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SIXES RIVER RECREATION AREA MANAGEMENT PLAN
ENVIRONMENTAL ASSESSMENT
EA: OR128-99-13

U.S. Department of Interior
Bureau of Land Management
Coos Bay District
1300 Airport Lane
North Bend, OR 97459

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Summary

This Environmental Assessment (EA) analyzes environmental consequences of the proposed Sixes River Special Recreation Management Area (SRMA) Recreation Area Management Plan (RAMP) and alternative management programs for the SRMA. The means of mitigating impacts resulting from proposed facility development and recreation uses are also presented in this EA.

Some actions proposed in the RAMP require development of detailed project plans specifying design, lay-out, and placement of facilities prior to their implementation. Additional site-specific environmental analyses will be prepared for these project plans prior to implementation of individual development projects in order to comply fully with the requirements of the National Environmental Policy Act.

Chapter 1.0 Purpose of and Need for Action

1.1 Introduction

The Myrtlewood Resource Area of the Coos Bay District Bureau of Land Management (BLM), as directed, proposes the Sixes River SRMA RAMP to provide guidance for future management of recreation uses and recreation resources on BLM-administered land within that area designated as the Sixes River SRMA (BLM lands along the Sixes River corridor between and including Edson Creek and Sixes River Recreation Sites).

The purpose of this EA is to analyze the environmental consequences of No Action, the Proposed Action, and reasonable Alternatives to the proposed Sixes River SRMA RAMP. It will also identify appropriate mitigation measures, and document the decision-making process. Environmental consequences are based on specialist reports and additional analysis documents contained in the analysis file, which is reasonably available for inspection within the time allowed for comment.

1.2 Applicable Resource Management Plan

The direction to prepare a management plan for Sixes River SRMA comes directly from and is tiered to the *Coos Bay District Resource Management Plan* (RMP), *Environmental Impact Statement* (EIS), and its *Record of Decision* (ROD) (BLM, 1995). Moreover, it is the Bureau's policy (BLM Manual 8322.06) to prepare RAMPs for all SRMAs.

1.3 Relevant Watershed Analysis

In 1997, the United States Forest Service (USFS) completed a watershed analysis for the Sixes River Watershed. Several objectives and management actions in the proposed plan, which this EA analyzes, complement *The Sixes River Watershed Analysis* and are intended to be in conformance with the Aquatic conservation Strategy (ACS) objectives described in the *Standards and Guidelines for Management*

of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (Northwest Forest Plan) (Interagency, 1994). The *Sixes River Watershed Analysis* includes comments specific to patterns of recreation use along Sixes River, and particular activities such as recreational gold mining, fishing, camping, and growing trends in other dispersed activities (USFS, 1997, pp. S-8 - S-17). There were no recommendations made regarding fishing, but the benefits to employment were noted, as well as limited access to the river due to private property ownership (USFS, 1997, page S-8). The watershed analysis indicates that current and future developed recreation is limited by terrain, topography, and land management designation (USFS, 1997, page S-9). Developed recreation opportunities, which are provided at Edson Creek and Sixes River Recreation Sites, are unlikely to be replaced elsewhere in the watershed. The watershed analysis projects an expected increase in demand for biking, hiking and interpretation (USFS, 1997, page S-10). Recreation use including guided sport fishing was reported to have increased in the watershed analysis and is expected to continue to increase (USFS, 1997, page S-16). The *Sixes River Watershed Analysis* (USFS, 1997) is hereby incorporated in this EA by reference.

1.4 Decision Needed

The decision(s) to be made are:

1) Which set of actions (alternatives, including the proposed action and no action alternatives, or a mixed array of management actions from the set of alternatives) will the BLM adopt as the Recreation Management Program to be implemented under the Sixes River SRMA RAMP?

2) Which recommendations, suggested design features, and/or mitigation measures will accompany the selected set of actions?

3)Determine consistency with Aquatic Conservation Strategy (ACS) objectives, as described (page B-10) in the Northwest Forest Plan. An evaluation of the proposed management activity considering ACS objectives is provided in the appendices (Appendix B) of this EA. It includes a "Range of Natural Variability" description of the important physical and biological components of the Sixes River Watershed.

The decision(s) are directly related to: the scope of the RAMP actions and alternative actions, and the environmental consequences of the No Action, Proposed Action, and any alternatives. The proposed RAMP actions were limited to management actions that both resolved the planning issues and enhanced recreational opportunities presented by the area. The alternatives generally would not include elimination of recreation use or the removal without replacement of existing facilities and recreation opportunities.

1.5 Relevant Issues

Summary of Scoping

The scoping process for Sixes River SRMA began with BLM Recreation Staff identifying problems related to management and visitation at Edson Creek and Sixes River Recreation Sites. An interdisciplinary team of resource specialists was formed to identify potential and substantive environmental issues. Members of this team (which changed over time) were involved in the early stages of planning as well as preparing this Environmental Assessment.

The public was invited to offer input to the issues (within the SRMA) and objectives this plan addresses, either by public meeting, letter, phone, e-mail, or fax. An announcement was mailed in April of 1998 to adjacent landowners, local governmental bodies, civic groups, Chamber of Commerce, and others who expressed an interest in participating in the planning process. Enclosed with the announcement was a list of broad recreation program goals and objectives, a list of identified management problems and known user conflicts at the recreation sites, and a schedule of public meetings. Public meetings were announced in the *Port Orford Today*, the *Port Orford Newspaper*, and *The World*, a regional newspaper published in Coos Bay, Oregon. Meetings were held at Port Orford, Bandon, and North Bend in April of 1998. The public is also invited to review this draft plan and Environmental Assessment.

Issues Identified

Most of the issues raised in the scoping process were combined to form the issues described in Part 1 under the *Major Issues* section of the Sixes River SRMA RAMP. The remaining issues were considered but not analyzed for reasons described under *Issues Considered but Eliminated from Detailed Study* in Appendix C.

Key Issues

The issues below were identified as key issues; the ID Team developed alternative actions to the No Action and Proposed Action alternatives for each of these issues. Indicators (for each issue) are described by resource as related to each alternative in Table 2: Summary of Consequences.

<u>Resource Protection</u> (Issue 2 in RAMP)
What steps should BLM take to keep resource impacts to an acceptable level?

The Sixes River Special Recreation Management Area is used year-round for many different recreational uses. These uses, and development associated with managing for these uses, may affect soils, Riparian Reserve vegetation, fish and wildlife habitats, cultural, and other resources.

<u>Facilities and Development</u> (Issue 5 in RAMP)
What facilities and facility/site improvements should BLM provide to accommodate visitor needs and protect resources?

Given the frequent and reoccurring public use the recreation sites receive, and limited resources available to manage the recreation use, the provision of facilities/site improvements would help to manage these uses in a manner that promotes visitor health and safety and protects the resource base.

Recreation Resource Access (Issue 6 in RAMP)
What level and type of access should BLM provide at the recreation sites to accommodate visitor needs and protect resources?

Traditional, reoccurring, and a potentially increasing demand for visitor access to common use or primary interest areas within recreation sites may impact some resources. Accordingly, it is important to establish the level and type of access that BLM will permit at the existing developed recreation sites in order to limit such impacts.

1.6 Necessary Permits / State and County Conformance

Permits will not be necessary for the Sixes River SRMA RAMP itself. Federal, State, or County permits necessary to implement specific projects will be obtained by BLM during subsequent project planning, prior to project development.

Sixes River Recreation Site is described as an existing recreation site in an earlier plan (pages 47-48 of the Coos Bay District RMP), which was found to be consistent with state and county planning. Edson Creek Recreation Site, formerly managed as Edson Creek County Park, was acquired after the completion of the District RMP. However, it is managed in accordance with the conditions of the donation Quit Claim Deed from Curry County and for the purpose for which it was acquired, and as directed in the RMP (pg. 62) for managing newly-acquired land. The Sixes River SRMA RAMP is in compliance with the Curry County zoning designations and, therefore, the Oregon Coastal Zone Management Act.

Chapter 2.0 Alternatives Including the Proposed Action

This chapter describes the alternatives. It also summarizes the environmental consequences of the alternatives including the proposed action. Aside from the No Action alternative, the management actions described in each alternative are intended to resolve issues identified by the public and BLM resource specialists.

2.1 Description of Alternatives Including the Proposed Action

No Action

If this alternative is selected, it would involve no changes to the current level of recreation resource management in the Sixes planning area. The BLM would not implement the proposed Sixes River Recreation Area Management Plan (RAMP). Planning issues identified by the public and BLM resource specialists in the proposed Sixes River RAMP, Part 1- Major Issues, would remain unresolved. Multiple recreation and resource protection opportunities would be compromised and potentially lost in the long-term. Social and resource concerns would likely escalate to higher-risk status until addressed by the BLM in a more reactive manner.

Proposed Action

If this alternative is selected, it would involve implementing the Sixes River RAMP as proposed. The actions would guide management of the Recreation Sites within the SRMA as well as the design of specific project plans. The proposed management actions are intended to resolve issues identified by the public and BLM resource specialists. At Edson Creek Recreation Site, this alternative would provide: some opportunities for year-round camping, 4-8 walk-in only tent campsites (in addition to the existing camping opportunities), management of the user-defined day-use areas (existing opportunities), and a hardened boat ramp/parking surface. At Sixes Recreation Site, this alternative would provide an additional developed day-use opportunity (with vehicle access) and access routes/footpaths would be connected. The remaining scattered parcels of BLM-administered land within the SRMA and planning area boundary would be managed and maintained according to the existing management and direction provided in the District RMP and Northwest Forest Plan. This alternative is presented in detail within the Sixes River RAMP, Part 3 - Management Program. There are 46 separate management actions that comprise the Management Program under the following subheadings:

Safety	Facilities and Development
Resource Protection	Recreation Resource Access
Recreation Opportunities	Cost Management
Visitor Services	Site Supervision and Use Monitoring

The key actions in this alternative are displayed in Table 1: Range of Alternatives and Alternatives Eliminated From Further Consideration.

Alternative 1

If this alternative is selected, it would involve implementing alternative actions, identified by the Interdisciplinary Planning Team, for 10 of the 46 proposed management actions. The remaining 36 management actions would be implemented as described under the Proposed Action. The actions would guide management of the Recreation Sites within the SRMA as well as the design of specific project plans. At Edson Creek Recreation Site, this alternative would provide: no opportunities for year-round camping (limited by season), 4-8 walk-in only tent campsites (in place of some of the existing camping opportunities), management of user-defined day-use areas (limit opportunities by eliminating some existing access), and an improved boat ramp surface. At Sixes Recreation Site, this alternative would provide an additional developed day use opportunity (with vehicle access) and access routes would be point of access only. The remaining scattered parcels of BLM-administered land within the SRMA and planning area boundary would be managed and maintained according to the existing management and direction provided in the District RMP and Northwest Forest Plan. The key actions in this alternative are displayed in Table 1: Range of Alternatives and Alternatives Eliminated From Further Consideration.

Alternative 2

If this alternative is selected, it would involve implementing alternative actions, identified by the ID Team for 2 of the 46 proposed management actions. The remaining 44 management actions would be implemented as described under the Proposed Action. The actions would guide management of the Recreation Sites within the SRMA, as well as the design of specific project plans. At Edson Creek Recreation Site, this alternative would provide: no management of user-defined day-use areas (limit opportunities by eliminating some existing access). At Sixes Recreation Site, this alternative would provide an additional managed day-use opportunity (pedestrian access only). The key actions in this alternative are displayed in Table 1: Range of Alternatives and Alternatives Eliminated From Further Consideration.

2.2 Range of Alternatives and Alternatives Eliminated

Table 1, on the following pages, displays the range of alternatives and alternatives considered but not analyzed as identified by the ID team. The table represents a reasonable range of alternatives to resolve the key issues identified for this EA. Some alternatives emphasize more recreation opportunities and access than others, while providing for physical and biological resource protection. A brief description is provided in parenthesis for each “alternative considered but not analyzed” to explain why it was eliminated.

Table 1: Range of Alternatives and Alternatives Eliminated From Further Consideration

Key Actions	No Action Existing Condition	Proposed Action	Alternative 1	Alternative 2	Alternative(s) Considered but not Analyzed
2-1	No provision would be made for supplying/managing firewood or prohibiting firewood collection in the recreation sites.	Prohibit wood gathering within recreation site boundaries and provide or contract with concessionaire to provide pre-cut firewood sources.	Prohibit wood gathering within recreation site boundaries and provide sources of firewood within a designated collection boundary.	Same as Proposed Action	
2-2 & 2-3	Continue to allow unmanaged vehicle access onto the open grassy area at Edson for camping and day use during the wet season.	Harden parking pads, using grate or matted material (concrete and cable), for 6-15 sites and seasonally close (set date) the remaining unhardened sites.	Seasonally close (set date) the entire campground and provide no site hardening.	Same as Proposed Action	1) Open year round and harden all sites (not economically feasible and would not be necessary to meet demand) 2) Dynamic wet seasonal closure and no site hardening (unpredictable closures, would not meet visitor expectations)

5-4	Continue to provide opportunities/experiences for vehicle, group, and social camping at Edson without providing opportunities/experiences for 4-8 walk-in tent campsites.	Develop project plan for 4-8 walk-in tent campsites in the undeveloped east end of the Edson recreation withdrawal. Install artificial habitat structures to alleviate potential wildlife habitat loss.	Develop project plan to convert a portion or all of an existing site/area within Edson recreation reserve into 4-8 walk-in tent campsites.	Same as Proposed Action	1) Develop project plan for 4-8 walk-in tent campsites outside of planning area. (opportunities for this type of experience would not be met within planning area) 2) Develop project plan for 4-8 walk-in tent campsites at other location within planning area, but outside Riparian Reserve. (suitable sites do not exist that fit this criteria)
Key Actions	**No Action Existing Condition**	**Proposed Action**	**Alternative 1**	**Alternative 2**	**Alternative(s) Considered but not Analyzed**
5-5	No improvements to the boat ramp at Edson. Boat ingress/egress would continue to be difficult due to rutted-out ramp.	Harden (pave or Polypave) ramp, parking, and entrance road surface.	Install concrete and cable matting system at or above high water mark.	Same as Proposed Action	1) Provide deadman/winch point (limits access and continues to rut/erode) 2) Develop boat ramp on/at another site (generally, not supported by local community)

