation) on fields where leases are no longer pursued by private entities.

Segment 1

Under this alternative 8.7 acres of public agricultural lands would be leased for commodity production in association with private land agriculture at approximately RM 23.

Segment 2

Approximately 162 acres of public agricultural lands would be obligated for non-commodity use, such as riparian vegetation propagation for restoration, wildlife habitat enhancement (food and cover plots), or conversion to natural vegetation (desirable native and/or non-native grasses, forbs, shrubs and trees). Approximately 116 acres would be leased for commodity production. Crop selection would be based on local needs.

Segment 3

Two acres of public agricultural lands would be utilized for non-commodity use, propagation of woody riparian vegetation (cottonwood, willow, aspen) for restoration purposes. Approximately 69.5 acres would be leased for commodity production. Crop selection would be based on local needs.

Alternative C

No public land commodity production; emphasis on wildlife habitat enhancement. Activities would include tree and shrub propagation (such as cottonwood,

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willow, aspen), establishment of tree and shrub stands, wildlife food and cover plots of annual seed and grain crops, and establishment of upland grasses and forbs. This would be conducted in a phased approach over approximately 15 years depending on funding. Phase 1 would target areas currently under this type of management, and lands currently not leased where noxious weed infestations need to be controlled. Phase 2 would target lands currently under lease agreements. Where perennial vegetation is established, beneficial use would be maintained and water rights would be leased or transferred instream with the OWRD.

Alternative D

No public land commodity production; emphasis on restoring native vegetation and elimination of irrigation. Activities would include establishment of native grasses, forbs, shrubs and trees. This would be conducted in a phased approach over approximately 20 years depending on funding. Phase 1 would target areas currently not leased. Sites preparation would employ noxious weed control through application of herbicide and temporary establishment of annual crops. Phase 2 would target lands currently under lease agreements. Irrigation use would be phased out and leased or transferred instream with the OWRD upon establishment of native vegetation.

Recreation Opportunities

Desired Condition: A variety of on-river recreation experiences are provided (including motorized and non-motorized boating on specific segments). Commercial outfitters provide public service based on assessed need.

Common to All Alternatives (Preferred)

Under all alternatives, the BLM would continue to implement a modified Limits of Acceptable Change (LAC) planning and monitoring program to determine appropriate levels for boating use and make other management decisions that protect and enhance river values. Monitoring efforts would evaluate the physical condition of campsites both before and after the high use season, observe the ability of campsite conditions to recover during the “off season”, and conduct social experience surveys to determine social preferences, while correlating the data to actual recreation use levels. Data collected over a three year period would be needed before appropriate use levels can be determined.

Boating Use Levels

Common to All Alternatives (Preferred Alternative)

BLM policy encourages public use of and access to “Recreational” Wild and Scenic Rivers to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreation river values, to protect users, or to meet recreation management objectives. (BLM Manual 8351, Wild and Scenic Rivers Policy and Program Direction, 5/19/92.) Consistent with existing policy the BLM would establish appropriate carrying capacity , using the principle of LAC, in all areas where visitor use has the potential to adversely impact significant resource values and/or the quality of visitor experiences.

Alternative A

Under this alternative the BLM would continue existing management. The BLM would not set interim target use levels. Under this alternative, boating use is expected to increase during the three year LAC study period, subject to variations in water, weather, fishing, and economic conditions.

Common to All Action Alternatives (Preferred Alternative)

During the three-year period following the Record of Decision, appropriate use levels would be estimated for Segments 2 and 3, and interim daily launch targets would be set based on these estimates. In Segment 1 use levels would be evaluated annually to determine if launch targets become necessary. The effects of day use on river resources and social conditions would be evaluated as part of the LAC study to determine the need for future limits or use restrictions. In managing recreation use, including boating, it is the BLM’s policy to begin with the least restrictive management prescriptions that would accomplish the objective and move toward more restrictive measures as needed. Through a variety of non-permit measures, the boating public would be asked to voluntarily launch during off-peak periods to maintain use levels at or below the interim daily launch targets. Actions that could be employed to manage use levels include letters to users and the media encouraging off-peak use, required no impact camping, equipment restrictions, party size limits, a campsite reservation system, and use fees. During this time, on-the-ground management actions to protect resources would be taken as soon as a need was identified.

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Alternative B

Under this alternative the BLM would set interim daily launch targets at the maximum level observed during the 1998 boating season. As a result interim launch targets would be a maximum of 19 daily launches from Service Creek and Twickenham combined, and a maximum of 16 daily launches from Clarno and Butte Creek combined.

See Boating Use Levels in Common to All Alternatives and Common to All Action Alternatives for all elements of this alternative.

Alternative C

The BLM would set interim daily launch targets based on campsite availability. Daily launch targets would be established at a level equal to 70% of the available campsites within the first 15 river miles of the launch point. Interim launch targets would be a maximum of 13 daily launches from Service Creek and Twickenham combined, and a maximum of 11 daily launches from Clarno and Butte Creek combined. This would limit campsite occupancy to a maximum of 70% of the available campsites within the first 15 miles of Service Creek and Clarno launch sites on a given night. (Note: Campsites located less than 2.5 miles downstream of Service Creek and Clarno were not considered as available campsites due to their close proximity to the launch points.) Allowing a potential maximum of 70% of available campsites to be occupied on a given night by controlling launches allows for (1) some campsites to remain unfilled, giving boaters flexibility in campsite selection, (2) the possibility that drive-in campers may occasionally occupy riverside campsites, such as Priest Hole or Juniper Island, and (3) management flexibility to close campsites for rehabilitation as necessary.

See Boating Use Levels in Common to All Alternatives and Common to All Action Alternatives for all elements of this alternative.

Alternative D

This alternative would base interim daily launch targets on historical use levels. Using the limited data available, maximum daily launch targets would be established equal to 1988 to 1998 averages. Interim launch *targets* would be a maximum of 6 daily launches from Service Creek and Twickenham combined, and a maximum of 8 daily launches from Clarno and Butte Creek combined.

See Boating Use Levels in Common to All Alternatives and Common to All Action Alternatives for all elements of this alternative.

Alternative E (Preferred Alternative)

Same as Alternative C (Segment 1, continue existing management [no targets], Segments 2 and 3 target daily launches equal to 70% of campsites within 15 miles of launch points) except:
Within Segments 1 and 2 targets for motorized boating would be 1 launch per day in March and 2 launches per day in April. Motorized boating launch targets are intended to prevent use by such a large number of motorboats that recreational experience would substantially change during these months.

Boating Use Allocation

Alternative A

Because boating limits are not proposed under existing management an allocation system need not be considered or implemented.

Common to All Action Alternatives (Preferred Alternative)

An allocation system need not be implemented until it is determined that boating use levels are near or at the limits of acceptable change and that actions short of formal use limits have proven inadequate in keeping boating use levels within the limits of acceptable change. If it is determined that limits are necessary to keep use within the limits of acceptable change, then use would be allocated through a permit system.

If an allocation system is needed the allocation method selected would consist of features designed, to the extent possible, to consider the following factors and criteria:

1. Treat outfitted and non-outfitted users equitably.
2. Be designed to minimize disruption to guided and outfitted services.
3. Not create a private property value out of a public resource.
4. Accommodate all types of boaters (long-term planner, as well as short-term and spontaneous users).
5. Foster a high quality of outfitted services.
6. Minimize the cost of access to the river by the public.
7. Provide an efficient system (minimize no-shows and make unused trips available to others).

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8. Make the system as easy to use as is feasible.
9. Penalize cheaters.
10. Provide a system that is flexible as possible to accommodate individual changes in plans based on weather, water levels, quality of fishing, etc.
11. Be able to be defended to diverse groups.

Alternative B

Under this alternative allocation would be based on the historical proportion of non-guided and guided user groups. Available launches allocated to guided trips would be assigned individually to existing commercial permittees based on the average number of historical launches reported annually by the permittee (based on five year average). Available launches allocated to non-guided trips would be issued through an annual lottery or reservation system. A lottery application fee would be charged, and the applicable launch fee would be due in advance to hold a launch reservation. Canceled dates would be re-allocated.

Alternative C

Available launches would be allocated through an annual common pool lottery system, serving all boating groups, both non-guided and guided. A lottery application fee would be charged, and the applicable launch fee would be due in advance to hold a launch reservation. Canceled dates would be re-allocated.

Alternative D (Preferred)

Available launches would be allocated using a common pool reservation system, on a first-come, first-served basis, to boating groups, both guided and non-guided. Blocks of permits would become available for reservation at several intervals prior to the launch dates. The applicable launch fee would be due in advance to hold a reservation. Canceled dates would be re-allocated.

Motorized Boating

Alternative A

This alternative would allow motorized boating levels to fluctuate with public demand in all segments of the river, within existing regulations (Segments 1 and 2 closed to Motorized boating from May 1 to October 1.

Common to All Action Alternatives (Preferred Alternative)

In Segments 10 and 11 motorized boating would be prohibited due to lack of sufficient flow for safe boating.

Alternative B

This alternative would adjust areas and seasons of current restrictions to better reflect the needs of fish and wildlife.

Segment 1 would be closed to motor boat use from March 1 to December 1 to better protect fish and wildlife. The existing closure would be extended to include the months of March and April to protect nesting waterfowl from the noise and disturbance that can be a result of motorized boating use. The closure would be extended to include the months of October and November to protect spawning and rearing fall chinook salmon from the physical disturbance of motorized boats.

Segment 2 would be closed to motor boat use from March 1 to December 1 to better protect fish and wildlife. The existing closure would be extended to include the months of April and March to protect nesting waterfowl from the noise and disturbance that can be a result of motorized boating use. The closure would be extended to include the months of October and November to protect spawning and rearing fall chinook salmon from the physical disturbance of motorized boats. The planning partners would recommend to Congress that motorized boating be excluded within WSA's if these lands are designated as Wilderness.

Segment 3 would be closed to motor boat use from April 1 to October 1, except for downstream use of small electric motors (40 lbs. thrust or less), to protect fish and wildlife.

Alternative C

This alternative would restrict motorized boating use in order to protect a wide range of river values (including recreation experience, wilderness values, fish, and wildlife values).

Segment 1 would be closed to motorized boating use from April 1 to December 1.

Segment 2 from Cottonwood Bridge (RM 40) to Clarno Rapids (RM 104.5) would be closed to motorized boating use year-round to provide an opportunity for visitors to WSAs to experience

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natural primitive conditions without interruption by motors. That portion of Segment 2 from Clarno Rapids (RM 104.5) to Clarno Bridge (RM 109) would be closed to motorized boating use from April 1 to October 1, except for downstream use of small electric motors (40 lbs. thrust or less), to protect fish and wildlife.

Segment 3 would be managed the same as in Alternative B; closed to motorized boating use from April 1 to October 1, except for downstream use of small electric motors (40 lbs. thrust or less), to protect fish and wildlife.

Alternative D

Segments 1, 2, 3, 10, and 11 closed to motorized boating to protect river values.

Alternative E (Preferred Alternative)

Closed to motorized boating from May 1 to December 1 in Segments 1, 2, and 3 to minimize conflicts between motorized and non-motorized users during peak use period, protect fall chinook and summer steelhead runs, and to manage boating use in a manner consistent with the purpose of John Day River Wildlife Refuge in Segments 1 and 2.

Recommend river between Clarno Rapids and Cottonwood Bridge in Segment 2 be closed to motorized travel if Wilderness Study Areas become designated Wilderness in order to promote use consistent with wilderness values.

Dispersed Camping

Alternative A

BLM policy requires that management actions be taken to ensure the protection of resource values through visitor information, public contact, resource protection and monitoring.

This alternative would continue existing management. Decisions concerning dispersed sites would be made on a case by case basis.

Common to All Action Alternatives--Encourage Dispersed use in areas that can best sustain impacts of camping (Preferred Alternative)

Additional actions designed to protect dispersed river campsites would be based on the recommendations of a modified LAC study, currently underway. The LAC study would take into account the desired future condition that is defined for each river segment, and monitoring data collected on the resource conditions of each campsite. Management actions would be taken to protect resources and to move campsites to the desired condition. Campsite rehabilitation methods may include but are not limited to: defining campsite perimeter boundaries, defining tent site locations, site hardening, seeding and erosion control, and temporary or permanent campsite closure.

Segment 1 No actions.

Segment 2 Create a map to identify river campsites which can best handle human use. Designate dispersed camping area on west bank near Clarno.

Segment 3 Create a map to identify river campsites which can best handle human use.

Segments 10 and 11 Identify preferred dispersed camping areas and install signs and parking barriers to protect riparian vegetation.

Developed Recreation

Common to All Alternatives (Preferred Alternative)

The development of Recreation facilities should be proposed only if they would meet at least one if not all of the following criteria: 1) the facilities enhance resource-dependent recreation; 2) the facilities are necessary to help manage public lands and protect resource values; 3) the facilities are best provided by the BLM; or 4) the facilities complement and support other public and private recreation facilities in the area. (Recreation 2000: A Strategic Plan, BLM, 1989) The “recreation” classification under the Wild and Scenic Rivers Act does not prescribe or assume recreation development (BLM Manual 8351, Wild and Scenic Rivers Policy and Program Direction, 5/19/92). Development of any type of facility on public lands within a WSA is generally not permitted (BLM Manual 8550-1, Interim Management Policy for Lands Under Wilderness Review, 7/5/95).

Alternative A (Preferred Alternative for Segment 11)

Segment 1 Maintain Cottonwood and Rock Creek Recreation Sites. No scheduled maintenance of Oregon Trail Monument and implement regular maintenance.

Segment 2 Maintain Clarno Recreation Site, and provide limited maintenance at Butte Creek.

Segment 3 Maintain Service Creek and Priest Hole Recreation Sites.

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Segments 10 and 11 No developed sites exist.

Common to All Action Alternatives (Preferred Alternative)

The BLM would improve or upgrade existing facilities where needed to protect resources.

Alternative B--Improve or upgrade existing facilities where needed to better meet the needs of the recreational user. (Preferred Alternative for Segments 1-3 except as noted in Table III-A)

The BLM would not develop additional recreation sites, but may develop new ones to replace those that are permanently closed for resource protection or other purposes.

Segment 1 Same as Alternative A, except improve parking facilities, add a primitive boat ramp and a boater registration station at Rock Creek. Add picnic tables, plant shade trees, and provide water for dump station at Cottonwood. Develop small parking area and signing for Oregon Trail Monument.

Segment 2 Same as Alternative A, except grade the primitive launch ramp at Butte Creek and add additional launch lanes, add a pay phone, and provide water for the dump station at Clarno.

Segment 3 Same as Alternative A, except develop Lower Burnt Ranch and a public site at Twickenham with parking, primitive boat ramp and a boater registration station, to replace the existing Burnt Ranch and private Twickenham sites. Development at the Twickenham site is contingent on acquiring land from a willing seller. This alternative would also add a vault toilet at Priest Hole.

Segments 10 and 11 No developed sites exist.

Alternative C--Same as Alternative B and develop new facilities where needed to provide better resource protection. (Preferred Alternative for Segment 10)

Segment 1 Same as Alternative B.

Segment 2 Provide signing and a vault toilet at Juniper Island camping area.

Segment 3 Same as Alternative B, except: At "Clarno East", an undeveloped take-out point located 3.5 miles upstream of the existing Clarno Recreation Site, grade a small launch and landing ramp and add a bulletin board to post regulations. At Lower Burnt Ranch develop a primitive camping area with bulletin board, signs, maps, parking .barriers, and vault toilet.

Segment 10 Create a campground at Ellingson Mill. Facilities would include a vault toilet, tables, information board, signs and parking barriers.

Segment 11 No need for new sites has been identified in this segment.

Alternative D--reduce facilities at selected sites, or close selected sites, in an attempt to discourage use and protect resources.

Segment 1 Close existing facilities at Rock Creek.

Segment 2 Close BLM launch site at Butte Creek.

Segment 3 Close the existing Burnt Ranch site to vehicle access.

Segments 10 and 11. No developed sites or facilities exist.

Public Access

Common to All Alternatives (Preferred Alternative)

The BLM would continue to seek a river access point on public land at Twickenham to replace the current private access, the road to Priest Hole would be improved to accommodate a temporary increase in use while the new Twickenham access point is sought. Ditches and culverts would be improved on the South Fork Road. Work with local government to clarify status of access to the Oregon Trail Monument and McDonald Crossing. Use signs to mark the public access routes to the Interpretive Site, by foot from the West river bank and by vehicle from Wasco and Grass Valley.

The BLM would continue to resolve public access issues by consolidating public land ownership patterns through exchanges with willing landowners for state and private lands, through an active easement acquisition program, and through partnership agreements to provide access to high value recreation opportunities. BLM policy encourages active participation in the Land and Water Conservation Fund for acquisition of appropriate recreation lands or interest in lands. (Recreation 2000: A Strategic Plan, BLM, 1989)

Landowners have rights of access across public lands to private parcels subject to reasonable regulation by the BLM.

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Alternative A

This alternative would maintain access at existing levels. Public access would not be expanded or reduced.

Alternative B

Improve existing access by upgrading current access routes across public land. (Preferred Alternative for Segment 1, 2, 3, 10 and 11, except as noted in Talbe III-A.)

Grade, surface, or widen gravel roads as needed.

Segment 1 Same as Alternative A.

Segment 2 Same as Alternative A, except improve BLM road on west bank from Clarno to Clarno Homestead.

Segment 3 Same as Alternative A, except close the existing Burnt Ranch site to vehicle access while improving access to Lower Burnt Ranch Rapid. Develop trail to existing Burnt Ranch site.

Segments 10 and 11 Same as Alternative A, except improve the surface of the South Fork Road.

Alternative C--Provide maximum reasonable public access to the river via roads and trails.

Access would be through public lands where possible. Access needed through private land would be achieved through acquisition of easements, land exchange or land purchase from a willing seller.

Segment 1 Same as Alternative B plus seek to acquire public access to Tumwater Falls and the confluence of Hay Creek and the John Day River.

Segment 2 Same as Alternative B plus seek public access easement to the river via Butte Creek Road. Seek to acquire public access on the east bank from Clarno to Clarno Rapid.

Segment 3 Same as B

Segments 10 and 11 Same as Alternative B, except widen the South Fork Road where practicable.

Alternative D--Reduce public access to protect and enhance resources that constitute river values.

This alternative would reduce public access via roads and trails by closing some existing access routes.

Segment 1 Same as Alternative A.

Segment 2 Seasonally close the west bank to vehicle traffic past the Clarno Homestead during opening week of pheasant season to provide a non-motorized hunting experience and promote safety. Close the west bank to boat launching to prevent bank erosion and reduce vegetation trampling.

Segment 3 Same as B except do not improve motor vehicle access to Lower Burnt Ranch. Discourage use of Clarno East as Boating use Access.

Segments 10 and 11 Same as Alternative A.

Commercial Services

Common to All Alternatives

BLM policy provides extensive guidance in the administration of Special Recreation Permits for Commercial Use. (BLM Handbook H-8372-1, Special Recreation Permits for Commercial Use, 9/9/87.) In addition, the OSMB has registration requirements for all guides and outfitters.

Alternative A

Under this alternative the BLM would continue to issue permits on a case-by-case basis, at the discretion of the Authorized Officer, to qualified applicants when the proposed activity meets management objectives. The number of permits would not be limited and permits would be transferable according to the guidelines provided by BLM policy.

Common to All Action Alternatives

Any decision to limit commercial permit availability on the John Day River would fully consider the type of public service to be provided by the permittee or applicant and consistency with management goals and objectives, the ability of that person to provide the service, the opportunity to make a business profit, the public safety of commercial customers, BLM's workload in administration and monitoring of permits, and other ramifications of that decision.

The minimum use required to maintain a commercial permit would be increased from 10 paying client user days every 2 years to 20 paying client user days every 2 years. Minimum use limits may be modified in the future based on review of use levels and LAC.

Shuttle services would be brought under special use permit.

The BLM would issue concession permits based on the results of a needs assessment (See Glossary).

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Continue moratorium on new permits and not allow any transfers until launch numbers are finalized (in 3 years or less from Record of Decision).

Alternative B (Preferred Alternative)

1. The BLM would increase the requirements for permits and permit transfers to include training in river rescue, Leave No Trace skills, and interpretive techniques.
2. New applicants would pay a non-refundable application fee to cover the cost of verifying that application requirements are met.
3. The minimum use required to maintain a permit would be increased.
4. The BLM would conduct independent random audits of permit records.
5. There would be no administrative limit on the number of permits issued.
6. After the initial moratorium, transfers would be allowed in accordance with BLM transfer policies.

Alternative C

The BLM would issue new permits only if the need existed for a particular service (such as trips for the physically challenged, etc.), as indicated by a needs assessment. Once a specific need was identified, permits would be issued by competitive prospectus among those applicants meeting specific criteria identified by the needs assessment. Permits would be transferable only to applicants who met the same criteria identified in the needs assessment.

Alternative D

The BLM would place a cap on the number of outfitter/guide permits at the current level of 34 permits. Any spaces that became available through attrition would be filled based on a needs assessment and competitive prospectus. Neither outfitter/guide nor concession permits would be transferable.

Energy and Mineral Resources

Common to All Alternatives

All public lands are open to recreational mineral collection unless there are prior rights, such as mining claims.

Alternative A

All mining related activity, including road construction, must meet screening standards prescribed in State Scenic Waterway(SSW) Rules (see Chapter 4). All lands in the Wild and Scenic River(WSR) Corridor are subject to a Plan of Operations under the regulations at 43 CFR 3809, however since the river segments were classified by legislation as “recreational”, the mineral estate was not withdrawn from mineral entry as it would have been if the river was classified “wild”. Additional guidance for energy and mineral resources is found in the Two Rivers and John Day RMPs, BLM Manual 8351 (5/19/92) for Wild and Scenic Rivers, the Technical Report of the Interagency WSR Coordinating Council and BLM Manual H-8550-1 (7/5/95) for WSAs.

Leasable Minerals

There is no leasing of fluid minerals within sections of the corridor that are under wilderness review. In the Two River RMP area a restrictive no surface occupancy stipulation for fluid minerals exploration and development is maintained on lands identified as nationally significant or visually sensitive. The John Day RMP, which applies to the upper John Day (and South Fork) basins does not address leasable minerals.

Exceptions to the stipulation of no surface occupancy would be evaluated using the following criteria:
(1)Evidence of exploration or similar activities would not be visible from the surface of the John Day River.
(2)All activities involving exploration would use existing roads to the fullest extent possible.
(3)Any proposed exploratory drilling pad or road construction for access to a drilling site would be located to avoid canyon slopes and areas of high visibility. In these areas, roads and drilling sites would be fully rehabilitated when operations have been completed.

If leases are issued with the no surface occupancy stipulation, the criteria for exception would be included in the stipulation.

Locatable Minerals

Areas not specifically withdrawn from mineral entry under the Mining Law of 1872, as amended, would continue to be open under the mining laws to help meet the demand for minerals. Mineral exploration and development on public land would be regulated under 43 CFR 3809 to prevent unnecessary and

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undue land degradation. Under the 43 CFR 3809 regulations all mining in WSR Corridors requires a Plan of Operations. If the John Day River is ever ruled to be navigable, the bed and banks would be considered state land, and not subject to location under the 1872 Mining Law.

State law provides the minimum standard for environmental protection, with which any activities on BLM land must comply. State Scenic Waterway, rules for dredging are set by ORS 390.835(2). This law requires a permit for any dredging regardless of the amount, from the Oregon Division of State Lands (ODSL). In other waters, a permit is only required for movement of more than 50 cubic yards. Also, suction dredging in SSWs may not: (a) divert a waterway or obstruct fish passage; (b) include nozzling outside the wet perimeter; (c) move boulders or logs from the wet perimeter, except by hand; (d) disturb any woody plants; (e) excavate from the streambank; (f) fail to level pits and furrows outside the main channel; (g) occur without a DEQ discharge permit; (h) occur on federal lands without permission; (i) impede boating ; (j) operate within 500 ft of a home or campground between 6 pm and 8 am; (k) operate within posted swimming areas.

A general permit from the DEQ is also required for small suction dredges. Under that permit, suction dredging is prohibited on the John Day mainstem, North Fork, Middle Fork, and South Fork for all but 6 weeks of each year. Suction dredging is permitted only between July 15 and August 31, in order to protect anadromous fish.

Salable Minerals

Salable minerals, including common varieties of sand, gravel, and stone, would continue to be made available at the three sites located within the John Day River corridor. The salable mineral program involves several quarries where state and county road departments obtain rock for road surfacing material. New quarry sites may be developed on a case-by-case basis if requested by the state or counties. In all cases, they would be approved only if they are consistent with the protection of other values in the river corridor.

All public lands are open to recreational mineral collection unless specific minerals are subject to prior rights, such as mining claims.

Alternative B (Preferred Alternative)

This alternative is the same as Alternative A except that:

1. The John Day RMP would be amended by subjecting leasable minerals on public lands falling within the John Day River Canyon of the John Day Planning Area (Grant County)(Segments 5, 6, 7, 8, 9, 10 11, and the Grant County portion of 4) (including designated SSWs and federally designated WSRs) to a no surface occupancy restriction (remaining portions of planning area already have this restriction under the Two Rivers RMP).

2. Under the authority of Section 202 of FLPMA, BLM recognizes that States may apply their laws to locatable mining operations on public lands. In this Plan, BLM is adopting the State Scenic Waterway Rules, described in Chapter 4, as the minimum restrictions for locatable mineral operations in the river corridor. If State laws or rules in the future conflict with these requirements, an operator would have to follow the federal requirements which are the State Scenic Waterway Rules in Chapter 4. If State laws or regulations require a higher standard of protection for public lands than these rules provide, the more stringent State requirements would apply**.** Where permitted, mining of locatable minerals would be subject to stipulations to protect river values. Stipulations would include actions necessary to:

   Prevent sediment from entering the river or tributaries.
   Protect riparian vegetation. .
   Prevent noxious weed establishment and spread.
   Protect recreation facilities.

3. On BLM lands new sites for the production of saleable minerals would not be permitted within State Scenic Waterways or Wild and Scenic Rivers and existing agreements would either not be renewed when they expire or would be renegotiated.

4. Facilities such as established campgrounds, and launches would be closed to leasing and salable minerals and withdrawn from locatable mineral entry under the 1872 ming law.

Alternative C

Same as B.

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Alternative D

Same as Alternative B for segments not designated Wild and Scenic River or State Scenic Waterway. Both the John Day and Two Rivers RMPs would be amended by closing BLM managed lands within WSR and SSW boundaries to leasing and salable mineral activity and locatable minerals would be withdrawn from entry under the Mining Law of 1872, as amended.

Land Ownership, Classifications, and Use Authorizations

Alternative A

The Two Rivers and John Day RMPs, as amended, provide direction for processing requests for utility and transportation rights-of-way and for land acquisitions, exchanges, and disposals. The RMPs identify certain corridors or river crossing "windows" where utilities may be placed to cross a given area. Several utility lines and pipelines already cross the John Day River in previously defined corridors. Any future requests granted would require the use of these corridors. BLM-designated corridors are generally 1000 feet on either side of existing road, pipeline, or major electric transmission right-of-way center lines.

BLM administered lands within the Wild and Scenic River are withdrawn from disposal (sale) under public land laws. These lands may be exchanged, however, for private lands of equal or greater value that are within the boundaries of the WSR.

Lands Under Wilderness Review - Until Congress acts on wilderness recommendations or otherwise releases Wilderness Study Areas for other purposes, these lands would be managed under BLM's Interim Management Policy for Lands Under Wilderness Review (IMP). These lands have not been withdrawn from operation under the Public Land Laws. Grazing, mining, rights-of-way and other uses may be continued. With few exceptions, such as mining patents, these lands may not be disposed of by public sale, exchange, patents under Recreation and Public Purposes Act, or State selections. Certain use authorizations and rights-of-way may be renewed if they are still being used for their authorized purpose. New rights-of-way may be approved for temporary uses that satisfy the non-impairment criteria. New rights-of-way that do not meet non-impairment criteria may be approved under certain conditions as outlined in the IMP. Existing withdrawals within Lands Under Wilderness Review may be renewed if the withdrawal is still serving its purpose. No new withdrawals may be made except those that satisfy non-impairment criteria.

Land Acquisitions - Under this alternative the management decisions and land use allocations under existing Resource Management Plans would continue in effect. River values would be considered in these decisions and mitigations proposed where feasible.

Common to All Action Alternatives

Same as Alternative A except that the BLM has identified several parcels of land along the river for potential acquisition through purchase or exchange, or acquisition of easement. Primary benefits of acquisition would be to protect and enhance recreational, wildlife/fisheries and wilderness values. Preliminary review of lands adjacent to the John Day River indicate that several parcels may be suitable for acquisition by the BLM. Table III-H displays these lands, their location, the approximates size of the parcels and the values associated with the lands and/or the rationale for the proposed acquisition. Under most circumstances these lands would be acquired through an exchange process. Acquisitions would be limited to parcels with willing sellers and may occur only after site specific analysis tiered to this EIS.

Priorities for Acquisition

Specific criteria exist for categorizing public land for retention, disposal, and acquisition. This list is not all-inclusive, but represents the major factors to be evaluated. The criteria to be used are public resource values, including but not limited to:

- public access
- threatened or endangered species habitat
- reducing landowner conflicts
- wilderness
- riparian/wetland/unique habitats
- manageability
- recreation site potential/river campsites
- cultural resources/National Register eligibility
- paleontological resources
- wildlife and fisheries
- protection and enhancement of ORVs

Alternative D

The BLM would pursue opportunities within the Wild and Scenic River boundaries to acquire from willing sellers privately owned lands affected by Grazing Alternative D. It is not known how many acres would be targeted for acquisition. Acquisition of these lands may occur only after site specific analysis tiered to this EIS.

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Table III-H Lands Possibly Suitable for Acquisition

Parcel#	Location	Est. Acres	Character of Land and Acquisition Rationale
1	T 9S R 23E Section 18, SE1/4 NE 1/4	5.83	Acquire Service Cr. launch site from ODOT as agreed
1a	T 9S R 22E Section 28, portions of E1/2 SW1/4 south of JDR Section 32, SW1/4 NE1/4 NW1/4 SE1/4 E1/2 NW1/4 NE1/4 SW1/4	248	Consolidate public lands
1b	T 9S R 22E Section 23, SW1/4 NW1/4	40	Consolidate public lands
1c	T 9S R 22E Section 32, SE1/4 SW1/4	40	Consolidate public lands
1d	T 9S R 22E Section 13, portions of NE1/4 SW1/4 NW1/4 SE1/4	80	Consolidate public lands, recreation site potential
1e	T9S R22E Section 23, NE1/4 SW1/4	40	Consolidate public lands, acquire for campsites
1f	T9S R22E Section 22, S1/2 SW1/4 Section 27, NW1/4 NW1/4 Section 28, N1.2 NE1/4	200	Consolidate public land, acquire for campsites

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Table III-H Lands Possibly Suitable for Acquisition

Parcel#	Location	Est. Acres	Character of Land and Acquisition Rationale
2	T 10S R 22E Section 6, NW1/4	160	acquire for campsites
2a	T10S R22E Section 5, NW1/4 NE1/4	40	Consolidate public land
3	T 9S R21E Section 32, portions of N1/2 NW1/4, north of the river	15	Consolidate public lands, acquire campsites
3a	T9S R21E Section 32, N1/2 NE1.4 Section 33, NW1/4 NW1/4 all north of the JDR	31	Consolidate public lands, acquire for campsites
3b	T9S R21E Section 28, SE1/4 SW1/4 north of the JDR	6	Consolidate public land
4	T 7S R 19E Section 32, SW1/4 NE1/4	1.86	Acquire Clarno Launch/landing from OPRD as agreed
5	T 1S R 19E Section 17, SE1/4 SW1/4	1	Small sliver of private land that is between BLM and OPRD
5a	T 1S R 19E Section 17, SE1/4 SW1/4	7.12	Acquire Cottonwood launch/landing from OPRD as agreed

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Table III-H Lands Possibly Suitable for Acquisition

Parcel#	Location	Est. Acres	Character of Land and Acquisition Rationale
6	T 1S R 19E Section 14, S1/2 SW1/4 NW1/4 SW1/4 Section 15, NW1/4 NE1/4 NE1/4 SE1/4 Section 22, S1/2 NE1/4 SE1/4 NW1/4 Section 23, W1/2 NW1/4 NE1/4 NW1/4	440	Consolidate public lands
7	T 1S R 19E Section 4, SW 1/4 Section 9, NW 1/4 N1/2 SW1/4 Section 16, NE1/4 NE1/4	440	Acquire access
8	T 1S R 20E Section 6, SW 1/4 SW1/4 SE1/4 Section 7, E NW1/4 W1.2 NE1/4 NE1/4 NE1/4 Section 8, N1/2 SE1/4 SW1/4 NE1/4 SE1/4 NW1/4 NW1/4 NW1/4	600	Acquire access
9	T 1N R 19E Section 3, S1/2 S1/2	160	Acquire Oregon Trail segment

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Table III-H Lands Possibly Suitable for Acquisition

Parcel#	Location	Est. Acres	Character of Land and Acquisition Rationale
9a	T 1N R 19E Section 11, NW 1/4	20	Provide additional parking and boat launch
10	T 4S R 18E Section 11, W1/2 SW 1/4 SW1/4 NW1/4 Section 14, NW1/4 NW1/4	160	Consolidate public land in Wilderness Study Area
11	T 3S R 18E Section 35, S1/2 SW1/4 T 4S R 18E Section 2, NW1/4 NW1/4	160	Consolidate public land in Wilderness Study Area
12	T 4S R 18E Section 14, N1/2 SE1/4 NE1/4 SW1/4 SW1/4 NE1/4	160	Consolidate public land in Wilderness Study Area
13	T 2S R 18E Section 13, SW1/4 SW1/4 Section 24, W1/2 NW1/4 NW1/4 SW1/4 SE1/4 NW1/4 S1/2 NE1/4 NE1/4 SE1/4	320	Consolidate public land in Wilderness Study Area
14	T 8S R 19E Section 36, NW1/4 NW1/4	40	Acquire poor condition land for rehabilitation and campsite potential
15	T 5S R 19E Section 30, NE1/4 SE1/4	40	Consolidate public land in Wilderness Study Area

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Table III-H Lands Possibly Suitable for Acquisition

Parcel#	Location	Est. Acres	Character of Land and Acquisition	Rationale
16	T 1S R 19E Section 19, LOT 7, 8 and 12 Section 30, NW1/4 NE1/4 SW1/4 NE1/4 NW1/4 SE1/4 LOT 1 and 7	320		
16a	T 1S R 19E Section 32, SW1/4 NW1/4	40		
16b	T 1S R 19E Section 32, SW1/4 NE1/4 SE1/4 NW1/4 E1/2 SW1/4 W1/2 SE1/4	240		
17	Cherry Creek		Preserve undeveloped character of the area	
Total Acres (approximate)		**4036**		

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Table III-I Summary of Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Scenery					
VRM Classification	Inconsistent Management of Visual Resources	**Interim management consistent with VRM Class II objectives except VRM Class I in WSAs, pending VRM inventory process**			
Vegetation					
Special Status plants	**Maintain or increase populations of special status plants**				
Weeds	**Reduce populations of non native species that compete with native species.**				
Fire	**Continue existing management**				
Forestlands	100 mbf over 20 years	**20 mbf over 20 years**			
Grazing					

Management in WSR Segments (1,2,3,10,11)	1986 public	1986 private	Present public	Present private	**public**	**private**	public	private	public	private
Grazing Excluded (miles of riverbank)	6.1	1.5	64	55.2	**65.5**	**53.5**	196.4	161.7	195.7	127.6
Riparian Oriented Mgmt. (miles of riverbank)	9.2	10.5	122	71.9	**128.7**	**97.7**	0	1.5	0	1.9
No Riparian Oriented Mgmt. (miles of riverbank)	181.1	149.8	9.9	33	**2.2**	**8.9**	0		0.7	9.6
Private Land Management not tied to BLM Allotments (miles of riverbank)	0	58.4	0	60.1	**0**	**60.1**	0	57	0	81.1
Miles of New Fence	n.a.		3.5	0	**11.5**	**0**	113	112	99	52.3
# New Water Developments	n.a.		4	0	**7**	**0**	113	112	99	52
Acres Closed to Grazing	unknown		387	331	**393**	**321**	881	882	65,845	15,118
AUMs cancelled	n.a.		0		**0**		9		2725	

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Table III-I Summary of Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A				Alternative B		Alternative C		Alternative D		Alternative E
Management in Non-Designated Segments (4,5,6,7,9)	1986 public	1986 private	Present public	Present private	public	private	public	private	public	private	
Grazing Excluded (miles of riverbank)	not available		11.8	29.8	**14.9**	**29.8**	43.0	78.9	43.0	78.9	
Riparian Oriented Mgmt. (miles of riverbank)	not available		24.3	30.5	**26.9**	**48.5**	0	0	0	0	
No Riparian Oriented Mgmt. (miles of riverbank	not available		6.9	28	**1.2**	**10.3**	0	14.5	0	0	
Private Land Management (miles of riverbank)	not available		0	392	**0**	**392**	0	387	0	402.1	
Miles of New Fence	not available		0	0	**0**	**0**	29	47.3	48.2	56.2	
# New Water Developments	not applicable		0		**0**		29	47	48	56	
Acres Closed to Grazing	not available		71	179	**89**	**179**	703	1060	4372	6116	
AUMs cancelled	not applicable		0		**0**		19		390		

Agricultural Lands

Acres Irrigated for Commodity Use	221-385±	195±	0 in 15 years	0 in 20 years
Acres Potentially Irrigated for Non-Commodity Use	0-164± *Not all acres will be irrigated every year	164± *Not all acres will be irrigated every year	359±.*Not all acres will be irrigated every year	0 in 20 years
Acres Restored to Native Vegetation	0-164	**0-164**	0-359	359± *All acres would be restored to native vegetation under this Alternative
Acres Irrigated in Public Ownership	385± *Not all acres will be irrigated every yea	359± *Not all acres will be irrigated every year	359± *Not all acres will be irrigated every year	0 in 20 years
Acres disposed	0	26± (assumed to be used for irrigated Agriculture)	26± (assumed to be used for irrigated Agriculture)	26± (assumed to be used for irrigated Agriculture)

Table III-I Summary of Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Recreation					
Boating Use Levels for Segments 1-3					
Interim Number of Launches per day	No Restrictions	19 from Service Creek/ Twickenham 16 from Clarno/Butte Creek	13 from Service Creek/ Twickenham 11 from Clarno/Butte Creek	6 from Service Creek/ Twickenham 8 from Clarno/Butte Creek	**Same as C**
Potential # of People (assumes max. party size of 16)	No Limit	maximum of 560 people launching per day	maximum of 384 people launching per day	maximum 224 people launching per day	**maximum of 384 people launching per day**
Motorized boats	No restriction under boating use levels.	Can't exceed launch limits	Can't exceed launch limits	Can't exceed launch limits	**Segments 1 and 2: March: Max. Of 1 launch per day. April: Max. of 2 launches per day. Segment 3: Can't exceed launch limits**
Experience of User	No Change	Advanced planning required for weekend use.	Some weekend launches may not be available	Weekend launches would be difficult to obtain	**Some weekend launches may not be available**
Long Term	Increased use	**Future use levels would depend on decisions based on LAC study, mandatory launch limits possible**			
Allocation System					
Principles of system	Open Access	Limited access, 80% private, 200% guided	Application window, random drawing. Requires advanced planning.	**First come first served, a proportion of permits available at intervals. People unable to plan far in advance have opportunity to get permit**	n.a.

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Table III-I Summary of Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Motorized Boating # of days river open to motorized use	Segments 1 and 2 = 211 Segment 3 =365 Segments 10 and 11 = 0	Segment 1 = 89 Segment 2 = 150 Segment 3 = 181 Segments 10 and 11=0	Segments 1 = 120 Segment 2 = 0/181 Segment 3=181 Segments 10 and 11=0	0	**Segments 1, 2, 3: 151** **Segments 10 and 11: Same as B.**
Dispersed Camping Changes in Dispersed Camping Opportunities	No Change	Segments 1: No Change Segment 2: No Change Segments 1: No Change Segments 10-11: Fewer Opportunities	Same as Alternative B	Segments 1-3: Same as A Segments 10 and 11: Reduced Opportunities	
Developed Facilities Changes in condition/ # of sites					
Segment 1	No Change	**3 sites improved**	Same as B		2 sites improved 1 site closed
Segment 2	No Change	**2 sites improved**	4 sites improved		1 site closed
Segment 3	No Change	**1 site improved**	1 site improved	1 site added Same as A	
Segment 10	No sites	Same as A		**1 site added** Same as A	
Segment 11	**No sites**	Same as A			
Total		6 sites improved	8 sites improved	2 sites added 2 sites added	2 sites closed

Table III-I Summary of Direct Impacts (Preferred Alternatives in Bold)

Issue	Alternative A			Alternative B			Alternative C			Alternative D			Alternative E
Public Access													
Changes in Access	Improve	Add	Close	Improve	Add	Close	Improve	Add	Close	Improved	Add	Close	
Segment 1	No Change			No Change				**2**					
Ssgment 2	No Change			**1**			1	2				1	
Segment 3	1	1		**1**	**2**	**1**	1	2	1	1	1	1	
Segments 10 and 11	1			**1**			1			1			
Total	2	1	0	**3**	**2**	**1**	3	6	1	2	1	3	
Commercial Use													
# of outfitter guide permits	No limit (Moratorium, 34)			**No limit**			No limit, BLM determined need			34			
Permit Transferability	Yes			**Yes**			Yes if applicant meets criteria			No			
Minerals													
Production Potential										None			
Land Ownership, Classifications, and Use Authorizations													
Potential Acquisition Acreage	**Not identified**			**4,036 acres**						4,036 acres plus land needed to Implement Grazing Alternative D			

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Monitoring

The job of determining whether a determined course of action is having the desired effects can be broken down into three separate activities associated with a monitoring plan. First, confirmation of the completion of necessary actions is required. This is the implementation phase. In the case of grazing, implementation monitoring answers questions like "were improved grazing systems put into place" and "did the necessary fences get built?" Second, confirmation that the actions are having consequences is required. This is the effectiveness phase. In the case of grazing, effectiveness monitoring answers questions like "are the cattle where they are supposed to be when they are supposed to be there?" and "is the vegetation responding to changes in management?" Third, confirmation that changes are desirable, relative to the stated objectives is required. This the validation phase. In the case of grazing, validation monitoring answers questions like "are riparian areas at or progressing toward properly functioning condition?"

Water Quality

Water temperature will be monitored within the plan area and combined with data from the entire basin used to determine if actions taken affect water temperature.

Special Status Species

populations of special status species will be monitored to assess stability and health.

Noxious Weeds

Noxious weed populations will be monitored as prescribed under the Integrated Weed Management Program.

Grazing

Protocols for each step in the evaluation process have been established by BLM. For the implementation phase the documentation of activities such as fence or water trough construction occurs through the computerized 'Rangeland Improvement Project Systems' (RIPS) database. For the effectiveness phase of monitoring documentation is achieved through a wide variety of monitoring techniques, including but not limited to random compliance checks of adherence to authorized grazing systems, rangeland health and watershed function assessments (riparian and upland PFC, *Standards for Health Rangelands Assessment*), water quality (temperature), vegetative attribute (composition, structure, ground cover), river flow, and channel cross section monitoring. Additionally, on river segments 2 and 3, an inventory of willow communities, first completed in 1981 and re-measured in 1995, would be completed on a 5-10 year basis. For the validation phase of monitoring, an interdisciplinary team gathers available information and evaluates resource conditions relative to site potential and changes which have occurred since management changes went into effect. An allotment evaluation (or similar document) is prepared which provides the authorized officer the information to determine attainment, progress toward attainment or non-attainment of standards and allotment objectives. In the event of non-attainment, a determination of cause would be made and appropriate action would be taken as soon as practicable. In the case of non-attainment due to non-compliance on the part of the grazing operator (for example, willful trespass, failure to maintain facilities, or other violations of the grazing regulations or permit conditions/stipulations, such as the allotment management plan), livestock grazing authorization shall be discontinued for a period to be determined by the authorized officer.

Table III-J shows the proposed monitoring and implementation schedule for the 4 alternatives. Activities would be started following issuance of WSR Plan decision record and completed by December 31 of the years shown. Some actions, such as adjustments to grazing leases where no on-the-ground structures are required, could be made immediately following the signing of the decision record. Other actions, such as fence construction, would take longer. The time required to complete title or easement acquisitions is beyond the control of the BLM. The assumptions were made that funding would continue similar to current levels and that the decision record would be issued before December 31, 2000.

Recreation

Monitoring of recreation and impacts of recreation would occur as the result of LAC monitoring as described for each alternative (See Appendix K).

