1999

Sloan-Kennally Timber Sale Final Environmental Impact Statement

United States Forest Service

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SLOAN-KENNALLY TIMBER SALE
FINAL ENVIRONMENTAL IMPACT STATEMENT

USDA Forest Service
Payette National Forest
McCall Ranger District
Valley County, Idaho

December, 1999

Proposed Action: Timber harvest using tractor and helicopter logging systems and regeneration of timber stands in the vicinity of Sloans Creek and Kennally Creek in the Gold Fork watershed.

Type of Statement: Final EIS (Environmental Impact Statement)

Lead Agency: USDA Forest Service

Responsible Official: David Alexander, Forest Supervisor
Payette National Forest
P.O. Box 1026, McCall, Idaho 83638

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Abstract: This Final EIS documents three alternatives analyzed for the Sloan-Kennally Timber Sale. The sale is to be offered in 2000 and administered by the McCall Ranger District of the Payette National Forest. The Sloan-Kennally sale planning area is located approximately 15 miles southeast of McCall.

Alternatives include No Action, the Proposed Action, and Alternative 3, no timber harvest in the roadless area. The preferred alternative is the proposed action, which would harvest timber on 571 acres using tractor and helicopter logging systems. The mixture of silvicultural treatments is designed to mimic historic timber stand structure consisting of scattered large trees of ponderosa pine, Douglas-fir, grand fir, spruce, and western larch and a mixture of healthy understory trees. 33 acres would be patch clear cut and 3 acres would be patch clear cut with reserve trees, all in sizes of three acres or less to provide habitat for foraging goshawk young. An estimated 0.2 mile of road would be constructed. 24.8 miles of road would be improved, which includes 4 miles of graveling as well as removing vegetation, blading, and installing rolling dips and relief culverts to improve drainage and reduce accelerated erosion. Also, 8.7 miles of existing road would be obliterated after the sale to improve watershed conditions in the planning area.
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Summary of the Final Environmental Impact Statement

This Final Environmental Impact Statement (FEIS) analyzes and discloses the potential site-specific environmental effects of the Sloan-Kennally Timber Sale on resources within and around the sale planning area on the McCall Ranger District of the Payette National Forest (see Figures 1-1 and 1-2 in the FEIS). This analysis is tiered to and supplements the analysis in the FEIS prepared for the Payette National Forest Land and Resource Management Plan (1988), hereafter referred to as the Forest Plan.

The proposed Sloan-Kennally Timber Sale planning area covers an estimated 5,100 acres in the Sloans and Kennally Creek drainages of the Gold Fork Watershed. Approximately 2,100 acres of the planning area are also within the Needles Roadless Area. The Forest Plan allocated these acres for timber, recreation, wildlife, range, and watershed management. The primary access to the area is from the west via the Paddy Flat Road No. 50388. The planning area lies entirely within Valley County, Idaho, and is located about 13 miles southeast of McCall and 10 miles east of Highway 55 (Figure 1-2 in the FEIS).

The Proposed Action

The McCall Ranger District of the Payette National Forest proposes to harvest and regenerate timber stands in the Sloan-Kennally Timber Sale. The planning area lies partially within and adjacent to the Needles Roadless Area (see FEIS, Figure 1-3). The proposal includes improvements to the road system that would contribute to higher water quality in Cascade Reservoir. In addition, the proposal includes watershed improvement projects that would improve overall water quality in the planning area.

The Proposed Action would:

• Harvest an estimated 3.9 million board feet (MMBF) of timber from approximately 553 acres in the Sloan-Kennally planning area using tractor/jammer and helicopter logging systems. Harvest prescriptions include 516 acres of Even-Aged Regeneration harvest, 19 acres of Selection harvest, 33 acres of Patch Clear Cuts and 3 acres of Patch Clear Cuts with reserve trees.

• Reconstruct/improve an estimated 24.8 miles of existing roads to meet current and future resource management needs in the area. Improvements will consist of graveling entire segments of roads, spot graveling near stream crossings, improving drainage through blading and shaping, and installing culverts where needed.