5-7	No improvements to or regulation of access/entrance to secondary day use at Edson which is steep, rutted, and vegetation blocks line of site around corner of main road. Vehicle and pedestrian access to river would continue to be user defined.	Manage for day use at this site by hardening existing vehicle access/entrance, removing the vegetation blocking line of site, and defining foot path to river.	Manage for day use at this site by defining foot path to river, but eliminate current parking and barricade vehicle access.	Do not manage for day use. Allow public access, but do not provide or develop facilities. Barricade vehicle access.	Eliminate use by installing a barrier and posting signs to close area from all use /access and allowing area to recover (would not meet historical use, would eliminate recreation use/multiple use opportunities in this area, and would likely shift access and use elsewhere on the river)
Key Actions	**No Action Existing Condition**	**Proposed Action**	**Alternative 1**	**Alternative 2**	**Alternative(s) Considered but not Analyzed**

5-8	West end of Sixes Recreation Withdrawal would continue to be undeveloped. The existing access road would continue to be cabled off and not maintained for public access.	Manage west end of Sixes for day use by installing a gate with a pedestrian bypass, upgrading existing road for public vehicle access, developing parking, providing picnic tables, installing vault or portable toilet, and maintaining lowest portion of road for pedestrian access. Install artificial habitat structures to alleviate potential wildlife habitat loss.	Manage for day use by installing a gate with a pedestrian bypass, upgrading/maintaining existing road for administrative vehicle access and public foot traffic only, providing picnic tables, installing vault or portable toilet, and maintaining lowest portion of road for pedestrian access. Install artificial habitat structures to alleviate potential wildlife habitat loss.	Manage for day use by installing a barrier with a pedestrian bypass, maintaining river access (existing road) for foot traffic, provide for parking outside of this area, provide facilities that can be packed in, promote packing out waste. Install artificial habitat structures to alleviate potential wildlife habitat loss.	Eliminate use by installing a barrier to close area from all use/access and allowing area to recover (would not meet historical use and would eliminate recreation use/multiple use opportunities in this area)
6-4	No improvements to the existing low-water crossing at Edson. The crossing would continue to be too steep for some vehicles to access. Potential users would continue to be notified of the limitations in advance of their arrival. The potential for vehicle and resource damage would continue to exist, because enforcement is not practicable.	Manage for a broader range of vehicle access by modifying the approaches above the bank full mark.	Manage for a broader range of vehicle access by designing and replacing the existing crossing structure with a bridge or drift.	Same as Proposed Action	Modify approaches including elevations below bank full mark. (Widening stream cross section adversely affects hydrologic and fisheries resources)
Key Actions	**No Action Existing Condition**	**Proposed Action**	**Alternative 1**	**Alternative 2**	**Alternative(s) Considered but not Analyzed**

6-5	Access at Sixes would continue to be user defined from the existing, developed day-use area to the river. The existing random access routes would continue to promote erosion problems and bank instability.	Manage river access route (foot path) at day-use site to the bank full mark by designating an access route and installing steps (terraced foot path) where necessary. Decommission non-designated routes.	Manage river access route (foot path) at day-use site to the bank full mark by designating an access route, but make no improvements. Decommission non-designated routes.	Same as Proposed Action
6-7	The existing access routes (foot paths) to and along the river at Sixes would continue to be user defined, not continuous, and not maintained.	Design and construct a managed access route (foot path) above the high water mark, connecting existing pathways where appropriate, from existing day-use area to campsite 10. Maintain access from sites 16 and 13. Decommission non-designated routes.	Manage point of access routes only. Do not connect existing pathways from existing day use area to campsite 10 and discourage user defined access routes.	Same as Proposed Action

2.3 Summary of the Environmental Effects of Alternatives

Table 2 below summarizes the environmental consequences of each alternative by issue.

Table 2: Summary of Consequences

Issue 2: Resource Protection				
Indicators	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**
Soils (Issue 2)				
Organic Matter and Nutrient Cycling	Continue to be Limited Throughout Riparian Reserve (2-1)	Retains (2-1)	Continue to be Limited Within Designated Boundary (2-1)	Same as Proposed Action
Erosion (Sediment Delivery/Turbidity)	Continues Period-ically (2-2&3)	Relieves (2-2&3)	Relieves in Wet Season (2-2&3)	Same as Proposed Action
Chronic Disturbance to Soil	Occurs (2-2&3)	Relieves (2-2&3)	Relieves in Wet Season (2-2&3)	Same as Proposed Action
Wildlife (Issue 2)				
Habitat	Continue to Decline (2-1) Limits Recovery (2-2)	Improves Condition (2-1) Limits Recovery (2-2&3)	Limits Recovery Same as Proposed Action	Same as Proposed Action
Biotic Richness	Maintains Declining Condition	Simplifies (2-2&3) Improves (2-1)	Same as Proposed Action	Same as Proposed Action
Fisheries (Issue 2)				
Riparian Habitat (Structural Diversity of Plant Community, Micro-climate, Nutrient Cycling, and Large Woody Material)	Reduces (2-1)	Passive Recovery (2-1)	Passive Recovery (2-1)	Same as Proposed Action
Chronic Distur-bance to Floodplain and River/Creek Bed and Banks	Occurs (2-2&3)	Reduces (2-2&3)	Reduces (2-2&3)	Same as Proposed Action

Vegetation (Issue 2) Abundance & Diversity	Decreases (2-1)	Maintains (2-1)	Same as Proposed Action	Same as Proposed Action
Indicators	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**
Watershed (Issue 2) Bank Stability and Rivercourse Alignment	Continues Potential for Interruption (2-1)	Maintains (2-1)	Same as Proposed Action	Same as Proposed Action
Water Quality	Continues Potential to Decrease (2-2&3)	Maintains (2-2&3)	Maintains (2-2&3)	Same as Proposed Action
Sediment Delivery/Turbidity	Continues to Occur (2-2&3)	May Reduce (2-2&3)	May Reduce (2-2&3)	May Reduce (2-2&3)
Recreation (Issue 2) Opportunities/Experiences Over Time	Unlikely to Provide More Than Existing Over Long-Term	Provide/Improve Over Long-Term (2-1,2,3)	Improve Over Long-Term (2-1,2,3)	Same as Proposed Action
Access Over Time	Previously Defined Vehicle and Pedestrian Exists	Increases Maintenance and Management of Vehicle and Pedestrian (2-2,3,)	Decreases or Eliminates Existing Vehicle and Pedestrian(2-2&3)	Increases (2-2,3)
Season of Use	Year Round With Some Seasonal Closure	Fewer Year Round and Some Closures (2-2&3)	Fewest Year Round and Most Closures (2-2&3)	Same as Proposed Action

Issue 5: Facilities and Development				
Indicators	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**
Cultural (Issue 5) Known Resources	Continues to Degrade (5-9)	Protect and Repair (5-9)	Same as Proposed Action	Same as Proposed Action

Soils (Issue 5) Erosion (Sediment Delivery/Turbidity) Compaction and Displacement	Continues Periodically (5-4&5) Maintains Condition	Overall Decrease (5-4, 5, 7, 8) Additional from New Construction (5-4&8)	Same as Proposed Action Lower than Proposed Action (5-4&8)	Overall Decrease (5-4&5) Maintains Condition (5-8)
Indicators	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**
Wildlife (Issue 5) Habitat Biotic Richness Survey & Manage Resources T&E Resources	Maintains Condition Maintains Condition Retains May Affect, Likely to Adversely Affect (5-8)	Declines (5-7&8) Declines (5-4,7,8) Decreases (5-8) May Affect, Likely to Adversely Affect (5-5&8)	Same as Proposed Action Same as Proposed Action Same as Proposed Action Same as Proposed Action	Same as Proposed Action Same as Proposed Action Same as Proposed Action Same as Proposed Action

Fisheries (Issue 5) Riparian Habitat (Structural Diversity of Plant Community, Micro-climate, Nutrient Cycling, and LWD)	Maintains Condition	Reduces From New Development (5-4,7,8)	Passive Recovery (5-4&7) Reduces From New Development (5-4,7,8)	Passive Recovery (5-7) Reduces From New Development (5-4)
Aquatic and Riparian-Dependant Species	Maintains Condition	May Increase Trampling and Disturbance (5-4,7,8)	May Increase Trampling and Disturbance (5-7&8)	Same as Proposed Action
Sediment Delivery/Turbidity to Fisheries and Aquatic Habitat	Continues Potential to Occur (5-5)	Reduces (5-5)	Reduces Potential (5-5&7)	Reduces (5-5&7)
T&E Resources	Maintains Condition	May Affect, Likely to Adversely Affect (5-4&8)	May Affect, Likely to Adversely Affect (5-8)	Same as Proposed Action
Vegetation (Issue 5) Non-native and Native Species	Himilayan black-berry Spreading Through Native Establishment (5-4,5,8)	Reduce Himilayan blackberry (5-5) Minimal Distur-bance to Native (5-4&8)	No More Than Proposed Action	No More Than Proposed Action
Shrubs & Herbaceous Species	Maintains Condition	Minimal Loss (5-4)	No More Than Proposed Action	No More Than Proposed Action
Understory Microclimate for Vascular Plant Species	Maintains Condition	May Change (5-4)	No More Than Proposed Action	No More Than Proposed Action
Indicators	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**
Watershed (Issue 5) Water Quality	Continues Potential to Decrease (5-7&8)	Maintains (5-8)	Maintains	Potential to Decrease (5-8)
Sediment Delivery/Turbidity	Continues to Occur (5-5&8)	May Reduce (5-4,5,8)	May Reduce (5-4,5,8)	May Reduce (5-5&8)
Stream Temperature	N/A	May Increase (5-7&8)	N/A	N/A

Recreation (Issue 5) Opportunities/Experiences Over Time	Unlikely to Provide More Than Existing Over Long-Term	Provide/Improve Over Long-Term (5-4,5,7,8)	Provide/Improve Some Over Long-Term (5-4,5,7,8)	Provide/Improve Fewer Over Long-Term (5-4, 5,8)
Outdoor Recreation Trends	Growth Unchecked	Growth Considered and Supported (5-4&8)	Growth Considered (5-8) May be Displaced (5-4)	Growth Considered (5-8)
Access Over Time	Previously Defined Vehicle and Pedestrian Exists	Increases Maintenance and Management of Vehicle and Pedestrian (5-5,7,8)	Increases (5-5&8) Decreases or Eliminates Existing Vehicle and Pedestrian (5-7)	Increases (5-5,8) Decreases or Eliminates Existing Vehicle and Pedestrian (5-7)

Issue 6: Recreation Resource Access				
Indicators	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**
Soils (Issue 6) Erosion (Sediment Delivery/Turbidity)	Maintains Condition	Overall Decrease (6-5&7)	Same as Proposed Action	Overall Decrease (6-5&7)
Wildlife (Issue 6) Habitat	Maintains Condition	Maintains Condition (6-4) Declines (6-6)	Same as Proposed Action	Same as Proposed Action
Biotic Richness	Maintains Condition	Simplifies (6-6) Improves (6-4)	Same as Proposed Action	Same as Proposed Action
Indicators	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**

Fisheries (Issue 6) Riparian Habitat (Structural Diversity of Plant Community, Micro-climate, Nutrient Cycling, and Large Woody Material)	Maintains Condition	Passive Recovery (6-5&7) Reduces From New Development (6-7)	Passive Recovery (6-5&7)	Passive Recovery (6-5&7) Reduces From New Development (6-7)
Aquatic and Riparian-Dependant Species	Likely Trampling and Disturbance (6-5&7)	Channels Trampling and Disturbance (6-5&7)	Channels Trampling and Disturbance (6-5&7)	Same as Proposed Action
Sediment Delivery/Turbidity to Fisheries and Aquatic Habitat	Continues Potential to Occur (6-5&7)	May Increase (6-4)	Decreases Potential to Occur (6-4)	May Increase (6-4)
Habitat for Juvenile Salmonids	Continues Likely Vehicle-related Disturbance (6-4)	Same as No Action	Likely to Restore Habitat and/or Reduces Vehicle-related Disturbance (6-4)	Same as No Action
Vegetation (Issue 6) Pink Fawn Lily	Continues Potential for Damage (6-7)	Same as No Action	Same as No Action	Same as No Action
Watershed (Issue 6) Sediment Delivery/Turbidity	Continues to Occur (6-5&7)	May Reduce (6-5&7)	May Reduce (6-5&7)	Same as Proposed Action
Recreation (Issue 6) Opportunities/Experiences Over Time	Unlikely to Provide More Than Existing Over Long-Term	Provide/Improve Over Long-Term (6-4,5,7)	Provide Over Long-Term (6-4,5,7)	Same as Proposed Action
Access Over Time	Previously Defined Vehicle and Pedestrian Exists	Increases Maintenance and Management of Vehicle and Pedestrian (6-4,5,7)	Increases (6-4) Decreases or Eliminates Existing Vehicle and Pedestrian (6-5&7)	Increases (6-4,5,7)

Chapter 3.0 Affected Environment

This section describes the environmental components that may be affected by the Alternatives being analyzed. This section does not address the environmental consequences, but rather acts as the baseline for comparisons in Chapter 4.0 - Environmental Consequences.

The affected environment for the EA is described in detail in Part 1 under the Physical and Biological Resources in the Management Area section of the Sixes River SRMA RAMP.

Chapter 4.0 Environmental Consequences

This section describes the scientific and analytical basis for the comparison of the Proposed Action (proposed Sixes River SRMA RAMP), alternative management programs for the SRMA, and the probable consequences as they relate to the alternatives. The means of mitigating impacts resulting from proposed facility development and recreation uses are also presented in this section.

Some of the proposed actions are too large in scale to be covered fully in this EA. In addition, many of the proposed actions require additional project or site-specific planning to determine actual on-the-ground detail. Consequently, separate EAs will be prepared to analyze these actions as project plans are developed. Appendix D-Table of Proposed Actions (generated by the interdisciplinary team) displays which proposed actions: were identified as having impacts to the human environment, require separate project plans, require other National Environmental Policy Act documentation, or are fully analyzed in this Environmental Assessment.

4.1 Impacts on The Critical Elements of the Human Environment

The environmental consequences to critical elements of the human environment are summarized below in Table 3.