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Table III-J Monitoring Schedule for Grazing (Preferred Alternative in Bold)

	Alt A	Alt B	Alt C	Alt D
Allotment Evaluations	2002	*	*	*
Consult., Coord., Coop.	2002	*	*	*
Decisions	2003	*	*	*
Implement Mgt Actions	2005	**2003**	2008^	2012^
Monitoring Intervals (in years)+				
Compliance	1	**1**	1	1
Riparian Vegetation	2-5	**2-3**	2-3	2-3
Upland Vegetation	5-10	**3-6**	3-6	3-6
Other	2-5	**2-5**	2-5	2-5
Validation **	2008	**2003**	2003	2003
Validation***	10	**5**	5	5

* WSR Plan finalizes decisions for implementation of management that protects and enhances Outstandingly Remarkable Values
^ Time will depend on land owner willingness to negotiate easements and land exchanges necessary to implement the actions called for in Alternatives C and D.
+ Monitoring is on-going throughout the John Day basin, at the date of a Record of Decision, a new monitoring frequency would be adopted for allotments which fall within the designated Wild and Scenic River segments.
** For those allotments which require no on-the-ground changes (such as fences) as described in this plan.
*** For those allotments which require on-the-ground changes as described in this plan, validation would occur within 5 years of implementation in the Action Alternatives.

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Chapter IV - Oregon State Scenic Waterway

Background

The Oregon Scenic Waterways System was created by ballot initiative in 1970. The original Act designated 496 free-flowing miles of six different rivers. Designation of the John Day River main stem accounted for about 147 of these miles.

In 1988, Oregon voters passed a second scenic waterways initiative, the Oregon Rivers Initiative (Ballot Measure #7). This measure added 573 river miles to the Oregon Scenic Waterways System, including 167 additional miles to the John Day River Scenic Waterway. The John Day River addition was divided among four new segments. These segments are: an 11 mile extension of the John Day River Scenic Waterway on the main stem from Service Creek to Parrish Creek; a 56 mile addition on the North Fork, from Monument to the North Fork John Day Wilderness Area; a 71 mile addition on the Middle Fork, from its confluence with the North Fork to its confluence with Crawford Creek; and a 29 mile addition on the South Fork, from the north boundary of the Phillip W. Schneider Wildlife Area (formerly Murderer's Creek Wildlife Area) to the Post-Paulina Road crossing. There are now segments of 19 rivers (1,148 river miles) and one lake (Waldo Lake) in the Oregon Scenic Waterways System.

Rivers can also be added to the system by the state legislature or through administrative act of the Governor. Such actions have added segments of five rivers and the entirety of Waldo Lake to the scenic waterway system.

Administration

Scenic waterways are administered by the Oregon Parks and Recreation Commission in accordance with Oregon Revised Statutes (ORS) 390.805 to 390.925. Oregon Administrative Rules (OAR) have been adopted to govern the program. General rules set forth generic standards that apply to all scenic waterways. Specific rules are also developed for each river during the management planning process. These rules are designed to manage development within the scenic waterway corridor to maintain the natural beauty of the river.

The Scenic Waterways Act and rules require evaluation of proposed land development,

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improvement or alteration relative to the scenic and aesthetic beauty of the waterway as viewed from the river. This review and evaluation apply to all related adjacent lands, defined as lands within one-quarter mile of the banks of the scenic waterway. Landowners wanting to build houses or roads, cut timber, mine, or pursue other similar projects, must make written notification to the Oregon Parks and Recreation Department (OPRD). OPRD reviews the proposal in coordination with other jurisdictions and determines if the proposal will substantially impair the natural beauty of the scenic waterway. When a project is inconsistent with scenic waterway goals, OPRD works with the landowner to resolve conflicts. The Commission has one year from the date of initial notification in which to reach accommodation with the landowner. This may include revising the project or compensating the landowner by purchasing the land or resource or negotiating a scenic easement. If satisfactory resolution is not reached within one year, the landowner may proceed with the initial development proposal.

Local and state agencies must comply with the scenic waterway law and rules. Federal land managing agencies are encouraged to coordinate with OPRD to insure their own land management actions are compatible with scenic waterway management prescriptions.

Management Plans

Scenic waterway management plans (administrative rules) are developed to protect or enhance the aesthetic and scenic values of scenic waterways while allowing compatible agriculture, forestry and other land uses. The plans are composed of management principles, standards and prescriptions applicable to scenic waterway shorelines and related adjacent lands. The rules establish varying intensities of protection or development based on the special attributes of each river segment. This is done through the use of river classifications.

In addition to developing formal management rules, the scenic waterway planning process may also identify other management tools. These may take the form of prescribed agency actions, interagency agreements, agency commitments, and cooperative arrangements with a variety of other parties, all designed to more effectively preserve and protect the natural values and special attributes of scenic waterways.

Scenic Waterway Classification

A scenic waterway may be divided into multiple segments with each segment having its own classification. Scenic waterway segments are assigned one of six possible classifications according to the character of the landscape and the amount and type of development present within the corridor at the time of designation.

The following describes each of the six classifications and the management goals each represents.

1. *Natural River Areas* are generally inaccessible, except by trail or river, with primitive or minimally developed shorelines. Preservation and enhancement of the primitive character of these areas are the goals of this classification.

2. *Accessible Natural River Areas* are readily accessible by road or railroad but otherwise possess the qualities of Natural or Scenic River Areas. Preserving or enhancing the primitive scenic character while allowing compatible recreation use are the goals of this classification.

3. *Scenic River Area*s are accessible by roads in places but contain related adjacent lands and shorelines still largely primitive and undeveloped except for agriculture and grazing. Scenic River Areas are administered to preserve their undeveloped character, maintain or enhance their high scenic quality, recreation, fish and wildlife values while allowing continued agriculture use.

4. *Natural Scenic View Areas* possess the qualities of Natural or Scenic River Areas except that one shore and the related adjacent lands have development or access that only qualify for a lesser classification. Protecting or enhancing the primitive scenic character while allowing compatible recreation use are the goals of this classification.

5. *Recreational River Areas* are readily accessible by road or railroad, may have some development along their shoreline and on related adjacent lands and may have undergone impoundment or diversion in the past. Allowing compatible existing uses and a wide range of river-oriented recreation use while

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protecting the natural beauty, fish and wildlife values are the management goals of this classification.

6. *River Community Areas* are river segments where the density of existing structures (residential tract or platted subdivision), or other development precludes a more restrictive classification. River Community Areas are managed to allow development that is compatible with county zoning and blends into the natural character of the surrounding landscape. This also means protecting riparian vegetation and encouraging activities that enhance the landscape.

The rules established for each river classification generally do not affect development existing at the time of scenic waterway designation. None of the classifications are designed as absolute prohibitions of new development. Though some types of improvements require notification, review, and approval, others do not.

Mining, road building, new structures, mobile home placement, land clearing and timber harvest typically must go through the notification process. River classifications and the administrative rules for each scenic waterway determine what proposals may be approved and how they must be conditioned to protect the natural and scenic beauty of the waterway.

Notification and approval is generally not needed for new fences, farm building maintenance, irrigation lines, crop rotation, danger tree removal, residential maintenance and remodeling, homesite landscaping, minor road maintenance and firewood cutting. However, landowners are generally advised to contact OPRD before making any changes to their land within a scenic waterway corridor, especially if it is visible from the river.

Proposed Classification for the John Day River Scenic Waterway (Main Stem)

The John Day River main stem from Tumwater Falls to the confluence with Service Creek was designated as a state scenic waterway in 1970. In 1988, an additional 11 miles of river from the confluence of Service Creek to the confluence of Parrish Creek was designated as scenic waterway.

Existing Oregon Administrative Rules divide the John Day River Scenic Waterway (main stem) into three reaches. The upper and lower reaches are classified as Scenic River Areas and the middle reach is classified as a Natural River Area. OPRD proposes to amend these existing rules. The proposed amendments will lengthen the reach of the Natural River Area segment along the lower John Day River, apply more definitive land management rules to the segments of the John Day River between Tumwater Falls and Service Creek, and add management rules for the new scenic waterway segment from Service Creek to Parrish Creek.

The 11.3 mile segment of the John Day River from river mile 168.7, at the confluence with Parrish Creek near Spray, to river mile 157.4, at the confluence with Service Creek, runs parallel to Oregon State Highway 19. Along most of this segment, the highway can be seen from the river. OPRD proposes to classify this scenic waterway segment as a **Recreational River Area**. The management goal for this segment is to ensure that the view of any new development along the river is unobtrusive as seen from the river.

The 62.4 mile segment of the John Day River from Service Creek, at river mile 157.4, to the Wasco County-Sherman County line, at river mile 95, is fronted mainly by private agricultural lands. Public access along this segment is less prominent than the upstream reach. The management goal for this segment is to allow the continuation of existing farm, rural residential and recreation uses while protecting the scenic character of the river. OPRD proposes to classify this segment of river as a **Scenic River Area**.

The 51.7 mile segment of the John Day River from the Wasco County-Sherman County line, at river mile 95, downstream to river mile 43.3, about three and one-half miles upstream from Cottonwood Bridge, is largely inaccessible by road. This segment of river is remotely located between steep-walled canyons where very little sign of structures or human settlement exists. River frontage in this segment is mainly Bureau of Land Management administered public land. The management goal for this segment is to preserve and protect the primitive, undeveloped character of the river corridor. OPRD proposes to classify this segment as a **Natural River Area**.

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The lower 33.3 mile segment of the John Day River Scenic Waterway begins at river mile 43.3, upstream from Cottonwood Bridge, and terminates at river mile 10 at Tumwater Falls. This segment is fronted mostly by private agriculture and range lands. The management goal for this segment is to allow the continuation of existing farm, rural residential and recreation uses while protecting the scenic character of the river corridor. The proposed classification for this segment is **Scenic River Area**.

Proposed Land Management Rules for the John Day River Scenic Waterway(Main Stem)

The following text reflects existing rule language and proposed amendments. Existing language that is proposed to be deleted is indicated by [~~brackets and strikeout~~] and language that is proposed to be added is indicated by **bold and underlining**.

736-040-0065
John Day River Scenic Waterway

(1) Natural River Area:

(a) [~~The~~] **That** segment of the scenic waterway beginning at the intersection of [~~West to East Centerline of Section 5, Township 5 South, Range 19 East, of the Willamette Meridian), (T 5S, R 19E, W.M.), Sherman County, extended easterly from the center of said section to its intersection with the John Day River, near the mouth of Thirty Mile Creek; thence downstream approximately 31 miles to the North Boundary of the Southwest Quarter (SW 1/4) of the Southeast Quarter (SE 1/4) of Section 24, Township 2 South, Range 18 East, of the Willamette Meridian, (T 2S, R 18E, W.M.), Sherman and Gilliam Counties, near East Ferry Canyon,~~] **the John Day River with the township line between Township 5 South and Township 6 South, Willamette Meridian, at about river mile 95, thence downstream approximately 51.7 miles to the intersection of the John Day River with the southern section line of Section 30, Township 1 South, Range 19 East, Willamette Meridian, (Section 30, T 1S, R 19E, W.M.) at about river mile 43.3,** is classified as a Natural River Area;

(b) [~~Within this area, no new structures or improvements which are visible from the river, other than those erected or made in connection with agricultural uses, or those needed for public recreation or resource protection will be permitted. Additional dwellings and commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river will not be permitted.~~] **This Natural River Area shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(a)(C). In addition to these standards, all new development in resource zones (i.e. farm-related dwellings) shall comply with Gilliam County or Sherman County land use regulations.**

(c) New structures and associated improvements shall be totally screened from view from the river by topography and/or vegetation, except as provided under OAR 736-040-0030(5), and except those minimal facilities needed for public outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on the site, the structure or improvement may be permitted if native vegetation can be established to provide total screening of the proposed structure or improvement within a reasonable time (4-5 years). The condition of "total screening," as used in Section (1) of this rule, shall consist of adequate topography and/or density and mixture of native evergreen and deciduous vegetation to totally obscure (100%) the subject improvement.

(d) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(e) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed mining site, the mining operation may be permitted if native vegetation can be established to provide total screening of the proposed mining site within a reasonable time (4-5 years).

(f) New roads may be permitted only when totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed road, the road may be permitted if native vegetation can be established to provide total screening of the proposed road within a reasonable time (4-5 years).

(g) Where existing roads are visible from the river, major extensions, realignments, or upgrades to existing roads shall not be permitted. Necessary minor road improvements shall be substantially screened from view from the river. If inadequate

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topography or vegetation exists to substantially screen the road improvement, the road improvement may be permitted if native vegetation can be established to provide substantial screening of the road improvement within a reasonable time (4-5 years). The condition of "substantial screening," as used in Section (1) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to substantially obscure (at least 75%) the subject improvement. When an existing road is regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

(h) Visible tree harvest or other vegetation management may be permitted provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

(B) Harvest and management methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, "enhance" means to improve vegetative health by emulating the vegetative character of the pre-settlement landscape; and

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(i) Improvements needed for public recreation use or resource protection may be visible from the river, but shall be primitive in character and designed to blend with the natural character of the landscape.

(j) Proposed utility facilities shall share existing utility corridors, minimize any ground and vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(k) Whenever the standards of OAR 736-040-0035 and Section (1), Subsections (a) through (j) of this rule, are more restrictive than the Gilliam and Sherman County Land Use and Development Ordinances, the above Oregon Administrative Rules shall apply.

(2) Scenic River Areas: **two segments of the John Day River main stem are designated as Scenic River Areas:**

(a) [~~The segments of the scenic waterway upstream and downstream from the designated Wild River Area are classified as Scenic River Areas;~~] **That segment of scenic waterway beginning at the confluence of Service Creek at about river mile 157.4 and extending downstream approximately 62.4 miles to the intersection of the John Day River with the township line between Township 5 South and Township 6 South, Willamette Meridian, at about river mile 95, is classified as a Scenic River Area;**

(b) That segment of scenic waterway beginning at the intersection of the John Day River with the southern section line of Section 30, Township 1 South, Range 19 East, Willamette Meridian, (Section 30, T 1S, R 19E, W.M.) at about river mile 43.3 and extending approximately 33.3 miles downstream to Tumwater Falls, at about river mile 10, is classified as a Scenic River Area.

(c) [~~(b)Within these areas, no new structures or improvements which are visible from the river, other than those erected or made in connection with agricultural uses, or those needed for public recreation or resource protection will be permitted. Additional dwellings, other than those necessary to existing agricultural uses, and commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, will not be permitted.~~] **These Scenic River Areas shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(b)(B). In addition to these standards, all new development in resource zones (i.e. farm related dwellings) shall comply with Sherman County, Gilliam County, Wasco County, Wheeler County, or Jefferson County land use regulations, whichever applies.**

(d) New structures and associated improvements shall be substantially screened by topography and/or native vegetation, except as provided under OAR 736-040-0030(5), and except for those minimal facilities needed for public outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on a site, the structure or improvement may be permitted if native vegetation can be established to provide substantial screening of the proposed structure or improvement within a reasonable time (4-5 years). The condition of "substantial screening," as used in Section (2) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to substantially obscure (at least 75%) the viewed structure or improvement.

(e) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(f) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. **If inadequate topographic or vegetative screening exists on a site, mining and similar forms of development may be permitted if native vegetation can be established to provide**

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total screening of the affected area within a reasonable time (4-5 years). The condition of "total screening," as used in Section (2) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to totally obscure (100%) the subject improvement.

(g) New roads may be permitted only when totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed road, the road may be permitted if native vegetation can be established to provide total screening of the proposed road within a reasonable time (4-5 years).

(h) Where existing roads are visible from the river, extensions, realignments, upgrades, or other improvements, shall only be permitted when substantially screened from view from the river. If inadequate topography or vegetation exists to provide substantial screening, the road improvement may be permitted if native vegetation can be established to provide substantial screening of the subject improvement within a reasonable time (4-5 years). When an existing road is improved or regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

(i) Visible tree harvest or other vegetation management may be allowed provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

(B) Harvest and management methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, "enhance" means to improve vegetative health by emulating the vegetative character of the pre-settlement landscape; and

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(j) Improvements needed for public recreation use or resource protection may be visible from the river, but shall be primitive in character and designed to blend with the natural character of the landscape.

(k) Proposed utility facilities shall share existing utility corridors, minimize any ground and vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(l) Whenever the standards of OAR 736-040-0035 and Section (2), Subsections (a) through (k) of this rule are more restrictive than the applicable County Land Use Development Ordinances, the above Oregon Administrative rules shall apply.

(3) Recreational River Area:

(a) That segment of scenic waterway beginning at the confluence of Parrish Creek, at about river mile 168.7, about one mile west of Spray and extending downstream approximately 11.3 miles to the confluence of Service Creek, at about river mile 157.4, is classified as a Recreational River Area.

(b) This Recreational River Area shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(c)(B). In addition to these standards, all new development in resource zones (i.e. farm and forest related dwellings) shall comply with Wheeler County land use regulations.

(c) New structures and associated improvements shall be moderately screened from view from the river by topography and/or vegetation, except as provided by OAR 736-040-0030(5) and except those minimal facilities needed for public outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on a site, the structure or improvement may be permitted if native vegetation can be established to provide moderate screening of the proposed structure or improvement within a reasonable time (4-5 years). The condition of "moderate screening," as used in Section (3) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to moderately obscure (at least 50%) the viewed improvement or structure.

(d) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(e) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists on a site, mining and similar forms of development may be permitted if native vegetation can be established to provide total screening of the affected area within a reasonable time (4-5 years). The condition of "total screening," as used in Section (3) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to totally obscure (100%) the altered improvement site.

(f) New roads constructed for agricultural use, mining or residential use shall be moderately screened with vegetation and/or topography. If inadequate topographic or vegetative screening exists, the road may be permitted if native vegetation can be established to provide moderate screening of

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the road within a reasonable time (4-5 years). (g) Where existing roads are visible from the river, extensions, realignments, upgrades, or other improvements, shall only be permitted when partially screened from view from the river. If inadequate topography or vegetation exists to provide partial screening, the road improvement may be permitted if native vegetation can be established to provide partial screening of the subject improvement within a reasonable time (4-5 years). The condition of "partial screening," as used in Section (3) of this rule shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to partially obscure (at least 30%) views of the road improvement. When an existing road is improved or regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

(h) Visible tree harvest or other vegetation management may be allowed provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

(B) Harvest and management methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, "enhance" means to improve vegetative health by emulating the vegetative character of the pre-settlement landscape; and

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(i) Improvements needed for public recreation use or resource protection may be visible from the river, but shall be primitive in character and designed to blend with the natural character of the landscape.

(j) Proposed utility facilities shall share existing utility corridors, minimize any ground and vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(k) Whenever the standards of OAR 736-040-0035 and Section (3), Subsections (c) through (j) of this rule are more restrictive than Wheeler County Land Use and Development Ordinances, the above Oregon Administrative Rules shall apply.

Proposed Classification for the North Fork John Day River
Scenic Waterway

The North Fork John Day River was designated a scenic waterway in 1988. The designated reach extends approximately 56.2 miles from the North Fork John Day Wilderness boundary at about river mile 76.7, downstream to about river mile 20.3 approximately three miles upstream from Monument. OPRD proposes to divide the North Fork John Day River Scenic Waterway into three segments.

The upper segment begins at the North Fork John Day Wilderness boundary at about river mile 76.7 and extends downstream approximately 16.7 miles to the State Highway 395 Bridge crossing at about river mile 60, just north of Dale. A primitive road, intermittently visible from the river runs along the north side of the river for most of this segment. Publicly owned National Forest land borders the river for most of this segment. Cattle grazing and timber harvest is common on the privately owned parcels along this reach of river. The impact of these activities as viewed from the river has, for the most part, been minimal. Dwellings, ranch buildings and public campground structures are lightly distributed making the overall impression one of primitiveness and isolation. The management goal is to preserve the primitive character of the landscape throughout this portion of the river corridor. OPRD proposes to classify this segment of scenic waterway as an **Accessible Natural River Area**.

The next scenic waterway segment extends from about river mile 60, at the State Highway 395 Bridge crossing, downstream approximately three miles to the confluence of Camas Creek at about river mile 57. State Highway 395 closely parallels the north bank of the river throughout this segment and is readily visible from the river. River frontage on both banks is primarily privately owned. The management goal for this section is to ensure that the view of any new developments is unobtrusive as seen from the river. OPRD proposes to classify this segment of scenic waterway as a **Recreational River Area**.

The third North Fork scenic waterway segment extends approximately 36.7 miles from the confluence with Camas Creek downstream to about

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river mile 20.3 approximately three miles north of Monument. Landownership in this reach is a patchwork of private holdings and public lands managed by the Bureau of Land Management. The upstream half of this segment is closely paralleled by a road which is visible from the river. The lower half of the reach is essentially unroaded. As with the upstream most segment of this scenic waterway, range and timber practices provide the economic base and evidence of settlement is minimal. The management goal is to maintain the primitive character of the river corridor. OPRD proposes to classify this segment as an **Accessible Natural River Area**.

Proposed Land Management Rules for the North Fork John Day River Scenic Waterway

To date, specific land management rules for The North Fork John Day River Scenic Waterway have not been adopted. The following proposed rule language is completely new. Accordingly, the entire text is highlighted with **bold and underlining.**

736-040-0066
North Fork John Day River Scenic Waterway

(1) Accessible Natural River Areas: two segments of the North Fork John Day River are designated Accessible Natural River Areas:

(a) That segment of scenic waterway beginning at the west boundary of the North Fork John Day Wilderness in the Umatilla National Forest as that boundary was constituted on December 8, 1988, being at about river mile 76.7, where the North Fork John Day River intersects the western section line of Section 18, Township 7 South, Range 34 East, Willamette Meridian, (Section 18, T 7S, R 34E, W.M.) and extending downstream approximately 16.7 miles to the State Highway 395 Bridge crossing, at about river mile 60, is classified as an Accessible Natural River Area;

(b) That segment of scenic waterway beginning at the confluence of Camas Creek, at about river mile 57, and extending downstream approximately 36.7 miles to the intersection with the northern boundary of the south one-half of Section 20, Township 8 South, Range 28 East, Willamette Meridian, (Section 20, T 8S, R 28E, W.M.) at about river mile 20.3, is classified as an Accessible Natural River Area.

(c) These Accessible Natural River Areas shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(e)(B). In addition to these standards, all new development in resource zones (i.e. farm and forest related dwellings) shall comply with Grant or Umatilla County land use regulations.

(d) New structures and associated improvements shall be totally screened from view from the river by topography and/or vegetation, except as provided under OAR 736-040-0030(5), and except those minimal facilities needed for public outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on the site, the structure or improvement may be permitted if native vegetation can be established to provide total screening of the proposed structure or improvement within a reasonable time (4-5 years). The condition of "total screening," as used in Section (1) of this rule, shall consist of adequate topography and/or density and mixture of native evergreen and deciduous vegetation to totally obscure (100%) the subject improvement.

(e) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(f) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed mining site, the mining operation may be permitted if native vegetation can be established to provide total screening of the proposed mining site within a reasonable time (4-5 years).

(g) New roads may be permitted only when totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed road, the road may be permitted if native vegetation can be established to provide total screening of the proposed road within a reasonable time (4-5 years).

(h) Where existing roads are visible from the river, major extensions, realignments, or upgrades to existing roads shall not be permitted. Necessary minor road improvements shall be substantially screened from view from the river. If inadequate topography or vegetation exists to substantially screen the road improvement, the road improvement may be permitted if native vegetation can be

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established to provide substantial screening of the road improvement within a reasonable time (4-5 years). The condition of "substantial screening," as used in Section (1) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and decidous vegetation to substantially obscure (at least 75%) the subject improvement. When an existing road is regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

(i) Visible tree harvest or other vegetation management may be permitted provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

(B) Harvest and management methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, "enhance" means to improve timber stand health, including reducing stand density, by emulating the mosaic character of the natural forest landscape (pre-forest management tree density and occurrence patterns); and

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(j) Improvements needed for public recreation use or resource protection may be visible from the river, but shall be primitive in character and designed to blend with the natural character of the landscape.

(k) Proposed utility facilities shall share existing utility corridors, minimize any ground and vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(l) Whenever the standards of OAR 736-040-0035 and Section (1), Subsections (c) through (k) of this rule are more restrictive than Grant County's or Umatilla County's Land Use and Development Ordinance, the above Oregon Administrative Rules shall apply.

(2) Recreational River Area:

(a) That segment of scenic waterway beginning at the State Highway 395 Bridge crossing, at about river mile 60, and extending downstream approximately three miles to the confluence of Camas Creek, at about river mile 57, is classified as a Recreational River Area.

(b) This Recreational River Area shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(c)(B). In addition to these standards, all new development in resource zones (i.e. farm and forest related dwellings) shall comply with Grant County or Umatilla County land use regulations.

(c) New structures and associated improvements shall be moderately screened from view from the river by topography and/or vegetation, except as provided by OAR 736-040-0030(5), and except those minimal facilities needed for public outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on a site, the structure or improvement may be permitted if native vegetation can be established to provide moderate screening of the proposed structure or improvement within a reasonable time (4-5 years). The condition of "moderate screening," as used in Section (2) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to moderately obscure (at least 50%) the viewed improvement or structure.

(d) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(e) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists on a site, mining and similar forms of development may be permitted if native vegetation can be established to provide total screening of the affected area within a reasonable time (4-5 years). The condition of "total screening," as used in Section (2) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to totally obscure (100%) the altered improvement site.

(f) New roads constructed for agricultural use, mining or residential use shall be moderately screened with vegetation and/or topography. If inadequate topographic or vegetative screening exists, the road may be permitted if native vegetation can be established to provide moderate screening of the road within a reasonable time (4-5 years).

(g) Where existing roads are visible from the river, extensions, realignments, upgrades, or other improvements, shall only be permitted when partially screened from view from the river. If inadequate topography or vegetation exists to provide partial screening, the road improvement may be permitted if native vegetation can be established to provide partial screening of the subject improvement within a reasonable time (4-5 years). The condition of "partial screening," as used in Section (2) of this rule shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to partially obscure (at least 30%) views of the road improvement. When an existing road is

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improved or regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

(h) Visible tree harvest or other vegetation management may be allowed provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

(B) Harvest and management methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, "enhance" means to improve timber stand health, including reducing stand density, by emulating the mosaic character of the natural forest landscape (pre-forest management tree density and occurrence patterns).

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(i) Improvements needed for public outdoor recreation use or resource protection may be visible from the river, but shall be primitive in character and designed to blend with the natural character of the landscape.

(j) Whenever the standards of OAR 736-040-0035 and Section (2), Subsections (c) through (i) of this rule are more restrictive than Grant County or Umatilla County Land Use and Development Ordinances, the above Oregon Administrative Rules shall apply.

Proposed Classification for the Middle Fork John Day River
Scenic Waterway

The Middle Fork John Day River was designated a scenic waterway in 1988. The designated reach begins at about river mile 71, at the confluence with Crawford Creek, and extends approximately 71 miles to the confluence of the Middle Fork with the North Fork John Day River. OPRD proposes to divide the Middle Fork John Day River into two scenic waterway segments.

The first segment extends from Crawford Creek downstream approximately 60 miles to about river mile 11 approximately four miles downstream from Ritter. The upper 30 miles of this segment flows through an interspersed ownership of private parcels and public lands managed by the Malheur National Forest. The lower 30 miles is bounded mostly by private lands. This river segment is paralleled by a paved but lightly travelled road that provides access to thinly distributed ranches and rural dwellings. The road and development in the area is not obtrusive on the view from the river. The management goal is to allow continuation of existing farm, forest, rural residential and recreational uses while protecting the scenic character of the river corridor. OPRD proposes to classify this segment of the river as a **Scenic River Area**.

The second scenic waterway segment extends from about river mile 11 to the confluence with the North Fork John Day River. While this segment of river is bordered by mostly private lands, it flows through a steep walled canyon, is inaccessible by road and exhibits little sign of settlement or development. The management goal is to preserve and protect the primitive undeveloped character of the river corridor. OPRD proposes to classify this segment of scenic waterway as a **Natural River Area**.

Proposed Land Management Rules for the Middle Fork John Day River Scenic Waterway

To date, specific land management rules for The Middle Fork John Day River Scenic Waterway have not been adopted. The following proposed rule is completely new. Accordingly, the entire text is highlighted with **bold and underlining**.

736-040-0067
Middle Fork John Day River Scenic Waterway

(1) Natural River Area:

(a) That segment of scenic waterway beginning at the intersection of the Middle Fork John Day River with the eastern section line of Section 11, Township 8 South, Range 29 East, Willamette Meridian, (Section 11, T 8S, R 29E, W.M.), at about river mile 11, and extending downstream approximately 11 miles to its confluence with the North Fork John Day River is classified as a Natural River Area.

(b) This Natural River Area shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(a)(C). In addition to these standards, all new development in resource zones (i.e. farm and forest related dwellings) shall comply with Grant County land use regulations.

(c) New structures and associated improvements shall be totally screened from view from the river by topography and/or vegetation, except as provided under OAR 736-040-0030(5), and except those minimal facilities needed for public

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outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on the site, the structure or improvement may be permitted if native vegetation can be established to provide total screening of the proposed structure or improvement within a reasonable time (4-5 years). The condition of "total screening," as used in Section (1) of this rule, shall consist of adequate topography and/or density and mixture of native evergreen and deciduous vegetation to totally obscure (100%) the subject improvement.

(d) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(e) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed mining site, the mining operation may be permitted if native vegetation can be established to provide total screening of the proposed mining site within a reasonable time (4-5 years).

(f) New roads may be permitted only when totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed road, the road may be permitted if native vegetation can be established to provide total screening of the proposed road within a reasonable time (4-5 years).

(g) Where existing roads are visible from the river, major extensions, realignments, or upgrades to existing roads shall not be permitted. Necessary minor road improvements shall be substantially screened from view from the river. If inadequate topography or vegetation exists to substantially screen the road improvement, the road improvement may be permitted if native vegetation can be established to provide substantial screening of the road improvement within a reasonable time (4-5 years). The condition of "substantial screening," as used in Section (1) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to substantially obscure (at least 75%) the subject improvement. When an existing road is regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

(h) Visible tree harvest or other vegetation management may be permitted provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

(B) Harvest and management methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, "enhance" means to improve timber stand health, including reducing stand density by emulating the mosaic character of the natural forest landscape (pre-forest management tree density and occurrence patterns); and

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(i) Improvements needed for public outdoor recreation or resource protection may be visible from the river but shall be primitive in character and designed to blend with the natural character of the landscape.

(j) Proposed utility facilities shall share existing utility corridors, minimize any ground and vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(k) Whenever the standards of OAR 736-040-0035 and Section (1), Subsections (c) through (j) of this rule are more restrictive than the Grant County Land Use and Development Ordinance, the above Oregon Administrative Rules shall apply.

(2) Scenic River Area:

(a) That segment of scenic waterway beginning at the confluence with Crawford Creek at about river mile 71, being in the Northwest 1/4 of Section 25, Township 11 South, Range 35 East, Willamette Meridian, (NW 1/4, Section 25, T 11S, R 35E, W.M.) and extending downstream approximately 60 miles to the intersection of the Middle Fork John Day River with the eastern section line of Section 11, Township 8 South, Range 29 East, Willamette Meridian, (Section 11, T 8S, R 29E, W.M.), at about river mile 11, is classified as a Scenic River Area.

(b) This Scenic River Area shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(b)(B). In addition to these standards, all new development in resource zones (i.e. farm and forest related dwellings) shall comply with Grant County land use regulations.

(c) New structures and associated improvements shall be substantially screened by topography and/or native vegetation, except as provided under OAR 736-040-0030(5), and except for those minimal facilities needed for public outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on a site, the structure or improvement may be permitted if native vegetation can be established to provide substantial screening of the proposed structure or

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improvement within a reasonable time (4-5 years). The condition of "substantial screening," as used in Section (2) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to substantially obscure (at least 75%) the viewed structure or improvement.

(d) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(e) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists on a site, mining and similar forms of development may be permitted if native vegetation can be established to provide total screening of the affected area within a reasonable time (4-5 years). The condition of "total screening," as used in Section (2) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to totally obscure (100%) the subject improvement. (f) New roads may be permitted only when totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed road, the road may be permitted if native vegetation can be established to provide total screening of the proposed road within a reasonable time (4-5 years).

(g) Where existing roads are visible from the river, extensions, realignments, upgrades, or other improvements, shall only be permitted when substantially screened from view from the river. If inadequate topography or vegetation exists to provide substantial screening, the road improvement may be permitted if native vegetation can be established to provide substantial screening of the subject improvement within a reasonable time (4-5 years). When an existing road is improved or regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

(h) Visible tree harvest or other vegetation management may be allowed provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

(B) Harvest methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, "enhance" means to improve timber stand health, including reducing stand density by emulating the mosaic character of the natural forest landscape (pre-forest management tree density and occurrence patterns); and

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(i) Improvements needed for public outdoor recreation use or resource protection may be visible from the river but shall be primitive in character and designed to blend with the natural character of the landscape.

(j) Proposed utility facilities shall share existing utility corridors, minimize any ground and vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(k) Whenever the standards of OAR 736-040-0035 and Section (2), Subsections (c) through (j) of this rule are more restrictive than the Grant County Land Use and Development Ordinance, the above Oregon Administrative Rule shall apply.

Proposed Classification for the South Fork John Day River
Scenic Waterway

The South Fork John Day River was designated a scenic waterway in 1988. The designated reach extends from the Post-Paulina Road crossing near river mile 35, downstream approximately 29 miles to the northern border of the Phillip W. Schneider Wildlife Area (formerly Murder's Creek Wildlife Area) at about river mile six. OPRD proposes to divide this reach into two segments.

The first segment extends from the Post-Paulina Road crossing downstream approximately five miles to Ellingson Mill. This section of river is paralleled by a gravel road which crosses from the east bank to the west bank at Ellingson Mill and can be seen frequently from the river. The road is lightly travelled and provides access to a few ranch dwellings. Utility lines also follow the road and river in this segment. In this segment, the river flows through public lands, managed by the Bureau of Land Management, interspersed with private holdings. The management goal is to allow the continuation of existing ranch,

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forest and recreation uses while protecting the scenic character of the river corridor. OPRD proposes to classify this segment as a **Scenic River Area**.

The remaining segment of the South Fork extends from Ellingson Mill approximately 24 miles downstream to about river mile six at the north boundary of the Phillip W. Schneider Wildlife Area. The river is paralleled by an all season road which begins on the west river bank, crosses the river shortly downstream from Izee Falls, follows the east bank to the end of the segment and is visible from the river at numerous locations. River frontage in this segment includes state owned lands as well as private parcels and BLM managed lands. While there is access to the river in this segment, there is little evidence of development or settlement. The management goal for this reach is to preserve and protect the fairly primitive and undeveloped character of the river corridor. OPRD proposes to classify this segment as an **Accessible Natural River Area**.

Proposed Land Management Rules for the South Fork John Day River
Scenic Waterway

To date, specific land management rules for The South Fork John Day River Scenic Waterway have not been adopted. The following proposed rule is completely new. Accordingly, the entire text is highlighted with **bold and underlining.**

736-040-0068
South Fork John Day River Scenic Waterway

(1) Accessible Natural River Area:

(a) That segment of scenic waterway beginning at Ellingson Mill at about river mile 30, being at the intersection of the South Fork John Day River with the northern section line of Section 29, Township 16 South, Range 27 East, Willamette Meridian, (Section 29, T 16S, R 27E, W.M.) and extending downstream approximately 24 miles to the north boundary of the Murder's Creek Wildlife Area as constituted on December 8, 1988, at about river mile six, being in the Southeast 1/4 of Section 24, Township 13 South, Range 26 East, Willamette Meridian, (SE1/4, Section 24, T 13S, R 26E, W.M.) is classified as an Accessible Natural River Area.

(b) This Accessible Natural River Area shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(e)(B). In addition to these standards, all new development in resource zones (i.e. farm and forest related dwellings) shall comply with Grant County land use regulations.

(c) New structures and associated improvements shall be totally screened from view from the river by topography and/or vegetation, except as provided under OAR 736-040-0030(5), and except those minimal facilities needed for public outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on the site, the structure or improvement may be permitted if native vegetation can be established to provide total screening of the proposed structure or improvement within a reasonable time (4-5 years). The condition of "total screening," as used in Section (1) of this rule, shall consist of adequate topography and/or density and mixture of native evergreen and deciduous vegetation to totally obscure (100%) the subject improvement.

(d) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(e) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed mining site, the mining operation may be permitted if native vegetation can be established to provide total screening of the proposed mining site within a reasonable time (4-5 years).

(f) New roads may be permitted only when totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed road, the road may be permitted if native vegetation can be established to provide total screening of the proposed road within a reasonable time (4-5 years).

(g) Where existing roads are visible from the river, major extensions, realignments, or upgrades to existing roads shall not be permitted. Necessary minor road improvements shall be substantially screened from view from the river. If inadequate topography or vegetation exists to substantially screen the road improvement, the road improvement may be permitted if native vegetation can be established to provide substantial screening of the road improvement within a reasonable time (4-5 years). The condition of "substantial screening," as used in Section (1) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to substantially obscure (at least 75%) the subject improvement. When an existing road is regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

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(h) Visible tree harvest or other vegetation management may be allowed provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

(B) Harvest and management methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, "enhance" means to improve timber stand health, including reducing stand density by emulating the mosaic character of the natural forest landscape (pre-forest management tree density and occurrence patterns); and

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(i) Improvements needed for public outdoor recreation use or resource protection may be visible from the river, but shall be primitive in character and designed to blend with the natural character of the landscape.

(j) Proposed utility facilities shall share existing utility corridors, minimize any ground and vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(k) Whenever the standards of OAR 736-040-0035 and Section (1), Subsections (c) through (j) of this rule are more restrictive than the Grant County Land Use and Development Ordinance, the above Oregon Administrative Rules shall apply.

(2) Scenic River Area:

(a) That segment of scenic waterway beginning at the Post -Paulina Road crossing at about river mile 35, being in the Northwest 1/4 of Section 9, Township 17 South, Range 27 East, Willamette Meridian, (NW1/4, Section 9, T 17S, R 27E, W.M.) and extending downstream approximately five miles to Ellingson Mill at about river mile 30, being at the intersection of the South Fork John Day River with the northern, section line of Section 29, Township 16 South, Range 27 East, Willamette Meridian, (Section 29, T 16S, R 27E, W.M.) is classified as a Scenic River Area.

(b) This Scenic River Area shall be administered consistent with the standards set by OAR 736-040-0035 and OAR 736-040-0040(1)(b)(B). In addition to these standards, all new development in resource zones (i.e. farm and forest related dwellings) shall comply with Grant County land use regulations.

(c) New structures and associated improvements shall be substantially screened by topography and/or native vegetation, except as provided under OAR 736-040-0030(5), and except for those minimal facilities needed for public outdoor recreation or resource protection. If inadequate topographic or vegetative screening exists on a site, the structure or improvement may be permitted if native vegetation can be established to provide substantial screening of the proposed structure or improvement within a reasonable time (4-5 years). The condition of "substantial screening," as used in Section (2) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to substantially obscure (at least 75%) the viewed structure or improvement.

(d) Commercial public service facilities, including resorts and motels, lodges and trailer parks which are visible from the river, shall not be permitted.

(e) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in ORS 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists on a site, mining and similar forms of development may be permitted if native vegetation can be established to provide total screening of the affected area within a reasonable time (4-5 years). The condition of "total screening," as used in Section (2) of this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to totally obscure (100%) the subject improvement.

(f) New roads may be permitted only when totally screened from view from the river by topography and/or vegetation. If inadequate topographic or vegetative screening exists to totally screen the proposed road, the road may be permitted if native vegetation can be established to provide total screening of the proposed road within a reasonable time (4-5 years).

(g) Where existing roads are visible from the river, extensions, realignments, upgrades, or other improvements, shall only be permitted when substantially screened from view from the river. If inadequate topography or vegetation exists to provide substantial screening, the road improvement may be permitted if native vegetation can be established to provide substantial screening of the subject improvement within a reasonable time (4-5 years). When an existing road is improved or regraded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river.

(h) Visible tree harvest or other vegetation management may be allowed provided that:

(A) The operation complies with the relevant Forest Practices Act rules;

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(B) Harvest and management methods with low visual impact are used;

(C) The effect of the harvest or vegetative management is to enhance the scenic view within a reasonable time (5-10 years). For the purposes of this paragraph, “enhance” means to improve timber stand health, including reducing stand density by emulating the mosaic character of the natural forest landscape (pre-forest management tree density and occurrence patterns); and

(D) The harvest or vegetation management does not degrade the riparian buffer of any waterway.

(i) Improvements needed for public outdoor recreation use or resource protection may be visible from the river but shall be primitive in character and designed to blend with the natural character of the landscape.

(j) Proposed utility facilities shall share existing utility corridors, minimize any ground or vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(k) Whenever the standards of OAR 736-040-0035 and Section (2), Subsections (c) through (j) of this rule are more restrictive than the Grant County Land Use and Development Ordinance, the above Oregon Administrative Rule shall apply.

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Chapter V
Environmental Consequences

Introduction

This chapter describes the environmental consequences of the different alternatives for managing the John Day Wild and Scenic River corridor and non-designated segments of the John Day River. This chapter follows the same sequence of discussion followed in Chapter 3:

1. The impacts of the alternatives on issues resolved by continuing existing management.
2. The impacts of the alternatives on issues resolved by continuing existing management with additional actions.
3. The impacts of the alternatives on issues resolved by alternatives.

The subsequent analysis assumes that every action proposed for each alternative has the potential to impact other actions. As a result we systematically ask the question, "How does _____ action impact any given issue, resource, or value associated with the John Day Wild and Scenic River?" Sometimes the answer is obviously "no impact." Sometimes a large number of actions have no impact on a particular issue or resource. Whenever appropriate the analysis that follows will minimize repetition by grouping actions that have no impact on a particular issue or action.

As required by 40CFRsec.1508.8 this analysis documents a cause and effect relationship between actions and consequences, both beneficial and detrimental. Indirect effects are frequently the result of lengthy cause and effect chains involving several resources. In order to simplify the analysis and to avoid repetition consequences described for other resources will frequently serve as the beginning point of analysis. For example it is well known that the condition and composition of upland vegetation has an impact on fish. The linkage between upland vegetation and fish is not direct. In the analysis that follows when we examine the impacts of the alternatives on vegetation we will examine how different vegetation management strategies impact the condition and composition of vegetation. When we examine the impacts of the alternatives on water quality and quantity we will show the link between vegetation condition and composition on water quality and quantity. Finally when examining the impacts of the alternatives on fish we will show the link between water quality and quantity and fish habitat and fish populations and will cite the analysis that links vegetation management to vegetation condition and composition and vegetation condition and composition to water quality and quantity rather than repeating that portion of the cause and effect chain when explaining the relationship of water quantity and quality to fish habitat and fish populations.

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Isolating key elements of cause and effect chains will reduce the amount of repetition of text and will dramatize the interrelationship of the various actions proposed to protect and enhance river related resources.

The effects disclosed in this chapter include direct, indirect, and cumulative effects on other ecosystem components. After addressing issue related effects this chapter will disclose other environmental effects and incomplete/unavailable information.

Actions Common to All Alternatives Documented by Reference

The following two management actions are Common to All Alternatives and have been subject to recent environmental analysis. For detailed consideration of the consequences of these actions please refer to the documents cited.

Noxious Weed Control

Impacts are discussed in documents cited in Chapter 3, including EA # OR-053-3-062, EA # OR-054-3-063, BLM's Northwest Area Noxious Weed Control Program FEIS (Dec. 1985) and Supplemental FEIS (March 1987) and their respective Record of Decisions, Vegetative Treatment on BLM Lands (Thirteen Western States) FEIS (1991), and the use of additional chemicals when approved for Oregon

The district Environmental Assessments described impacts for all areas within the BLM's Prineville District and found no significant adverse impacts with the proposed treatments. These environmental assessments found that the treatments would decrease or eliminate noxious weeds in riparian, rangeland, woodland, and forest types and would prevent the dominance of noxious plant species that would limit forage and cover values of vegetation when compared to taking no action or relying on only mechanical or biological means of control.

Fire Management

Impacts are discussed in documents referred to in Chapter 3, including the Prineville District's Fire Management Plan, BLM Manual H-8550-1 (interim management policy for lands under wilderness review, 1995), BLM Manual 8351 (Wild and Scenic Rivers - policy and program direction for identification, evaluation, and management, 1992), and various Environmental Assessments written for prescribed fire projects.

These documents noted that wildfire, short of catastrophic levels, and prescribed fire would generally improve habitat conditions by diversifying habitat structure, providing short-term improvement in forage palatability, and increasing the availability of herbaceous forage plants. Some habitat changes would result in adverse impacts to species reliant on large homogeneous blocks of vegetation types. Most vegetation types are dependent on fire return intervals that have been modified over the last century. Returning these habitats to historic fire interval levels, or management close to these levels, would generally increase the quality of habitat.

Extreme wildfire that causes mortality in existing plants and soil sterilization can lead to noxious weed infestation, and may demand immediate attention for rehabilitation efforts.

