

APPENDIX C—CONSERVATION AND RESTORATION WATERSHEDS—ALTERNATIVES B, C, AND D

INTRODUCTION

The CFO has identified programmatic aquatic management direction for specific watersheds (includes subwatersheds) within the planning area. Because of scattered and limited BLM ownership, primary criteria for identifying conservation and restoration (objective) watersheds depends on BLM ownership within the watershed and other public land ownership, specifically Forest Service and Idaho Department of Fish and Game. The purpose is to provide managers and the public with a clear intent of the watershed, riparian, and aquatic resources management emphasis and priority when considering land use alternatives and management actions.

Identifying conservation and restoration ~~area~~ watersheds demonstrates the BLM's priority of programmatic management direction, and strategies for watershed, riparian, and aquatic resources; which is the basis for developing goals, objectives, standards, and monitoring strategy. Because of limited time and monetary resources, when planning land management strategies, the BLM should prioritize the most effective and cost efficient conservation and restoration opportunities. ~~Management~~ It is also recognizes ~~recognized~~ that some watersheds ~~or subwatersheds~~ will not be restored to their physical or biological potential within the RMP timeframe of up to 20 years because ~~of the cumulative private lands and existing land uses, current land uses not controlled by BLM, updrainage effects within and outside the watersheds,~~ and legacy effect of past land management.

Not every project, even in a watershed with a degraded baseline condition, will be restorative. These short-term effects are appropriate as long as they will have discountable or negligible effects on a Watershed and Aquatic Condition Indicators (WACIs – see Appendix W [Volume III]), and will not preclude attainment of long-term improvement of watershed, aquatic and riparian processes and functions. If ~~riparian and~~ watershed, riparian, and aquatic processes are to be restored over time within watersheds that ~~are not functioning~~ have a Functional at ~~desired conditions~~ Risk (FAR) baseline, it is critical that management actions individually and collectively do not further degrade or retard attainment of ~~Watershed Condition Indicators. Management actions~~ WACIs. It is also important that management actions in conservation or restoration watersheds ~~would~~ provide some programmatic direction toward achieving or maintaining desired ~~Watershed Condition Indicators~~ WACIs. It needs to be recognized that because of limited BLM ownership and opportunities for restoration in some of these watersheds, ~~its~~ BLM's management opportunity or ability to attain desired ~~functioning Watershed Condition Indicators~~ WACIs is not always possible from management actions on BLM lands. Also, some WACIs cannot achieve desired conditions within the timeframe of the RMP, even with active BLM restoration actions because recovery is very long term and gradual.

CONSERVATION WATERSHEDS

Conservation ~~subwatersheds~~ have ~~watershed~~ processes and functions that occur in a relatively undisturbed and natural landscape setting. Hydrologic function, such as sediment amounts and stream flow regimes resulting from disturbance, are within a natural range of frequency, duration, and intensity. Waters are meeting designated or existing beneficial uses. Land uses and human

activities do not strongly influence aquatic and hydrologic functions, as indicated by low road density and few stream crossings. Examples of conservation areas typically include wilderness, roadless, and undeveloped ~~sub~~watersheds. However, conservation ~~areas~~watersheds may contain areas that have limited land uses, while maintaining natural processes.

Management strategies emphasize allowing natural disturbances, but active management is sometimes required to conserve these physical and biological processes and patterns. For example, vegetation composition and structure that trend outside the historic range of variability because of fire suppression may pose a risk to ecological processes. An active management activity to conserve hydrologic and biological processes is to maintain roads and trails to minimize erosion and resulting sediment additions to nearby streams and water bodies. However, as a general rule minimal investment over time is needed to maintain function and critical instream and upland habitat elements in these conservation-designated watersheds.

RESTORATION WATERSHEDS

Restoration ~~sub~~watersheds were identified because biological and physical processes and functions do not reflect natural conditions because of past and long-term land disturbances. The common effects of these disturbances are a long-term (decades) increase of sediment deposition in streams, loss of large woody debris recruitment to stream channels, abnormal hydrologic patterns (water flows), and elevated water temperatures. Cumulative impacts from human disturbances and periodic natural events, such as large fires, landslides, and floods, exacerbate abnormal watershed and biological conditions.