Table 3: Summary of Critical Elements of the Human Environment

Critical Element of the Human Environment	Applicable to the Project Area	Affected by No Action	Affected by the Proposed Action	Affected by Alternative 1	Affected by Alternative 2
Air Quality	Yes	No	No	No	No
Areas of Critical Environmental Concern	No	N/A	N/A	N/A	N/A
? Cultural Resources	Yes	Yes	Yes	Yes	Yes
Farm Lands, Prime or Unique	No	N/A	N/A	N/A	N/A

Flood Plain	Yes	Yes	Yes	Yes	Yes
Native American Religious Concerns	No	N/A	N/A	N/A	N/A
? Solid/hazardous Waste	No	N/A	N/A	N/A	N/A
? Threatened & Endangered Species (Fish and Wildlife)	Yes	Yes	Yes	Yes	Yes
? Threatened & Endangered Species (Botanical)	No	N/A	N/A	N/A	N/A
Water Quality	Yes	Yes	Yes	Yes	Yes
Wetlands and Riparian Zones	Yes	Yes	Yes	Yes	Yes
Wild and Scenic Rivers	No	N/A	N/A	N/A	N/A
Wilderness Values	No	N/A	N/A	N/A	N/A
? Noxious Weeds	Yes	Yes	Yes	Yes	Yes
? Port Orford Cedar	Yes	Yes	Yes	Yes	Yes
? Environmental Justice	Yes	No	No	No	No
? Aquatic Conservation Strategy Objectives	Yes	Yes	Yes	Yes	Yes

? Resource specialists' input, located in the analysis file, indicates either an impact or no impact to these critical elements of the human environment from one or more alternatives including the proposed action.

? An ID Team evaluation, located in the appendices of this EA, indicates the level of effects from one or more alternatives including the proposed action.

Air Quality and Environmental Justice are not affected by any alternative including the proposed action.

4.2 Effects on Cultural/Historical Resources

The Cultural/Historical Resource Specialist report is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Samuels, 2000).

No Action

The No Action alternative has direct, indirect, and cumulative effects on cultural/historical resources. This alternative would allow the masonry sluice box at Sixes River campground to continue degrading.

Proposed Action

The Proposed Action would have direct, indirect, and cumulative effects on cultural/historical resources.

Action 5-9 (masonry sluice box: interpretation, protection and repair) would directly impact (interpret, protect, and repair) a known cultural resource at Sixes River campground. Some actions (4-8 through 4-10, 5-4 through 5-8, and 6-5 through 6-7) with impacts to the human environment could potentially have effects (loss of archaeological information) on unknown or undiscovered cultural resources. A field visit during project layout or initial work would be needed to provide cultural clearance. The remaining actions with impacts to the human environment should not have any effect on cultural resources; no further cultural resource clearance would be needed.

Alternative 1

Alternative 1 would have direct, indirect, and cumulative effects on cultural/historical resources. Potential effects of this alternative are the same as described under the Proposed Action.

Alternative 2

Alternative 2 would have direct, indirect, and cumulative effects on cultural/historical resources. Potential effects of this alternative are the same as described under the Proposed Action.

Recommendation (all alternatives):

? If any potential cultural resources are encountered during the course of project or other actions, all work in the vicinity should stop and the District Archeologist must be notified at once.

4.3 Effects on Soils

The Soils Resource Specialist report is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Maziasz, 2000).

No Action

The No-action alternative has direct, indirect, and cumulative impacts to soil resources. The Riparian Reserves in the analysis area contain a limited amount of woody debris. Fuel-wood gathering in these areas would limit the amount of organic matter and hinder the nutrient cycling process. The disruption of this process would limit the nutrients in the soil that are essential for adequate plant growth. All-season camping at Edson would result in extended periods of soil disturbance with increases in surface runoff, erosion, and sediment delivery potential from the floodplain. In addition to camping use at Edson, increases in the potential for surface runoff, erosion, and sediment delivery exist from the following: steep slopes lacking vegetation in the undeveloped east end of the Edson Recreation Site, the Edson boat ramp, the secondary day-use access road at Edson, the lower portion of the road in the west end of the Sixes Recreational Site, and the access routes and foot path to the river at Sixes Recreation Site. Periodic erosion from the sites listed above would be considered negligible when compared individually to the inherently high background levels. However, the combination of erosion from all of the sites may result in increased sediment delivery and higher turbidity levels on the Sixes River. For more details see the Soils report in the Analysis File.

Proposed Action

The Proposed Action alternative would have direct, indirect, and cumulative impacts to soil resources.

Providing pre-cut firewood would decrease the disturbance to the soil/humus and indirectly effect nutrient cycling and the accumulation of organic matter through the retention of coarse woody debris. Retaining course woody debris for nutrient cycling and organic matter buildup in the long term may improve the soil chemical and physical properties within the sites. Providing rocked parking pads in the Edson camp sites and seasonal closures for the unhardened sites would relieve the chronic soil disturbance from parking and camping problems. Construction activity in the development of the east end of Edson Recreation Site and the west end of the Sixes Recreation Site would result in soil displacement, disturbance and compaction. In the west end of the Sixes Recreation Site, upgrading the existing road for safe public access and creating the parking area would have the greatest impact on the soil resource by widening the road and constructing a ditch-line which removes the vegetative covering. Official management of areas for day-use (i.e. West end of the Sixes Recreation Site) would likely result in an increased level of hazard tree management. Indirect impacts on the soil resources from hazard tree management include bank instability, impaired nutrient cycling, and accelerated erosion. The following actions may result in a decreased potential for surface runoff, erosion, and sediment delivery: providing rocked parking pads in the Edson Recreation Site, seasonal closures in the Edson Recreation Site, managing the east end of the Edson Recreation Site, hardening the boat ramp, hardening the entrance/exit road at the secondary day-use in the Edson Recreation Site, maintaining the lower portion of the road in the West end of the Sixes Recreation Site for pedestrian traffic, designating river access routes and decommissioning non-designated routes at the Sixes Recreation Site. Individually, the decrease in sediment delivery resulting from these actions would be considered negligible compared to the inherently high natural background levels. However, the combined decrease in erosion from all these actions may be substantial enough to decrease sediment delivery and lower turbidity levels in Sixes River.

Alternative 1

Alternative 1 would have direct, indirect, and cumulative impacts to the soil resource. Fuelwood gathering or continued removal of coarse woody debris in a designated area may limit the amount of organic matter and hinder the nutrient cycling process within that area. The disruption of this process would limit the nutrients in the soil that are essential for optimal plant growth. Seasonal closure at Edson would relieve the chronic soil disturbance during a portion of the wet season but would not alleviate the periodic soil disturbance when the park is open. Compared to the Proposed Action, this alternative would have a lower level of disturbance from construction activity since the east end of Edson would not be developed, the parking area in Sixes would not be developed and the road in the West end of Sixes would not be upgraded to the level of public access. However, upgrading the road for administrative access would be expected to result in some level of soil displacement, disturbance and compaction. Official management of areas for day-use (i.e. West end of Sixes) would likely result in an increased level of hazard tree management. Possible indirect impacts on the soil resource from hazard tree management include bank instability, impaired nutrient cycling, and accelerated erosion. The following actions may result in a decreased potential for surface runoff, erosion, and sediment delivery: seasonal closure in Edson, hardening the boat ramp, barricading the entrance/exit road at the secondary day-use in Edson, maintaining the lower portion of road in the West end of Sixes for pedestrian traffic, designating river access routes at Sixes and decommissioning non-designated routes at Sixes. Individually, the decrease in sediment delivery resulting

from these actions would be considered negligible compared to the inherently high natural background levels. However, the combined decrease in erosion from all these actions may be substantial enough to decrease sedimentation and lower turbidity levels in Sixes River.

Alternative 2

Alternative 2 would have direct, indirect, and cumulative impacts to the soil resource. The environmental consequences are similar to the Proposed Action with the exception of the following: 1) the secondary day-use at Edson would not be "officially" managed for day-use, therefore, it would maintain the existing hazard tree management and the issues discussed under the Proposed Action and Alternative 1 would not be applicable, 2) the road in the undeveloped west end of Sixes Recreation Site would not be upgraded therefore the issues discussed under the Proposed Action and Alternative 1 would not be applicable.

Recommended mitigation (all alternatives):

? Seed and mulch all bare and disturbed soil from construction activities.

? Surface layer of rock is recommended on exposed bare soil where seed and mulch is not a viable option. Limit surface rock to areas above the high water mark.

? All proposed actions at the Edson Recreation Site are subject to rare periods of flooding and should be designed appropriately.

? Trail construction should minimize the removal of existing vegetation to limit surface disturbance and erosion. Leave vegetation on the bank to maintain stability.

? Water bars, stream crossings and other drainage devices should be constructed where needed and in compliance with the USFS Trail Manual Specs.

? Proper erosion control practices should be used when sediment and surface erosion is possible. Situations such as lack of vegetation for filtering of sediment and steep grades adjacent to the stream are in definite need of erosion control plans.

? Keeping traffic within the designated areas will keep soil disturbance to a minimum. Interpretative signing describing how steep side trails to the creek may increase erosion/sediment delivery in the stream would help.

4.4 Effects on Wildlife, Including T&E Species

The Wildlife Resource Specialist report (including Threatened and Endangered Species) is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Langenstein, 2000).

No Action

The No-action alternative would have direct, indirect, and cumulative impacts on wildlife resources. It would allow the existing condition to continue, not discourage any type of use, and not address some of the existing recreation-based issues. This alternative is considered to have the <u>third greatest</u> (of four alternatives in this EA) relative effect on the wildlife resources. However the expected level of effect from

this alternative would not be substantially higher than for Alternative 1. The general effects identified (supported in literature but not with site-specific data) may include the loss of existing habitat through the loss of vegetation, increase in noise and/or human activity, increase in the production of persistent smoke from campfires, and the loss of unique forest structures. The removal of any large woody material (16-inch diameter or greater logs) for all decay classes of wood from either the Sixes or Edson recreation sites, would decrease the already deficient level of large wood within these Riparian Reserves. Small animals such as insectivorous birds, bats, rodents, furbearers, lizards, salamanders, snakes and mollusks all depend on these structures. Maintaining the campsites at Edson would continue the long-term loss of natural vegetation on the site. Maintaining the boat launch would likely create seasonal human disturbances to Bald Eagles and their habitats, downstream from Edson Creek. The unmanaged use of the user-defined "day-use" areas at Edson and at the West End of Sixes Recreation Site would continue to cause Riparian Reserve disturbances. Further loss of wildlife habitats, for Federally Threatened species, requires a "Take" permit from USFWS. The individual effects of these no-actions to wildlife resources would be substantial within the scope of the recreation areas (developed on 165 acres), and generally not substantial within the scope of the Sixes River Watershed (approximately 85,916 acres). Within the BLM-administered lands in this watershed (2,072 acres), the no-actions would have a greater cumulative effect on the conditions of wildlife resources than each no-action individually. Not all of the no-actions have the same level of effect on these resources; some have little to no effect, while others would likely maintain some level of effect on wildlife resources.

This alternative would likely affect Federally Threatened wildlife, Survey and Manage species, and their habitats because the level of visitor use at the West End of Sixes Recreation Site would remain un-addressed. No-action would result in "May affect, not likely to adversely affect" and therefore formal consultation under section 7 of the Endangered Species Act would be required. Mitigation would reduce the effects of this alternative by reducing the probability of "Take" on the Marbled Murrelet population and complying with Conservation Measures of the Biological Opinion issued by the U.S. Fish and Wildlife Service.

Proposed Action

The Proposed Action alternative would have direct, indirect, and cumulative impacts on wildlife resources. Some actions in this alternative may cause little or no increased effect on wildlife resources beyond the current condition, while other actions would continue a trend of development at the recreation sites. This "Proposed Action" alternative is considered to have the <u>greatest</u> relative effect on wildlife resources as compared to the other three alternatives in this analysis. The development of the new walk-in campsites at the Edson campground, the change of the stream crossing for a broader range of vehicle access, the development of footpaths within the Sixes River campground, and the "Day Use" designations at both areas all contribute to a potentially higher level of disturbance from this alternative. Action 4-11 would be anticipated to "market" these recreation areas, thereby potentially increasing the visitor use and stressing wildlife resources more than the present condition. Creating new tent campsites at the Edson Creek Recreation Site would be expected to simplify the existing vegetative structure, and increase the level of hazard tree management on the area. Artificial structures would only partially mitigate the immediate loss

of some habitats at the East End of Edson, because structures are not known to replace the quality of natural habitats in the wild for all species affected. Improving the boat ramp at Edson Creek would potentially increase the seasonal human disturbances to wildlife (specifically to Bald Eagles) and their habitats downstream. There would be little or no alleviation of wildlife habitat loss with the placement of artificial structures at the undeveloped West End of Sixes campground; structures are not considered cost effective at this site. The scale of the above mentioned effects are difficult to quantify for this alternative. Within the Sixes River Watershed (approximately 85,916 acres), the proposed recreation facilities (developed on no more than165 acres) and activities contribute a minor effect to the overall condition of the wildlife resources. Within the scope of BLM-administered lands (2,072 acres in the Sixes River Watershed), the proposed recreation facilities (developed on no more than 165 acres) and activities contribute a major effect to the condition of potential wildlife resources.

This proposal would likely affect the habitat of Federally Threatened Wildlife (Marbled Murrelets and Bald Eagles) and the habitats of Survey and Manage wildlife species (identified in the Northwest Forest Plan) due to the proposed development of previously undeveloped sites within the existing recreation withdrawals. This proposal would be considered "May Affect, likely to adversely affect", and formal consultation under section 7 of the Endangered Species Act would be required. The suggested mitigation would be expected to reduce the probability of "Take" on Bald Eagles and Marbled Murrelets, and would be expected to comply with the "Terms and Conditions" and "Conservation Measures" identified in the Biological Opinion issued by the U.S. Fish and Wildlife Service.

Alternative 1

Alternative 1 would have direct, indirect, and cumulative impacts on wildlife resources. Some actions in this alternative would have little to no effect on wildlife resources beyond the current condition, while other actions (without the suggested mitigation) would be expected to increase the effects to the wildlife resources on public lands from recreation development. This alternative would be considered to have the forth-greatest (out of four) relative effects on wildlife resources. These effects would be similar in level to the "No Action " alternative. However, this alternative would mitigate potential effects by building a bridge rather than altering the existing stream crossing at Edson Creek. Bridge design features could provide opportunities to mitigate the loss of other wildlife habitats associated with this riparian area campground. Effects include: increased access to areas where human activities regularly occur, an increased level of hazard tree management, the increased presence of the people within a Marbled Murrelet occupied site, and the increase in other human-related recreation activities at all sites. The indirect effect of promoting additional camping use on the other side of the stream (existing Reservation Area at Edson) has the same effect as the Proposed Action. Reduced overall effects would be expected from the seasonal closure of Edson and by converting existing campsites into walk-in tent sites. Without the continuous presence of campers, animals like beaver, and a variety of riparian-dependent songbirds may have additional opportunities to carry out life functions without the disturbance of humans. Improving the boat ramp at Edson could cause increased river use and put additional pressure on the wildlife resources downstream along the river. Hazard tree management at new "Day Use" or campsites would cause the reduction or loss of standing cavity-related structures. At the undeveloped West End of Sixes River Recreation Site,

artificial wildlife structures are not considered cost efficient at this time. Within the Sixes River Watershed (approximately 85,916 acres), the proposed recreation facilities (developed on not more than 165 acres) and activities would be considered to have substantial effects on riparian habitats, Marbled Murrelet, and associated wildlife resources.