Impacts of the Alternatives on Issues Resolved by Continuing Existing Management

Riparian and Aquatic Habitat Restoration

Actions considered for managing riparian and aquatic restoration, scenery, and agricultural lands have the potential to impact riparian and aquatic restoration activity.

Riparian and Aquatic Habitat Restoration

Under each alternative planting native black cottonwood (*Populus trichocarpa*) within riparian areas would take place and would increase streambank stability, increase shade, and increase structure along the river.

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Scenery

Alternative A

Continuing existing management of visual resources may be less likely than other alternatives to affect the design and implementation of riparian and aquatic restoration projects.

Common to all Action Alternatives

Meeting the standards of interim VRM classes until a VRM inventory process is completed would make design and implementation of some projects more difficult and expensive.

Agricultural Land Management

Alternatives A-C

Each of these alternatives would allow existing riparian and aquatic restoration activity to continue.

Alternative D

Black cottonwood plantations would be discontinued due to lack of irrigation. This would require a new, less convenient source of stock to maintain the cottonwood outplanting program and would make the program more expensive.

Fish

Management of Wildlife, Native American Uses, Paleontological Resources, Cultural Resources, Information and Education, Law Enforcement and Emergency Services, and Boating Use Allocation would not alter existing condition of fish under any alternative. There are no direct actions (fish habitat enhancement projects proposed under any alternative).

Riparian and Aquatic Habitat Restoration

As discussed in impacts on vegetation, riparian and aquatic restoration would
stabilize streambanks and, by the retaining of soil by the roots of trees and shrubs, create overhanging banks.

Impacts on fish and fish habitat result from:

1) increased filtration of water - thereby improving water quality parameters especially with regard to agricultural fields and surface runoff containing various chemicals such as fertilizers.
2) increased storage capacity and groundwater recharge - providing late summer season water sources to the river which would augment and enhance typical summer flows.
3) increased root masses - stabilizing banks and reducing sediment input to the river and providing important habitats such as overhanging or undercut banks used for cover.
4) allochthonous organic production which provides food specifically for fish and indirectly food for other aquatic organisms which fish eat.
5) shade production - buffering stream temperatures by reducing solar energy input which leads to reduced summer maximum temperatures, thereby lowering metabolic rates and increasing oxygen content within the water providing fish with a less environmentally stressful habitat.
6) dissipation of high stream flows - decreased velocity of high water through submerged riparian vegetation areas provides specific high flow refugia which allows fish to remain protected from high water velocities.

Though riparian and aquatic restoration activity can accelerate achievement of conditions needed to protect and enhance aquatic conditions which are the foundation of fish habitat, as described under water quantity and quality these actions can impact, at best, 2 % of the stream and river banks in the John Day River basin. Because the vast majority of water flowing through the John Day River originates and flows through miles of streams managed by other landowners before it reaches areas within the scope of the plan, the ability of the cooperators to create measurable and significant changes in water quantity and quality and subsequent changes in fish populations is severely restricted.

Fish

All actions that are designed to protect and enhance fish and fish habitat involve treatment of other resources.

Water Quantity and Water Quality

The elements of water quantity and quality that affect fish include: quantity of water, chemical and nutrient levels, and temperature. Water quantity impacts fish through the volume of water within the stream. The higher the volume the more buffering capability water has to reduce impacts to fish from changes in air temperature, solar radiation input, or introduced

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chemicals or nutrients. In addition higher water volume allows fish to overcome barriers that are impassable at lower flows. Chemical and nutrient levels, either dissolved or suspended within the water can affect fish. Excessive pollutants such as gas and oil will kill fish at very low concentrations. Low levels of available oxygen can increase stress levels, limit function, and over a sufficient period can lead to mortality. Stream temperature determines metabolic rates and oxygen saturation levels. Currently only stream flow and water temperature have been measured consistently across the basin, other water quality parameters have been measured but not throughout the basin, so measurements are highly localized. Decreased levels of specific chemicals and decreases in water temperature can improve fish habitat and remove or reduce some environmental stressors.

Existing Management

Continuing existing cooperative and coordinated efforts would contribute to increased water quantity and reduced introduction of sediment and other pollutants, and lower water temperature during warmer periods of the year.

Additional Actions

The State Scenic Waterway recommended flows would provide sufficient water quantity and water quality indirectly through dissipation and buffering of other water quality parameters such as chemical or nutrient levels and instream temperatures to provide for migration, spawning, and rearing of anadromous fish (Lauman 1977) at appropriate times compared to existing conditions. Adopting the State Scenic Waterway recommended flows constitutes a benchmark against which progress toward providing adequate riparian habitat for anadromous fish can be measured.

Scenic Quality

Existing Management

There would be no impacts to the fisheries resource.

Common to All Action Alternatives

Requiring that fish enhancement projects be designed to meet interim VRM Standards could increase the costs of some projects. Most projects would not be affected by implementation of VRM standards.

Grazing Management

Alternative A

Continuing existing grazing management would change riparian conditions as described later in this chapter in the description of impacts of grazing on riparian vegetation. Impacts on fish habitat would include increases in water quantity and quality as described in the discussion of impacts of riparian and aquatic restoration on fish. However the area affected by grazing management would be much greater than the area affected by direct restoration activity. As a result increases in density and diversity of riparian vegetation would cover a greater area than would occur as the result of direct restoration activity alone.

Alternative B

Same as Alternative A except that there would be an increase in diversity and density in riparian vegetation on allotments in which grazing practices would be altered (see Table III-E). The additional 9.1 miles of management that would be converted to riparian oriented management would increase fish habitat through increases in water quantity and quality as described in the discussion of impacts of riparian and aquatic restoration on fish.

Alternative C

Exclusion would increase riparian density and diversity as described in the discussion of impacts of grazing on riparian vegetation and would have the same consequence for water quality and fish habitat as outlined in the discussion of impacts of riparian habitat restoration.

Alternative D

Effects of this alternative would be the same as Alternative C. Impacts associated with upland grazing within the river corridor would be eliminated. See discussions of riparian and aquatic restoration on fish and water quality and quantity.

Agricultural Lands Management

During the irrigation season and especially during the summer months the primary fishery of concern is the smallmouth bass fishery. Colder water species such as salmonids are not present in segments 1-3 during these times of year (Segments 1-3 function primarily as a migration corridor in early spring and fall). Agricultural leases and their associated water rights

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have the result of removing water from instream, thereby decreasing the amount of habitat available for fish and other aquatic life. See discussion of water quantity effects on fish habitat.

The critical low flow months are August and September when average flows (80% exceedence) are 246 cfs and 194 cfs respectively. Total consumptive use and storage in the basin are 192.6 and 128.5 cfs respectively. The water rights held by the BLM represent approximately 5% and 7.5% respectively in August and September of the 80% exceedence flows in the river.

Alternative A

Continuing existing management would maintain existing levels of water quantity and quality for fish. Continuing existing management would maintain the existing levels of water use and consumption in Segments 1-3. Total water use for all three segments would have a theoretical maximum of 9.6 cfs at any single time and a total of 1925 acre-feet of water withdrawn from the river over the irrigation season. Instream use, non-use, riparian shrub/tree propagation, wildlife food and cover, weed control, vegetation restoration, and commodity agriculture would continue.

Segment 1 - BLM agricultural lands in this segment have approximately a 0.2175 cfs water right associated with them. Withdrawal of this amount of water in this segment represents an 0.09% reduction in river flows in August and an 0.11% reduction in September, these water removals would be masked by the average daily fluctuation in river flow in August and September.

Segment 2 - BLM agricultural lands in this segment have approximately a 6.96 cfs water right associated with them. In 1998 approximately 107.1 acres of agricultural land in this segment were not irrigated and the associated water was left instream in the form of an instream use or non-use, this accounts for approximately 2.67 cfs. The remaining 4.29 cfs is available for use in irrigation. These numbers represent a theoretical maximum allowed water withdrawal based on this stipulations of the water right certificate. In reality actual use is far less. If the water rights were used to their maximum in this segment, minus instream flows it would take approximately 100 days removing water at a rate of 4.29 cfs in order to use associated maximum duty of 857 acre feet. Actual use for the crops grown require less than this theoretical maximum cfs withdrawal of 1/40 per acre: spring grain - 22.3 days; alfalfa - 51.7 days; and beans - 32.4 days. Therefore even with the most water intensive crop - alfalfa - the water right is only approximately half utilized, the rest of the water remains instream. However, alfalfa and beans require irrigation in August and September (alfalfa only) when water levels are the lowest. In order to produce these crops the most water withdrawn from the river would be 4.29 cfs for approximately 14 days in August and 7 days in September. This represents approximately 1.7% and 2.2% of 80% exceedence flow in these months respectively. Removal of 4.29 cfs from the river for irrigation would have a negligible effect on water quantity within the river and therefore a very minimal, unmeasurable effect on fish habitat. Approximately 2.6 cfs is allocated for commodity crop production and the remaining 1.6 cfs is used for BLM restoration projects including cottonwood plantations and wildlife food and cover plots.

In addition not all water removed for irrigation is lost to the stream, some returns in the form of overland flow and to a greater extent groundwater flow. Numbers to quantify this return flow associated with these agricultural fields are not available. This return flow acts to add water into the river and increase water quantity parameters.

Segment 3 - BLM agricultural lands in this segment have approximately a 2.425 cfs water right associated with them. Alfalfa is the most water intensive crop grown on these lands requiring a total of 51.7 days of maximum rate irrigation (1/40 cfs per acre). Approximately 95 acres are leased for agricultural production, less than half of which (33.7 acres) is used to grow alfalfa. The BLM water right represents approximately <1% and 1.25% of 80% exceedence river flows in August and September respectively. Given the crop production in this segment the theoretical maximum duty available is 485 acre-feet only approximately 248 acre-feet are used to produce alfalfa.

Overall water use by BLM agricultural leases accounts for 5% and 7.5% of flow in August and September respectively when water is withdrawn at the theoretical maximum rate of 9.6 cfs. Portions of this are leased for instream use, other parts are in non-use and not used for irrigation, the remainder used for irrigation does not approach maximum use levels and in fact uses approximately half the associated duty when producing the most water intensive crop (alfalfa) grown on these lands. Adjusting for these conditions the BLM water withdrawal accounts for approximately 0.7% and 0.9% in August and September respectively. Water use on these agricultural fields does not significantly impact water quantity in the river and has an imperceptible impact on smallmouth bass habitat.

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Common to All Action Alternatives

Exchange of 25 acres would maintain existing uses and because these lands are distant from the river bank uses would not impact conditions upon which fish depend.

Exchange of approximately 25 acres would reduce BLM water rights by approximately 0.625 cfs. This would reduce BLM water rights to approximately 9.0 cfs. Slightly more than half of BLM agricultural fields are leased for commodity production (182.4 acres) the rest are not currently in commodity production (164.1 acres) or are part of a larger privately owned field (12.1 acres). Therefore maximum theoretical water withdrawal for BLM commodity producing agricultural fields is 4.56 cfs, only approximately half of this is needed to produce alfalfa - the most water intensive crop grown on these fields - leaving approximately 2.28 cfs withdrawn from the river for irrigation. This accounts for approximately 0.9% of flow in August.

If review of late season irrigation use leads to use restrictions and keeps additional water in the river, smallmouth bass habitat in the lower river would be increased. The lower section of the John Day river is considered a thermal barrier during summer months to salmonids, and salmonids are not known to occur in this stretch of the river in large numbers during this time. Any water use restrictions would therefore not enhance or degrade salmonid habitat within the lower river during this period of the year.

Evaluation of water withdrawal after August 15 when flows drop to the 80% exceedence flow of 246 cfs, would serve as a screen to consider how water withdrawal at these times would effect overall flow within the river. At this time of the irrigation season the actual withdrawal from the river is substantially lower than the theoretical maximum withdrawal of 9.6 cfs. Approximately 2.7 cfs of the 9.6 cfs water rights held by BLM are leased instream, this leaves a maximum of 6.9 cfs that is available for irrigation. This accounts for roughly 2.8% of river 80% exceedence flow of 246 cfs in August. Coordination of further irrigation with ODFW, CTWS and the lessee would allow all concerns over the BLM withdrawals to be addressed and appropriate action taken relative to specific flow regime and actual migration of steelhead.

Alternative B

Changes in vegetation and implementation of vegetative buffers between agricultural lands and the river would slow overland runoff and filter or absorb agricultural chemicals and sediment thus reducing introduction of pollutants into the river. This process would contribute to the quality of fish habitat.

Commitment of 164 acres to non-commodity production would maintain a water right of approximately 4.1 cfs on these lands. This water would be used for irrigation purposes designed to promote and establish trees and shrub stands, wildlife food and cover plots and upland grasses and forbes. Water rights not used for irrigation would be left instream as non-use or could be leased or transferred through the Water Resources Department and maintained as an instream water right.

Designation and implementation of a 20 ft. buffer strip associated with agricultural fields adjacent to the active floodplain would serve to filter water and nutrients originating in the agricultural field. This would serve to protect water quality as described under Riparian Habitat Management effects of water quality. Water rights associated with the remaining commodity producing acreage would amount to 4.875 cfs or approximately 2% of water flow at the 80% exceedence level. In the event that any portion of current commodity production acres goes out of leased status the current water rights would be maintained in irrigation to implement restoration and enhancement activities. Reduction in flows within the river due to BLM water withdrawal will have an imperceptible impact on smallmouth bass during the summer months.

Alternative C

This alternative is likely to reduce the introduction of pollutants into the river because, with the elimination of commodity production, there would be a lower rate of application of fertilizers with less cultivation and reduced introduction of sediment than at present. With reduced withdrawal of water from the river more habitat would be available to fish. The additional increment would not be sufficient to benefit fish. If other users were to reduce withdrawal rates during critical low water periods in the summer expanded habitat could lower water temperature and provide more space for species that utilize the river during this part of the year. Increasing the water in the river coupled with a lower rate of introduction of pollutants would reduce the concentration of these elements in the river. Fish habitat would improve as water quantity and quality relate to fish habitat.

Short term effects to water withdrawal would be similar to alternative B, water rights would be maintained to promote establishment of tree and shrub stands, wildlife food and cover plots and

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upland grasses and forbes. This would be a phased approach to restoration of agricultural fields that would extend over approximately 15 years. Long term effects would return a greater proportion on water rights to instream uses, which could be leased or transferred to the Water Resources Department and held instream. A small portion of water would be maintained for irrigation to continue riparian and wildlife enhancement projects. Long term the amount of water left instream would increase slightly, this would have an imperceptible effect on smallmouth bass during the summer months.

Alternative D

After native vegetation is established introduction of additional chemicals needed for agricultural production and sediments loosened by cultivation would be eliminated. Eliminating withdrawal of water from the river would increase habitat available for fish. Though greater than any other alternative, the additional increment of water kept instream would not be sufficient to benefit fish. If other users were to reduce withdrawal rates during critical low water periods in the summer expanded habitat could lower water temperature and provide more space for species that utilize the river during this part of the year. This would reduce the concentration of these elements in the river. However, given the small amount of land affected compared to the total amount of land adjacent to the river, the reductions in concentration not be measurable and changes in habitat would not be sufficient to affect fish populations.

Short term effects are similar to alternative B. Transition from commodity and restoration effort to purely natural production would be phased over 20 years. In the long term all irrigation would cease on BLM agricultural fields, all restoration effort dependent on irrigation would also cease. This includes black cottonwood plantations and wildlife food and cover plots. This would return all 9.6 cfs (9.0 after 25 acres exchange) to instream use that would be leased or transferred through the Water Resources Department and held as an instream water right. Long term increases in instream water will have a negligible effect on smallmouth bass.

Boating Uses Levels

Alternative A

Increased use during May through October as predicted under boating use levels would increase the probability of boat/fish encounters compared to existing boating use level. Boat/fish interactions involve startling migratory or spawning steelhead and chinook. Such an event increases environmental stress levels and the possibility of displacing the fish off spawning areas. Because of the limited time salmon and steelhead are in the mainstem and because they are not present during the main boating season, encounters with floating or drifting boats would not occur with any regularity unless more boaters were to use the river much later in the fall or much earlier in the spring than at present.

As described under impacts on vegetation and impacts on water quantity and quality there is a small potential for impacts on fish. Given the small area affected by pulling boats onto the bank the proportion of riparian area subject to damage would be small.

Increasing use levels would likely result in a proportional increase in fishing. As a result fish populations may be reduced under this alternative.

Alternative B

The increased use and timing of that use predicted under boating use levels would result in the same number of boat/fish encounters as Alternative A but more evenly distributed during the main boating season. Because of the limited time salmon and steelhead are in the mainstem and because they are not present during the main boating season, encounters with floating or drifting boats (i.e. 16 launches per day with an average of 2.3 boats per launch in Segment 2 and 19 launches per day with the same number of boats in Segment 3) would not occur with any regularity unless many boaters began to use the river much later in the fall or much earlier in the spring than at present.

Changes in the stream bank vegetation would be unlikely to result in meaningful changes in fish habitat because the more even distribution of use under this alternative, compared to Alternative A would reduce the need to pioneer new campsites and landing areas.

Alternative C

Interim daily launch targets resulting in the occupancy of not more than 70% of established campsites (11 launches in Segment 2 and 13 launches in Segment 3) would reduce the potential of startling migratory or spawning steelhead and chinook during most of the year. An exception would be during the month of October when migrating steelhead and a potential run of spawing fall chinook

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may be present in the lower mainstem of the John Day River. It is expected that the lower launch targets would encourage more boaters than at present to visit the John Day River during October. Consequently the likelihood of increased physical stress level of salmon and steelhead due to encounters with boats would be reduced compared to Alternatives A and B except for October.

Increased stream bank vegetation resulting from the new distribution of use under this alternative would be unlikely to result in meaningful changes in fish habitat because the total bank area subject to camping and boat landing is a small proportion of the total river frontage.

Alternative D

Setting interim daily launch targets for boats at 6 daily launches for Segment 2 and 8 daily launches for Segment 3 would have same impacts as Alternative C except impacts on chinook and steelhead in October would be slightly greater.

Alternative E

Same as Alternative C. Limiting motorized boat launches in March and April would prevent motorized boating from occurring at a level that would have a high likelihood of disturbing or endangering fish.

Motorized Boating

The analyses of impacts of motorized boating on vegetation and water quantity and quality indicate that motorized boating can result in physical and chemical impacts to the water and shore-line that in turn impact fish and fish habitat. These areas support a specific vegetative community of sedges, rushes and grasses that provide important habitat for fish, especially bass spawning and rearing areas. Loss of riparian vegetation and subsequent erosion reduces cover for fish.

Loss of riparian vegetation reduces riparian functioning which, in turn, affects water temperature and presence of pollutants and suspended sediments in the river. Salmon and steelhead are especially sensitive to these conditions.

There are two direct impacts of motorized boating. First, disturbance by the sight and sound of motorized boats can cause increased levels of startling and trigger a vigorous escape response and may disrupt spawning behavior of chinook or migratory behavior of chinook and steelhead. Such a response can lead to increased environmental stress levels in fish that can lead to mortality before spawning can take place. Second, pollution from motors can have detrimental effects on fish populations because small amounts of gasoline can prove fatal to fish. Some estimates suggest that up to 10-20% of fuel used in two-stroke engines is discharged directly into the water (Jackivicz & Kuzminski, 1973a).

Alternative A

Use levels under this alternative would increase with demand as in Boating Use Levels Alternative A. In addition to the impacts described above, the impacts from motorized boating would include the impacts as described in Boating Use Levels Alternative A. As use increases these impacts would increase proportionally.

Segments 1 and 2 - Allowing motorized boating from October 1 to April 30 would limit potential for impacts from motorized boating to this time period. The number of motorized boats currently using the John Day during these times is expected to increase in the future and as a result would increase the likelihood of the types of interactions described above, especially during the month of October.

Segment 3 - Continuing existing management would allow for the full range of impacts described above year round. The number of motorized boats currently using the John Day is expected to increase in the future and as a result would increase the likelihood of the types of interactions described above, especially during the months of October and November when migrating steelhead are in this segment of the river.

Common to All Action Alternatives

Closing Segments 10 and 11 to motorized boating would have little impact on fish or fish populations because there is no known motorized boating occurring at this time. This action would eliminate the potential for impacts resulting from motorized boating in the future.

Alternative B

Segment 1 - Same as Alternative A and Boating Use Levels Alternative A. In addition limiting motorized boating use to December through the end of February would reduce the impacts to migratory chinook and steelhead during the closed periods. This would also decrease physical and chemical impacts from motorized boating during the closure. Motorized boating would not be permitted when

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juvenile smolts are migrating downstream. As a result smolts would be free of potential adverse impacts from motorized boating.

Segment 2 - Same impacts as for Segment 1 except if WSAs become designated wilderness impacts from motorized boating would not occur downstream from Clarno Rapids

Segment 3 - April 1 to October 1 closure would reduce the potential for impacts on spring chinook and summer steelhead. Use of small electric motors during closure would not impact fish.

Alternative C

Segment 1 - Same as Alternative B

Segment 2 - Most of this segment would be closed to motorized boating year round. This would eliminate motorized boating impacts from this section of river, therefore impacts to fish via startling and increased stress levels or displacement off spawning areas would not occur. There would be a decrease in the physical and chemical impacts from motorized boating as described above. Between Clarno and Clarno Rapids impacts would be similar to those described for Alternative B. Allowing the use of small electric motors would not impact fish or fish populations.

Segment 3 - Same as in Alternative B.

Alternative D

Closing all river segments to motorized boating all year would eliminate the possibility that impacts associated with motorized boating could occur. Since motorized boating occurs at low levels and seldom when use has the greatest potential for impacts eliminating motorized boating is not likely to affect fish or fish populations.

Alternative E

Segments 1 and 2: Same as Alternative A except closing the river to motorized boating in October and November would reduce the period motorized boating could affect migrating steelhead and spawning fall chinook.

Segment 3: Same as Alternatives B and C except closing the river to motorized boating in October and November would reduce the period motorized boating could affect migrating steelhead.

Dispersed Camping

Alternative A

Impacts of dispersed camping on fish would be the same as the impacts described for boating use levels except where primary access is via road. Where access is by road impacts of dispersed camping would be the same as those described for access.

Common to All Action Alternatives

Segment 1 - Same as in Alternative A.

Segment 2 - Designating a dispersed camping area near Clarno and identifying sites suitable for camping would encourage use of these areas and decrease use in other areas. As described under impacts on water quality this action would provide habitat more suitable to the needs of fish when compared to conditions under existing management. Because the sites impacted are small compared to total drainage area of the river changes in water quality and fish habitat are not likely to be measurable.

Segment 3 - Identification of sites that can best handle human use would have the same impacts described above for Segment 2.

Segments 10-11 - Identification of sites that can best handle human use, providing signs, and installing barricades to prevent motor vehicles from entering riparian areas would have the same impacts as described for Segment 2. In addition, by keeping motor vehicles out of riparian areas, the potential for the spilling of petroleum product that could affect water quality would be reduced.

Developed Facilities

Alternative A

Continuing existing maintenance schedules on developed recreation sites would not change riparian vegetation in these areas and consequently would not change cover conditions or water quality. These sites cover a small portion of the entire river corridor and any changes are not likely to impact water quality or fish habitat.

Alternative B

Improvements to existing sites and development of new sites at Twickenham and Burnt Ranch to replace sites that would be permanently closed would encourage more use with an expected loss of some

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riparian and upland vegetation near the river at these sites. However the permanent closure of the two existing sites would allow riparian vegetation to recover to natural conditions in these areas. The proposed Twickenham site is a gravel bar that would could accept the new use without compromising fish habitat. The development of a boat ramp at Rock Creek would provide an opportunity for more use of the river between Cottonwood and Rock Creek. As a result of this opportunity increased harvest on smallmouth bass would occur and an increase in mortality of steelhead would result as more anglers would take advantage of the catch and release steelhead fishery.

Alternative C

Impacts would be the same as in Alternative B plus the impacts associated with the development of a site at Ellingson Mill in Segment 10. Because this site is already a heavily used dispersed site trampling of riparian vegetation and compaction of soils has already occurred. By controlling travel routes and campsite location, and preventing vehicle access to riparian vegetation overland stream runoff would be reduced as would erosion and sediment transport. As a result water quality and habitat would better meet the needs of fish than Alternative A.

Alternative D

Where sites are closed there would be reduced trampling of vegetation and soil compaction than when sites are open to use. As a result vegetation would increase in vigor and density compared to the existing condition in these sites and overland stream runoff, erosion, and sediment transport would be reduced. As a result water quality and habitat would better meet the needs of fish than Alternative A. Given the small area affected the magnitude of the change would be small. In addition, without a subsequent decrease in use, other sites would be subject to increased use by recreationists displaced by the closures. New areas would be likely to be subject to increased use and associated impacts.

Public Access

Common to all Alternatives

Improved access at Priest Hole and designation of Public Access at Twickenham would be expected to result in either no change or a slight improvement in riparian vegetation, since the impacts associated with recreation use at Twickenham would be transferred to a new location, with the same amount of stream footage. Vegetation at the closed site would recover to natural conditions and use at the new site would occur on a gravel bar that is better able to handle the impacts of launching and taking out boats and rafts.

Alternative A

Because public road mileage is low in Segments 1, 2, 3 the amount of sediment introduced into the river and water quality and fish habitat problems associated with roads is also relatively low. In other segments where roads parallel the river water quality would be subject to higher levels of introduced sediment. Existing road access is sufficient to allow increasing numbers of anglers to access the John Day River fishery.

Alternative B

Improving current access would not directly impact fish; however, expected increased river use would have impacts similar to those discussed for impacts of this alternative on dispersed camping. Road effects are the same as in Alternative A with the additional effect of increased disturbance in some areas. These impacts would be mitigated through proper road design and maintenance which would decrease the amount of sediment introduced into the river from roads not currently maintained.

Alternative C

Providing the maximum reasonable access to the river would increase the presence of fishermen and increase fishing pressure on fish. Additional road construction to provide access would increase effects of roads on water quality compared to Alternatives A and B. As in A or B, a reduction in the amount of sediment introduced into the river may be derived from maintenance of roads not currently maintained.

Alternative D

Closure of access points would decrease use in those areas and allow for the increase in riparian vegetation which would provide cover for fish and provide more filtering of runoff as described in riparian habitat management. By contributing to better water quality fish habitat would be enhanced. Reduction in access would reduce fishing pressure at locations previously accessible.

Commercial Services

Since all users must comply with regulations and since commercial use falls within any boating use

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level alternative, commercial use would have no impact on fish or fish populations under any alternative.

Energy and Minerals Resources

Alternative A

Continuing existing management of Energy and Minerals Resources would maintain existing risk of erosion, surface runoff, and leaching of mining chemicals and heavy minerals into groundwater. Erosion and surface runoff would continue the introduction of sediment in the river which results in sediment filling cracks in the substrate and eliminating cover for small fish and macroinvertebrates upon which fish feed. Sediment would also continue to become embedded in spawning gravels which reduces the reproductive success of salmonids. Surface runoff from mining operations can introduce toxic chemicals or high concentrations heavy metals into the waterway and create water quality conditions that do not support aquatic life. The current low level of mining has little potential to affect water quality within the Wild and Scenic River Corridor and very little within the planning area.

Alternatives B and C

Where no surface occupancy for leasable mineral resources would be implemented the probability of impacts on fish and fish habitat would be reduced. New stipulations for locatable mineral extraction would reduce the probability that sediment and chemicals would be introduced into the river. As a result water quality would be maintained and consequently fish habitat protected.

Alternative D

Closing the Wild and Scenic River corridor to mining would eliminate mining impacts from within the Wild and Scenic River Corridor.

Land Ownership, Classifications, and Use Authorizations

There are no specific proposals addressed in this plan, impacts to resources will be discussed in future site specific proposals. Potential impacts could include increases in riparian areas associated with changed grazing management on acquired lands, or degradation or removal of riparian vegetation associated with increased human use via access and dispersed or developed recreation areas.

Wildlife

Actions considered in this plan but not discussed below would have no impact on wildlife and wildlife management.

Riparian and Aquatic Habitat Management

Continuing cottonwood outplanting would lead to increased riparian structure and therefore an increase in riparian habitat available for wildlife species.

Wildlife Management

No specific actions proposed, see description for Wildlife in Chapter 3.

Information and Education

Existing Management

Continuing the current level of information and education about controlling the spread of noxious weeds, reducing the threat of wildfire, and other information that aids in the public's education of wildlife, wildlife habitat needs, and risks to those habitats would increase the opportunity to support the protection and enhancement of wildlife.

Common to All Action Alternatives

Same as Alternative A except that information and education efforts would be increased.

Law Enforcement and Emergency Services

Existing Management

Continuing existing management would have no impact to wildlife.

Common to All Action Alternatives

Increased presence of law enforcement during hunting season would increase compliance with game laws.

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Grazing-

Upland Wildlife Habitat, Upland Wildlife Species, and Grazing

Livestock management practices that can affect wildlife habitats and populations include livestock numbers, timing and duration of grazing, animal distribution, livestock types, and specialized grazing systems (Kie et al. 1996). These practices can be modified to reduce or eliminate adverse effects on wildlife, and sometimes to enhance wildlife habitat (Severson 1990). As might be expected, each grazing system varies somewhat in its influence on wildlife. Each may increase or decrease the abundance and quality of food and cover for wildlife, or simply affect the social interactions between livestock and wildlife (Robinson and Bolen 1989). Controlled light-to-moderate grazing will generally not damage wildlife habitat even in arid regions and most wildlife species are tolerant and some may benefit from grazing at light to moderate intensities (Holechek et al. 1989).

Livestock can affect wildlife habitat directly by removal and/or trampling of vegetation that could otherwise be used for food and cover. Unplanned or poor grazing practices frequently result in trampling of nests, reducing cover, and removing food such as insects, seeds, or fruit (Skovlin 1984). Typically poor grazing practices, if allowed to continue, result in changing the seral stage of the vegetative community. This change usually results in a shift from perennial to annual herbaceous species and an increase in woody species. Wildlife species utilizing each vegetative community will generally also shift in abundance and/or diversity.

Some grazing investigators have reported increased rodent species richness under moderate or heavy grazing pressures (Moulton 1978). In Idaho, small mammal density was lower but species richness and species diversity were higher in grazed sites. Deer mice were almost twice as abundant in the grazed area, but montane voles were more common in the ungrazed exclosure (Medin and Clary 1990). Cooperrider et al. (1986) points out that small mammals may be adversely affected by domestic livestock grazing, and added that small mammals that are added or increase in numbers are usually habitat generalists whose habitat requirements are broad.

Songbirds that nest in shrubs or trees may not be directly affected by timing or intensity of grazing, but may be indirectly affected by the stage of plant succession resulting from past grazing practices. Direct effects may be the removal of cover through grazing or browsing which may alter current feeding habits or nesting habitat (Skovlin 1984). Bock et al. (1993) in reviewing the literature reported that of 43 neotropical migratory birds, 8 responded favorably to grazing, 17 were negatively affected, and 18 were unresponsive or showed mixed responses. Wiens and Dyer (1975) suggested that ecological plasticity of many shrubsteppe birds would make them unresponsive to moderate levels of livestock grazing. Unfortunately, there have been no long-term, well replicated studies comparing the avifaunas of grazed and ungrazed shrubsteppe communities and no aspect of grazing effects on shrubsteppe neotropical migratory birds is well understood. (Bock et al. 1993).

Riparian Wildlife Habitat, Riparian Wildlife Species, and Grazing

Riparian vegetation and its structural arrangement have high value for wildlife. Many vertebrate and invertebrate species depend directly or indirectly on riparian vegetation for food, cover, or other life requisites (Kie et al. 1996). For example, of the 363 terrestrial species known to occur in the Great Basin of southeastern Oregon, 288 are either directly dependent on riparian zones or utilize them more than other habitats (Thomas et al. 1979). Riparian habitat is used by more bird species than any other habitat type within the interior Columbia basin, where 84 of 132 migrant birds use riparian vegetation for nesting, brooding, and foraging (ICBEMP 1997). For many riparian birds, presence or absence in a particular habitat is highly dependent on the complexity and density of vegetation structure, especially in the shrub and herbaceous layers (Dobkin 1994). In addition, riparian soils and substrates are important to amphibians, reptiles, and small mammals because these wildlife forms inhabit subsurface environments. Hence, the temperate microclimate, availability of moisture, and greater biomass production provide for complex food webs of which wildlife is a part (Kie et al. 1996).

The most direct effect of livestock on riparian vegetation is the removal of lower vegetation layers. Ground nesting birds appear to be the most negatively affected by livestock grazing (Saab et al. 1995). In a study by Ammon and Stacey (1997), artificial nests were placed in an area that had been traditionally summer grazed and one that had been rested for 30 years. Their findings indicate that livestock grazing may not only affect availability of nesting substrates for riparian birds by reducing

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stream side vegetation, but could influence bird populations by facilitating nest predation, possibly increasing the detectability of nests or through changes in predator assemblage.

Some ground nesting birds, such and shorebirds or waterfowl, may use emergent aquatic vegetation for nesting and usually feed in or near water. Grazing at certain seasons may disrupt nesting but not feeding, or visa versa. On the other hand, a few birds such as the killdeer benefit from grazing (Skovlin 1984).

Where grazing can be controlled in riparian habitats and seasonally light-to-moderate forage removal is practiced, the impact can be small to riparian vegetation and wildlife (Cooperrider et al. 1986). When riparian systems are grazed, moderate use during late-fall and winter, or short term use in spring, will be less damaging than continuous or growing-season grazing (Bock et al. 1993), and would thus have less of an impact on wildlife species that use these habitat types. Impacts to wildlife by heavy domestic livestock grazing vary from moderate to extreme depending on whether grazing is seasonal or year-long. Seasonal grazing generally allows limited tree and shrub regeneration that provides some habitat and forage for wildlife, whereas heavy, year-long grazing eventually leads to removal of most, if not all, of the palatable riparian vegetation (Cooperrider et al. 1986).

It should also be noted that elk, deer, and other wildlife can also contribute to overuse of riparian areas (Kie and Lift et al. 1990).

Grazing and Wildlife Habitat Conclusion

Food and cover requirements of one wildlife species or group are often directly opposite of another. Vegetation requirements for cover of many wildlife species are often much different than those for feeding. These requirements may also vary drastically between seasons for some wildlife species. Therefore, diversity in vegetation structure, vegetation composition, and terrain favors the highest diversity and density of wildlife. If carefully controlled, livestock grazing can be a useful tool to obtain and maintain habitat diversity (Holechek et al. 1989). Bock et al. (1993) reject the notion that livestock grazing is either universally detrimental or beneficial to rangelands and their wildlife. However, livestock are the organisms largely responsible for determining structure and function of ecosystems of which they are part.

Livestock grazing systems that enhance riparian vegetation and provide an increase in desirable rushes, sedges, and riparian woody species would increase the suitability of riparian habitats for wildlife use. Even if the general trend in riparian habitat is upward it is expected that some areas would respond more quickly than others. The vegetation, and therefore the different wildlife species, that different riparian sites will support is based on site potential and the ability of those sites to harbor riparian vegetation.

Fences, Grazing Management, and Wildlife

Fences provide an opportunity to manage livestock grazing and can be used to attain a desired status of vegetation (Kimball 1957, Scotter 1980, Holechek et al. 1982, Kindschy 1986, Kie and Loft 1990, Severson 1990).

Fences, however, have the potential to disrupt normal movement patterns for big game (bighorn sheep, mule deer, elk, and pronghorn) which, under extreme situations, may result in death from collisions, entanglement, or entrapment (Kindschy 1996). Proper fence design and use of appropriate construction materials can reduce the adverse effects of fences. Examples of this are flagging new fences with white flagging or using white-topped fence posts to increase visibility of a newly constructed fence to wildlife (Kie et al. 1996).

Many livestock fences are built on survey lines, such as “section” boundaries, with no regard to local topography, location of water, or other biological considerations. The result, in many instances, is poor livestock distribution and forage utilization (Sanderson et al. 1990). Big game are more likely to encounter obstruction to movement when fences contour around steep hill slopes. All wildlife suffers when portions of improperly fenced range are constantly stripped of vegetation (Kindschy 1996).

Alternative A

See description of effects of grazing management to vegetation and Table III-E and Appendix L which describe grazing management and changes by alternative. Riparian habitat and wildlife species associated with riparian habitat should increase with riparian oriented grazing strategies designed to improve riparian vegetation. Riparian structure, density, and diversity appear to be the most important attributes for riparian associated wildlife species, and these attributes should increase with riparian oriented grazing strategies.

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Some grazing strategies generally do not implement riparian oriented grazing. These strategies include season long grazing, spring-summer grazing, and summer grazing and have the potential to decrease available riparian habitat, thus impacting those wildlife species that use riparian habitat. These types of uses can be mitigated by activities such as regular herding, short grazing periods, or close monitoring of utilization levels. In those areas where these grazing strategies are mitigated, impacts to wildlife would also be decreased.

In allotments where riparian areas would be grazed early in the spring, the potential for trampling of nests and reducing vegetative cover, thus increasing chances of predation, would affect ground nesting birds. Allotments that are grazed between March 1 and April 15 would experience conflicts between grazing and nesting waterfowl in those areas where livestock have access to riparian vegetation (see environmental consequences of recreational activity to wildlife). This is most prevalent in Segments 1 and 2.

Desired wildlife habitat conditions would be attained in upland habitats with perennial grass, forb, shrub, and tree components under this alternative for those grazing systems that are designed to maintain or increase herbaceous perennial vegetation. Some of the desired wildlife cover and structure conditions in rangelands currently influenced by annual grass species (cheatgrass and medusahead rye) may be difficult to obtain in the short or long term without rehabilitation efforts, regardless of the grazing system.

The planned construction of approximately 5 miles of new fence could result in increased wildlife collisions, entanglement, or entrapment problems.

Alternative B

Same as Alternative A except that riparian oriented grazing strategies would be implemented on more pastures within allotments, thus having the potential to increase riparian habitat and associated wildlife species in those areas.

The construction of 12 miles of new fence could result in increased wildlife collisions, entanglement, or entrapment problems.

Alternative C

Same as Alternative A except that, by eliminating grazing on public lands within the riparian area, ground nesting birds and nesting waterfowl in riparian areas on public land would not be affected by livestock.

This alternative would potentially include 147 miles of fence on public land and 141 miles of fence on private land for a total of 288 miles of fence along the riparian corridor. The necessity for high levels of additional fencing would increase the likelihood of some unavoidable disruption to some big game movements, increased vulnerability to predation, and injury or death due to collision or entanglement. Where there is a need for escape from human disturbance, death losses or injury that are ultimately attributable to fencing can result. Properly designed fencing reduces the likelihood of death or injury to wildlife, but it does not completely eliminate potential for harm.

This alternative significantly increases the physical barriers that bighorn sheep would have to navigate as they utilize the river for a water source or cross back and forth to utilize habitat on both sides of the river, especially in Segment 2. An increased risk to bighorn sheep by entanglement in fences would occur because these fences would be constructed to maximize livestock control and not to recommended bighorn sheep specifications (BLM Manual H-1741-1, 1989). Fencing in bighorn sheep habitat can limit bighorn use of available habitat and increase mortality. The principal limitation of fencing in areas having bighorn sheep is that they typically try to go through or under fences. Larger rams can become entangled when trying to move between the strands of wire (the wire becomes caught inside the curl of their horns). Death typically results from fighting the fence unless the wire is weak and breaks.

Alternative D

Same as Alternatives A, B, and C except more upland wildlife habitat within the Wild and Scenic River corridor would be excluded from livestock grazing.

This alternative would likely include 147 miles of fence on public land and 109 miles of fence on private land for a total of 256 miles of fence along public/private boundaries within wildlife habitat areas. The entire landscape could not be managed in a full cooperative partnership. The livestock fences that would be built on survey lines, such as “section” boundaries , generally do not take in to consideration topography and other biological considerations and would increase the collision, entrapment, and entanglement problems of fences on wildlife.

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Agricultural Lands

Common to All Action Alternatives

Disposal of public parcels that constitute a portion of a larger agricultural field owned by a private party would have no suspected impact to those wildlife species that utilize the agricultural lands. The management of the parcels is not expected to change when they are transferred from public to private ownership. The opportunity to acquire more riparian or sagebrush/grassland habitat would be realized. This would slightly increase (by approximately 25 acres) the number of acres of these types of habitats available for wildlife.

Alternatives A and B

Continuing to manage public agriculture lands under the existing guidance would provide a diversity of both agriculture land production, and the vegetation species associated with that production, and native vegetation for the use by wildlife species.

Species that would benefit from the continuation of agriculture production include: mule deer, elk, and pronghorn that utilize agriculture crops year round, but mainly during the late summer and fall months when native vegetation has cured out and many agriculture crops are still green. The tricolored blackbird, a Bureau Sensitive Species, feeds on a variety of seeds and waste grain following breeding season. Pheasants, valley quail, Hungarian partridge, and mountain quail all utilize grain crops and food / cover crops produced on agriculture fields. These species would continue to utilize those crops where these types of vegetation are grown.

On those fields where riparian shrub/tree propagation is conducted an increase in habitat for several species of neotropical migratory birds, including but not limited to mourning dove, western kingbird, American robin, yellow warbler, yellow-breasted chat, lazuli bunting, song sparrow, white-crowned sparrow, and Bullock's oriole, would occur.

Since no increase in agriculture production is proposed under this alternative, those species associated with the sagebrush/bunchgrass habitat type would not experience a decrease in available habitat.

Alternative C

Same as Alternatives A and B except that those species that utilize commodity agriculture would have a slightly reduced available habitat and those species that utilize native habitat would have slightly increased available habitat.

Alternative D

Same as Alternatives A and B except those species that would utilize food and cover plots and annual grain crops would have reduced habitat once this alternative is completed. Those species that utilize native habitat would have slightly increased available habitat.

Impacts of Recreational Activity to Wildlife

Recreational activity and its effects on wildlife can range from relatively minor to so severe that virtually all the vegetation is destroyed locally (Cooperrider et al. 1986). Riparian systems are very attractive to recreationists when they contain water, interesting plants and animals, shade, and numerous other enjoyable features in the otherwise arid and semiarid environments (Cooperrider et al. 1986). Recreational activities that can affect wildlife include, but are not limited to; boating, angling, bird watching, swimming, camping, picnicking, and walking.

Construction of campgrounds/campsites in riparian zones enhances the opportunity for human/wildlife conflict but simultaneously decreases the value of the riparian zone as wildlife habitat because of disturbance by humans, trampling, soil erosion, compaction, and loss of vegetation (Settergren 1977). Many form of wildlife leave areas with recreational impacts and others, such as lizards, snakes, frogs, and salamanders, are destroyed by children and pets (Cooperrider et al. 1986). The more campsites that occur in an area, the more riparian habitat that potentially could be impacted, and the more chances of human/wildlife interaction.

Liddle and Scorgie (1980) state that all recreational activities carried out on the shores of water bodies are potentially disturbing to animals living at the water margin and also occupying the surface. Birds are apparently most seriously affected and other groups may be equally sensitive to public pressure but, because they are less conspicuous and less easily studied, their responses may go undetected. Species such as beavers, river otters, California bighorn sheep, mule deer, upland game birds and neotropical migratory birds are also affected by recreational disturbance in the John Day River corridor.

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Because Segment 1 and most of Segment 2 occur in the John Day Wildlife Refuge, waterfowl, namely Canada geese *(Branta canadensis)*, will be discussed in detail. In order to determine impacts of recreational activity to Canada geese a closer examination of the breeding and post-breeding season in needed. The BLM found no studies on the chronology of breeding and post-breeding activity on the John Day River. Information by Bellrose (1976) will be used to describe, generally, the breeding and post-breeding activity by Canada geese. Canada geese appear to begin nesting along the Columbia River as early as the first part of March, the earliest of the waterfowl species. Females incubate the eggs for an average of 25 to 30 days. The average clutch size is 4 to 7 eggs. On average, goslings fly within 50 to 75 days of hatching. Adult Canada geese generally molt, rendering them flightless for a period of 3 to 5 weeks while raising their clutches, and regain their flight feathers about the time their young reach flight stage. If a nest fails, adults generally will attempt to renest.

Disturbance appears to affect waterfowl most during the nesting and brood rearing stages of development. The biggest losses come when parents get flushed from the nest disrupting incubation, predation or destruction of the nest itself, and separation of goslings from their parents early after hatching increasing mortality and predation.

Broods of Canada geese seem to be most susceptible to human disturbance during the first few weeks after hatching, but older broods seem to be relatively tolerant of repeated human disturbance (Eberhart et al. 1989). Sherwood (1965) also found that family ties of Canada geese are fragile during the first 3 to 4 weeks of life, and a brood unit could be easily broken up. Parents in this study headed for the water after a disturbance and some goslings were lost in dense vegetation. Parent's usually swam off without goslings that could not follow. Desertion of Canada geese nests can be minimized in areas with much human activity by regulating fishing seasons and access during the nesting season (Krohn and Bizeau 1980). The greatest recreational damage to a Canada goose population on the Columbia River was harassment caused by picnics, beach parties, and photographing nests (Hanson and Eberhardt 1971). If waterfowl use heavily fished bodies of water for breeding, resting, or feeding, they will be disturbed often by anglers who use boats or fish from the banks (Johnson 1964).