• Reduce sediment generation from existing roads by graveling 4 miles of road including 1 mile of road located in T. 17 N., R. 5 E., section 7, which was identified in the Gold Fork Watershed Analysis (1996) as a problem source of sediment and a high priority for treatment.

• Obliterate an estimated 8.7 miles of system and non-system road in the planning area which have been identified as having sediment problems and are no longer needed for the long term management of National Forest resources.
Summary

• Ensure stocking levels of desired species by planting Douglas-fir, ponderosa pine, and western larch seedlings on approximately 434 acres.

• Treat harvest generated fuels on an estimated 571 acres. Treatments will include tractor piling on 453 acres, excavator piling on 21 acres, broadcast burning on 82 acres, jackpot burning on 6 acres, and lopping and scattering on 9 acres.

Purpose and Need for Action

The purpose of the proposed action is to improve the existing condition of timber stands within the Sloan-Kennally planning area in accordance with the goals, objectives and Desired Future Condition described in the Forest Plan (Forest Plan, pages IV-50 to IV-69). In particular, the Proposed Action addresses the Forest Plan goal to “manage suited timber acres to near site potential to produce commercial crops of trees suitable for timber production.” The Proposed Action would meet this direction by increasing long-term health, diversity, and productivity of the timber resource while providing short-term wood products and reducing risks from insects, disease, and wildfire.

The need for the proposed action is generated by the difference between existing timber stand conditions in the planning area and the desired conditions for stands in the area. Vegetative characteristics are described in three categories: 1) Forest Structure; 2) Stand Characteristics and Conditions from a Historic Perspective; and 3) Stand Growth and Health.

Existing Condition - The forest structure is largely old forest with smaller amounts of mid-aged, mature, and young forest. Timber stands are composed of about 55% subalpine fir, lodgepole pine, and Engelmann spruce and 45% grand fir. Exclusion of natural fire for the past 100 years has altered stand characteristics and conditions. Many stands show signs of slow or even negative growth (high mortality), decay, and high levels of insect and disease infestations. Shade-tolerant grand fir trees are slowly replacing open-grown pines, Douglas-fir, and western larch, and potential fire severity is nearing the upper limits of historic norms.

Desired Condition - The forest structure consists of about 40% mid-aged to mature forest with the remainder evenly divided between old forest, young forest, and open areas. Stand characteristics mimic historical conditions where regeneration of early seral species such as western larch, Douglas-fir, lodgepole pine, and ponderosa pine is encouraged. About 338 acres in dry growing sites have an uneven-aged stand structure, and the remaining 4,763 acres in the moist growing sites have an even-aged stand structure with a remnant overstory of large spruce, Douglas-fir, larch, and pines. Stands are healthy, growing vigorously, and near site potential.

Management Direction

The Proposed Action follows Forest Plan direction. Because no single acre on the Forest can serve all uses at once, the Forest Plan allocates different emphases to different areas of the Forest, based on the land’s capabilities. In the Forest Plan, the Forest is divided into 26 Management Areas. The Sloan-Kennally planning area lies in Management Area 20. Management Area 20 provides for roaded, multiple-use management, including timber management (Forest Plan, pages IV-218-225). Additional
Summary

direction can be found in the Forest-wide goals, objectives, desired future condition, and standards and guidelines on pages IV-1 to IV-132 of the Forest Plan.

The Forest Plan directs and integrates management of the entire Forest, including roadless areas. The FEIS for the Forest Plan analyzed a range of development and non-development alternatives for all of the Forest’s roadless areas. Based on that analysis, the Forest Plan recommended some roadless areas for wilderness and assigned others to non-wilderness management. The Forest Plan assigned part of the Needles Roadless Area to general forest management, including timber harvest. The southeast portion of the Sloan-Kennally planning area is in the portion of the roadless area assigned to general forest management. However, Forest Plan decisions allow development rather than mandate it. The site-specific effects must be examined before development can occur. The Chief of the Forest Service has released an interim policy dealing with management in roadless areas. This policy will determine if, how, or when entry in the Needles Roadless Area will proceed with this project.

