FINDING OF NO SIGNIFICANT IMPACT

EA Number: OR-053-3-063

Title of Action: Lower John Day River Integrated Weed Management

BLM Office: Prineville District Office, Central Oregon Resource Area

I have reviewed the environmental assessment (EA.), including the mitigation section which is part of the proposed action. The assessment details two alternatives. The proposed action (alternative one) proposes to use all available Integrated Weed Management practices (Cultural, Physical, Biological and Chemical) to control or eradicate noxious weeds on public lands. The proposed action includes the use of herbicides in Wilderness Study Areas (WSAs). The second alternative would be the same, except for not permitting the use of herbicides in WSAs or WAs. The EA. is tiered to the Northwest Area Noxious Weed Control Program Final Environmental Impact Statement (FEIS) 1985 and Supplemental FEIS 1987. No significant impacts to the human environment would occur based on the EA. analysis and all impacts are less than those addressed in the FEIS 1985 and Supplemental FEIS 1987 and are consistent with their Records of Decisions 1985 and 1987.

On the basis of the information contained in the EA., the tiered FEIS 1985 and Supplemental FEIS 1987 documents and all other information available to me, it is my determination that the proposed action does not significantly affect the quality of the human environment. Therefore an Environmental Impact Statement is not necessary and will not be prepared.

Harry R. Cosgriffe, Area Manager
Central Oregon Resource Area

Dec. 6, 1996
Date

LOWER JOHN DAY RIVER
INTEGRATED WEED MANAGEMENT

EA Number: OR-053-3-063

US Department of the Interior

Bureau of Land Management

Prineville, Oregon

December, 1996

EA Team Leader:

Lawrence C. Thomas, Environmental Protection Specialist — Date: Dec 4, 1996

Reviewed By:

Don Smith, ADM and NEPA Compiance — Date: 12/6/96

Approved and Accepted

Harry R. Cosgriffe, Central Oregon Resource Area Manager — Date: Dec. 6 1996

LOWER JOHN DAY RIVER INTEGRATED WEED (INITIATIVE) MANAGEMENT

EA. Number: OR-053-3-063

BLM Office: Prineville District Office

Resource Areas: Central Oregon R. A. (CORA - Lower John Day River Eco-Region)

Location of Proposed Action: Public Lands along John Day River from Tumwater Falls (Rm. 10) to upriver from Clarno (Rm. 122). (See Map 2a to 2d)

EA. Team Leader: L.C. Thomas

A. PURPOSE/NEED FOR PROPOSED ACTION

The purpose of the proposed action is to continue and expand the District's ecosystem based Integrated Weed Management (IWM) program for noxious weed control and eradication efforts along the Lower John Day River (LJDR) system from Tumwater Falls at rivermile (Rm.) 10 to upstream from Clarno at Rhodes Canyon near Rm. 122. This proposed action specifically focuses on the four BLM Wilderness Study Areas along LJDR area because of their very high resource and recreational values set among mostly weed free natural native vegetative communities. The LJDR is also a Wild and Scenic River (W&SR)designated as "Recreational." These WSAs and W&SR areas have expanding recreation and are highly susceptible to noxious weed populations exploding out of control. The expanded IWM practices include prevention, manual, mechanical, biological, and chemical, which includes the proposed use of herbicides in the treatment of noxious weeds in four BLM-administered wilderness study areas (WSAs). These WSAs (USDI-BLM 1991) are Lower John Day River (OR-5-6), Thirtymile (OR-5-1), North Pole Ridge (OR-5-8) and Spring Basin (OR-5-9). The LJDR area currently has numerous small populations of noxious weeds (mainly Dalmation Toadflax, Russian and Diffuse Knapweed, White top, and Poison Hemlock), that similar to a wildfire emergency, if left untreated will alter the natural biodiversity and wilderness characteristics of the WSAs. The emergency and biological phenomena that noxious weeds represent will cause unalterable watershed changes due to "long term and often permanent" (USDI-1996) changes to vegetative diversity. They also threaten economical and environmental damage to the adjacent private agriculture lands. The LJDR area is facing increased biodiversity threats due to the presence of increasing infestations of Yellow Starthistle, Leafy Spurge and Perennial Pepperweed moving downstream from upper JDR watersheds in Wheeler and Grant Counties. These small noxious weed infestations are a biological phenomena that constitute an emergency and which requires the immediate and urgent emergency treatment now, before they expand beyond the limits of physical and economic IWM control. It is urgent that these new noxious weeds (biological phenomena) infestations are treated as a biodiversity emergency just like a wildfire.

This EA. doesn't include the two newly designated WSAs of Sutton Mountain (5-84) nor Pat's Cabin (5-85), which includes the

lower portions of Bridge Creek and Girds Creek watersheds flowing into the John Day River at Rm. Weed control in the Sutton Mountain area including these two new WSAs were analyzed as part of the Sutton Mountain Coordinated Resource Management Plan-Environmental Assessment (EA. No. OR-054-2-044)(SMCRMP March 1995) and its Decision Record of March 1996 (see pp. 6-7.), and the District IWM EA. No. OR-053-3-062. This Sutton Mountain area of the lower Bridge Creek and Girds Creek watersheds is part of the BLM's Bridge Creek (National) Demonstration Weed Management Area initiated in FY 1996.

This proposed action continues and expands the use of all Integrated Weed Management practices on all public lands along the John Day River which is designated as an Oregon State Scenic Waterways and a National Wild and Scenic River. The LJDR up to Butte Creek (Rm.97.3) is also a designated State wildlife refuge. The proposed action is also required to meet environmental and legal concerns over control of noxious weed expansion in WSAs and off puplic lands onto adjacent private agriculture lands and vis versa. These infestations are dynamic and expanding along the immediate WSRs corridior mostly within 1/4 mile of JDR. They threaten the long term biodiversity of the four Wilderness Study Areas (WSAs), Wild and Scenic Rivers (WSRs), native rangelands, riparian areas, recreational lands and sites along the Lower John Day River. The current District-wide Integrated Weed Management Environmental Assessment Decision Record (EA. No.OR-053-3-062), which is under appeal to the Interior Board of Land Appeals (IBLA) did not allow for the use of herbicides in WSAs (Alternative 2)and practices under the proposed action limited use of fire and vehicle access. This EA. proposes to specifically address that need.

Noxious weed eradication or control is a vital tool for ecosystem management because it protects biodiversity and watersheds through maintenance of native vegetative diversity, and improvement of native riparian habitats and rangelands. It is vital to continue and expand early control efforts on noxious weed infestations, which are considered a biological phenomena, on all public lands immediately when found. Since early prevention, detection, and immediate control measures (hand pulling especially first year infestations before seed production) begun before noxious weeds, through their "aggressive and prolific nature" explode out of control and take over native rangelands. 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) until the infestation is so large that it is like a wildfire raging out of control. Noxious weeds are considered exotic plants. These exotic plants "typically spread more slowly in wilderness, but these areas are not immune" (Asher and Harmon 1995). Even in areas such as the Selway-Bitterroot Wilderness in Idaho, where mining and livestock use has been absent for more than 50 years, has exotic plants which are being spread mainly by recreational use.

IWM control practices and actions are based upon BLM's main authority and direction for controlling noxious weeds: Federal Land Policy and Management Act of 1976, 43 USC 1700 et seq. (FLPMA); and Public Rangelands Improvement Act of 1978, 43 USC 1901 et seq. (PRIA). The Federal Noxious Weed Act of 1974 (7

U.S.C.2801-2813) as amended by Sec. 15, Management of Undesirable Plants on Federal Lands, 1990 (PL. 93-629) and the Carlson Foley Act of 1968 (PL. 90-583) also directed weed control activities on federal lands. The State and County laws place responsibility for noxious weed control on public lands with the federal land management agency. Noxious weeds are officially designated noxious by State Dept. of Agriculture (ODA) and/or county Weed Boards. All noxious weeds shown of table 2 and 8 are so designated by either the State ODA or one or more of the following counties: Gilliam, Grant, Jefferson, Sherman, Wasco or Wheeler. Additional laws, regulations and policies that provide the foundation for management of noxious weeds on public lands are summarized in Appendix 2 on pp.25-26 "Noxious Weed Strategy for OR/WA - Aug.1994" (Bolton 1994.)

This Lower John Day Integrated Weed Management (LJDRIWM) EA. No. OR-053-3-063 is tiered to the District IWM EA. No OR-053-3-062 (June 1994). This LJDRIWM EA.is also tiered to the Northwest Area Noxious Weed Control Program Final Environmental Impact Statement (FEIS-Dec 1985), and Record of Decision (ROD-April 7, 1986), the Supplement Environmental Impact Statement (SEIS-Mar 1987) and ROD (May 5, 1987) and the U.S. 9th Circuit Court implementations date of 4/7/88.

In addition, the noxious weed sections, including the use of herbicides form the expanded list of EPA-approved herbicides found in the Final Environmental Impact Statement for Vegetation Treatment on BLM Lands (Thirteen Western States), (May 1991), its Appendix (May 1991) and ROD (July 1991) will be incorporated into the District's Integrated Weed Management (IWM) program and this EA. These additional chemicals will be incorporated only after final approval from the Solicitors Office, U.S. Justice Dept. and 9th U.S. Court review. The expanded list of herbicides is listed in the proposed action (Additional Herbicides p. 8) and their use will be as stipulated in the proposed action alternative 1 of FEIS (May 1991)and ROD (July 1991).

Implementation and Objectives

The overall objective of the LJDR IWM Initiative EA.is to implement the proposed actions noxious weed control practices to protect native rangeland biodiversity, especially in WSAs using all Integrated Weed Management including herbicide practices. The major goal of this IWM is to implement a program and/or practices which reduce the populations or eradicate where possible the targeted noxious weeds and "alters the habitat which supported the weeds in the first place" (Hoglund 1991). It also is apply BLM laws and policy such as in FLPMA section 603(c) that directs wilderness study areas under Interim Management Policy to be managed "in a manner so as <u>not to impair the suitability of such areas for preservation as wilderness</u>." Thus, objectives/priorities for proposed noxious weed control activities are as follows:

1. Potential New Invaders*
2. Eradication of New Invaders*
3. Established Infestations*

* (see Table 1 of District IWM EA., Table 1 LJDR Priority areas and Table 2.)

This is consistent with the agreement reached with the 9th Circuit Court of Appeals, and guidelines outlined in the April 7, 1986 and May 5, 1987 Records of Decision for FEIS (1985) and Supplemental FEIS (1987). The LJDR IWM EA. primary objectives for noxious weed control correspond in summarized form (see Table 1 District IWM EA.), to those found on p. 119 of the Supplemental FEIS (1987). The weed control features along with inventory and monitoring, and interrelationships with state, county and local governments, are described on pp. 1-11 and 14-18 of the FEIS (1985), and on pp. 2-9 of the Record of Decision (SFEIS 1987). It also incorporates and uses weed control strategies and guidelines of Appendix 4 from the Noxious Weed Strategy and Guidelines for OR/WA BLM Aug. 1994 (Bolton 1994). They are tiered/incorporated into this EA. as referenced material.

Conformance with Applicable Land Use Plans

The IWM proposed actions for controlling noxious weeds is subject to and in conformance with the following land use Final Environmental Impact Statements and associated plans:

1. Two Rivers Resource Management Plan (June 1986) - Record of Decision (ROD) and Rangeland Program Summary (RPS) p. 31

2. John Day River Management Plan and Environmental Impact Statement (Draft) (October 1993) p. 92

B. PROPOSED ACTION AND ALTERNATIVES CONSIDERED

1. Proposed Action

The proposed action (alternative 1) is to implement an expanded Integrated Weed Management (IWM) program that is focused on protecting susceptible lands, which are not yet significantly infested with noxious weeds. This includes all IWM practices (even the use of herbicides) in the four Wilderness Study Areas (WSAs) in the lower John Day River corridor. These four WSAs are Lower John Day River (OR-5-6), Thirtymile (OR-5-1), North Pole Ridge (OR-5-8), and Spring Basin (OR-5-9). This proposed action would emphasize a proactive (all available methods) ecosystem-based approach for control (eradication or containment) of noxious weeds on public all lands within the lower John Day River corridor Rm. 10 to 122 (see maps 2a to 2d). Public education, prevention practices and techniques and extra detection efforts (see standard practices section in Appendix 1) will be emphasized. When weed infestations are detected, hand pulling or manual or mechanical practices will be used if practical and effective. The immediate and on the spot treatment (handpulling) especially if infestations are only a few plants will be allowed and encouraged by public, and users of public lands. Biological control efforts and agents if available will be released on those weed infestations where feasible. If any of the above practices are not effective or practical then the use of herbicides will be considered.

Its actions are tiered to all referenced plans (FEIS, SFEIS and RODs) and incorporated stipulations, mitigation and guidelines from the District-wide IWM EA. No. 93-053-62. These actions include Cultural Practices (preventive), Physical Control Practices, Biological Control Practices and Chemical (herbicide) Control Practices (see Appendix 1) for standard IWM operating procedures and practices to be used in this EA.

The proposed action will incorporate all features of the mitigation section.

Control actions will be implemented following objectives one, two and three.
They will also follow priorities presented in Table 1 below. Tables 2 and 7 list in summarized form most of the BLM priority noxious weeds, their control priorities, which are tiered to the State ODA and Jefferson, Gilliam, Grant, Sherman, Wasco and Wheeler Counties' noxious weed lists. Table 2 and 7 summarizes the BLM noxious weeds from the District IWM Appendix 1 which lists and prioritizes the State and County the designated noxious weeds into a (T), (A), (B), (C) or (Q) class (see Appendix 1 pp. 39-42 in the District-wide IWM). The main work focus will be directed against the noxious weeds summarized in Tables 2 and 7. The estimated annual treatment acres are shown in Table 3.

Control work in the LJDR area will only be done within District budget, funding and planning limits in accordance with stipulations tiered to FEIS-1985, SEIS-1987 and ROD guidelines and mitigation as described with above stated documents

This EA. 's (see Table 1) priority areas for noxious weed treatment/control work, inventory and monitoring on the LJDR public lands have been prioritized into six basic categories or zones

Table 1. Lower John Day River EA. Priority Treatment Areas or Zones

Priority	Description of Area
1.	Areas adjacent to private agricultural croplands.
2.	Areas within WSAs, WAs, ACECs and RNAs not treated previously.
3.	Areas on or adjacent to **major** public rights-of-ways: Federal, state and county highways and associated gravel stockpile sites, irrigation ditches, canals, pipelines (PGT) and powerlines (BPA and local).
4.	BLM managed administrative sites such as fire guard stations, developed and undeveloped recreation sites, boating or rafting river access sites, campgrounds along the lower John Day River.

5. All other rights-of-way, BLM roads, reservoirs and springs, streams, irrigation ditches, and riparian areas.

6. **All remaining** affected public lands.

Close cooperation will be maintained with the Oregon Dept. of Agriculture (ODA) and the appropriate county and other agency noxious weed coordinators (within and adjacent) to the EA.'S area to ensure continued cooperation and updated coordination in noxious weed inventory, biological control and IWM control/eradication efforts.

The 1996-2000 periods of current/proposed noxious weed control activities in the EA. area are shown by affected Counties in Appendix 2. These activities during period are expected to continue and expand, but effort is dependent budget, as well as noxious weed inventory, weed dynamics and application of year to year control efforts.

Principle Features of Proposed Action

The principle feature for an ecosystem-based approach to an IWM program is the coordination and cooperation of noxious weed control efforts on all affected lands (public, state or private). BLM policy limits its efforts for treating only public lands, but adjacent federal, state (ODA and ODFW), and private efforts in cooperation/coordination with the county weed departments will be the principle feature of BLMs coordination efforts. These efforts are focused on both indirect Cultural (preventative) actions and direct Physical, Biological or Chemical actions on the weeds themselves, such as handpulling, hand hoeing, discing, competitive seeding (natives), prescribed fire, release of biological control agents (insect, pathogens) or herbicide applications (see Appendix 1 and 2 for specific details.) The indirect actions focus on the site specific environmental or biophysical aspects. These indirect actions tie into the social and human behavior aspects of the particular weed problem focused on enhancing the natural controls, modifying people's attitudes for the needed or required maintenance activities to prevent establishment of a weed or a change of environmental requirements needed by the weed (Hoglund 1991). These activities are the focus of Cultural Practices.

Direct actions (treatments) are targeted to actions on the specific weeds themselves. These actions are presented in the Physical Control Practices, Biological Control Practices and Chemical Control Practices (see Appendix 1 for standard operating procedures and specific details, Appendix 2 for type of weed control activity and site location, and Maps 2a-2d for land status and location of treatments).

Physical access is often required as part of site preparation for the application of other control methods such as manual or mechanical practices, removal of weed debris, burning or hauling, prescribed fire, competitive seeding or application of

herbicides. (See Table 3 and Appendix 1 and 2.) For all areas including (WSAs) with some previous trail or road allowing vehicle access, ATV vehicles will be used for access to provide emergency treatments of noxious weeds. The ATV vehicles will be used also on the larger alluvial flats for herbicide application, since backpack application is extremely slow and poses the most risk or hazards to the applicator, (outside of mixing operations). Helicopter application next to the river is limited by required buffers (see Mitigation section.) The least sensitive herbicide Glyphosate (Rodeo formulation) toward water, by FEIS 1985 and SFEIS 1987 stipulations is not allowed to be applied by helicopter. Helicopters will be used only where applicable.

All herbicide applications will be done only by a State ODA licenced applicator following herbicide label and mitigation restrictions. A Pesticide (Herbicide) Fact Sheet (USFS, BLM, BPA 1992) for Glyphosate, Dicamba, Picloram and 2,4-D summarizing risks associated with the use of each herbicide is included in this EA. as reference material and copies are available upon request.

Because of minimal tool concept and access concerns, prescribed fire will be used as a tool on sites up to 40 acres in size and native reseeding in WSAs will be mostly by broadcast methods (hand, ATV, or helicopter). However, recent unpublished control research done by Colorado State Univerisity (NAWMA 1996) on dense Russian Knapweed infestations had the best control results with a combination herbicide use-surface soil scarification (minimum seedbed preparation) and drilled competitive grass seeding. Thus, for dense Russian Knapweed sites less than five acres and accessable by ATVs, a minimum surface soil seedbed preparation with ATV drilling of grass seed will be used as part the proposed action, combined with the use of prescribed fire and chemical use.

Additional Herbicides

As included in the District-wide IWM EA. and also included for this LJDR IWM EA., the additional herbicides are tiered to and incorporated from the 1991 FEIS for Vegetation Treatment on BLM Lands (Thirteen Western States) into this EA. if approved (see p. 3 section A). These additional herbicides are as follows: Atrazine, Bromacil, Bromacil + Diuron, Chlorsulfuron, Clopyralid, Diuron, Hexzinone, Imazapyr, Mefluidide, Metsulfuron Methyl, Simazine, Sulfomefuron Methyl, Tebuthluron and Triclopyr (with all stipulations of FEIS 1991 and ROD regarding application tiered to and incorporated into the proposed action). The use of additional chemicals is allowed in the FEIS 1985 which states on p. 8, "Other or new herbicides could be proposed for use in the future, but before their use, a hazard assessment similar to those in Appendix K will be conducted and appropriately documented." This was done in the FEIS 1991, its Appendix and ROD.

Cooperative Agreement Relationships/Actions

At this time the Prineville District has working relationships in the LJDR area (current/past contracts or

agreements) with the State ODA (State BLM/ODA cooperative agreement), and Crook/Wheeler, Gilliam, Grant, Jefferson, Sherman and Wasco counties for noxious weed control work being done on public lands.
Besides field treatment **(Control)**, the counties are also involved in 1) **Inventory** of noxious weeds, especially where public lands interface with other ownerships, 2) **Monitoring** and **Evaluating** the effectiveness of eradication and/or control actions, and 3) **Future Planning and Updating** current and existing noxious weed control contracts with BPA, PGT, ODOT or County Road Departments and/or other agencies with appropriate Pesticide Use Proposals (PUPs), Pesticide Application Records (PARs) or Biological Control Agent Release Proposals/Records (BCARP/Rs). It is expected that the BLM's effort in its Bridge Creek (National) Demonstration Weed Management Areas (NDWMAs), one of its four National WDAs efforts starting in Fiscal Year 1996), would also be coordinated with work in the Lower John Day River area, which is also part of the NDWMA. It is expected to increase the BLM's coordination and cooperation with Wheeler Co. OWIC, private land owners, National Park Service (Painted Hills Unit of Fossil Beds National Monument), and the Ochoco National Forest.

Additional cooperation is being focused to rights-of-ways (ROWs)and addressed through information and/or control work with local irrigation districts, Oregon Dept. of Transportation (ODOT), Bonneville Power Administration (BPA), Pacific Gas Transmission (PGT), adjacent/local U.S. Forest Service offices and other local agencies.

The BLM hosted a field trip on June 26, 1996 to allow interested members of the public to view the weeds present along the John Day River within the North Pole Ridge WSA'S (W&SR corridor). Invitations were extended to members of the public known to be interested in weeds and/or wilderness in the LJDR area. Attending was BLM weed specialists and four representatives of local public groups including the Blue Mtn. Biodiversity Project, Sierra Club's High Desert Protection Group, and Oregon Natural Resource Council. The group floated the river from Butte Creek to Thirtymile Creek through the North Pole Ridge WSA. Discussion focused on the extent and species of weeds observed in the WSA, what is causing weeds to spread and options to control them.

Project Design IWM Treatments/Mitigation

The common management practices or project design features tiered to this EA. related to noxious weed control practices are found in the FEIS (1985), pp 7-11, and Table 1-3. p. 9, which gives mixtures and maximum rates of chemical application (summarized in mitigation measure q); FEIS (1985) Appendix I; and are supplemented in the text revisions section pp. 119-127 of the SFEIS (1987). In addition, all mitigation measures adopted in both FEIS and SEIS Record of Decisions as modified by this EA.'S (more stringent) stipulations, are part of the proposed action and project design features.