Motorized boats caused goose families to flee and broods to separate making goslings susceptible to predation in a study by Mickelson (1975). The author suggested that human activities such as boating be restricted on waterfowl nesting and brood-rearing grounds to reduce predation on young birds.

For analytical purposes it is assumed that the majority of the Canada geese on the John Day River initiate nesting between March 1 and March 15. Incubation would end between March 26 and April 15. The average date at which adults would fly after molting and young would begin the flight stage would be sometime between May 15 and June 29.

Boating Use Levels

Alternative A

Unrestricted numbers of boaters proposed in Alternative A would have the potential to displace many riparian wildlife species including nesting waterfowl, and could lead to the degradation of riparian vegetation, further affecting wildlife species that use the riparian habitat type. The majority of the boating use in Segments 1,2, and 3 in 1998 occurred in May, June, and July (852 launches and 2075 boats). This is after most waterfowl nesting and incubation has occurred, and throughout the period in which waterfowl are raising young. There was some use during March and April (77 launches and 127 boats) which would potentially cause disturbances to nesting and incubating waterfowl. Boating use is expected to grow at a 4% annual rate which would increase the number of disturbances to wildlife. Increased use is expected to occur from May through October, with most additional launches occurring on weekends and holidays in May through July.

Disturbance to other wildlife species that utilize the river corridor such as beaver, river otters, California bighorn sheep, mule deer, upland and neotropical migratory birds would potentially occur with the most disturbances occurring during the time that these species are actively involved in the raising of their young.

Alternative B

Targeting the number of launches at 1998 levels would have similar impacts as in Alternative A except this alternative has the potential to spread boating use throughout the week, instead of just on the weekends. New and repeat boaters would be asked to voluntarily launch on weekdays to maintain daily launch levels at or below 1998 levels. This would potentially increase the number of disturbances to

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wildlife on weekdays where there were typically less launches. It is assumed that the total number of disturbances would still continue to grow at 4% annually.

Fewer numbers of launches per day would mean less campsites are needed per day, which would decrease the likelihood that new campsites would be pioneered and riparian habitat and associated wildlife species would be less likely to be disturbed.

Alternative C

Similar to Alternatives A and B except that targeting a further reduction in daily launches would increase the numbers of launches on weekdays, decreasing the number of disturbances per day on weekends, and shifting some new and existing use to the month of April during waterfowl nesting and incubation periods.

Alternative D

Same as Alternatives A and B except that target launch levels would be the most restrictive, allowing the least number of launches per day. In addition to moving the new and repeat use to weekdays, this alternative would move more use to the months of March and April during waterfowl nesting and incubation periods.

Alternative E

Same as C except that limiting launches of motorized boats to 1 per day in March and 2 per day in April would limit the amount of disturbance of wildlife by motorized boats during those months.

Motorized Boating

Alternative A

Continuing to close Segments 1 and 2 to motorized boat use from May 1 to October 1 would provide protection to waterfowl in the John Day Wildlife Refuge during post hatching activities, but not during the most critical times of nesting, incubation, and brood rearing.

Disturbance to other wildlife species that utilize the river corridor such as beaver, river otters, California bighorn sheep, mule deer, upland and neotropical migratory birds would potentially occur.

Winter use by motorized boats, which would also occur under this alternative beginning October 1, can be detrimental to waterfowl if it reduces energy intake so much that it cannot be compensated by either increasing the rate of food intake during undisturbed periods or avoiding disturbance by nighttime feeding. In a study by Belanger and Bedard (1990) the energetic consequences of snow goose *(Chen caerulescens)* responses to disturbance were examined. The study found that more than 2.0 disturbances per hour may cause an energy deficit that no compensatory behavior mechanism (e.g. feeding at night) can counterbalance. The BLM assumes the consequences to Canada geese would be similar to those found in this study. However, current motorized boating use on the John Day River during the winter (registered users show 2 total launches in 1998 for the combined months of October - February, Table II-U) is far less than that level which was determined by Belanger and Bedard (1990) to cause a detrimental energy deficit. An increase in motorized boating to a level that approaches 2.0 disturbances per hour would cause justified concern. It should be noted that one motorized boat, depending on the length of time on the river and the number of trips up and down the river, can cause multiple disturbances.

Although no motorized boating occurs in Segments 10 and 11, the potential for disturbance would still be possible under this alternative.

Alternative B

Closing Segments 1 and 2 to motorized boating from March 1 to December 1 would provide protection to waterfowl from motorized boats during nesting, incubation and brood rearing activities in the John Day Wildlife Refuge. Disturbance to wintering waterfowl would still have the potential to occur from December 1 to March 1. If the WSA's in Segment 2 become designated and recommendations to allow no motorized boating are adopted, no disturbances from motorized boats to waterfowl would occur within the boundaries of those WSA's. Closing Segment 3 from April 1 to October 1 would provide protection to waterfowl after the majority of clutches are hatched, but would not provide protection during the incubation and start of the hatching period. Disturbance to wintering waterfowl would still have the potential to occur.

Although no motorized boating currently occurs in Segments 10 and 11, this Alternative would ensure that no future disturbances to wildlife would occur.

Alternative C

Closing Segment 1 from April 1 to December 1 (within the John Day Wildlife Refuge), and Segment 2

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between Clarno and Clarno Rapids from April 1 to October 1 (outside the John Day Wildlife Refuge) would provide protection to waterfowl after the majority of clutches are hatched, but would not provide protection during the incubation and start of the hatching period. Disturbance to wintering waterfowl and other wildlife species would still have the potential to occur.

Closing Segment 2 below Clarno Rapids year round would provide protection to waterfowl and other wildlife from motorized boating disturbance within that portion of the John Day Wildlife Refuge.

Segment 3, Same as Alternative B.

Segments 10 and 11 would have the same impacts described for Alternative B.

Alternative D

No impacts to waterfowl or other wildlife species would be observed.

Alternative E

Same impacts as Alternative A in Segments 1, 2, and 3 except extending closure to motorized river travel during October and November would eliminate impacts from motorized boating on wintering waterfowl during these months.

If WSAs are designated Wilderness, closing WSAs to motorized travel would eliminate potential impacts from motorized river travel from within Wilderness segments of the river.

Dispersed Camping

Alternative A

See impacts to vegetation and fish from dispersed camping.

Common to All Action Alternatives

LAC would determine what changes need to be made to prevent damage to wildlife resources.

Developed Recreation

Alternative A

See impacts to vegetation and fish from developed recreation.

Alternative B

Impacts to riparian vegetation would result in a small loss of riparian habitat. See impacts to riparian vegetation.

Alternative C

Similar to Alternatives A and B. See impacts to riparian vegetation.

Alternative D

Closed sites would have reduced use if riparian vegetation suppressed would self-restore.

Public Access

Alternative A

Existing levels of human/wildlife disturbance would continue.

Alternative B

Improving existing access has the potential to cause a slight increase in human/wildlife disturbances.

Alternative C

Same as Alternative B except that the potential for human/wildlife disturbances would increase. See also impacts to riparian vegetation and fish.

Alternative D

Reducing public access would reduce the potential for human/wildlife disturbances.

Commercial Services

Commercial use would not affect wildlife under any alternative because use levels are determined by Boating Use Levels.

Native American Uses

A number of alternatives would impact Native American Indian uses, although the degree to which those uses would be affected is unknown. Action alternatives related to access and vegetation would have the most direct effect. Preventing vehicle access to selected public lands, for example, would certainly limit use of those areas by a segment of the Native American Indian population, but not all. Alternatively, the same action could protect known

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use areas from the effects caused by general, unrestricted activities. Action alternatives which aim to increase the habitat structure and diversity of riparian and upland vegetation within the scope of the plan can provide increased opportunities for Native American Indians to collect traditional food and product species.

Impacts of the Alternatives on Issues Resolved by Continuing Existing Management and Additional Actions

Water Quantity and Quality

Alternatives involving actions directly addressing the following issues would have no impact on water quantity and water quality: Fish Management, Wildlife, Native American Uses, Paleontological Resources, Cultural Resources, Law Enforcement and Emergency Services, Boating Use Allocation, and Commercial Services.

The following describes or references impacts of the alternatives on Water Quantity and Quality.

Riparian and Aquatic Habitat Restoration

A properly functioning riparian area performs various functions:

Dissipation of stream flow energy - Riparian vegetation functions to reduce the velocity of water at high flow periods by increasing the hydraulic resistance to flow and therefore reduces the energy and erosive capacity of the water (Schumm and Meyer 1979). Riparian areas also function to dissipate energy associated with surface runoff by dispersing and slowing the surface runoff from agricultural land areas and other up slope areas thereby decreasing the water's erosive potential (Hansen et al.1995).

Sediment and nutrient filtration - During high flow periods much of the sediment load within the stream is the result of bank erosion from unstable streambanks. Riparian vegetation reduces the transport rate of sediment and nutrients by holding streambank soil intact via roots and also increases the hydraulic resistance to water at high flows. This, in turn, decreases water velocities while increasing sediment deposition within riparian areas. Sediment deposition is part of the process that builds and stabilizes streambanks. Nutrient filtering performed in riparian areas can help control agricultural non-point source pollution (Lowrance et al. 1985).

Store water and recharge the groundwater aquifer - Infiltration of surface runoff is high in properly functioning riparian areas due to the dissipation and slowing of overland flow which allows more water to seep into the riparian soils and subsequent groundwater aquifer. This allows for some storage of water during periods of high runoff that is discharged during later, drier periods and serves to maintain stream flow.

Shade producing capability - Riparian vegetation produces shade according to size and extent of vegetation, and proximity to the stream. Black cottonwood, when mature, will produce more streamside shade than the mature, low growing willow now present within the John Day River corridor. Shade presence along stream banks reduces the input of heat energy from solar radiation into the stream. Reduced input will decrease the amount of stream temperature fluctuation experienced during the summer. This leads to reduced summer maximum water temperatures. Elevated stream temperatures affect fish, salmonids in particular, in two important ways: 1) body metabolism in cold-blooded species is controlled by environmental temperatures, the warmer the environment (i.e. the water) the higher the metabolic rate. Salmonids such as trout, salmon and steelhead function optimally at lower environmental temperatures than warmwater species, such as smallmouth bass, located within the John Day River. When water temperatures rise and the metabolic rate of salmonids increases, energy needs, even when at rest, increase. In order to compensate for this condition the salmonid must consume more food or convert stored body reserves to energy. Either response increases the need for food and the expenditure of more energy in the search for more food. If high temperatures occur over a sufficient time mortality can be the result. Conversely, warm water species, such as smallmouth bass, can be stressed when water temperatures drop below their optimum range, decreasing metabolism and thereby decreasing the amount of energy the fish has for evading predators, foraging, and reproducing. This condition can also lead to mortality if the condition

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persists for a sufficient period of time. 2) Oxygen carrying capacity of water is lowered as temperature increases, therefore the warmer the water the less 'breathable' oxygen is available for fish to utilize. Higher water temperatures create higher environmental stress levels in fish and low oxygen levels over a sufficient period can lead to fish mortality. The specific level is dependent upon species. For example, cold water fish species such as trout and salmon require more dissolved oxygen for survival than warm water species such as smallmouth bass. Therefore an increase in stream temperature could be detrimental to salmon and trout while actually improving habitat for smallmouth bass.

Food production capability - riparian areas are important nutrient cycling areas with respect to instream ecosystems. Riparian vegetation produces most of the detritus (i.e. dead leaves, plants, twigs, insects, etc.) that supplies the organic matter necessary to support aquatic communities (as much as 90 percent (Campbell and Franklin 1979), or 54 percent of the organic matter ingested by fish in a large river (Kennedy 1977)).

Net changes in aquatic conditions resulting from improved functionality of riparian sites would not be detectable. Riparian influence in the river corridor is inversely proportional to the width of the river, i.e. the wider the river the less influence the riparian vegetation exerts on the river. As management continues, increases in riparian functionality will be observed as more riparian areas are treated with cottonwood outplantings and the trees planted previously grow and mature.

Impacts of Water Quantity and Quality Management

Existing Management

Continuing existing cooperative and coordinated efforts would contribute to increased water quantity and reduced introduction of sediment and other pollutants, and lower water temperature during warmer periods of the year.

Additional Actions

Implementation of additional coordination between John Day River co-managers would increase the likelihood that additional water could be made available for instream beneficial uses while still meeting the offstream needs of agricultural users.

Information and Education

Specific attention to water quality and quantity issues at user sites along river could lead to behavior modifications that lead to an increase in water quality and water quantity. Continued work with all user groups to educate and become more involved with water quality and water quantity management would increase water quality and water quantity in proportion to the amount of education and application of water quality and water quantity enhancing management actions.

Private Land Uses

See discussion of water quality issues with respect to Senate Bill 1010 under impacts of private land uses to fish and fish management.

Scenic Quality

There would be no negative impacts to water quantity and quality as a result of any actions described for scenery. The need for screening via vegetation of some developments would provide for an increase in riparian vegetation and/or large tree component which leads to an increase in plant diversity and an increase in surface water infiltration into soils. With regard to State Scenic Waterway Rules involving scenic quality the potential for development is reduced and therefore a decrease in potential water quality and water quantity impacts.

Impacts of Vegetation Management

Management of vegetation through management of grazing and cultivated agriculture has the potential to impact water quantity and water quality by altering the ability of the land to, as described by Bedell and Borman, 1997, capture and store water and as a result to delay and spread, over time, the release of water. These functions are achieved by increasing infiltration of moisture, reducing overland flow in response to precipitation, and increasing the time and amount of water temporarily stored in the ground. Lowarnce (1985) has demonstrated that the greater the percentage of ground covered by native grasses the more infiltration into the ground occurs and the less overland flow occurs. As a result of these consequences the contribution of groundwater to stream flow increases but is delayed when compared to overland flows, thus increasing the amount and duration of flow during natural low flow periods (summer and fall) when compared to flows occurring when lower levels of native grasses are present within a watershed.

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Management actions such as excluding grazing from riparian areas (by fencing and creating water developments away from the river), limiting duration and season of use in riparian areas, rangeland seeding of perennial vegetation, and creating riparian buffers between cultivated lands and the river) (USDI, 1993 TR 1737-9; and USDI, 1998 TR 1737-15) have been demonstrated to increase water tables and subsequently increase late summer instream flow (Elmore, 1998; Jensen, et al., 1989; Barber, 1988; Elmore and Beschta, 1987; and Ponce (1989).

Such management actions do more than increase summer and late season flow. Increased upland and riparian vegetation retains more sediment than lesser amounts of vegetation. Retaining sediment consequently builds up streambanks, thereby creating narrower and deeper stream channels. Because retained sediments are not available for suspension in the river turbidity levels are reduced and the amount of sediment available to precipitate to the bottom of the channel also decreases. Thus not only does retention of sediment build up streambanks but it also reduces the tendency of streams that would otherwise have a high sediment load to build up layers of sediment on the bottom of the channel and thus decrease depth and spread out water over a wider area. Because of a smaller capacity to absorb energy narrower, deeper rivers are cooler than wider, shallower rivers (all conditions otherwise being equal).

Groundwater contributed to the stream channel in summer stream is generally cooler than surface water (Buckhouse, et al., 1997). Thus by increasing groundwater flow increased vegetation can reduce the temperature of instream flows.

In summary any action that would promote appropriate upland and riparian vegetation would be likely to delay runoff, and increase summer and late season flow and decrease water temperature during the summer and turbidity during high flow periods.

As described in Chapter 2 the John Day River system is subject to dramatic fluctuations in flow from year to year, season to season, and even day to day. As a consequence the impacts of any actions on water quantity and quality are likely to be measurable as broad trends only after many decades of monitoring, with continued dramatic yearly, seasonal, and daily fluctuations.

Agricultural Land Management

Alternative A

Continued existing management of the commodity and non-commodity crops located on public land would maintain existing riparian conditions. Removing water from instream and spreading it over agricultural fields would decrease instream flow but some portion of this water would seep into the ground and pass through the soil and eventually back into the stream. Other portions would be completely lost to instream uses through evaporation, transpiration, and metabolism/photosynthesis within the agriculture crop.

As described in Chapter II, specific crops require different amounts of water at different stages of growth. Lack of a riparian vegetation buffer strip between many agricultural fields and the river reduces the opportunities for chemical filtering, retarding overland flow, or seepage into groundwater before irrigation water re-enters the river.

Water use for public land irrigation and subsequent reduction of river discharge would vary within the legal allocation identified in the water right, not to exceed 1/40 cfs per acre, with a theoretical maximum use in the John Day River of 9.6 cfs over 114 miles of river. This is approximately equivalent to 0.37% of the John Day River basins total water rights estimated in OWRD (1986). Changes in the John Day River discharge and water quality (temperature, turbidity, etc.) would likely not be measurable due to relative amount of water used at each location, spatial relation between agricultural lands, and variation in actual use both in duration (time), rate (cfs), and duty (acre-feet).

Potential nutrient and pesticide inputs are expected to be minimal and have no observable consequences due to the slope of the fields (less than 1%), elevation of the fields relative to water surface during irrigation (approx. 5 to 10 feet), and the existence of vegetation and lateral distance between fields and river during irrigation. The primary source of nutrient and pesticide input from agricultural fields into water is through surface soil erosion from agricultural fields. Surface erosion associated to agricultural fields would be minimal to non-existent due to the above parameters. In addition, irrigation is primarily conducted with sprinkler systems which further limits potential runoff. Where flood irrigation is conducted runoff from irrigation would not flow into the river because fields are sloped away from the river. Potential subsurface movement of nutrients and

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pesticides would again be limited by the parameters previously discussed. Existence of vegetation and soil micro-organisms between fields and the river would further reduce potential input into the river. Where active bank erosion along agricultural fields occurs, the potential for sediment, nutrient, and pesticide introduction does exist. This is limited to approximately 500 feet of river bank.

Management Common to All Action Alternatives

Exchange of 25 acres of agricultural lands not immediately adjacent to the river and associated water rights would not result in any observable environmental consequences.

Alternative B

Same as Alternative A plus: Designation of a 14 foot buffer strip between public agricultural lands directly adjacent to the active floodplain would enable this area to filter herbicides, pesticides, and other chemicals as described in Riparian Habitat Management. Buffers that are properly installed and maintained have the ability to: 1) remove up to 50% of nutrients and pesticides; 2) remove up to 60% of certain pathogens; and, 3) remove up to 75% of sediment as noted in a Natural Resources Conservation Service's information bulletin - Buffer Strips: Common Sense Conservation. Cooperation and coordination with lessees to improve water management practices with regard to crop production and irrigation water removal would increase the efficiency of water use and decrease the amount of water removed from the stream. This would increase water quantity in the river and increase the buffering capacity with regard to chemicals and temperature of the water remaining in the river. The amount of additional water kept instream would be small compared to total river flow, even during the low flows of August.

Alternative C

Eliminating all public land commodity production would provide more water for instream use since less would be needed for commodity production. Less water would be removed from the stream during low flow periods, this would increase water quantity and quality during low flow periods.

Alternative D

Eliminating irrigation and restoring natural vegetation in these fields would eliminate presence of pesticide and fertilizer chemicals that could move into the water table and eventually the river. In addition this alternative would promote native vegetation within agricultural fields that would function to reduce surface flow and overland runoff. This would increase water quality and quantity and fish habitat as discussed in Riparian Habitat Management.

Boating Uses Levels

Alternative A

Increased boating expected under this alternative would impact riparian vegetation along the river bank by crushing vegetation and repeated banking of watercraft would scuff the soil and make it difficult for new vegetation to become established. Where removal of riparian vegetation occurs the ability to dissipate stream flow energy, filter sediments and nutrients, store water, provide fish habitat, produce shade, produce food would be reduced compared to a fully vegetated stream bank. Water quality would remain the same because bank area affected by camping and boating use is small compared to the total mileage of river bank.

Alternative B

Maintaining peak use levels would not change water quality because overall use level would remain the same and changes in the condition of campsites are not expected.

Alternative C

Reducing peak use levels would have no impact on water quality because the riparian area that would have increased riparian vegetation would small compared to the total miles of riverbank.

Alternative D

Same as C

Alternative E

Same as C except that limiting launches of motorized boats to 1 per day in March and 2 per day in April would reduce the potential for the introduction of pollutants or other consequences during those months compared to other alternatives that permit motorized boating during the same months.

Motorized Boating

Motorized boating can result in physical and chemical impacts to the water and shore-line. These impacts include: wash (movement of water resulting from its

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displacement by the movement of a boat across the water), propeller action, direct contact, and pollution from petroleum powered motors. These impacts depend on amount and extent of boat use within the water body. Wash associated with motorized boating depends and the size of craft (i.e. amount of water displacement), and the speed and power of the craft. Wash causes bank erosion when water crashes against the bank. The amount of erosion depends on the size, force and extent of the wash. Wash also causes turbulence which stirs up sediment on the stream bottom, increasing turbidity. Erosion results in a loss of root stabilization which leads to a decrease of submerged, emergent and floating plants, loss of plants in turn leads to less stable banks and more erosion. Propeller action from an outboard motor can disrupt the stream bottom and uproot vegetation. Direct contact involves collision with the stream bank that results in removal of emergent or submerged vegetation. These areas usually coincide with dispersed camping or day use areas and also are chosen from the sand/small gravel/sediment substrate that does not scratch or damage boat hulls when put aground. There is a much higher potential of fuel and oil being introduced into river from motorized boats (either accidently or through the normal functioning of two-stroke engines) than other recreation uses. Although magnitude of leaks or spillage is very small in relation to the amount of water in the river, it only takes a 1 ppm (part per million) concentration to be lethal for fish. This could decrease water quality and prove lethal in small localities to fish species within the river. Some estimates suggest that up to 10-20% of fuel used in two-stroke engines are discharged directly into the water (Jackivicz & Kuzminski, 1973a).

Alternative A

With predicted levels of increased usage this alternative would have the highest probability of the types of impact described above compared to the other alternatives.

Segments 1 and 2 - Allowing motorized boating from October 1 to April 30 would limit potential for impacts from motorized boating to this time period. The small number of motorized boats currently using the John Day during these times would reduce the likelihood of the types of interactions described above.

Segment 3 - Continuing existing management would allow for the full range of impacts described above. The small number of motorized boats currently using the John Day during these times would reduce the likelihood of the types of interactions described above.

Common to All Action Alternatives

Closing Segments 10 and 11 to motorized boating would have little impact on water quality because there is no known motorized boating occurring at this time. This action would eliminate the potential for impacts resulting from motorized boating in the future.

Alternative B

Segment 1 - Same as Alternative A and Boating Use Levels Alternative A. In addition limiting motorized boating use to December through March 30 would reduce the physical and chemical impacts on water quality during these closed times.

Segment 2 - Same impacts as for Segment 1 except that duration of motorized boating closure would be reduced and physical and chemical impacts on water quality would occur during these open times.

Segment 3 - Same as Segment 2 and use of small electric motors during closure would result in impacts to water quality as described above.

Alternative C

Segment 1 - Same as Alternative B

Segment 2 - Most of this segment would be closed to motorized boating year round. This would decrease the duration that physical and chemical impacts from motorized boating could occur. Between Clarno and Clarno Rapids impacts would be similar to those described for Alternative B. Allowing the use of small electric motors would result in impacts to water quality as described above.

Segment 3 - Same as in Alternative B.

Alternative D

Closing all river segments to motorized boating all year would eliminate the possibility that impacts associated with motorized boating could occur. Since motorized boating now occurs at low levels, eliminating motorized boating is not likely to measurably affect water quality.

Alternative E

Closing all river segments to motorized boating from May to December would eliminate the possibility that impacts associated with motorized boating could occur during those months. Since motorized boating now occurs at low levels, eliminating motorized

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boating is not likely to measurably affect water quality.

Dispersed Camping

Alternative A

Under existing management riparian vegetation in areas accessible only by river would be reduced in density and diversity with impacts on water quantity as described for the impacts of boating use levels on water quantity and quality.

In areas with roaded access the impacts of dispersed camping would be the same as the impacts of access on water quantity and quality.

Common to All Action Alternatives

Segment 1 - Same as Alternative A

Segment 2 - Designating camping areas near Clarno and identifying sites suitable for camping would encourage use of these areas and decrease use in other areas. This would direct use away from riparian areas and allow riparian vegetation to grow without the trampling and soil compaction associated with camping. As a result vegetation would increase in vigor and cover more area thus reducing overland waterflow and erosion. This, in turn would reduce the introduction of sediments into the river, reduce turbity levels, and contribute to improved water quality as described under impacts of riparian restoration on water quality. Because the sites impacted are small compared to total drainage area of the river changes in water quality are not likely to be measureable.

Segment 3 - Identification of sites that can best handle human use would have the same impacts described above for Segment 2.

Segments 10-11 - Identification of sites that can best handle human use, providing signs, and installing barricades to prevent motor vehicles from entering riparian areas would have the same impacts as described for Segment 2. In addition, by keeping motor vehicles out of riparian areas, the potential for the spilling of petroleum products that could affect water quality would be reduced.

Developed Recreation

Alternative A

Continuing existing management would not change water quality.

Alternative B

Improving facilities would not affect water quality.

Alternative C

By controlling travel routes and campsite location and preventing vehicle access to riparian vegetation, overland stream runoff would be reduced as would erosion and sediment transport. Small changes in water quality would not be measurable.

Alternative D

Closing sites would initiate processes that would reduce overland stream runoff, erosion, and sediment transport. Given the small area affected the magnitude of the change would be small. Recreationists displaced by campsite closures would increase use of other sites which are likely to be subject to trampling, soil compaction and vegetation loss which would increase overland stream runoff, erosion, and sediment transport.

Public Access

Roads used for public access have the following impacts to water quality and water quantity : 1) they reduce infiltration rates, 2) increase surface runoff at the expense of groundwater flow, 3) increase erosion, 4) compact soils, and 5) have the greatest impact on soil mass movement (Brooks et al. 1991).

Common to all Alternatives

Improved access at Priest Hole and relocation of Public Access at Twickenham would decrease the effects of roads on water quality. Maintenance of the Priest Hole road would decrease the potential for erosion and runoff, as would relocating the public access at Twickenham from an eroding dirt road to a hardened gravel bar.

Alternative A

Continuing existing road access would maintain existing levels of soil compaction, surface runoff, and increased erosion. These conditions contribute to rapid fluctuation in water quantity and to the introduction of sediment into the river system.

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Because road mileage is low in Segments 1, 2, 3 the amount of sediment introduced into the river and water quality and fish habitat problems associated with roads is also relatively low. In other segments where roads parallel the river water quality is more likely to be lower.

Alternative B

Road effects are the same as in Alternative A with the additional effect of increased disturbance in some areas. Proper road design and maintenance would decrease the impact existing non-maintained roads have on water quality.

Alternative C

Additional road construction and/or maintenance to provide access would increase effects of roads on water quality. As in Alternative B proper road design and maintenance would decrease the impact existing non-maintained roads have on water quality.

Alternative D

Introduction of sediment would decrease as closed roads are reclaimed by natural vegetation and overland flows are reduced. This would increase water quality and water quantity.

Energy and Minerals Resources

The impacts of energy and minerals on water quantity and water quality are covered in the discussion of impacts on fish.

Land Ownership, Classifications, and Use Authorizations

Proposed acquisitions would provide the opportunity to improve management of riparian resources. At the same time, if these lands become more accessible to the public than at present, it is possible that the development of user trails, trampling of vegetation , and soil compaction would lead to additional runoff and subsequent erosion and sediment transport into the river and reduced infiltration into the soil. As a result turbidity levels would increase and late season flow would decrease.

Paleontological Resources

Except for alternatives that result in increased recreational use or access, impacts resulting from actions planned under this alternative would be mitigated through adherence to Bureau manual guidance and consultation with the John Day Fossil Beds National Monument (as per the co-management agreement).

Impacts of Recreation Management

Disturbances related to increased numbers of users can include inadvertent damage, opportunistic removal or destruction of fossil specimens or fossil exposures, or the planned removal or destruction of fossil specimens and fossil exposures. The most common disturbance occurs when camping takes place near paleontological resources. Frequently people opportunistically recognize and collect surface specimens. Impact by OHV (off highway vehicle) use on the highly erodible slopes of fossil exposures can be very damaging. Specimens can be destroyed by being run over by OHV's and trails resulting from OHV use can accelerate erosion and obliterate contextual settings. A more intentional type of impact is the planned collection of specimens which is believed to occur in the river corridor during low use periods (winter). Motorized boating provides the opportunity for rapid access to the most remote river segments (and some paleonotolgical resources) during the winter and spring. Motor boats also enable specimen seekers to bring more tools and remove more specimens in a single trip. Unauthorized excavation removes or damages specimens without using proper preservation techniques or documenting contextual information. Some of these disturbances are conducted by the curious, though others are motivated by profit.

Alternative A

As recreational use increases the likelihood of disturbances to paleontological resources would increase. Increased use of some campsite areas would elevate the probability for disturbances to paleontological resources. Opportunistic surface collecting would be the major source of disturbance, though disturbance by OHVs and planned disturbances would also occur.

Alternative B

During the interim management period this alternative would have the same impacts as Alternative A because overall use is likely to increase.

Alternative C

During the interim management period, because use is expected to remain at about the same level as at

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present, the rate of disturbance would remain about the same.

Alternative D

During the interim management period, expected reduced levels of boating and elimination of motorized use would reduce the incidence of disturbance to localities that are accessible only by boat.

Alternative E

Same as C except that limitations on motorized boating would reduce opportunities for planned disturbances**.**

Impacts of Management of Public Access

Access to some segments of the river corridor (and certain paleontological resources) provides an opportunity for planned removal or disturbance of paleontological resources. Access to the river corridor on roads through private lands has probably contributed to the continued loss of certain fossil resources.

Alternative A

Disturbance and removal of paleontological resources would continue to occur due to casual use activities at some localities.

Alternative B

Improving accessability to certain river segments would likely increase the probability for planned and inadvertent removal of, and disturbance to, paleontological resources. The impacts of limiting access to Burnt Ranch or creating access to Lower Burnt ranch are unknown at this time.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A, except that the frequency of disturbance may reduced.

Impacts of Managing Paleontological Resources

Maintaining or expanding the existing systematic scientific research program would result in documenting the location and extent of fossiliferous exposure, mapping the associated lithostratigraphy (rock/soil layers), establishing the biochronological sequence (different fossil specimens through time), assessing the relative significance of each fossil-bearing locality, and conducting cyclic prospecting (periodic inventory and specimen collection). Much of this work would be completed in cooperation with the John Day Fossil Beds NM. Sometimes cost-share contracts are developed between the BLM and university researchers, under the guidance of the National Park Service (NPS), for specific areas to conduct baseline studies of the kind described above. Costs for services and/or materials typically range from $2500 to $10,000, depending on the size of the area and the tasks to be performed.

Existing Management

For the most part, costs associated with planned actions in-house will vary in proportion to the number of proposed projects. Adjustments are made when unplanned projects arise and are assigned a high priority. When larger, more complex projects are proposed the associated expenses are subject to prioritization with other workload costs under the same budget process. Much of the budgeting for the latter situation is done on a case by case basis.

Common to All Action Alternatives

Under this alternative the associated costs are expected to be higher. A proactive approach involves substantial additional time for networking, contract/ agreement development, logistical planning, implementation, monitoring and follow up. It is not unreasonable to expect a 20% increase in costs relative to existing management time.

Cultural Resources

Except for increases in use resulting from some alternatives for recreational use and public access, impacts resulting from all alternatives would be mitigated by implementing the requirements of Section 106 of the National Historic Preservation Act (as amended in 1999).

Impacts of Recreation Management

A range of potential impacts can occur as a result of recreation use within the river corridor. The most common disturbance occurs when camping takes place on or near cultural resources. Potential impacts

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include opportunistic collection of surface artifacts and use or destruction of wooden historic structures or features for firewood or camp furniture, opportunistic defacing (vandalism) of both historic (cabins) and prehistoric (rock art) features, inadvertent destruction of surface features and subsurface deposits resulting from the construction of camp fires and tent flats and the use of off highway vehicles (OHVs). Fishing or hiking activities are less likely to result in substantial impacts to cultural resources except for the occasional opportunistic collection of surface artifacts. The timing and number of users can affect the frequency of such disturbances. A more intentional type of impact is the planned vandalism of sites or artifact collection which is believed to occur in the river corridor during low use periods (winter). Motorized boating provides the opportunity for rapid access to the most remote river segments (and some cultural resources) during the winter and spring. Motor boats also enable artifact seekers to bring more tools and remove more artifacts in a single trip. Digging, which disturbs the integrity of subsurface sediment deposits, and removal of rock art or historic artifacts are some of the impacts associated with these activities.

Alternative A

Under existing management, user numbers would increase, especially during peak periods (weekends). By increasing use of both popular and as less desirable campsites this alternative would increase the probability of disturbances (removal and vandalism) of cultural resources. Low use period access via motorized water craft would continue to provide opportunities for more planned disturbances to cultural resources.

Alternative B

Limiting user numbers to 1998 levels and spreading use between peak and off-peak periods, impacts to cultural resources would be similar to Alternative A. Designating a dispersed camping area at the mouth of Sorefoot Creek would increase opportunities for casual collecting and, if the facility attracts increased OHV use, may lead to the inadvertent destruction of cultural resources.

Alternative C

Similar to Alternative A because the same campsite locations would be utilized. However closing a large portion of Segment 2 to motorized boating would lower the rate of planned removal of cultural resources.

Alternative D

Reduction in peak and overall use and elimination of motorized boating would reduce opportunities for both opportunistic and planned removal of resources and the inadvertent destruction of sites.

Alternative E

Same as C except that limitations on motorized boating would reduce opportunities for planned disturbances.

Impacts of Management of Public Access

Point access to some segments of the river corridor (and certain cultural resources) provides an opportunity for planned removal of or disturbance to cultural resources. Access via motorized vehicles expedites intentional removal by providing a more convenient means to transport equipment to and from remote locations than non-motorized travel. Point access to the river corridor on roads through private lands provides an opportunity to destroy or remove cultural resources.

Alternative A

By maintaining existing access destruction and removal of cultural resources would continue to occur at current levels.

Alternative B

Improving existing access would increase opportunities for opportunistic, inadvertent, and planned user activities. The impacts of limiting access to Burnt Ranch or creating access to Lower Burnt ranch are unknown at this time.

Alternative C

Similar to Alternative B, with the addition that opening up new areas would increase the probability of opportunistic, inadvertent, and intentional destruction or removal of cultural resources to cultural resources not presently accessible to the general public.

Alternative D

Reducing road access would reduce opportunities for opportunistic, inadvertent, and planned destruction

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and removal of cultural resources from sites that have already been disturbed.

Impacts of Cultural Resources Management

The nature of cultural resource information gathering has different effects on the resource itself. Inventory efforts are typically nondestructive. That is, information about surface manifestations, including setting and artifact or feature attributes, are normally all that is gathered from a site. However, sometimes artifacts from the surface are found, mapped/recorded, collected and curated to preserve and protect them. The difference between formal excavations conducted by professionals and indiscriminate digging by unauthorized collectors is the recording effort. The relationship (or context) of the sediments and artifacts which are excavated by professionals can be reconstructed, while those same elements collected by amateurs or vandals cannot.

The cost of conducting inventory or excavation varies depending on the circumstances. For example, the cost of an inventory is calculated by the expected number of acres one person can reasonably cover in a day. Factored in to this is the expected sensitivity of the area for finding sites and accessability. The higher the expected site density of and/or the more difficult access to an area, the more time would be required for recording. This situation results in a lower number of acres and more expense. Costs can range from $15 to $30 per acres for both in-house and contract services. Excavation at a site is typically limited and calculated by a cost per cubic meter (m3) of fill. Other factors that must be considered are the expected complexity of the subsurface deposit and accessability. A figure of $3000/m3 is an applied average when estimating cost. Additional costs may be added for ancillary studies, such as carbon dating, micro/macro botanical and faunal analysis, which contribute to our understanding of the significance and how to assess the effects of impacts to any particular site.

Existing Management

Costs associated with planned actions in-house would vary in proportion to the number of proposed projects. Adjustments are made when unplanned projects arise and are assigned a high priority. When larger, more complex projects are proposed and contracting or seasonal hires are expected, the associated expenses are subject to prioritization with other workload costs under the same budget process. Much of the budgeting for the latter situation is done on a case by case basis.

Common to All Action Alternatives

Under this alternative the associated costs are expected to be higher. A proactive approach involves substantial additional time for networking, contract/agreement development, logistical planning, implementation, monitoring and follow up. It is not unreasonable to expect a 20% increase in costs relative to existing management time.

Public Information and Education

Alternatives that focus on Fish, Native American Uses, and Private Land Use would not impact Public Information and education alternatives.

The remaining alternatives may have impacts on Public Information and Education alternatives.

Riparian and Aquatic Habitat Restoration

Continuing restoration projects such as cottonwood planting would require interpretation through brochures, watershed council meetings, and other forms of public contact. See also Agricultural Lands.

Wildlife

See Agricultural Lands.

Water Quantity and Quality

Existing Management

Continuing existing Water Quantity and Quality management through a cooperative approach would result in a continued need for public education through brochures, watershed council meetings, and other forms of public contact.

Alternative B

Increased cooperative management activities would increase the need to keep the public informed.

Scenery

Alternative A

Continuing existing management of Scenery would

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not be expected to have an effect on public information and education.

Alternative B

Assigning VRM Classifications to river segments would require that any new bulletin boards or signing proposed for information and education needs meet VRM standards. Oregon State Scenic Waterway standards would also be considered prior to development of signing.

Paleontological Resources

Under all action alternatives, communicating the importance of paleontological resources and the laws that apply to their protection would require outreach programs and other interpretative techniques.

Cultural Resources

Under all action alternatives, communicating the importance of cultural resources and the laws and treaties that apply to their protection would require outreach programs and other interpretative techniques.

Public Information and Education

Existing Management

Continuing existing management would maintain the existing level of Public Information and Education.

Additional Actions

Increasing Public Information and Education efforts would have the same effects as Existing Management, except that more people would be reached through a variety of media such as brochures, maps and interpretive signs and the cost of information and education efforts would increase.

Law Enforcement and Emergency Services

Existing Management

Continuing existing management of Law Enforcement and Emergency Services would not have an effect on Public Information and Education.

Additional Actions

Increasing interagency coordination of law enforcement and emergency services efforts would result in an increase in law enforcement personnel from different agencies who would be tuned in to Wild and Scenic River regulations, an increase in law enforcement presence, and an increased likelihood of detection and enforcement of use regulation violators. More law enforcement personnel would be actively participating in public information and education goals and objectives. Increased enforcement of use regulations would improve the effectiveness of launch point signing and public contact efforts, as users are more likely to take regulations seriously if enforcement efforts are visible.

Grazing

Under all action alternatives communication with the public concerning the methods and importance of proper grazing management would require presentations and one on one discussions with public groups or individuals. Flyers and signs asking the public to close gates and not cut fences would be necessary to help maintain proper grazing management.

Agricultural Lands

Under all action alternatives communication with the public concerning the use and methods on public owned agricultural lands to raise cottonwoods and other woody species for riparian restoration, to create buffers, or to grow crops for wildlife would require interpretive signs, brochures and presentations to public groups.

Recreation

Implementing a Limits of Acceptable Change (LAC) planning and monitoring program to study the effects of recreation use on physical resources and social experience would create a need for public information to explain the process to the public.

Boating Use Levels

Alternative A

Continuing existing management of Boating Use Levels would result in increased boating use during the peak season. To reduce the cumulative effects of increased use on resource conditions, an expanded information and education effort would be needed to educate users about the importance of each person's behavior in the effort to protect river resources.

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Alternatives B, C, D and E

Setting interim daily launch targets, would have the same effect on the need for public information and education as in Alternative A.

Allocation

Alternative A

Continuing existing management by not selecting an allocation system would maintain existing needs for information and education, because proportions of user types are likely to remain the same as at present. Consequently, changes in behavior and the resulting resource conditions are not likely to occur, and changes in the amount and content of information provided would not be necessary.

Common to All Action Alternatives

Selecting a specific allocation system would create a need to inform and educate the public concerning the system prior to implementation.

Motorized Boating

Alternative A

Continuing existing management of Motorized Boating would not change the needs for information and education.

Common to All Action Alternatives

Closing Segments 10 and 11 to motorized boating would require a minimum of interpretation and public contact since flows in these segments are rarely high enough to accommodate the use of motorized boats.

Alternative B

Adjusting areas and seasons of use would increase the need for signs and one on one contact with boaters to explain the new restrictions.

Alternative C

Adjusting areas and seasons of use would have the same effect on information and education as Alternative B, except that the need for one on one contact with boaters to explain the new restrictions would be greater because the restrictions would be more complex.

Alternative D

Prohibiting motorized boating would require a public information and education effort, including signing, public presentations to boating groups and one on one contacts to explain the necessity for this restriction.

Alternative E

Same as Alternative B

Dispersed Camping

Alternative A

Management of dispersed sites on a case-by-case basis to protect resources would continue to require signing at river access points and one on one contacts with campers to explain no-impact camping requirements designed to protect resources.

Common to All Action Alternatives

Encouraging dispersed use in areas that can best sustain impacts of camping would require signing and one on one contacts to explain new restrictions adopted to reduce vehicle impacts to riparian areas. Signing of dispersed campsites would be required in Segments 2, 3, 10 and 11. Signing of riparian areas closed to vehicle use would be required in Segments 10 and 11.

Developed Facilities

Alternative A

Continuing existing management of developed facilities would not change needs for information and education.

Common to All Action Alternatives

Improving or upgrading existing facilities to protect resources would not alter the need for public information and education.

Alternative B

Improving or upgrading existing facilities where needed to better meet the needs of the recreation user, and developing new recreation sites to replace sites that are closed for resource protection, would require additional signing to identify closed areas, new parking areas, boat ramps and other facilities in Segments 1, 2, and 3.

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Alternative C

Developing new facilities where needed to provide better resource protection would have the same impacts on the need for public information and education as Alternative B, except that new facilities in Segment 10 would also require signing.

Alternative D

Reducing facilities at selected sites, or closing selected sites, in an attempt to discourage use and protect resources, would be expected to require signing, one on one contacts and public presentations to explain the reasons for facilities closures in Segments 1, 2 and 3.

Public Access

Common to All Alternatives

Acquiring public river access at Twickenham to replace the current private access would require signing to direct use to the new site. There would be signing for public access routes to the Oregon Trail Interpretive site at McDonald's crossing contingent on negotiations with Wasco County.

Alternative A

Maintaining public access at existing levels would not alter the existing need for public information and education.

Alternative B

Improving existing access by upgrading current access routes across public land would be expected to increase the need for signing and one on one contact with users. Closing the existing Burnt Ranch site to vehicle access and opening a new access to Lower Burnt Ranch rapids would require signing to make the change and explain the reasons. See dispersed camping for effects on information and education in Segments 10 and 11.

Alternative C

Providing maximum reasonable access to the river vias roads and trails would be expected to have the same effects on the need for information and education as Alternative B in Segments 3, 10 and 11. New access in Segments 1 and 2 would require additional signing.

Alternative D

Reducing public access to protect and enhance resources would be expected to require signing, and person to person contact with users to explain the reasons for reduced access in Segments 2 and 3.

Commercial Use

Alternative A

The the expected increased number of commercial permits to be administered by the BLM would make it difficult for BLM staff to maintain communications with individual permittees and to monitor each permittee's commercial use as required by BLM policy. Rather than continue the current practice of communication with permittees in person or by telephone, the BLM would be forced to rely mostly on mass communication techniques such as mailings and large outfitter meetings to provide information and education to permittees and their employees concerning permit stipulations, river safety, protecting river resources, and minimum impact camping.

Alternative B

The extent of the effects described above would be slightly less for Alternative B, since permit numbers would be slightly less.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment would not be expected to have an effect on the existing methods of communicating information and education, nor the need for that communication.

Energy and Mineral Resources

If claims are established within the Wild and Scenic River corridor under alternatives A or B, it would be important to communicate with individuals and public groups the laws regarding mining and the impacts and mitigation of those impacts.

Land Ownership, Classification and Use

Impacts will be discussed in future site specific proposals. Acquisitions would require signing, updating of maps and other forms of communication to inform the public of the new land ownership.

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Law Enforcement and Emergency Services

Alternatives directly concerned with Riparian and Aquatic Habitat Restoration, Fish, Wildlife, Native American Uses, Water Quantity and Quality, Scenery, Private Land Use, Grazing, Agricultural Lands, Boating Use Allocation, and Energy and Mineral Resources would not create new needs for Law Enforcement and Emergency Services.

Paleontological Resources

Existing Management

Continuing existing management of Paleontological resources would not create new needs for Law Enforcement and Emergency Services.

Common to All Action Alternatives

Increasing efforts in inventory and interpretation of paleontological resources, as well as soliciting more involvement from the National Park Service and other individuals or organizations, would discourage fossil hunting and reduce the need for law enforcement measures because resource sites would be frequently visited by field staff. When these visits result in the discovery of violations, however, there would still be a need for investigations by trained law enforcement personnel.