In addition, this project follows recent changes in management direction not covered in the Forest Plan. These changes include: identification of sensitive species by the Regional Forester; the listing of bull trout, Ute ladies-tresses, and the proposed listing of lynx under the Endangered Species Act; adoption of ecosystem management principles by the Payette National Forest; completion of the Phase I and II Watershed Management Plans for the Cascade Reservoir Watershed (see below); following the Management Recommendations for the Northern Goshawk in the Southwestern United States; and incorporation of INFISH guidelines to the Forest Plan.

The Idaho Division of Environmental Quality has completed Phase I and II Watershed Management Plans for the Cascade Reservoir Watershed. Phase I identified water quality standards within the reservoir for reduction of algal growth, point and non-point sources of nutrient loading, and subwatershed-specific load allocations and reductions required to meet in-reservoir water quality standards. Phase II further refined the instream parameters. The management plans have determined that to attain acceptable water quality improvements within the Gold Fork watershed, a 30% reduction in overall phosphorus load is required.

Decisions to be Made

The Responsible Official for this project is the Forest Supervisor. Based on the analysis in this document, the Forest Supervisor will make the following decisions and document them in a Record Of Decision accompanying or following a Final EIS:

Should the planning area be entered for timber harvest and regeneration at this time?

If so:
• How many acres should be treated?
• Where and how are those acres to be treated?
• What measures are taken to move other Forest resources toward their desired conditions?
• What management requirement and mitigation measures are necessary to meet the Forest Plan standards and guidelines for all resources?
What monitoring requirements are appropriate to evaluate project implementation?

Major Issue Resulting in Formation of an Alternative

The interdisciplinary team and Responsible Official analyzed initial comments from the public, combined them with management concerns, and developed issues for the proposed project. The project’s effect on one issue, Roadless Character and Wilderness Potential, was substantial enough to require project-specific alternatives.

The issue is that proposed management activities within the roadless area could modify the roadless character of the area. Wilderness attributes could be affected which in turn may affect the area’s potential for wilderness designation. This issue is discussed in detail in Chapter 3.

Other Issues Addressed

Besides the major issue of Roadless Character and Wilderness Potential, the ID team also analyzed the effects of the alternatives on other relevant issues and resources in terms of environmental consequences. These resource issues are summarized in Chapter 1 and are analyzed in Chapter 3. They include: soil productivity, water resources, fish habitat, wildlife habitat, recreation, and economics/socio-economics.

Issues Not Analyzed

Analysis of some issues led to project design elements, management requirements, and mitigation that avoid or eliminate effects the project might have on these resources. These analyses are detailed in the project record and summarized in Chapter 1. They include: visual quality, air quality, biological diversity, heritage resources, range, noxious weeds, and threatened, endangered, and sensitive plants.

Alternatives Considered in Detail

The range of alternatives and mitigation measures presented in this DEIS was determined from the scope of the proposed project. This scope was largely defined by the Purpose and Need and major issue. In addition to the alternatives considered in detail, the ID team examined eight other alternatives from previous analyses of the Sloan-Kennally project. Although these alternatives contributed to a reasonable range of alternatives, the ID team and Responsible Official eliminated them from further consideration for the reasons listed in Chapter 2.

The ID team developed and analyzed in detail three alternatives for the Sloan-Kennally Timber Sale. In the narrative for Alternatives 2 and 3, numbers for road miles affected, acres treated, and timber volumes are best estimates based on all available information to date.

Alternative 1 (No Action)

The No Action alternative is required by the National Environmental Policy Act and serves as a baseline for analyzing effects. Under no action, current management of the area would continue as directed in the
Summary

Forest Plan, except that this proposed timber sale and its associated activities and mitigation measures would not be implemented. The roadless portion of the planning area would not be developed, thus providing the opportunity to reevaluate the area for wilderness designation at a future date. Normal road maintenance and public firewood cutting in the area would continue. If wildfire or major outbreaks of insect or diseases affect the timber, the Forest may plan, analyze, and implement appropriate salvage or other harvest treatments in the area.

Alternative 2 (Proposed Action)

This alternative meets the Purpose and Need for the project by improving timber growth, yield, and overall forest health conditions. It incorporates recent changes in management direction including INFISH direction, habitat requirements for goshawk, snag and down woody requirements, water quality improvement needs, and Historic Range of Variability (HRV) concepts. It is also consistent with the Forest Service Chief’s interim roadless policy and natural resources agenda. Figure 2-1 illustrates this alternative.