New Sites

As information gathering and sharing of weed information are the "first and most important component of an IWM program" (Piper 1991), it is essential to educate all employees to the known and potential District weed problems. The key factor of an IWM program is the continuous weed inventory effort, and information exchange which is focused on surveying, monitoring and record keeping activities. Inventory and monitoring activities during the next few years will discover new infestations/populations of Table 2 prioritized weeds on public lands. These increased efforts and educational awareness of noxious weeds by district personnel may also discover sites/populations of noxious weeds or new invaders not targeted or classified for control by BLM, State or counties. For each of

Table 2. BLM Noxious Weeds Priority List, Growth Form, Reproduction Methods, and Treatment (Witson 1991) (Burrill 1993) (Hawks 1985 and 1989)

BLM List Priorities 2/	**Noxious Weed Species 1/** (Approved ODA Bio Agents # *)	**Growth Form**	**Reproduction Methods**	**Treatment**
1.	Yellow StarThistle ******	Annual (W)	Seeds	Chem,Bio,Man,Mech,
2.	Leafy Spurge *******	Perennial	Roots/Seeds	Chem,Bio
3.	Dalmation Toadflax *	Perennial	Seeds/Roots	Chem,Man,Mech,Bio
4.	Tansy Ragwort **	Biennial	Seeds	Chem,Bio,Man,Mech
5.	Rush Skeleton Weed ****	Perennial	Roots/Seeds	Chem,Bio
6.	Scotch Thistle	Biennial	Seeds	Man,Mech,Chem,
7.	Diffuse Knapweed *****	Biennial**	Seeds	Chem,Bio,Man,Mech
8.	Spotted Knapweed ****	Biennial**	Seeds	Chem,Bio,Man,Mech
9.	Russian Knapweed *	Perennial	Roots/Seeds	Chem,Bio
10.	St.Johnswort-Klamath Weed***	Perennial	Roots/Seeds	Chem,Bio
11.	WhiteTop-Hoary Cress	Perennial	Roots/Seeds	Chem,Man,Mech
12.	Kochia	Annual	Seeds	Man,Mech,Chem
13.	Puncture Vine **	Annual	Seeds	Chem,Man,Mech,Bio
14.	Western Water Hemlock	Perennial	Seeds	Man,Mech,Chem
15.	Canada Thistle ***	Perennial	Roots/Seeds	Chem,Bio
16.	Bearded (Common) Crupina	Annual (W)	Seeds	Chem,Man,Mech
17.	Medusahead Rye	Annual	Seeds	Man,Mech,Chem
18.	Musk Thistle **	Biennial	Seeds	Man,Mech,Bio,Chem
19.	Matgrass	Perennial	Seeds	Mech,Man
20.	Squarrose Knapweed	Perennial	Seeds	Chem,Bio,Man,Mech
21.	Dodder	Parasitic	Seeds	Chem,Man,Mech

22. Poison Hemlock	Biennial	Seeds	Man,Mech,Bio,Chem
23. Jointed Goatgrass	Annual	Seeds	Chem,Man,Mech
24. Field Bindweed Morning Glory	Perennial	Roots/Seeds	Chem
25. Spiny Cocklebur	Annual	Seeds	Chem,Man,Mech
26. Purple Loosestrife **	Perennial	Roots/Seeds	Bio,Chem,Man,Mech,
27. Bull Thistle **	Biennial	Seeds	Bio,Man,Mech,Chem
28. Johnson Grass	Perennial	Roots/Seeds	Chem,Man,Mech
29. Milk Thistle	Annual (W)	Seeds	Man,Mech,Bio,Chem
30. Halogeton	Annual	Seeds	Chem,Man,Mech
31. Jimson Weed	Annual	Seeds	Man,Mech,Chem
32. Yellow-Common Toadflax *	Perennial	Roots/Seeds	Chem,Bio
33. Perennial Pepperweed	Perennial	Roots/Seeds	Chem,Man,Mech
34. Scotch Broom **	Woody Shrub	Seeds	Chem,Man,Mech,Bio
35. Russian Thistle	Annual	Seeds	Chem,Bio,Man,Mech
36. Teasel	Biennial	Seeds	Man,Mech,Chem
37. Spikeweed	Annual	Seeds	Chem,Man,Mech
38. Wild Prosso Millet	Annual	Seeds	Chem,Man,Mech
39. Italian Thistle	Annual (W)	Seeds	Chem,Man,Mech
40. Dyers Woad	Biennial	Seeds	Chem,Man,Mech,
41. Wild Carrot	Biennial	Seeds	Man,Mech,Chem
42. Yellow Nutsedge	Perennial	Roots/Nutlets	Chem
43. Purple Starthistle	Biennial	Seeds	Chem,Man,Mech,
44. Iberian Starthistle	Biennial	Seeds	Chem,Man,Mech
45 Mediterranean Sage *	Biennial	Seeds	Bio,Man,Mech,Chem

1/ District Wide Approved ODA submitted BCARP #s *-****** (see Appendix 2 & 3. ** Short-lived Perennial, (W) winter annual or sometimes biennial.)

2/ Treatment Priorities will vary according to infestation size, location, public health and safety, accessibility and effectiveness of specific treatment. A key factor in effective control is implementation of cultural practices keyed to early detection and immediate/early application of control practices to prevent initial weed establishment. these sites found, the noxious/targeted weed population at each site will be characterized. This will require specific locations noted on maps, identified for land status, rate of spread determined, and potential for control/eradication. These actions are critical for the

selection of IWM control practices causing the least environmental disturbances tied to the proper selection, timing and levels of action needed. Those new population sites consisting of an isolated plant to several small populations of plants, will be manually controlled immediately, bagged if have flowers or seedheads, noted on a map, GIS data base and site monitored in out years for additional plants.

The approximate estimated total acres to be treated based upon projected funding available for weed control by the various treatment

methods each year for 1996 to 2000 are shown in Table 3. as summarized

Table 3. Average Annual Estimated Treatment Acreage (1996-2000) 1/

Treatment	1996	1997	1998	1999	2000
I. Cultural Practices*	-	-	-	-	-
a. Prevention (Inspection, regulation, sanitation & education)					
b. Livestock Manipulation					
c. Wildlife manipulation					
d. Soil Disturbance					
e. Rock (material) Sources					
f. Public Use (Recreation)					
II. Physical Control Practices					
a. Mechanical Practices* (mowing, tilling, & disking)	25	100	100	100	100
b. Manual Control** (hand pulling & hand tools)	4	10	15	20	25
c. Prescribed Fire (Burning) * (Burn plans required for all burns initial and second burns)	25	100	100	100	100
III. Biological Control Practices*					
a. Natural Competition * (competitive seeding)					
b. Introduced Competition (# sites) (insects -BCAs, pathogens)	5 (BCA)	5 (BCA)	5 (BCA)	5 (BCA)	5 (BCA)
IV. Chemical Control Practices					
a. Pesticides (herbicides) (2,4-D, Picloram, Dicamba, Glyphosate, others if approved)	365	565	765	765	765
b. Fertilization					
Totals	394	675	880	885	890

1/ Treatment acreage is based upon best estimated projections for existing weed surveys and current workload, but estimated out year treatments is subject to available funding and workload capabilities. (see Appendix 2).

(*) Acres in Table 3 are duplicated if control measures are combined such as in Physical Control methods; mechanical, manual controls or prescribed fire, are projected / proposed to be used prior to seeding. Cultural Practices are used where appropriate & possible.

(**) Some proposals are both manual and chemical.

*** Biocontrols effectiveness "works best on large weed concentrations and worst on isolated patches" (Kummerow 1992). "Biocontrol is no cure-all. Many exotic species aren't amendable to it; sometimes the recruits turn out to be duds; and it's often difficult and very expensive to find the right agent - four to six years of research carrying a price tag of $1 million for each target alien" (noxious weed) "is typical" (Devine 1994).

Special Management Areas

When noxious weeds are discovered within existing or proposed Special Management Areas (SMAs) such as WSAs, (see Maps 2a-2d), RNAs, ACECs, and W&SRs), they will be controlled/eradicated according to specific SMAs needs/limitations. The control methods selected would be specific to targeted weed species, site specific characteristics, biodiversity goals and weed population densities.

The following areas (Table 4) are proposed to be treatable with all available IWM practices, including herbicides as existing SMAs (see pp.26-28 and Map 9 in Reecord of Decision RMP/EIS Two Rivers June 1986)

Table 4. Special Management Areas along the Lower John Day River.

WSAs	**RNAs**	**ACECs**
W&SRs*	Lower John Day River (OR-5-6)	None
None	Lower John Day R. Thirtymile (OR-5-1)	
North Pole Ridge (OR-5-8)		
Spring Basin (OR-5-9)		

***** This Lower John Day River W&SR designation is "Recreational" The area is also designated as a State of Oregon Scenic Waterway as part of Lower JDR (lower 147 miles from Service Creek downstream) It also contains the Red wall scenic area and the Oregon Trail Historic sites at McDonald (400 acres).

Staff specialists and the Area Managers will determine the best combination of IWM weed control practices in accordance with the provisions of this EA. These practices would be determined based on the expected success of weed control efforts and the short and long term consequences. A discussion of IWM cultural, physical, biological and chemical control practices which will be used on SMAs is located on pages 3-13 and Appendix 1 and 2.

Wilderness Study Areas

Treatment options for WSAs will be conducted in accordance with the provisions of Chapter III.C.2. on pages 38 &39 of BLM Manual H-8550-1, Interim Management Policy For Lands Under Wilderness Review (USDI-BLM 7/5/95), as follows:

III.C. **WATERSHED REHABILITATION AND VEGETATIVE MANIPULATION**

"1. Watershed Rehabilitation. Measures required for watershed rehab ilitation, including structures, will be permitted only if they satisfy the nonimpairment criteria. Land treatments (e.g. trenching, ripping, pitting, terracing, plowing) will not be permitted on lands under wilderness review.

Watershed rehabilitation work required by emergency conditions caused by fire, flood, storms, biological phenomena, or landslide may involve any treatments needed but must be conducted to the estent feasible in a manner that will not impair wilderness suitability. For example, the rehabilitation work will use the methods least damaging to the wilderness resource. Alternatives to seeding must be carefully evaluated prior to the decision to reclaim, if reclamation is allowed. Reseeding and planting under

emergency conditions will utilize species native to the area and will minimize cross-country use of motorized equipment. Seedings and plantings will be staggered or irregular so as to avoid a straight-line plantation appearance."

"2. Vegetative Manipulation. Vegetative manipulation by chemical, mechanical, or biological means will not be permitted except: (1) plantings or seedings established before October 21, 1976 may be maintained but not expanded; (2) activities that qualify under the manner and degree provision for grandfathered grazing uses; and, (3) control of noxious weeds and individual exotic plants such as tamarisk when there is no effective alternative and when control of the noxious weed or exotic plant is necessary to maintain the natural ecological balances within a WSA or portion of a WSA. Hand or aerial seeding of native species may be done to restore natural vegetation.

In all cases where vegetative manipulation is proposed, the activity must conform to the policy guidance of Chapter II of this manual and not adversely impact wilderness values within any portion of the WSA. (See Chapter II.B.4.c for specific analysis requirements.)

In grandfathered" grazing operations, if vegetative manipulation had been done on the allotment before October 21 1976, and its impacts were noticeable to the average visitor on that date, the improvement may be maintained by reapplying the same treatment to the same area. Otherwise, vegetative manipulation may be used only for control of small areas of exotic plants when there is no effective alternative. Limited exceptions are specified as follows.

-- Noxious weeds may be controlled by grubbing or with chemicals when they threaten lands outside the WSA, or are spreading within the WSA, provided the control can be effected without serious adverse impacts on wilderness values.

-- Prescribed burning may also be used where necessary to maintain fire-dependent natural ecosystems.

-- Reseeding may also be done by hand or aerial methods to restore natural vegetation. (There is also a provision for reseeding in emergency reclamation projects, described in Section 1, above.)"

In WAs, noxious weeds will be controlled or eradicated in accordance with provisions of .37.A.3.h.(1) through (4) of BLM Manual 8560, Management of Designated Wilderness Areas, as follows:

(1) Seeding. The need of seeding must be carefully analyzed. Seeding will be approved only for:

(a) Areas where human activities have caused the loss or threatened the existence on indigenous species.

(b) Areas where human activities have denuded or cause loss of soil, providing the actions or activities

responsible for the deterioration have been corrected and natural vegetation is insufficient and ineffective.

(2) Plant Control. Plant control must be approved only for:

(b) Noxious farm weeds by grubbing or with chemicals when they threaten lands outside wilderness or are spreading within the wilderness, provided the control can be effected without serious adverse impacts on wilderness values.

(4) Fertilizing. Fertilization may be used only as an aid to revegetation of disturbed areas approved in item (1).

Alternative 2 No Use of Herbicides in WSA's or WA's

Under alternative 2 all methods and areas would remain open for full use of all IWM practices exactly like alternative 1 (proposed action) except under this alternative the use of herbicides would **NOT** be permitted in any WSA or WA (see maps' 2a-2d).

This differs from the proposed action (alternative 1) which would permit herbicide use on all LJDR area public lands, including WSAs. The use of herbicides in WSAs was not part of the approved Decision Record in the District wide IWM EA. (EA. # 0R-053-3-62).

3. Alternatives Considered But Not Analyzed

The alternatives of **No Aerial Herbicide Application, No Use of Herbicides** and **No Action** have been analyzed in the NW Area Noxious Weed Control Final EIS (1985) and Supplement FEIS (1987) and their respective RODS. No further discussion in this EA. of these alternatives will be necessary, since the conclusions and impacts would be essentially the same.

The alternative of **No Use of Herbicides** has already been analyzed in FEIS-1985 and 1987 and their respective Records of Decision. The decision/agreement reached with the U.S. 9th Circuit Court of Appeals allowed the use of Picloram, 2,4-D, Dicamba and Glyphosate. This herbicide use to be part of an IWM program. Thus, the No Use of Herbicides is not an alternative to be analyzed further.

The alternative of **No Action** is defined as no noxious weed control efforts being applied to public lands. This is not viable, due to the requirements by Federal, State and County regulations and laws, which mandate active control actions for known and newly discovered noxious weed infestations. Aggressive noxious weeds expansion (biological phenomena) or "invasion of native communities" and which causes "a reduction of biodiversity" (Barbe 1991) is against BLM policy and mandates (per section A page 1). This reduction of biodiversity results in negative impacts to all wildland resources, but directly affects native vegetation, watersheds, wildlife habitat, wilderness values and naturalness, natural fire regimes and recreational needs.

C. DESCRIPTION OF AFFECTED ENVIRONMENT

1. Introduction

The Prineville District is located in the central and north central portion of Oregon (see Map 1) and manages more than 1.58 million surface acres in eleven counties. A general summarized description of the environment is expressed briefly below for the Lower John Day River Basin. The LJDRIWM EA. is principally concerned with the public lands between Tumwater Falls at Rivermile (Rm.) 10 to Rhodes Canyon area southeast of Clarno at Rm. 122 between the canyon rims. This area along the John Day River comprises segments 1 and 2 with a small portion of segment 3, from the National Wild and Scenic River Plan on the Lower John Day River (USDI 1993). All three segments are designated as Recreational. It also includes all the public lands identified and included in the lower three Wilderness Study Areas (these 3 WSAs are all in segment 2, which is from Cottonwood Bridge (Rm. 39.5) to Butte Creek (Rm. 97.2) along the Lower John Day River. These WSAs are the Lower John Day River (WSA #5-6), Thirtymile (WSA #5-1), and North Pole Ridge (WSA #5-8). It also includes the Spring Basin WSA which is southeast of Clarno above the LJDR up to Rm. 122. (see Maps 2b-2d). These WSAs are described in more detail especially how it relates to their wilderness values in the two BLM Wilderness EISA and one Wilderness Study Report (USDI 1991). This same area is mainly in the Lower Subbasin of the John Day River (OWRD 1986).

2. Location and Setting

This lower JDRIWM EA. area between Rm. 10 and 122 occupies the landscape as the lower funnel, through which drains the whole John Day River ecosystem (8,100 sq. miles). The lower John Day River is a subbasin in the longest free-flowing river with Chinook Salmon and steelhead in the Columbia River Basin. This lower subbasin itself, drains an area just north of Clarno of about 2,030 sq. miles and is located in Gilliam, Sherman, Wasco, Wheeler and Morrow Counties (Morrow County is in the Baker Resource Area of the Vale District of BLM). The major public lands of concern lie mostly along the John Day River and a short way up its tributaries between the Columbia River Basalt canyon rims. This lower subbasin is characterized by lower elevations, less rainfall as 9-13 inches

are average, and far less accumulation of mountainous snowpack. The adjacent small tributaries are often dry during summer months of July, Aug., and Sep. Its level to rolling loess-covered hills and plateaus have been used for extensive dryland wheat farming. These basaltic plateaus have been very deeply dissected by the John Day River and its tributaries. This has lead to a scenic, remote, relatively vehicle free (inaccessible), deep (1,000 ft), a river canyons with extremely steep topography and very limited alluvial acreages of significant size for irrigated agriculture development. Thus, the BLM administered public lands between the canyon rims, comprising basalt cliffs, canyon escarpments, side slopes and narrow alluvial bottoms is still mostly in its wild and scenic native state, especially from Cottonwood Bridge (Rm. 39.5) to Butte Creek (Rm. 97.2). This is segment 2 of the Wild and Scenic River plan and all three lower WSAs are in this river segment. The Spring Basin WSA is southeast of Clarno above the agriculture fields in the canyons upper slopes in segment 3. It is north west of Rhodes Canyon at Rm. 121.7.

Public River Access

The public river access is extremely limited. In the lower river reaches Tumwater Falls (Rm. 10) is accessible by a primitive road which is not open to the public. It is accessible by boat from the public boat launch at the mouth of the river on Lake Umatilla. Near McDonald Ferry (Rm 20) unauthorized use private land (west side) and BLM administered public lands (east side) are being accessed by a unmaintained county road. This results in its being used for increased boating access. At Cottonwood Bridge (Rm 39.5) where State Hwy 206 crosses the river, the J.S Burres State Park (eastbank) is used almost exclusively for public boating access. The next public access is at Clarno (Rm 109.3), where State Hwy 218 crosses the river. Public boating access is at a State Wayside (eastbank). On the west side public access along a unmaintained dirt road runs north from the Hwy 218 for approximately 3 miles on mostly public lands which allows for public access. Public access to Spring Basin WSA is south of Clarno on a Wheeler County road that lies mainly between private agriculture fields and the Spring Basin WSA. It does not provides public access to the LJDR and a primitative campground (Black Rock) Rm near Rm 119. There are a limited number of unimproved private trails and roads to the rims and down major tributary canyons, but these are not authorized public access.

3. Climate

Climate for most of the area is semiarid, with average rainfall ranging from 9-13 inches per year. It characterized by long, cool, moist winters days contrasted with the short, dry, hot days and cool nights of summers, with the average frost free period being 100-150 days. The length, and character of climatic winter and summer extremes are influenced by local elevation and aspect, the Cascades Mtns create a rainshadow effect. The wind tunnel effect of the Columbia River Gorge also greatly modify the temperature and rainfall extremes. Snowfall is common from Nov - Mar, but is usually only 2-4 inches in a 24 hour period and extended snow cover periods are rare. The most significant runoff periods occur during times of warm windy rainfall falling on above normal snowpack combined with frozen ground. The two largest runoff events occurring in Dec 1964 and Feb. 1996.

Air quality is excellent, with visibility on most days ranging from 60-80 miles or more. That quality is impacted occasionally by burning conducted through agriculture and forest management practices. In the northern part of the area wind erosion (dust) is a problem, due to the windy conditions created by being near the Columbia River Gorge and the silty loam nature of the loess soils on the plateaus above the river canyons being used for wheat production. The lower John Day River commonly experiences windy conditions up or down the canyon in the afternoons.

4. Water Resources

Surface Water

As a whole this lower subbasin doesn't contribute significant amounts of water, but it serves as the receiving funnel for water generated in its upper reaches. The John Day River gaging station near McDonald Ferry (Rm 21.3) records the discharge for 95% of the whole river, its average annual flow measurement since 1905 has been 1,475,500 acre-feet. The peak flow of record at 42,800 cfs occurred on Dec 24 1964 (a frozen soil, snowpack situation followed by a warm windy rain event), Figure 1. shows the peak flows from 1904 to the Feb 8, 1996 peak flood event 28,570 cfs. Normally the highest flows coincide and occur during spring snowmelt (late March to early June) from the upper subbasins, with 22% of total runoff occurring in April and 21% in May (OWRD 1986). These average normal high flows are estimated to be about 10,000 to 14,000 cfs. The McDonald Ferry gage has also recorded no flow during 1966,1973 and 1977. The low flow period is from July to November, in the fall the river flow rises following the shutting off or decreasing the extensive upper river basins irrigation withdrawals and the onset of fall rains. Most of the small tributaries streams are emphemeral, and in most years surface flow ceases or is often less than 1 cfs during late summer months (July-Sep). Grass Valley Canyon Creek (Rm 21.2), Rock Creek (Rm 22.3), Hay Creek (Rm 29.8), Ferry Canyon Creek (Rm 53.6), Little Ferry Canyon Creek (Rm 55.4), Jacknife Canyon Creek (Rm 61.5), Thirtymile Creek (Rm 83.9), Pine Hollow Creek (Rm 84.8), Butte Creek (Rm 97.3), Sorefoot Creek (Rm 106.3), Pine Creek (Rm 109.2) and Muddy Creek (Rm 116.4)and Rhodes Canyon Creek (121.7) are the most significant tributaries with Rock Creek, Thritymile and Butte Creek contributing the largest and most consistent flows.