This proposal would likely affect the habitat of Federally Threatened wildlife (Marbled Murrelets and Bald Eagles), and the habitats of Survey and Manage wildlife species (identified in the Northwest Forest Plan), due to potential increased use of the proposed day-use area on the West End of the Sixes. This proposal would be considered "May Affect, likely to adversely affect", and formal consultation under section 7 of the Endangered Species Act would be required. The suggested mitigation would be expected to reduce the probability of "Take" on Bald Eagles and Marbled Murrelets, and would be expected to comply with the "Terms and Conditions" and the "Conservation Measures" identified in the Biological Opinion issued by the U.S. Fish and Wildlife Service.

Alternative 2

Alternative 2 would have direct, indirect, and cumulative impacts on wildlife resources. Some actions in this alternative may cause little or no increased effect on wildlife resources beyond the current condition, while other actions would continue a trend of development at the recreation sites. This alternative would be considered to have the <u>second</u> <u>greatest</u> (out of four alternatives) relative effects on wildlife resources. The overall effects of this alternative are expected to be similar to those effects described under the "Proposed Action". Unmanaged day-use in the secondary use area at Edson Creek (action 5-7), has little to no effect on wildlife resources beyond what has been caused by previous recreational developments or disturbances. The proposed recreation facilities (developed on not more than165 acres) and activities would be considered a minor effect to the overall condition of the wildlife resources within the watershed (approximately 85,916 acres).

This proposal would likely affect the habitat of Federally Threatened wildlife (Marbled Murrelets and Bald Eagles), and the habitats of Survey and Manage wildlife species (identified in the Northwest Forest Plan), due to the proposed development of previously undeveloped sites within the recreation withdrawals. This proposal would be considered "May Affect, likely to adversely affect", and formal consultation under section 7 of the Endangered Species Act would be required. The suggested mitigation would be expected to reduce the probability of "Take" on Bald Eagles and Marbled Murrelets, and would be expected to comply with the "Terms and Conditions" and the "Conservation Measures" identified in the Biological Opinion issued by the U.S. F. & W. Service.

Recommended mitigation:

No Action

? At the Edson campground, BLM should provide approximately 2 artificial cavity structures (i.e., 1 bat box in main campground and 1 bat box in the reservation area) to mitigate the past loss of snags or cavity-providing trees (2-1).

? At the undeveloped West End of Sixes campground, manage to reduce incidental human use of

the area through signage that does not encourage additional use.

Proposed Action

? At the Edson campground, artificial habitat structures are to be placed in the main existing camping areas where standing cavity structures are eliminated through continuous hazard tree management practices.

? Coordinate site-specific hazard tree management between the hazard tree management coordinator(s) and the appropriate wildlife biologist(s).

4.5 Effects on Aquatic Habitat/Fisheries, Including T&E Species

The Aquatic Habitat/Fisheries Resource Specialist report (including Threatened and Endangered Species) is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Kellett, 1999).

No Action

The No-action alternative would have direct, indirect, and cumulative impacts on aquatic habitat/fisheries resources. Continued firewood cutting/gathering within the Sixes River and Edson Creek Recreation Sites is likely to further reduce the structural diversity of the riparian plant community, and indirectly result in altered microclimate, impaired nutrient cycling, accelerated erosion, and diminished large woody debris recruitment. Unmanaged vehicle access to the Edson Creek site is expected to indirectly result in chronic disturbance to the floodplain, channel and near-bank region of Sixes River and Edson Creek caused by traffic. Unmanaged pedestrian access is likely to result in trampling effects and human disturbance to aquatic and riparian-dependent species. These disturbance mechanisms would have the potential to produce sediment delivery/turbidity and associated impacts to fisheries and aquatic habitat (Newcombe and MacDonald, 1991). Vehicle traffic at the Edson Creek low-water crossing is likely to continue to cause pulse turbidity and vehicle-related disturbance to juvenile salmonids. The boat ramp at Edson Creek is expected to continue to erode, producing sediment delivery/turbidity that may adversely impact fisheries and aquatic habitat. Firewood gathering within the recreation sites has already contributed (cumulatively) to reduced structural diversity of the riparian plant community, altered microclimate, impaired nutrient cycling, accelerated erosion, and diminished large woody debris recruitment. The no-action alternative is expected to perpetuate these conditions. Management and recreational use of the Edson Creek site have modified [simplified] the riparian plant community. A large portion of the floodplain would be maintained as a grassy opening. Unmanaged vehicle access has resulted in chronic disturbance to the floodplain, bed and banks of Sixes River and Edson Creek. Unmanaged pedestrian access has resulted in a network of user-defined trails within the active channel and near-bank region at the Sixes Recreation Site and Edson Creek day-use areas. These practices would inhibit recovery of riparian vegetation . The no-action alternative is expected to maintain the existing condition. A review of the relevant NEPA documentation (6 Categorical Exclusions for hazard tree management) indicates that over the last three years a total of 28 trees at Sixes Recreation Site and 26 trees at Edson Creek Recreation Site have been cut down to eliminate hazards to infrastructure and the public. All of these trees were within the Riparian Reserve, which is gradually being denuded by this process. The no-action alternative is likely to perpetuate this

process.

Proposed Action

The Proposed action alternative would have direct, indirect, and cumulative impacts on aquatic habitat/fisheries resources. Providing firewood and prohibiting firewood gathering is expected to facilitate passive recovery of riparian structure and function within the recreation sites. Providing hardened parking pads and implementing seasonal closures at Edson Creek campground is expected to reduce chronic disturbance to the floodplain. The installation of boulder barricades at the secondary day-use area at Edson Creek is expected to facilitate passive recovery of riparian vegetation. The installation of the various information panels and kiosks proposed is not expected to affect aquatic or riparian resources, provided existing openings are used. Development of the various proposed new walk-in campsites, day-use areas, and trails is likely to result in reduced structural diversity of the riparian plant community, altered microclimate, impaired nutrient cycling, accelerated erosion, and diminished large woody debris recruitment, if the development occurs within Riparian Reserve. These effects are expected to extend to fisheries and aquatic habitat if the developments occur within one site-potential tree height of Edson Creek or Sixes River. Additional camp sites, day-use facilities and trails may also result in increased visitor use, and a concomitant increase in trampling and human disturbance to aquatic and riparian-dependent species. Paving the Edson Creek boat ramp, parking, and entrance road surface is expected to reduce any adverse impacts to fisheries and aquatic habitat that may be occurring as a result of sediment delivery/turbidity associated with surface erosion at the existing ramp. Modifying the low-water crossing at Edson Creek to accommodate a wider variety of vehicles may have impacts to fisheries and aquatic habitat from sediment delivery/turbidity and increased traffic. The proposed elimination of various user-defined trails and improvement of the specified existing foot paths at Sixes and Edson Recreation Sites is expected to facilitate passive recovery of the riparian plant community.

Alternative 1

Alternative 1 would have direct, indirect, and cumulative impacts on aquatic habitat/fisheries resources. Designating a firewood collection boundary outside of Riparian Reserve and prohibiting firewood gathering within the recreation sites is expected to facilitate passive recovery of riparian structure and function. Implementing seasonal closures at Edson Creek campground is expected to reduce chronic disturbance to the floodplain. Converting a portion or all of an existing site/area within Edson Creek recreation reserve into 4-8 walk-in tent campsites would not directly or indirectly affect the fisheries, aquatic habitat, or riparian resources. Hardening the existing user-defined foot path to the river, eliminating parking, and barricading vehicle access at Edson Creek secondary use area is expected to facilitate passive recovery of riparian plant community and reduce the potential for surface erosion/sediment delivery from the site. Development of the various proposed new walk-in campsites, day-use areas, and trails is likely to result in reduced structural diversity of the riparian plant community, altered microclimate, impaired nutrient cycling, accelerated erosion, and diminished large woody debris recruitment, if the development occurs within Riparian Reserve. These effects are expected to extend to fisheries and aquatic habitat if the developments occur within one site-potential tree height of Edson Creek or Sixes River. Additional camp sites, day-use facilities and trails may also result in increased visitor use, and a concomitant increase in

trampling and human disturbance to aquatic and riparian-dependent species. Installing concrete and cable matting system on the Edson Creek boat ramp is expected to reduce any impacts to fisheries and aquatic habitat that may be occurring as a result of sediment delivery/turbidity associated with surface erosion at the existing ramp. Replacing the Edson Creek low-water crossing with a bridge is likely to restore a salmon spawning riffle now obstructed by the cable/concrete mat. Using a drift would not provide this benefit. Either of the proposed replacement structures would substantially reduce pulse turbidity and vehicle-related disturbance to juvenile salmonids. The proposed elimination of various user-defined trails and improvement of the specified existing foot paths at Sixes and Edson Recreation Sites is expected to facilitate passive recovery of the riparian plant community.

Alternative 2

Alternative 2 would have direct, indirect, and cumulative impacts on aquatic habitat/fisheries resources. Directly and indirectly, blocking vehicle access at the Edson Creek secondary day-use area is expected to facilitate passive recovery of riparian plant community and reduce the potential for surface erosion/sediment delivery from the site. Cumulatively, this action is expected to slightly improve the existing condition. Managing the undeveloped west end of the Sixes Recreation Site as a walk-in day-use area is likely to result in direct and indirect impacts to fisheries, aquatic habitat, or riparian resources. The proposed location for the day-use area and facilities would be within the Riparian Reserve, and partially within one site-potential tree height (180 feet) of Sixes River. Establishing such sites typically involves removing existing vegetation to create or enlarge an opening. This development would also be likely to result in an increased level of hazard tree management in the vicinity of the new day-use area. The impacts associated with these practices include reduced structural diversity of the riparian plant community, altered microclimate, impaired nutrient cycling, accelerated erosion, and diminished large woody debris recruitment. Construction/designation of an additional parking facility elsewhere within the campground is likely to have similar effects, depending on its location. Additional day-use opportunities may also result in increased visitor use, and a concomitant increase in trampling and disturbance to aquatic and riparian-dependent species. Installing a gate with a pedestrian bypass at the entrance to the proposed day-use area poses no additional impacts to fisheries, aquatic habitat, or riparian resources (a cable gate is currently in place). Cumulatively, this alternative would be likely to perpetuate the process of removing hazard trees within the Riparian Reserve and expand the scope of the impacts to include the new day-use area.

Recommended mitigation:

Proposed Action

? Provide firewood collection permits for concessionaire and campground patrons for designated firewood cutting areas outside of Riparian Reserves (2-1).

? Ensure that boulder barricade is installed above the ordinary high-water line (2-5).

? Install/establish panels, interpretive signs, maps, kiosks, and picnic tables in existing openings (4-5&6, 4-8&9, 5-6&9).

Alternative 1

? Provide firewood collection permits for concessionaire and campground patrons for designated firewood cutting areas outside of Riparian Reserves (2-1).

4.6 Effects on Vegetation, Including T&E Species

The Vegetation Resource Specialist report (including Threatened and Endangered Species) is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Pipp, 1999).

No Action

The No Action alternative would have direct, indirect, and cumulative effects on botanical resources. No wood would be provided for visitors to use in their campfires: thus, logs, snags, and green trees would continue to be removed form the forest by visitors to provide firewood. These actions directly decrease botanical abundance and diversity by removing individuals and habitats for vascular plants, fungi, lichens, mosses, and liverworts. Impacts to the vegetation at Edson Creek boat ramp would continue from trampling vegetation and compacting soil. These disturbances would allow non-native vegetation to invade and more successfully outcompete native vegetation. Vehicle traffic would continue to compact the soil at the Edson Creek campground, hindering growth of non-native lawn grasses (no direct impact to native botanical species). The riparian vegetation (where the walk-in tent sites are proposed at Edson Creek) and its structure would remain intact and functional. Himilayan blackberry would continue to expand its population there and outcompete native vegetation. Visitors at Sixes River Recreation Site would continue to use the existing trail that connects campground site 10 to the river trail and also parallels the fenced exclosure for pink fawn lily, *Erythronium revolutum*. To date, there has not been a problem with visitors tampering with the fenced exclosure of *Erythronium revolutum*; even though there are holes in the fence line. However, the potential for damage to the fence and/or the plant would remain high, because that path is visible and well used. The presence of a healthy population of poison oak in the exclosure is probably a good deterrent. The proposed "day-use" area at Sixes River Recreation Site consists of a road which leads to Sixes River surrounded by partially disturbed ground. Himilayan blackberry grows densely in portions of his area. By not developing this site further, botanical habitat would remain, though there would be continual loss of native species through the expansion of the Himilayan blackberry population. If no trail improvements occur and day-use areas are not further developed, then the existing level of hazard tree management will not increase. Thus, habitat for vascular plants, fungi, lichens, mosses, and liverworts would be maintained; although, those seeking firewood would continue to target these trees and snags.

Proposed Action

The Proposed Action alternative would have direct, indirect, and cumulative effects on botanical resources. Providing wood for campfires would greatly affect botanical species by maintaining substrates. It would also maintain populations of those species that prefer logs and snags as their substrates. Improving the boat ramp and nearby access trail at Edson Creek would either have no direct impact or provide minor improvements to botanical species and their habitats. In order to develop or make improvements in the area where walk-in tent sites are proposed, some habitat loss to previously disturbed riparian vegetation would occur. If this involves cutting back some shrubs and herbaceous vegetation then the loss of habitat would be minimal. However, if green trees and/or snags are removed then this would directly reduce botanical abundance, diversity, and change the understory microclimate for lichens, mosses, liverworts,

fungi, and vascular botanical species. Upgrading the existing gravel road in the proposed day-use area at Sixes Recreation Site would remove botanical species and their habitat. Installing a vault toilet and picnic tables would also remove some botanical species and their habitat. However, these impacts would be minimal to the native vegetation. The effect of greatly reducing or eliminating the Himilayan blackberry would outweigh the loss of habitat caused by upgrading the road and installing a toilet and picnic tables. None of the remaining proposed actions would have any impacts to botanical species of concern.

Alternative 1

None of the actions under this alternative would have any impacts to botanical species of concern, in addition to those described under the proposed action.

Alternative 2

None of the actions under this alternative would have any impacts to botanical species of concern, in addition to those described under the proposed action.

Recommendation (all alternatives):

? Control (reduce or eliminate) and annually monitor non-native plants, including Himilayan blackberry, to prevent their spread into neighboring sites.

? Use natural barriers to reduce traffic on the foot path adjacent to the pink fawn lily. This would reduce the risk of damaging the fence and/or plant.