Active management may be required to restore the physical and biological function to their natural range of frequency, duration, and intensity. Identifying and assessing the adverse impacts on habitat will allow managers to focus restoration efforts in the most cost-effective manner to achieve hydrologic and biological recovery. This implies that there is a range of treatment intensities and desired landscape responses and not all impacts need be treated to achieve goals. ~~Within some watersheds, BLM management options for implementation of active restoration measures may be limited. Land uses (active or passive) on BLM lands that minimize or avoid adverse effects and does not delay achievement of desired conditions in the long term would support restoration. Decisionmaker discretion would balance short-term risks (to aquatic and other resources) with long-term benefits for multiple resources as actions are considered to move toward natural variability of conditions.~~

~~Vegetation management or land-disturbing activities may occur in the same time frame (within 5 years) of soil, water, or aquatic habitat improvements. Improvement may be the result of restoration project implementation, land use restrictions/modification that improves conditions, natural recovery, or a combination of the three.~~

~~Ground-disturbing activities or projects may be designed allowing measurable short-term (up to 4 years, but generally less than 1 year) sediment production where long-term (beyond 4 years) improvement toward natural levels is expected.~~

PRIORITY RANKING FOR CONSERVATION AND RESTORATION WATERSHEDS

Priority ranking (high, moderate, and low) for each conservation or restoration subwatershed was based on status, risks, and opportunities (BLM and Forest Service 1999). Primary issues considered in ranking status and risks were water quality, riparian habitat, existing aquatic species diversity, and potential fisheries habitats productivity. Opportunities considered the expected cost and response time to effect measurable changes toward achieving goals.

High Priority Criteria—Conserve Area Designation

1. Fish species assemblages contribute to high biological diversity. Habitats support productive or unique populations and key salmonid species exhibit full range of life history diversity. The assumption is that the aquatic community is largely intact, and is a potential source of individuals to nearby recovering populations; AND
2. Water quality supports designated and existing beneficial uses or municipal (public) water supplies.

Moderate Priority Criteria—Conserve Area Designation

1. Fish species assemblages represent moderate biological diversity; AND
2. Water quality supports designated and existing beneficial uses.

High Priority Criteria—Restore Area Designation

1. Habitat potential for highly productive or unique fish communities with restoration efforts. Loss of connected populations, competition, or genetic introgression (hybridizing) with nonnative species has caused the loss of diversity of some unique populations, such as key salmonid species. The assumption is that the aquatic community is largely intact but not resilient to landscape disturbance events, nor does it provide a source of individuals to nearby recovering populations; AND
2. Water quality may not support all designated and existing beneficial uses or municipal (public) water supply.

Moderate Priority Criteria—Restore Area Designation

1. Potential for moderately productive fish habitat with restoration efforts. Long-term loss of connected populations, competition or genetic introgression with nonnative species has caused the loss of diversity of some unique populations, such as key salmonid species. The assumption is that the aquatic community is largely intact but not resilient to landscape disturbance events, nor does it provide a source of individuals to nearby recovering populations; AND
2. Water quality may not support all designated and existing beneficial uses or municipal (public) water use a future possibility.

Low Priority Criteria—Restore Area Designation

1. There is a minor amount of fish habitat. Long-term loss of connected populations, competition, or genetic introgression with nonnative species has caused the loss of diversity of key salmonid species. The assumption is that the aquatic community is not intact and not

highly resilient to natural events, nor does it provide a source of individuals to nearby recovering populations; AND

2. Water quality may not support all designated and existing beneficial uses and municipal (public) water is not considered as a future use.

MANAGEMENT STRATEGIES

Protection

Preserve riparian areas that are ecologically intact and fully functional. Human activities that significantly influence aquatic and riparian ecological functions are restricted. The strategy strives to protect aquatic and riparian ecosystems that are currently in good condition so that naturally regenerative processes can continue to operate. Conserve designations that typically include the wilderness, and minimal developed watersheds would fall within this management strategy. However, high priority restoration projects do exist within portions of some conserve-designated watersheds. Also, some restoration-designated watersheds may have a stream segment or watershed area that is ecologically intact and functional, which would also warrant protection of aquatic and riparian ecosystems.