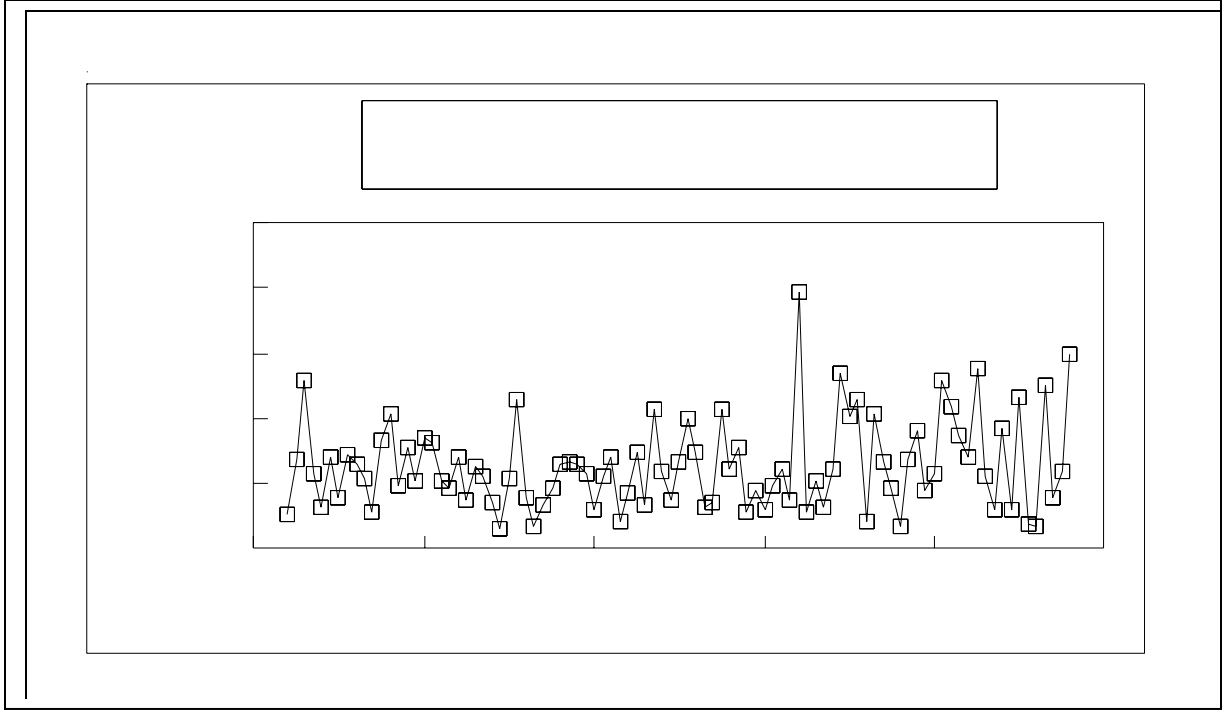

Figure 1 Peak Discharge at McDonalds Ferry 1904-Feb 1996

Water Quality

Water quality of this basin is the result of an accumulation of pollutants carried into the subbasin and locally produced bacteria and sediment. Data on the LJDR near McDonald Ferry indicates that severe turbidity, temperature (high) and fecal bacteria problems occur in the lower river (ODEQ 1988). These problems are tied to the severe streambank erosion from high unregulated spring flows, low flows enhanced by upper basins irrigation withdrawals, sedimentation and lack of stabilizing riparian cover and diversity. They impair anadromous and resident fish and threaten safe use of the river for water contact recreation. The water quality parameters affecting fish are temperature, suspended solids and turbidy (OWRD 1986).

Groundwater

The Columbia River Basalt, Alkali Canyon Formation, Clarno Formation and Quaternary Alluvium are the major hydrogeologic units in this subbasin (OWRD 1986). The recent Quaternary Alluvium is dominant along the numerous small tributaries. These small linear stream terraces, along with the alluvial deposits in the floodplains and river terraces have shallow ground water levels in direct proportion to the seasonal rise and fall of stream and river runoff.

5. Vegetation

Riparian

In general, the riparian vegetative habitat is currently in early seral to mid-seral stage (poor to fair - unpublished 1995 BLM public land riparian survey of LJDR). There is limited riparian vegetation especially on islands and riverbanks within the normal high water line/floodplain and what there is mostly annual grass/sedge communities with lots of bare sandy soils and gravel along with many vertically eroded stream and riverbanks due to

suspected lateral migration of river during extreme annual flood events. There is a lack of woody riparian vegetation to provide cover, stability, diversity and structure. What limited woody riparian vegetation is present, is comprised mostly of Coyote or Sandbar Willow (Salix exigua), alder, mockorange, Siberian elm and a very few widely scattered pocket remanents of cottonwoods. The willows spp. at present are averaging about 10%, but they are increasing (unpublished 1995 BLM public land riparian inventory of LJDR). The increases are the greatest on those grazing allotments where grazing systems have been changed to a winter/spring use period for the longest period of time. Most of the increases have been on the islands and at the confluences of the small tributaries and the John Day River. Almost all woody species are more common upstream into the small side tributaries. On some of the river bends a few areas contain pockets of western juniper (Juniperus occidentalis Hook.) These juniper areas are used extensively as primitive boating camping spots and have very little native understory remaining if adjacent to the river.

Uplands

The immediate alluvial flats are covered mostly by big sagebrush (*Artemesia tridentata* Nutt), and snakeweed (*Gutierrezia sarothrae* (Pursh) Britt. & Rusby), with small amounts of rubber rabbitbrush, buckwheat (*Eriogonum sp*. Michx.). The understory is mostly annual grasses dominated by cheatgrass (*Bromus tectorum* L.) and sixweek's fescue (*Festuca octoflora* Walt.) along with minor amounts of Sandberg's bluegrass, Thurber needlegrass (*Stipa thurberiana* Piper), bottlebrush squirreltail, phlox, and chickweed (*Cerastium sp*. L.). Scattered pockets of western juniper also are concentrated on the flats. These flats are the most heavily used areas both historically by livestock and more recently by recreational boaters, and the plant community is mostly in early seral to mid-seral condition (poor to fair) The canyons sideslopes are a diverse yet sparse shrub/bunchgrass steepe /talas rock community. The shrubs are dominated by big sagebrush, rubber rabbitbrush (*Chrysothamnus nauseosis* (Pall.) Britt), and snakeweed; the bunchgrasses are dominated by bluebunch wheatgrass (*Pseudoroegneria spicata* (Pursh) A. Love), Idaho fescue (*Festuca idahoensis* Elmer) on north aspects, and Sandberg's bluegrass *(Poa sandbergii* Vasey) and other grasses in trace amounts, the herbs were dominated by common yarrow *(Achillea millefolium* L.) arrowleaf balsamroot (*Balsamorhiza sagittatat* (Pursh) Nutt.) milvetch (*Astragalus sp*. L) lubine (*lupinus sp*. L) and phlox (*Phlox sp* L.). There are also small communities dominated by stiff sage (*Artemisia rigida* (Nutt.) Gray), Sandbergs bluegrass, bluebunch wheatgrass and bottlebush squirreltail (*Sitanion hystrix* (Nutt.) Smith). These upland communities are generally seral (good) to late seral or climax condition (excellent), especially those areas further away from water and/or on very steep slopes.

The upper canyons sideslopes with bunchgrass dominating vegetation are maintained to a degree by periodic wildfire burns. The most recent (1994) ones being the Ferry Canyon (OR-PRD 185) between Rm 48-59, Little Ferry Canyon (OR-PRD-597) between Rm 52-56, and Potlach Canyon (OR-PRD-650) near Rm 72.6 These fires burned about 15,650 acres, with private lands comprising about 7,360 acres and BLM public lands about 8,290 acres. A large portion of the public acres burned were in the Lower John Day River WSA and the Thirtymile WSA. In Feb. 1995, about 2,450 acres of the public lands were seeded (Emergency Fire Rehabilitation Plan and EA

(OR-054-4-99). Sizable areas of an older burn mainly west of Clarno are infested with Medusahead Rye. There were very recent burns in Aug 1996 that covered mostly private lands south and east of the Muddy ranch towards Ashwood, OR.

Special Status Plants

A complete floristic inventory was completed in Spring Basin WSA in 1984 and one special status plant, *Cryptantha rostellata*, was found. *Cryptantha rostellata* (beaked crypthantha) is a BLM Assessment Species considered by the Natural Heritage Data Base (NHDB 1995) to be threatened or endangered in Oregon, but more common elsewhere. This annual is found sporadically throughout Eastern Oregon in dry open spaces within sagebrush and grassland. Many locations have been found in the Lower Deschutes and John Day River basins.

With the exception of Spring Basin WSA, only limited inventory for special status plants has occurred in the project area with only two species known from either public or private lands: *Cryptantha rostellata* and *Myosurus sessilis*.

Myosurus sessilis (sessile mousetail) is a tiny annual which is indegenous to vernally inundated pools. A member of the buttercup family, it flowers in April or May. It is presently a Species of Concern (SoC), formerly a C2. In the Prineville District, it's known from private land at Alkali Flat south of Arlington, and from McInnes Norton Ridge, north of Pine Creek near the Lower John Day River.

Other species which would be suspected of occurring include *Astragalus collinus var. laurentii, Carex hystricina, Mimulus jungermannioides, Mimulus washingtonensis, Rorippa columbiae* and *Thelypodium eucosmum.*

Astragalus collinus var. laurentii (Lawrence's milkvetch) is a perennial milkvetch found on dry slopes in sandy or rocky substrates with sagebrush and grasses. There is one historical record from the John Day River area near Cottonwood Bridge. A Species of Concern (SoC), formally a C2, it has not been seen on the District since. Contemporary sightings have been east of Condon, in Morrow County.

Carex hystricina (porcupine sedge) is a little-collected species of wet areas, such as springs, seeps and along stream courses. It is presently listed as Threatened or Endangered in Oregon (List 2) by the NHDB 1995, and as such is a BLM Assessment Species. In the Prineville District, it is known from widely separated locations, including Ten Mile Creek near the Deschutes River, the John Day River near Picture Gorge, and near the S.F. John Day River near the Black Canyon Wilderness.

Mimulus jungermannioides (hepatic monkeyflower) is a SoC, formally a C2, which is endemic to seepage zones in steep-walled canyons and along basalt cliffs. In the Prineville District, it occurs sporadically in the Deschutes and John Day River drainages, with known locations along the Deschutes River near Maupin and in Buck Hollow, and in the John Day drainage near Thirtymile Creek. There are also locations along the cliffs overlooking the Columbia River.

Mimulus washingtonensis is an annual monkeyflower found in seeps and along moist drainages at locations predominantly scattered in Grant and Wheeler counties. Two populations have recently been verified in Crook County. It is a SoC, formally a C2.

Thelypodium eucosmum (arrowleaf thelypody) is a biennial (perennial?) member of the mustard family found in moist, seepy areas in Grant and Wheeler counties. Considered by the NHDB (1995) to be threatened or endangered throughout its range (List 1), it is a SoC, formerly C2. Most populations are found in steep drainages along the John Day River, from near Monument to Service Creek, with other populations in the Sutton Mountain/Twickenham, Dayville and John Day areas.

Noxious Weeds

The District noxious weed problems and potential problem noxious weeds, which are affecting and may affect the public lands, can be expressed as to the number of different weed species and to the number of common targeted weed species (see table 3 and 5). The weeds causing the most concern now in the Lower John Day River are Diffuse, Spotted and Russian Knapweeds, Dalmation Toadflax, Yellow Star Thistle, Scotch Thistle Purple Loosestrife, Rush Skeleton Weed, Leafy Spurge, Poison Hemlock and Medusahead Rye (the scientific names are the same as those used in Appendix 1. District IWM EA. and from the book "Weeds of the West" Whitson 1991). These weeds are a special concern in that they are beginning to occupy very small niches from a few plants along the high water line to small patches on islands (mainly Diffuse Knapweed and Dalmation Toadflax). Also there are beginning small infestations on the upper sheltered alluvial flats (Russian Knapweed and Dalmation Toadflax). This is especially noted on almost all riparian zones below the confluence of Thirtymile Canyon Rm. 84, but few plants of both Purple Loosestrife and Russian Skeleton 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 seems to favor the clayey soils formed from the Clarno formation. Diffuse Knapweed is found along the road ROW south of Clarno. Russian Knapweed is also very prevalent in the Clarno area but has also been found in many very small patches downstream almost always on the upper alluvial flats. The Dalmation Toadflax is also found on these flats and is beginning to move up slopes in a few spots especially below Thirtymile Cyn. The thistles (Scotch, Bull and Canada) along with Poison Hemlock are found most commonly near the small tributaries near and in the 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 in the Columbia River near Biggs and Horn Butte ACEC area north and east of the John Day River). Leafy Spurge is established in Crook Co along Mill Creek and Crooked River near Prineville and in Grant Co. are found in the upper watersheds (Fox Valley and Cottonwood Creek) of the N.F.John Day R. Four sites found and treated in 1995 and eighteen sites were found and treated between Monument and Spray this year 1996. A very serious threat is noted in the recent increased infestations of Perennial Pepperweed noted in the Bridge Creek drainage.

6. Soils

Floodplains/Wetlands

The soils in this area have been mapped by the Natural Resources Conservation Service (old SCS) in three different soil surveys. These are the Sherman County Soil Survey (USDA Nov. 1964), the Gilliam County Soil Survey (USDA May 1984) and the Trout Creek-Shaniko Area Soil Survey (USDA 1975). In addition, the BLM completed a soil/range survey for most of the public lands in the lower John Day River corridor in 1980-1981 as part of the Districts Soil Vegetation Inventory Methods (SVIM) effort for the Two Rivers RMP/EIS planning efforts.

In general from these various soil surveys the floodplain and wetland soils were mapped primarily as bottom lands, alluvial fans, river terraces, and Riverwash a land type mapping unit that included most of the sandy gravelbar islands in the LJDR. Some of these deeper soils such as Kimberly and Willowdale also would be considered Prime Farmland soil if irrigated (USDA SCS 1991). In the northern part of the survey the flood plains included Kimberly soils and Xeric Torrifluvents. The Kimberly soil is a very deep (greater than 60 inches) fine sandy loam to sandy loam alluvium soil that is well drained. The Xeric Torrifluvent is a very deep fine sandy loam over sandy loam and gravelly loamy sand soil formed in alluvium and windlain materials. It is somewhat excessively well drained. These units were mapped most extensively in the small tributary drainages. The floodplains in the southern part of the area includes Mixed Alluvial Land, Willowdale soils and Rail soils (USDA 1970). The Mixed Alluvial Lands units were typically highly stratified clay, silt, sand and gravel and ranged in depth of several feet to 60 inches plus. The Willowdale is a very deep fine sandy loam to silt loam soil formed in recent mixed alluvium and volcanic ash. It is well drained. The Rail is a very deep clay soil formed on alluvial and river terraces from fine textured mixed alluvium (John Day and Clarno formations). It is a somewhat poorly drained soil. A typical Riverwash unit is mapped along the narrow, irregular strips and in the bends of stream channels and along intermittent drainage channels. It consists of sand, well-rounded gravel, stones, and boulders generally derived from rhyolite, andesite or basalt. Areas are 40 to 200 yards wide and 2 to 10 feet above normal level of the stream. (USDA May 1994) The riverwash is underlain by bedrock at a depth of 20 to greater than 60 inches. It is subject to flooding usually from Dec to May, but it is extremely droughty when water levels have dropped (June to Nov.). Usually during each flood, new deposits of sand silt and clay are deposited and redeposited and some recent alluvial material is removed principally through cut banks sloughing off and eroding away or where new gravel bars and channels are rearranging themselves. This riverbank movement is very noticeable in the Clarno area.

Uplands

The upland soils are dominated by slope and aspects between the Columbia River Basalts. In the northern area, north of Cottonwood Bridge the LJDR canyon broadens out and the dominating very deep loess silty soil units are Warden silt loams, Nansene rocky silt loams, shallow (10-20 inches) Lickskillet extremely stony loams, and Starbuck extremely stony silt loams. The middle part of the area is dominated by the steepest slopes, and the most scenic Columbia River Basalt cliffs upstream to about Butte Creek. Its soils are dominated by Lickskillet extremely stony loams on

southern slopes, and the moderately deep (20-40 inches) Wrentham stony silty loams on northern slopes. In the southern part, near Clarno the John Day and Clarno formations begin to greatly influence soils with deeper silty loam to silty clay soils again dominating the terrain. These are the very deep Simas, Tub, Currant and Sorf soils. Again the Lickskillet and Wrentham soils are present, but they are higher up near ridges or the Columbia River Basalts cliffs. The moderately deep and deep, gently sloped phases (0-7 %), and silty loam soils like Condon, Mikkalo and Walla Walla on the Columbia River Basalt plateaus used for wheat production would be considered Prime Farmland if irrigated (USDA SCS 1991).

7. Wildlife

Terrestrial Species

The wildlife species known or suspected to be found in the area are listed by life form, relative abundance and habitat type in Appendix P pp. 141-146 the Draft Two River RMP/EIS (USDI 1885). Wildlife species diversity is somewhat limited by the poor - fair riparian conditions and the lack of large woody structure. The wildlife habitat and diversity have been enhanced by the relative isolation, lack of access roads and steep terrain of the river canyons. The extensive use of the rolling plateaus for wheat production and the historic livestock abuse on the river canyons and riparian areas has lead to declines in wildlife diversity. The majority of this area up to Thirtymile Creek is designated as a State of Oregon Wildlife Refuge. It is a critical area for waterfowl habitats, especially for Canada Geese that occupy this lower subbasin on a year-round basis. This area has also seen the introduction of chukar which thrives on the steep bunchgrass/big sagebrush-covered river canyons. A successful reintroduction of California bighorn sheep has also occurred between Clarno and Cottonwood Bridge.

Fish and Aquatic Species

The Lower John Day River supports a variety of native and introduced fish species. The most recognized for various reasons of significance are spring chinook salmon, summer steelhead/redband trout and smallmouth bass. Anadromous salmonoids, including Pacific lamprey, are significant species at a Pacific Northwest regional scale in respect to cultural, commercial and recreational fisheries and indicators of watershed health. Smallmouth bass provide excellent recreation fishing opportunities. Although the lower John Day River primarily functions as a migration corridor for anadromous species, it is reported to support approximately 2% of the summer steelhead population and a small run of fall chinook salmon (State of Oregon Water Resources Department, 1986). The majority of lower John Day River tributaries have intermittent flow during summer months; however, summer steelhead and resident trout have been observed in these intermittent systems: Jackknife Canyon, Little Ferry Canyon, Ferry Canyon, Pine Hollow Canyon, Hay Creek, and Grass Valley Canyon. The larger tributaries with a more consistent flow, Rock Creek, Thirtymile Creek, Butte Creek and Bridge Creek (Rm. 135.3) provide habitat for summer steelhead/resident trout and other species as well.

Amphibians and aquatic invertebrates are also found in most all riparian areas. Perhaps due to the lower water quality of the lower JDR (see Water section) the listed invertebrates suspected elsewhere in the upper more pristine watersheds are not known or suspected to occur in the LJDR. No known Federal Candidate and Proposed Animal (Amphibian) Species of Concern (SoC, old C1 or C2 listed amphibian) is known to inhabit the area. The ODFW has on its sensitive species list the vulnerable (SV) Western Toad (Bufo boreas) which is known and suspected to inhabit the riparian areas.

Special Status Animals

Special Status Animals that are known or suspected to be found in this area are listed in Appendix 5. Most are not full time residents.

8. Cultural

Prehistoric

An intensive cultural inventory has been conducted on portions of area, especially between C1arno the Cottonwood Bridge on river segment 2 and to lesser degrees segments 1 and 3, by Polk in 1976. Within river segment 2 Polk recorded 59 prehistoric and nine historic sites. An additional five prehistoric sites have been located since that time. Others are expected to exist but have yet to be discovered. The type of prehistoric sites recorded include pit house villages, isolated pit houses, rock shelters, lithic scatters, pictographs, petroglyphs, and rock features. Based upon these discoveries along the river, it seems that human occupation in the lower river canyon reaches back some 8,000 years (Schalk 1987). It has also been formulated that most use in the interior canyon was after 5,000 years ago, but no formal testing or evaluation has been done to prove this theory.

Ethnographically, this area of the river has been known to have been utilized by the Tenino group of the Sahaptian-speaking language family. Few of the ethnographic studies mention the use of the canyon specifically, it is assumed that the use was primarily related to fishing activities, but observable evidence indicates that hunting and gathering were also as important. Several villages were known to have existed in the lower reaches of the canyon, but their exact locations have not been identified. The current use of the canyon by the Tenino or other Native American groups are unknown.

Historic

The primary historic use of the river 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. Most of the more extensive alluvial flats and those areas at junctions of tributaries were homesteaded as farms and ranches. Clarno was first settled in the 1880's and a post office was erected in 1884. This upper river area has been used for farming and ranching since that time.

9. Paleontology

The John Day River below Butte Creek is considered to have low potential for both vertebrate and non-vertebrate fossils. However, no inventory has been conducted. It is the area between Butte Creek (Rm. 97.3) and the Clarno area (Rm. 110) that fossil-bearing exposures are within the river corridor. The Clarno Unit of the John Day Fossil Beds National Monument lies just east of Clarno. The John Day and Clarno formations are readily exposed on both sides of the river and several locations are known to contain or are considered highly likely to contain significant vertebrate and non vertebrate (botanical) specimens. However, again no inventory of public lands has been conducted. Sorefoot Creek is in spots actively eroding into the formations.

10. Recreation

The recreational opportunities in segment one are limited by lack of public access and the lands adjacent to the river being predominately private land. Boating access is at the launch sites at Cottonwood Bridge (J.S Burres State Park) and at McDonald. The river is characterized by long quiet stretches with a few Class 1 and II rapids. There are approximately 30 primitive camping places along this river segment. Ten of these are on public land. The main recreation use is for boating, camping, fishing, photography, swimming, hiking, wildlife watching and hunting (waterfowl hunting is prohibited in segments one and two from Rm. 10 upstream to Thirtymile Creek Rm. 83.9 it is in the State's John Day River Wildlife Refuge).

River segment 2 and a little of 3 are the most primitive and undeveloped segments. The river flows through a primitive and largely natural, scenic, remote wilderness setting. Primary public access is by boating on the river. The boating access is from launch points at Clarno or Cottonwood Bridge. It is one of the most popular for long fishing and boating trips. There are many Class I and II rapids, one Class III rapid (Basalt), and one Class IV rapid (Clarno). There are about a dozen primitive dirt roads that reach the river, but there is no public access. There are about 178 known sites suitable for camping, with approximately 100 of these being on public lands.

11. Agriculture

Cultivated Agriculture

Most of the agriculture fields are on the LJDR floodplains and stream terraces on private lands near Rock Creek, Hay Creek, Thirtymile Creek, Butte Creek, and the Clarno area. Generally hay is the most important crop grown with irrigation water taken from the river or adjacent stream. However, by far the most important agriculture fields, are the numerous private wheat fields on the loess-covered soils on top of the Columbia River Basalts dissected by the LJDR and its tributary canyons.