Cultural Resources

Existing Management

The existing management of cultural resources might require more attention from law enforcement.

Common to All Action Alternatives

Under these alternatives more effort in salvaging, rehabilitating, and interpreting cultural resources as well as soliciting more tribal involvement would tend to discourage theft and vandalism reducing the need for law enforcement measures.

Public Information and Education

Existing Management

Continuing existing management of Public Information and Education would not alter the existing need for Law Enforcement and Emergency Services.

Common to All Action Alternatives

Increasing the amount of public information and education provided to prospective river users including signs and maps showing rapids, access routes, and discussing boater safety would be expected to reduce the need for emergency services. Information on use regulations and no-impact camping would normally be expected to reduce the need for law enforcement patrols, however, enforcement of regulations is necessary in order for signs and river rangers to be taken seriously. Enforcement would remain an important component of a successful information and education program in both Alternatives A and B. Installation of additional signing would increase the opportunity for vandalism, and the need for law enforcement patrols to deter the vandalism.

Law Enforcement and Emergency Services

Existing Management

Continuing existing management of Law Enforcement and Emergency Services would be expected to result in no change to the existing level of law enforcement and emergency services.

Common to All Action Alternatives

Increasing interagency coordination of law enforcement and emergency services efforts would be expected to result in a better trained, interagency staff who share scarce time and resources more efficiently to offer increased coverage and service along the river corridor.

Recreation

Common to All Alternatives

Implementing mandatory launch limits based upon the Limits of Acceptable Change study would increase the need for law enforcement to ensure compliance with the specific permit system selected.

Boating Use Levels

Alternative A

The anticipated 4% annual increase in visitors is likely to increase the need for law enforcement and emergency services in proportion with increases in visitation.

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Alternative B

Setting interim daily launch targets at or below 1998 levels and spreading use between peak and off-peak periods, would result in the same needs for Law Enforcement and Emergency Services as existed in 1998.

Alternative C

Setting interim daily launch targets at 70% of available campsites, reducing boating use on weekends, and spreading use between peak and off-peak periods, would increase the need for Law Enforcement and Emergency Services during off-peak periods.

Alternative D

Setting interim daily launch targets at approximately 60% below 1998 levels, reducing boating use on weekends, spreading use between peak and off-peak periods, and reducing the expected annual increase in use from 4% to 2%, would have the same effect on the need for Law Enforcement and Emergency Services as Alternative C.

Alternative E

Same as Alternative C

Motorized Boating

Alternative A

Continuing existing management of Motorized Boating would increase the existing need for Law Enforcement and Emergency Services if motorized boating use increases.

Common to All Action Alternatives

Closing Segments 10 and 11 to motorized boating would require a minimum of law enforcement effort since flows in these segments are rarely high enough to accommodate the use of motorized boats.

Alternative B

Adjusting areas and seasons of current restrictions to better reflect the needs of fish and wildlife would increase the need for law enforcement to enforce new restrictions proposed for Segments 1, 2, and 3.

Alternative C

Adjusting areas and seasons of current restrictions to protect a wide range of river values would have the same impact on Law Enforcement as Alternative B, except in Segment 2 where the need for enforcement of closing part of the segment would be changed from seasonal to year round.

Alternative D

Prohibiting motorized boating would greatly increase the need for law enforcement efforts compared to all other alternatives, in order to enforce the ban.

Alternative E

Same as Alternative B

Dispersed Camping

Alternative A

Management of dispersed sites on a case-by-case basis to protect resources, would not change the existing need for Law Enforcement and Emergency Services.

Common to All Action Alternatives

Encouraging dispersed use in areas that can best sustain impacts of camping would be expected to increase the need for law enforcement in Segments 10 and 11 to enforce vehicle closures in riparian areas, and minimize vandalism to new signs.

Developed Facilities

Alternative A

Continuing existing management of developed facilities would not alter the existing need for Law Enforcement and Emergency Services.

Common to All Action Alternatives

Improving or upgrading existing facilities to protect resources would not alter the existing need for Law Enforcement and Emergency Services.

Alternative B

Same as A, except additional law enforcement coverage would be needed to enforce the vehicle closure at the existing Burnt Ranch site.

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Alternative C

Developing new facilities where needed to provide better resource protection would have the same impacts on law enforcement as Alternative B except that new facilities in Segment 10 would also require signing. This would create more opportunities for vandalism and would increase the need for law enforcement.

Alternative D

Reducing facilities at selected sites, or closing selected sites, in an attempt to discourage use and protect resources, would be expected to increase the need for law enforcement to enforce facilities closures in Segments 1, 2 and 3.

Public Access

Common to All Alternatives

Acquiring public river access at Twickenham to replace the current private access would not increase the need for law enforcement.

Alternative A

Maintaining public access at existing levels would not alter the existing need for law enforcement and emergency services.

Alternative B

Excluding motor vehicles from the existing Burnt Ranch site would require increased law enforcement. See Dispersed Camping for effects on law enforcement in Segments 10 and 11.

Alternative C

Providing maximum reasonable access to the river via roads and trails would be expected to have the same effects on law enforcement and emergency services as in Alternative A in Segments 3, 10 and 11. New access in Segments 1 and 2 would require additional law enforcement coverage. Where access to reach cultural sites such as Tumwater Falls would be improved, increased looting and vandalism of sites would be more likely to occur than at present. This would increase demands on law enforcement personnel.

Alternative D

Closing Sorefoot Creek in Segment 2 and the existing Burnt Ranch site in Segment 3, to public assess would increase the need for law enforcement.

Commercial Use

Alternative A

The expected increase in the number of commercial permits to be administered by the BLM would make it difficult for BLM staff to maintain communications with individual permittees and to monitor each permittee's commercial use as required by BLM policy. Increased law enforcement efforts would be necessary to enforce permit stipulations. There would be fewer non-permitted outfitters using the river because commercial permits would be easier to obtain. This would reduce the need for law enforcement investigations into possible illegal outfitting.

Alternative B

The extent of the effects described above would be slightly less for Alternative B, since permit numbers would be slightly less except that higher levels of non-permitted guiding would be expected compared to Alternative A and would increase the need for law enforcement.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment would not be expected to have an effect on need for law enforcement and emergency services.

Land Ownership, Classification and Use

Acquisitions that increase public access would increase the area to be patrolled and the number of contacts with the public for law enforcement personnel.

Private Land

Alternatives concerned with boating use levels and public access can affect private land owners by increasing or decreasing opportunities for trespass by determining the number of recreational users traveling through or adjacent to private lands.

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Impacts on Issues Resolved by Alternatives

Scenic Quality

Alternatives that directly address Fish, Wildlife, Native American Uses, Water Quantity and Quality, Paleontological Resources, Cultural Resources, Allocation, and Motorized Boating would not impact scenic quality.

The following discussion compares the effects of actions that would impact scenic quality.

Riparian and Aquatic Habitat Restoration

Continuing existing Riparian and Aquatic Habitat Restoration management including planting native cottonwoods along the river and its tributaries, and other potential projects designed to enhance riparian vegetation, would increase vegetation and enhance scenery of the river corridor in the long term. Proposed projects would be designed to be consistent with BLM's Interim Visual Resource Management Policy and State Scenic Waterway standards. Temporary fencing designed to protect cottonwood outplantings may be visible from the river or from campsites in the short term. In the long term, re-introducing native cottonwoods would enhance the color and texture, and create a more natural viewshed.

Scenery

Alternative A

Continuing existing management of Scenery or "visual resources" in compliance with existing RMP guidance, but out of compliance with BLM's Visual Resource Management Policy would likely result in inconsistent protection of scenic qualities, over time, within a river segment or even a river mile. Each project or improvement proposed for public lands would be analyzed for its effects on visual resources, without reference to established standards or guidelines. With no standards in place to reflect the desired future condition of the various river segments, the emphasis on protecting visual resources could vary according to the current definition of "significant" and "adverse" effects, the perceived value of the proposed project, and the views of the BLM staff involved in the analysis at the time.

Common to All Action Alternatives

Identifying interim Visual Resource Management (VRM) classes until a VRM inventory process is completed would result in a more consistent set of standards for management of Visual Resources than existing management. As in Alternative A, each proposed project or improvement would be analyzed by BLM staff for its affects on visual resources, except that any management activity permitted on public lands within the Wild and Scenic River corridor would be consistent with the VRM standards for those lands. Classifying the WSA lands within Segment 2 as VRM Class I would be expected to assure that proposed management actions in these river sections are designed to protect current visual quality from deterioration, by requiring that projects not divert attention from the river or river campsites. Classifying the remaining Wild and Scenic River segments as VRM Class II on an interim basis would result in projects or improvements proposed for these river segments that would blend with the basic visual elements of form, line, color and texture found in the natural environment, as seen from the river or river campsites. The management standards for VRM Class II are generally consistent with Oregon State Scenic Waterway rules for Scenic River Areas, Accessible Natural River Areas, and Recreational River Areas as proposed in Chapter IV.

Public Information and Education

Existing Management

Continuing existing management of Public Information and Education would result in an informed public that would be expected to gradually help improve scenic quality by practicing no-impact camping techniques to reduce litter, fire rings, human waste, user trails, cut and limbed trees, and the spread of noxious weeds.

Alternative B

The effects of increasing the level of information and education available to the public would be expected to be the same as Existing Management, except that sharing information and education messages with more users would be expected to lead to a greater proportion of users practicing no-impact camping techniques, resulting in a greater reduction in litter, fire rings, human waste, user trails, cut and limbed

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trees, and the spread of noxious weeds. Proposed signing projects would be designed to be consistent with BLM's Visual Resource Management policy and State Scenic Waterway standards (see Chapter 4).

Law Enforcement and Emergency Services

Existing Management

Continuing existing management of Law Enforcement and Emergency Services would maintain existing effects on scenery, as actions that would affect scenery such as litter, fire rings, human waste, cut and limbed trees, illegal fires and vandalism would be expected to occur at the same rate.

Common to All Action Alternatives

Increasing interagency coordination of Law Enforcement and Emergency Services efforts would be expected to lead to an increase in law enforcement patrols to enforce recreation regulations, resulting in a reduction in litter, fire rings, human waste, cut and limbed trees, illegal fires and vandalism.

Private Land Use

Proposed State Scenic Waterway regulations will have an impact on scenic quality, however the extent of this impact is unknown.

Grazing

Alternative A

Continuing existing management through proper grazing strategies would affect scenic quality by increasing the density and diversity of riparian vegetation. Hedging or trampling of vegetation and the trampling of some banks would continue on the allotments where riparian oriented strategies have not been implemented. Cattle may be visible from the river throughout the year in upland areas. However, except for allotments without riparian oriented management, grazing in riparian areas would be limited, in most cases, to less than 60 days between November through May. Except for May there is little overlap in the times recreational use and grazing seasons overlap. The opportunity for boaters to see cattle and fresh cattle droppings in campsites and other riparian sites would occur primarily during the month of May. Some existing and proposed fences may be visible from the river and may contrast in line, form, and color from the natural landscape. Some fences between private land and public land would be visible where such fencing would have to go to or enter the river to discourage cattle from entering public lands.

Alternative B

Alternative B would have the same effects on scenery as A except that almost all allotments that do not now have riparian oriented grazing management would have increased vegetation density and diversity as a result of a shift to spring grazing, a decrease in other grazing systems, and an increase in the amount of river bank miles from which grazing would be excluded compared to Alternative A. Where changes involve increased fence to implement riparian exclusion of cattle, fence design and materials would blend into the line, form, and color of the natural landscape. Some fences between private land and public land would be visible where such fencing would have to go to or enter the river to discourage cattle from entering public lands.

Alternative C

Preventing cattle from grazing in riparian areas would result in increasing riparian species diversity and density. This would result in vegetation and soils that would have more naturally appearing color, texture, and scenic quality as seen from the river and river campsites compared to areas with nonriparian oriented management. Cattle and cattle droppings would not be visible on the river side of the fencing, but may be visible on the upland side of the fencing at any time of year. As in Alternatives A and B, proposed fences and water developments visible from the river or river campsites would be screened from view. Some fences between private land and public land would be visible where such fencing would have to go to or enter the river to discourage cattle from entering public lands.

Alternative D

Exclusion of cattle from public lands within the corridor would have impacts similar to Alternative C except that no cattle (except for occasional trespass), fences, or water developments would be visible on public lands from the river. Some fences between private land and public land would be visible where such fencing would have to go to or enter the river to discourage cattle from entering public lands.

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Agricultural Lands

Alternative A

There would be no overall effect on existing scenic quality if agricultural lands in Segments 1, 2 and 3 were managed by existing guidance. Wheel lines, pumps and fields would remain visible in the foreground, mid-ground and background as viewed from the river.

Alternative B

The creation of buffer strips along agricultural fields on public lands in Segments 1, 2 and 3 using cottonwoods or other native species would partially screen agricultural operations, resulting in a more naturally appearing foreground as viewed from the river.

Alternative C

The creation of buffer strips using cottonwoods or other native species along agricultural fields on public lands and converting additional acreage to native vegetation would have the same effects as Alternative B, except that in the long term, those areas converted to native vegetation would have a more natural appearance in the fore, mid, and background as viewed from the river. Cultivated fields converted to native grasses would likely attract new camping and picnicking use.

Alternative D

The gradual restoration of all publicly owned lands in Segments 1, 2 and 3 to native vegetation and the removal of pumps and irrigation systems would result in the greatest enhancement of scenic quality, compared with all other alternatives for Agricultural Lands. In the long term, the vegetation in the fore, mid, and background would have a more natural appearance as viewed from the river and from some river campsites. As in Alternative C, new campsites would become available for use as native vegetation was restored.

Recreation

Common to All Alternatives

Implementing a Limits of Acceptable Change (LAC) planning and monitoring program to study the effects of recreation use on physical resources and social experience would influence future management decisions concerning visitor use rules, numbers and availability of campsites.

Boating Use Levels

The following analysis is based on the assumption that target use levels for each alternative would be attained using the voluntary measures described in Alternatives B, C, D, and E for Boating Use Levels. If, for any reason, target use levels are not attained or maintained, the effects for each alternative would be expected to be the same as in Alternative A, or an alternative with a target higher use level.

Alternative A

Continuing existing management of Boating Use Levels would likely result in increased boating use, primarily on weekends from Memorial Day through Fourth of July, in all segments where boating use occurs. In 1998, recorded weekend launches surpassed public land campsite capacity on one night by one group in Segment 2, and on 4 nights by as many as 8 groups in Segment 3. Additional weekend launches would further increase competition for existing campsites, and when traditional sites became full, would force a growing number of groups to create “new” sites or use less desirable sites, including sites located on private lands. Occupancy of new sites would include increased foot traffic resulting in the creation of new access trails within camps and along the banks, thus an increase in denuded vegetation, bank erosion, soil loss, and the spread of noxious weeds. New sites would have increasing trash, human waste, campfire scars, and cut and limbed trees. Each year the number of campsites showing moderate to heavy evidence of human use would likely increase. River segments experiencing increased use would likely appear less natural, less primitive and more developed over time, due to an increase in the evidence of human use.

Alternative B

Setting interim daily launch targets at or below 1998 levels would have similar effects on scenery as Alternative A, except that the impacts would not exceed those levels of use resulting from 1998-99 use. Daily launch targets for overnight use would exceed 1998 available campsites by 1 site in Segment 2, and 8 sites in Segment 3. However, by 2000, users would have created some new campsites to handle the overflow. New sites created in 1998-99 would continue to receive use and

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impacts to these sites may not be fully visible until the end of 1999, resulting in an initial increase in the number of sites showing moderate to heavy evidence of human use. Once sufficient new sites have been created by users to handle 1998 use levels, there would be less competition for campsites, fewer new campsites would be created, and a slower rate of impacts would be expected compared to Alternative A, since use levels would remain stable. Lands adjacent to the river in these segments would appear less natural, less primitive and more developed than in 1998, but after an initial increase in impacts, scenic quality would be expected to remain stable, rather than decreasing annually as in Alternative A.

Alternative C

Setting interim daily launch targets corresponding to 70% of available campsites, would be expected to result in reduced boating use on weekends, with use spread more evenly throughout the week and the season. The effects on scenery would be the same as in Alternative A except that the use of “new” or less desirable campsites would likely decrease, allowing sites showing low evidence of previous use to begin to naturally revegetate. The number of campsites visible from the river would slightly decrease compared to Alternatives A and B, and the river corridor in these segments would appear slightly more natural, more primitive and less developed due to a slight decrease in the evidence of human use.

Alternative D

Setting daily launch targets at approximately 60% below 1998 levels, would be expected to have the same effects on scenery as in Alternative C, except that the occupancy rate of popular campsites would decrease slightly, and the use of “new” or little-used campsites, including campsites located on private lands, would likely decrease substantially. Sites showing low evidence of previous human use would likely naturally revegetate over time. The river corridor in these segments would appear more natural, more primitive and less developed than in the other alternatives, due to a decrease in the evidence of human use.

Alternative E

Same as Alternative C

Dispersed Camping

Alternative A

Management of dispersed sites on a case-by-case basis to protect resources would continue existing scenic quality.

Common to All Action Alternatives

Encouraging dispersed use in areas that can best sustain impacts of camping according to the recommendations of a modified Limits of Acceptable Change (LAC) Study would be expected to enhance scenic quality as actions to rehabilitate damaged campsites would result in more naturally appearing soils and vegetation. Proposed projects would be designed to be consistent with BLM’s Visual Resource Management policy and State Scenic Waterway standards (see Chapter 4). In Segments 2 and 3, a small brown sign measuring 3 inches wide by 18 inches tall would be used to identify each durable campsite referenced on a user map. In Segments 10 and 11, installing signs and parking barriers along the South Fork Road to protect riparian vegetation from vehicle trampling would be expected to enhance the color, texture, and naturalness of riparian vegetation in those areas closed to vehicles, however, the presence of signing may also detract from the natural appearance of the foreground as viewed from the road.

Developed Facilities

Alternative A

Continuing existing management of developed facilities would maintain existing scenic quality.

Common to All Action Alternatives

Improving or upgrading existing facilities to protect resources would not be expected to affect scenic quality. All proposed projects would be designed to be consistent with BLM’s Visual Resource Management policy and State Scenic Waterway standards.

Alternative B

Developing new recreation sites to replace sites that are closed for resource protection could affect scenery. However, all proposed projects would be designed to be consistent with BLM’s Visual Resource Management policy and State Scenic Waterway standards and in the case of new

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developments, would be subject to site specific analysis and public review. In Segment 3, closing the original Burnt Ranch site to vehicles and replacing it with a new site at Lower Burnt Ranch would result in vegetation loss at the new site, but would enable the road into the original site to be re-vegetated. The proposed new site, located on flat terrain, would be less subject to erosion than the original site which has steep terrain and unstable soils. Developing a new public launch site at Twickenham to replace the existing private launch site would eliminate some vegetation at the new site, but allow vegetation on the private site to respond and grow after being closed to use by the landowner.

Alternative C

Developing new facilities where needed to provide better resource protection would have the same effects on scenery as in Alternative B, except that additional improvements described for Juniper Island (Segment 2), Clarno East and Lower Burnt Ranch (Segment 3), and developing a campground near Ellingson Mill (Segment 10), could also affect scenery. These proposed projects would be designed to be consistent with BLM's Visual Resource Management policy and State Scenic Waterway standards, and in the case of new developments, would be subject to site specific analysis and public review. If visual concerns could not be satisfactorily mitigated, the scope of these proposed improvements would be adjusted as necessary to comply with BLM and State rules for the protection of scenic quality.

Alternative D

Reducing facilities at selected sites, or closing selected sites, in an attempt to discourage use and protect resources, would be expected to enhance the scenic quality of these sites as vegetation would appear more natural once the impacts of vehicle and/ or foot traffic were removed. However, the current users of sites identified for closure would likely use new undeveloped locations which may be less able to sustain the impacts of human use. New riparian areas would be trampled by foot and vehicle traffic reducing the naturalness of the scenery in these areas.

Public Access

Common to All Alternatives

Proposed projects are not expected to have an effect on scenery as each project would be designed to be consistent with BLM's Visual Resource Management policy and State Scenic Waterway standards.

Alternative A

Maintaining public access at existing levels would maintain existing scenic conditions.

Alternative B

Improving existing access by upgrading current access routes across public land would be expected to have the same effect on scenery as in Alternative A, except that closing the exiting Burnt Ranch site to vehicle traffic and improving access for vehicles to Lower Burnt Ranch would have the same effects on scenery as described under Alternative B for Developed Facilities.

Alternative C

Proposed access to the river via Hay Creek in Segment 1, and Butte Creek and northeast of Clarno in Segment 2, would be via public easements over existing private roads, therefore these actions would not be expected to affect scenery. In Segment 1, public access to the vicinity of Tumwater Falls would comply with BLM and State rules designed to preserve scenic quality only if easements were able to be obtained over existing roads, and new construction were not necessary. Widening the South Fork Road where practicable may make portions of the road more visible from the river, reducing scenic quality by detracting from the natural form, line, color, and texture of the surrounding environment, and vegetative screening may be necessary to mitigate these effects.

Alternative D

Reducing public access to protect and enhance resources would be expected to result in enhanced scenic quality in Segment 2 past the Clarno Homestead as vegetation and soils would appear more natural once the existing road is rehabilitated.

Commercial Use

Alternative A

Issuing unlimited commercial permits would affect scenic quality by encouraging additional boating use which would increase campsite occupancy rates, resulting in the establishment of new campsites showing evidence of human use. Foot traffic in new sites would result in increases in trampled vegetation,

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bank erosion, and the spread of noxious weeds. Although all commercial permittees would be required to practice no-impact camping under all alternatives, increased permit numbers would decrease BLM's ability to monitor each permittee to assure compliance with permit stipulations. Commercial use would continue to increase until the most desirable dates are full.

Alternative B

The extent of the effects described above would be slightly less for Alternative B, since permit numbers would be slightly less.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment would not be expected to have an effect on scenic quality, as gradually adjusting permits to offer a wider range of opportunities to the public would not be expected to encourage an increase in commercial use over and above the annual 4% increase expected for recreation use as a whole.

Energy and Mineral Resources

Alternative A

Continuing existing management could result in a reduction of scenic quality. Leasable mineral entry would be subject to a no surface occupancy stipulation that would require that exploration and extraction take place from outside of the corridor. Locatable mineral claims would be subject to the screening requirements imposed by the State Scenic Waterway regulations. Salable minerals would continue to be taken from pits currently open to extraction.

Alternatives B and C

Same as Alternative A, except that an additional stipulation requiring increased protection against the spread of noxious weeds and the limitations on salable mineral permits would place restrictions on new claims and permits. Because there are no claims or permits currently within the corridor, scenic quality would remain unchanged.

Alternative D

The corridor would be Withdrawn from mineral entry in designated Wild and Scenic River segments. This would eliminate the possibility of future mining activity from affecting scenic quality. There would be no changes in existing scenic quality.

Land Ownership, Classification and Use

Impacts will be discussed in future site specific proposals.

Vegetation

Alternatives for managing Fish, Wildlife, Native American Use, Paleontological Resources, and Cultural Resources would not impact vegetative resources.

The remaining alternatives do have potential impacts on vegetation as described below.

Riparian and Aquatic Habitat Restoration

Common to All Alternatives

The effects of producing and outplanting cottonwoods and other riparian tree or shrub species were covered in the Native Hardwood Supplementation Project Environmental Assessment (#OR-054-95-004). The activities are expected to increase the long term sustainability of riparian species through the re-introduction of native genetic stock onto suitable habitats throughout the John Day River basin. This is expected to decrease the isolation of existing populations and increase the likelihood of successful sexual reproduction. Breadth, density and diversity of riparian plant communities is expected to increase. Changes resulting from the activities would include a long term stabilization of river and stream banks due to increased root mass, an increase in the amount of shade, and an increase in the recruitment of large woody debris into the river and tributaries.

However outplantings are small in scope and extent and make up a very minor percentage of actual public riparian corridor miles. Measurable differences in riparian conditions would be limited to specific sites with the potential to support such vegetation.

The effects of construction and maintenance of minor structures for the protection, conservation, rehabilitation and enhancement of fish and wildlife habitat would be subject to site specific analysis. Generally, actions taken to stabilize river banks or to

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add aquatic structure to the river may result in short term reductions in or disturbances to riparian or aquatic vegetation. Longer term, the activities would likely increase the available habitat for riparian and aquatic species.

Water Quality and Quantity

Existing Management plus Additional Actions

The effects of further coordination and cooperation with other federal, state, tribal, local organizations and private landowners are expected to include increased communication, development and adoption of appropriate best management practices for a wide variety of activities throughout the watershed. The implementation of management changes are likely to result in increased soil cover and desirable upland vegetation and a reduction in exotic, annual grasses and weeds throughout the basin. Aquatic and riparian species are expected to be specifically targeted for recruitment and maintenance. Short term decreases in or disturbances of vegetation are expected through implementation of some upland or tributary water management projects. The long term results of such actions would be an increase in desirable vegetation.

Information and Education

Existing management plus Additional Actions

Providing information regarding the importance of, and procedures, for controlling the spread of noxious weeds and for reducing the threat of human caused wildfire would reduce problems associated with weeds and fire. The spread of weeds attributable to public land users is expected to decrease, allowing maintenance or expansion of desirable vegetation. Reduction of fire frequency would maintain soil cover and the current trends of ecological change. In the long term, an absence of fire is associated with an increase in woody species, while the presence of fire is associated with an increase in herbaceous species. Wildfire suppression activities would decrease, decreasing the disturbance of soils and vegetation by bulldozers or hand tools, decreasing the opportunities for expansion of weeds. Opportunities for rehabilitation of burned areas through seeding would also decrease. Greater adherence to Leave No Trace ethics could reduce the amount of trees that are cut or limbed for fuel wood. Adherence to designated campsite guidelines would decrease trampling of vegetation by concentrating use and limiting the pioneering of new campsites.

Law Enforcement and Emergency Services

Existing Management plus Additional Actions

Fire closure regulations would be enforced, increasing compliance and decreasing the vegetation changes associated with human caused wildfire (see Information and Education). Instances of tree cutting would be investigated, regulations enforced and increased compliance would be expected.

Scenic Quality

Alternative A

Existing management would not change existing vegetative condition.

Common to All Action Alternatives

Identifying interim VRM Classes to river segments would require that new vegetation manipulation projects meet VRM standards. Projects would be rated according to their short and long term impacts on form, line, color and texture. Proposed activities which introduce short term moderate or strong contrasts onto the landscape, such as prescribed fire, weed control, or juniper cutting, may be allowed if the long term changes lead the area towards a more natural appearance. Other proposed activities, such as road construction, fence and spring development, may be modified, mitigated or rejected in order to meet VRM standards.

Forest Management

Alternatives concerned with boating use levels and public access can affect forestland by increasing or decreasing opportunities for recreational users. As user numbers increase the potential for human caused wildfires increases.

Alternative A

Volumes harvested from these areas over the past 20 years has been less than 100 mbf. Future harvesting techniques and volume harvested would continue at present rates. The limited harvest would not impact overall forest conditions.

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Common to All Action Alternatives

Volumes removed would continue but at a lower annual rate (possibly less than 20 mbf over the next 20 years) than under existing management. The limited harvest would not impact overall forest conditions.

Grazing Management and Riparian Resources

In a recent review of over 1500 articles regarding riparian areas, Larsen and others (1998) noted that the literature contained "a great deal of personal opinion and commentary interspersed with little scientifically valid experimentation" and that "many of the opinion papers and nonexperimental reports were cited by others as science." Much of the research which has been done on livestock-riparian area relationships has focused on documenting the damage that livestock grazing can do. To that end, some experiments examined the effects of grazing compared to no grazing, while not describing some fundamentals of livestock management, such as grazing intensity or season of use. While that research is valuable for establishing that grazing can have negative effects, it has limited applicability for establishing the consequences of one grazing strategy over another.

There may be differences between the responses of riparian areas to various riparian-oriented grazing strategies. However, as yet, the ability of scientific methods to detect those differences has been confounded by the complexity of the interactions between the watershed, the riparian soils and vegetation, the stream channel and the grazing animal. When differences are detected, the results are often contradicting. For example, Clary and others (1996) reported greater willow density from spring grazing over no grazing on a 'depleted' sagebrush steppe riparian system (Pole Creek, Oregon) while Clary (1999) reported greater willow cover from no grazing over spring grazing on a mountain meadow ecosystem (Stanley Creek, Idaho). Kauffman and others (1983a) found greater streambank erosion with late season grazing over no grazing and little over-winter erosion on Catherine Creek while Buckhouse and others (1981) found no differences between treatment (no grazing, deferred rotation, rest rotation and season long grazing) and large over-winter erosion on Meadow Creek. Many studies found there to be few if any differences between any treatments (Bryant and Skovlin, 1982; Buckhouse and Gifford, 1976; Green and Kauffman, 1995; Kauffman and others, 1983b; Kondolf, 1993; Sedgwick and Knopf, 1991; Siekert and others, 1985).

The conclusion that few differences exist in riparian area responses to various riparian-oriented grazing strategies (such as exclusion and spring grazing) is supported by the results of monitoring on the John Day River (see Appendix M). The nature of the response to no use (see for example, photos 1 through 6) is very similar to the response to riparian-oriented management (see photos 9 and 10, 15 through 22). Some areas do not respond to changes in management. For example, photos 7 and 8 show a riparian area within an exclusion fence, built sometime in the 1950s, that still has sparse riparian vegetation. This is not the result of use by livestock but a reflection of the site potential (see discussion in Chapter 2, Vegetation, Condition and Trend). The paired inventories of willow communities in Segments 2 and 3 showed an increase from 0.0 miles to 15.56 miles of willow communities along the John Day River between 1981 and 1995 (BLM, 1996). This increase in vegetation is the result of cooperative efforts by private landowners, tribes, and local, state and federal government to restore riparian communities using a variety of livestock management techniques. It should be noted, however, that much of the riverbank is not capable of supporting willow communities and management could never result in the successful introduction of willows.

Another conclusion consistent in the literature is that unmanaged hot season or season long grazing will either slow recovery of riparian areas over no grazing or contribute to degradation (Bohn and Buckhouse, 1985; Clary and others, 1996; Hubert and others, 1985; Knapp and Matthews, 1996; Myers and Swanson, 1995; Sarr and others, 1996.

The literature cited above and photo monitoring of sites along the John Day River indicate that restoration of desirable conditions along the John Day River can occur as fast and as completely with riparian-oriented grazing management as it would be with complete exclusion of livestock. This would be true for a river or stream system which is in balance with its sediment load. The John Day River is not in balance with its sediment load, it has recently down cut and is going through the process of re-establishing a floodplain (that is, in many areas it is laterally unstable). Future condition of the river will be driven more by natural geomorphological processes than by differences in grazing strategy.

In areas where nonriparian-oriented grazing strategies (such as season long grazing) are replaced by riparian-oriented grazing strategies (such

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as spring grazing), the riparian vegetation is likely to show an immediate response (as the vegetation is released from grazing pressure) and then slowly change, increasing in density, breadth and diversity (as successional and geomorphological processes proceed). At least part of the response and subsequent change will depend on variables beyond the control of the manager, such as the site type (for example, whether a given site is basalt cliff or alluvial fan), the vegetation on the site when the management change occurred, height of groundwater table, the subsequent climate and variations in river flows (Kondolf, 1993; Platts, 1991). Large hydrological events, such as ice flows or floods, and prolonged drought influence the nature and direction of the response of vegetation to changes in grazing and, at times, actually reverses changes.

An important finding by many researchers is that there is a linkage between the vegetative community of a stream segment and associated upstream or upland areas, and that restoration efforts need to focus on a watershed perspective rather than a stream segment perspective (Duff, 1977; Hubert and others, 1985; Rinne, 1985; Elmore and Kauffman, 1994). For example, there are approximately 1050 riverbank miles (or 525 river miles) on the John Day mainstem, North Fork, Middle Fork and South Fork. The public land portion is 337 riverbank miles, or 32%, 97 of which are managed by the Umatilla and Wallowa-Whitman National Forests (segment 8). Within the Wild and Scenic designated segments of the river (Segments 1, 2, 3, 8, 10 and 11), 196 public riverbank miles are managed by the BLM. Of the 712 private riverbank miles, approximately 450 (43%) are currently outside of BLM grazing allotments. Uses along these riverbanks are predominantly agricultural fields, pasture, transportation (roads) and recreation. Within the Wild and Scenic designated segments of the river, 220 private riverbank miles are managed concurrently with public lands.

Only in Segment 8, the segment managed by the Forest Service, is the position of public lands in the Wild and Scenic designated segments upstream from private lands. The BLM manages approximately 8 percent of the land in the John Day Basin. Approximately 56 percent of the lands managed by the BLM are located in the lower subbasin (below Kimberly). The amount and quality of water (such as temperature and sediment load), as well as the seed sources for riparian vegetation, have been influenced by land management practices largely beyond the jurisdiction of the BLM by the time the water reaches the segments of the river which include substantial proportions of public land.

Of the 196.4 public land river bank miles in the designated segments of the river, under Alternative A 64.5 would be excluded from grazing, 122.0 would be in riparian oriented grazing management and 9.9 would be in non-riparian oriented grazing management. Under Alternative B 65.5 public riverbank miles would be excluded from grazing, 128.7 would be under riparian oriented management and 2.2 would be under non-riparian oriented management and awaiting land exchange opportunities for lands elsewhere in the Wild and Scenic River corridor. Under Alternative C, all public riverbanks would be excluded from grazing. Under Alternative D, all but 0.7 public riverbank miles would be excluded. The lands associated with the 0.7 miles of riverbank would await land exchange opportunities.

Consequences of specific strategies

Some general information is available regarding impacts of different grazing strategies on riparian areas. However, after investigating grazing management strategies and techniques practiced on healthy riparian streams in Montana, Ehrhart and Hansen (1997) found that operator involvement was the magic bullet. “We concluded ... that riparian grazing might be incorporated into each of the traditional grazing systems - except season-long - *as long as the condition of the riparian zone itself remains of primary concern* (emphasis original). Management, not the system, is the key.”

In reviewing impacts of various grazing strategies it has been noted that the most important aspect of an strategy, operator involvement and commitment to riparian recovery, is likely to vary amongst operators. As a consequence the level of riparian recovery has varied. Duff’s study (1977) supports this by noting that “Positive habitat response achieved from 4 years of rest had been negated by six weeks intense livestock grazing” after a riparian exclosure fence was cut. Implementation of an ‘appropriate’ strategy without constant attention is bound to fail, whether the strategy is exclusion, total rest, or maximized use.

General information is presented below explaining probable results of grazing strategies or techniques commonly used within the John Day Basin. The information presented below (except where otherwise noted) is paraphrased from several documents which summarize experiments, observations and opinions regarding grazing in riparian areas, including Ehrhart and Hansen (1997), Elmore and Kauffman (1994), and Platts (1991).

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Season of Use. One of the first steps to developing a riparian-oriented grazing system is determination of appropriate grazing seasons. Primary considerations include livestock behavior, response of plant communities and the degree of soil moisture on the site. Seasons are defined by growth stages in the annual growth cycle of native bunchgrasses. Early season runs from the beginning of growth in the spring to flowering. This corresponds to the period of highest river flow levels (see photos 11-14 in Appendix M). Hot season runs from development of seeds to seed set and drying of vegetation. This corresponds to the period of quickly dropping river flow levels, during which the river ceases to act as an effective barrier to livestock movement. Late season runs from completion of annual life cycle, through the on set of fall rains, the development of next year's tillers and re-initiated photosynthesis. This corresponds with the lowest river flow levels and the gradual increase in flow associated with autumn. Dormant season runs from the drop in soil temperatures, which slows and eventually stops plant growth, to the increase in soil temperatures which allows plants to begin active growth. This corresponds to the period of rising river levels and ice flows.

Early Season (Spring) Use. Livestock are attracted to uplands by succulent upland vegetation while cool temperatures discourage cattle from loitering in the riparian zones. Much of the John Day River riparian zone is covered by water (see Appendix M, photos 11-14), so many of the riparian plants are ungrazed with early season use. Those plants that are available to livestock usually have sufficient soil moisture for regrowth following defoliation. Reduced grazing pressure on trees and shrubs is a typical result of early season use. Impacts on soil and banks depend on soil texture and soil moisture content. Much of the John Day River has riparian soils that are cobbly or sandy and are well drained. The opportunity for compaction and bank damage is limited on these soils.

Hot Season (Summer) Use. Livestock tend to remain in the riparian area due to high temperatures and low relative palatability of vegetation in the uplands. As waters recede, barriers to livestock movement (such as deep, flowing water, steep slopes or cliffs) can be circumvented, neutralizing the effect of pasture or allotment boundaries. Following defoliation there is less moisture available for regrowth and replenishment of carbohydrate reserves. Browse species (for example, willow and cottonwood) tend to become more preferred as herbaceous vegetation dries out or loses nutritional value. Hot season use, following the critical growing season of upland vegetation, may meet plant growth requirements if the intensity of management can be increased, such as regular herding, short grazing periods, or close monitoring of utilization levels. Soils are typically more stable at this time of year, so compaction and trampling is less of a problem if long periods of use are avoided.

Late Season (Fall) Use. Due to the palatability differences between dried upland vegetation and riparian shrubs and forbs, cattle will not be attracted to uplands unless cooler weather is accompanied by precipitation which stimulates cool season grass growth. As long as palatable herbaceous forage and offstream water is available and cool air pockets discourage livestock from loitering in lowlands, willow use should remain low. In the absence of precipitation, the relatively high protein content of shrubs and trees makes them attractive to livestock. For this reason, regular late season use on the John Day should be accompanied with close surveillance. While, young willow are particularly vulnerable to damage during late season grazing, mature stands of willow should not be affected. Herbaceous vegetation have completed their growth cycles and grazing should not affect plant development. If heavily grazed, the silt trapping properties of vegetation may be compromised (though the importance of this is under dispute, see Skinner, 1998). Soils are usually dry and the probability of compaction and bank trampling is low.

Dormant Season (Winter) Use. When bottoms are colder than surrounding uplands, especially where south facing slopes are present, winter grazing can be an effective way to limit the time spent by livestock in riparian zones. Supplemental feeding well away from streams and offstream water developments will increase the effectiveness of winter grazing. Harsh winter storms, however, could encourage livestock to seek cover in riparian zones, allowing for rubbing and trampling damage. Herbaceous vegetation have no exposed growing points, so defoliation does little or no damage. Plants that are used have the entire growing season to recuperate. Grazing when soils are frozen is an advantage on finely textured soils, however, in the John Day basin, few soils are finely textured and the majority of the winter is spent above the freezing level.

Season Long Use. Grazing throughout the growing season, livestock tend to congregate and loiter in riparian zones. Riparian zones provide convenient forage, water and cover for livestock. Overuse of riparian zones is possible even with low stocking rates. The availability of water allows for continuous regrowth throughout the grazing season and plants

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often are grazed numerous times in one year. If grazed heavily enough, carbohydrate reserves needed for dormant season respiration can become depleted and plants can lose vigor or die. Trampling damage, soil compaction and accelerated streambank erosion are likely.

Rotation Grazing. Rotation grazing systems were designed to meet the growth requirements of upland vegetation while allowing grazing to occur during periods when plants were sensitive to defoliation (Hormay, 1970). As long as the physiological needs of riparian species are known and taken into account, rotation grazing systems can be used to restore degraded riparian areas. Effects of grazing under a rotation system will mirror the effects described above for various seasons. The difference is that the effects will change from year to year depending on whether livestock are present in the spring, summer, fall or winter. Also, rotation systems often include periods of non-use for more than one calendar year. Rotation schedules vary in the number of pastures which are included in the rotation as well as the seasons which are included. Because of the variety of combinations available, effects on the riparian zone cannot be predicted without more information on the rotation system.

Livestock Distribution. Discouraging livestock from loitering in riparian zones is accomplished with a variety of techniques in addition to season of use. Offstream water has been shown to reduce the time cattle spend in riparian zones by as much as 90%. Other strategies include placing salt or mineral blocks over 1/4 mile from the target riparian zone; improving upland vegetation through proper management, burning or seeding; regular herding; selective culling of animals which linger in riparian zones; turning animals into a pasture at a gate far removed from the target riparian area; drift fences which prevent livestock from using the river as a travel corridor; and corridor fencing.

Livestock Exclusion. Livestock exclusion from a target riparian area can be achieved through construction of a fence which parallels the banks of the river, called a corridor. This strategy eliminates flexibility in the decision of whether to develop offstream water. With the riparian zone no longer accessible to livestock, alternative water sources must be developed. However, this strategy eliminates the impacts of livestock on soils and vegetation in and nearby the target riparian zone and allows the operator more flexibility when deciding how to graze the upland vegetation. With corridor fencing the uplands could, if grazed improperly, contribute to increased overland flow resulting in sediment loading of the water and riparian zone. Livestock impacts could be further reduced by elimination of grazing from an entire watershed.

The effectiveness of corridor fences determines the degree to which livestock continue to affect riparian resources once the project is implemented. Fences must be constructed so damage by floods is minimized and so the general public doesn't neutralize the effort through cutting fences or leaving open gates. Coordination with other land owners is also essential in determining corridor fence effectiveness. At low water, a neighbor's livestock can cross the river and graze a riparian zone otherwise excluded. Even on the same side of the river, if one neighbor's riparian zone is fenced and the other is not, fences leading down into the water on the land ownership boundary must be put up and taken down with variations in river flow levels. Otherwise, fences will be washed out by high water and a hole will allow livestock to penetrate at low water. Constructing corridor fences over large sections of the river would require coordination among several land owners. Means for achieving cooperation could include interagency incentive programs and purchase of easements.

The following summarizes grazing impacts to riparian vegetation by alternative. Refer to Table III-E and Appendix L to determine how each allotment varies by alternative.

Alternative A

Continuing existing grazing management on allotments would maintain existing trends in riparian production and density and diversity of riparian plants. As described above, where riparian-oriented strategies have not been implemented riparian areas would be less likely to increase in vegetation density and diversity over time. Riparian areas with riparian oriented strategies would either maintain existing condition or increase in vegetation density and diversity.

Alternative B

Same as Alternative A except that the additional 9.1 miles of riparian area would have increased diversity and density in riparian vegetation where site conditions are suitable as a result of: Grazing management that utilizes high water or exclusion fences to prevent access of livestock to a large portions of riparian vegetation, limits duration and intensity of grazing to a level that allows plants that are grazed to complete their growth cycle, and permits grazing during a period in which upland

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vegetation is accessible and provides a more desirable forage source for livestock than riparian vegetation. Where existing management would be continued current trends in vegetative condition would also continue. See Table III-E for disclosure of Allotments with new grazing management.

Alternative C

Exclusion of grazing from riparian areas on public land within the corridor would have effects similar to those of Alternative B.

Alternative D

The effects of this alternative on riparian vegetation would be the same as Alternative C.

Grazing Consequences for Upland Vegetation

With grazing strategies which take advantage of the natural propensity of livestock to disperse throughout the uplands rather than to congregate in the riparian areas, there could be effects to the uplands which are not currently occurring. The scope of these effects, however, is mitigated by several factors.

First, the riparian areas are small fractions of the landscape, often less than 5 percent of the total area. The effects of displacing use of riparian areas to use of uplands would be not be measurable. Measurable effects may occur if the uneven distribution from the riparian area is simply displaced to another unique site which livestock prefer, but this is not expected. Special status plant species might be at greater risk with greater dispersal, but the populations of species which are sensitive to grazing (see discussion under Grazing Impacts on Special Status Plants) have survived in areas which herbivores don't tend to visit. Populations of special status plants are monitored. If a population becomes endangered through grazing by livestock, mitigation measures would prevent further impacts.

Second, the carrying capacity of public lands was determined through range surveys conducted in the 1960s and 1970s. The range surveys measured upland forage production and did not estimate riparian forage production. These surveys enabled production estimates for proper use (leaving enough of the forage for soil cover and physiological needs of the plants), wildlife use, and livestock distribution factors to be corrected. The surveys prescribed allowable use levels, which are consistently below those prescribed by the National Resources Conservation Service for similar lands, below those used on nearby private lands, and in many cases are a fraction of the public land use levels prior to the surveys.

Third, upland grazing is timed to limit the amount of grazing which occurs during the upland plants' 'critical growing season'. Plants are more susceptible to defoliation at certain points of their annual growth cycle (Miller, Seufert and Haferkamp, 1994), the most susceptible season of which is called the 'critical growing season'. Measurable effects of grazing are less likely when the critical growing season is avoided, when grazing pressure is kept light or when 'critical growing season' grazing is followed in subsequent years by a grazing strategy that allows vegetation to fully recover.

Consequences of specific strategies

Control of animal numbers is considered by some (Heady and Child, 1994) to be most important aspect of proper grazing management. Once grazing pressure is brought to within reasonable levels, the timing of grazing is generally considered to be more important than percent utilization (Frost, Smith and Ogden, 1994; Miller, Seufert and Haferkamp, 1994). The following explains some of the impacts which can be expected at various seasons, the information is summarized from Miller, Seufert and Haferkamp, 1994 and BLM, 1998 except where otherwise noted.