Passive Restoration

Prevent further loss of aquatic and riparian ecosystem integrity. To the extent possible, remove anthropogenic disturbances from altered aquatic and riparian ecosystems in order to allow natural processes to be the primary agents of recovery. Allow the natural disturbance regime to dictate the speed of recovery in areas that have a high probability of returning to a fully functional state without human intervention. This management strategy applies to many of the low and moderate priority restore designated watersheds. Speed of recovery may be several decades (or more) once anthropogenic disturbances are removed or mitigated.

Active Restore

Return functionally impaired aquatic-riparian ecosystems to a state that would occur naturally at the site by actively managing certain aspects of habitat recovery. Combine elements of natural recovery with management activities directs at accelerating development of self-sustaining, ecologically health riparian ecosystems. This management strategy applies to the high and some moderate restore priority watersheds. Many watershed, riparian, and stream restoration projects fall into this category, including vegetation treatments, stream channel restoration, stream crossings removal or improvement, reducing road densities, and improving road condition. Speed or recovery may be one to two decades once human caused disturbances are removed or mitigated.

Rehabilitation

Re-establish naturally self-sustaining riparian ecosystems to the extent possible, while acknowledging that irreversible changes such as dams, permanent channel changes due to urbanization and streamside roads, stream channel incision, and floodplain development, permit only partial restoration of ecological functions. Combine natural and active management approaches where ecological self-sufficiency cannot occur.

Table C-1
Conservation and Restoration Management Watersheds—Alternative B

<u>Subwatershed Watershed Number</u>	<u>Subwatershed Watershed Name</u> ¹	<u>Management Objective</u> ²	<u>Subbasin Management Priority</u> ³	<u>BLM Management Opportunities</u> ⁴
<i>Lower Snake River Subbasin</i>				
170601030302	Captain John Creek Madden Creek	Restoration	Moderate	Moderate
	S. Fork Captain John Creek			
170601030403	Corral Creek	Restoration	Low	Moderate
<i>Lower Salmon River Subbasin</i>				
170602090103	China Creek	Restoration	Moderate	Low
170602090201	Eagle Creek ⁷	Restoration	Moderate	Moderate
170602090202				
170602090301	Deer Creek	Restoration	Moderate	Low
170602091101	Slate Creek	Restoration	High	Low
170602091202	John Day Creek	Restoration	High	Moderate
	E. Fork John Day Creek			
	M. Fork John Day Creek			
	S. Fork John Day Creek			
170602091303	Lake Creek	Restoration	Moderate	Low
170602091603	Partridge Creek	Restoration	Moderate	Low
170602091601	Elkhorn Creek	Restoration	Moderate	Low
170602091501	French Creek	Restoration	Moderate	Low
<i>Middle Salmon River</i>				
170602070101	Salmon River Face Drainages ⁵			
	Carey Creek	Restoration	Low	Low
170602070301	Salmon River Face Drainages ⁵			
	Bear Creek	Restoration	Low	Low
170602070305	California Creek	Restoration	Moderate	Low
	Maxwell Creek			
<i>Little Salmon River</i>				
170602100102	Elk Creek	Restoration	Low	Low
	Little Elk Creek			
170602100601	Boulder Creek	Restoration	High	Low
170602100201A	Little Salmon R. Face Drain ⁵			
	Trail Creek	Restoration	Moderate	Moderate
170602100301	Hazard Creek	Restoration/Conservation ⁶	High	Moderate
170602100201B	Hard Creek	Restoration/Conservation ⁶	High	Moderate
<i>South Fork Salmon River</i>				
170602081501	Lake Creek	Restoration	High	Low

Table C-1
Conservation and Restoration Management Watersheds—Alternative B *(continued)*