Range and Livestock

All three segments of the LJDR have livestock utilization as the dominant agriculture use of public lands. Appendix 6. lists the number/name of the different BLM range allotments, allotted AUMs, BLM acres and use period. Livestock utilize most of the LJDR canyons on a seasonal basis with most use occurring from April

through mid-July, but the authorized use varies widely from two and a half months to 12 months. A key provision of the Two Rivers RMP was to improve the riparian habitat and fishery along the Lower John Day River and its tributaries. The common management recommendation for most allotments, after allotment evaluations, is to change the livestock use period to March 1 to May 1. The 1995 riparian vegetation inventory supported this objective, from its data noting that the area with the most improvement (increases) in woody riparian (especially willow) species were in those allotments with the longest period of livestock use limited only to the early spring.

12. Geology and Minerals

Geology

The LJDR's massive Columbia River Basalt cliffs and escarpments especially in segment 2 are a major reason for its proposed 4 wilderness study area recommendations for designation as wilderness. The exposed John Day and Clarno formations near Clarno are significant sources of paleontological value for vertebrate and botanical fossils. The Oregon Parks and Recreation Department has found that this lower John Day River area for its geology and paleontological resources has special attributes.

Minerals

The potential mineral value for most of the area is low. There is moderate mineral potential for zeolite and bentonite clay materials in the area of Clarno from the exposed John Day and Clarno formations clay beds, which has lead in recent years to some exploration. There has been some use made of gravel and rock pit sources mostly by the State ODOT or private on non public lands.

Federal oil and gas leases are currently in effect in the northern part of the JDR. The majority of oil and gas leases are issued with a "no surface occupancy" stipulation which restricts disturbance within the area visible from the surface of the river. The entire JDR basin has a low potential for low grade coal. No coal production is expected to take place.

13. Wilderness

This lower JDR reach has four Wilderness Study Areas (WSAs) designated and recommended for wilderness designation to Congress by the BLM. These three WSAs are Lower John Day River WSA (19,587 acres), between Rm. 41 - 75; Thirtymile WSA (7,538 acres) between Rm. 75 - 83; and North Pole Ridge WSA (6,369 acres) between Rm. 87 - 94 and Spring Basin (5,982 acres)east and northeast of river between Rm. 114 - 122. The boundaries of these WSAs are shown on Maps 2b and 2d. Detailed information on each of these WSA is available in the Wilderness Study Report Vol 1 (USDI Oct. 1991) at the BLM Prineville District Office.

Until the wilderness review process has been completed, these areas will be managed so as to not impair their suitability for protection as wilderness (see Special Management Section on pp 9-10). The management of WSA's is discussed in detail in the BLM "Interim Management Policy for Lands Under Wilderness Review" H-

855-1 Release # 8-67 dated 7/5/95 (USDI-BLM July 1995). It superseded Release # 8-36 dated Nov. 10, 1987.

14. Other Sources of Information

A more detailed description of the affected environment can be found in the following documents which are on file in the Prineville District Office 185 East Fourth St., Prineville, OR. 97754:

Northwest Area Noxious Weed Control Program FEIS 1985 pp. 19-33 and Maps 2-4 and Appendix Maps A1-A14.
Oregon Wilderness Environmental Impact Statement (EIS) Volume II (Draft) - BLM April 1985. PP. 187-231. (USDI April 1985)

Oregon Wilderness EIS Volume II Supplement to Draft - BLM 1986 pp. 357-372. (USDI 1986)

Wilderness Study Report Volume 1 - BLM Oct 1991 pp. 617-640. (USDI 1991)

Two Rivers Resource Management Plan - BLM June 1985 (USDI June 1985)

John Day Resource Management Plan - BLM June 1989 (USDI 1989)

John Day River Management Plan and EIS Draft - BLM Oct 1993 pp. 25-68 and pp.121-160. (USDI 1993)

John Day Basin Report State of Oregon Nov 1986 pp. 3-88 and 185-199. (Oregon Water Resources Dept. 1986)

Soil Survey of Gilliam County, Oregon - Soil Conservation Service May 1984 (USDA 1984)

Soil Survey of Sherman County, Oregon - Soil Conservation Service Nov 1964
(USDA 1964)

Soil Survey of Trout Creek-Shaniko Area, Oregon - Soil Conservation Service 1975
(USDA 1975)

Two Rivers Soil Survey, Oregon - BLM unpublished soil survey (SVIM) data. 1980-1981.

BLM Central Oregon Resource Area Allotment Evaluations for those allotments listed in Appendix 4.

D. ENVIRONMENTAL CONSEQUENCES

The actions proposed and described in section A of this EA. will cause environmental impacts presented in Chapter 3 and summarized in Table 1-4 (Alternative 1) of the FEIS (1985). They were further addressed in Chapter 3 pp. 1-24, Appendices K pp. 65-92 and N pp. 93-117, and amended in Text revision section pp. 120-121 in the Supplemental FEIS (1987). Analysis discussions in the FEIS (1985) and Supplemental FEIS (1987) have determined that no impacts of importance would occur to the following resources: Climate, Geology, Topography, Utilities, Communication Sites, and Energy Use.

No impacts have been identified which exceed those addressed in the previous FEIS (1985), Supplemental FEIS (1987) and RODs referenced in earlier portions. The site specific components of the environment which may be affected as a result of alternatives 1 and 2 in this updated IWM EA. are as follows:

1. Areas of Critical Environmental Concern (ACECs)

The impacts to ACECs would be the same under alternative 1 and 2 at present as no ACECs are currently designated in the Lower John Day River Corridor (see Special Management Areas section on p. 8).

Designation of an area as an ACEC at a later date, will or may require special modification/mitigation requirements to any noxious weed control actions. These modifications may be to prevent or limit any surface disturbing impacts due to vehicle access, spraying of sensitive plants, or other resource impacts that may cause damage to the surface and vegetative resources, through physical, biological or chemical control efforts. It may require a specific weed control action to be modified or not using the most cost effective method for controlling weeds. It will be determined for each ACEC site on an as needed basis.

An example of an ACEC requiring special mitigation modification (seasonal restrictions of access and spraying) to normal methods is a noxious weed control proposal in the Horn Butte ACEC - PUP # 94-OR-054-05 (Gilliam County)(see Appendix 2).

As much as possible to prevent any surface disturbing activities the preferred methods of control in ACECs would be 1) prevention, 2) biological,
3) manual, 4) chemical and 5) mechanical.

2. Air Quality

Air quality impacts were assessed in the previous FEISs and RODs per impacts from use of chemicals and the determination that the very low volatility of the proposed chemicals to be used would **Not** impact air quality.

The amount of smoke released from a small (40 acre or less) fire located away from urban areas would not cause an impact of any duration or intensity.

The smoke impacts are the same under both alternatives' 1 and 2, but increased reliance on prescribed fire under alternative 2 may be required if herbicides are not allowed to be used in WSAs.

3. Cultural Resources

Weed control practices may directly or indirectly impact cultural resources. Physical (manual, mechanical or prescribed fire) weed control practices which result in direct surface disturbance may adversely affect the surface manifestations of prehistoric or historic sites while herbicide application may indirectly impact vegetation important to traditional Native American plant gathering practices.

Impacts to cultural resources would be modified or avoided by requiring cultural resource surveys prior to all surface disturbing and prescribed fire activities. Those treatment areas away from the general ROW corridors are of special interest for cultural resource surveys. All PUPs would be reviewed by staff archaeologists prior to implementation.

The impacts of either alternative may be greater where physical practices (manual, mechanical and prescribed fire) are utilized resulting in surface disturbance. The impacts of herbicide use would be less, but vehicle or ATV application may also cause surface impacts. The general uses of herbicides along major highway ROWs, PGT or utility corridors are not expected to have any impact on unidentified archeological resources.

Under both alternatives, but especially in alternative 2 the increased reliance in manual and prescribed fire control measures may result in additional impacts to unknown cultural resources.

4. Flood Plains

The impacts to floodplains will be a change in vegetation along riparian zones or upper bank alluvial flats. The control of noxious weeds by any means would promote/enhance the native vegetation and stabilize the riparian zones for flood events. Any noxious weed control project would only be a very localized event with minimal surface disturbance. Most physical control activities (mechanical and manual) would be very similar to any adjacent farming activities, but on a smaller scale (acreage). Activities would be carried out over several years and may be enhanced and/or hindered by major flood events. This is especially true along the Lower John Day River where annual 2-5 frequency spring runoff events may cause localized flooding. This could bring in small local depositions of soil (a new seed bed primed for a weed invasion) along with the associated noxious weed seeds, or stimulate existing noxious weed species (such as Diffuse and Russian Knapweeds, or Dalmation Toadflax through enhanced soil cover and increased soil nutrients). These three species either as single species or in combinations, are becoming established on sites ranging from a few plants to numerous small scattered patches (usually less than 0.25 acres). They are prevalent on islands, on riverbanks between the lower water levels of summer and the high water line of the 2-5 year spring flood events and the immediately adjacent upper alluvial flats. IWM practices including any herbicide applications would prevent/limit surface soil disturbing impacts to riverbanks or changes to protective riparian floodplain vegetation and buffer zones between live water. Stipulations specific to riparian zones and live water are required if herbicides are applied (see Mitigation section E pp.37-39).

Under Alternative 1, the ability of herbicides, or a combination of IWM practices would greatly contribute to the successful treatment of these three species. The difficulty of access and economics for multiple same season treatments using physical practices alone could allow for the rapid expansion and explosive growth of these weeds throughout the lower John Day River. Chemical control practices are often the only available effective means to control these deep rooted perennial weeds. Biological control agents are not readily available or at present there effectiveness is unknown, especially for Russian Knapweed and Dalmation Toadflax (see Table 2 and 4 or Appendix 3 for agents/weed hosts).

No mechanical surface disturbing such as disking, plowing treatments would be permitted under either alternative 1 or 2 within floodplains or alluvial bottomlands in WSAs, except for those areas that may have been fields previously and would possibly fit the grandfathered clause. No such fields are known to fit the grandfathered definition at this time. However, old access roads to field are proposed to be used by ATV vehicles and ATVs would be used for herbicide application or prescribed fire preparations. Seed application would be by broadcast methods either manually, or applied by ATV or Helicopter in WSAs.

Under alternative 2, extensive areas of the lower John Day River would be off limits to herbicide use, due to WSA designation. This would limit further the ability to control the known and increasing Diffuse and/or Russian Knapweeds or Dalmation Toadflax infestations within the river floodplain.

5. Hazardous Materials

In the United States, the EPA has primary responsibility for regulating pesticides (including herbicides), including their manufacture, sale, transportation and use. This regulation is controled by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) enacted in 1947 and ammended several times. FIFRA governs the registration and use of all pesticides, but states may have more strict standards. The Oregon Department of Agriculture are regulates the licencing of certified applicators and the use of general use herbicides (glyphosate, dicamba, and 2,4-D) and restricted use herbicides (picloram). Under all alternatives the inhouse (BLM) use or contracted use , application, transportation, and storage will be kept to a minimum as required for each specific job.

To ensure safe handling and use, **all chemical/herbicide** applications **will** only be done by an Oregon state certified applicator following **all** applicable product label stipulations and State requirements (DEQ, ODA, OSHA) as well as all federal EPA laws and (FIFRA) regulations.

Use of these herbicides will not exceed the use, rates, mixes, active ingredient amounts applied per acre, methods of applications and safety precautions as specified by FEIS and SFEIS, RODs and stipulations in this EA (mitigation section E). All product label instructions will be followed. The inherent risks to safety and public health, and/or spills etc. associated with using a potentially hazardous material (dependent upon reportable quanity), were covered in the referenced FEIS and ROD documents.

Impacts would be the same under either alternative, except an increased chance of a accident could occur in WSAs under alternative 1 (proposed action) due to their remoteness, and the increased risk possibilities of having to move chemicals into remote canyon areas by ATVs, flying (helicopter only) during times of low water, or by raft/boat (jet boat - no use of jet boat is authorized between May 1 and Oct 1) during times of higher flows.

6. Native American Religious Concerns

Impacts to Native American religious concerns especially plant gathering activities are expected to be minimal under both alternatives because of required cultural resource surveys and PUPs reviews. Impacts may be greater if weeds in traditional gathering areas are not treated, since weeds can out compete most native vegetation.

Consultation and coordination with the four tribal governments maintaining traditional interests in the Prineville District will address areas sensitive to weed control activities. The four tribes included are the Confederated Tribes of Warm springs, the Confederated Tribes of the Umatilla, and the Klamath Tribe of which all tribal governments ceded lands to the U.S. Government in ratified treaties. The Prineville District also includes lands of traditional interest to the Burns Paiute for which no treaties were ratified. Treaty rights provide for off-reservation gathering activities by the Umatilla and Warm Springs Tribes.

The heritage-related interests of contemporary Native American include the perpetuation of traditional practices, such as plant gathering. Federal legislation and Department policy recognize that federal land-managing agencies have a continuing trust responsibility to honor terms of the treaties and to protect the rights of the Indian Nations, as well as the resources that provide for those rights.

7. Prime and Unique Farmland

Most of the District's prime farmlands are defined by soil series phases (SCS May 1993) as needing irrigation or limited by degree of seasonal flooding. By law (see section A), the BLM is required to address the noxious weed problems on public lands especially if they are acting as seed sources for infestation of adjacent private agricultural lands. Weeds are affecting private agricultural lands, especially along the Lower John Day River Canyon, as if left unchecked they will increase their potential due to rapidly expanding infestations (Scotch Thistle, Knapweeds, Dalmation Toadflax) are acting as seed sources. This represents increasing costs and impacts to the adjacent canyon top wheat fields or adjacent but limited irrigated fields near Clarno (Wasco and Wheeler Counties) or downstream towards the WSAs in Sherman and Gilliam counties.

Additional small old/recent agricultural acreage acquired by BLM in land exchanges have prime farmland soils along the floodplains, river terraces or bottomlands. These areas and agriculture leased lands adjacent to John Day River in the Clarno area need be treated to return these lands from weed infested lands to productive range, wildlife habitat and/or to protect the adjacent agricultural leased lands.

Impacts to prime and unique farmlands, under both alternatives are greatest to those private lands immediately adjacent to expanding noxious weeds sites.

Under alternative 1, especially where prime and unique farmlands are adjacent to WSAs all measures including herbicide applications would be used in cooperation with the local weed masters or adjacent land owners.

Under alternative 2, where prime and unique farmlands are adjacent to WSAs, and where herbicide usage is not allowed, the use of fire and/or manual control practices are the only immediate physical treatment practices available. This may impact other resources to a greater degree than herbicides. The use of biological control agent releases may in the long term be effective also, but approved and effective biocontrol agents for the weed species of concern may or may not be approved, available, or method needed for timely and effective control or eradication (see Biological Control Practices section in Appendix 1) of the these small, very localized infestations of noxious weeds. (see Appendix 2 and 3).

8. Solid Waste

The LJDR IWM noxious weed control efforts could generate small amounts of vegetative refuse (manual or mechanical control) that may need to be disposed of as waste or burned to prevent seed dispersal. The proper disposal of all herbicide containers must follow State DEQ rules, label requirements and FIRCA regulations.

Small amounts of vegetative residue material may cause impacts as fill material to local landfills or site specific small burn piles. These impacts are expected to be the same, but proper, economical and feasible disposal of vegetative material most likely will be dependent upon location and distance to the county landfill. In remote sites disposal of residue material may be by burning, especially if site access is difficult (WSAs).

9. Special Status Animals

The use of any control methods could temporarily (relocation) or permanently (if sprayed, burned or injured or cut up in mechanical or manual treatments) disrupt the daily individual behavior of wildlife inhabitating or occupying the treatment areas. The special status animal species (fish, amphibians, reptiles, birds, mammals and invertebrates), (Oregon Natural Heritage Program (ONHP 1995) expected to inhabit the Prineville District are listed in Appendix 5. The risks and impacts to wildlife by the use of IWM practices, including chemicals, has been analyzed in the tiered FEIS (1985) pp. 45-56, and Appendix K pp. 201-204 and in the Supplemental FEIS (1987) pp. 9-10 and Appendix K pp. 65-92 and RODs.

In summary, the expected risks and impacts to wildlife are greatest for whichever practice causes the largest soil surface disturbance, or changes to vegetative cover as a single block. For specific IWM practices, the impacts ranging from greatest to lowest are from prescribed fire, mechanical, manual or chemical (spot treatments) and biological. The potential impacts are greater on smaller less mobile animals than on larger ones. The greatest disturbance to wildlife will last the duration of the

specific treatment activity or longer if localized specific habit niche (home) is destroyed or abandoned. These residual impacts may last until the return to natural conditions. The impacts of not treating noxious weeds in a timely manner would allow for the potential expansion to the detriment of existing native vegetation and a corresponding loss of extremely valuable wildlife habitat.

Aquatic macroinvertebrates and amphibians are among the most sensitive animals to changes in environment due to inhabitating both aquatic and terrestrial ecological niches. Aquatic invertebrates (snails and caddisflys) due to their aquatic larval stages are very sensitive to minute changes in water quality or exposure to herbicides. There are only two species suspected or known to occupy the Lower John Day River. The two are western toad (Bufo boreas) and possibly the Columbia pebblesnail (Fluminicola columbiaianus) a invertebrate. Amphibians are also very sensitive to changes in water quality or exposure to herbicides especially in their aquatic egg and tadpole stages. Additional impacts would occur to amphibians (sensitive skin membranes) as they also inhabit the adjacent riparian and terrestrial zones, where some impacts may be expected through either physical or chemical control practices dependent upon size of area treated .

Under alternative 1, the impacts to fish and aquatic species (such as salmonids, amphibians or macroinvertebrates), which are the most sensitive to environmental impacts dealing with water quality (sedimentation or siltation) and/or exposure to herbicides, are expected to be very limited (minimal). This is due to the riparian buffers for mechanical work, and to the nature of the herbicides authorized, maximum rates approved for application, application methods, and the use of Glyphosate (Rodeo only) immediately adjacent to or near water. The required riparian buffers and application stipulations that keep chemicals away from live water (see Mitigation section E. pp. 37-39) will also mitigate and prevent impacts to fish and aquatic species. Thus, none are expected to be impacted from IWM practices including herbicide applications under either alternative.

All weed control projects and PUPs will be reviewed to insure avoidance or mitigation of impacts to special status animals, including seasonal restrictions as needed (like Horn Butte ACEC for Longbill Curlew nesting habitat).

Under alternative 1 or 2, no known life threatening impact to special status animals is likely to result from the application of any treatment method.

Under alternative 2, however, potential weed expansion in WSAs and WAs is greater without the use of chemicals. Prescribe fire with its greater potential impacts to small animals, and manual control may be the only available control practices, but by themselves these are not effective control measures for the deep rooted perennial weeds such as Russian Knapweed or Dalmation Toadflax. Perhaps the use of biological control agents (if available), whose effectiveness for noxious weed control (reduction in populations but not eradication) is long term at best (see Biological Control Practices in Appendix 1), could be used. This delay in control or eradication may lead to further loss of valuable wildlife habitat or watershed deterioration in WSAs or WAs.

10. Special Status Plants

Unidentified populations of special status plants, would be a potential target subject to the same impacts as targeted noxious weeds or vegetation. To mitigate this impact, under both alternatives **All** noxious weed proposals would be surveyed for special status plants before any work would start. Special status plants found in the project area are listed in section C Special Status Plants. on p.14.

11. Water Quality/Water Resources

Surface Water

It is expected that the fate of herbicides applied under alternative 1 in this EA will be consistent with the tiered FEIS and Supplemental FEIS or RODs documents. Impacts under alternatives 1 and 2 are essentially the same except for the possibility of increased use of prescribed fire in WSAs instead of chemical use.

The increased use of fire over herbicide use could open up larger areas of bare and denuded ground to a short term exposure to severe precipitation events resulting in an increase in surface erosion increases due to loss of protective vegetative cover. Herbicide use generally allows the dying plant material to remain on site. In addition, where 2,4-D, Picloram, Dicamba are used (see Vegetation/Range section D.18 on . p.32) grasses remain unaffected. This allows the protective ground cover to remain on site and reduces the potential effects of large precipitation events to watersheds.

The use of prescribed fire for weed control activities over 40 acres in size would require a separate EA to analyze the impacts to watersheds.

Impacts from alternatives 1 or 2 to both surface and ground water should not exceed those anticipated and analyzed in the FEIS (1985), on pp. 39-40 and Supplemental FEIS (1987) pp. 4-8 and as those summarized in Table 1-4 Text revisions section pp. 120-121.

The required stipulation of standard buffer zones (see Mitigation section E. pp.37-39) of varying widths where chemicals are and may be used, depending upon site specific conditions, and any specific mitigation requirements in PUPs will mitigate potential - contact of herbicide and live water. These stipulations are covering existing PUPs (see Appendix 2) and would also be applied to all newly discovered noxious weed sites proposed for herbicide treatment.

Under alternative 1 any mechanical surface disturbing activities, (not allowed in WSAs or WAs except for the proposed use of ATVs for access, herbicide application, broadcast seeding and prescribed fire preparation) opening up bare ground would increase the chances of increased runoff (erosion) into a stream causing an increase in siltation and sedimentation or turbidity. Under both alternatives, the establishment of riparian buffer zones, would tend to minimize soil disturbance and impacts. This would allow the buffered riparian zones to act as sediment filters during runoff events. This is critical around potential fish habitat, especially small salmonid or steelhead streams.

Under either alternative most treatments in buffered water and riparian areas would be done manually (hands or hand tools), which would eliminate or mitigate impacts to surface waters.

Under alternative 1, the low rates of herbicide application and careful application (including use of ATVs) in those critical areas next to riparian and buffered zones with live water situations should result in **no** water contamination anywhere. Any herbicide escape into creek or river system due to heavy storm events and surface runoff from previously (recent) sprayed areas of would be so small and so heavily diluted by the increased stream flow and sediment load that it is doubtful if any could be measured or detected from a non-point source.

Under alternative 2, no herbicides would be used in WSAs or WAs, but in all other areas the herbicide use impacts would be the same.

Under alternative 2, the limitation of no mechanical (excluding prescribed fire) treatment in WSAs would severely reduced the direct potential impacts to water resources. It may preclude the effectiveness of other practices as a tool for treatment when combined with seeding, as direct reseeding would be limited to broadcast treatments.