Dormant season (winter). Upland herbaceous plants are mostly dormant during the winter season of use with the exception of some photosynthesis by new growth after fall and winter precipitation and during warming weather trends, primarily on south exposed slopes. Light (20 - 40%) to moderate (40 - 60%) use of the new growth usually is not detrimental to the health and vigor or plants as long as there is adequate soil moisture through the spring and summer for regrowth and completion of the annual life cycle. Defoliation of fall sprouting annual species, such as cheatgrass, may provide a competitive advantage for desirable perennial species. Browsing of palatable upland shrubs can become heavy during periods of snow accumulation.

Heavy (60- - 80%) or severe (80 - 100%) use of the range in the winter may reduce the amount of standing dead vegetation which forms the soil cover layer and eventually becomes integrated as organic matter into the upper layers of the soil. Loss of soil cover would result in the loss of protection of the soil surface from raindrop impact and wind erosion. With high soil moisture content, soils high in clay are susceptible to trampling and compaction. Soils high

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in coarser particles, like sands, are less susceptible to compaction. Soils crusts (microbiotic crusts such as lichen, fungi and moss) are fully hydrated during this period and can tolerate some disturbance (Harper and Marble, 1988). Areas of heavy use, however, are not likely to support soil crusts.

Early season (spring). Active growth of herbaceous species, particularly cool season species, occurs with rising soil temperatures. The active growing season is occasionally divided in two, based on when the growing points of palatable perennial species elongate to within the reach of the herbivore. Plants can generally tolerate defoliation prior to elongation of seed stalks. Enough soil moisture generally remains for regrowth, flowering and replenishment of nutrient reserves. Since annual species begin stem elongation earlier than perennial species, grazing during this time can give a competitive advantage to desirable species.

During seed stalk elongation and flowering (that is, the 'critical growing season') the plants are susceptible to moderate defoliation. Susceptibility increases with repeated defoliation of the same plant. Limited soil moisture is available for regrowth and flowering and defoliated plants could go into dormancy with reduced nutrient reserves. Following moderate 'critical growing season' defoliation, a plant can generally recover with one season of 'critical growing season' rest. However, several consecutive years of moderate 'critical growing season' defoliation could reduce the vigor of the plant to the point of die-off.

Impacts to soils are similar to those listed above for dormant season grazing. Hoof action on soil crusts will cause greater disturbance to the organisms as soils dry (Harper and Marble, 1988).

Hot season (summer). Soil moisture becomes very limiting to most native plant growth, most upland plants have completed their annual growth cycles, some hot season species (such as sand dropseed) may still be in seed production. The plants are generally in senescence and nutrient reserves are near their maximum levels. Defoliation during this stage generally does not affect the vigor of desirable plant species. Impacts to soils are similar to those listed above, except that little opportunity for compaction exists. Disturbance from hoof action to soil crusts is near their maximum.

Late season (fall). Herbaceous upland plants remain senescent with minimal new growth and some regrowth during warm conditions when soil moisture has been replenished by fall precipitation. Defoliation at this time generally does not impair the vigor of plants. Impacts to soils and crusts are similar to those listed for hot season.

Season long. Season long grazing generally begins during the active growing period and extends through the 'critical growing season' and hot season until fall. The effects of uneven livestock distribution are most noticeable with this type of grazing. Plants where livestock congregate are defoliated repeatedly throughout their life cycle. The vigor of palatable species can be greatly compromised at those locations. Areas inaccessible to livestock are lightly grazed or ungrazed. Impacts to soils and crusts are more severe than those listed for hot season grazing and can include damage to surface soil structure, an increase in bare soil, exosure to weed invasion or increase, and a reduction in infiltration rates.

Rotation. When management objectives allow the flexibility to graze in more than one season, use of a pasture may be varied such that it is grazed in a particular season on one year in three or four. The timing of grazing and subsequent rest may allow plants opportunity to make and store food (recover vigor), allow seeds to ripen, allow seedlings to become established or allow litter to accumulate. The amount of rest needed for these purposes depends on the plants involved, character of the range, and objectives of management, so it is determined for each range individually (Hormay, 1970). Generally, active growing season (particularly 'critical growing season') use is followed by a year or more of active growing season rest. Often, the following year is a deferred treatment, in which the pasture is grazed during the hot season or fall. Anticipated short term impacts from annual use of a pasture for any one season are presented above. Long term impacts are determined by the rotation schedule and the mix of resources within a pasture.

Exclusion (non-use). Defoliation is limited to that which occurs from insect, wild horse and native herbivore use. Except in cases of a concentration of herbivores, defoliation levels tend to be slight or none. Soil cover tends to reach a maximum and then fluctuate with differences in rainfall, season, and fire frequency.

The following summarizes grazing impacts to upland vegetation by alternative. Refer to Table III-E and Appendix L to determine how each allotment varies by alternative.

Alternatives A and B

The grazing prescriptions applied on lands adjacent to the riparian exclosure would meet the Standards

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for Rangeland Health and Guidelines for Livestock Grazing Management. (See Appendix J) Compliance with Standard 1, Watershed function--uplands, would provide sufficient groundcover to intercept and dissipate overland flow and increase water infiltration into soils. As a result there would be a reduced potential for runoff to create erosional channels capable of damaging downslope riparian areas. Localized trampling or trailing by livestock along riparian fence lines or congregation within specific areas would compact soils, decrease water infiltration, and increase overland flow and erosion. These localized impacts would vary by allotment. Allotments with upslope water developments would help to move cattle use away from riparian fence lines whereas allotments without such developments would have more livestock use along riparian fences.

Alternative C

Exclusion from riparian areas would have same impacts on Upland vegetation as described for Alternatives A and B. With the increase in riparian fence lines there is a possibility that trailing along these fence lines would be greater than under any of the other alternatives.

Alternative D

Excluding grazing from designated Wild and Scenic River segments and from within 1/4 mile of the river in the undesignated segments would create vegetative conditions similar to those that would be found on public lands under Alternatives A, B, and C. Conditions on public lands outside the Wild and Scenic River Boundary or outside of 1/4 mile of the river would be subject to the same impacts as described for Alternatives A and B outside of riparian exclusions. In addition there is a possibility that current permittees with lands adjacent to the Wild and Scenic River Boundary or out side the quarter mile buffer may increase grazing on private lands to make up for AUMs lost under this Alternative. When this occurs upland vegetation may become less dense and less diverse with a subsequent loss in ability to function as described under Alternatives A and B.

Special Status Plants

Management of grazing, recreation, and mining are actions considered in this EIS that have the potential to impact special Status plants.

Effects of Grazing

Alternative A

The rarity aspect of special status plants can arise through a variety of different means. For example, the plants may have always been rare (for example, they may require very specialized conditions), they may have only recently evolved from a closely related species, or they may have been common once and are becoming rare due to environmental changes (such as climate change, introduction of a superior competitor, or human perturbation).

Of the seven species of special status plants known or suspected to occur within the basin, some occupy habitats which are unlikely to attract livestock (*Astragalus diaphanus* var *dinurus*, *Mimulus jungermannioides*), others are tolerant of livestock disturbance (*Juncus torreyi*, *Rorippa columbiae*) and some are both palatable to livestock and intolerant of disturbance during part of their lifecycle (*Thelypodium eucosmum*, *Carex hystericina*, and *Astragalus collinus* var. *laurentii*).

Of those species which are intolerant to grazing during certain seasons, the legacy of uncontrolled livestock use in the John Day basin removed those plant populations which grew in areas that livestock favored. The loss of those populations occurred well before the adoption of grazing use levels or season of use restrictions. Those populations were replaced by other plant populations. Of those species which are intolerant to grazing during certain seasons, populations located in areas that are not preferred by livestock are likely to continue to be unaffected by livestock unless some management action makes the area more favorable to livestock (such as a new fence or water trough). All such potential management actions are subject to review and clearance according to procedures outlined in Chapter 3, Existing Guidance section of this document.

Thelypody eucosmum is susceptible to grazing during the latter part of flowering and to trampling. The species prefers steep, rocky hillslopes derived from volcanic ash and grows near water, though it is not considered a riparian species. Flowering occurs during May through August during its second year. As long as water is available, a reproducing plant will resprout and complete reproduction when grazed. Livestock related activities (such as fencing or water troughs) which do not encourage livestock to venture into new areas would not adversely affect existing populations. The limiting factors in expansion of the

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species within the Wild and Scenic River boundaries is most likely the availability of a seed source and suitable habitat.

Carex hystericina occupies very wet, boggy or marsh areas. Available habitat on the John Day River is limited, but could become more common with restoration of riparian areas and uplands. The limiting factor in expansion of the species within the Wild and Scenic River boundaries is availability of a seed source.

Astragalus collinus var. *laurentii* occupies dry slopes in sandy or rocky substrates. It would be susceptible to grazing during April to July in normal years. Populations have not been found within the John Day basin. The limiting factor in expansion of the species within the Wild and Scenic River boundaries is availability of a seed source. Any changes in grazing management which would favor other native species would be favorable to the habitat for this species.

Alternative B

Same as Alternative A.

Alternative C

Same as Alternative A except that with the restriction of livestock access to riparian areas, livestock would be forced to spend more time in the uplands. Generally, a more even distribution of pressure is expected and overgrazing would not be a common problem (see general overview of grazing consequences to upland vegetation). In the event that alternative water sources had to be built to accommodate grazing, however, livestock may be encouraged to venture where they previously were not inclined to go. The special status plant populations which are palatable and accessible to livestock may be jeopardized by new springs or fences which encourage use of previously unused areas. Clearance procedures outlined in Chapter 3, Existing Guidance, would help to mitigate any such impacts for populations located on public lands. Populations located on private lands would not be protected by such clearances.

Alternative D

Same as Alternative A except with the restriction of livestock access from all public lands and some private lands within the WSR boundaries, the distribution of grazing pressure would be shifted. Of those species which are intolerant to grazing during certain season, populations lying within the boundaries would experience similar grazing pressure to what currently exists. Populations lying outside the boundaries would be more likely to receive greater grazing pressure. Clearance procedures outlined in Chapter 3, Existing Guidance, would help to mitigate any such impacts for populations located on public land, populations located on private lands would not be protected by such clearances.

Opportunities for expansion of existing or recruitment of new populations would be limited in *Carex hystericina* and *Astragalus collinus* var. *laurentii* by available seed source and habitat. Opportunities for expansion or recruitment of *Thelypodium eucosmum* populations may be greater within the Wild and Scenic River boundaries, however, this could potentially be offset by a loss of some populations outside the boundaries.

Agricultural Lands

Impacts on vegetation by the different alternatives are directly related to how many acres are in the different uses.

Alternative A

This alternative would maintain existing vegetative conditions by continuing the present uses on 384.2 acres of agricultural land with attached water rights. Twenty-eight percent are in non-use, 17 percent are in either wildlife food and cover crops or in a native hardwood supplementation program and 55 percent are in commodity production. All of the acreage in non-use is being treated for weeds which routinely invade a field following abandonment. Wildlife food and cover crops primarily consist of sunflower, milo, wheat, millet and Sudan grass, although other species may be added or substituted depending on the wildlife species using the forage.

Common to All Action Alternatives

Seven percent of the agricultural land is scheduled to be exchanged for other lands in the Wild and Scenic River corridor. The fields exchanged would likely remain in commodity production. The consequences would be fully analyzed in the planning document prepared for the exchange.

Alternative B

Of the 358.6 irrigated acres which would remain in public ownership, 54 percent would remain in commodity production. These lands would support buffer strips of non crop vegetation adjacent to the active flood plain. Any portion of lands in commodity

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production may be converted to wildlife food and cover crops or native perennial vegetation in the event that the lease was no longer pursued by private entities. Approximately 46 percent of the remaining irrigated fields would be converted to wildlife food and cover crops or used for the production of native hardwoods.

Alternative C

Of the 358.6 irrigated acres which would remain in public ownership, 100 percent would be converted to wildlife food and cover crops, native perennial vegetation or put into native hardwood propagation. There would be a 15 year phase-in period.

Alternative D

Of the 358.6 irrigated acres that would remain in public ownership, none would be available for wildlife food and cover crops or native hardwood propagation efforts (see Riparian and Aquatic Habitat Restoration). All irrigated acres would be seeded to native vegetation consisting primarily of the dominate grass species in the particular ecoregion an irrigated field is located. The exact species seeded would vary depending on soils and adjacent native vegetation; however, the more common grasses, forbs and shrubs are bluebunch wheatgrass, sand dropseed, basin wildrye, white yarrow, sulfur flower, blue flax, sagebrush and bitterbrush.

The effects of eliminating the native hardwood propagation efforts would be either to cease outplanting or to rely upon other sources for dormant stalks. Other producers of dormant stalks for outplanting are unlikely to have a high availability of John Day basin genetic stock. A more detailed analysis of these options are presented in the Native Hardwood Supplementation Project Environmental Assessment (#OR-054-95-004).

Impacts of Boating Use Levels on Vegetation

Boating use can contribute to weed dispersal, the pioneering of new campsites, and riparian area disruption.

Alternative A

Under this alternative, there would be little control of effects of visitation on vegetation. Increased use would force campers to pioneer new sites when existing sites are occupied. Increased disturbance can be expected to occur from activities such as launching and docking a boat, tying a boat to a suitable shrub for anchorage, setting up tents, fire rings, gathering fire wood, cutting vegetation, and seed dispersal of both desirable and undesirable plant species. Possible changes in soils and vegetation would be similar in type to effects of livestock grazing (such as, soil compaction, loss of vegetation, reduction in organic matter). The greatest changes would occur immediately after an area is first used, after which the soils and vegetation condition would tend to stabilize (Clark and Gibbons, 1991). The effects would to be greatest prior to the completion of the LAC study and subsequent implementation of use limits.

Alternative B

No additional decrease in riparian vegetation within established campsites would be expected since use levels similar to 1998 would be expected. This is due to the fact that most sites to be used under this alternative have already been impacted and riparian vegetation removed as a result of previous use. The tendency to pioneer new sites would be reduced because peak use levels would be the same as 1998 and sufficient site numbers have been established.

Alternative C

Since use would be more evenly distributed over the days of the week and the season rather than concentrated in a few peak weekends, total disturbance would remain about the same as at present at the most popular campsites. This would maintain at existing levels the frequency nearby vegetation would be trampled. Localized soil compaction and erosion would occur at about the same rate. Reducing use during peak use periods would virtually eliminate the need to create new camp sites as competition for sites would be reduced. Some less desirable sites would fall into disuse and would eventually revegetate. This would reduce the expansion of disturbances and decrease opportunities for seed dispersal on new locations.

Alternative D

The rate of increase of use would slow and the use would be more evenly spread throughout the boating season. The effects would be similar to those presented in Alternative C. Popular camp sites would continue to be used at nearly the same rate while use in other sites would decrease even more than under Alternative C. Revegetation would occur at more sites than under any other alternative.

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Alternative E

Same as Alternative C

Impacts of Motorized Boating on Vegetation

Alternative A

Physical forces associated with motorized boating includes wash, turbulence and propeller action. The direct effects of each force have been difficult to quantify because they interact and are confounded by variables such as size of boat and engine, shape of hull, size and current of water, and the time of year. Potential effects are bank erosion, washing out of roots, and turbulence which disturbs streambed sediments. Disturbance can facilitate the distribution of seeds or plant fragments of both desirable and undesirable species (Liddle and Scorgie, 1980). Direct contact with banks and vegetation and the effects of increasing visitation would have effects similar to those described under boating use levels. Because of the limited number of boats with motors on the John Day River pollution associated with outboard motors would not be great enough to affect soils or vegetation.

Alternative B

Closure of Segment 3 during April to October would reduce the effects of wash, turbulence, and propeller action during the active growing season and the lowest river flows. Extending the closure in Segments 1 and 2 would reduce effects of motorized boating during seasons when physiological activity of riparian vegetation is generally low.

Alternative C

Effects would be similar to those stated above except that closure of a portion of Segment 2 would eliminate the effects of motorized boating on that portion of the river.

Alternative D

Eliminating motorized boating would eliminate bank erosion, washing out of roots, and disturbance of streambed sediments associated with motorized boating.

Alternative E

Same as for Alternative B, except that allowing limited motorized use in Segments 1 and 2 during March and April would allow the effects of wash, turbulence, and propeller action during the active growing season to continue on a limited basis.

Dispersed Camping

Impacts of Dispersed Camping are included in discussions of Boating Use Levels and Access.

Developed Facilities

Alternative A

Continuing existing maintenance schedules on developed recreation sites would not change riparian vegetation in these areas and consequently would not change cover conditions or water quality.

Alternative B

Improvements to existing sites and development of new sites at Twickenham and Burnt Ranch would encourage more use with an expected loss of some riparian and upland vegetation near the river. However, loss of vegetation at the new sites would be offset by revegetation of tow sites that are permanently closed.

Alternative C

Impacts would be the same as in Alternative B plus the impacts associated with the development of a site at Ellingson Mill in Segment 10. Because this site is already a heavily used dispersed site trampling of riparian vegetation and compaction of soils has already occurred. By controlling travel routes and campsite location, and preventing vehicle access, riparian vegetation would increase in density compared to all other alternatives B.

Alternative D

Where sites are closed there would be reduced trampling of vegetation and soil compaction than when sites are open to use. As a result vegetation would increase in vigor and density compared to the existing condition in these sites. Given the small area affected the magnitude of the change would be small. Recreationists displaced by campsite closures would increase use of other sites which are likely to be subject to trampling, soil compaction and vegetation loss.

Public Access

Roads used for public access have the following impacts: 1) they reduce infiltration rates, 2) increase

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surface runoff at the expense of groundwater flow, 3) increase erosion, 4) compact soils, and 5) have the greatest impact on soil mass movement (Brooks et al. 1991).

Common to All Alternatives

Improved access to Priest Hole and relocation of Public Access at Twickenham would cause a slight decrease in riparian vegetation (approximately 70 feet) at the new site, but would to focus use away from adjacent riparian areas and therefore increase riparian vegetation outside the 70 foot stream frontage.

Alternative A

Continuing existing management of access would maintain existing vegetation condition.

Alternative B

Effects of road management are the same as in Alternative A with the additional effect of increased disturbance in some areas. Small amounts of vegetation may be lost in the course of improving existing access routes.

Alternative C

Additional road construction and/or maintenance to provide access would increase the amount of vegetation loss compared to Alternatives A and B.

Alternative D

Closure of access points would decrease use in those areas and reduce trampling of riparian vegetation. Some increase in vegetation density may occur if closed roads become revegetated.

Energy and Minerals Resources

Alternative A

The low occurrence of mineral activity within the corridor currently results in only a small amount of disturbance. The most common activity is the mining of rock and gravel which sometimes results in disturbance and the removal of vegetation over a few acres. Disturbance during the prospecting for locatable minerals is usually minimal and confined to areas of much less than an acre. In the event of a strike, development of several to many acres may be required. Strict State Scenic Waterway and Federal 43 CFR 3809 regulations combined with the low potential for the occurrence of locatable minerals within the corridor however, make the development of mining claims unlikely. If claims were to be established, undesirable annual species would usually dominate reclaimed sites in the short term. Use of noxious weed control techniques would limit spread of undesirable species in the long term. Disturbances resulting from leasable mineral exploration are usually short lived with site reclamation restoring vegetation within a few years. The No Surface Occupancy (NSO) stipulations for the lower John Day up to Kimberly and the State Scenic Waterway Screening regulations, combined with a low to moderate potential of occurrence of leasable minerals make the development of leasable resources unlikely.

Alternatives B and C

Same as A except that the NSO stipulation would be extended to the upper John Day River by an amendment to John Day RMP and proposed State Scenic Waterway rules (CH4) would be adopted as a permanent management policy for BLM, regardless of any future changes to the State Scenic Waterway rules. Stipulations in this plan for added protections of vegetation including the closing of the corridor to salable mineral entry would also be in place. The combined effect would be to make the development of mineral resources even less likely than for the present situation.

Alternative D

Withdrawing lands within the WSR boundary from mining activity would eliminate the possibility of future mining activity affecting vegetation.

Boating Use Levels

Alternatives for managing Fish, Wildlife, Native American Uses, Water Quality and Quantity, Scenery Management, Private Land Use, Grazing , Boating Use Allocation would not be expected to have an effect on boating use levels.

Some of the Alternatives described below are expected to have impact on boating use levels.

Riparian and Aquatic Habitat Restoration

Continuing existing Riparian and Aquatic Habitat Restoration management may involve temporary or permanent use restrictions at dispersed campsites where necessary to restore riparian and aquatic habitat. Campsites in need of restoration would be identified through an LAC inventory of campsite conditions. Temporary or permanent campsite

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closures would affect the number of campsites available for use and may be taken into consideration when determining appropriate boating use levels under Alternative C.

Paleontological Resources

Under any alternative boating use levels may have to be adjusted if the closure of an area reduces available campsites or if degradation of the paleontological resource occurs.

Cultural Resources

Under any alternative boating use levels may have to be adjusted if the closure of an area reduces available campsites or if degradation of the cultural resource occurs.

Vegetation

Agricultural Lands

Alternative A

Continuing existing management would not affect boating use levels.

Common to All Action Alternatives

More campsites would become available through the conversion of agricultural lands to native vegetation under Alternatives B, C, or D contingent upon the control of weeds. Alternative B would probably provide the fewest new campsites and Alternative D the most. New campsites would be possible in Segments 1, 2, and 3 however Segment 2 would have the most potential. An increase in available campsites could lead to an increase in the number of daily launches allowed in a segment under Alternative C for Boating Use Levels.

Public Information and Education

Existing Management

Continuing existing management would not be expected to have an effect on boating use levels.

Additional Actions

During the three year period before appropriate use levels are determined, letters and media press releases would be necessary to encourage boaters to launch during off peak times to maintain use levels or interim daily targets.

Law Enforcement and Emergency Services

Existing Management

Continuing existing management would not be expected to have an effect on boating use levels.

Additional Actions

Increased law enforcement presence would encourage boaters to abide by interim daily launch targets.

Recreation

Common to All Alternatives

If recreation use is found to be above acceptable limits after implementing an LAC study, mandatory limits on boat launching in Segments 1-3 may be imposed. This would require boaters to participate in a permitting process as described under Allocation. The long-term effects of mandatory launch limits on boating use levels would be similar to the effects expected during the interim period in which boaters would be asked to voluntarily meet one of the use level targets described below.

Boating Use Levels

The following analysis is based on the assumption that target use levels under each alternative would be met during the interim management period using the voluntary measures described for Alternatives B, C, D, and E. If, for any reason, target use levels are not attained or maintained, the effects for each alternative would be expected to be the same as in Alternative A, or an alternative with a target higher use level. The following analysis also assumes that launches of motorized boats include a single boat. Launches of non-motorized boats, rafts, canoes, an kayaks, etc. average between 2 and 3 vessels per launch.

Alternative A

Not limiting Boating Use Levels would result in increases in boating use in all segments where boating use occurs, subject to variations in water flow, weather, fishing, and economic conditions. From Service Creek to Tumwater Falls boating use would be expected to increase by approximately 4%

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per year above the 18,300 boater use days(one boater using the river for any portion of one day) estimated for 1998. This would amount to an increase of approximately 135 additional launches at an average length of 3.3 days per launch, accounting for 2,282 additional use days in 2001, assuming water and weather conditions similar to those in 1998. On weekends from Memorial Day through Fourth of July, the number of boating parties within these river segments would be expected to exceed the number of available river campsites in most cases. The consequences of this situation are described under impacts of Alternative A on dispersed camping. (Note: Four percent annual growth projection is based on a combination of observed increases in private and commercial boating use and on 1987 OPRD estimates for Central Oregon of a 4.2% annual increase in freshwater boat fishing and a 1.6% annual increase in river non-motor boating through the year 2000. Recreation Needs Bulletin, Oregon Statewide Comprehensive Outdoor Recreation Plan, Oregon Parks and Recreation Department, 1991.)

Alternative B

Targeting boating use at or below the maximum daily launches recorded in 1998, (19 launches from Service Creek/Twickenham and 16 launches from Clarno/Butte Creek) during the interim management period would reduce the amount of use on weekends compared to Alternative A. As in Alternative A, total boating use would be expected to increase approximately 4% in Segments 1-3 over 1998 levels, except that the 135 additional launches in 2001 would occur on weekdays, when current launches are well below target levels.

Alternative C

Targeting daily launches to correspond with 70% of available campsites, or 13 launches from Service Creek/Twickenham and 11 from Clarno/Butte Creek would reduce daily launches to less than in Alternatives A and B. During the 1998 season, daily launches were above Alternative C targets on 3 days from Service Creek/Twickenham, and on 2 days from Clarno/Butte Creek. Annual boating use would be expected to increase in Segments 1-3 at the same rate as in Alternatives A and B. To meet Alternative C targets, 26 launches that occurred on weekends in 1998, and all new launches (an estimated 135 by 2001), would need to occur on weekdays, a period when launches are currently below target levels.

Alternative D

Targeting daily launches at a 10-year historical average of daily peak period launches, or 8 launches from Service Creek/Twickenham and 6 from Clarno/ Butte Creek during the interim management period would reduce daily launch levels to less than all other alternatives. Many boaters would move launch dates away from peak use days, spreading use more evenly throughout the season. Some past users would likely discontinue boating the John Day due to frustration with non-permit measures, resulting in a slight decrease in repeat use. Total boating use would be expected to increase at 2% annually, a slower rate of increase than expected in all other alternatives. At this rate 68 additional launches and 1,120 additional boating use days would be expected by 2001. During the 1998 season, daily launches were above Alternative D targets on 9 days from Service Creek/ Twickenham, and on 7 days from Clarno/Butte Creek. To achieve Alternative D targets during the interim management period, it is estimated that 68 new launches and 79 of the launches that occurred on weekends in 1998, would need to occur on weekdays or “shoulder” seasons, when current launches are primarily below target levels.

Alternative E

Same as C, except that targeting daily launches for motorized use in Segments 1 and 2 during March and April would require communication between the BLM and motorized users to assure that no more than one or two motorized launches occurred on the same day. Non-permit measures designed to redistribute boating use to non-peak days would not be effective in managing daily motorized launches because these measures are designed to encourage entire groups of users to change their use patterns, rather than asking each individual to do something different from another individual. Achieving target levels for motorized use would not be possible without the use of a reservation or advance permit system. In Segment 2, motorized launch targets for March and April would comprise a portion of the target launch levels described for general boating use in Alternatives B, C, and D.

To accurately monitor compliance with the motorized use targets, motorized river patrols would be necessary during March and April, increasing the number of motorized administrative launches, and requiring additional funding to maintain motorized watercraft, and employ river staff during an otherwise low use period.

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During any month in which motorized boating is allowed, motorized boating use is expected to rise at approximately 4% annually (as is boating use in general). Although this alternative would allow motorized use in March and April to increase above current levels (one to two launches per month), capping motorized use in Segments 1 and 2 at 30 motorized launches per segment in March and 60 motorized launches per segment in April, would eliminate further increases in motorized use once the cap was reached.

Motorized Boating

Alternative A

Continuing existing management of Motorized Boating by allowing motorized boating use to fluctuate within existing restrictions would be expected to result in an estimated 4% annual increase in motorized boating use in all segments where flows are sufficient for navigation.

Common to All Action Alternatives

Closing Segments 10 and 11 to motorized boating would not be expected to have an effect on motorized boating since flows in these segments are rarely high enough to accommodate the use of motorized boats.

Alternative B

Adjusting areas and seasons of use to protect wildlife would result in a slight decrease in motorized boating use. The 57 motorized use days estimated for 1998 would be foregone as a result of this alternative, decreasing the total boating use days by .4 %.

Alternative C

Adjusting areas and seasons of use to protect wildlife and provide for use consistent with WSA status would have the same effects on boating use levels as in Alternative B, except that the 43 motorized use days estimated for 1998 would be foregone as a result of this alternative, decreasing the total boating use days by .3 %.

Alternative D

Prohibiting motorized boating to eliminate the potential for conflict with other resources or uses would be expected to have the same effects on boating use levels as in Alternative B, except that the 57 motorized use days estimated for 1998 would be foregone as a result of this alternative, decreasing the total boating use days by .4%.

Alternative E

Adjusting areas and seasons of current restrictions to protect anadromous fish, promote consistency with future wilderness designations, and limit potential user conflicts would be expected to have the same effects on boating use levels as Alternative B, except that 32 motorized use days estimated for 1998 would be forgone as a result of this alternative.

Dispersed Camping

Alternative A

Management of dispersed sites on a case-by-case basis to protect resources may involve temporary or permanent use restrictions at dispersed campsites where necessary to restore resource conditions. Temporary or permanent campsite closures would affect the number of campsites available for use.

Common to All Action Alternatives

Encouraging dispersed use in areas that can best sustain impacts of camping according to the recommendations of a modified Limits of Acceptable Change (LAC) Study would have the same effects as Alternative A, except that campsites in need of restoration would be identified through an LAC inventory of campsite conditions.

Developed Facilities

Alternative A

Continuing existing management of developed facilities would not be expected to affect boating use levels, and would be expected to result in a continuation of the launch point conditions described in Chapter 2.

Common to All Action Alternatives

Improving or upgrading existing facilities where needed to protect resources would be expected to have the same effect on boating use levels as in Alternative A.

Alternative B

Developing a primitive boat ramp at the existing Rock Creek site may slightly increase boating use of Segment 1, as it would provide clearly marked, legal public boat access in an area where landowners have discouraged use in the past. In Segment 2, adding additional launch lanes at Clarno and grading

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the primitive boat ramp at Butte Creek would not be expected to have an effect on boating use levels, since historical use of these sites appears to be unrelated to the level of site development. In Segment 3, developing lower Burnt Ranch with a primitive boat ramp, to replace the existing Burnt Ranch site, would be expected to slightly decrease boating use between Priest Hole and Burnt Ranch, and slightly increase boating use in Segment 3 below Burnt Ranch. Developing a new public boat launch at Twickenham to replace the existing private launch, would not be expected to affect boating use levels in Segment 3 as unrestricted boat launching is currently allowed at the private site.

Alternative C

Developing new facilities where needed to meet the needs of the recreational user and provide better resource protection would have the same effect on boating use levels as Alternative B, except that grading the primitive launch at Clarno East in Segment 3 would likely encourage short 3.5 mile fishing trips between Clarno East and Clarno Recreation Site.

Alternative D

Closing the primitive BLM launch ramp at Butte Creek would not likely affect boating use levels as boaters would simply launch on adjacent private land. Closing the existing Burnt Ranch site to vehicle access without providing another takeout at Lower Burnt Ranch would decrease boating use between Priest Hole and Burnt Ranch because putting in and taking out in this area would be foregone.

Public Access

Common to All Alternatives

Acquiring public boat access at Twickenham would not change use levels because access is currently available on private land. Improving the condition of the road to Priest Hole may slightly increase use of this site by boaters, primarily day users traveling from Twickenham to Priest Hole or from Priest Hole to Burnt Ranch.

Alternative A

Maintaining public access at existing levels would not be expected to affect boating use levels.

Alternative B

In Segment 3, improving access to lower Burnt Ranch, to replace access to the existing Burnt Ranch site, would decrease upstream use and increase down stream use, as described in Alternative B for Developed Facilities.

Alternative C

In Segment 1, acquiring a public access easement to Tumwater Falls and the confluence of Hay Creek and the John Day River would provide additional take-out points in a Segment where lack of road access to the river is limiting boating opportunities. A public take-out point near Tumwater Falls would open 10 miles of river to boaters that is currently available only to private landowners or motorized boaters, and would likely result in a increase in boating use in Segment 1. In Segment 2, acquiring a public access easement to the river via Butte Creek Road, would provide free access to the BLM launch site, would be expected to result in only a slight increase in boat launching at this site because the time required to reach the site and the roughness of the road is unacceptable to many users.

Alternative D

In Segment 3, closing the existing Burnt Ranch site to vehicle access without providing access to Lower Burnt Ranch would be expected to decrease boating use between Priest Hole and Burnt Ranch because a takeout in the Burnt Ranch area would be forgone.

Commercial Use

Alternatives A and B

Not limiting commercial permits would contribute to an increase in boating use levels in all segments where boating occurs over and above the 4% annual increase expected in recreation use in general, as described under Alternative A for Commercial Services.

The extent of the effects described above would be slightly less for Alternative B, since permit numbers would be slightly less.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment would not alter the projected 4% increase in boating use level as described under Alternative C.

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Energy and mineral resources

Energy and mineral resources are not expected to have any effect on boating use levels

Land Ownership, Classification, and Use Authorizations

Impacts will be discussed in future site specific proposals.

Boating Use Allocation

No alternatives concerned with resources or resource values would have an impact on the selection and implementation of an Allocation System. In addition, Motorized Boating, Dispersed Camping, Developed Facilities, Public Access, Commercial Use Energy and Mineral Resources, and Land Ownership, Classification, and Use Authorizations alternatives would have no impact on Boating Allocation Alternatives.

Potential impacts on Boating Allocations are described below.

Boating Use Levels

Alternative A

If boating use levels remain unrestricted, an allocation system would not be developed. If the LAC study indicates launch limits would be needed to protect resources or visitor experience, an allocation system should be selected.

Common to All Action Alternatives

If Limits of Acceptable Change (LAC) planning and monitoring data indicates recreation use is above acceptable levels, mandatory limits on boat launching in Segments 1-3 may be imposed. This would affect boaters by requiring participation in a permitting process as described under Allocation below.

Alternative E

By limiting the number of launches of motorized boats this alternative would require, after adoption of the plan, immediate implementation of an allocation system during a low use period due to the low daily limit for motorized boats.

Allocation

Alternative A

Not selecting an Allocation system would have no effect on existing conditions. In the long term, the lack of an allocation method could result in a delay in the implementation of a limited-entry permit system, once such a system has been determined necessary.

Alternative B

Allocating use between guided and non-guided users based on historical proportions (approximately 80% private use and 20% commercial use) would maintain current proportions of private and commercial use but would not accommodate future changes in public demand by specific user groups.

Alternative C

Allocating use through an annual common pool lottery system would allow equal access from guided and non-guided users to available launches. Available use would be allocated to applicants via a random selection process. The annual proportion of non-commercial and commercial users would not be predetermined, but would annually adjust to changes in public demand by specific user groups. Permits would be awarded non-commercial and commercial users at approximately the same proportion as the applicant pool. Requiring boaters to request a launch permit approximately 3 to 5 months in advance of their trip would make it difficult for users to initiate trips on peak use days on short notice.

Alternative D

Allocating use through a common pool, first-come, first-served system would allow equal access from non-commercial and commercial users to available launches as in Alternative C. Making blocks of permits available on more than one pre-set date would allow parties with both long term and short term planning timelines to have access to permits. The annual proportion of non-commercial and commercial users would not be predetermined, but would vary based on the order in which permit requests were received during reservation periods.

Motorized Boating

No actions concerning any resources or resource values would have an impact on the selection and implementation of alternatives for managing motorized boating.

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Potential impacts on Motorized Boating are described below.

Boating Use Levels

Management decisions related to Boating Use Levels would limit motorized boating in the same manner as all boaters except that under Alternative E specific launch targets of one launch of motorized boat in per day in March and two launches of motorized boats per day in April in Segments 1 and 2 would limit opportunities for motorized boating compared to existing management.

Under Alternative E limiting motorized launches in Segments 1 and 2 to one launch per day per segment during March, and two launches per day per segment during April would allow an increase from the current 5 motorized launches recorded for the two segments combined during these months in 1998, to 30 launches per segment during March and 60 launches per segment during April. Limiting launches through a first-come-first-serve registration system at the launch points would be impractical due to the small number of allowable launches per day, and the opportunities for launching from multiple private land locations. Implementation of this alternative would require a reservation or advance permit system to ensure that the actual number of daily launches did not exceed the proposed limits.

In Segments 1 and 2, general boating use during March and April is currently below daily target levels proposed by any alternative, and a system to reduce general launches during these months is not anticipated for at least 10 years, therefore limiting daily motorized launches would require development of a reservation system specifically to regulate motorized use. Recovering the administrative costs of managing and enforcing a reservation system specific to a small group of users would likely raise permit application fees to levels above what the user could support.

Allocation

Management decisions related to Allocation would affect motorized boaters in the same manner as all other users.

Motorized Boating

Alternative A

Continuing existing management of Motorized Boating would allow motorized boating levels to fluctuate according to public demand in all segments of the river, within existing restrictions, and within the alternative selected for Boating Use Levels. If boating use levels remain unrestricted, the use of motorized boats would likely increase by an estimated 4% per year. This increase in motorized use would likely include jet boats, gasoline and electric outboard motors, and would take place in the same river segments and seasons in which motorized boating currently occurs.

Common to All Action Alternatives

Closing Segments 10 and 11 (South Fork John Day) to motorized boating would preclude the possibility of future motorized use of these segments. Closing these segments to motorized boating would not be expected to affect current users because low water flows, a rocky streambed, and pasture cross fences make motorized boating impractical. However, increased water flow, advances in technology, and changes in fence locations could present new boating opportunities that would be precluded as a result of this alternative.

Alternative B

Extending the seasonal closure in Segments 1 and 2 to include the months of March, April, October and November would reduce motorized boating opportunities, especially during the months of March, April, and October when existing motorized use occurs. Current opportunity to use motorized boats during these months would be foregone. In 1998, 6 launches of motorized boats were recorded during these months. These trips included a total of 25 people for 37 use days. The effects of extending the existing closure to include the month of November in Segment 1 would likely be slight as motorized use seldom occurs during this month.

In Segment 3, adopting a seasonal closure from April 1 to October 1, except for downstream use of small electric motors (40 lbs. thrust or less) would likely displace current and future users during the months of April through July, when motorized use currently occurs. In 1998, boaters registered 10 motorized trips originating at Clarno, with 8 of the trips occurring from April through July. The travel direction of these trips is unknown, therefore it is uncertain whether these boaters traveled into Segment 2 or 3 or both. Based on the assumption that all of the trips traveled into Segment 3, 8 trips represent a possible 35 motorized use days registered in Segment 3 during April through July 1998. As a result of this action, the opportunity to use jet boats and gasoline-powered motors during April through September would be

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foregone, including a possible 24 motorized use days recorded in Segment 3 during 1998. Users of small electric motors (40 lbs. thrust or less) would not be affected by this action. Note: The dirtection of travel of motorized launches is unknown, therefore launches occurring at Clarno, with potential travel in Segments 2 and 3, are included in the data for both segments, resulting in a duplication of data when considered by segment. When considered as a whole, the 1998 recorded motorized use days forgone in all segments as a result of Alternative B would be 57.

Boaters affected by additional seasonal and segment closures would be expected to either boat outside their preferred season (during the unrestricted months), boat an unrestricted segment such as Segments 4, 6, or 7, boat other rivers which allow motors during the John Day restricted season (such as the Deschutes River), switch to non-motorized watercraft, or discontinue boating altogether. As a result of additional restrictions, motorized user days would be expected to increase slightly in Segments 4, 6, and 7 during the months of April through July. The expected increase in motorized boating on other area rivers would be negligible.

Alternative C

Seasonal restrictions would be the same as those proposed in Alternative B and would have the same effects except: Allowing the use of small electric motors (40 lbs. thrust of less) year-round in Segment 2 from Clarno Rapid to Clarno Bridge would not be expected to increase existing boating opportunities as this type of motor is insufficient to power a boat upstream against the current, and there are currently no take-out points on public land within this section. Boaters could navigate Clarno Rapid and take-out at Butte Creek, but future public access to this take-out point is uncertain.

In the portion of Segment 2 from Cottonwood Bridge (RM 40) to Clarno Rapids (RM 104.5), extending the existing motorized boat closure to year-round would reduce opportunities for motorized boating in this segment compared to Alternatives A and B. A year-round closure would have the greatest effect on boaters during the months of April and October. No motorized trips were recorded during the months of January, February, November or December of 1998. During 1998, an above average year for water flows, registration data indicates that 6 motorized trips launched at either Cottonwood or Clarno during the unrestricted season (January through April and October through December). Three trips occurred during April and one during October. Each boating party traveled within Segments 1-3. If it is assumed that all 4 boating parties traveled within Segment 2, 23 motorized use days would be forgone as a result of this action, as would the opportunity to use all types of motorized boats from January through April, and October through December within this segment. Note: The direction of travel of motorized launches is unknown, therefore launches occurring at Clarno, with potential travel in Segments 2 and 3, are included in the data for both segments, resulting in a duplication of data when considered by segment. When considered as a whole the 1998 recorded motorized use days forgone in all segments as a result of Alternative C would be 43.

In Segment 2, extending the motorized restriction from 5 to 12 months, downstream from Clarno Rapids, would eliminate the opportunity for motorized boaters to experience 46 miles of Wild and Scenic River.

Seasonal restrictions proposed for Segment 3 would be the same as those proposed in Alternative B. Therefore, the expected effects of this action in Segment 3 would be the same as in Alternative B.

Motorized boaters would respond to these additional seasonal and segment closures as described in Alternative B.

Alternative D

Prohibiting the use of motorized boats in Segments 1, 2, and 3 would eliminate the opportunity to use motorized boats of any type in these segments. The 57 motorized use days, including jet boat and gasoline-powered outboard motors, that occurred in these segments in 1998 would be foregone, and users would either move to other rivers or utilize non-motorized watercraft. As in Alternative C, the effects of this alternative would provide more opportunity to experience solitude and primitive recreation within WSAs than Alternative B and C.

Alternative E

Closing Segments 1 and 2 to motorized use from May 1 to December 1 would have the same effects on motorized use as described for Alternative B, except that rather than a March and April closure on motorized use, limited motorized launches would be allowed during this period. (See Alternative E for Boating Use Levels). The 4 motorized launches recorded in Segments 1 and 2 during March and April of 1998 would be allowed to continue. Two launches, accounting for 12 use days, that were recorded in October 1998 would be forgone. Note: The direction

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of travel of motorized launches is unknown, therefore launches occurring at Clarno, with potential travel in Segments 2 and 3, are included in the data for both segments, resulting in a duplication of data when considered by segment. When considered as a whole the 1998 recorded motorized use days forgone in all segments as a result of Alternative D would be 32.

In Segment 3, the opportunity to use all types of motorized boats from May 1 to December 1 would be foregone, including a possible 30 motorized use days recorded in this segment during these months in 1998. (See Table II-Z) In addition, this action would eliminate the use of small electric motors attached to drift boats or rafts which are currently used by an unknown number of boaters to aid or speed navigation.

Dispersed Camping

Alternatives for Dispersed Camping would have the same effects on motorized boating as for all types of boating use. See discussion of impacts of Dispersed Camping on Boating Use Level.

Developed Facilities

Alternative A

Continuing existing management of developed facilities would not be expected affect motorized boating.

Common to All Action Alternatives

Improving or upgrading existing facilities to protect resources would not be expected to affect motorized boating.

Alternative B

Improving or upgrading existing facilities where needed to better meet the needs of the recreation user, and developing new recreation sites to replace sites that are closed for resource protection would increase launch access for motorized boats at Rock Creek, Clarno, and Lower Burnt Ranch, if such use were permitted under the selected alternative for motorized boating.

Alternative C

Developing new facilities where needed to provide better resource protection would have the same effects on motorized boating as in Alternative B.

Alternative D

Reducing facilities at selected sites, or closing selected sites, in an attempt to discourage use and protect resources, would not affect motorized boating because none of the are used for this purpose.

Public Access

Common to All Alternatives

Acquiring public river access at Twickenham to replace the current private access would provide a public access point for motorized boats if allowed under the alternative selected for motorized boating.

Alternative A

Maintaining public access at existing levels would maintain existing opportunities for motorized boating.

Alternative B

Access changes proposed under this alternative would nave no effect on motorized boating.

Alternative C

Same effects as Alternative B, except that new access in Segments 1 and 2 could provide additional public access to the river at Tumwater Falls, Hay Creek, Butte Creek and below Clarno Rapid. Additional access points would increase launch options, allowing boaters to more easily avoid rapids, thus increasing opportunities to navigate the river at lower water levels than at present.

Alternative D

Reductions in public access to protect and enhance resources would not reduce motorized boating opportunities because access routes that would be closed are long, rough, and difficult to negotiate when pulling a trailer.

Commercial Use

Alternative A

With no cap on commercial permits the number of commercial permits administered by the BLM would be expected to increase. A portion of the new permittees would likely use motorized boats, where permitted, as a part of their business. This would result in an increase in the number of motorized boating use days.

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Alternative B

Same as A except the effects described above would be slightly less because permit numbers would be slightly less.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment could result in an increase in permittees using motorized boats, where permitted, as a part of their business if a needs assessment indicated a growing public need for this type of service.

Land Ownership, Classification, and Use Authorizations

Impacts will be discussed in future site specific proposals.

Dispersed Camping

Alternatives concerned with Fish, Wildlife, Native American Uses, and Water Quantity and Quality, Allocation System, and Energy Mineral Resources would not be likely to have any impacts on dispersed camping.

The following discloses potential impacts of the remaining alternatives on Dispersed Camping.