Subwatershed Watershed Number	Subwatershed Watershed Name¹	Management Objective²	Subbasin Management Priority³	BLM Management Opportunities⁴
<i>Clearwater River</i>				
170603061001	Big Canyon Creek ⁷	Restoration	High	<u>Moderate</u> <u>Low</u>
170603061002				
170603061003				
170603061004				
170603061005				
170603061006				
170603061007				
170603061008				
170603061101	Little Canyon Creek ⁷	Restoration	High	<u>Moderate</u> <u>Low</u>
170603061102				
170603061502	Lolo Creek ⁷	Restoration	High	Moderate
170603061503				
170603061504				
170603061601				
<i>South Fork Clearwater River Subbasin</i>				
170603050403	South Fork Clearwater River– Face Drainages	Restoration	Moderate	Moderate
	Whiskey Creek	<u>Restoration</u>		
	Maurice Creek			
170603050801	Crooked River	Restoration	High	Low
170603050701	Red River	Restoration	High	Low
	Big Campbell Creek			
	Little Campbell Creek			
170603050601	Lower American River	Restoration	High	Moderate
	Buffalo Gulch			
170603050602	Elk Creek	Restoration	High	Moderate
	Big Elk Creek			
	Swale Creek			
	Monroe Creek			
	W. Fork Big Elk Creek			
	Little Elk Creek			
170603050605	Middle American River	Restoration	High	Moderate
	Kirks Fork Creek			
	Baboon Creek			
	Box Sing Creek			
	Queen Creek			
	Whitaker Creek			
	Telephone Creek			
170603050604	East Fork American River	Conservation ⁶	Moderate	Moderate
170603050603	Upper American River	Restoration	High	Moderate
	<u>Maggie Creek</u>			
	<i>Total Restoration Watersheds: <u>28-32</u></i>			
	<i>Total Conservation Watersheds: <u>36-4</u></i>			

Table C-2
Conservation and Restoration Management Watersheds—Alternative C

Subwatershed Watershed Number	Subwatershed Watershed Name¹	Management Objective²	Subbasin Management Priority³	BLM Management Opportunities⁴
<i>Lower Snake River Subbasin</i>				
170601030302	Captain John Creek Madden Creek S. Fork Captain John Creek	Restoration	Moderate	Moderate
170601030403	Corral Creek	Restoration	Low	High
170601030501	Snake River Face Drainages ⁵ Cottonwood Creek	Restoration	Low	Low
<i>Lower Salmon River Subbasin</i>				
170602090102	Salmon River Face Drainages ⁵ Wapshilla Creek	Restoration	Low	Low
170602090103	China Creek	Restoration	Moderate	Low
170602090201	Eagle Creek	Restoration	Moderate	Moderate
170602090202				
170602090301	Deer Creek	Restoration	Moderate	Low
170602091101	Slate Creek	Restoration	High	Low
170602091202	John Day Creek E. Fork John Day Creek M. Fork John Day Creek S. Fork John Day Creek	Restoration	High	Moderate
170602091303	Lake Creek	Restoration	Moderate	Low
170602091603	Partridge Creek	Restoration	Moderate	Low
170602091601	Elkhorn Creek	Restoration	Moderate	Low
170602091501	French Creek	Restoration	Moderate	Low
<i>Middle Salmon River</i>				
170602070101	Salmon River Face Drainages ⁵ Carey Creek	Restoration	Low	Low
170602070301	Salmon River Face Drainages ⁵ Bear Creek	Restoration	Low	Low
170602070305	California Creek Maxwell Creek	Restoration	Moderate	Low
<i>Little Salmon River</i>				
170602100103	Squaw Creek	Restoration	Moderate	Low
170602100101	Little Salmon R. Face Drain ⁵ Sheep Creek Hat Creek Denny Creek Lockwood Creek Rattlesnake Creek N. Fork Rattlesnake Creek Fall Creek	Restoration	Low	Low Low Moderate Low Low Low Low
170602100102	Elk Creek Little Elk Creek	Restoration	Low	Low
170602100601	Boulder Creek	Restoration	High	Low

Table C-2
Conservation and Restoration Management Watersheds—Alternative C *(continued)*