Roads - Construct an estimated 0.2 mile of new road, improve an estimated 24.8 miles of existing road, close a total of 22.4 miles of road, and obliterate an estimated 8.7 miles of existing road.

Harvest and Silvicultural Systems - Tractor/jammer log on 463 acres where slopes are less than 45 percent. Helicopter yard on 108 acres where tractor or jammer skidding is not feasible due to lack of road access. Silvicultural prescriptions include 516 acres of even-aged regeneration, 19 acres of free selection, 33 acres of patch clear cuts and 3 acres of patch clearcut with reserve trees. The overall purpose of the silvicultural prescriptions is to enhance the growth and health of timber stands in a way that reflects historic norms.

Slash Disposal and Site Preparation - Treat logging slash and prepare planting sites by tractor piling and burning 453 acres, broadcast burning 82 acres, excavator piling and burning 21 acres, jackpot burning 6 acres, and lopping and scattering 9 acres.

Reforestation - Plant 434 acres with mostly pine, Douglas-fir, and western larch. Regenerate 102 acres naturally in goshawk young foraging areas.

KV Opportunities - Opportunities eligible for Knutson-Vandenbarg (KV) funds generated by the timber sale are: 1) 434 acres of tree planting, site preparation, and tree survival exams, 2) 102 acres of site preparation for natural regeneration, and 3) 20 acres of noxious weed survey and treatment.

Alternative 3

This alternative addresses the roadless character issue by not entering the Needles Roadless Area with timber harvest. It also represents findings of the Upper Columbia River Basin scientific assessments which show that some roadless areas are aquatic and terrestrial strongholds. It is also consistent with the Forest Service Chief’s interim roadless policy and natural resources agenda. Figure 2-2 illustrates this alternative.

Roads - Same as Alternative 2.
Summary

**Harvest and Silvicultural Systems** - Tractor/jammer log on 432 acres where slopes are less than 45 percent. Silvicultural prescriptions include 432 acres of even-aged regeneration. The overall purpose of the silvicultural prescriptions is to enhance the growth and health of timber stands in a way that reflects historic norms.

**Slash Disposal and Site Preparation** - Treat logging slash and prepare planting sites by tractor piling and burning 406 acres, broadcast burning 2 acres, excavator piling and burning 21 acres, and jackpot burning 3 acres.

**Reforestation** - Plant 372 acres with mostly pine, Douglas-fir, and western larch. Regenerate 42 acres naturally in goshawk young foraging areas.

**KV Opportunities** - Opportunities eligible for Knutson-Vandenburg (KV) funds generated by the timber sale are: 1) 372 acres of tree planting, site preparation, and tree survival exams, 2) 42 acres of site preparation for natural regeneration, and 3) 20 acres of noxious weed survey and treatment.

**Elements Common to Both Action Alternatives**

The action alternatives have certain things in common. They comply with State and Federal laws and regulations and meet Forest Plan standards and guidelines for all resources. In addition, the action alternatives share the following elements:

**Timber Sale Date** - The Sloan-Kennally timber sale is scheduled for offering in Fiscal Year 2000. Road work and timber harvest would take place between approximately 2001 and 2004.

**General Planning Boundary** - To maintain continuity during analysis, all alternatives developed for the sale have the same planning area boundary (Figure 1-2).

**Riparian Habitat Conservation Areas (RHCA)** - Current management guidelines for activities in watersheds covered by INFISH call for establishment of riparian habitat conservation areas (RHCAs), which include landslide-prone areas. The Gold Fork River Watershed Analysis utilized two methods to analyze the hazards for mass wasting on the Payette National Forest: aerial photo analysis and field investigation. The project hydrologist examined three sets of aerial photographs, taken in 1962, 1988, and 1994 to track the history of mass wasting in the watershed. In 1995, he field identified and verified the mapped failures. Three areas were considered to have high hazard rating for mass wasting: the headwaters of Rapid Creek, the North Fork of Kennally Creek, and the eastern portion of the East Fork of Kennally Creek. The entire planning area for Sloan-Kennally is considered to have a low hazard rating for mass wasting. Detailed maps of landslide-prone areas used for project design can be found in the Gold Fork Watershed Analysis (1996) in the project record.