Ground Water

Under alternatives 1 and 2 no impacts are expected to ground water resources due to any surface disturbing activities.

Picloram, Dicamba, and 2,4-D, being somewhat mobile herbicides, can move through the soil profile and potentially into shallow groundwater tables. To some degree, this feature makes them more effective for killing vegetation by getting to the roots. This is especially needed for those weeds which spread by both roots and seed, or those which are a deep rooted perennial (see table 3).

Generally, it is not expected that any sites would be over very shallow ground water (less than 5 feet), due to lower streamflows at time of application with the exception of the those area immediately adjacent to Lower John Day River such as islands. If noxious weeds are found in this area a site specific restriction to type(such as use only Rodeo up to live water), timing of application (seasonal) or the use of other means for control may be required.

Impacts from herbicide applications, due to the small amounts and dosages (lbs of active ingredients per acre applied) and small acreages (mostly spot treatments) of herbicide used in the LJDR IWM EA area's mostly arid and semi/arid precipitation zones (9 to 13 inches) will not significantly impact ground water resources. In addition, their application on soils having xeric, torric or aridic soil moisture regimes; along with their physical (sun and light) and biological decomposition (see soils impact section); over mostly deep (300+ ft) regional groundwater aquifers, and required special treatment stipulations (buffer strips) when in riparian and next to live water situations (see Mitigation Measures in section E. pp. 37-39) with shallow stream aquifers, no herbicide is expected to reach ground water tables.

12. Wetland/Riparian

Wetland or riparian area treatments for control of noxious weeds would be limited to manual control and/or chemical control limits as referenced and stated in the water resources (section 11.and mitigation measures section E). No impacts are expected to exceed those tiered to FEIS, SFEIS and RODs.

However, most of the artificial waterways in the priority zones 5 and 5 (ditches, canals, and stock ponds/reservoirs) contain native and introduced riparian species, including certain listed noxious weeds. These artificial riparian areas will be impacted where control of weeds is necessary to prevent spread into adjacent agricultural fields. Special care is required if herbicides are used in or next to any irrigation water sources.

13. Wilderness

It is proposed under alternative 1 that noxious weed control and eradication including the use of herbicides, is needed in the District's Wilderness Study Areas. The WSAs in the Lower John Day River Canyon (5-1, 5-6, 5-8, and 5-9) (see Map 2) are known to be infested with noxious weeds (Russian and Diffuse Knapweeds, Dalmation Toadflax, Whitetop, Medusahead Rye and several species of thistles). If these weeds infestations (biological phenomena) were left unchecked it could dramatically impact and change the native vegetation, watershed and wildlife habitat characteristics within the WSAs. The weeds, acting as seed sources, are currently affecting the off site agricultural lands resulting in increased costs for weed control.

The BLM's policy for the control poisonous plants and/or noxious weeds is discussed in this EA under Special Management Areas pp. 8-9 and on p. 7 of FEIS (1985). Impacts due to the use of herbicides would be consistent with the discussion on p. 48 of FEIS (1985).

The proposed chemical (herbicide) control practices and associated use of ATVs for access and application would occur only after a careful site specific field review. The primary control practice would be use of a combination of manual, prescribed fire (less than 40 acres), and chemical (spot treatment applications).

The use of site specific, appropriate, effective and ODA approved biological control agents (see Appendix 3) may be used if available, but not at the expense of leaving infestations in WSAs without any other control measures being applied.

In WSAs a combination of all IWM practices (except direct mechanical soil surface disturbance) will be necessary in most cases to control/eradicate the weed infestations. This is especially true for deep rooted and perennial weeds such as Dalmation Toadflax, Russian Knapweed, Whitetop, Leafy Spurge and Perennial Pepperweed which spread by rootstocks and are very difficult to control by manual and prescribed fire means. The wildland resource impacts of prescribed fire will be less where herbicides can be used and herbicides would be more effective for some targeted weed species when used in combination with fire. The impacts from herbicides would be consistent with meeting the minimual tool concept and treatment of emergency biological phenomena (noxious weed infestations) where chemical control,

reseeding and planting (native species) and cross-county use of motorized equipment is minimized without serious adverse impacts to the wilderness values. These proposed uses as shown in Appendix 1. They would also include all the
mitigation measures incorporated in the proposed action section (see Mitigation Measures section E. pp. 37-39).

Under both alternatives, the prescribed fire effects, limited to 40 acres or less per site in this EA, would not create long lasting or unusually visible impacts. This is a normal process and 40 acres sites are minor in compared to the wildfires in 1994 (see vegetation/range section p.13-15.

Under 1 and 2, the use of larger prescribed fires, however may be used, if specifically addressed in a separate EA.

Larger (greater than 40 acres) prescribed fires may be expected if alternative 2 is selected, since under this alternative herbicide usage will not be allowed in WSAs. This is true in WSAs (5-1, 5-6 ,and 5-8,) where weed infestations are and have been discovered to be expanding.

Currently fire is being used outside WSAs as a part of a combination of IWM practices. Its use without seeding or chemical spot treatments afterwards may severely limit its effectiveness for long term control on sites with deep rooted perennial weeds (such as Russian Knapweed), or on sites where persistent large sources of noxious weed seed are present (such as Yellow Starthistle). It also may temporarily open up denuded surface areas, for increased invasion of other weed species (such as knapweeds, Medusahead Rye, or thistle) from adjacent areas.

14. Wild and Scenic Rivers (W&SRs)

Impacts from weed control activities will be focused to avoid conflicts between recreation use and active weed control efforts (see Appendix 2). These potential conflicts will continue to increase, due to increases in recreational use and annual spring/summer weed control efforts. Weed control efforts are geared to prevent deterioration of the native vegetation by noxious weed expansion, thus providing protection to the Outstanding Remarkable Values of the W&SR canyons.

This increase in noxious weeds is due in part to past overgrazing practices and extreme runoff events resulting in changes to the vegetation on riverbanks. It is also directly proportionate to the current abundance of adjacent and upstream weed sources and the increases in people use/access. This is especially true in the heavy use the designated "Recreational" W&SR areas of the Lower John Day River, particularly the camp sites along the streambanks and riparian areas. Outside of extreme flood events, the increased recreational populations use of the W&SRs is the prime preparer of seedbeds for various weed species due to the native vegetation cover being trampled and reduced, recreation traffic bringing in seeds, and increasing prevalence of disturbed surface soil for seed germination.

Weed control efforts under both alternatives are expected to provide beneficial impacts by providing protection to the native vegetation in the to Wild and Scenic Rivers areas.

15. Access and Lands

Under both alternatives, access to weed sites could be a major control factor favoring or limiting which control practices may be selected or for economic reasons limit amount of control work done during a single season.

In areas with difficult access like that of segment 2 along the lower John Day River, and/or in WSAs weed control logistics may require a unique blend of IWM control measures to control/eradicate the noxious weeds. This is especially important to control noxious weeds found on the tops of the canyons (WSAs in some cases) adjacent to wheat fields and on the relatively inaccessible and adjacent side canyons to protect or enhance riparian and potential salmonoid spawning/fishery values. All the few non-public trails/roads available, in both WSAs and non-WSAs areas would be used by ATVs to access these remote canyons and floodplains next to the LJDR.

Public access into an area may have to be curtailed/limited, if the area has a high weed population. This may be a temporary preventative control measure to prevent an outbreak and/or spread prior to control measures being applied.

All land acquisitions, exchanges and R&PP actions need to have as part of appraisals and/or use actions methods to account for land values associated with noxious weed infestations. The lands actions also will need to address noxious weed concerns/control measures on all Lands and ROW actions, so that all control actions on public lands meet BLM requirements.

16. Outdoor Recreation

Recreational sites (undeveloped and developed) will continue to receive active noxious weed control through herbicide use (see Appendix 2). Very small infestations may be manually treated. As part of this proposed action, it is possible through educational efforts, to actively begin a weed pulling program on a few selected targeted weed species by recreation users, especially in inaccessible areas. The high levels of public use in the District's major recreational areas (such as the lower JDR) will cause continued reintroduction of noxious weeds from outside sources and continue to create bare ground, a site for weed invasion. Recreational developments on future sites would consider and incorporate design features to mitigate unregulated OHV and exposed bare soil areas.

Competitive seeding or reseeding and limiting access by vehicles or people may be measures needed to increase ground cover. Some of these control measures, including herbicides, may cause a temporary disruption to public use.

Additional weed sites will expand the control efforts required and an increased usage of herbicides is expected, especially as new areas are proposed to be treated in WSAs. The portions of the lower John Day River was inventoried during FY 1986, 1989, 1993, and 1994; and as expected numerous, mostly small but rapidly expanding infestations of noxious weeds (mainly Diffuse and Russian Knapweeds and Dalmation Toadflax) were found on nearly all the riverbanks and islands (within the high water line) and on the immediately adjacent upper alluvial flats below the confluence of Thritymile canyon (Rm 83.9).

These existing sites and newer sites when found , mostly in and among the numerous primitative undeveloped camping areas (generally a few plants to numerous small patches less than 0.25 acres in size), will be treated under alternative 1 using herbicide or other IWM measures as applicable. Herbicides will be used where handpulling or grubbing is determined to be ineffective or not practical, as per practices/guidelines of Appendix 1 and mitigation section E.

Alternative 1 impacts are expected to be mostly visual to the recreational user and very short term. The use of herbicides would allow native grasses to buffer visual impacts to the visitor. Timing the use of herbicides would have to be coordinated to minimize spraying during high visitor use periods, thereby avoiding impact of direct contact immediately (within 24 hours) after spraying.

Alternative 2 impacts may be increased due to the more visually noticeable impacts of prescribed fire in WSAs or by the expected larger weed patches if herbicides are not available for use.

17. Paleontology

No surface impacts are expected from either alternative, since no surface disturbing physical activities (mechanical or manual treatments) will be allowed in paleontological areas. No vehicle use across exposed beds (except for existing roads/trails for application of chemicals or biological control agent releases will be allowed.

Any noxious weed control activities applied to areas of significant paleontological resources, would be of the chemical and/or biological nature.

There would be no difference between impacts from either alternative, since all these areas currently have no designation as WSAs. Impacts associated with chemical or biological control agent releases is expected to have no impact to paleontological resources.

18. Vegetation/Range

Terrestrial vegetation in both alternatives is the primary environmental component that would be the most affected by the proposed IWM implementation. Treatments for noxious weed control would affect both targeted weeds and non-targeted vegetation on small areas that are treated to protect much larger adjoining areas. The various impacts to vegetation using manual, mechanical, prescribed fire, biocontrol and chemical methods of control for noxious weeds were discussed on pp. 40-42 in FEIS (1985) and pp. 7-9 in Supplemental FEIS (1987). They are also summarized in Table 1-4 on pp. 120-121 of FEIS (1987).

The impacts under alternative 1 would be similar to alternative 2. The use of physical treatments including mechanical and prescribed fire would affect all vegetation within the targeted area regardless if noxious or native. The degree of vegetative disturbance would be dependent upon the duration and type of control practice applied. Depending upon weed species and site

environment, the use of prescribed burning may stimulate noxious weed production from seeds or roots and a follow up to burning may require a spraying or other measures over a period of time.

Alternative 1 would allow the use of chemical treatments, which could affect all vegetation within the targeted area. These chemical treatments would vary in size, scope, timing, and would in general be limited to the targeted area of actual chemical application. Generally the use of a boom (vehicle) applied herbicides would be less selective to the area sprayed as compared to a vehicle handgun, ATV mounted handgun or backpack applied hand spraying operations.
The use of a handgun and backpack would be less selective over Glyphosate (Rodeo) in hand-wipe application sites. Chemicals allowed, maximum treatment application rates, mixes and application methods are shown in Table 1-3 on p. 9, discussed on pp. 8-11 of the FEIS (1985), and revised on pp. 119-123 Supplemental FEIS (1987), the herbicide stipulations for this EA are in the Mitigation Section E.

Most of the targeted terrestrial broadleaf noxious weeds and the non-targeted broadleaf plants within the sprayed area would be killed by the use of 2,4-D, Dicamba,(both selective) and Picloram (nonselective) as proposed (see table 5). These herbicides would effectively kill or damage most broadleaf plants, thus if native and noxious weeds are within the spray area both would be killed. The grasses may suffer slight damage due to varied sensitivity to herbicides, depending upon microclimatic and site specific conditions, but they will recover and should increase in vigor and density due to reduced competition.

Table 3-2 on page 7 of the Supplemental FEIS provides a short list of native plants and their relative susceptibility to 2,4-D, Dicamba and Picloram. The effects of killing non-targeted broadleaf species should be minimal because most target areas would be small, spot spraying in patches less than 5 acres in size, and herbicides for the most part will be applied with ground equipment and or hand spraying equipment. The surrounding adjacent native broad-leaf vegetation and most grasses within the target area would not be affected. Table 7 in Appendix 1 gives the relative effectiveness of the different herbicides on the BLM priority weeds.

Since drift to non-targeted areas is a potential impact, stipulations to aerial spraying buffer strips and wind speeds (see Mitigation section E p 30-32) are in effect to minimize drift potential. In addition, the stipulations state that Dicamba will **not** be applied aerially by itself. Dicamba will only be applied aerially in a mix with 2,4-D. Picloram (Tordon) will **not** be applied aerially as a mix. Glyphosate will not be applied aerially. All aerial applications will be done by a helicopter.

Glyphosate (Rodeo and Accord formulation only), is a broad spectrum, nonselective herbicide that affects most perennial plants, annual and perennial grasses, sedges, and broadleaf plants. It is a herbicide that is not generally used or labeled for rangelands, but rather used along waterways, reservoirs, and recreational areas. Glyphosate will **not** be applied aerially.

Under both alternatives most of the impacts would be the same, due to weed control focused on noxious weeds along State and county

road ROWs. These weeds in the major (priority 2) ROWs and administratively developed sites (priority 4) have been and will continue to be disturbed as a result of maintenance/use actions. These areas contain few native species. Since they are the major vehicle movement and highest visitor use areas they are also usually the first areas of noxious weed invasion. They are areas of continued concentrated effort of chemical control (herbicides) by the county weed departments (under contract with BLM).

Under alternative 2 the impacts associated with using prescribed fire instead of herbicide will cause temporary impacts to native vegetation in the targeted areas. This EA limits the use of prescribed fire to 40 acres or less. It is this limit that would minimize any impacts to the vegetative visual aspects of a WSA. It is also the ability of native grasses to be stimulated by fire that would make most fires a temporary and natural appearing impact.

Use of prescribed fire covering larger areas will be addressed in separate EAs. However, the selection of alternative 2 (non-use of herbicides in WSA's) would create the need to use larger prescribed fires as one of few cost effective measures to treat some noxious weed infestations. However, fire is not generally that effective against perennial weeds that have capabilities to sprout from roots. It is not as effective by itself as it could be when combined with other IWM practices such as follow up competitive seeding and spot spraying with herbicides.

Management directed towards maintenance of biodiversity and native plant ecosystems requires the use of all aspects of an IWM. It requires the full use of control measures available under alternatives 1 and 2 (except for herbicide limits in WSAs) Non herbicide use in WSAs would limit the effectiveness of other control measures against weeds that require herbicides for control purposes.

All IWM measures are needed per Alternative 1 since the noxious weed's ability to out compete most native plants, due in part to its "tough and aggressive nature" by its "ability to flower early, to produce many seeds, grow quickly, and to germinate under a broad range of conditions" (Devine 1994). In addition, their lack of host diseases and insect feeders, requires the use of IWM measures to for control of noxious weed infestations on all public lands.

Under alternatives 1 and 2 the control of poisonous plants and/or noxious weeds, especially in regards to maintenance of seedings and vegetative control projects is allowed and required on all public lands (see Special Management Areas in section A).

All IWM noxious weed applications, especially chemical and biological will be noted into the specific range allotment file as part of that file's permanent record. Yearly monitoring results should also be included (see Appendix 2 and Table 6).

19. Livestock and Wild Horses

Alternative 1 and 2 impacts to livestock and wild horses are discussed on pp. 43-45 of the FEIS-1985. Table 3-2 on p. 44 of that same document summarizes the effects of domestic livestock

eating the various noxious weeds or a few poisonous plants. There are no known wild horses/herds in the LJDR IWM EA area.

All chemical treatments are generally applied in a form or at such low rates that they do not affect livestock and label instructions are required to be followed if livestock are present. Major treatments under the proposed action would be applied when livestock are not in the treated pasture. spot treatments may occur at any time. As analyzed in the FEIS 1985, the elimination of livestock from the treatment areas relates to label restrictions of specific chemicals when animals consuming forage treated with certain chemicals (Picloram, 2,4-D and Dicamba) cannot be slaughtered for food within the period of time specified on the herbicide label. In addition, dairy animals should not be grazed on treated acres, again for the specified time on the label.

Under alternative 1 and 2 the impact of weed control activities would be generally the short term elimination of livestock grazing or require wild horse movement away from herbicide sprayed areas. Small spot treatment areas would not require movement.

Under both alternatives noxious weed control practices are not expected to impact livestock or horses as their mobility would allow them to be moved away from treated areas. A withdrawal from grazing (seasonal) of up to 2 years for rest regrowth may be required, if prescribed fire or competitive seeding over 5 acres is selected under physical or biological control.

Any localized temporary impacts to vegetation would be of short duration, thus, loss of forage impacts would be for the most part minor. Increased control over livestock grazing operations and wild horse actions may be required if noxious weed infestations are being spread by their continued current pattern of use. Sheep and goats may be used as a part of biological control activities to reduce populations of noxious weeds.

20. Forestry

Control activities and impacts from alternatives 1 and 2 are the same to the forestry resources. Since there are no public commercial foresty lands in lower river corridior, weed control efforts are focused on preventation. Active weed control would be at harvested sites and access roads used in harvest activities. Control activities are expected to have only a minimal impact to the forestry resources. These actions would occur during both preharvest in controlling weeds along access roads and during sale activities to prevent spread of weeds on to cutting or harvest areas by trucks and logging equipment.

This may be necessary in Grant Co. And Wheeler Co. with the diverse weed populations on both private and USFS lands. It also may be necessary to have all equipment, especially USFS/BLM shared vehicles, fire vehicles cleaned and inspected before coming onto the new work site as part of prevention practices.

21. Soil Resources

Impacts to the soil resource throughout the LJDR IWM EA area using any of the control methods, should not exceed those impacts expected and analyzed on pp. 36-38 of FEIS-1985 and pp. 2-4 of Supplemental FEIS-1987. The direct impacts to the soils would be

the temporary surface disturbances associated with physical (prescribed fire, manual and mechanical) control practices.

Impacts are expected to be small from either alternative due to small surface acreage disturbances and loss of vegetative cover or the use of herbicide spot treatments (see Appendix 2). Most soil/watershed impacts are due to direct impacts from mechanical disturbance (such as plowing, discing, or seedbed preparation), or increased erosion potential due to changes in vegetative cover. These small (in most cases several years of spot treatments if herbicides, and less than 5 acres other (over 5 acres physical practices require a separate EA), would be mitigated in two to five years with native regrowth or sooner if seeded.

Using prescribed fire as a control measure for noxious weeds (which have for the most part low fuel loads) would not cause great changes in surface soil physical and chemical (nutrient levels) characteristics. The greatest effect would be the short term loss of soil productivity due to a temporary change in vegetative cover, surface organic matter and soil organisms in the surface few inches. Thus, unless fire conditions were extreme (very large, very hot or long duration) soil surface characteristics should return to prefire conditions after several growing seasons.

Alternative 2, with the greatest use of fire, would have the most impact. No impacts for prescribed fire over 40 acres are expected as none are proposed.

The fate of herbicides and behavior on the soil microbiotic community varies to specific chemical and site specific soil characteristics. Behavior actions of herbicides in soils are summarized below in Table 5 (FEIS-1985 and Table 3-1 from SFEIS - 1997 p. 3).

Table 5. Chemical/Soil Behavior of Approved Herbicides/Chemicals

Chemical	Soil Behavior
2,4-D	Degradability in soil depends on microbial activity but is faster in moist soils having higher organic matter content. Persistence is short usually a month or less, and mobility is relative high, especially in soils having lower organic matter content. Photodecomposition and volatilization (in most formulations generate only small losses in 2,4-D activity.
Dicamba/Banvel	Moderately (3 to 12 months) persistence, does not adsorb readily to soil colloids or particles, and is highly mobile. Mainly lost from soil by microbial decomposition. Photodecomposition or chemical degradation is minimal.
Glyphosate/ Rodeo or Accord	Strongly adsorbed by soil particles. Adsorption is higher with organic and phosphate rich soils and lowest in sandy soils. Decomposed rapidly and completely by microorganisms. Persistence is about 2 months, but maybe longer in sandy (80%) soils.
Picloram/Tordon	Highly stable in plants, can be leached, relatively nonvolatile. Moderately to highly

persistent in soil, depending upon climate and rate of application, at 1 lb ai/acre generally up to a year and within top 12 inches. Relatively mobile depending upon net water actions. Degradation results from sunlight and slow microbial action.

In most cases, except where glyphosate is used, native grasses would not be impacted or affected by the use of proposed herbicides within restrictions related to rates of application. This would be beneficial to soil surface features and provide protection for watershed and visual concerns in sensitive Special Management Areas.

22. Minerals/Geology

There should be no impacts associated with this IWM on geological resources.

However, in disturbed mining areas if noxious weeds are left untreated these areas would act as seed sources for further spread. The survey and treatment of noxious weed in these areas of active mining, pits, clay pits, gravel storage areas, or cinder pits and highway yards before material is spread out along roads is an important preventative and control practice for both alternatives.

Mining operations/claims for locatables and saleable need to be administratively required to control noxious weeds on the public lands associated with their claims per each respective county noxious weed control list. This control would normally be annual (as needed) by herbicide (PUP required) or manual, mechanical practice if claim/material pit is active or by reclamation and reseeding if claim/pit is to be closed.

23. Visual Resources

Under alternative 1 and 2, the majority of control work occurs within highway ROWs and high recreational use areas where disturbance and visual impacts are already exist. The small acreage and or spot treatments along with the limited damage to native grasses by 2,4-D, dicamba or picloram herbicide applications creates only short term visual impacts that over time blend into the background. New sites generally would be small in size and scope and treatment by any means would be relatively unnoticed.