Riparian and Aquatic Habitat Restoration

Continuing existing Riparian and Aquatic Habitat Restoration management may result in temporary or permanent use restrictions at dispersed campsites where necessary to restore riparian and aquatic habitat. Temporary or permanent campsite closures could affect the number of available campsites which could trigger adjustments in boating use levels. As a result of restoration efforts, enhanced riparian conditions at some dispersed campsites would be expected.

Paleontological Resources

Common to All Alternatives

Some campsites may be closed to protect paleontological resources.

Cultural Resources

Common to All Alternatives

Some campsites may be closed to protect cultural resources.

Information and Education

Existing Management

Continuing existing management of Public Information and Education would be expected to result in a more informed public who, by practicing no-impact camping, would help to slow or reduce the rate of resource damage at dispersed campsites, which may reduce the need for temporary or permanent campsite closures. Informed users would be expected to help slow the spread of noxious weeds.

Common to All Action Alternatives

Sharing information and education messages with more users, in additional formats (brochures, maps and interpretive signs), would be expected to increase the effects of Existing Management, and would help direct users to the dispersed sites that can best handle human use.

Law Enforcement and Emergency Services

Existing Management

Continuing existing management of Law Enforcement and Emergency Services would not change impacts on dispersed camping.

Common to All Action Alternatives

Improving interagency coordination of law enforcement and emergency services efforts, including increased river patrols by law enforcement personnel, would be expected to improve visitor compliance with use regulations. This would result in reduced litter, less campsite degradation due to vandalism and misuse, and fewer camper caused fires.

Private Land Use

Some campsites could become available on private land with the consent of the land owner. See Land Ownership Classifications and Use Authorizations.

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Scenery

Alternative A

Continuing existing management of Scenery would not be expected to have an effect on dispersed camping.

Common to All Action Alternatives

Meeting interim VRM classification and design standards when identifying and signing dispersed sites, would ensure that signs and markers are unobtrusive and would not attract attention.

Grazing

Alternative A

The presence of cows would impact campsites by removal of vegetation. If campsites were recently grazed, sites may have fresh cow dung which would be an obstacle for walking and create an unpleasant odor. This would primarily be an early season impact because most cows would be off public lands adjacent to the river by about May 1.

Alternative B

Fencing of 9 campsites would prevent the impacts described for Alternative A from occurring in these sites.

Alternatives C and D

Not allowing grazing in the riparian zone or campsites would eliminate the potential for impacts described in Alternative A.

Agricultural Lands

New camping opportunities would become available when agricultural lands are converted to native vegetation.

Alternative A

No changes in camping opportunities are likely.

Alternative B

Availability of new campsites is unlikely.

Alternatives C and D

New opportunities for dispersed camping would be available on lands converted to natural vegetation.

Boating Use Levels

Alternative A

Continuing existing management as described in Alternative A for Boating Use Levels would be expected to result in the same effects on dispersed camping as described for scenery.

Alternative B

Setting daily launch levels at or below 1998 levels, would result in the same effects on dispersed camping as described for scenery.

Alternative C

Setting interim daily launch targets corresponding to 70% of available campsites, would result in the same effects on dispersed camping as described for scenery.

Alternative D

Setting daily launch targets at approximately 60% below 1998 levels, would be result in the same effects on dispersed camping as described for scenery.

Alternative E

Same as Alternative C

Motorized Boating

Decisions related to restrictions on Motorized Boating would not be expected to have an effect on dispersed camping because the number of motorized use days is very low (57 use days or .4% of overall use in 1998) compared to overall use, and motorized boat users have the same effects on campsites as boaters in general.

Dispersed Camping

Alternative A

Management of dispersed sites on a case-by-case basis to protect resources may involve temporary or permanent use restrictions at dispersed campsites where necessary to restore resource conditions. Temporary or permanent campsite closures would affect the number of campsites available for use which would affect camping opportunities.

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Common to All Action Alternatives

Encouraging dispersed use in areas that can best sustain impacts of camping would reduce vegetation loss in some campsites.

Developed Facilities

Alternative A

Continuing existing management of developed facilities would not affect dispersed sites.

Alternative B

Same as A, although some users accessing dispersed sites by vehicle may switch to improved developed sites.

Alternative C

Same as B, except developing a new campground at Ellingson Mill on the South Fork of the John Day river would attract some users away from dispersed sites.

Alternative D

Closing Burnt Ranch without replacing it would displace current users to dispersed sites.

Public Access

Alternative A

Continuing existing management would not be expected to have an effect on dispersed camping.

Alternative B

Improving the South Fork John Day Road in Segments 10 and 11 would make public access to dispersed campsites along this road easier.

Alternative C

The same as Alternative B except the South Fork John Day road would be widened and would provide more convenient access to dispersed sites along the river easier to access than in Alternative B.

Alternative D

Closing roads in segments 2 and 3 would eliminate motor vehicle access to some dispersed campsites.

Commercial Services

Alternative A

Issuing unlimited commercial permits would be expected to increase the number of commercial permits administered by the BLM, resulting in an expected increase in commercial use days, and boating use levels in all segments where boating occurs, over and above the 4% annual increase expected in recreation use in general. The effects of increased boating use levels on dispersed camping are the same as those described for scenery. In some cases, increased occupancy of campsites may lead to deterioration of resource conditions, increasing the number of campsites that may need to be temporarily or permanently closed for restoration purposes.

Alternative B

The extent of the effects described above would be slightly less for Alternative B, since permit numbers would be slightly less.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment would not be expected to affect dispersed camping because increases in boating use would not be expected as a result of this action.

Land Ownership, Classification, and Use Authorizations

Impacts will be discussed in future site specific proposals. Acquisitions have the potential to provide more dispersed campsites on public land.

Developed Recreation

Alternatives that focus on Fish, Wildlife, Native American Uses, Water Quantity and Quality, Paleontological Resources, Cultural Resources, Private Land Use, Information and Education Law Enforcement and Emergency Services, and Energy and Mineral Resources would not be expected to affect developed facilities.

The following discloses potential impacts of the remaining alternatives on Developed Recreation.

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Riparian and Aquatic Habitat Restoration

Continuing existing Riparian and Aquatic Habitat Restoration management may involve temporary or permanent use restrictions at developed campsites to restore riparian and aquatic habitat.

Scenery

Alternative A

Continuing management of Scenery would not be expected to have an effect on developed facilities.

Alternative B

Assigning interim VRM Classifications to river segments would require that any new facility development meet VRM standards. Oregon State Scenic Waterway standards would also be considered prior to facility development. Proposed developments located within view of the river may need to be screened by vegetation or topography, and may need to blend in color and design with the natural surroundings.

Grazing

Alternatives A and B

Where grazing is permitted within developed facilities, the presence of fresh cow dung would be an obstacle for walking and create an odor. This would occur primarily from late fall through early spring. Most cows would be off public land by about May 1st.

Alternatives C and D

Cows would not have an effect on campsite condition because they would not have access to developed facilities.

Agricultural Lands

A number of sites suitable for development could become available through the conversion of agricultural lands to native vegetation under alternatives B, C, or D.

Alternative A

New sites suitable for development would not likely become available.

Alternative B

Fewer opportunities for new facilities because less agricultural land would be converted to native vegetation than Alternatives C and D.

Alternatives C and D

Several opportunities for development of facilities because of the amount of land to be converted to non-irrigated use.

Boating Use Levels

Alternative A

Continuing existing management of Boating Use Levels would allow increased boating use between Memorial Day and the Fourth of July, in all segments where boating use occurs, and as a result, increased waiting times and competition for parking spaces, launch lanes, and take-out sites would be expected. At Clarno Recreation Site, where site capacity is already exceeded on peak-use days, the waiting time for boat launching would increase, and an increased number of users would be forced to park along the highway due to a shortage of parking space. At Cottonwood, the proposed public launch site at Twickenham, and at Service Creek, boaters may have to wait for use of a boat ramp to launch or take out boats. On weekdays, boating use at these locations would be expected to increase, but would not exceed capacity in the short term. Other sites would not likely see substantial increases in boating related use. An increase in maintenance costs would be expected at all sites associated with boating, as use increased.

Alternative B

Setting daily launch targets at or below 1998 levels, would likely result in a continuation of existing conditions on weekends at parking areas, launch lanes, and take-out sites associated with boating, as described in Chapter 2. On weekdays, boating use at these locations would be expected to increase, but would not exceed capacity.

Alternative C

Setting daily launch targets corresponding with 70% of available campsites, would result in decreased boating use on weekends, and increased boating use on weekdays and “shoulder” seasons. Use at parking areas, launch lanes, and take-out sites would become more balanced throughout the week, and

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boating use would not be expected to exceed site capacity.

Alternative D

Setting daily launch targets to approximately 60% below 1998 levels, would be expected to have the same effects on developed facilities as in Alternative C.

Alternative E

Same as alternative C.

Allocation

Decisions related to Allocation would not be expected to have an effect on developed facilities because these decisions would not affect overall use levels, but merely the ratio of guided to non-guided users.

Motorized Boating

Decisions related to Motorized Boating would not be expected to have an effect on developed facilities because facilities related to boating use are used by all boaters, regardless of type of watercraft. Therefore, the need for proposed facilities would remain regardless of the alternative selected for motorized boating.

Dispersed Camping

Alternative A

Continuing existing management of dispersed camping would not affect developed facilities.

Common to All Action Alternatives

Same as Alternative A, except that in Segments 10 and 11, closing riparian areas to dispersed camping would likely encourage the use of any existing or future developed campgrounds in the surrounding area.

Developed Facilities

Common to All Alternatives

Continuing to improve or upgrade existing facilities when needed to protect resources by installing signing, and parking barriers at sites where visitation is high, would help to prevent trampling of vegetation by vehicles. The installation of vault toilets would help to prevent unsanitary conditions.

Alternative A

Continuing existing management of Developed Facilities would have no effect on use levels at most sites because most recreation sites are strategically located, well established sites, and would continue to receive use even if no improvements are made. Use of developed facilities along the John Day River is generally expected to increase at approximately 4% per year.

The degree of development at a site, such as signing, vehicle barriers, and toilet facilities, is expected to have a direct effect on the ability of resource conditions in and around a site to withstand the pressures of increased use. Additional use would not be expected to affect resource conditions at recreation sites which have been “hardened” or prepared to accommodate use while protecting resources. Some sites which have not been “hardened” would be expected to incur soil compaction, loss of native vegetation, and increased weed infestation as a result of increased use.

Segment 1 Continuing the practice of no scheduled maintenance of the Oregon Trail Interpretive Site would be expected to result in a degradation of existing facilities as well as contribute to continued low visitation, due in part to a lack of directional signing. Maintaining Rock Creek Recreation Site at existing levels would be expected to have little effect on resource conditions, as low visitation of this site is expected to continue due to limited parking facilities and a lack of launch facilities. Maintaining Cottonwood Recreation Site at existing levels would be expected to have little effect on resource conditions, despite expected annual increases in use, as signs, vehicle barriers, a large parking area, and toilets have already been installed at his site to protect resources.

Segment 2 Maintaining the boater registration and information station at Butte Creek, assuming continued annual increases in use, would be expected to have little effect on resource conditions in the short-term, as existing use levels are low. In the long-term, assuming the private landowner continues to allow fee-access of the Butte Creek Road, use levels on several weekends would be expected to increase to the point where vehicle damage to riparian vegetation and streambanks could occur. Maintaining Clarno Recreation Site at existing levels, assuming annual increases in use, would not change existing resource conditions, because signs, vehicle barriers, and toilets have already been installed at his site to protect resources. During boating season, waiting times for use of the

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limited launch facilities at Clarno would be expected to increase each year, and existing parking facilities would continue to be inadequate to accommodate use on Spring and Summer weekends, resulting in an increasing number of boater vehicles parked on the highway outside the recreation site.

Segment 3 Maintaining Priest Hole Recreation Site at present level of development, assuming continued annual increases in use, would likely result in increases in sanitation problems, due to a lack of toilet facilities at this location. Maintaining Service Creek Recreation Site at existing levels, assuming continued annual increases in use, would likely result in very little effect on existing resource conditions, as signs, vehicle barriers, and toilets have already been installed at this site to protect resources.

In Segments 10 and 11, no developed sites currently exist.

Alternative B

Segment 1 The effects of Alternative B would be the same as for Alternative A except that implementing regularly scheduled maintenance of the Oregon Trail Interpretive Site, improved directional signing for vehicle and foot access, would be expected to result in improved conditions of existing site facilities and increased visitation. Additional signing would make it easier to access the interpretive site by road from Wasco or Grass Valley, and a designated boat parking area would enable boaters to walk to the site by walking a short distance along a marked easement. In the short-term, the slight increase in visitation expected from this action would be expected to have little effect on resource conditions. In the long-term, increased use could potentially result in more trash, increased trespass, and a need for toilet facilities. The initial cost of implementing this action is estimated at $1,000, with annual maintenance and monitoring costs of approximately $1,000.

Improving Rock Creek Recreation Site with additional parking facilities, a primitive boat ramp, vehicle barriers, and a boater registration and information station would provide a user-friendly take-out point for boaters launching from Cottonwood, provide information on use of the river by downstream users, and would be expected to reduce potential trespass and conflicts between landowners and recreationists over access to parking and launch points. As a result of this action, use of this site and boating use of Segment 1 would be expected to increase slightly as upstream and downstream users learned of this access point. In the long-term, increased use could potentially result in more trash, increased trespass, and a need for toilet facilities. Additional monitoring would be required, which may lead to additional BLM actions to protect resources as necessary. The initial cost of implementing this action is estimated at $1,500, with annual maintenance costs of approximately $1,000.

The installation of picnic tables and planting shade trees at Cottonwood Recreation Site would better meet the needs of current and future users by providing picnic facilities and shade. The initial cost of implementing this action is estimated at $1,000, with annual maintenance costs of approximately $150.

Segment 2 The effects of Alternative B would be expected to be the same as for Alternative A, except that occasional grading of the Butte Creek primitive launch would make the site easier to use, and would concentrate launching in a preferred location, thus discouraging boaters from damaging riparian vegetation in search of easier river access. Constructing an additional primitive launch lane at Clarno would be expected to reduce launch waiting times on busy weekends by 50%, thus reducing congestion at the launch site. An additional launch lane would not be expected to accelerate use of the site beyond the 4% annual increase expected for recreation sites in general, as users don't base their decision to boat Segment 2 on the condition of launch facilities at Clarno. Installation of a pay phone at Clarno would provide a needed service to boaters, and would reduce disturbances to the adjacent landowner which occur when boaters request to use the private telephone. The initial cost of implementing this action is estimated at $1,500, with annual maintenance costs of approximately $500.

Segment 3 The effects of Alternative B would be expected to be the same as for Alternative A, except that developing a new site at Lower Burnt Ranch to replace the existing Burnt Ranch Site would be expected to shift vehicle and boat access to the new site. Construction of a primitive launch, parking area, and boater registration station at Lower Burnt Ranch would provide new river access for fishing, boating, dispersed camping, picnicking and related recreational activities. A primitive launch ramp at Lower Burnt Ranch would provide boater access below Burnt Ranch Rapids, allowing boaters to avoid navigating the rapid by launching just downstream. The initial cost of this action is estimated at $1,500, with annual maintenance costs of approximately $200.

Installation of a vault toilet at Priest Hole Recreation

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Site, would reduce the amount of human waste and toilet paper left by users. This action may slightly accelerate the increase in vehicle camping already expected to occur at recreation sites in general, as the site may attract additional users who prefer to camp where toilet facilities are available. Increased use could potentially result in increased trash and vandalism. The initial cost of implementing this action is estimated at $7,000, with annual maintenance and monitoring costs of approximately $500.

Segments 10 and 11 No developed sites exist.

Alternative C

Segment 1 The effects of Alternative C would be the same as for Alternative B.

Segment 2 The effects of Alternative C would be the same as for Alternative B, except that installation of a vault toilet at Juniper Island, contingent on obtaining a public access easement for Butte Creek Road, would be expected to reduce the amount of human waste and toilet paper left by users. Installation of an information station would be expected to improve compliance with use regulations, resulting in a reduction in the use of ground fires, fire ring construction and associated trash deposits, and the risk of human-caused wildfire. This action may slightly accelerate the increase in camping already expected to occur at dispersed recreation sites in general, as the sites may attract additional users who prefer to camp where toilet facilities are available. Increased use could result in increased trash and vandalism within the campsite. Vehicle access to this site is contingent on the landowner continuing to offer free or fee-access to recreationists. The initial cost of implementing this action is estimated at $7,000, with annual maintenance and monitoring costs of approximately $500.

Segment 3 The effects of Alternative C would be the same as for Alternative B, except that grading the primitive Clarno East take-out point would make it easier for boaters to put in and take out boats at this site. As a result, use of this site as a take-out point would increase. In time, the current congestion which occurs on busy weekends at Clarno Recreation Site would be reduced, by offering an alternative take-out point 3.5 miles upstream of the current facility. Some boaters may also use the site as a launch point for a short fishing trip on Segment 3, or to launch a Segment 2 trip, as a way to avoid congestion at Clarno. The potential use of Clarno East would be expected to result in the need for an additional boater registration and information station, and additional staff to check-in boaters, monitor use, and maintain the site.

Developing Lower Burnt Ranch as a primitive camping area with signs, maps, vehicle barriers, and a vault toilet would be expected have the same effects as for Alternative B, except that the site would be expected to attract campers in addition to boaters and anglers. This action may slightly accelerate the increase in use already expected to occur at recreation sites in general, as the site may attract additional campers who prefer to camp where toilet facilities are available. Increased use could potentially result in increased trash and vandalism. The initial cost of developing the camping area is estimated at $8,500 with annual maintenance and monitoring costs of approximately $500.

Segment 10 Creating a new campground at Ellingson Mill, to include a vault toilet, tables, information board, sign and vehicle barriers, would be expected to concentrate campers in an area that had been “hardened” to accommodate visitor use while protecting resources. Some of the camping use currently occurring in sensitive riparian areas would be shifted to the hardened site. Developed facilities would be available to visitors to the South Fork John Day River Backcountry Byway. The creation of this campground may slightly accelerate the increase in use already expected to occur at recreation sites in general, as the campground may attract additional campers who prefer sites with developed facilities. Increased use could potentially result in increased trash and vandalism. The initial cost of developing the campground is estimated at $10,000 with annual maintenance costs of approximately $500.

Segment 11 The effects of Alternative C would be the same as for Alternative A.

Alternative D

Segment 1 The effects of Alternative D would be the same as for Alternative A.

Segment 2 Closing the existing facilities at ButteCreek would be expected to result in boaters shifting their launch location to BLM land at Juniper Island or to private land. Boat launching in the vicinity of Butte Creek would be expected to temporarily decrease as current users take time to adjust to changes in launch location. Provided the landowner continues to allow vehicles fee-access to the Butte Creek Road, boat launching levels would be expected to return to current levels within 3 years

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and then increase at approximately 4% annually. No cost would be associated with implementation.

Segment 3 Closing the existing Burnt Ranch Site to vehicle access would be expected to protect resources, control erosion, and reduce the need for vehicle assistance, while allowing users to access the site by foot or horse. The initial cost of implementing this action is estimated at $1,000, with annual enforcement costs at $1,000.

Segment 10 and 11 Not developing recreation sites would have the same effects as Alternative A.

Public Access

Common to All Alternatives

Improved signing of public access routes to the Oregon Trail Interpretive site at McDonald's Crossing would make it easier for the public to find the site thus increasing access to a developed facility.

Alternative A

Continuing existing management would not be expected to have an effect on developed facilities.

Alternative B

Closing the existing Burnt Ranch Site to vehicles and developing access to the Lower Burnt Ranch site would be expected to increase use at the new site and may increase use of the original site by walk-in visitors. Increased use may result in the need for toilet facilities, vehicle barriers, and other improvements to protect resources.

Alternative C

Same as Alternative B.

Alternative D

Reducing access in segments 2 and 3 would not be expected to result in the closure of developed sites.

Commercial Use

Alternative A

The effects of increased commercial boating use on developed facilities would accelerate the changes described for general boating use in Alternative A of Boating Use Levels.

Alternative B

Increased requirements for permits would slightly decrease the number of permits issued and would result in less use and fewer impacts than described for Alternative A.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment would not be expected to affect developed facilities since increases in boating use would not be expected as a result of this action.

Land Ownership, Classification, and Use Authorizations

Some acquisitions could provide the opportunity to develop additional facilities. Future development would require site specific analysis.

Public Access

Alternatives that focus on Fish, Wildlife, Native American Uses Water Quantity and Quality, Grazing, Law Enforcement, and Emergency Services, and Allocation would not affect public access.

The following discloses potential impacts of the remaining alternatives on Public Access..

Riparian and Aquatic Habitat Restoration

Continuing existing Riparian and Aquatic Habitat Restoration management may involve temporary or permanent use restrictions at public access points where necessary to restore riparian and aquatic habitat.

Paleontological Resources

Access for hiking, camping, fossil collecting, OHV use, and hunting may be limited because important paleontological resource sites may be closed under either of the alternatives. This impact would be most pronounced in the upper end of Segment 2.

Cultural Resources

Access for hiking, camping, OHV use, and hunting may be limited because important cultural resource sites areas may be closed under any of the alternatives.

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Information and Education

Existing Management

Continuing existing management of Information and Education is not expected to have an effect on public access.

Additional Actions

Increasing public information and education efforts would include maps providing the location of access points available for public use.

Private Land Use

Management of private lands would not be expected to have any effect on public access, except that permission to use private roads may be revoked at any time.

Scenery

Alternative A

Continuing existing management of Scenery would not be expected to have an effect on public access.

Alternative B

Assigning interim VRM Classifications to river segments would require that any proposed projects to develop or improve public access meet VRM standards. Oregon State Scenic Waterway standards would also be considered prior to public access development. New public access proposed under Alternative C for Hay Creek and Tumwater Falls in Segment 1 may need to be screened by vegetation or topography if road construction were visible from the river, depending on the visual standards that apply to that specific location. Road improvements proposed under Alternative C for the South Fork Road in Segments 10 and 11, may require vegetative screening to mitigate effects to visual quality.

Agricultural Lands

Alternative A

Continuing existing management of Agricultural Lands would not change existing access.

Alternatives B, C, and D

These alternatives convert more agricultural land to native vegetation. These lands are generally accessible by road across public land and by the river. Some of these lands could be used for new campsites creating new recreation access points.

Boating Use Levels

Alternative A

Increased use would likely result in increased demand for additional public access routes to the river. It would also likely increase the potential for private land trespass, and recreationist/landowner conflict.

Alternatives B, C, D, and E

Maintaining daily launch levels at or below 1998 levels would maintain the need for public access at existing levels.

Motorized Boating

Alternative A

Continuing existing restrictions on motorized boating would not affect public access.

Alternatives B, C, and E

Additional restrictions on when and where motorized boats can be used would reduce existing public access enjoyed by motorized boaters, requiring them to adjust either the season, location, or type of watercraft used in order to continue accessing the river.

Alternative D

Prohibiting the use of motorized boats in a given segment would require recreationists to access that segment of the river by float boat, vehicle, foot or horse. In Segment 1, motorized boating is currently the primary means of public access to the river between McDonald Crossing and Tumwater Falls (11 miles), as no public take-out exists below McDonald Crossing (RM 21), and no public roads or trails access the river downstream of this point. Prohibiting motorized boating in Segment 1 would virtually eliminate public access below McDonald Crossing, except in cases where permission to cross private land was obtained from the landowner.

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Dispersed Camping

Alternative A

Continuing existing management of Dispersed Camping would not be expected to have an effect on public access.

Common to All Action Alternatives

Encouraging dispersed use in areas that can best sustain the impacts of camping would have the same effects on public access as in Alternative A, except that installing signs and parking barriers to protect riparian vegetation along the South Fork in Segments 10 and 11, would result in a loss of vehicle access to the river bank in some places.

Developed Facilities

Actions proposed under Developed Facilities would not be expected to have an effect on public access, except at Twickenham, Burnt Ranch, and Ellingson Mill as described under Public Access, below.

Public Access

Common to All Alternatives

Segment 1 Coordinating with local county governments to sign public access routes and parking areas associated with McDonald Crossing and the Oregon Trail Interpretive Site would shift current use to areas with legal public access, reducing trespass potential, and landowner/ recreationist conflicts. Signing public access routes and parking areas associated with the interpretive site would encourage increased visitation.

Segment 3 Improving the road to Priest Hole Recreation Site would be expected to reduce travel problems during wet conditions, resulting in reliable access to the site.

Providing new public river access on 14 acres of private land on the North side of the river 2 miles downstream from the Twickenham Bridge would replace the existing private access point, which is scheduled to be closed to the public by the landowner on January 1, 2000. A reduction in conflicts between landowners and recreationists would be expected, as existing recreational use would be moved away from residential areas.

Segments 10 and 11 Improving the South Fork Road with ditches and culverts would result in fewer washouts along the road, with fewer traffic delays for residents and visitors to the South Fork Backcountry Byway.

Alternative A

Maintaining access at existing levels would not change existing access to public lands.

Common to All Action Alternatives

Segment 3 Closing the existing Burnt Ranch Recreation Site to motor vehicle access would increase the effort required to access this site but would reduce the frequency of the need for motorist assists.

The loss of this site as a launch point would affect boaters with four wheel drive vehicles who use this site as a take-out for a one-day float from Twickenham, or as a take-out at low water flows to avoid Burnt Ranch Rapid (just downstream of the site). The initial cost of implementing this action is estimated at $1,000, with annual enforcement costs of approximately $1,000**.**

Alternative B

Segment 1 No actions are proposed, access would remain the same as under existing management.

Segment 2 The effects of Alternative B would be expected to be the same as for Alternative A, except that maintaining the road on the West bank from Clarno to Sorefoot Creek would ensure a continuation of existing access for recreationists, school groups, landowners, and lessees, but would not be expected to accelerate increases in use as no new areas would be accessible, and access would continue to be available for all types of vehicles.

Segment 3 The effects of Alternative B would be expected to be the same as for Alternative A, except that developing new vehicle access to Lower Burnt Ranch would shift current vehicle use from the original Burnt Ranch site to an a area where resources are better suited to handle recreational use. By shifting use to the new site, resources would be protected without a net loss of recreational opportunities. Two-wheel drive vehicles could access the new site, resulting in easier access for vehicle camping and boat launching, and reducing the need to rescue stranded vehicles. Use of the site for boat launching would enable users to launch just below Burnt Ranch Rapids and create an opportunity for one or two day floats to Clarno during low-water periods. However the opportunity to take out just

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above the rapids would be lost. As a result low-water or one-day floats originating at Twickenham, would not be as convenient for users.

Segments 10 and 11 The effects of Alternative B are expected to be the same as for Alternative A, except that improving the surface of the South Fork Road would be expected to improve travel conditions. Installing signs and vehicle barriers to keep vehicles off of sensitive riparian areas would limit vehicle access for camping, fishing, and sightseeing to suitable sites. The ability to have uncontrolled vehicle access to all areas between the road and the river would be lost. This action would not be expected to affect use levels. The initial cost of implementing this action is estimated at $500,000 with annual maintenance costs of approximately $10,000.

Alternative C

Segment 1 The effects of Alternative C would be expected to be the same as for Alternative B, except that acquiring public access to Tumwater Falls and the confluence of Hay Creek and the John Day River would provide two more important public access points.

Public road access to the vicinity of Tumwater Falls would provide new opportunities for fishing, boating access, sightseeing and related recreational activities. New public road access in this area would provide an alternative to the current access, which is limited to those who own or operate a motor boat.

Public road access down Hay Creek to its confluence with the John Day River and downstream 1/4 mile to public land would provide opportunities for fishing, hunting, boating access, and related recreational activities. Public road access to recreational opportunities in this area would provide an alternative to boat-in access, which limits use of the area to those who own or operate a boat.

Segment 2 The effects of Alternative C would be expected to be the same as for Alternative B, except that seeking public road access to the river via Butte Creek Road would be expected to result in increased use of the Butte Creek launch point and Juniper Island Recreation Site (See Effects on Boating Use Levels and Dispersed Camping). Recreationists would no longer be required to pay an access fee for the use of the private road which accesses these BLM recreation sites. Free access through private lands to public lands in this area would be expected to result in increased use of this area by steelhead and small mouth bass anglers. Future access to these sites would be guaranteed for the life of the easement.

Public road access to this area would increase the potential for trespass and recreationist/landowner conflicts due to the intermingling of public and private lands in this area.

Segment 3 Actions proposed would be limited to those described under Common to All Alternatives and Common to All Action Alternatives and would have the same impacts on access.

Segments 10 and 11 The effects of Alternative C would be the same as described for Alternative B, except that widening the South Fork Road where practicable would increase the safety and convenience of the road. However, widening the road may encourage increased driving speeds and more use, which could result in a safety hazard for drivers, pedestrians, recreationists and livestock on and adjacent to the road, in spite of the improved road conditions. The initial cost of implementation is estimated at $1,000,000 with annual maintenance costs of approximately $10,000.

Alternative D

Segment 1 No actions are proposed beyond those described in Common to All Alternatives.

Segment 2 The effects of Alternative D would be expected to be the same as for Alternative C, except that closing the BLM road on the West bank at the Clarno Homestead would convert 1.5 miles of vehicle access to non-motorized access. Loss of 1.5 miles of motorized access would result in changes to the type of use currently occurring north or downstream of the homestead. Campers, pheasant hunters, commercial boaters and educational tour groups would need to either adjust their area of use to south of the motorized closure, or access the area by foot or horse. This action would likely displace some current users, while others, especially the pheasant hunters, may prefer a non-motorized experience.

Segment 3 The effects of Alternative D would be expected to be the same as for Alternative B, except that not improving Lower Burnt Ranch would result in a change in the type of use currently occurring at the existing Burnt Ranch Site. Lower Burnt Ranch, in its current undeveloped state, would continue to be available to anglers, picnickers, rafters and others who could walk the short 75 feet to the river bank. The lack of a primitive launch ramp at the new site would displace boaters who currently use the existing Burnt Ranch site to launch and take-out drift boats.

Segment 10 and 11 No action is proposed in Alternative D. Impacts would be the same as for Common to All Alternatives.

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Commercial Use

Alternatives A and B

Issuing unlimited commercial permits would be expected to increase the number of commercial permits administered by the BLM, resulting in an increase in commercial use days, thus an increase in boating use levels and an increased need for public river access points.

The extent of the effects described above would be slightly less for Alternative B, since permit numbers would be slightly less.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment would not be expected to affect the need for public river access since increases in boating use would not be expected as a result of this action.

Land Ownership, Classification, and Use Authorizations

Many of the potential acquisitions would provide additional public access to the river.

Commercial Use

Actions concerning resources or resources values would be expected to have the same effect on Commercial Use as they have on recreation use as described for boating use levels and recreation opportunities.

The following discloses potential impacts of the remaining alternatives on Commercial Services.

Law Enforcement and Emergency Services

Existing Management

Continuing existing management of Law Enforcement and Emergency Services is not expected to have an effect on commercial services.

Additional Actions

Improving coordination of law enforcement and emergency services may result in a decrease in the incidence of non-permitted guiding and an increase in permittee compliance with BLM and State Marine Board requirements.

Boating Use Levels

Future boating use limits could affect the ability of all boaters, including commercial permittees to obtain launch permits for controlled use dates.

Allocation

Common to All Alternatives

Decisions related to selecting an Allocation method would have no effect on commercial use in the short term. Boating use is not currently limited, therefore there is no immediate need to allocate use.

Continuing existing management by not selecting an allocation method would delay future implementation of a limited-entry permit system, if and when such a system is determined necessary. Such a delay would affect all boaters in the same manner, regardless of whether they be guided or non-guided.

Alternative B

Allocating use between guided and non-guided users based on Historical Proportions would result in a continuation of past and current use patterns of approximately 80% private use and 20% commercial use. Future increases or decreases in total available use would be shared by each user group proportionally. Freezing the ratio of commercial use at current levels would severely limit the economic growth potential for commercial guiding on the John Day River as a whole. Additional launches would possibly become available to an individual permittee if unused guided launches were re-distributed, or launches for all users were increased, but guided launches would remain at approximately 20% of total controlled launches. There would be very little opportunity to expand the number of guided trips to meet potential demands for these services in the future. The average party size of commercial trips would likely increase in order to accommodate additional customers within a limited number of launches.

Alternative C

Allocating use through an annual common pool lottery system would allow equal access from guided and non-guided users to available launches. The proportion of commercial users obtaining requested launch dates would be approximately equal to the

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proportion in the applicant pool over the long term. Requiring permittees to apply for desired launch dates in February would create a situation in which a permittee would be unable to schedule trips until after the lottery each year (about March 1). Customers wishing to take a commercial trip on a particular date may be encouraged to hire a commercial company based on the available launch dates the permittee held, rather than on quality of service or other considerations. This system could provide the opportunity for additional commercial launches and economic growth in commercial guiding. However, since a permittee's launch dates would not be set in advance, a permittee's inability to offer trips on specific dates would likely complicate scheduling for permittee and customer to the point where some businesses would be unable to schedule sufficient trips to remain economically viable.

Alternative D

As in Alternative C, allocating use through a common pool, first-come, first-served system would allow equal access from guided and non-guided users to available launches. Also as in C, the annual proportion of non-commercial and commercial users would not be predetermined, but would be approximately equal to the proportion of the applicant pool. Making blocks of permits available at several intervals would make scheduling less difficult for permittees than in C, as staggered application opportunities would increase flexibility for permittees and their customers. Rather than a random selection process as in C, a user's success at obtaining a launch permit would be determined by their ability to contact the BLM during the reservation period, before available permits for a given date became exhausted. The ability to make a second attempt to obtain a specific launch date, and the ability to request an alternate date if the original date were unavailable, make this reservation system more compatible with commercial booking needs than the lottery system described in Alternative C. This allocation method could potentially provide the opportunity for additional commercial launches and the economic growth in commercial guiding. Since this system would not set a permittee's launch dates in advance, a permittee's inability to offer trips on known dates would complicate scheduling for permittee and customer alike. But, unlike Alternative C, it is likely that most permittees could, with effort, make the reservation system work.

Motorized Boating

Alternative A

Continuing existing management of Motorized Boating would not change the conditions in which commercial services providers would operate.

Common to All Action Alternatives

Adjusting current motorized boating restrictions would have a slight effect on commercial services. In 1998 one commercial motorized trip was reported. The trip took place in Segment 3 in June and resulted in 2 user days. Under all action Alternatives this trip would not have been authorized.

Dispersed Camping

Management decisions related to dispersed camping would affect commercial services in the same manner as boaters as a whole. Please see the impacts on boating use levels and impacts on recreation opportunities for a discussion of these effects.

Developed Facilities

Management decisions related to Developed Facilities would be expected to affect commercial services in the same manner as they affect all boaters. Please see impacts on boating use levels, and impacts on recreation opportunities for a discussion of these effects.

Public Access

Management decisions related to Public Access would affect commercial services in the same manner as they affect all boaters. These effects are discussed under impacts on public access.

Commercial Services

Alternative A

Permit Requirements: Continuing the existing permit application requirements and minimum use requirements would be expected to continue to allow some individuals to maintain permits who rarely conduct commercial trips, but hold permits for speculative reasons or to benefit from tax writeoffs. To meet BLM's objectives for commercial permitting, a permittee must offer a service to the public. Continuing existing application and use requirements allow permits to be held that do not meet the intent of this objective.

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Permit Transfers: Not restricting transfers of permits would not lead to more transfers because new permits would be available to any qualified applicant.

Permit Numbers and Expected Use Trends: Offering unlimited permits with few application requirements could result in an initial increase in permits held for speculative reasons, as some individuals speculate that permits may be limited in the future. Continuing existing management of Commercial Services, by issuing permits to those applicants meeting existing application requirements would allow an unlimited number of applicants to provide commercial services. In the short term, the number of commercial permits administered by the BLM would likely increase from the current number of 34. The extent of the increase is uncertain. The most certain indicator of an increase in permits is the existing waiting list of 34 individuals who have asked to apply for a permit since the moratorium on new permits was put in place in 1996. Incorporating the individuals on the waiting list, the number of permits could rise to 68 as soon as the moratorium is lifted. In addition there are an estimated 15 organized groups currently using the John Day for "commercial" operations without a permit that would be permitted. It is also likely that the announcement to lift the moratorium would spur additional individuals to apply for permits.

The predicted short term increase in the number of commercial permits would likely result in an increase in commercial use days. New businesses would compete with existing permit holders for clientele, and permit holders would likely increase marketing efforts in an attempt to generate new clients. An artificial demand could be generated through intense advertising. An increase in the number of commercial permits would likely result in an increase in commercial use of the river over and above the estimated 4% annual increase expected to take place for recreation use in general.

In the long term, the factors influencing whether permit numbers will continue to increase, level off or decline are more uncertain. The most influential factor is the level of client demand that will support the businesses and allow them to meet the minimum use requirements. Some permit holders would not generate enough business to meet minimum use requirements and their permits would be canceled by the BLM.

Permit Administration: Issuing additional permits would increase administration costs to the BLM, since on the John Day River, fees collected do not cover administrative costs. Increased funding necessary for permit administration would reduce funds available for other recreation projects. The increased number of permits issued in the short term would further impact the BLM's ability to monitor the permit holder's performance. An increase in the number of permits canceled for failure to meet minimum use requirements would create an additional workload in processing the violation, probation, and cancellation paperwork (a three year procedure) and the accompanying appeal process that can occur.

Common to All Action Alternatives

Increasing the minimum use requirements from 10 paying client user days for every two years to 20 paying client user days for every two years could affect the number of permit holders able to meet this requirement in order to maintain a permit. Issuing Special Use Permits for shuttle services would comply with BLM policies that require such operations be administered under permit, would insure that shuttle operations are covered by liability insurance to protect the vehicle owner, the shuttle driver and the U.S. Government. Permit proposals for new uses or events, including concession permits, would be subject to the appropriate level of NEPA analysis.

Alternative B

Permit Requirements: Charging new permit applicants an application fee, expanding application requirements, and increasing minimum use requirements would prevent some new applicants from seeking permits solely or primarily for speculative reasons. As in Alternative A, permittees that failed to meet minimum use requirements would have their permits canceled by the BLM. Conducting an independent audit of permit and business records on all existing permits within three years, and within three years of issuing new permits, would be expected to result in a decrease in the number of permittees holding a permit for speculative purposes. Requiring permittees and their guides to be trained in river rescue, Leave No Trace outdoor ethics, and interpretive techniques would be expected to result in a pool of outfitters who would collectively be better qualified to meet the objectives of the BLM's commercial permit program. Training in river rescue would be expected to result in permittees and employees who were better trained to handle river emergencies. An increased understanding of Leave No Trace principles would be expected to result in greater protection of resources. Training in sharing

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interpretive information about the values of the river ecosystem would be expected to result in a more meaningful experience for the commercial customer.

Permit Transfers: Transfers would be allowed as in Alternative A, but would be unlikely to occur because new permits would be available to any qualified applicant.

Permit Numbers and Expected Use Trends: Not limiting the number of commercial use permits would increase the number of commercial use permits administered by the BLM. On the other hand increasing the requirements applicants must meet in order to obtain a permit may decrease the number of commercial use permits administered by the BLM. The net change is uncertain. In the short term it is likely, as in Alternative A, the number of permits would increase to 68 when the moratorium is lifted if permits were issued to all 34 individuals now on the waiting list. As in Alternative A, the 15 organized groups would be permitted, and additional applications for permits would be likely. The increase in permit numbers would likely be less than in Alternative A, as some interested individuals, including some speculators, would be discouraged by the increased requirements applicants must meet to obtain a permit. In the long term, as in Alternative A, the factors influencing permit numbers would be client demand and the permittee's ability to continue to meet expanded minimum use requirements to maintain a permit. More permits would be canceled for failure to meet minimum use requirements than in Alternative A because the required minimum number of use days would be doubled. Additional new requirements and the potential for an audit would also discourage some potential applicants. Delaying consideration of new permits until after 3 years of LAC study and the subsequent determination of whether or not boating use limits should be implemented and if so at what level, would provide a prospective applicant with information necessary to evaluate the probable success of a business venture.

The expected increase in commercial use would be slightly less than Alternative A because fewer permits would be issued than under Alternative A.

Permit Administration: Same as Alternative A except: The monitoring required is greater for Alternative B than for Alternative A because of the expanded permit requirements. The time and expense of conducting random audits of permits records would increase for both permit holders and BLM. The increase in permits that are not renewed as a result of not meeting expanded permit requirements and records audit requirements creates a workload in processing the violation, probation, and cancellation paperwork and possible appeal process. In the long term these effects should level out, except that the opportunity for new applicants is always available and there would be some new applications expected to continue as long as business people see a new opportunity to make a profit.

Alternative C

Permit Requirements: Requiring permit applicants to compete with other applicants and be rated on their ability to meet or exceed specific selection criteria would allow the BLM to select the best qualified applicant to offer services to the public, which would be expected to result in a higher quality of service to the public. After three years, some long term permittees may have their permits canceled by the BLM because they fail to meet minimum use requirements.

Permit Transfers: The limited transfer potential resulting from issuing new permits by competitive prospectus, coupled with increased minimum use requirements and records audits, would be expected to reduce the incidence of speculative permits.

Permit Numbers and Expected Use Trends: Utilizing a needs assessment to identify public needs and the capability of available resources to support those needs, when coupled with the use of a competitive prospectus as the instrument for issuing new permits would have several consequences: Permit numbers would reflect the public's need for different types of commercial services. Permit numbers and types would be consistent with management goals and objectives. Permittees would have the opportunity to make a business profit. The number of permits and type of services would match the BLM's administrative and monitoring capabilities. The flexibility to make changes in permit type and number would make it possible to maintain a balance in services that reflects changes in the public's needs, and the needs of the resources. Existing permits would be "grandfathered", however, if the assessment showed that the mix of services provided by existing permittees comprises an oversupply of a certain type of service or contributes to declining resources, existing permits for that service, vacated by attrition, would not be filled. Issuing new permits to fill identified needs, and reducing the number of oversupplied services through attrition, would be expected to result in a more diverse range of services offered to the public.

The number of commercial permits administered by the BLM would be projected to increase initially as

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additional public needs were identified and filled. Anticipated failure to meet minimum use or record audit requirements, would result in the cancellation of an some permits, and permit numbers would be expected to level off in the long term at an estimated 37 permits.

By issuing fewer commercial permits than in Alternative A or B, competition for clients would be less, resulting in a reduced need to advertise to attract new clients, and a much slower rate of increase in commercial use days than Alternative A. A slower rate of increase in commercial use days would better support BLM's management goals to protect and enhance ORVs and to maintain the existing character of the river. This action would not be expected to increase overall recreational use of the river over and above the estimated 4% annual increase expected to take place for recreation use in general. Issuing permits based on an identified need, and thus a presumed demand for a specific service, would enable an outfitter to secure a client base adequate to maintain a profitable business, without resorting to intense marketing efforts.

Permit Administration: Conducting an initial needs assessment and competitive prospectus process to fill identified permit needs would increase administrative costs compared to Alternatives A and B. The increased number of permits issued in the short term would require the BLM to expend additional resources to monitor the permit holders performance, but not as much as under Alternatives A and B because the increase in permit numbers is less than Alternatives A and B. The increased requirements combined with the needs assessment and competitive prospective process would reduce incidents of violations, probation, and cancellations paperwork and appeals compared to Alternatives A or B. This would decrease the workload for processing violations.

Alternative D

Permit Requirements: The effects of the actions proposed in Alternative D would have the same effects on permit requirements as for Alternative C.

Permit Transfers: Permits would not be transferable. This policy, as well as increased minimum use requirements and required audits of business records, would be expected to eliminate the incidence of speculative permits.

Permit Numbers and Expected Use Trends: Same as C except that limiting permits to 34 and allowing grandfathering of existing permits would make adapting to changes in public needs a slower process. This alternative is likely to result in the lowest number of commercial use permits due to the cap on number of permits.

Permits would be expected to become available at an average rate of one permit per year, resulting primarily from permits canceled by the BLM for failure to meet minimum use or record audit requirements, or attrition. Issuing new permits by competitive prospectus would be expected to provide a fair and equitable process to issue permits for those services identified in a needs assessment competed in advance by the BLM.

Limiting commercial permits to 34 would result in a similar rate of increase in commercial use days as Alternative C.

Permit Administration: There will be increased cost to BLM of conducting an initial needs assessment and competitive prospectus process to fill identified permit needs. Because of the cap on number of permits this alternative would be likely to have the lowest cost of administration compared to the other alternatives.

Land Ownership, Classification, And Use Authorizations

Alternative A

Existing management would maintain existing conditions for commercial use.

Alternatives B, C, and D

Future acquisitions could provide new opportunities for future commercial use. Specific impacts would be disclosed as part of the analysis of site specific proposals.

Impacts on Other Recreational Opportunities and Recreational Experience

The following alternative actions may have impacts on recreation opportunities not disclosed above.