? When hazard trees are removed, plant native trees to provide future substrate and snag recruitment; consider placement, recognizing that these trees would also be subject to removal if they pose a hazard in the future.

? Consider developing a plan to maintain a healthy population of pink fawn lily.

4.7 Effects on Watershed Resources

The Hydrologist report is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Carpenter, 2000).

No Action

The No Action alternative would have direct, indirect, and cumulative effects on watershed resources. Investments made to improve the Edson Creek campground could be compromised without some active management. Bank stability of Edson Creek along the campground could be interrupted by fuelwood collecting and cutting of key logs in and along the creek; causing the stream to change direction and erode the campground. All-season camping and vehicle access could lead to erosion, turbidity/sediment delivery and decrease water quality in Edson Creek and the unimproved secondary day-use entrance to the Sixes River. Lack of a vault toilet in this day-use area may detrimentally affect water quality. Continued vehicle access to the gravel bars along the Sixes River could lead to an increased risk of hazardous fluids (oil, fuel and grease) entering the Sixes River waterway. The existing unimproved boat ramp would continue to erode and deliver turbidity/sediment to the Sixes River. There is a slight potential for damage to undercarriage

areas of recreational vehicles and escape of hazardous fluids from vehicles traversing the Edson Creek low-water crossing to the group area. The existing low-standard road on the west end of the Sixes River Campground (proposed day-use area) may deliver some turbidity/sediment to the stream. Lack of a vault toilet in this proposed day-use area may detrimentally affect water quality. There is a slight potential for turbidity/sediment to enter the Sixes River from random trails at the Sixes River Campground day use parking area on the east end. A moderate potential exists for steep portions of the user-defined Sixes River access trails to channel water and turbidity/sediment into the stream.

Proposed Action

The Proposed Action alternative would have direct, indirect, and cumulative effects on watershed resources. Edson Creek rivercourse alignment and bank stability would be maintained. Turbidity/sediment delivery to Edson Creek from vehicle damage would be curtailed because of access restrictions, erosion proofing existing roads, developing some parking pads and improving the boat ramp and associated parking area. Removal of some riparian vegetation may reduce stream shading (stream temperature concern) and coarse wood input locally to the Sixes River in the secondary day-use area. Lack of a vault toilet in this day use area may detrimentally affect water quality. Unconstrained driving on river gravel bars may occur, resulting in an increased risk of hazardous fluids (oil, fuel and grease) entering the Sixes River waterway. There is a slight potential for damage to the undercarriages of recreational vehicles and escape of hazardous fluids (such as oil and fuel) from dragging while crossing the Edson Creek ford to the group site. Upgrading the existing road on the west end of the Sixes Campground to a day-use site may reduce turbidity/sediment delivery to the Sixes River during storms. Removal of riparian vegetation for a parking area in this same location may reduce stream shading and coarse wood input locally. A vault toilet in this proposed day-use area may positively maintain water quality. If the Sixes River access trail and day-use area trail on the east end of the Sixes river campground are designed, constructed and maintained to be erosion proofed, there will be no effect from this action on the water resource.

Alternative 1

Alternative 1 would have direct, indirect, and cumulative effects on watershed resources. Edson Creek rivercourse alignment and bank stability would be maintained. Turbidity/sediment delivery to Edson Creek from vehicle damage would be curtailed because of access restrictions, erosion proofing of existing roads, developing some parking pads and improving the boat ramp and associated parking area. Lack of a vault toilet in Edson secondary day use area may detrimentally affect water quality. Risk of hazardous vehicle fluid leakages (oil, fuel and grease) into the Sixes River would be diminished due to a vehicle barrier. There would be no effect on Edson Creek from a bridge or drift placement, assuming the structure can pass floatable debris and does not change local stream hydraulics. Limited administered use of the existing low-standard road on the west end of the Sixes River Campground proposed day use area may reduce turbidity/sediment delivery to the Sixes River during storms. A vault toilet in this proposed day-use area could maintain water quality. If the Sixes River parallel access trail is designed, constructed and maintained to be erosion proofed, there will be no effect from this action on the water resource.

Alternative 2

Alternative 2 would have direct, indirect, and cumulative effects on watershed resources. Edson Creek rivercourse alignment and bank stability would be maintained. Turbidity/sediment delivery to Edson Creek from vehicle damage would be curtailed because of access restrictions, erosion proofing of existing roads, developing some parking pads and improving the boat ramp and associated parking area. Removal of some riparian vegetation may reduce stream shading (stream temperature concern) and coarse wood input locally to the Sixes River in the secondary day-use area. Lack of a vault toilet in this day-use area may detrimentally affect water quality. Risk of hazardous vehicle fluid leakages (oil, fuel and grease) into the Sixes River would be diminished due to a vehicle barrier. There is a slight potential for damage to the undercarriages of recreational vehicles and release of hazardous fluids (such as oil and fuel)to occur from dragging while crossing the Edson Creek ford to the group site. The existing low-standard road on the west end of the Sixes River Campground (proposed day-use area) may deliver some turbidity/sediment to the stream, but with a vehicle barrier is expected to revegetate and reduce delivery in a few years. Lack of a vault toilet in this day-use area may detrimentally affect water quality. If the Sixes River access trail and day-use area trail on the east end of the Sixes river campground are designed, constructed and maintained to be erosion proofed, there will be no effect from this action on the water resource.

Suggested Design Features (all alternatives):

? Waterbar or grade any steep trail, slope, or roadway which may erode or transport sediment to a stream channel.

? When stream channels may be influenced, limit soil and plant disturbance in site preparation and construction to minimize sediment production, protect bank stability, and maintain riparian species composition.

? Revegetate unutilized or disturbed locations with native species when possible, to protect soil, water, or plant and wildlife communities.

? Design road and parking areas for adequate drainage to minimize delivery of water and sediment to Edson Creek and Sixes River.

? Evaluate, based on future trends, whether other conservation practices need to be applied for the protection of soil and water resources. Examples include: A) heavy use of trail during the winter season, B)if user-defined access routes continue to be used or developed, or C) if increased runoff of water and sediment from road and parking improvements are adversely affecting the water quality of Edson Creek and Sixes River.

? If possible, locate walk-in tent sites and its parking area outside of the 100 year floodplain boundary of Edson Creek.

4.8 Effects on Recreation Resources

The Recreation Resource Specialist report is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Harper, 2000).

No Action

The No Action alternative would have direct, indirect, and cumulative effects on recreation resources. The direct effects (for all actions) would be unresolved issues, which were identified by the public and BLM resource specialists, and unmet project objectives. In the long-term, it is unlikely that multiple recreation opportunities would be provided due to the absence of necessary resource protection measures. Indirect or cumulative effects include lost opportunities and increasing resource damage. There would be an increased potential for frustration between BLM, the recreating public, and adjacent property owners; the relationship between BLM, the public, and property owners would be more reactionary than collaborative. The general growth trends of outdoor recreation leading to increased visitation or use of the area would be left unchecked.

Proposed Action

The Proposed Action alternative would have direct, indirect, and cumulative effects on recreation resources. The direct effects would be resolved issues that meet nearly all of the project objectives. Through the construction/installation of new facilities and necessary resource protection measures, multiple recreation opportunities (valued by the public) and protection of the natural resources that serve as the basis for the desired recreation opportunities would be provided in the long-term. Camping, walking, and hiking opportunities/experiences would be improved. Information on recreation opportunities, historical, and cultural significance would be more readily available. Resource damage would be reduced. Maintenance practices would be more consistent and thorough. OHV access/use and related damage would decrease. More accurate and consistent visitor-use data would be collected. Health and safety hazards to visitors, contamination of the river, pollution of the environment, and attraction of wildlife scavenger species would be reduced. There would be an improvement in the maintenance and management of vehicle and pedestrian access. Indirect or cumulative effects include increased collaborative relationships between BLM, the public, and adjacent property owners. Visitation or use of the area may increase, but probably not substantially as there is surplus camping capacity approximately 95% of the time and day-use areas are intended to support current day-use activities that are occurring at these sites.

Alternative 1

Alternative 1 would have direct, indirect, and cumulative effects on recreation resources. The direct effects would be resolved issues that meet many project objectives. Through the construction/installation of a few new facilities and necessary resource protection measures, some recreation opportunities (valued by the public) and protection of the natural resources (that serve as the basis for the desired recreation opportunities) would be provided in the long-term. Portions of historical, current, and future opportunities and use would be not be supported or would be eliminated (i.e. year-round camping, existing parking , vehicle access, increased hiking/camping opportunities). If improvements to pathways are not made, then visitor safety would not increase. Indirect or cumulative effects include increased collaborative relationships between BLM, the public, and adjacent property owners. Visitation or use of the area may increase. Unsupported or eliminated historical, current, and future opportunities may be displaced onto other public or private lands within the planning area.

Alternative 2

Alternative 2 would have direct, indirect, and cumulative effects on recreation resources. The direct effects would be resolved issues that meet many project objectives. Through the construction/installation of minimal facilities and necessary resource protection measures, few recreation opportunities (valued by the public) and protection of the natural resources (that serve as the basis for the desired recreation opportunities) would be provided in the long-term. Portions of historical, current, and future opportunities and use would be not be supported or would be eliminated (i.e. existing areas of use, existing parking, vehicle access, increased recreation opportunities). If improvements to pathways are not made, then visitor safety would not increase. Indirect or cumulative effects include increased collaborative relationships between BLM, the public, and adjacent property owners. Visitation or use of the area may increase. Unsupported or eliminated historical, current, and future opportunities may be displaced onto other public or private lands within the planning area.

4.9 Effects on Noxious Weed Management

The Noxious Weeds Specialist report is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Raper, 2000).

The No Action, Proposed Action, and all Alternatives would have direct, indirect, and cumulative effects on noxious weed management. Direct and indirect effects would be the additional spread of non-native invasive populations. Invasive species favor disturbed sites and consequently would be given greater opportunity and space over time to expand current populations of the area. Cumulative effects would include opportunities for noxious weeds and other non-native aggressive plant species (along roads and water courses) to further spread throughout the watershed. The additional spread of non-native species may potentially invade remote locations leading to a greater contamination of the overall plant community health and diversity.

Suggested Mitigation (all alternatives):

? Maintenance plans for the area should include mandatory removal of all noxious weeds when detected within the designated site.

4.10 Effects on Hazardous Materials and Solid Wastes Management

The Hazardous Materials Specialist report is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Votaw, 1999).

The No Action, Proposed Action, and all Alternatives would have no direct, indirect, or cumulative effects on hazardous material or solid waste management. After the completion of a Hazardous Material Level I Survey for the proposed work locations, there was no evidence of existing hazardous material concerns; any future identification of concerns will be investigated by the Hazardous Material specialist. Discussion and any related action regarding potential mercury contamination will be deferred to a future analysis.

Suggested Design Features (all alternatives):

? Use of heavy equipment in and near waterways requires the development and submission of Spill Prevention, Control and Countermeasure Plans (SPCC) for each contract resulting from this EA. Contractors / operators will also be required to furnish and keep Spill Containment Kits on site. Specifications for these requirements have been developed and will be included in any contracts. District Spill Plan is to be followed in the event of a spill or release. (References: 40 CFR 100-149, 260-299, and 300-399; Oregon Revised Statutes Chapters 466 and 468; Oregon Administrative Rules 340-108 (DEQ Spill and Cleanup); OAR 629-57-3600 (Oregon Forest Practices)).

? Pre-work meetings shall include the submission and review of required plans where applicable. Contract administration shall include compliance check for spill kits, and monitoring for releases.

? Storage and use of chemicals and petroleum products on site shall be in accordance with applicable federal and state standards and codes, in approved containers, and subject to spill plans.

4.11 Effects on Port Orford Cedar/Forest Management

The Port Orford Cedar/Forest Management Specialist report is summarized below. The detailed report is contained in the analysis file and is hereby incorporated by reference (Kowalick, 1999).

The No Action, Proposed Action, and all Alternatives would have direct, indirect, and cumulative effects on the viability of Port Orford Cedar (POC) as a species. POC root rot *Phytophthora lateralis* (PL) infections are expected to increase in the Edson and Sixes Recreation Sites, due to public use of these sites and readily available disease innoculum found along roads and streams in the Sixes River drainage. The sanitation of POC along BLM-controlled roads, campsites, and trails in the developed Sixes Recreation Site and Edson Creek Recreation Site will reduce the spread of the disease on BLM lands affected by public use. The overall population viability of POC as a species is expected to persist, because of the numerous areas throughout the drainage where POC is healthy.

Suggested Design Features (all alternatives):

? Cut all green POC 25 feet up slope and 30 feet down slope from roads, campsites, and trails in the developed Sixes Recreation Site and Edson Creek Recreation Site. This will reduce the likelihood of PL infection centers becoming established on BLM lands. Cut all dead POC to reduce potential hazards to the public.

? Require washing of all construction equipment prior to entering BLM lands to prevent the spread of disease.

4.12 Unavoidable Adverse Effects

At all recreation sites, hazard tree management is required through BLM policy (BLM Manual 8365.2) to assure visitor and employee safety and compliance with federal Occupational Safety Health Administration requirements. The removal of trees that are identified as hazards would adversely affect the following physical and biological resources in the management area:

?	Soils	(indirect effects as described under 4.3)
?	Wildlife	(direct, indirect and cumulative effects as described under 4.4)
?	Aquatic Habitat/Fisheries	(direct and cumulative effects as described under 4.5)
?	Vegetation	(direct effects as described under 4.6)

Recommendations, mitigation, and additional design features are provided under each resource's description of effects.

Chapter 5.0 List of Participants and Contributors

The following individuals are acknowledged for their contributions to the preparation of this Environmental Assessment:

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Chapter 6.0 List of Agencies, Organizations, Businesses, and Individuals Contacted

The following agencies, organizations, businesses, and individuals were sent copies of the initial planning announcement, attended public meetings, expressed an interest in the planning process, and/or are frequent visitors to the planning area. This list is also comprised of those whom copies of this Environmental Assessment are sent.

Agencies

National Marine Fisheries Service
O.D.A. - Noxious Weed Control
Oregon Dept. of Environmental Quality
Oregon Dept.of Fish and Wildlife
Oregon Division of State Lands
Oregon Parks and Recreation Dept.
Oregon State Historic Preservation Office
Oregon State Marine Board
U.S. Bureau of Indian Affairs
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
U.S. Forest Service, Powers Ranger District

Organizations

Friends of Cape Blanco
Kalmiopsis Audubon Society
Point Orford Heritage Society
Port Orford Area Comm. Resource Team
Port Orford Christian Center

Businesses

Egret Communications
Langlois Market
Sixes River Hotel
Sixes Store and Service
Port Orford News
Port Orford Today

City and Tribal Government

City of Bandon
City of Port Orford
Coquille Indian Tribe
Curry County Commissioners
Port Orford Chamber of Commerce
Siletz Tribal Council
Sixes R.F.P.D.