The temporarily blackened areas (less than 40 acres in size) when treated by prescribed fire as part of an combination of IWM practices would blend into the surrounding native tree/shrub/grass mix, and be masked after 2-5 growing season by regrowth of native grasses.

24. Wildlife

The use of any control methods could temporarily (relocation) or permanently (if sprayed, burned, flattened, injured or cut up in mechanical or manual treatments) disrupt the daily individual behavior of wildlife inhabitating or occupying treatment areas. The use of any IWM practices including chemicals and risks and

impacts to wildlife has been analyzed in the tiered FEIS (18850 pp. 45-56, and Appendix K pp. 201-204 and Supplemental FEIS (1987) pp. 9-10 and Appendix K pp. 65-92 and ROD documents. In summary the chemicals proposed for use in order of decreasing risk to wildlife are Dicamba, 2,4-D, Glyphosate (Rodeo) and Picloram (Tordon). These risks to wildlife are dependent upon application rates, dermal penetration rates, and the inherent toxicity of the compounds

Terrestrial Species

Treatments under alternatives 1 and 2 will temporarily or permanently disrupt the day-to-day life habitats of the wildlife occupying the treatment areas. No life-threatening impact is likely to result from application of any treatment method, except for incidental mammals (mostly rodents), amphibians, birds, reptiles and arthropods from vehicles, prescribed fire (large) and/or mechanical treatments (in fields). In general, the larger the contiguous soil surface disturbed or vegetative cover removed (such as in fire or mechanical seedings), the greater the impacts to wildlife, through either the direct loss of wildlife or indirect impacts due to loss of habitat.

For specific IWM practices, the impacts ranging from greatest to lowest are from prescribed fire, mechanical, manual or chemical (spot treatments) and biological. The potential impacts are greater on smaller less mobile animals than on larger ones. The greatest disturbance to wildlife will last the duration of the specific treatment activity or longer if localized specific habit niche (home) is destroyed or abandoned. Residual impacts may last until the return to natural conditions. The impacts of not treating noxious weeds in a timely manner would allow for the potential expansion to the detriment of existing native habitat (vegetation) and a corresponding loss of extremely valuable wildlife and fishery habitat.

Habitat treated and recovering from dominance by noxious weeds will gradually recover its diversity. Those areas left or dominated by weeds will become monocultured alien blights on the landscape with very little biodiversity.

Impacts to the mobile mammals, birds, reptiles, amphibians and arthropods are expected to be minimal through applied mitigation measures, clearance and review of all proposed weed projects though the Resource Area's wildlife and fishery biologists.

A reduction in available food sources and/or cover could result in impacts to avian (bird) species through weed removal. In particular, it may impact some species such as morning doves and other neotropical migrant bird species which utilize weed species such as scotch thistle seeds for food. Replacement of noxious weeds and seed used as cover and bird food with native species or by competitive seeding with native or introduced species, which are able to be utilized by neotropical migrant birds or morning doves would reduce impacts from noxious weed removal. The amount or acreage treated (mostly along road Rights-of-Ways see Table 4 and Appendix 2) with chemicals is so small District-wide that impacts on any one population of birds is expected to be minimal and not quantitative.

Fish and Aquatic Species

No impacts under either alternative are expected to the fish species and aquatic organisms from herbicide application. None of the approved herbicides (at approved rates of application) showed a tendency for bioaccumulation and long term persistence in the food chain (SFEIS 1987). The fish and aquatic impacts were assessed in the SFEIS p. 9-10 and Appendix K (Aquatic Hazard Analysis p.78, Aquatic Risk Analysis p.86 and Details of the Wildlife Exposure Calculations p.87). In summary, the fish and aquatic impacts from herbicide use in order of decreasing risk would be 2,4-D (especially ester forms), Dicamba, Picloram (Tordon) and Glyphosate (Rodeo and Accord formulation).

Impacts from physical practices under either alternative would primarily result from runoff events off bare soil and vegetative removal areas (prescribed fire). This would cause increased opportunities for erosion and increases in siltation and sediment into streams. These are expected to be mitigated through riparian buffer areas and keeping treatment areas in any one watershed small. Additionally, the reseeding and/or natural revegetation processes would keep the window of opportunity for drastic increased erosion events dumping sediment and causing siltation of streambeds generally to 1 growing season.

Not effectively treating weed infestations would hinder riparian and watershed vegetation diversity and thus indirectly impacting the fishery and aquatic habitats.

25. Social and Economic

Social and economic impacts were discussed on pp. 48-50 of the FEIS (1985).

In summarized form, these impacts consider weed control activities being needed and beneficial for productive rangelands, economic production is severely decreased on weed impacted land, ingestion of poisonous plants kill livestock and reduce productivity and weeds spreading from BLM lands are contributing to economic losses on adjacent private lands. The local economy is benefitted by all IWM control practices, through increases in local spending, labor, equipment and materials. However, labor intensive manual and mechanical control practices (contracts) may provide a more direct economic benefit in the form of employment and wages. Polarized reactions between non-chemical use proponents and proponents for a IWM program allowing use of chemicals will occur.

The site specific impacts of alternatives 1 and 2, are essentially the same, as summarized, except the additional social and economic concerns and polarized reactions both pro and con about use or non-use of herbicides in WSAs or Was.

26. Human Health

A detailed hazard analysis was conducted for IWM practices and each of the four herbicides proposed for use on pp. 50-55 and

Appendix N pp. 209-233 in the FEIS (1985). Additional analysis evaluated impacts including a worst case analysis on pp. 11-24 and Appendix N pp. 93-117 in the Supplemental FEIS (1987).
In addition, the summary discussion of herbicides and human health from section "2. The Herbicides' Risks to Human Health" in the Supplemental FEIS 1987 ROD and the detailed updated analysis in FEIS 1991 pp 3-64-3-94, and Appendix E FEIS 1991 addresses the issues and impacts related to human health and use of (risk) of herbicides. In addition, the 1992 Pesticide Fact Sheets (USDA,USDI,& USDE 1992) that summarize impacts and risks to human health in their Human Health Effects and Safety Precautions sections are incorporated into this EA as reference material and copies are available upon request.

The cumulative analysis of expected impacts for workers, human and wildland resources along with risk assessment of using these herbicides was addressed in the FEIS 1985 and Supplemental FEIS 1987 and their respective RODs. In addition, the impact analysis for additional chemicals as well as the currently four approved herbicides (Picloram, Dicamba, 2,4-D and Glyphosate) were analyzed and updated in the FEIS for Vegetation Treatment on BLM Lands (Thirteen Western States, May 1991, its Appendixes May 1991 and ROD July 1991.

It has been determined that the worst-case is that someone could get cancer from exposure to herbicides used in BLM's IWM. The probability of occurrence was projected for two basic populations considered at risk (occupational and general public). The highest probability of cancer for workers in the extreme-case is on the order of one out of 10,000 workers exposed under the lifetime exposure scenario. The highest probability for the general public is on the order of one out of 10 million individuals exposed in the extreme case scenario presented. Oregon's current population is estimated to be about 2.7 million.

In order to provide a perspective on the risks, comparison to accepted risks or the public's willingness to accept certain voluntary and involuntary risks is needed. Risks of one in 10,000 for occupational (voluntary) and one in one million for the general public (involuntary) are willingly accepted. In fact, human health would benefit by the reduced probability of human contact with noxious and poisonous weeds resulting from control activities.

The use of only Oregon State (ODA) certified and licensed applicators for all herbicide applications on BLM public lands, using only BLM, ODA and EPA approved herbicides, following all state requirements per license and information in "Oregon Pesticide Applicators Manual" (Miller 1993), all instructions per specific herbicide LABELS (as required by Law), using proper and required Personal Protective Equipment PPE), Material Safety Data Sheets with applicator at site, and specific EA proposed application and mitigation stipulations reduces the human health, and environmental risks and impacts of using herbicides in the Prineville District IWM program to levels below those accepted in the FEIS 1985 and Supplemental FEIS 1987 and their RODS. This does not mean that these herbicides are completely safe, as safe does not mean risk free, rather safe means that each herbicides's environmental hazards and risks are EPA, ODA and BLM approved and acceptable ones to take based upon best available knowledge and proper use.

Impacts from non-chemical treatments are analyzed in the FEIS (1985) on pp. 50-55. These impacts are essentially the same for alternatives 1 and 2. These are summarized as to vehicle operations, mechanical equipment hazards, smoke and prescribed fire safety concerns, using hand tools, physical contact and skin irritant from hand pulling certain noxious weeds, poisonous snakes and human interactions. Most infested sites, where physical control practices would be used are in geographically and physically remote locations, where distance to medical help (hospital) may complicate any medical injury.

E. Mitigation Measures

The following District mitigation/stipulations will apply to the District's Lower John Day River Integrated Weed Management EA No. OR-053-3-063 for all noxious weed control activities under both alternatives:

1. Cultural (prevention) activities such as inspection (weed surveys), regulation (ROWs), sanitation (wash and clean vehicles) and education) will be encouraged and enforced for all high priority developed multi-use recreational areas, especially those along the Lower John Day River.

2. Physical control practices (Mechanical) such as mowing, tilling, disking, seedbed preparation, and prescribed burning (if over 40 acres) treatments will require a separate EA. Small mechanical treatment areas of less than 5 acres may only require a CE.

3. All manual control practices (hand pulling and hand tools) will be done before seed ripe or dispersal and the plant residue collected as needed for burning (piles) or bagged and removed from site(s). On small isolated sites such as undeveloped primititive camp sites along the lower JDR manual control may be given priority consideration and user (boaters) encouraged to manually pull,grub, or hoe out the few plants to small patches of noxious weeds. Educational brochures identifying weed species of concern will be made available at all developed boating access points.

4. Biological control practices methods such as introduced insects, competitive seedings, pathogens or grazing (goats or sheep) will be given consideration District wide. ODA approved biocontrol agents (insects or pathogens) will be given emphasis for release to control/contain larger infestations where containment is major goal. The approval for release of beneficial insects or pathogens must use the same procedures as herbicides using the Biological Control Agent Release Proposal (BCARP) and Record (BCARR). Only ODA approved biological control agents will be allowed for release after District and State Office approval (see appendix 3).

5. A Special Status Plant and Animal survey or clearance will be done prior to any treatment.

6. A cultural survey or clearance is required before any soil surface disturbing activity from physical weed control practices (mechanical or prescribed fire)

occurs. Hand pulling, grubbing or hoeing a few plants or scattered plants on public land sites less than 5 acres (such as undeveloped campgrounds along Lower JDR in WSAs and/or WSRs is authorized by this EA

7. All herbicide use will comply with USDI rules and policy, BLM policy and guidelines, Oregon State laws and regulations, OR Department of Agriculture (ODA) laws and regulations, Environmental Protection Agency (EPA) , federal pesticide laws (FIRCA), Oregon Department of Environmental Quality (DEQ) regulations, Local County Weed District Priorities and requirements and by Law must follow product label requirements.

8. All pesticide (herbicide) applicators are required to submit proposals using 1.) a Pesticide Use Proposal (PUP) form (which BLM may approve for use of up to 3 years, if same chemical, same target weed, and same area); 2.) a Pesticide Application Record (PAR) to be completed after application and promptly submitted to the district office.

9. All herbicide applications will only be applied by a Oregon State licenced and certified applicator.

10. Material Safety Data Sheets (MSDSs for each herbicide being applied will be at site with applicator, and guidelines and information found in "Oregon Pesticide Applicator Manual" (Miller 1993) as updated will be followed

11. Areas of known or suspected Federal Listed, Candidate or Proposed or Oregon Candidate (old C-1) or Species of Concern (old C-2) amphibians will have as a minimum 100 foot buffer strip from live water for all herbicide applications, with the exception for the use of Rodeo.

12. Use of existing trails/access routes or roads for emergency weed control activities will be allowed by vehicles even in WSAs, but use off existing routes for prescribed fire, herbicide application or seeding practices will only be by ATV type vehicles. All seeding in WSAs will be by broadcast methods.

13. Herbicide Use Restrictions are as follows:

a. No vehicle mounted or powered boom sprayers or handguns will be used within 25 feet of surface (live) water.

b. No booms or powered equipment applicators would be used in riparian areas, where weeds are closely intermingled with trees and shrubs.

c. Liquid herbicides can be applied (at a height of 0.5 ft to 2.5 ft. above ground) to areas for spot treatments with hand spraying (backpack) equipment (single nozzle, low pressure and volume) to within 10 feet of live water. Use of mule or horse mounted equipment would also be allowed.

d. Spreader equipment (broadcast) could be used to apply granular formulations applied at a height of about 3.5 feet, to within 10 feet of the high water line of live water.

e. Contact Systemic Herbicides (such as Glyphosate - Rodeo or Accord) may be allowed using hand wipe applications on individual plants up to the existing high water line.

f. When wind speeds exceed 5 mph, no spray equipment will be used in riparian areas or near water, and no aerial applications are allowed in riparian or wetland areas. No aerial application of Glyphosate is allowed.

g. No application of herbicides will occur if wind speeds exceed 8 mph.

h. All aerial application of herbicides will be done **only** by **helicopter** and allowed within the constraints of the Final NW Area Noxious Weed Control Program EIS (1985) as supplemented 1987, and ROD pages 1-3 (May 5 1987). A buffer strip of 100 feet will be established between target weed areas and any live water/riparian areas.

i. No aerial application of herbicides will be permitted without written approval from the authorized officer.

j. No aerial application of herbicides will be permitted when wind speeds exceed 5 mph.

k. For Or/WA only 2,4-D, picloram (Tordon), dicamba, and glyphosate (Rodeo and Accord only) and approved combinations will be allowed as per ROD (1987) from Supplemental FEIS (1987). Acceptable formulations, EPA registration #s, maximum rates of application, and mixture stipulations are referenced from BLM Approved list March 1994 (see Appendix 6 as updated) and from Table 1-3 p. 9 FEIS (1985) (see q.)

l. All chemicals will be applied only in accordance with BLM, EPA, ODA requirements, and **Herbicide LABEL** standards/stipulations.

m. Pesticide Use Proposals (3 year approval) for herbicide application within boundaries of WSAs, or WAs, and RNAS will be reviewed and evaluated by Resource Area staff on a year to year basis.

n. Monitoring pretreatment and posttreatment will be done yearly (pre and post spray applications) on all treated areas.

o. In aerial applications a 500 foot unsprayed buffer strip will be left next to inhabited dwellings unless waived in writing by the residents. A 100 foot buffer of unsprayed strip will be left next to croplands and barns.

p. Additional Herbicides if approved (see p. 1 and 7) may be used subject to all the above mitigation measures, label restrictions and within limits of ROD or specific approval recommendations.

q. The maximum rates of application for the four approved herbicides (per Table 3-1 from FEIS 1985): (ai = active ingredients of specific herbicide).

Ground Applications (vehicle and hand)

Application of Single Herbicide:

Herbicide	**Maximum Rate**
2,4-D	**3 lb ai/ac**
Dicamba	**6 lb ai/ac**
Glyphosate	**3 lb ai/ac**
Picloram	**1 lb ai/ac**

Application of Tank Mixes

Herbicide	**Maximum Rate**
2,4-D and Dicamba	**2 lb ai/ac 2,4-D & 1.5 lb ai/ac Dicamba**
Picloram and 2,4-D	**0.5 lb ai/ac Picloram 1 lb ai/ac 2,4-D**

Aerial Applications (helicopter only)

Herbicide	**Maximum Rate**
2,4-D	**3 lb ai/ac**
2,4-D and Dicamba	**2.0 lb ai/ac 2,4-D and 1.5 lb ai/ac Dicamba**
Picloram	**1.0 lb ai/ac**

13. All other stipulations and mitigation in FEIS (1985) pp. 1-7 to 1-10, Supplemental FEIS (1987) pp. 119-122, RODs (1986) or (1987) will apply.
In addition, the stipulations and mitigation from the FEIS 1991 and its ROD will apply for all additional chemicals (herbicides if or when approved for noxious weed control.

F. Monitoring

A monitoring plan following guidelines of Table 6 will be established to determine success/failures and any other impacts. Modifications to the proposed action in site specific areas would be proposed if necessary and further environmental assessment/public disclosure made.

Table 8 reflects the herbicide application monitoring plan set forth in the Supplemental FEIS (1987) p. 122. As per stipulations from Supplemental FEIS (1987), RODs and this EA, BLM will monitor all noxious weed control projects with special emphasis on chemical and biological control efforts. In order to facilitate such

monitoring, the District's Resource Areas will require utilization of the following forms (as revised)and shown in the District IWM EA Appendix 7-11: Pesticide Use Proposal (PUP) - Appendix 7; Pesticide Application Record (PAR) -Appendix 8; Biological Control Agent Release Proposal (BCARP) - Appendix 9; Biological Control Agent Release Record (BCARR) - Appendix 10; the District Monitoring and Evaluation form/guidelines - Appendix 11; A District Noxious Weed Field Survey Form (Apr 1993) - Appendix 6; and map (USGS 7.5 min topographic preferred-copy to an 8 1/2 by 11 inch sheet) showing location of project.

Table 6. District Herbicide Application Monitoring Plan

Monitoring Element Evaluated	Methods	Time	Characteristics
Pretreatment Survey density, present, methods chosen, Dist. Noxious Weed Field Completed (Appendix 9)	Onsite visual inspection	Each Treatment area	Species present, endangered species control options, Survey Form
Postreatment Survey for retreatment, corrective measures or mitigation	Onsite visual inspection	Each Treatment area	Effectiveness, need
Pesticide Use Proposal requirements and meets EIS and EA	Review of proposal and by authorized State certified applicator	Before any herbicide application	Proposal compared to EPA registration herbicide stipulations
Water Monitoring contamination	Pre- and post-treatment water samples,if near potable water sources & herbicide could get into water	As needed	Potential water
Coordination plan monitoring	Weed Mgt plans submitted to W.O.	Yearly	Coordination of
Biological establishment, spread released agents	Survey of Bio-control agents release sites	Yearly	State/District rate of effectiveness, of biological control
Surveys for Special Status Species Status	Survey for species action	Each project species before	Presence of Special
Cultural Resource Surveys	Survey for Cultural resources	Each project involving fire or surface soil disturbances	Presence of Cultural Res.

Contract Admin of Contract Each contract Contract stipulations
and work accomplish.

The project specific post treatment monitoring and evaluations would be completed as specified on the forms/guidelines per BLM policy. In addition all herbicide treatment sites, biological control agent release sites and yearly weed monitoring results will be noted into the specific range allotment file, subject to available funding and personnel.

All chemical treatments will be applied by OR state certified, licensed pesticide (weed) applicators. All biological control agents will be certified and released through the consultation/approval of the ODA.
Consultation/Coordination

The District's primary consultations were made with the Oregon State Dept of Agriculture (ODA) and the County weedmasters or Road Departments of each county (see list below). Additional consultations were made with Ochoco National Forest (USFS), BPA, and PGT.

These are the people or agencies actively tracking infestations/occurrences and determining the priority treatment areas/needs to control or eliminate noxious weed populations. They will also be the main source of biological control agents (ODA) and main herbicide applications (county weedmasters) within the District.

1. Agencies and Individuals Consulated.

a. Oregon State Department of Agriculture-Salem and Redmond Offices
b. Crook County Extension Agent
c. PGT Natural gas ROW
d. Crook County Weed Control Dept.
e. Gilliam Co. Rd. (Noxious Weed) Dept.
f. Jefferson Co Rd. (Noxious Weed) Dept.
g. Sherman Co. Weed Control
q. Wasco Co Weed Dept.
r. BLM Oregon State Office -- Jerry Asher
s. BLM Oregon State Office (Lakeview) -- Bob Bolton
t. BLM Oregon State Office -- Dave Harmon
u. BLM Salem District Office -- Joe Furnish (Special Status Animals - Invertebrates)

2. BLM District Employees Involved with Preparation

a. Lawrence (L.C.) Thomas -- District Weed Coordinator (EA Team Leader, Soils, HazMat)
b. Don Smith -- ADM Resource Services - (Weed Management Review)
c. Harry Cosgriffe -- Central Oregon Resource Manager (CORA) - (Area Management)
d. Joe Wichman -- NRS (CORA) National Weed Demonstration Area (Bridge Creek) Coordinator
e. Ron Halvorson -- District Botanist - (Botany, Special Status Plants, ACEC'S)
f. John Zancanella -- (CORA) - (Cultural Resources, Native American Religion, and Paleontology)
g. Rick Demmer -- NRS Riparian (CORA) - (Riparian Ecosystems, Amphibians,)
h. Syd Williamson -- Forester (CORA) - (Forestry)
i. Dennis Davis -- Dist. Geologist - (Minerals, Geology)

j. Dan Wood -- Supervisory NRS (CORA) - (JDR Wild and Scenic Rivers Coordinator, Special Projects)
k. Lyle Andrews -- Range Conservationist (CORA) - (Range, Bridge Cr. CRMP) l. Dan Tippy -- Supervisory NRS (CORA) - (Area Management Review)
m. Heidi Mottl -- Recreation Specialist (CORA) - (Recreation, Wilderness)
n. Darren Brumback -- Fishery Biologist (CORA) - (Fishery)
o. Mary D'Aversa -- Hydrologist (CORA) - (Hydrology)
p. Scott Cooke -- Wildlife Biologist (CORA) - (Wildlife)
q. Craig Obermiller -- Range Conservationist (CORA) - (Range)
r. Teal Purrington -- Range Conservationist (DESCH) (NEPA Coordinator)

3. References:

Asher, Jerry 1993 "Noxious Weeds in Eastern Oregon" Oct 1993; USDI Bureau of Land Management Oregon State Office, Portland OR.

Barbe, Douglas D. 1991 "Characteristics of Noxious Weeds and Their Ecological Impact" OR Oregon Interagency Noxious Weed Symposium Proceedings Dec 3-4 1991 Corvallis OR.

Bolton, Bob 1993 "Noxious Weed Strategy for Oregon/Washington BLM" USDI Bureau of Land Management, Oregon State Office (Lakeview) Portland, OR.

Burrill, Larry C. 1993, Ray D. William, and Dan Ball; Robert Parker, Chris Boerboom, and Kassim Al-Khitb; Robert H. Callihan, Charlotte Eberlein, and Don W. Morishita;
"Pacific Northwest Weed Control Handbook" 1993 OSU; WSU; and Univ of Idaho.