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Riparian and Aquatic Habitat Restoration

Continuing existing management by planting native cottonwood trees at selected sites would improve wildlife habitat, as described under Wildlife, providing more opportunities for wildlife photography, bird watching and other wildlife observation activities.

Water Quantity and Quality

Continuing existing management could lead to improved fish habitat, resulting in increased fishing opportunities. Increased water quantity (through meeting DIACK flows) could extend the boating season by increasing flows by 10 to 20 cfs. during August and September when flows currently average between 150 and 300 cfs. During these very low water periods, even a slight increase in flows would make it possible to negotiate some river sections more easily, lengthening the navigable season by a few days.

Paleontological Resources

Under all alternatives certain areas may be closed to protect paleontological resources which could limit access for hiking, camping, or off-road vehicle use or hunting.

Cultural Resources

Under all alternatives certain areas may be closed under to protect cultural resources which could limit access for hiking, camping, off-road vehicle use or hunting.

Private Land Use

State Scenic Waterway regulations may limit future recreation development on private land within the scenic corridor, resulting in the need for additional recreation sites on public land to meet potential growth in recreation demands. Under all alternatives there is a potential for developing commercial activities, such as camping and boat or raft rentals that could contribute to increases in use and competition for available launches and campsites, as well as the number of people encountered on the river.

Vegetation-Grazing

Alternative A

Continuing to allow some cattle grazing within the river corridor would maintain the existing cattle trails that hikers and hunters prefer to follow, rather than walking through dense vegetation. At the same time users could encounter cattle, cow dung and fences.

Alternative B

Same as A except that fences constructed to exclude cattle from 9 dispersed sites would eliminate vegetation removal and trampling of vegetation by cattle within these sites.

Alternatives C and D

Encounters with cattle and signs of cattle in riparian areas would not occur because cattle would be excluded . In addition, under alternative D, there would be no cattle, cow dung, or their trails in the uplands within the corridor. Under Alternative C and D, fences no longer needed in the riparian zone would be removed, and in Alternative D fences no longer needed within the Wild and Scenic River corridor would be removed, resulting in fewer fences for hikers and hunters to negotiate.

Vegetation-Agricultural Lands

Alternative A

Existing recreational opportunities would be maintained.

Alternative B

The planting of wildlife food and cover crops would be increased. This would increase the opportunities for wildlife observation and hunting.

Alternative C

All of the agricultural lands would go to wildlife enhancement projects such as food and cover plots or the restoration of native wildlife habitat.

Alternative D

Irrigation would no longer be used on the agricultural lands. This would remove wheel lines and pumps from the corridor increasing the naturalness of recreation opportunities. However this alternative would also reduce the opportunities to hunt upland

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game birds since food and cover plots would be eliminated. Land converted to native vegetation under Alternatives B, C, and D could provide nearly ideal camping conditions since such sites are essentially level.

Scenery

Alternative A

Continuing existing management of Scenery would not be expected to have an effect on recreation opportunities.

Common to All Action Alternatives

Assigning interim VRM Classifications and Oregon State Scenic Waterways classifications to river segments would not be expected to have a direct effect on recreation opportunities, however, this action would provide increased long-term protection of the river's scenic qualities, an important value to visitors of the John Day River.

Boating Use Levels

Alternative A

Not limiting Boating Use Levels would allow increases in boating use in all segments where boating use occurs. Boaters would be forced to compete for traditional campsites, create new campsites, use less desirable sites, or camp on private lands. Increased waiting times and competition for available space would occur at parking areas, launch lanes and take-out sites. Encounters with other boating parties would likely increase, with several parties being visible from a given point on the river, and with less space and screening between campsites than at the present. The result would be a reduction in both the opportunity for a semi-primitive recreation experience and the opportunity for solitude in Wilderness Study Areas.

Alternative B

Setting daily launch targets at or below the maximum daily launches recorded in 1998, would be expected to result in a continuation of existing recreation opportunities. At parking areas, launch lanes, take-out sites, and on the river itself the level of competition for campsites would continue on weekends as described in Chapter 2. However the recreational experience would change on weekdays because encounters with other boating parties and competition for campsites would be expected to increase. The existing opportunity for a semi-primitive recreation experience and the opportunity for solitude in Wilderness Study Areas would be maintained on weekends and reduced on weekdays and during "shoulder" seasons as additional use is directed towards non-peak use periods.

Alternative C

Setting daily launch targets corresponding to 70% of available campsites, would be expected to spread use more evenly throughout the week and the season. At parking areas, launch lanes, take-out sites, and on the river itself, the existing level of congestion, encounters with other users, and competition for campsites would decrease on weekends. The effects of spreading use to weekdays would be the same as in Alternative B. Opportunities for solitude in WSAs would be the same as in Alternative B.

Alternative D

Setting daily launch targets corresponding to a historical average of daily peak period launches, would have the same effects on recreation opportunities as Alternative C, except congestion would not likely be an issue at parking areas, launch lanes, take-out sites, or on the river itself. Competition for campsites would be rare. The opportunity for a semi-primitive recreation experience and the opportunity for solitude in Wilderness Study Areas would be available throughout the week, and the season.

Alternative E

Same as C.

Allocation

Alternative A

Expected increases in boating use is likely to create the need for a limited-entry permit system at some time in the future. A method of allocating use would then be necessary. Determining an allocation method at a later date would delay implementation of a permit system if it is determined to be necessary, compared to selecting any of the allocation systems (B, C, D) as part of this river plan. During this delay, boating use would likely continue to rise, as would the effects on resource and social conditions, such as increases in competition for and creation of new

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campsites, congestion at launch and take-out points, and daily encounters with other parties.

Common to All Action Alternatives

Any allocation system would require most users to apply or reserve a space in advance, making it more difficult to base river trips on a last minute determination of water, weather, and fishing conditions. At the same time the allocation system would serve as a means of limiting changes in conditions of river resources by being part of the system for limiting recreational use and the timing of use on the river.

Motorized Boating

Alternative A

Continuing existing management of Motorized Boating would maintain existing recreation opportunities. Users of non-motorized watercraft who prefer to avoid the sounds of motors would continue to encounter the sights and sounds of motorized use when and where use of motors is now allowed.

Alternatives B

The use of motorized boats for hunting and fishing would be forgone during the seasons and in river segments restrictions were extended. The opportunity for rafters, kayakers, canoeists, and other non-motorized users to experience the river without hearing the sounds of motorboats would be extended by 4 months in Segments 1 and 2.

These closures would reduce the potential for noise disturbance created by motorized boats and encounters between boating parties that occur with upriver or multidirectional travel would be reduced. These reductions would be consistent with Wilderness values by increasing a sense of solitude and primitive recreation for users who visit the WSAs during this time period. As in the remainder of Segments 1 and 2, the non-motorized season of use would be extended in the WSAs from 5 to 9 months. Closing Segment 3 to motorized boating use (except small electric motors) from April 1 to October 1 would have same impacts as Segment 1 and 2 closures except for a shorter duration.

Alternative C

Closing Segment 1 to motorized travel between April 1 and December 1 and closing of Segment 2 to motorized travel between April 1 and October 1 would have same impacts as describe for Alternative B except for a shorter duration. Closing 46 miles of Wild and Scenic River to motorized river travel within the North Pole Ridge, Thirty Mile, and Lower John Day Wilderness Study Areas would reduce the potential for noise disturbance created by motorized boats and encounters between boating parties that occur with upriver or multidirectional travel would be reduced. These reductions would be consistent with Wilderness values by increasing a sense of solitude and primitive recreation for users who visit the WSAs during this time period.

Alternative D

Closing all three segments to motorized use year-round would extend the effects described above to year-round.

Alternative E

Same as Alternative B except that anglers would have the opportunity to use motorized Boats in March and April, resulting in a less primitive experience for float boaters during these months. The opportunity for a semi-primitive recreation experience and the opportunity for solitude in WSAs would be expected to decrease compared to Alternative B, as motorized boating would be allowed during March and April and would contribute to increased use. Closing Segment 3 to all motorized boating use from May 1 to December 1 would eliminate the convenience of small electric motors attached to drift boats or rafts and which allow headway against up canyon winds during low flows.

Developed Facilities

Alternative A

Continuing existing management of developed facilities would not change existing recreation opportunities, except that developing a new recreation site at Twickenham would provide new opportunities for day use activities such as fishing and picnicking, which are not currently permitted at the private Twickenham site.

Alternative B

Making improvements to some existing facilities in Segments 1, 2, and 3 would provide more convenient facilities for day-use activities such as picnicking, hiking and fishing.

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Alternative C

The same as for Alternative B, except that new sites would be developed in Segments 2, 3, and 10. This would further increase recreation opportunities and provide new areas that would be more convenient to some people.

Alternative D

Closing some existing facilities in Segments 1, 2, and 3 would reduce the number of people that could experience Developed Facilities, and likely result in increased use at remaining facilities, creating more congested conditions. The action could encourage some people to create new dispersed campsites.

Public Access

Alternative A

Continuing existing management would maintain existing recreational opportunities.

Common to Action Alternatives

Improved signing for public access routes to the Oregon Trail Interpretive site at McDonald Crossing would encourage more visitation and provide more opportunities for historical study and education. Providing new public access at Twickenham, contingent on a proposed land exchange, would provide new opportunities for day use activities such as fishing and picnicking, which are not currently permitted at the private Twickenham site.

Alternative B

Improved access for vehicles at Clarno in Segment 2 would provide more convenient access for hunters and hikers. Access changes at Burnt Ranch would eliminate the car camping opportunity at the end of the access road, but would open the area for use by several walk-in groups at a time, who could spread their use over several sites suitable for camping.

Alternative C

The same as Alternative B and, in addition, new access points in Segments 1 and 2 would also provide new recreation opportunities for people interested in drive-in river access for picnicking, hiking, fishing, and hunting.

Alternative D

Reducing access in Segment 2, beyond the Clarno homestead, would reduce opportunities for drive-in pheasant hunting, camping, and fishing, while increasing opportunities for those who prefer a non-motorized experience.

Commercial Use

Alternatives A and B

Not limiting the number of commercial permits would increase the number of commercial permits administered by the BLM, resulting in a greater number of businesses offering guided recreation opportunities to the public, and increasing the variety of opportunities available. This would greatly increase the number of permittees the public could select from when seeking to hire a guide or outfitter.

Alternatives C and D

Issuing commercial permits according to the results of a needs assessment would result in new commercial permits being issued in response to public needs. As in Alternatives A and B, permits for new or unrepresented uses would likely be issued, increasing the variety of commercial recreation opportunities available to the public.

Energy and Mineral Resources

Alternatives A-C

No change in recreational opportunities

Alternative D

Closing the corridor to mineral entry would eliminate opportunities for recreational gold panning and dredging.

Land Ownership, Classifications, and Use Authorizations

Except for agricultural land management and lands needed for acquisition to implement Alternative D for grazing, Land Ownership, Classifications and Use Authorizations are largely independent of other actions.

Caves

One cave has been listed as significant within the John Day Planning Area. This small cave receives

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limited use by the western big-eared bat. No alternative would affect this cave by increasing nearby use or access. No other caves are documented within the planning boundary.

Impacts on Human Uses and Values

Impacts of Vegetation Management - Forest Management

Alternative A

The historically irregular opportunities for companies located within and outside the planning area to harvest timber in the John Day Basin would continue as outlined in the John Day and Two Rivers Resource Management Plans. The State Scenic Waterway designation would limit harvest activities within the corridor to those that "enhance the scenic view within a reasonable time." Generally only forest health treatments could occur within the corridor. The counties currently receive 5 percent of the revenue generated by public domain timber sales. This revenue would be lost, however, without timber revenues the counties would likely qualify for slightly higher Payments in Lieu of Tax resulting in no net effect on county revenues.

Common to All Action Alternatives

Same as Alternative A, except that BLM's VRM designations may also limit the scope of timber harvest and management activities within the corridor to protect scenic quality.

Impacts of Vegetation Management - Grazing Management

Assumptions

Fence construction costs vary according to length of fence to be constructed as well as the roughness and remoteness of the fence site. Total costs of surveys, clearances, project design and layout, project administration (contracting), fencing materials, construction and inspection average between $9000 and $11,000 per mile. One person can maintain about 50 miles of fence during the year (ODFW, personal communication).

The cost associated with water developments range from $2,000 to $3,500 per development, depending on location and the concentration of the water source. Pipeline construction costs are approximately $1 per foot. Pumping costs depend on the available power sources, amount of water to be transported and the height to which the water would be raised. It is estimated that one person can maintain about 50 spring box/trough combinations during a year. Water developments are needed at a ratio of about 1 per mile of fence constructed.

Alternative A

Alternative A results in no change from the current situation. The majority of public land bank miles (186 out of 196) withing designated Wild and Scenic Rivers have been managed with grazing systems to maintain or enhance riparian vegetation. The BLM began revising allotment management systems in 1986. At that time only an estimated 15 public land river bank miles were excluded from grazing or subject to riparian-oriented. Since that time an additional 58 publicly owned riverbank miles have been closed to grazing and an additional 113 miles of publicly owned have been subject to riparian-oriented grazing practices. Most changes in grazing management have involved adjusting season of use in pastures adjoining the John Day River. Many were adjusted from late spring and summer to winter and/or spring. These adjustments were made under the existing John Day and Two Rivers Resource Management Plan. Animal Unit Months (AUMs) authorized have not been changed as a result of these season of use changes.

The role of public lands grazing in the economics of the basin is complex because it often fills a niche in a livestock operation for which a substitute would be difficult to find or expensive to implement. Public land grazing leases within the John Day River Basin provide a limited proportion of the forage consumed by livestock in the eight county region. Forage requirements totaled an estimated 2.36 million AUMs or equivalents. BLM authorizes 31,098 AUMs within the basin, between 1.32% to 7.89% of the forage requirements. The remaining forage is derived from Forest Service lands, Tribal lands, private lands, and public lands located in the eight-county region but outside the basin. Hay and other forage, grown locally or imported from outside the region, also contributes to forage requirements of livestock. The 31,098 AUMs of forage on public land managed by

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the BLM within the basin supports an estimated $805,700 to $4.8 million of the approximately $61.25 million of livestock sales in the eight-county region.

Since 1986 exclusion of riparian areas from grazing has increased and approximately 3.5 miles of fence and 4 water developments are awaiting construction within the corridor, with an estimated cost of $39,500 to $52,500. Fences and water developments on public lands are now maintained by the lessees under cooperative agreements as a condition of their grazing lease. Inventories of the existing fences and water developments within the corridor are not complete, so it is impossible to accurately estimate the annual maintenance costs. The additional fence and water developments would have little impact on the maintenance workload.

Grazing fee collections would be unchanged, assuming the 1998 fee of $1.35 continues into the future. Large increases in beef prices or congressional action could increase the fee, however, $1.35 is the legislatively established minimum. An estimated $41,982.30 would be collected from lessees operating within the John Day River Basin.
Alternative B

This alternative would continue existing management to protect and enhance-Outstandingly Remarkable Values on 186 public bank miles and would implement new grazing systems on an additional 7.7 public bank miles in the Wild and Scenic designated segments. Ten livestock operations would be affected by implementation of new grazing systems. The new systems would involve winter and/or early spring grazing systems. No changes to AUM numbers are anticipated as a result of these season of use changes.

Changing season of use may impact livestock operators even if total forage offered annually by the BLM is unchanged. This is because changing season of use may make excess forage available in some months that cannot be harvested and utilized in future months when forage is in short supply. Typically herd size is constrained by forage availability in months when forage is in short supply. Operators typically provide year-round forage by growing or buying hay for months of low forage availability.

The ability of individual operators to adjust his or her forage supply when public land grazing season is changed is unknown. Some operators may be able to maintain or even expand herd sizes, while others may be required to reduce herd sizes because of a lack of forage during certain seasons. Private business decisions will determine the final outcomes of changes in BLM season of use within the John Day River corridor.

Within the corridor an additional 11.5 miles of additional fences and 7 new water developments would be required to implement this alternative, with an estimated cost of $117,500 - $151,000. Maintenance would be accomplished by lessees under a cooperative agreement as a condition of their grazing lease. The maintenance of these additional fences and water developments would require one third of the available time of one worker.

Grazing fee collections would be the same as Alternative A.

Alternative C

While there would be approximately 494 more public land acres closed to grazing under this alternative than under the existing situation few changes in AUMs would occur as a result of implementing a riparian exclusion. This largely because estimates of available forage, and subsequent assignment of AUMs, were based only upland resources and riparian resources were not part of the calculation. Also, the addition of management effort into a ranching operation typically improves the efficiency with which the forage resource is harvested. By fencing livestock away from an area in which they spend an inordinate amount of time under certain conditions, the livestock tend to distribute themselves more evenly across the landscape to which they continue to have access. While counter-intuitive, eliminating acreage from a pasture does not necessarily mean that a reduction in the allowable AUMs and a reduction in harvest level would be required. In some cases, when a riparian corridor fence is constructed, a decrease may be required in the authorized AUMs for a pasture. In many cases, the authorized use levels could be safely increased. Given the above analysis it is not likely that the AUMs within the river corridor would change enough to have an economic impact on the area.

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This alternative adopts a riparian corridor fencing strategy for designated and non-designated river segments. As a result of intermingled land ownership, both public and private lands are included in many allotments. Riparian corridor fences would be designed to cross public and private lands.

Within the designated segments approximately 113 miles of fence would be built on public lands and 100 miles of fence would be built on private lands. An estimated 213 new water developments would be required because cattle would be cut off from the river, the primary source of water. Estimated cost for implementing riparian corridor fencing in designated segments would be between $1.9 and $2.3 million. Estimated cost for implementing water developments in designated segments would be between $426,000 and $745,500. The maintenance of these additional fences and water developments would require the available time of 9 workers. A total of 1703 acres, 881 public and 822 private, would be excluded from livestock use.

Within the non-designated segments approximately 29 miles of fence would be built on public lands and 47 miles of fence would be built on private lands. An estimated 76 water developments would be required. Estimated cost for implementing riparian corridor fencing in the non-designated segments would be between $684,000 and $836,000. Estimated cost for implementing water developments in the non-designated segments would be between $152,000 and$ 266,000. The maintenance of these additional fences and water developments would require the available time of 3 workers. A total of 1943 acres, 883 public and 1060 private, would be excluded from livestock use.

Effective implementation of this alternative requires cooperation from planning partners and private land owners. The decision to cancel grazing preference on public lands may affect interspersed private grazing lands. Private land owners could pursue exchange, sale, or easement arrangements with the federal government. They could choose not to graze livestock. If private landowners choose to continue grazing interspersed private lands, they would be responsible for keeping their livestock off public lands. The BLM would monitor the closed public lands for livestock trespass and other violations. Appropriate follow-up actions would be taken. The BLM recognizes the right of private landowners to access their lands and allows transport of livestock through public lands to reach private lands.

While an estimated 29 AUMs would be canceled under this alternative operators could adjust their operations with no impacts to herd size or production costs.

Grazing fee collections would be reduced by less than $40 under this alternative.

Alternative D

Eliminating livestock grazing from public lands within the Wild and Scenic River boundaries and within a 1/4 mile corridor on non-designated segments would be accomplished through a combination of existing pasture fences, new fences between public land and private property, new fences crossing public land, and topographic barriers.

Within the designated segments approximately 99 miles of fence would be built on public lands and 52 miles of fence would be built on private lands. An estimated 151 new water developments would be required because cattle would be cut off from the river, the primary source of water. Estimated cost for implementing fencing in designated segments would be between $1.36 and $1.66 million. Estimated cost for implementing water developments in designated segments would be between $302,000 and $528,500. The maintenance of these additional fences and water developments would require the available time of 6 workers. A total of 80,963 acres, 65,845 public and 15,118 private, would be excluded from livestock use.

Within the non-designated segments approximately 29 miles of fence would be built on public lands and 47 miles of fence would be built on private lands. An estimated 76 water developments would be required. Estimated costs for implementing corridor fencing in the non-designated segments would be between $936,000 and $1,144,000. Estimated costs for implementing water developments in the non-designated segments would be between $208,000 and $364,000. The maintenance of these additional fences and water developments would require the available time of 3 workers. A total of 10,448 acres, 4,372 public and 6,116 private, would be excluded from livestock use.

Approximately 3115 AUMs would be canceled on public lands, of these 2,725 would be in the designated segments. Assuming that livestock operations reduce herds accordingly, this would represent a decrease in livestock sales of $80,000 to $485,000 within the eight-county region. Operators

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whose BLM permits were severely reduced or canceled would restructure operations by utilizing remaining available public lands outside the corridor, increasing use on private lands, relying on purchased hays and other forage, or reducing the number of cattle in their operation. Restructuring of this kind favors large diversified agricultural operations with significant capital reserves. Smaller, less diversified operations, and operations with relatively small privately owned land bases, would be at risk of foreclosure or bankruptcy. A foreseeable outcome of this alternative may be an increase in private land within the basin area that is owned by banks, insurance companies, and other businesses located outside the planning area. This could have far-reaching social and political effects in an area where self-sufficiency and family-owned businesses are highly valued.

Effective implementation of this alternative requires cooperation from planning partners and private land owners. The decision to cancel grazing preference on public lands may affect interspersed private grazing lands. Private land owners could pursue exchange, sale, or easement arrangements with the federal government. They could choose not to graze livestock. If private landowners choose to continue grazing interspersed private lands, they would be responsible for keeping their livestock off public lands. The BLM would monitor the closed public lands for livestock trespass and other violations. Appropriate follow-up actions would be taken. The BLM recognizes the right of private landowners to access their lands and allows transport of livestock through public lands to reach private lands.

Eliminating grazing from BLM-managed land in the river corridor would also eliminate all grazing fee collections. Assuming the grazing fee of $1.35 is continued into the future, $4,205.25 would be forgone annually.

Monitoring Costs

The types of monitoring required to implement each alternative would vary. For example, under Alternatives A and B, the majority of monitoring efforts would be focused on ecological and watershed conditions. Under alternatives C and D, the emphasis of the monitoring program would shift to fence condition and surveillance of areas which are excluded from livestock grazing. There is no information available indicating that the costs of the different monitoring programs would be significantly different.

Irrigated Agricultural Lands

Common to All Alternatives

Each alternative could involve converting from existing uses to other uses. Costs associated with conversion of agriculture lands currently used for commodity production were estimated based on the need to set these lands up on an irrigation system to control the expansion of noxious weeds and the aid in the establishment of non-commodity uses.

Costs to convert an agriculture field currently in commodity production to native vegetation or to wildlife food and cover would include the following estimates:

1) Burning; $5-10 per acre (could be a multiple year treatment)
2) Herbicide; $35 per acre (could be a multiple year treatment)
3) Herbicide Application; $20 per acre (could be a multiple year treatment)
4) Wildlife Food and Cover Mix; $30 per acre
5) Native Seed; $80 per acre on those agriculture lands reclaimed to native vegetation
6) Native Seed Planting; $5 per acre
7) Initial Irrigation System Set Up; $500 per acre for wheel line and pump purchase
8) Cultivation for seedbed preparation; $40 per acre

The total cost to convert an agriculture field currently in commodity production to native vegetation would be approximately $690 per acre. For example the cost to convert a 70 acre field would be $48,300. This would be an initial investment as irrigation equipment could be used on other agriculture fields if they were converted to native vegetation in phases. The cost to convert an agriculture field to native vegetation once initial investment of irrigation equipment was made would be approximately $190 per acre. This figure does not include the time, money, and labor investment to move the irrigation system to other fields.

The total cost to convert an agriculture field currently in commodity production to a wildlife food and cover plot would be approximately $640 per acre. For example the cost to convert a 70 acre field would be $44,800. After the initial investment, the cost to maintain food and cover plots would go down substantially. The cost of herbicide and herbicide application would decrease as weed problems are controlled. Some time, money, and manpower investment would be made yearly to maintain a field in a wildlife food and cover plot.

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The total cost to convert a large field currently in commodity production to any other vegetation is significantly higher than those fields that are currently in non-commodity production mainly due to size. A field that is currently in commodity production would have to be completely converted the first year after production is ceased to avoid significant weed problems. Fields currently in non-commodity production can be partially treated on a year by year basis.

Alternative A

Under this alternative the BLM would continue lease 210 acres of agricultural/cultivated land that would be used to grow crops such as grains, hay, alfalfa, dry beans, dry onions, and specialty crops. Specialty crops include mint, onion seed, carrot seed, and coriander. The estimated (1998 figures) acres of commodity production by county are: Wheeler, 89 acres alfalfa/grass hay and 23.4 acres grain/hay; Wasco County, 70 acres "specialty" crop (carrot seed, coriander, bean) and 3.4 alfalfa/grass hay; Sherman County, 8.7 acres alfalfa/grass hay. Estimated value of crops grown on these lands would continue to be between $99,000 and $332,000 annually (based on 1997 values).

Common to All Action Alternatives

BLM imposed water use restriction on irrigated fields, leased or managed for other uses, that are 100% public land has the potential to constrain late season water use after August 15 if flows are below 246 cfs.

Alternative B

As many as 164 acres would be removed from commodity lease opportunities and dedicated for wildlife food and cover enhancement, establishment of perennial vegetation, and/or production of woody riparian vegetation for restoration. This is the amount of public land not now utilized for commodity production but which could be in the future.

Subjecting public land irrigation activity to review and shutdown after August 15 could reduce the productivity of certain crops. This would revoke the flow stipulations that apply to the agricultural fields at RM 136 and RM 137.

Existing levels of commodity production on leased public land would continue at historic levels. Estimated value of crops grown on leased public land would be between $99,000 and $332,000 annually. However about 25 acres would be disposed and production on those lands would be transferred (through sale or trade) to private ownership.

Alternative C

Leased commodity production would be eliminated from all public irrigated lands (384.2 acres) along the John Day River. The estimated (1998 figures) acres of commodity production that would be eliminated by county are: Wheeler, 89 acres alfalfa/grass hay and 23.4 acres grain/hay; Wasco County, 70 acres "specialty" crop (carrot seed, coriander, bean) and 3.4 alfalfa/grass hay; Sherman County, 8.7 acres alfalfa/grass hay. The 3.4 and 8.7 acres of alfalfa/grass hay are incorporated as part of larger private land agricultural fields thus facilitating a change in operation such as irrigation layout. Estimated value of crop production lost on public lands would be between $99,000 and $332,000 annually. Leasing of BLM lands and associated water rights for commodity production would be phased out over an estimated 15 year period. Instead these land would be managed for wildlife habitat. Twenty-five acres of public agricultural lands associated to private lands at RM 112 and RM 119 would be removed from public ownership.

Alternative D

Leased commodity production would be eliminated all public irrigated lands (384.2 acres) along the John Day River. The estimated (1998 figures) acres of commodity production that would be eliminated by county are: Wheeler, 89 acres alfalfa/grass hay and 23.4 acres grain/hay; Wasco County, 70 acres "specialty" crop (carrot seed, coriander, bean) and 3.4 alfalfa/grass hay; Sherman County, 8.7 acres alfalfa/grass hay. The 3.4 and 8.7 acres of alfalfa/grass hay are incorporated as part of larger private land agricultural fields thus facilitating a change in operation such as irrigation layout. Estimated value of crop production lost on public lands would be between $99,000 and $332,000 annually. Leasing of BLM lands and associated water rights for commodity production would be phased out over an estimated 20 year period. Instead these land would be managed for native perennial vegetation. Twenty-five acres of public agricultural lands associated to private lands at RM 112 and RM 119 would be removed from public ownership.

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Recreation Use

Boating Use Levels

Alternative A

Current visitation of 100,000 annually would continue to increase at approximately 4.0 percent annually. Current boating use levels, 18,280 visitor days in 1998, generated an estimated $462,500 in local visitor spending. At the end of the interim period, an estimated 20,562 visitor days would generate an estimated $520,200 in local visitor spending.

Alternative B

Growth in recreation use would continue at rates similar to Alternative A. Targeting daily launches at 1998 levels would constrain use growth during peak periods. However, off peak times currently have available capacity to accommodate growth in recreation use during the interim period. Economic impacts are expected to be the same as Alternative A.

Alternative C

Growth in recreation use would continue at rates similar to Alternative A. Targeting daily launches to correspond with 70% of available campsites in Segments 2 and 3 would reduce use levels during peak periods. However, off peak times currently have available capacity to accommodate displaced users and growth during the interim period. Economic impacts are expected to be the same as Alternatives A and B.

Alternative D

Targeting daily launches to equal the historical average of peak period use in Segments 2 and 3 would reduce use levels during peak periods. Off peak times currently have available capacity to accommodate displaced users. Because of the smaller targets some users would decide to use the river during seasons when weather and water conditions are often less than optimal. Growth in boating demand could not be accommodated under this alternative. At the end of the interim period, an estimated 19,420 visitor days, would generate an estimated $491,300 in local visitor spending.

Alternative E

Same as Alternative C, except establishing limits on motorized launches in Segments 1 and 2 would limit use on some peak use days but would allow current levels of motorized use to continue.

Allocation System

See discussion of impacts of Allocation System on Other Recreational Opportunities and Recreational Experience.

Alternative A

No allocation system would result in increased commercial and non-commercial use in response to public demand, including demand generated by advertising. If launches are limited in the future to any of the interim levels targeted by Alternatives B, C, D, and E guided use could expand only by taking available launches from non-commercial users or offering services at off peak times.

Alternative B

An allocation system based on the historic use ratio of 80% unguided and 20% commercial would not accommodate changes in public demand for guided versus non guided access over time. If launches are limited in the future to any of the interim levels targeted by Alternatives B, C, D, and E existing and new permittee would compete among themselves for a limited number of peak and non-peak launches. Businesses offering guided use could expand only by taking available launches from other commercial users or offering services during off peak times.

Alternative C

A common pool lottery system would accommodate changes in public demand for guided versus non-guided access. Non-guided users wanting launch permits would apply during the February application window. Guided users would rely on guides to obtain permits. Guides may apply for launches without confirmed clients and then advertise for the dates assigned to them. This speculative application by guides may result in more guided use being assigned than actually demanded. If launches are limited in the future, speculative application by guide services could displace non-commercial users. Businesses offering guided use could also expand by obtaining available launches from other commercial users or offering services during off peak time.

Alternative D

A common pool, first come, first serve, with staggered permit availability system would accommodate changes in public demand for guided versus non-

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guided access over time. People wanting launch permits would contact BLM to receive a launch permit. Guided users would rely on guides to obtain permits. Blocks of permits would be made available on certain dates, reducing the need for long-term planning to meet the February application window. Speculative application by guides may be reduced below levels in Alternative C. If launches are limited in the future, speculative application by guide services could displace non-commercial users. Businesses offering guided use could also expand by obtaining available launches from other commercial users or offering services during off peak time.

Motorized Boating

Alternative A

Existing motorized boating would continue without change.

Alternative B

Local expenditures associated with existing motorized boating would be displaced under Alternatives B. Given an assumed average daily expenditure of $25.30 total expenditures forgone by this alternative would be $1,442 (57 days). These changes would be marginal within the overall economy.

Alternative C

Local expenditures associated with existing motorized boating would be displaced under Alternatives B. Given an assumed average daily expenditure of $25.30 total expenditures forgone by this alternative would be $1,088 (43 days). These changes would be marginal within the overall economy.

Alternative D

Local expenditures associated with existing motorized boating would be displaced under Alternative D. Given an assumed average daily expenditure of $25.30 total expenditures forgone by this alternative would be $1,442 (57 days) . This change would be marginal within the overall economy.

Alternative E

Local expenditures associated with existing motorized boating would be displaced under Alternative E. Given an assumed average daily expenditure of $25.30 total expenditures forgone by this alternative would be $810 (32 days) . This change would be marginal within the overall economy. In addition, limits on motorize launches in March and April could result in motorized boaters competing with other motorized boaters for the limited number of available daily launches.

Developed Facilities

Alternative A

Underlying growth in recreation user days would continue. Existing sites are currently at capacity during peak use periods. No capacity improvements would be made, resulting in user developed sites in unsuitable settings that could cause resource damage and conflict between user groups. Opportunities exist for the private sector to develop facilities (access, campgrounds, boat launches, etc) on private lands to meet increasing user demands.

Alternative B

Underlying growth in recreation user days would continue. Maintenance and improvement of existing sites would be made to improve visitor services and reduce resource damage. Capacity improvement would be minimal and could result in user developed sites in unsuitable settings similar to Alternative A. Opportunities exist for the private sector to develop facilities (access, campgrounds, boat launches, etc) on private lands to meet increasing user demands.

Alternative C

Underlying growth in recreation user days would continue. Maintenance and improvement of existing sites would be made to improve visitor services and reduce resource damage. Development of new sites would increase capacity, especially for non-boating recreation such as drive-in camping, day use, and swimming. Opportunities would continue to exist for the private sector to develop facilities (access, campgrounds, boat launches, etc) on private lands to meet increasing user demands, but to a lesser degree than in Alternatives A and B. Creation of a campground at Ellingson Mill is likely to bring new and different types of users to the South Fork area. This would compete with future private camping facilities in the area.

Alternative D

Underlying growth in recreation user days would continue. Removal of selected facilities and selected sites closure of sites would discourage use by users

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seeking developed site experiences. Capacity would be reduced. User developed sites in unsuitable settings could result in resource damage and conflict between user groups. Opportunities for primitive and dispersed recreation would remain. Opportunities for the private sector to develop facilities (access, campgrounds, boat launches, etc) on private lands to meet increasing user demands would be increased. Limitations on launches would require private sector developments be targeted at non-boating types of recreation.

Non-boating Uses

Under all alternatives noncommercial, non-boating activities such as photography, driving for pleasure, car camping, hunting and horseback riding would not be limited and would continue to increase annually, providing opportunities for local businesses to capture their spending by offering retail goods and services.

Commercial Use

Alternative A

Under this alternative permits would be issued to all eligible applicants. Because permits would not be scarce they would have no transfer value when an existing operator sold his or her business.

More permittees would result in more competition for existing permittees in the future. A situation could develop in the future where more services are available than the public demands. Successful permittees would need strong advertising to attract customers and offer quality service to gain repeat business and word-of-mouth referrals.

Common to All Action Alternatives

Regulating shuttle services through a special use permit system would increase in administrative activity for BLM and create additional paperwork and record keeping for operators.

Issuing concession service permits based on a needs assessment would may allow a small number of new permits that promote BLM management objectives for the river, such as the sale of maps, firepans, or portable toilets

Alternative B

Under this alternative permits would be issued to all eligible applicants. However eligibility requirements would be more stringent than in Alternative A. Because permits would not be scarce they would have limited transfer value when an existing operator sold his or her business. Increased permit application and transfer requirements would increase the cost to permittees of getting into the commercial outfitter/guide business.

More permittees would result in more competition for existing permittees in the future. A situation could develop in the future where more services are available than the public demands. Successful permittees would need strong advertising to attract customers and offer quality service to gain repeat business and word-of-mouth referrals.

Alternative C

Under this alternative new permits would be issued by competitive prospectus for new types of services or services in short supply. Existing permittees would be sheltered from competition from new permittees.

Permits for certain types of uses could be in demand. A permittee who wishes to sell his or her business would have a greater number of potential buyers than under Alternatives A or B because the number of permits available is limited. Permits have no cash value and cannot be assigned a monetary value in a business transaction. Permits are transferred to business buyers at the discretion of the BLM. Existing permittees who hold permits primarily for speculative reasons would be able to realize the greatest value under this alternative–either by selling their business or increasing trips.

Increased permit application and transfer requirements would increase the costs to individuals and businesses of getting into the commercial outfitter/guide business on the John Day River.

Alternative D

This alternative freezes outfitter and guide permit numbers at the existing 34. Permits could be in demand and develop significant transfer value. The value of the permit would be internalized within the business and considered when the business was sold. New types of services could not be permitted except when an existing permit is vacated by attrition. The result could be that certain types of services sought by visitors would not be available.

If launches are limited in the future, existing permittees could increase party size to meet increases in demand. This would have a greater

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impact on fishing guides, who typically take 2-3 customers in a single boat, than rafting guides who typically launch several rafts with 4-8 customers each.

Permits for certain types of uses could be in demand. A permittee who wishes to sell his or her business would have a greater number of potential buyers than under Alternatives A or B because the number of permits available is limited. Permits have no cash value and cannot be assigned a monetary value in a business transaction. Permits are transferred to business buyers at the discretion of the BLM. Existing permittees who hold permits primarily for speculative reasons would be able to realize the greatest value under this alternative–either by selling their business or increasing trips.

Existing permittees would continue to compete among themselves–but no new outfitter/guides would be permitted on the John Day.

Impacts on Mining and Minerals

Common to All Alternatives

Meeting standards for screening of mining operations would limit operations to existing roads in most cases since screening by topography and/or existing vegetation is generally required for new roads. However, in Segment 2 screening of new roads must be accomplished through topography. This screening requirement would make operations difficult in most locations. As with roads this will make establishing new operations difficult. If a potential mine site is not amenable to screening the operation would be impossible to implement. Operations that are possible under these regulations would likely to be more expensive than without these regulations because special measures may be necessary to accomplish the screening. Operations that are forgone would mean the loss of potential mineral development sites that could profit miners.

Alternative A

No locatable or leasable mineral activities currently exist within the corridor. The three saleable mineral materials sites located within the John Day River corridor would be unaffected.

Future mineral operations may be discouraged from locating within the State Scenic Waterway because of screening and other requirements. Opportunities for economic growth and diversification associated with energy and mineral development would be marginally reduced within the basin.

Alternatives B and C

The new no surface occupancy stipulations for leasable mineral resources within the upper John Day and South Fork corridors would have no impact on existing activity because there are no operations of this type located in the corridor. Future leasable mineral exploration and extraction would require slant drilling from outside of the corridor if leasable minerals were known to exist. This would increase the expense of extraction of leasable minerals within the corridor. Chapter II noted the low to moderate probability that leasable mineral exist within the river corridor. As a result it is unlikely that the need for slant drilling would arise even if this alternative was to be adopted.

The area would generally remain open for location of mineral resources under the 1872 mining law. Future locatable mineral operations may be discouraged from locating within the State Scenic Waterway because screening and other resource protection requirements would increase the costs of operation. Opportunities for economic growth and diversification associated with energy and mineral development would be marginally reduced within the basin.

Not issuing new permits for saleable mineral materials and closing three existing sites when permits expire within State Scenic Waterway or Wild and Scenic River portions of the corridor would have no economic impact because such material is readily available on BLM lands outside the corridor and on private lands. Renegotiating permits when permits expire would maintain availability of such materials at existing levels.

Alternative D

Locatable, leasable, and salable mineral development would be affected the same way as in Alternative B within segments not designated Wild and Scenic River or State Scenic Waterway.

Closing designated segments to leasing would have no effect on existing operations because no operations of this type are currently located in the corridor.

Closing designated segments to mining of salable mineral materials would not affect three permits without the agreement of the permittees. These

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common materials are readily available on BLM lands outside the corridor and on private lands. Additional haul costs could be incurred for projects within the corridor, but this should be minimal. State and county governments with free use permits agreeing to the closure would use other rock pit locations– but would still be eligible to receive materials for road maintenance and other public works projects.

Withdrawing designated segments from entry for locatable minerals under the Mining Law of 1872 would result in the elimination of future exploration and development of minerals.

Closing designated segments to future leasing and withdrawing them from locatable mineral entry under the Mining Law of 1972, as amended, would slightly reduce opportunities for economic growth and diversification associated with energy and mineral development.

Closing the designated segments to removable saleable mineral materials would result in the same impacts as Alternatives B and C.

Land Ownership, Classifications, and Use Authorizations

Alternative A

The John Day and Two Rivers Resource Management Plans identify lands suitable for retention disposal, and acquisition. Future land exchanges, acquisitions, and sales, would occur on a willing buyer, willing seller basis and are presumed to be advantageous to both parties. These action have the potential to change the acres of BLM-managed land in each county. Each acre of net increase or decrease would slightly alter the entitlement acres, and thus PILT payments in each county. These changes are expected to be very small given the large acreages currently managed by Federal agencies. Site specific environmental analysis (NEPA) is required prior to any federal land action.

Alternatives B and C

Same as A, except specific parcels are identified for acquisitions.

Alternative D

Same as B and C, except exchanges to mitigate private land impacts of corridor fencing would be pursued. The level of activity, and economic outcomes cannot be projected. This would be analyzed in future exchange specific NEPA analysis.

Required Disclosure of Impacts

Air Quality

The use of prescribed fire is part of actions common to all alternatives. Smoke from prescribed fire will have an unavoidable impact on air quality. These impacts would be short term and be mitigated by project design, prescription and timing. These impacts are described in detail in the following documents: ICBEMP, p.2:29-31, Wildland and Prescribed Fire Management Policy: Implementation Procedures Reference Guide (1998), Two Rivers RMP/EIS, 1986 and John Day RMP/EIS, 1985.

No adverse environmental effects on air quality are anticipated with the implementation of any alternative.

Areas of Critical Environmental Concern

There are no ACECs within the plan area.

Cultural Resources

Impacts to cultural resources have been described earlier in this chapter. By implementing existing and proposed regulations and guidelines there would be no adverse impacts as a result of any of the alternatives of this plan. The preferred alternative may increase the knowledge base concerning cultural resources. Some inadvertent or deliberate destruction of cultural sites may occur by visitors under each alternative.

Farm Lands (prime or unique)

Under all alternatives some publicly owned farmland may be affected in the long term by the discontinuation of irrigation. The additional water provided by irrigation is an essential criterion that makes these farmlands meet the requirements to be considered as prime or unique. Plant communities would change from crops requiring supplemental water to native vegetation or crops that do not require supplemental water. Impacts to vegetation and

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habitats associated with the farmlands have been described earlier in this chapter. These impacts would not be irretrievable or irreversible resource commitments. No adverse effects on Prime or Unique Farmlands are anticipated with the implementation of any alternative.

Floodplain and Wetlands/ Riparian Zones

Impacts of the alternatives to riparian vegetation, fish and water are described earlier in this chapter and in Chapter 3. Impacts from vegetation management actions in all alternatives allow for proper watershed functions to occur that would benefit floodplain and wetland/riparian zones. Some recreation facilities may impact floodplain on a localized scale and these impacts would be reduced by mitigation.
No adverse environmental effects on floodplain and wetland/riparian zones are anticipated with the implementation of any alternative.

Native American Religious Concerns

Actions of all alternatives would enhance resource conditions that contribute to Native American concerns. No adverse impacts to Native American Religious Concerns are anticipated.

Threatened or Endangered Species

There would be no adverse impacts to any Federally listed Threatened or Endangered Species or critical habitat as a result of this plan. The discussion of the effects of the alternatives on threatened, endangered or sensitive species is presented in the fish, wildlife and vegetation sections of this chapter.

Wastes, Hazardous or Solid

There are no known hazardous or solid wastes that will be generated or affected by any of the alternatives of this plan.

Water Quality (both surface water and ground water)

No adverse impacts to water quality are anticipated from any of the alternatives. Impacts to water quality are addressed earlier in this chapter.

Wild and Scenic Rivers

All action alternatives would protect and enhance river values associated the John Day Wild and Scenic River.

Wilderness

Actions related to grazing management or recreation in some alternatives (such as fence construction or rehabilitation of dispersed campsites) may occur within Wilderness Study Areas (WSAs). These actions would only be implemented if they do not impair wilderness values or preclude WSAs from Wilderness designation as directed in Interim Management Policy for Lands Under Wilderness Review (IMP), H-8550-1, 7/5/95, BLM.

No adverse impacts to Wilderness areas or WSAs are anticipated from grazing management actions under Alternatives A, B or D.

Alternatives A and B include 2 fence projects that total 0.4 miles that have been previously analyzed in Environmental Assessments #OR054-95-008 and #OR054-97-038.

Alternative B also proposes to fence 4-5 dispersed camp sites within WSAs to exclude livestock in order to reduce conflicts between recreationists and livestock. These fence projects would further protect and enhance river values of recreation opportunity and at the same time protect wilderness values. Constructing fences within WSAs would require further analysis to ensure that the proposed projects meet IMP criteria of nonimpairment, that they are substantially unnoticeable, and minimize surface disturbance.

Alternative C proposes approximately 12 fence projects totaling approximately 50 mile that are within WSAs. These projects would require further analysis to determine if they are consistent with the interim management policy and if they could be implemented.

Alternative D does not propose any new fence projects located within WSAs.

All projects proposed within WSAs would be located and designed to be consistent with VRM objectives, minimize surface disturbance, and, where applicable, meet State Scenic Waterway Rules.

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Alternative B for Dispersed Camping proposes to identify river campsites where resources are in need of rehabilitation or protection, including sites within WSAs. Rehabilitation of WSA sites would be designed to protect and enhance wilderness values, and would be accomplished using methods and equipment that have the least impact on WSA values.

The effects of motorized boating and boating use levels on wilderness values of semi-primitive recreation experience and solitude are discussed earlier in this chapter.

Environmental Justice

Research conducted in response to Executive Order 12898 on Environmental Justice identified no low-income groups with unique cultural, social, or economic practices that would be impacted by Alternatives A, B, C, D, or E. Native Americans were the only minority group of concern identified under the guidelines of the Executive Order. Impacts to Native Americans are discussed elsewhere in the document.

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