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Appendices

Appendix A-Literature Cited

Carpenter, D., 2000. Watershed Resources Project Review, Report prepared for EA: OR128 -99-13, Coos Bay District BLM, North Bend, Oregon.

Harper, J., 2000. Recreation Resource Analysis, Report prepared for EA: OR128 -99-13, Coos Bay District BLM, North Bend, Oregon.

Interagency, 1994. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl, and Standards and Guidelines for Management of habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.

Kellett, M., 1999. Fisheries, Aquatic Habitat & Riparian Resources, Report prepared for EA: OR128 -99-13, Coos Bay District BLM, North Bend, Oregon.

Kowalick, J., 1999. Forest Stands and Port Orford Cedar, Report prepared for EA: OR128 -99-13, Coos Bay District BLM, North Bend, Oregon.

Langenstein, S., 2000. Report prepared for EA: OR128-99-13, Coos Bay District BLM, North Bend, Oregon.

Maziasz, J., 2000. Soil Analysis, Report prepared for EA: OR128-99-13, Coos Bay District BLM, North Bend, Oregon.

Newcombe, C., and MacDonald, D., 1991. Effects of suspended sediment on aquatic ecosystems. N. Am. J. Fish. Mgmt. 11:72-82.

Omnibus Consolidated Appropriations Act, 1997. Public Law 104-208, Section 124, Watershed Restoration and Enhancement Agreements (commonly referred to as the Wyden Amendment) as amended by Section 136 of Public Law 105-277.

Pipp, A., 1999. Botanical survey for Sixes/Edson Recreation Sites, Report prepared for EA: OR128-99-13, Coos Bay District BLM, North Bend, Oregon.

Raper, B., 2000. Noxious Weed Specialist Report, Report prepared for EA: OR128 -99-13, Coos Bay District BLM, North Bend, Oregon.

Samuels, S., 2000. Cultural Resources Project Review, Report prepared for EA: OR128-99-13, Coos Bay District BLM, North Bend, Oregon.

USDA, Forest Service, 1997. Sixes River Watershed Analysis, Siskiyou National Forest, Oregon.

USDI, Bureau of Land Management, 1995. Coos Bay District Outdoor Recreation Program Plan: A Strategic Plan for the Year 2000 and Beyond, Coos Bay, Oregon.

Votaw, T., 1999. Hazardous Materials Management Project Review, Report prepared for EA: OR128 -99-13, Coos Bay District BLM, North Bend, Oregon.

Appendix B-Aquatic Conservation Strategy (ACS) Evaluation

Summary

While adverse effects may occur at the site-specific level, as a whole the management actions under each alternative would have negligible effect at the 5th field watershed scale and therefore would maintain the existing watershed conditions (range of natural variability description for each physical and biological component) rather than retard or prevent attainment of ACS objectives.

Scale of Evaluation

The Regional Ecosystem Office Analysis and Interpretation of Three Issues Related to Northwest Forest Plan Requirements for Aquatic Conservation Strategy Consistency Determinations memorandum (July 21, 1999) states the following:

? "Because the ACS was designed to maintain and restore ecosystem health at watershed and landscape scales, rather than the scale of individual projects, the ROD established watershed analysis at the 5th field watershed-scale as the appropriate geographic context for assessing the consistency of actions with the ACS."

? "In summary, determining consistency at the site scale requires understanding of the required range of variability established at watershed, provincial, or regional scales. An action that results in a degraded condition at individual sites or degraded subwatersheds cannot always be interpreted as failure to comply with the ACS. To make findings of an action's consistency with the ACS, the decision maker must take into consideration the scope and magnitude of the action's effects, both positive and negative, at scales appropriate for the relevant ACS objectives. Such findings should ensure the conservation of the natural range of variability at the watershed level."

Early in this evaluation, the matrix below was developed (based on beneficial and adverse affects) to visualize ACS objectives at the individual project or site-scale. It is provided as a step in the evaluation process. However, this matrix alone should not be mistaken to represent the consistency with ACS objectives, nor the conservation of the natural range of variability at the 5th field watershed level.

ACS Matrix (at the individual project or site-scale)

Action	No Action	Proposed Action	Alternative 1	Alternative 2
2-1 Firewood	Non-managed wood gathering within riparian area affects ACS #8 by reducing structural diversity in plant and riparian areas.	Providing firewood from a source outside riparian area and prohibiting wood gathering within riparian area meets ACS #8 by facilitating recovery of structural diversity in plant and riparian areas.	Designating a boundary outside riparian area for firewood gathering and prohibiting wood gathering within riparian area meets ACS #8 by facilitating recovery of structural diversity in plant and riparian areas.	Same as Proposed Action

Action	No Action	Proposed Action	Alternative 1	Alternative 2
2-2&3 Site hardening at Edson	Chronic disturbance within riparian area affects ACS #8 by preventing succession in riparian areas.	Hardening parking pads and using seasonal closures for unhardened sites meets ACS #8 by facilitating recovery through use limitations (RM-2) and eliminating chronic disturbance.	Seasonal closure meets ACS #8 by facilitating recovery through use limitations (RM-2) and eliminating chronic disturbance.	Same as Proposed Action
	Chronic sediment delivery within riparian area affects ACS #5 by increasing sediment source in riparian areas.	This action also meets ACS #5 by facilitating recovery and eliminating chronic sediment delivery source.	This action also meets ACS #5 by facilitating recovery and eliminating chronic sediment delivery source.	Same as Proposed Action

5-4 Walk-in tent sites at Edson	The existing condition does not affect ACS objectives.	Developing walk in tent sites within the riparian area affects ACS #8 by reducing structural diversity in riparian areas through construction and associated hazard tree management. This action potentially affects ACS #9 if use increases and causes disturbance to riparian dependant and associated species.	Converting an existing portion of site/area to walk-in tent sites maintains the existing condition and does not affect ACS objectives.	Same as Proposed Action
5-5 Boat ramp at Edson	Rutted out boat ramp within riparian area affects ACS #4 & 5 by resulting in chronic erosion and sediment delivery to aquatic ecosystems.	Hardening with pavement meets ACS# 4 & 5 by affecting engineering controls (in accordance with RM-2) to eliminate erosion and sediment delivery from boat ramp.	Hardening with concrete and cable matting meets ACS# 4 & 5 the same as the proposed action.	Same as Proposed Action
Action	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**
5-7 Secondary use-area at Edson	Existing condition has potential affect on ACS # 4,5,8 through unmanaged vehicle and pedestrian access which results in erosion, sediment delivery, and retards recovery of riparian vegetation.	Managing day use through hardening vehicle access/entrance affects ACS #8 by precluding recovery of unvegetated areas and reducing structural diversity of riparian plant communities (through hazard tree management).	Managing day use by eliminating parking and barricading vehicle access meets ACS #8 through traffic control devices (use limitations in accordance with RM-2).	Not managing for day use, not providing developed facilities, and barricading vehicle access meets ACS #8 same as Alternative 1.

5-8 New day-use at Sixes (undeveloped west end area)	Existing condition if erosion control design features are implemented meets ACS # 4 & 5 by treating chronic erosion and sediment delivery sources in accordance with RM-2.	Developing new day-use area (developed facilities and public vehicle access) within the undeveloped riparian area affects ACS #8 by reducing structural diversity in riparian areas through construction and associated hazard tree management. This action potentially affects ACS #9 if use increases and causes disturbance to riparian dependant and associated species.	Developing new day use area (developed facilities and administrative vehicle access) within the undeveloped riparian area affects ACS #8 same as Proposed Action. Same as Proposed Action	Managing new day use area (installing vehicle barrier, maintaining foot access, and packed in facilities) within the undeveloped riparian area affects ACS #8 same as Propose Action. Same as Proposed Action
6-4 Low-water crossing at Edson	The existing condition is maintained and does not affect ACS objectives.	Modifying approaches above bank full mark does not affect ACS objectives.	Replacing existing crossing with a bridge or drift does not affect ACS objectives. Additional benefit of reducing vehicle-related harassment of juvenile Salmonids and associated take.	Same as Proposed Action
Action	**No Action**	**Proposed Action**	**Alternative 1**	**Alternative 2**

6-5 Footpath from day-use to river at Sixes	The existing condition is maintained and does not affect ACS objectives.	Designating a footpath to bank full, terracing where necessary, and decommissioning non-designated routes does not affect ACS objectives. Additional benefit to bank stability (ACS #3) from foot traffic control devices (RM-2).	Designating a foot path, making no improvements, and decommissioning non-designated routes does not affect ACS objectives. Additional benefits same as Proposed Action.	Same as Proposed Action
6-7 Footpath from day-use to campsites at Sixes	The existing condition is maintained and does not affect ACS objectives.	Constructing a managed footpath above high water mark by connecting existing pathways and decommissioning non-designated routes does not affect ACS objectives. Additional benefit toward ACS #3 & 8 with recovery of disturbed areas and reducing foot traffic within active channel.	Managing point of access routes only, not connecting existing pathways, and discouraging user defined routes does not affect ACS objectives. Additional benefits same as Proposed Action.	Same as Proposed Action

Additional actions where the <u>No Action Alternative affects ACS</u> objectives (at the individual project or site-scale):

2-4 through 2-6 (gate, barricades, and fence at Edson)	Existing conditions result in chronic disturbance and affects ACS #8.
5-3 (grey water disposals)	Existing disposals or lack thereof have potential to affect ACS #4 by resulting in contamination of surface water.

Remaining actions in the plan (at the individual project or site-scale):
These are actions with no alternatives where the No Action Alternative meets ACS objectives or actions do not apply to ACS objectives.

Range of Natural Variability (at the watershed, provincial, or regional scale):
This portion of the evaluation is detailed in the following report titled: Range of Natural Variability of important physical and biological components of the Sixes River Watershed.

Range of Natural Variability of important physical and biological components of the Sixes River Watershed

Page B-10 of the Standards and Guidelines for the Northwest Forest Plan states that,

> "In order to make the finding that a project or management action "meets" or "does not prevent attainment" of the Aquatic Conservation Strategy objectives, the analysis must include a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given watershed, and how the proposed project or management action maintains the existing condition or moves it within the range of natural variability."

This direction is reiterated in the Terms and Conditions 1(a) of the NMFS' March 18, 1997 Biological Opinion on implementation of Land and Resource Management Plans (USFS) and Resource Management Plans (BLM).

The Sixes River Watershed Analysis (SRWA)(USDA, 1997) describes the existing conditions of many important physical and biological components of the watershed. However, the range of natural variability of those components is not documented. Therefore, the interdisciplinary team working on the Sixes River Recreation Area Management Plan completed the following analysis to comply with the Standards and Guidelines and meet the Terms and Conditions of the March 18, 1997 Biological Opinion.

For the purpose of this analysis, it is assumed that the term natural represents the conditions that existed in America prior to the arrival of Europeans.

Water Temperature:

Water temperatures have increased since the 1964 flood and past decades timber harvest, but DEQ has noted stream temperature declines in the past two decades (SRWA, pp. A-11&12). Additionally tributary stream-side vegetation has recovered along many harvested sections and it is estimated that tributary temperatures have reached pre-harvest levels (SRWA, pp. A-11&12). The lower 12 miles of the Sixes River is relatively unshaded. Although improving, these observations suggest that temperature may be outside the range of natural variability, particularly in the lower mainstem.

Turbidity:

The Sixes River has naturally high levels of turbidity which are carried for longer periods of time following storms compared to other Coastal Watersheds such as Elk River (SRWA, p. A-12). High levels are associated with larger amounts of silts and clays within the Sixes River Watershed. Sheared Otter Point bedrock weathers to clay which elevates turbidity when carried in suspension in the stream. These observations suggest that turbidity is probably within the range of natural variability.

Sediment Delivery:

Aerial photography review, estimating sediment delivery to channels, shows the highest incidence of delivery coinciding with intensive land use during the 1956-1979 period. Since 1980, lower volumes of sediment delivery to channels have been noted (SRWA, p. A-16). The watershed has a high natural suspended and bedload sediment component weathering from underlying geological units. These observations suggest that sediment is probably within the range of natural variability.

LWD Loading & Recruitment:

In the absence of active management, the distribution of LWD in streams and riparian areas is primarily influenced by landform and the age and type of the riparian forest (Reiter and Beschta, 1994). Studies of streams in mature to old-growth forests of the Oregon Coast Range have found mean LWD densities ranging between 17 - 61 pieces/100m (Ursitti, 1991). Other studies in similar-aged forests on coastal streams of Oregon and Washington have found mean volumes of LWD ranging between 46-96 m^3/100m (Reiter and Beschta, 1994). LWD loading tends to increase with stand age, but this correlation breaks down in stands

less than 120 years old, due to the presence of residual pieces (Reiter and Beschta 1994, Ursitti 1991). These studies focused on streams with active channel widths of 2-11m, and evaluated LWD greater than 10cm in diameter and 1m in length. These data are likely to represent the natural range of variability for LWD loading in the Sixes River Watershed.

Large wood has been removed from the channel in association with placer mining, during some early logging operations, and during post-storm salvage (SRWA, pp. A-7, A-16&17). There is very little wood structure on the lower-gradient section of Edson Creek (SRWA, p. A-34). This information suggests that the present LWD loading is outside (below) the natural range of variability.

Pool Area & Quality:

The historic and current ranges in pool frequency for the Sixes River are presented in FEMAT (p. V-24). This analysis indicates that the existing pool frequency is within, or slightly below, the natural range of variability for Sixes River. Pool quality refers to volume, cover, and depth of pool habitats. "Primary reasons for the loss of pools are filling by sediments...loss of pool-forming structures such as boulders and large wood...and loss of sinuosity by channelization" (FEMAT, p. V-22). Although stream habitat inventories at the watershed scale are lacking, observations indicate progressive shallowing of pools (SRWA, p. A-16). These observations are consistent with the general declining trend in coastal Oregon, where large, deep pools have decreased by 80% (FEMAT, p.V-22). Furthermore, since wood is a major habitat-forming element in streams (FEMAT, p. V-22), it is likely that the widespread reduction in LWD noted above has caused a reduction of pool volume and depth throughout much of the watershed. These observations suggest that pool quality is currently below the natural range of variability.

Off-Channel Habitat:

Channel straightening during the mid-century caused by high sediment delivery and riparian forest timber harvest, as well as the 1955 and 1964 floods have reduced overflow channels. Salvage of instream wood also may have also contributed to the demise of morphological channel controls necessary to sustain off-channel areas. These factors suggest that off-channel habitat may be outside the range of natural variability.