Cheater, Mark 1992 "Alien Invasion" Sep/Oct 1992 Nature Conservancy.

Cook, Ronald L. 1991 "Obtaining Quality Seed for Use in Vegetation Management Projects"
Oregon Interagency Noxious Weed Symposium Proceedings Dec 3-4 1991 Corvallis OR.

Coombs, Eric 1992 "Biological Control of Weeds Status Report" 1992 Oregon Dept. of Agriculture Salem, OR

Devine, Robert 1994 "Botanical Barbarians" Jan/Feb 1994 Sierra The Magazine of the Sierra Club.

Hawkes, Robert B. 1985 Tom D. Whitson, and La Rea J. Dennis: "A Guide to Selected Weeds of Oregon" 1985 Oregon Department of Agriculture, OSU.

Hawkes, Robert B. 1989 Larry Burrill, La Rea J. Dennis: "A Guide to Selected Weeds of Oregon (Supplement)" 1989 Oregon Dept. of Agriculture, OSU.

Hoglund, Georgia E. 1991 "Design and Implementation of Integrated Weed Management on Public Lands" Oregon Interagency Noxious Weed Symposium Proceedings Dec 3-4, 1991 Corvallis, OR

Kummenow, M 1992 "Weeds in Wilderness: A Threat to Biodiversity" Western Wildlands 18:2

Leininger, Wayne C. 1988 "Non-Chemical Alternatives for Managing Selected Plant Species in the Western United States US Dept. Interior, Fish and Wildlife Service and Colorado State University Cooperative Extension XCM-118 June 1988

Miller, Terry L. 1993 "Oregon Pesticide Applicator Manual" A Guide to the Safe Use and Handling of Pesticides, Oregon State University, Extension Service # 8532, October 1993

Piper, Gary L. 1991 "Principles of Integrated Noxious Weed Management" Oregon Interagency Noxious Weed Symposium Proceedings Dec 3 and 4, 1991 Corvallis OR

Oregon Natural Heritage Program, 1993 "Rare, Threatened and Endangered Plants and Animals of Oregon" Oregon Natural Heritage Program, August 1993 Portland, Oregon

USDA, USDI & USDE, USFS, BLM, BPA 1992 "Pesticide Fact Sheets for Glyphosate, 2,4-D, Dicamba, & Picloram" USFS January 1992

USDA, 1993 "Prime Farmland List for Oregon" May 1993 USDA SCS Portland Oregon.

USDI BLM 1985 "Northwest Area Noxious Weed Control Program (Draft) EIS" Dec, 1985 Bureau of Land Management Oregon State Office Portland, Oregon

USDI BLM 1985 "Northwest Area Noxious Weed Control Program FEIS" Dec, 1985 Bureau of Land Management Oregon State Office Portland, Oregon

USDI BLM 1987 "Supplemental to the Northwest Area Noxious Weed Control Program FEIS" Dec, 1987, Bureau of Land Management Oregon State Office Portland, Oregon

USDI BLM 1991 "Vegetation Treatment on BLM Lands in Thirteen Western State FEIS" May 1991,
Bureau of Land Management Wyoming State Office Chenyene, Wyoming

USDI BLM 1992 "Bureau of Land Management Special Status Invertebrate Species" 12/7/92
Salem District Office (Joe Furnish) 12/7/92 Salem, Oregon

Whitson, Tom D. 1991; Burrill, Larry C.; Dewey, Steven A.; Cudney, David W.; Nelson, B.F.; Lee, Richard D.; and Parker, Robert; "Weeds of the

West" University of Wyoming, The Western Society of Weed Science in

ted States Land Grant Universities Cooperative Extension Services. Jan. 1991.

Appendix 1 **PRINCIPLE FEATURES OF AN INTEGRATED WEED MANAGEMENT PLAN**

Project Design IWM Treatments/Mitigation

The common management practices or project design features tiered to this EA related to noxious weed control practices are found in the FEIS (1985), pp 7-11, Table 1-3. p. 9, which gives mixtures and maximum rates of chemical application (summarized in mitigation measure q); FEIS (1985) Appendix I; and are supplemented in the text revisions section pp. 119-127 of the SFEIS (1987). In addition, all mitigation measures adopted in both FEIS and SEIS Record of Decisions as modified by this EA's (more stringent) stipulations, are part of the proposed action and project design features.

Cultural Practices

Cultural Practices as summarized and listed below are incorporated into the proposed action in this EA and described in further detail in Noxious Weed Strategy for OR/WA BLM - Appendix 4 (Bolton 1993.) They are both indirect and direct practices designed to minimize the spread of existing infestations, but also to prevent weed establishment. These cultural practices are a key component of the District's IWM, and are not only the best control practices, but are also some of the most effective and cheapest long term practices.

These cultural practices will be used wherever possible, to reduce the risk of unknown sources of contamination, reduce spread (seed sources) and identify new infestations.

1. Develop a brochure for all recreational boaters/campers, identifying major weed species and concerns along the LJDR corridor and asking for their help and input (returnable 1 page form see Appendix 5) for inventory, monitoring and hand grubbing these selected weeds during their recreational activities. The focus of this volunteer effort will be on public lands adjacent to the John Day River within seasonal high water line and riparian areas adjacent to all primitative campgrounds not accessible by vehicle especially in WSAs.

2. Clean all heavy equipment, vehicles or ATVs used on BLM land (including Rights-of-Ways) prior to moving onto BLM lands or before changing from known weed areas or geographic areas.

3. **Require weed free hay or locally (County) grown hay** for the feeding of hay to livestock and big game animals on the public lands. Inspect all feeding sites during the summer after they are used.

4. Use only certified seed that has been checked for noxious weed seed prior to seeding public lands (Cook 1991).

5. Minimize surface disturbance on project sites and reclaim/seed disturbed sites/areas as soon as practical with a BLM approved seed mixture. Temporary fencing of newly seeded sites within grazing allotments may be required to assure establishment of new seeding. "All areas where vegetative manipulation occurs would be totally rested from grazing for at least two growing seasons after treatment". (per BLM District Standard Operating Procedures - p. 41 Two Rivers RMP, ROD, and RPS).

6. Monitor all vegetation manipulation and revegetation projects, i.e. prescribed fire areas, wildfire areas and emergency seeded ares,

timber harvest activities, seedings, juniper control areas or other disturbed sites like rock (material) pits for noxious weed infestations and initiate control efforts as needed. "Activities that cause bare soil on range and pastureland should be minimized" (Leininger 1988).

7. To reduce the areas of enhanced opportunity for potential noxious weed invasion, evaluate sites within the priority treatment zones # 1-6 of Table 1 for vegetative management practices and initiate changes in management in those zones where native or seeded vegetation is in a downward trend.

8. Limit, restrict or discourage recreational, especially OHV use in weed infested areas (Leininger 1988).

9. Limit, restrict or modify livestock use in areas of major weed infestations, and/or contain livestock several days before moving from a weedy area to an weedfree area.

Physical Control Practices

Manual

Manual control practices (hand pulling and hand grubbing with hand tools such as shovel, hoe, pulaski) are covered by this EA. They are usually highly labor intensive, often requiring periodic retreatment efforts within the same growing season. In addition, manual practices may include the need to collect plant residue (dependent upon site, species and plant maturity) by bagging or piling and burning, for proper disposal. They may be relatively ineffective against deep rooted perennial such as Leafy Spurge, Dalmation Toadflax, Russian Knapweed, Purple Loosestrife or Rush Skeleton Weed. Best results are often only on small satellite patches of a single to a few plants to less than 0.5 acre, and targeted to annual and biennial noxious weeds (see Table 2 and Appendix 2). Depending upon the targeted weed species, it may also be one of the few currently available options for control within riparian areas and areas very close to water.

Larger manual control efforts (hand pulling and hand tools) would be limited to 2-5 acres per infestation site. Control efforts may be permitted after Resource Area staff review of the same site specific information and/or mitigation stipulations as required for Pesticide Use Proposals (PUPs) (see Chemical Control Practices p. 8) and Resource Area management approval.

Manual control practices may be used immediately, to prevent or reduce establishment of a weed seed source, where newly discovered sites involve just a few plants or small scattered patches on sites totaling less than 1.0 acres. It is a focused effort with this EA to assist the recreational public in priority weed identification (inventory and monitoring) and asking them to manually hand pull or hoe out very small infestations at any and all primitative camping/boating sites along the LJDR. An example of this immediate identification and control was during the weed surveys in the lower John Day River canyon during FY 1993. This is where one to a few plants of Rush Skeleton Weed (private lands) and Purple Loosestrife (public lands) were discovered and manually removed at time of discovery.

Mechanical

All mechanical control practices (such as mowing, tilling, discing, plowing or competitive seedbed preparation, or seeding and activities) would require proper timing. They often require repeated periodic retreatment within the same growing season or a yearly repeat the following season. These practices are often used in combination with other actions such as prescribed fire (before) and seeding (after) mechanical practices are used. These methods are highly disruptive to surface soil characteristics, vegetation including desirable native shrubs, non-targeted grasses and forbs species and less mobile wildlife species. Some perennial weeds are not treatable in this way due to their ability to spread by roots (see Table 3 and Appendix 2). Slopes are a limiting factor for the application of these methods and slopes greater than 10 percent are not recommended for mechanical treatment.

All mechanical control surface soil disturbing practices such as mowing, tilling, discing, plowing or competitive seedbed preparation activities would require a separate site specific environmental assessment if greater than 5 acres for any one site.

Prescribed Fire

All prescribed fire over 40 acres in size would require a separate site specific analysis.

All prescribed fire activities would be conducted in accordance with BLM's Fire Management Policy (BLM Manual 9210). All prescribed fires would require the preparation of an approved prescribed burn plan before every burn. The burn plan must be approved by the District Fire Management Officer and Resource Area Management. In addition, all required smoke management stipulations or burning permit requirements would be part of the approved prescribed burn plan.

Prescribed fire is considered a control method under Physical Control Practices. This practice is very much a part of the District's IWM and is used both as a practice by itself (dependent upon target weed and site characteristics) and as tool combined with other before and after practices for noxious weed control. Fire as a tool by itself is often not effective in eradication of most weed species and may open up areas for increased weed infestations. It will be used as a clean up tool for piles of weeds collected for proper disposal under manual or mechanical methods. It will most often be used as a site preparation tool for small (less than 40 acres) sites, but it may also be used for sites 40 acres to several hundred acres in size. This site preparation generally consists of burning off noxious weed vegetation in fall-winter months to remove dead, matted vegetative material (such as or Russian Knapweed); reduce seed levels and vegetative mats (such as Medusahead Rye) for reseeding; or open up dense stands of dead weed stalks (such as Scotch Thistle) for physical access. After a stand is cleaned up with fire, the amount of time and work effort required by other practices is almost always less than if prescribed fire had not been used. In follow up applications using herbicides, generally the amount of herbicide required for treatment is less and application is more effective on newly sprouting noxious vegetation or seedlings not protected by old plant residue.

Biological Control Practices

Biological Control Practices are either introduced or natural competition. These can be insects, pathogens, native or non-native competitive seedings (certified seed only) and grazing by domestic livestock (sheep, goats, cows, geese or others). The District focus for the LJDR EA area is and will primarily be using both insects and competitive seedings (see Table 3 and Appendix 2).

Domestic grazing as a control practice would have to met specific allotment management resource and grazing objectives and approved District Plans on p. 3, under Conformance with Applicable Land Use Plans section. An example of grazing systems for noxious weed control although it is outside of EA area is along lower Bridge Creek in Wheeler Co. This (EOARC) research project (EA No. OR-054-3-20) is utilizating cattle under very controlled conditions (season, utilization and numbers of AUMs) for a noxious weed control utilization study on Russian Knapweed. Goats have successfully been used for eating the tops of leafy spurge, thus perhaps limiting seed dispersal,
but have not eliminated the infestation.

Competitive seedings using either native or introduced species, if using mechanical seedbed preparation or seeding practices are subject to a separate site specific analysis. If seeded sites are greater than 5 acres they would also require a separate site specific analysis.

Those competitive seeding sites less than 5 acres in size using only manual methods of seeding are covered by this EA. Seeding these small sites may be permitted after Resource Area staff review of the same site specific information and/or mitigation stipulations as required for Pesticide Use Proposals (PUPs) (see Chemical Control Practices p. 8) and Resource Area management approval.

The District's use of its approved Biological Control Agents (see Appendix 2 and 3) for treatment priorities will be coordinated closely with the ODA and County Weed districts to introduce biological control agents to weed populations where site specific criteria meets management goals. As can be seen on Tables 3 and 5 most BLM priority weeds listed do not have any ODA approved biological control agents available for control efforts. The District Wide BCARPs have been approved (1993-1998) for biocontrol agents dispersal, dependent upon availability of agent and upon specific release sites being selected. Those sites selected will and need to be protected from disturbances due to other various management actions. That protection will ensure that the biocontrol agents released will have a good chance of establishing viable populations for both control activities at the site and acting as biocontrol nursery for collection and redistribution to other sites.

Table 3 gives the relative treatment priority for each specific weed identified. The (*) weeds indicate that the Oregon Dept. of Agriculture (ODA) has had some measure of success in introducing and establishing biological control practices/agents for controlling noxious weed infestations (Coombs 1992).

The list of currently approved District Biological Control Release Proposals (1993) submitted by ODA for this District under BLM/ODA contract #1422h952-C-2-2073 are shown in Appendix 3. They have met all environmental testing criteria for host species, per requirements and an EA is on file with USDA and Oregon State Dept. of Agriculture.

However, immediate control/eradication is not possible since **eradication is not feasible using biological control agents alone.** It is a slow and long process that will be used by the District for slowing the spread and containment of larger established populations.

Chemical Control Practices

Chemical Control Practices include the use of Pesticides (approved FEIS 1985 and SEIS 1987) herbicides including 2,4-D; Dicamba; Dicamba + 2,4-D; Picloram (Tordon); Picloram + 2,4-D; Glyphosate (Rodeo or Accord only); and Glyphosate + 2,4-D) (see Appendix 6 for the most current approved herbicide list for OR/WA). and Fertilization. A Pesticide (Herbicide) Fact Sheet (USFS,BLM,BPA 1992) has been prepared for each of the four chemicals approved currently for use that gives to workers and general public the following summarized information for each herbicide:

1. Basic Information
2. Herbicide Uses
3. Environmental Effects/Fate
4. Ecological Effects
5. Toxicology Data
6. Human Health Effects
7. Safety Precautions
8. Definitions
9. Additional Reading
10. Toxicity Categories

These Pesticide Fact Sheets are incorporated into this EA as a referenced document and a copy is available upon request.

Chemical Practices using any herbicide applications on District require submission of a Pesticide Use Proposal (PUP) for review and approval at the Resource Area / District level and then BLM State Office approval or in a few specific cases (due to site location or selected herbicide/noxious weed targeted) U.S. Dept. of Interior approval (Information Bulletin No. WO 93-407, OR-93-445, WO-95-214). PUPs are required to be reviewed by the District/Resource Area (Eco-region team)staff and approved by the Resource Area Management prior to submission for State Office approval. The Resource Area offices will review or provide site specific information and/or mitigation stipulations concerning:

1. Special Status plants and animals.

2. Archeological Resources (sites and Native American concerns, such as traditional areas (see Mitigation section D.7)

3. Vegetation, soil & water resource concerns (if picloram use is being proposed a review must include a signed review/statement by Soil Specialist)

4. Fish and wildlife concerns

5. Special Management Area concerns

6. Other resource site specific mitigation concerns

Most of the District's herbicide applications are currently being applied as minor spot treatments along highway and county road rights-of-way, or recreational sites. Additional sites are pending as a backup to other IWM practices such as prescribed fire and seeding activities (see Appendix 2.

The currently BLM approved herbicides of 2,4-D; Dicamba; Dicamba + 2,4-D; Picloram (Tordon); Picloram + 2,4-D; Glyphosate (Rodeo or Accord only); and Glyphosate + 2,4-D will be applied only in accordance to all label stipulations and specific requirements of all tiered documents. The will only be applied by a Oregon State certified and licensed applicator. All herbicide stipulations of the mitigation section (section E) will apply. Additional information, herbicide formulations and updated analysis (risk assessment) of the four approved chemicals along with the "Additional Chemicals" (see p.12) is in the FEIS 1991, its Appendix E and ROD. This is incorporated in this EA as a tiered document and referenced information. Only those formulations that have been approved by BLM, EPA and ODA, which have been proven not to contain inert ingredients on EPA list 1 or 2, other than petroleum distillates will be used. Table 4 shows the relative susceptibility of the BLM listed noxious weeds to the four currently approved herbicides.

Table 7. BLM Noxious Weed List Priority and Susceptibility to Approved Chemicals

(Draft FEIS 1985 and Burrill 1993)

BLM List	Noxious Weed Species (Approved ODA Bio Agents # *)	Growth Form	Susceptibility 1/ Weeds Chemical 2,4-D	Dicamba	Picloram	Glyphosate
1.	Yellow StarThistle ******	Annual (W)	F	G	E	F
2.	Leafy Spurge *******	Perennial	P	F	G	F
3.	Dalmation Toadflax *	Perennial	F	G	G	G
4.	Tansy Ragwort **	Biennial	G	I	I	I
5.	Rush Skeleton Weed ****	Perennial	F	G	E	I
6.	Scotch Thistle	Biennial	G	E	E	I
7.	Diffuse Knapweed *****	Biennial	E	E	E	I
8.	Spotted Knapweed ****	Biennial	F	E	E	I
9.	Russian Knapweed *	Perennial	P	G	G	G
10.	St.Johnswort-Klamath Weed ***	Perennial	P	I	I	I
11.	WhiteTop-Hoary Cress	Perennial	P	F	F	G
12.	Kochia	Annual	F	F	E	G
13.	Puncture Vine **	Annual	G	E	E	E
14.	Western Water Hemlock	Perennial	G	G	E	E
15.	Canada Thistle ***	Perennial	F	G	E	E
16.	Bearded (Common) Crupina	Annual (W)	I	I	I	I
17.	Medusahead Rye	Annual	N	N	N	E
18.	Musk Thistle **	Biennial	E	G	E	E
19.	Matgrass	Perennial	N	N	N	E
20.	Squarrose Knapweed	Perennial	F	I	I	I
21.	Dodder	Parasitic	P	I	I	E
22.	Poison Hemlock	Biennial	G	G	E	E
23.	Jointed Goatgrass	Annual	N	P	N	E
24.	Field Bindweed-Morning Glory	Perennial	G	G	G	G
25.	Spiny Cocklebur	Annual	E	E	E	E
26.	Purple Loosestrife **	Perennial	-	-	-	G

27.	Bull Thistle **	Biennial	**F**	**E**	**E**
G					
28.	Johnson Grass	Perennial	**N**	**N**	**N**
E					
29.	Milk Thistle	Biennial (W)	**E**	**E**	**I**
I					
30.	Halogeton	Annual	**F**	**I**	**F**
I					
31.	Jimson Weed	Annual	**P**	**F**	**E**
E					
32.	Yellow-Common Toadflax *	Perennial	**N**	**F**	**G**
G					
33.	Perennial Pepperweed	Perennial	**F**	**G**	**F**
I					
34.	Scotch Broom **	Woody shrub	**I**	**I**	**I**
G					
35.	Russian Thistle	Annual	**G**	**E**	**E**
G					
36.	Teasel	Biennial	**I**	**I**	**I**
G					
37.	Spikeweed	Annual	**U**	**U**	**U**
U					
38.	Wild Prosso Millet	Annual	**U**	**U**	**U**
U					
39.	Italian Thistle	Annual (W)	**G**	**G**	**E**
I					
40.	Dyers Woad	Biennial	**G**	**E**	**G**
G					
41.	Wild Carrot	Biennial	**F**	**G**	**G**
G					
42.	Yellow NutSedge	Perennial	**F**	**N**	**F**
F					
43.	Purple Starthistle	Biennial	**E**	**G**	**G**
E					
44.	Iberian Starthistle	Biennial	**E**	**G**	**G**
E					
45	Mediterranean Sage *	Biennial	**I**	**I**	**I**
I					

E = Excellent (95% kill, 1 treatment), G = Good (95% kill, 2-3 treatments), F Fair (60-85% kill, one treatment), P = Poor ((10-65% kill, one treatment), N = none (plant resistant)
I = Insufficient data., U = Unknown, or Unusable
1/ Dependent upon factors such as plants age, residual root reserves, & site environment

Appendix 2. Noxious Weed Control Effort Priorities FY 1996-2000

County	Locations	Target Species	Estimated Annual Treatment Acres	Control Methods
Jefferson	Co Rd 511 & 5-17 ROWS Gosner & Muddy Cr Rds T9S. & T10S. R16E	Diffuse, Spotted Russian Knapweeds Puncture Vine Russian Thistle	5	#96-05, Herbicide, veh- Boom, handgun spot spraying
Gilliam	Horned Butte ACEC T3N.R22E sec 34, T2N.R22E sec 3,10, 11,12, & 14	Yellow Starthistle Diffuse Knapweed	50	#94-05, Herbicide Veh- boom spraying-spot
Gilliam	South of Condon T4S.R21E. sec 33 T5S.R21E. sec 3,4 Rangeland/ROWs	Dalmation Toadflax Spotted Knapweed	55	#96-033, Herbicide, aerial-Helicopter Veh-boom & handgun hand pulling in riparian (old #93-37)
Gilliam	T1S.R19E & R20E sec 10, 11,12,14,15,17,20,21,22 23 and sec 6, below Cottonwood Bridge	Dalmation Toadflax Spotted, Diffuse & Russian Knapweed, Scotch Thistle	50	#93-044, Herbicide, veh- boom, & handgun spot
Gilliam	Lower John Day R. Rm 55, T2S.R18E sec 24	Dalmation Toadflax Diffuse & Russian Knapweed	4	Manual hand grubbing in WSA on wild fire burn (1994) of near Rm 55, very small patches
Sherman	T1S.R20E. sec 6 T1S.R19E. sec 1 - 12 Starvation Point	Yellow Starthistle Diffuse & Russian Knapweed, Whitetop Scotch Thistle, Jimpson weed	90	#96-01, Herbicide, aerial (helicopter only) & veh-boom spraying
Sherman	T2N.Rl6E. sec 9,10	Yellow Starthistle	60	#96-02, Herbicides, veh-

Columbia River Diffuse Knapweed handgun, aerial (helicopter only),boom spot spray

Sherman/ T2S.Rl8E to T8S.Rl9E- Russian & Diffuse 600 Manual (100 acres), Gilliam R20E. mostly Spotted Knapweeds, Mechanical (100 acres), Jefferson along W&SR corridor Dalmation Toadflax Chemical (400 acres Wasco and specific PUPs Scotch, Bull & Canada Specific PUPs to be written Wheeler for use in WSAs Thistles, Whitetop, if proposed action is approved
L.John Day R. (OR-5-6), Purple Loosestrife, Based upon weed surveys Thirty Mile (OR-5-1), Skeleton Weed of 1993, 1994 and monitoring North Pole Ridge Yellow Star Thistle during 1995. Flood of Feb 1996 (OR-5-8), and Spring Leafy Spurge may have redistributed populations
Basin (OR-5-9) Medusahead Rye Weed control by IWM Practices,
including herbicide use will be mainly on alluvial flats, islands, areas between high and low flows and the immediate adjacent toeslopes of canyons and all primitive public land campground sites (about 130).