<u>Subwatershed Watershed Number</u>	<u>Subwatershed Watershed Name</u> ¹	<u>Management Objective</u> ²	<u>Subbasin Management Priority</u> ³	<u>BLM Management Opportunities</u> ⁴
170602100201 A	Little Salmon R. Face Drain ⁵			
	Trail Creek	Restoration	Low	Moderate
170602100301	Hazard Creek	Conservation ⁶	High	Moderate
170602100201B	Hard Creek	Conservation ⁶	High	Moderate
<i>South Fork Salmon River</i>				
170602081501	Lake Creek	Restoration	High	Low
<i>Clearwater River</i>				
170603061001	Big Canyon Creek	Restoration	High	Moderate
170603061002				
170603061003				
170603061004				
170603061005				
170603061006				
170603061007				
170603061008				
170603061101	Little Canyon Creek	Restoration	High	Moderate
170603061102				
170603061502	Lolo Creek	Restoration	High	Moderate
170603061503				
170603061504				
170603061601				
<i>South Fork Clearwater River Subbasin</i>				
170603050403	South Fork Clearwater River— Face Drainages	Restoration	Moderate	
	Whiskey Creek	Restoration	Moderate	High
	Maurice Creek		Moderate	High
170603050801	Crooked River	Restoration	High	Low
170603050701	Red River	Restoration	High	Low
	Big Campbell Creek			
	Little Campbell Creek			
170603050601	Lower American River	Restoration	High	Moderate
	Buffalo Gulch			
170603050602	Elk Creek	Restoration	High	Moderate
	Big Elk Creek			
	Swale Creek			
	Monroe Creek			
	W. Fork Big Elk Creek			
	Little Elk Creek			
170603050605	Middle American River	Restoration	High	Moderate
	Kirks Fork Creek			
	Box Sing Creek			
	Baboon Creek			
	Queen Creek			
	Whitaker Creek			
	Telephone Creek			

Table C-2
Conservation and Restoration Management Watersheds—Alternative C (*continued*)

<u>Subwatershed Watershed Number</u>	<u>Subwatershed Watershed Name</u> ¹	<u>Management Objective</u> ²	<u>Subbasin Management Priority</u> ³	<u>BLM Management Opportunities</u> ⁴
	East Fork American River	Conservation ⁶	Moderate	Moderate
	Upper American River	Restoration	High	Moderate
	<u>Maggie Creek</u>			
	<i>Total Restoration Watersheds: 3740</i>			
	<i>Total Conservation Watersheds: 3⁶</i>			

Table C-3
Conservation and Restoration Management Watersheds—Alternative D

<u>Subwatershed Watershed Number</u>	<u>Subwatershed Watershed Name</u> ¹	<u>Management Objective</u> ²	<u>Subbasin Management Priority</u> ³	<u>BLM Management Opportunities</u> ⁴
<i>Lower Snake River Subbasin</i>				
170601030302	Captain John Creek	Restoration	Moderate	Moderate
	<u>Madden Creek</u>			
	S. Fork Captain John Creek			
170601030403	Corral Creek	Restoration	Low	Moderate
<i>Lower Salmon River Subbasin</i>				
170602090103	China Creek	Restoration	Moderate	Low
170602090201	Eagle Creek	Restoration	Moderate	Moderate
170602090202				
170602090301	Deer Creek	Restoration	Moderate	Low
170602091101	Slate Creek	Restoration	High	Low
170602091202	John Day Creek	Restoration	High	Moderate
	E. Fork John Day Creek			
	M. Fork John Day Creek			
	S. Fork John Day Creek			
170602091303	Lake Creek	Restoration	Moderate	Low
170602091603	Partridge Creek	Restoration	Moderate	Low
170602091601	Elkhorn Creek	Restoration	Moderate	Low
170602091501	French Creek	Restoration	Moderate	Low
<i>Middle Salmon River</i>				
170602070305	California Creek	Restoration	Moderate	Low
	Maxwell Creek	Restoration	Moderate	Low
<i>Little Salmon River</i>				
170602100601	Boulder Creek	Restoration	High	Low
170602100201 ^A	Little Salmon R. Face Drain ⁻⁵			
	Trail Creek	Restoration	Moderate	Moderate
170602100301	Hazard Creek	<u>Restoration</u> <u>Conservation</u> ⁶	High	Moderate
170602100201B	Hard Creek	<u>Restoration</u> <u>Conservation</u> ⁶	High	Moderate