Channel Width/Depth Ratio:

Channel width/depth ratios are only relevant to the upper and lower valley low-gradient sections that were changed by past decades of natural and human causes of sediment delivery. Comparison of current aerial photographs with those taken two decades ago show channels becoming narrower, and more defined through these low-gradient areas (SRWA, p. A-16). This represents a change from a braided D3/4, to bar braided C3/4 channel type (Rosgen, 1994) These observations suggest that channel width/depth ratio may be within the range of natural variability.

Streambank Condition:

Removal of riparian forests, particularly through the low valley alluvial stream sections has allowed channel widening and streambank erosion (SRWA, pp. A-6, A-15). Although there is an improving trend, streambank condition within the Sixes River is probably outside the range of natural variability.

Floodplain Connectivity:

The valley form and channel types existing in the watershed, suggest that most channel reaches have always been connected to floodplains. Floodplains are most notable in the lower valley segment from the estuary to rivermile 12. The channel type through this segment has alternated between a bar-braided C3/4 to braided D3/4 (Rosgen, 1994), depending on sediment delivery. Tributary streams are confined by valley walls, are moderately entrenched and lack a floodprone area. This has not changed from the historic condition and is probably within the range of natural variability.

Road Density:

There is a current road density of 2.3 mi/mi^2 on USFS-administered lands and 3.2 mi/mi^2 elsewhere in the watershed (SRWA, p. S-13). Much of the upper watershed is still relatively unroaded. Compared to other watersheds in Coast Range, these road densities are average to below average. Resource effects from roads are normally considered as road development increases. However, road construction practices, road position and number of stream crossings are higher risk factors for physical effects to streams than density. Most of the road construction in the Sixes watershed occurred during the 1960's-1970's, coinciding with timber harvest, with little regard for standards (SRWA, p. S-13). Some of these "legacy" roads may be still contributing to resource effects.

Disturbance History (Fire):

Fire has shaped the stand conditions within the Sixes River Watershed. "Most of the current late-successional and old-growth stands developed from natural regenerations following wildfire that occurred during the last 500 to 600 years and covered large areas--frequently many thousand acres" (FEMAT, p. IV-30). More frequent, less intense fires are a part of the internal dynamics of a stand--tens to hundreds of acres (FEMAT, p. IV-30) and the average fire interval for the primary plant association within the watershed (western hemlock series) is estimated at 65 years (Interagency, 1995). This information suggests that the natural range of variability includes: high-intensity stand-replacement fires typically occurring over intervals of several hundred years and low-intensity stand modification fires typically occurring over several decades.

The historic and current conditions are presented in the SRWA (p. T-1 & T-2). In summary, these records indicate that four large fires occurred within the watershed over the last 150 years. The earliest (mid-to-late 1800's) burned much of the Southern Oregon coast, including the Sixes and Elk River drainages. In 1929, the lightning-caused Barklow Mountain Fire burned 9000 acres. Also in 1929, the Elk River Fire burned 9600 acres, including the present-day Grassy Knob Wilderness and into the Sixes River drainage. The latest was reported in 1966, when 655 acres burned as a direct result of timber harvesting operations. Timber harvesting and associated burning practices, on publicly owned lands, has declined since reaching a peak in the late 1960's. Large, high- intensity fires are uncommon in dominant western hemlock plant associations, especially with the maritime influence common to the watershed. This information suggests that the frequency and intensity of fire disturbance has occurred outside the natural range due to the influence of various vegetation and fire management regimes. However, under certain conditions, stand-replacement fires will likely occur regardless of the management influence (Price, 2000). This later information and the presence of stand-modifying fire suggest that fire disturbance, within the watershed, may be within its natural range of variability.

Landslide & Erosion Rate:

Erosion and mass movement (landsliding) are the prevalent natural processes. The rugged terrain of the Sixes River Basin is underlain by the complex geological province of the Klamath Mountains, in which landslides are a common, natural, and important process of erosion (McHugh, 1986). Management activity can accelerate these processes through deforestation and road building, by impacting factors that influence slope stability such as root strength and infiltration (Swanston & Swanson, 1976; Sidle, 1980; Amaranthus *et al.*, 1985). The Sixes River Watershed has approximately 356 miles of mapped roads and is in an early seral stage due to the wide-spread timber harvest of the past century (SRWA, pp. O-12, O-18). These observations suggest that landslide and erosion rates may be outside the natural range of variability.

Late Seral/Old Growth Habitat:

The Natural range of variability for the forests of the Klammath Mountains Ecological Province, including the Sixes River Watershed, are characterized as having ..."low to moderate disturbances (e.g., fire, wind, insects, and disease) that create canopy openings or gaps in the various strata of vegetation (FEMAT, p. IV-29)...among other effects. This ecological province typically has dry periods, short-duration high-intensity snowfall and rain events, severe wind events and contains a wide range of soil types affecting vegetative growth. "Structural characteristics of old forests vary with vegetation type, disturbance regime , and development stage"(FEMAT, p. IV-28). However, the natural variability of the forests is dynamic and not necessarily provided by any one disturbance factor with any one event. In other words, the creation of an old growth condition is thought to be dependant on numerous events with varying levels of intensity, over a time span of approximately 150 to 500 years or more.

The location of Edson Creek campground, relative to the rest of Edson Creek and the Sixes River, is exposed to more riparian forest variability than the upper portion of the Creek, as witnessed by the width of the flood plain and the types of forests which have begun to recover at the site. Past management has likely maintained an early seral condition. This early condition is likely to be maintained as long as the campground is retained.

The riparian area at the Sixes River campground is very different from that at the Edson Creek campground. The stream is constrained by hill slopes and the flood plain is more restricted by the land form. Historically, the site was confer dominated with a substantial hardwood component. Today this site has largely been converted to a hardwood site and is likely to be maintained.

Vegetation Abundance & Diversity:

The Sixes River occurs within the western hemlock (Tsuga heterophylla) vegetation zone, where western hemlock and Douglas-fir (Pseudotsuga menziesii) dominate. Within this zone, hardwoods are common only within riparian sites (Franklin and Dyrness, 1988). The planning area primarily contains riparian forest consisting of red alder (Alnus rubra), Oregon myrtlewood (Umbellaria californica), and bigleaf maple (Acer macrophyllum) which are all co-dominant. High moisture and relatively warm temperatures tend to promote this assemblage of species. In riparian habitats, trees may escape fire or be subjected to infrequent fires that are of lower intensity than the surrounding upland forests (Uchytil, 1989). All three tree species can survive a low intensity fire by resprouting at the root crown.

Bigleaf maple have a low to moderate tolerance of shade; thus, bigleaf maple will establish under coniferous stands, but will not survive more than a few years unless they receive sufficient light (Franklin and Dyrness, 1988). Bigleaf maple are also flood tolerant and obtain their best development on deep, alluvial soils near streams (Franklin and Dyrness, 1988). On low-elevation upland sites in Oregon, bigleaf maple are scattered within moist and relatively open-canopied Douglas-fir, western hemlock, western red cedar, and grand fir forests (Franklin and Dyrness, 1988).

Red alder develop their best along streams, moist bottomlands, and moist lower slopes (Uchytil, 1989). They can grow in pure stands as seen along the Edson campground or can establish in forest openings within mixed native conifer forests (Uchytil, 1989). Red alder are shade intolerant (Uchytil, 1989).

Oregon myrtlewoods are considered to be a seral species and can persist as a sub-canopy dominant in late seral communities (Howard, 1992). Individual trees can be either sun or shade tolerant (Howard, 1992).

Information regarding the natural range of variability for this habitat could not be found. However, based on the information previously given, any change in vegetation that would still allow for the germination and establishment of a red alder, bigleaf maple, and myrtlewood-dominated forest would fall within the natural range of variability. Species that would alter the light and moisture regimes would be considered outside the

natural range of variability. Examples may include invasions by exotic species that may smother seedling establishment by blocking light (eg. Himilayan blackberry) and the planting of conifer plantations.

It is assumed that if the dominant overstory composition persists and that exotics do not invade, then the understory (vascular and non-vascular plants) would remain within the natural range of variability.

Conclusions:

Based on existing literature (at the watershed, provincial, or regional scales) and observations (made by the appropriate BLM resource specialists) of important physical and biological components within the Sixes River Watershed, members of the ID Team produced a "range of natural variability" description for each important physical and biological component of the Sixes River Watershed. These descriptions suggest that the existing condition of some components are within their natural ranges, while the existing condition of other components are outside their natural ranges.

Those important physical and biological components of the Sixes River Watershed in which the existing conditions are believed to be within their natural range of variability include: turbidity, sediment delivery, channel width/depth ratio, floodplain connectivity, disturbance history (fire), and vegetation abundance and diversity.

Those important physical and biological components of the Sixes River Watershed in which the existing conditions are outside their natural range of variability include: water temperature, large woody debris (instream and riparian area) loading and recruitment, pool area and quality, off-channel habitat, streambank condition, and landslide and erosion rate.

Whether existing conditions for the Late Seral/Old Growth Habitat component is inside or outside of its respective natural range of variability was not discernible based on existing literature and observations.

Since management actions within the Sixes River SRMA RAMP (as a whole) are site specific and individually affect less than 165 acres (both recreation withdrawals combined), movement within the "range of natural variability" (as described above) for each important physical and biological component would generally be negligible (if discernible) in the magnitude of the approximately 85,916 acre Sixes River Watershed. Therefore, the management actions (as a whole) would maintain the existing conditions in the scope of the 5th field watershed.

Literature Cited

Amaranthus, Michael P.; Rice, Raymond M.; Barr, Nicholas R.; Ziemer, Robert R. 1985. Logging and Forest Roads Related to Increased Debris Slides in Southwestern Oregon. Journal of Forestry : 229-232.

FEMAT, 1993. Forest Ecosystem Management: An Ecological, Economic, and Social Assessment. Office of Environmental Policy, White House. Washington, D.C.

Franklin, J. F. and Dyrness, C.T., 1988. Natural Vegetation of Oregon and Washington. Oregon State University Press.

Howard, J. L., 1992. Umbellaria californica. In: Fischer, William C., compiler. The Fire Effects Information System (Database). Missoula, MT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present.

Interagency, 1995. Southwest Oregon Late-Successional Reserve Assessment, Version 1.0. Medford District, Bureau of Land Management and Siskiyou National Forest, U.S. Forest Service. Medford and Grants Pass, Oregon.

McHugh, Margaret H. 1986. Landslide occurrence in the Elk and Sixes River basins, southwest Oregon. Corvallis, OR: Oregon State University. M.S. thesis. 106 p.

Price, Frank N. 2000. Coos Bay BLM. Ecologist, personal communication.

Reiter, M.L. and Beschta, R.L., 1994. Patterns of large wood and stream temperature in forested coastal streams. COPE 7(2 &3):7-10.

Rosgen, D. L. 1994. A classification of natural rivers. Catena 22: pages 169-199.

Sidle, Roy C. 1980. Slope Stability on Forest Land. Pacific Northwest Extension Publication. Oregon, Washington, and Idaho.

Swanston, Douglas N.; Swanson, Frederick J. 1976. Timber harvesting, mass erosion, and steepland forest geomorphology in the Pacific Northwest. In: Coates, Donald R., ed. Geomorphology and engineering. Stroudsburg, PA: Dowden, Hutchinson & Ross, Inc.: 199-221.

Uchytil, R. J., 1989. Alnus rubra. In: Fischer, William C., compiler. The Fire Effects Information System (Database). Missoula, MT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present.

Ursitti, V.L., 1991. "Riparian vegetation and abundance of woody debris in streams of southwest Oregon." M.S. thesis, Oregon State University.

USDA, Forest Service, 1997. Sixes River Watershed Analysis, Iteration 1.0. Siskiyou National Forest, Powers Ranger District, Oregon.

Appendix C-Issues Considered but Eliminated from Detailed Study

Issues identified through the scoping process that were not compiled and described in Part 1 under the Major Issues section of the Sixes River SRMA RAMP are listed below with a rationale for eliminating each from detailed study.

<u>Voluntary Fees</u>
Why not have voluntary fees?

Rationale: It is likely that not enough fees would be generated by donation to cover the cost of collection. Facilities such as vault toilets, potable water, fire rings, and picnic tables as well as services such as site hosts, law enforcement patrols, provision of firewood, and other programs allow BLM to provide an appropriate level of public health and safety. Under the Fee Demonstration Program, BLM is authorized to use the fees generated at recreation sites for maintenance and operations. Recreation use fees are also consistent with the Land and Water Conservation Fund Act of 1965 and subsequent amendments that establish recreation fee criteria.

<u>Dredging</u>
Eliminate suction dredging at Sixes Recreation Site

Rationale: The mining issue is beyond the scope of the RAMP, since the activity occurs in State of Oregon waters within and/or adjacent to the areas covered by this plan. U.S. Fish and Wildlife Service, (USFWS) and National Marine Fisheries Service, (NMFS) are in the process of assessing the impact of placer mining activities on the native coho salmon population which has been declared a threatened species. If suction dredging or other forms of placer

mining are determined to have an impact, then policy would be determined by those agencies and supported/enforced by BLM and appropriate state agencies.

Recreational Mining
Eliminate all recreational mining at Sixes Recreation Site

Rationale: The mining issue is beyond the scope of the RAMP. BLM is waiting for legislation to be interpreted by NMFS and USFWS to determine whether or not dredging is creating a negative impact. If it is determined that panning and sluicing have no effect on the salmon population, BLM would request additional user input to determine whether there is a conflict between panning/sluicing and other recreational uses of the site. When there is conflict between different recreation uses, recreation managers generally try to resolve conflicts in such a way that allows different activities and user groups to coexist.

Marbled Murrelets
Effect of noise levels on marbled murrelets

Rationale: Actions/activities resulting in noise levels above ambient noise levels will be consulted upon with the resource area Wildlife Biologist for timing and restrictions. Ambient noise levels at existing recreation sites include normal/typical recreation use for the site.
Over Use of Sixes River
The river has appeared to have reached camping and fishing capacity.
Do not encourage more river use.

Rationale: The use of Sixes River issue is beyond the scope of the RAMP, since river-use occurs in State of Oregon waters within and/or adjacent to the areas covered by this plan. Note that private land comprises 70% of the Sixes River watershed land base. The Siskiyou National Forest manages 26% of the watershed, leaving the BLM and State of Oregon to manage less than 4% each (USFS, 1997).