Appendix 2. (cont.)

County	Locations	Target Species	Estimated Annual Treatment Acres	Control Methods
Wasco	Clarno Agriculture Fields T7S.R19E. sec 19 west 1/2	Diffuse & Russian Knapweeds, Spiny	15	#94-24 Herbicide, veh.-boom, ATV,backpack spot spray after burn, plow/disc, seeding, Fields A, B, C, & access rds T7S.R19E sec 18,19,20 Hemlock (EA # OR-054-3-44) 30,31; T7S.R18E. sec 25,32
Wasco	Clarno Homestead Island & west riverbank John Day R. T7S.R19E sec 18,20,29,32	Poison Hemlock, Spiny Cocklebur	10	# 94-21, Herbicide, backpack spot spraying after burning (EA # OR-054-4-58) (Pending)
Wasco	Clarno Homestead N. fields T7S.R19E sec 19 SENE, NESE, sec 20 west 1/2 NW; & access rds ROWs T7S.R19E sec 18,19,20,30,31 T7S.R18E sec 25,32	Russian & Diffuse Knapweeds	20	# 94-22, Herbicide, veh.-boom, handgun, ATV, backpack spot spraying, after burning, plow disc & seed (EA # OR-054-4-58)
Wasco	T2N.R15E. sect 16 Celilo Village area	Yellow Starthistle Bangastunam orientallis (unk)	*	Bio Control Agent Rel (1993) #93-B1-03

Wasco	Clarno Agricultural Fields T.7S.Rl9E. sec 19	Diffuse & Russian Knapweed, Poison Hemlock, Spiny Cocklebur	42	EA No. OR-054-3-44 prescribed burn, plow, disc seed, reseed, PUP #94-20
Wasco	Clarno Homestead Weed Control T.7S.R19E. sec 19,20, 29 and 32	Diffuse & Russian Knapweeds, Poison Hemlock, Spiny Cocklebur	80	EA No. OR-054-4-58) mechanical disc/plow, burn seed, (PUP # 94-21 & 22)
Wheeler	Southeast of Clarno LJDR Near Rm 116 spot T8S.R19E sec 21 NE small patches in floodplain near field	Scotch Thistle, Poison Hemlock, Diffuse & Russian Knapweeds, Yellow Star Thistle	50	#96-47, Herbicide, veh-boom, handgun, ATV, backpack spot spraying,
Wheeler	Southeast of Clarno County & BLM access Rd to Spring Basin WSA; & Black Rock campground at LJDR Rm 119.3 T8S. R18E sec 3,10,15,23,24,25	Diffuse & Russian Knapweeds, Scotch Thistle, Poison Hemlock Teasel	20	#96-48, Herbicide, Veh-boom, ATV,spot spray access Rd ROWs old field & campground

* ODA Biological control Agent Release Sites that are on BLM public lands or within 1/4 mile, many other release sites in counties not close to public lands.

Most 1996 PUPs are a renewal of previous (1993) PUPs. Site Specific PUPs will be developed for WSA dependent upon target weed, mitigation measures, site specific requirements, special access concerns (see mitigation section and Appendix 1 for standard operating procedures. * Control Methods - PUPs are generally approved for a 3 year period and have to resubmitted for approval if needed every three years or sooner if expired

Appendix 3. Biological Control Agent Release Proposals (BCARPs) 1993-1998.

Host Species (Target)	Name of Agent	Number of Releases (Maximum)	250 Agents per Release Life Cycle	Broadcast Release Time	Dist. Proposal Number
Bull Thistle	**Seed Head Weevil** (Rhinocyllus conicus)	15	Adults	March-May	93-OR-053-B35-01
Bull Thistle	**Seed Head Gall Fly** (Urophora Stylata)	15	Pupa/Larvae	Mar-May/Sep-Nov	93-OR-053-B35-02
Canada Thistle	**Crown/Root Weevil** (Ceutorhynchus litura)	15	Adults	March-May	93-OR-053-Bl4-O1
Canada Thistle	**Stem Gall Fly** (Urophora cardui)	15	Pupa/Larvae/Adults	Mar-Nov	93-OR-053-Bl4-02
Canada Thistle	**Seed Head Weevil** (Rhinocyllus conicus)	15	Adults	March-May	93-OR-053-Bl4-03
Dalmation Toadflax	**Defoliating Moth** (Calophasia lunula)	15	Larvae/Adults	June-August	93-OR-053-B4-01
Diffuse Knapweed	**Seed Head Weevil** (Larinus minutus)	15	Adults	June-August	93-OR-053-B8-01
Diffuse Knapweed	**Root Boring Beetle** (Sphenoptera jugoslavica)	15	Adults	June-August	93-OR-053-B8-02
Diffuse Knapweed	**Seed Head Weevil** (Bangasternus fausti)	15	Adults	June-August	93-OR-053-B8-03
Diffuse Knapweed	**Leaf Rust Fungus** (Puccinia jacea)	15	Spores	March-May	93-OR-053-B8-04
Diffuse Knapweed	**Root Boring Moth** (Pterolonche inspersa)	15	Larvae	June-August	93-OR-053-B8-05
Leafy Spurge	**Root/Stem Boring Beetle** (Oberea erythrocephala)	15	Adults	June-August	93-OR-053-B2-01
Leafy Spurge	**Root/Defoliating Flea Beetle** (Apthona cyparissiae)	15	Adults	June-August	93-OR-053-B2-02
Leafy Spurge	**Defoliating Moth** (Hyles euphorbias)	15	Larvae/Adults	June-August	93-OR-053-B2-03
Leafy Spurge	**Root/Defoliating Flea Beetle** (Apthona flava)	15	Adults	June-August	93-OR-053-B2-04
Leafy Spurge	**Shoot Tip Gall Midge** (Spurgia esulae)	15	Larvae/Adults	March-August	93-OR-053-B2-05

Leafy Spurge Root/Defoliating Flea Beetle 15 Adults June-August
94-OR-050-B2-06
(Apthona czwalinae)
Pending
Leafy Spurge Root/Defoliating Flea Beetle 15 Adults June-August
94-OR-050-B2-07
(Apthona nigriscutis)
Pending

Mediterranean Sage Crown/Root Weevil 15 Adults June-November
93-OR-053-B3-01
(Phrydiuchus tau)

Musk Thistle Crown/Root Fly 15 Adults December-March
93-OR-053-Bl7-01
(Cheilosia corydon)
Musk Thistle Seed Head Weevil 15 Adults March-May
93-OR-053-Bl7-02
(Rhinocylus conicus)

Puncture Vine Stem Boring Weevil 15 Adults June-August
93-OR-053-Bl3-01
(Microlarinus lypriformis)

Appendix 3. (cont.)

Host Species (Target)	Name of Agent	Number of Releases (Maximum)	250 Agents per Release Life Cycle	Broadcast Release Time	Dist. Proposal Number
Puncture Vine	**Seed Weevil** (Microlarnius lareynii)	15	Adults	June-August	93-OR-053-Bl3-02
Purple Loosestrife	**Leaf Beetle** (Galerucella pusilla)	15	Larvae/Adults	March-August	93-OR-053-B23-01
Purple Loosestrife	**Leaf Beetle** (Galerucella calmariensis)	15	Larvae/Adults	March-August	93-OR-053-B23-02
Rush Skeletonweed	**Bud Gall Mite** (Eriophyes chondrillae)	15	Larvae/Adults	June-August	93-OR-053-B6-01
Rush Skeletonweed	**Stem/Leaf Gall Midge** (Cystiphor schmidti)	15	Larvae/Adults	June-August	93-OR-053-B6-02
Rush Skeletonweed	**Root Weevil** (Hylobius transversovittatus)	15	Larvae/Adults/Eggs	Mar-Aug	93-OR-053-B6-03
Rush Skeletonweed	**Leaf Rust Fungus** (Puccinia chondrillina)	15	Spores	June-August	93-OR-053-B6-04
Russian Knapweed	**Leaf/Stem Gall Nematode** (Subanguina picridis)	15	Larvae	June-August	93-OR-053-B1O-O1
Scotch Broom	**Twig Mining Moth** (Leucoptera spartifol)	15	Pupa	March-May	93-OR-053-B37-01
Scotch Broom	**Seed Weevil** (Apion fuscirostre)	15	Adults	March-May	93-OR-053-B37-02
Spotted Knapweed	**Seed Head Weevil** (Bangasternus fausti)	15	Adults	June-August	93-OR-053-B9-01
Spotted Knapweed	**Seed Head Weevil** (Larinus minutus)	15	Adults	June-August	93-OR-053-B9-02
Spotted Knapweed	**Root Boring Moths** (Agapeta zoegana)	15	Adults	March-August	93-OR-053-B9-03
Spotted Knapweed	**Seed Head Moth** (Metzneria paucipunctella)	15	Pupa	March-May	93-OR-053-B9-04
St. Johnswort	**Root/Stem Boring Beetle** (Agrilus hyperice)	15	Adults	June-August	93-OR-053-B11-O1
St. Johnswort	**Leaf Gall Midge**	15	Larvae/Adults	March-August	93-OR-053-B11-02

(Zeuxidiplosis giardi)
St. Johnswort Defoliating Moth 15 Larvae/Adults January-Dec. 93-OR-053-B11-03
(Aplocera plagiata)

Tansy Ragwort Defoliating Flea Beetle 15 Adults June-November 93-OR-053-BS-O1
(Longitarsus jacobaeae)
Tansy Ragwort Defoliating Moth 15 Larvae/Adults June-August 93-OR-053-BS-02
(Tyria jacobaeae)

Yellow Starthistle Seed Head Weevil 15 Adults June-August 93-OR-053-BI-01
(Larinus curtus)
Yellow Starthistle Seed Head Fly 15 Adults March-August 93-OR-053-Bl-02 Chaetorellia australis)
Yellow Starthistle Seed Head Weevil 15 Adults June-August 93-OR-053-Bl-03 (Bangasternus orientalis)
Appendix 3. (cont.)

Host Species (Target)	**Name of Agent**	**Number of Releases** (Maximum)	**250 Agents per Release**	**Broadcast Release** **Life Cycle**	**Dist. Proposal Number** **Time**
Yellow Starthistle	**Seed Head Fly** (Urophora sirunaseva)	15	Adults	March-November	93-OR-053-Bl-04
Yellow Starthistle	**Seed Head Gall Fly** (Urophora quadrifasciata)	15	Adults	Mar-May/Sep-Nov	93-OR-053-Bl-05
Yellow Starthistle	**Seed Head Weevil** (Eustenopus villosus)	15	Adults	March-August	93-OR-053-Bl-06
Yellow Toadflax	**Defoliating Moth** (Calophasia lunula)	15	Larvae/Adults	June-August	93-OR-053-B33-01

Appendix 4. Grazing Allotments in the Lower John Day River Canyon

Category	Allotment #	Name	Alloted AUMs	BLM Acres	Use Period
Segment1					
M	2560	Baseline	30	598	Apr 16 - Nov 15
M	2513	Big Sky	60	1,215	Apr 01 - Dec 17
I	2520	Boynton	93	2,596	Apr 01 - Sep 30
M	2617	Emigrant Canyon	26	661	Mar 16 - Oct 01
I	2648	Hartung	16	540	Mar 01 - Oct 31
I	2598	Hay Creek	37	1,518	Oct 15 - Feb 28
I	2562	J Bar S	4	115	Apr 01 - Dec 31
I	2597	John T. Murtha	155	4,743	Mar 01 - Jan 24
M	2594	Morehouse & Elliot	3	65	Mar 01 - May 31
I	2595	Morris	53	833	Mar 25 - Oct 31
C	2540	Persimmon Woods	5	40	Apr 01 - Sep 01
M	2604	Philippi	60	942	Apr 16 - Oct 15
M	2637	V.O.West	15	223	Apr 01 - Feb 28
Subtotal			557	14,089	
Segment 2					
I	2509	Belshe	62	1,840	Apr 01 - Jun 14
I	2538	Decker	206	2,999	Apr 16 - Oct 14
C	2636	George Weedman	6	343	Apr 16 - Oct 15
I	2521	Horseshoe Bend	43	737	Jul 01 - Sep 01
I	2522	James Brown	66	2,527	May 01 - Oct 31
I	2597	John T Murtha	128	3,925	Mar 01 - Jan 31
I	2572	Laffoon & Carlson	85	3,655	Jun 01 - Oct 31
I	2591	Miller	47	1,896	May 10 - Oct 31
I	2581	Pine Creek	346	5,418	Apr 16 - Nov 17
I	2608	Rattray	312	8,434	Mar 25 - Feb 28

I	2619	Sid Seale	708	12,597	Mar 01 - Feb 28
I	2629	Tatum	113	2,889	May 16 - Oct 19
I	2553	Willow Spring	20	1,127	Apr 01 - Aug 31
Subtotal			2,142	48,387	

Segment 3 (only up to Rm 122)

I	2584	Catherine Maurer	526	14,683	Mar 01 - Feb 28
I	2587	Corral Canyon	88	2,301	Mar 01 - Dec 15
M	2588	Spud	40	608	Oct 01 - Feb 28
I	2512	Big Muddy	605	14,890	Mar 01 - Feb 28
I	2614	Clarno Homestead	63	1,693	Apr 01 - Feb 14
I	2623	Steiwer Ranches	230	4,373	Mar 01 - Feb 28
I	2630	Tripp	7	328	Sep 15 - Dec 31
I	2536	Spring Basin	142	5,219	Apr 01 - Dec 31
Subtotal			907	23,050	

Totals 3,606 AUMs 85,526 acres

Appendix 5. SPECIAL STATUS ANIMALS IN THE LOWER JOHN DAY RIVER CORRIDIOR OF THE PRINEVILLE DISTRICT KNOWN OR SUSPECTED (OR Natural Heritage Program 1995)

A. FEDERAL AND STATE LISTED TAXA (LE or LT or PE)*

Scientific Name	Common Name	Federal Status	State Status
Birds			
Falco peregrinus anatum	American Peregrine Falcon	Endangered	Endangered
Haliaeetus leucocephalus	Bald Eagle	Threatened	Threatened

B. FEDERAL CANDIDATE AND PROPOSED ANIMAL SPECIES (C or SoC) (old C-1 or C-2 species category)**

Scientific Name	Common Name
Fish	
Lampetra tridentata	Pacific Lamprey (SoC)
Oncorhynchus mykiss spp.	Inland/Interior Redband Trout (SoC)
Salvelinus confluentus	Bull Trout (C)
Amphibians	

None

Reptiles

Sceloporus graciosus graciosus	Northern Sagebrush Lizard (SoC)

Birds

Accipiter gentilis	Northern Goshawk (SoC)
Agelaius tricolor	Tricolored Blackbird (SoC)
Athene cunicularia hypugea	Western Burrowing Owl (SoC)
Butteo regalis	Ferruginous Hawk (SoC)

Mammals

Ovis canadensis californiana	California Bighorn Sheep (SoC)
Spermophilus washingtoni	Washington ground squirrel (SoC)

Invertebrates

Fluminicola culumbianus	Columbian Pebblesnail or Columbia R. Spire Snail (SoC)

C. ODFW SENSITIVE SPECIES LIST (SC, SV, SP, & SU)***

Scientic Name	**Common Name**

Fish

Lampetra tridentata	Pacific Lamprey (SV)
Oncorhynchus mykiss spp.	Inland/Interior Redband Trout (SV)
Salvelinus confluentus	Bull Trout (SC)

Appendix 5C. (con). ODFW SENSITIVE SPECIES LIST (SC, SV, SP, & SU)***

Scientific Name	**Common Name**

Amphibians

Bufo boreas	Western Toad (SV)

Reptiles

None

Birds

Accipiter gentilis	Northern Goshawk (SC)
Agelaius tricolor	Tricolored Blackbird (SP)
Ammodramus savannarum	Grasshopper Sparrow (SV)
Athene cunicularia	Burrowing Owl (SC)
Butteo regalis	Ferruginous Hawk (SC)
Buteo swainsoni	Swainson's Hawk (SV)
Falco peregrinus anatum	American Peregrine Falcon (LE)
Glaucidium gnoma	Northern Pygmy owl (SU)
Lanius ludovicianus	Loggerhead Shrike (SU)
Riparia riparia	Bank Swallow (SU)

Mammals

Lepus townsendii	White-tailed Jackrabbit (SU)
Spermophilus washingtoni	Washinton Ground Squirrel (SC)

Invertebrates

None

***** LE = Listed Endangered; LT = Listed Threatened: PE = Proposed Endangered

****** C = Candidate (former C1 which USFWS intends to include as Species of Concern list.
SoC = Species of Concern (former C2 which USFWS intends to include as part of their Species of Concern list.

******* ODFW Sensitive listing defined as follows: SC = Critical; SV = Vulnerable;
SP = Peripheral or Naturally Rare; SU = Undetermined Status.

Further information is available from the source "Rare, Threatened and Endangered Plants and Animals of Oregon" Oregon Natural Heritage Program Dec 1995)

Appendix 6. HERBIDIDE FORMULATIONS APPROVED FOR USE ON BLM LANDS *
(March 3, 1994)

Herbicide (Active Ingredient)	Chemical Company	Product Name	EPA Registration Number
2,4-D	Rhone-Poulenc	Aqua-Kleen	264-109AA
2,4-D	Rhone-Poulenc	Esteron 99	62719-9-264
2,4-D	Rhone-Poulenc	Formula 40	62719-1-264
2,4-D	Rhone-Poulenc	Weedar 64	264-2AA
2,4-D	Rhone-Poulenc	Weedar 64A	264-143
2,4-D	Rhone-Poulenc	Weedone 170	264-222ZB
2,4-D	Rhone-Poulenc	Weedone 2,4-DP	264-231-ZA
2,4-D	Rhone-Poulenc	Weedone LV-4	264-20ZA
2,4-D	Rhone-Poulenc	Weedone LV-6	264-271AA
2,4-D	Platte Chem	Clean Crop Amine 4	34704-5
2,4-D	Platte Chem	2,4-D Weed Kill	34704-120
2,4-D	Platte Chem	Clean Crop LV4 Es	34704-124
2,4-D	Platte Chem	Savage DF	34704-606
2,4-D	Platte Chem	Salvo LV ester	34704-609
2,4-D	Platte Chem	Sword (MCPA es)	34704-704
2,4-D	Cornbelt Chem	Weed Pro 4# Am	10107-31
2,4-D	Cornbelt Chem	Weed Pro 4# LV	10107-27
2,4-D	Cornbelt Chem	Weed Pro 6# LV	10107-40
2,4-D	PBI/Gordon	Turf Hi-Dep	2217-703
2,4-D	PBI/Gordon	Dymec	2217-633
2,4-D	Imperial Inc.	MCP Ester	1381-98
2,4-D	Imperial Inc.	LV6 2,4-D	1381-101
2,4-D	Imperial Inc.	LV4 2,4-D	1381-102
2,4-D	Imperial Inc.	Amine 4 2,4-D	1381-103
2,4-D	Imperial Inc.	MCP Amine	1381-104

HERBIDIDE FORMULATIONS APPROVED FOR USE ON BLM LANDS * (con) (March 3, 1994)

Herbicide (Active Ingredient)	Chemical Company	Product Name	EPA Registration Number
2,4-D	Wilbur-Ellis	Amine 4	42545-37-2935
2,4-D	Wilbur-Ellis	L.V. 4	42545-27-2935
2,4-D	Wilbur-Ellis	L.V. 6	42545-38-2935
Dicamba	Sandoz	Banvel Herb	55947-1
Dicamba	Sandoz	Banvel 4S	55947-4
Dicamba	Sandoz	Banvel 4WS	55947-18
Dicamba	Sandoz	Banvel CST	55497-32
Dicamba + 2,4-D	Sandoz	Weedmaster	55947-24
Dicamba + 2,4-D	PBI/Gordon	Brush Kill 4-41	2217-644
Dicamba + 2,4-D	PBI/Gordon	Brush Kill 10-5-1	2217-543
Glyphosate	Monsanto	Rodeo	524-343
Glyphosate	Monsanto	Accord	524-326-AA
Picloram	DowElanco	Tordon 22K	62719-6, 464-323
Picloram + 2,4-D	DowElanco	Tordon 101	62719-5, 464-306
Picloram + 2,4-D	DowElanco	Tordon 101R	62719-31, 464-510
Picloram + 2,4-D	DowElanco	Tordon RTU	62719-31, 464-510
Picloram	DowElanco	Tordon K	464-421, 62719-17
Picloram	DowElanco	Pathway	62719-31
Picloram	DowElanco	Access	62719-57
Picloram	DowElanco	Grazon PC	820002
Picloram	DowElanco	Grazon PC	820002

*** Note that these EPA registration numbers were current for BLM as of Mar 3, 1994 and chemical companies may have changed a few of them since that date. If other formulations for the above same chemicals become available and/or are cleared through the BLM Washinton Office, they will be considered for use on BLM administrated public lands. If Pesticide Use Proposal is new it must include a copy of herbicide label. Application. Also note that all herbicide label instructions must be followed. Herbicides applied on BLM public lands are limited as to methods of application, maximum rates applied and combinations of herbicides available for use as set by limits from Table 1-3 on p. 9 of FEIS 1985, (see Mitigation Section E q.on p.39) unless approved otherwise in writing by BLM.**