Table C-3
Conservation and Restoration Management Watersheds—Alternative D *(continued)*

<u>Subwatershed Watershed Number</u>	<u>Subwatershed Watershed Name</u> ¹	<u>Management Objective</u> ²	<u>Subbasin Management Priority</u> ³	<u>BLM Management Opportunities</u> ⁴
<i>South Fork Salmon River</i>				
170602081501	Lake Creek	Restoration	High	Low
<i>Clearwater River</i>				
170603061502	Lolo Creek	Restoration	High	Moderate
170603061503				
170603061504				
170603061601				
<i>South Fork Clearwater River Subbasin</i>				
170603050403	South Fork Clearwater River— Face Drainages	Restoration	Moderate	Moderate
	Whiskey Creek	Restoration	Moderate	Moderate
	Maurice Creek			
170603050801	Crooked River	Restoration	High	Low
170603050701	Red River	Restoration	High	Low
	Big Campbell Creek			
	Little Campbell Creek			
170603050601	Lower American River	Restoration	High	Moderate
	Buffalo Gulch			
170603050602	Elk Creek	Restoration	High	Moderate
	Big Elk Creek			
	Swale Creek			
	Monroe Creek			
	W. Fork Big Elk Creek			
	Little Elk Creek			
170603050605	Middle American River	Restoration	High	Moderate
	Kirks Fork Creek			
	Baboon Creek			
	Box Sing Creek			
	Queen Creek			
	Whitaker Creek			
	Telephone Creek			
170603050604	East Fork American River	Conservation ⁶	Moderate	Moderate
170603050603	Upper American River	Restoration	High	Moderate
	Maggie Creek			
	<i>Total Restoration Watersheds: 2427</i>			
	<i>Total Conservation Watersheds: 34</i>			

¹Watersheds will generally include a minimum of 50 percent BLM, Forest Service, or Idaho Department of Fish and Game ownership and will contain a minimum of 500 acres of BLM lands or have more than ten miles of fish-bearing stream flowing across BLM lands within a 5th code hydrologic unit code (HUC). Cooperative planning and management would be encouraged with partners to identify objectives and desired conditions and appropriate management actions to achieve these. The RMP will allow additions, deletions, or modifications (subwatersheds, desired conditions, partners, objectives) of prioritized conservation and restoration subwatersheds based on new information and partnership coordination.

²Do not undertake management activities that would degrade good quality habitat in conservation subwatersheds. Do not undertake management activities that would retard attainment of trends to improve aquatic habitats in restoration

subwatersheds. Short-term adverse effects are acceptable if they will not preclude attainment of long-term improvement to aquatic habitats.

³Watershed management priority was determined at a subbasin level using the following criteria: federally listed and BLM sensitive aquatic species that use the drainage for spawning and rearing habitat; aquatic habitat production potential for federally listed and BLM sensitive species; amount of fish-bearing habitat within the watershed; and drainage for focal or core habitats for federally listed and BLM sensitive species within the subbasin. It is acknowledged that specific subwatersheds (within the watershed) may warrant a different management prioritization (no rating identified) based on the above.

⁴BLM management opportunities are based primarily on the following prioritized factors: BLM ownership within the watershed; miles of fish-bearing streams crossing BLM lands within the watershed; fish production potential for streams flowing across BLM lands; logistic access within the watershed; percentage of other public lands within the watershed, and potential for restoration activities. It is acknowledged that specific subwatersheds (within the watershed) may warrant a different management prioritization (no rating identified) based on the above.

⁵Restoration and/or conservation watersheds within this 6th code HUC only is applicable to listed 7th code HUCs.

⁶Does not fully meet the Conservation Watershed criteria, however, many of the watershed and aquatic processes and functions are in proper functioning condition. Conservation Watersheds may have areas with limited land uses while maintaining natural processes.

⁷Contains several 6th code HUCS, however, combined subwatersheds counted as one composite watershed.

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