Oregon Department of Fish and Wildlife regulates fishing, Oregon State Marine Board regulates boating, and Oregon Division of State Lands regulates surface dredging. Recreational mining activities must be consistent with Oregon Division of State Lands, Department of Environmental Quality, and Army Corps of Engineers regulations and requirements. If these activities are determined by U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) to have an impact, then policy would be determined by those agencies and supported/enforced by BLM and appropriate state and federal agencies.

Cattle
Damage to Edson Creek Recreation Site by cattle

Rationale: Although privately owned cattle have been known to break loose and enter Edson Creek Recreation Site, the infrequency of occasion does not warrant taking corrective action at this time. Installing exclosure structures (i.e., fences and barriers) in the creek and around the site boundary would be costly and detract from the characteristic of the site. In the past, damage to the site has been limited and the cattle owners have been responsive upon notification.

Bicycling
Road is suitable to bicycling
Bicycling is hazard to motorists

Rationale: The Bureau of Land Management administers public lands within a framework of numerous laws. All Bureau policies, procedures and management actions must be consistent with the Federal Land Policy and Management Act of 1976 and the other laws that govern use of the public lands. At this time, bicycling legally occurs

along Sixes River Road (Curry County Highway 184) within and/or adjacent to the areas covered by this plan. The management actions covered in the RAMP are limited to BLM-administered lands. It is for this reason that the Bicycling issue is beyond the scope of the RAMP.

Prevent Dams and Erosion
Trim vegetation in stream to prevent dams and erosion

Rationale: The Aquatic Conservation Strategies outlined in the Northwest Forest Plan must be considered when working in riparian areas. Erosion prevention measures have recently been implemented with the installation of in-steam structures.

Summersville Trail
Good trail to Summersville

Rationale: Summersville is a historic site. Prior to improving access, the cultural resource sensitivity should be evaluated. In addition, it is likely that investments to improve access and accessibility will be costly, increase access to private land beyond BLM property boundaries, and increase safety concerns inherent in the existing physical features (proximity to the river and canyons with steep rocky slopes). This issue is deferred until the proposed interpretive assessment occurs.

Discount Fees
Opportunity for season-long pass
Better rate for 3-day stay

Rationale: Prior to offering discounts on use fees, the cost of operating the sites and/or Fair Market Value should be evaluated. In the meantime, the Golden Age Passport and Golden Access Passport are existing, congressionally authorized lifetime entrance passes (for individuals meeting specific criteria) which provide 50% discounts on Federal Land and Water Conservation Fund Act use fees. This issue is deferred until the proposed business plan is addressed.

Appendix D-Table of Proposed Actions

Action	Edson	Sixes	Identified Impacts to the Human Environ-ment	Requires Separate Project Plan	Requires Other NEPA Document	Fully Analyzed in this EA
Action 1-1: Coordinate with DEQ to determine the course of action for conducting a comprehensive study on mercury levels in the Sixes River.	?	?	no	yes plan with DEQ	no	yes
Action 1-2: Work with Curry County Road Master on installing (painting) a pedestrian cross walk, speed limit or caution signs from the campground to the primary day use area.	?		no	no	no	yes

Action 2-1: If feasible, provide one of the following: 1) contract with concessionaire to provide pre-cut firewood sources or 2) sources within a designated collection boundary for visitors to collect or obtain firewood at the Sixes River and Edson Creek RS. Prohibit wood gathering within the recreation site boundaries.	?	?	1) no 2) yes	1) yes contract or agreement 2) yes collection boundaries	1) no 2) yes EA	1) yes 2) no
Action 2-2: Develop a project plan to manage vehicle access by designing and providing hardened parking pads using grate or matted material (concrete and cable) for 6-15 sites. Manage open expanses in the campground and use a set date seasonal closure for unhardened sites.	?		yes	yes	yes EA	no
Action 2-3: Develop a project plan to manage vehicle access by providing parking pads (as in action 2-2) for 2 sites (R1A and R1B) in the reservation area. Use boulder barricades with parking pads to protect vegetation.	?		yes	yes	yes EA	no
Action 2-4: Install gate at the entrance to the campground to ensure resource protection during site/seasonal closures.	?		yes	no	no	yes
Action 2-5: Install (boulder) barricades at the river bank in the secondary day use area. Re-vegetate by planting native plant material on the slope where damage has occurred.	?		yes	no	no	yes
Action 2-6: Install a fence (post and cable) along the road and a gate at the east entrance to eliminate Off-Highway Vehicle (OHV) use to the undeveloped area east of the Group Reservation Area.	?		no	no	no	yes
Action 2-7: In order to avoid potential resource damage and conflicts between mining and recreation use management, request mineral entry withdrawals for the adjacent power site withdrawals.		?	no	no	no	yes
Action 2-8: Develop a brochure that makes mining regulations understandable. Provide information on the hazards of mercury generated by the mining process. Distribute via the camp host and at local Chamber of Commerce and Visitor Information Offices.		?	no	no	no	yes
Action	**Edson**	**Sixes**	**Identified Impacts to the Human Environ-ment**	**Requires Separate Project Plan**	**Requires Other NEPA Document**	**Fully Analyzed in this EA**

Action 3-1: Direct the planning, facility development, operation, and maintenance efforts to provide recreation opportunities within the class/setting range of Roaded Natural to Roaded Modified at Edson Creek and Sixes River RS. Maintain existing facilities and structures at each recreation site.	?	?	no	no	no	yes
Action 4-1: Train volunteer campground hosts and develop brochures on natural resource issues specific to the area such as coarse woody debris retention (fuelwood collecting), bank stabilization at Edson, and garbage removal to discourage wildlife scavengers (crows, jays, racoons, etc.). Provide brochures - consulted upon with the appropriate resource specialists.	?	?	no	no	no	yes
Action 4-2: Design a Sixes/Edson area brochure/map and guide to provide recreation visitors with information about the sites and nearby outdoor recreation opportunities, including the Sixes/Elk Loop for driving and biking, Grassy Knob Wilderness, the Elk River, and Cape Blanco. Explore the possibility of jointly producing the brochure, covering the Sixes and Elk River drainages, with the Forest Service. Distribute in local Chamber of Commerce and Visitor Information Offices and through site hosts.	?	?	no	no	no	yes
Action 4-3: Assess the need to interpret the natural and cultural resources on or near the recreation sites. If the need exists, prepare an interpretive assessment/plan.	?	?	no	no	no	yes
Action 4-4: Maintain and continually update campground web pages. Include consultation with appropriate resource specialists.	?	?	no	no	no	yes
Action 4-5: Develop and install a series of informational/orientation panels for campground and day use area kiosks using a consistent layout for each campground and day use area. Maintain a consistent kiosk structure and sign design from site to site.	?	?	yes	no refer to policy or kiosk plan in Appendix	no	yes
Action 4-6: Design and install a detailed recreation site maps for orientation kiosks at each site showing rivers, roads, trails, campsites and day use areas. Designate or name loops and/or spurs for identifying different segments of the campgrounds and day use areas.	?	?	yes	no refer to policy or kiosk plan in Appendix	no	yes
Action 4-7: Sign common use areas such as parking, day use, and boat ramp with signs located to provide adequate visibility from the road at Edson Creek Recreation Site.	?		no	no	no	yes

Action	Edson	Sixes	Identified Impacts to the Human Environ-ment	Requires Separate Project Plan	Requires Other NEPA Document	Fully Analyzed in this EA
Action 4-8: Install kiosk in boat ramp/primary day use area at Edson Creek RS.	?		yes	no refer to policy or kiosk plan in Appendix	no	yes
Action 4-9: Install kiosk and provide orientation information in the main campground area and on island inside gate to Group Reservation sites.	?		yes	no refer to policy or kiosk plan in Appendix	no	yes
Action 4-10: Provide information board in proposed walk-in tent camping area addressing fees and where to pay.	?		yes	no refer to policy or sign plan in Appendix	no	yes
Action 4-11: Work with Oregon Department of Transportation to have Edson Creek Campground added to the Oregon Coast Bike Route map.	?		no	no	no	yes
Action 5-1: Write a maintenance plan that will: 1) Identify target maintenance levels (work months and dollars) for the recreation site and address issues such as: removal of noxious weeds; removal of litter and garbage to discourage wildlife such as crows, jays, raccoons and bears. Include a schedule that will address annual maintenance needs (pruning, signing, and foot path maintenance of each site, etc.) as well as routine maintenance needs (cleaning, trash collection, and grounds maintenance). 2) Address hazard tree management.	?	?	1) yes 2) yes	1) yes maintenance plan 2) no refer to current hazard tree management policy	1) yes CX 2) yes CX	1) no 2) no
Action 5-2: Design campsites, pathways (access routes), and picnic areas for universal access whenever possible. Review sites to determine accessibility improvement needs, if any, and replace or retrofit existing facilities that do not meet universal access standards.	?	?	no	no	no	yes

Action 5-3: Develop a project plan to manage grey water disposal by designing and installing approximately covered or screened 3-6 grey water disposal stations at Edson Creek RS and relocate/replace 3-6 grey water stations at Sixes River RS.	?	?	yes	yes	yes EA	no
Action	**Edson**	**Sixes**	**Identified Impacts to the Human Environ-ment**	**Requires Separate Project Plan**	**Requires Other NEPA Document**	**Fully Analyzed in this EA**
Action 5-4: Develop a project plan to provide alternative camping opportunities by establishing 4-8 walk-in tent campsites at the eastern undeveloped portion of the recreation withdrawal. Install artificial habitat structures to alleviate potential wildlife habitat loss.	?		yes	yes	yes EA	no
Action 5-5: Develop a project plan to harden the boat ramp, parking, and entrance road surface to reduce rutting, sedimentation into the river, and improve access.	?		yes	yes	yes EA	no
Action 5-6: Install 1-2 picnic tables in the primary day use/boat ramp area. Install 1-2 picnic tables and trash cans in the secondary use area.	?		yes	no	no	yes
Action 5-7: Develop a project plan to manage day use by hardening the existing vehicle access/entrance road and cutting vegetation that blocks line of site onto Highway 184. Define foot path to the river from parking area. This should happen after installing boulders barricades in action 2-5.	?		yes	yes	yes EA	no
Action 5-8: Develop a project plan to manage day use opportunities by designing and developing a day use, river access area with parking and picnic facilities within the existing undeveloped portion at the west end of Sixes Recreation Withdrawal. Install a gate with a pedestrian bypass at the entrance of the existing road leading to this area. Upgrade the existing road for public vehicle access by either rocking or paving to harden the road surface. Utilize the existing openings approximately 2/3 of the way down the road for parking, picnic sites with tables, and a vault or portable toilet. Maintain the existing lower portion of this road to the river for pedestrian access. Install artificial habitat structures to alleviate potential wildlife habitat loss.		?	yes	yes	yes EA	no

Action 5-9: Research for accuracy and then, if appropriate, develop and install a low level interpretive sign near the sluice box in the campground. If research warrants, protect and repair masonry sluice box both from accidental impact by vehicles and "normal" degradation through age. The potential for repair of this structure, and necessary steps for its continued preservation, should be evaluated by an expert in historic masonry.		?	yes	no	no	yes
Action 6-1: Meet with adjacent land owners to examine the possibility for a trail easement to Elephant Rock.	?	?	no	no	no	yes
Action 6-2: Work/coordinate with Oregon Department of Fish and Wildlife, the State Marine Board, and other agencies, organizations or private individuals to evaluate boating access along the Sixes River; develop a plan if necessary.	?	?	no	no	no	yes
Action	**Edson**	**Sixes**	**Identified Impacts to the Human Environ-ment**	**Requires Separate Project Plan**	**Requires Other NEPA Document**	**Fully Analyzed in this EA**
Action 6-3: Meet with Powers Ranger District of the Siskiyou N.F. annually to coordinate and ensure maintenance of Sixes River Road east of Elephant Rock Creek bridge.	?	?	no	no	no	yes
Action 6-4: Develop a project plan to manage for a broader range of vehicle access by modifying the approaches above the bank full mark of the existing low water crossing leading to Edson Creek Group Sites R2 and R3. In the meantime, ensure that Group Site users are aware of the low water crossing's limitations and potential hazard to their vehicles in advance of their arrival.	?		yes	yes	yes EA	no
Action 6-5: Provide managed river access route (foot path) to the bank full mark in the existing developed day use area by designing an access route and installing steps (terraced foot path) where necessary. Decommission non-designated routes.		?	yes	yes	yes EA	no
Action 6-6: Construct a managed access route (foot path) linking the undeveloped west end area to the campground above the high water mark.		?	yes	yes	yes EA	no

Action 6-7: Design and construct a managed access route (foot path) above the high water mark, connecting existing pathways where appropriate, from the existing day use area and end at what is now campsite #10. Maintain access to the river at site # 16 and site #13. Decommission non-designated routes. Establish a name and post access signs.		?	yes	yes	yes EA	no
Action 7-1: Evaluate the potential for concessionaire operation of these sites by preparing a business plan that includes a comparison of costs - receipts from fees vs. proposals/estimates for concessionaire operation.	?	?	no	yes business plan	no	yes
Action 7-2: Charge a boat launch fee at Edson Creek Boat Ramp/Day Use Area to offset the cost of maintenance and facility improvements. Determine commercial use levels and charge for commercial use of boat ramp if appropriate.	?		no	yes business plan	no	yes
Action 8-1: Continue Law Enforcement Agreement with Curry County Sheriff.	?	?	no	no	no	yes
Action 8-2: Continue patrols with BLM Law Enforcement Officers. Establish site coverage during key times throughout the recreational use season.	?	?	no	no	no	yes
Action 8-3: Continue to seek qualified hosts by enlarging pool of volunteer applicants. Market Myrtlewood Resource Area campground host opportunities via the BLM homepage, through local newspaper ads or feature stories, and in RV publications such as *WorkKamper*.	?	?	no	no	no	yes
Action	**Edson**	**Sixes**	**Identified Impacts to the Human Environ-ment**	**Requires Separate Project Plan**	**Requires Other NEPA Document**	**Fully Analyzed in this EA**
Action 8-4: Schedule weekend patrol teams during the high use season with Myrtlewood Resource Area Recreation Staff. Provide patrol coverage from 11:00 a.m. to 7:00 p.m. during these peak use periods.	?	?	no	no	no	yes
Action 8-5: Compare visitors fee envelope stubs with the collected fee envelopes on weekly patrols at Edson Creek and Sixes River RS during the high use season.	?	?	no	no	no	yes
Action 8-6: Develop a visitor use monitoring plan (sampling method), which may include installing traffic counters at entrances to day use areas and campgrounds, to collect consistent and accurate visitor use data and continue to distribute customer comment cards.	?	?	yes	yes visitor use monitor-ing plan	Yes CX	no