INFISH buffers listed below constitute the minimum widths for riparian area protection. Field verification may result in wider buffer requirements for some areas.

- 300 feet either side of fish-bearing streams.
- 150 feet either side of non-fish-bearing perennial streams.
- 50 feet either side of non-fish-bearing intermittent streams.
Summary

- 150 feet around ponds, lakes, reservoirs, and wetlands greater than 1 acre in size.
- 50 feet around seeps, springs, bogs, wetlands, and lakes less than 1 acre in size, and around landslide-prone areas.

Management Requirements

Management requirements are one general type of mitigation used by the Payette National Forest. These requirements are designed to reduce or prevent undesirable effects from proposed activities. When applied, these requirements can avoid a potential effect, minimize the effect by limiting the action, rectify the effect, reduce the effect through maintenance, or compensate for the effect. The management requirements in Table 2-1 are to be implemented either during or after the proposed project in order to meet the stated objectives. These requirements reflect standard operating procedures for the protection of Forest resources. The source of the requirements is generally the Forest Plan, but other sources can be laws or regulations, or guidelines or provisions developed by the Forest Service, or specifically by the Payette National Forest.

Mitigation Measures

The mitigation measures listed in Table 2-2 are designed to reduce or prevent adverse effects that would otherwise result from implementing either of the action alternatives. They were developed to address site-specific environmental concerns that were not sufficiently addressed in the sale layout or through management requirements. Each mitigation measure includes an objective, enforcement mechanism, person responsible for enforcement, an effectiveness rating, and the basis for that rating.

Monitoring and Evaluation

Monitoring and evaluating the project give the decision-maker and the public information on the progress and results of implementing project activities. Monitoring collects data to see if the project produced the effects predicted in the scientific analyses presented in Chapter 3. Monitoring results will be evaluated to determine what, if any adjustments are needed. The Forest will evaluate whether the standards and guidelines for each resource are appropriate and indicate whether resource objectives, management direction and Best Management Practices have been met. If they are not met, the Forest Service may adjust this project and future projects. Table 2-3 summarizes the monitoring that would occur if an action alternative is implemented. Appendix G contains detailed monitoring and evaluation plans.
Comparison of the Alternatives

This section compares the alternatives described in detail in this chapter. Table 2-4 compares activities and outputs of the alternatives, Table 2-5 compares how each alternative responds to the purpose and need for the project, and Table 2-6 compares the effects of the alternatives on the issues described in Chapter 1. See Chapter 3 for a complete description of effects and the scientific basis for these results.

Table 2-4. Summary of Outputs and Activities by Alternative.

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<tr>
<th>Output or Activity</th>
<th>1 (No Action)</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>Acres treated</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Est. Volume Harvested (million board feet)</td>
<td>0</td>
<td>3.9</td>
<td>2.3</td>
</tr>
<tr>
<td>Acres by Silvicultural Prescriptions:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Even-aged Regeneration (EAR)</td>
<td>0</td>
<td>516</td>
<td>432</td>
</tr>
<tr>
<td>Free Selection (FS)</td>
<td>0</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Patch Clear Cut with Reserve Trees (PCCR)</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Patch Clear Cut (PCC)</td>
<td>0</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>Acres by Harvest System:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractor</td>
<td>0</td>
<td>463</td>
<td>432</td>
</tr>
<tr>
<td>Helicopter</td>
<td>0</td>
<td>108</td>
<td>0</td>
</tr>
<tr>
<td>Acres of Fuel Treatment</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tractor Pile and Burn</td>
<td>0</td>
<td>453</td>
<td>406</td>
</tr>
<tr>
<td>Excavator Pile and Burn</td>
<td>0</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Broadcast Burn</td>
<td>0</td>
<td>82</td>
<td>2</td>
</tr>
<tr>
<td>Jackpot Pile and Burn</td>
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<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Lop and Scatter</td>
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<td>9</td>
<td>0</td>
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<tr>
<td>Acres of Reforestation:</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Planted</td>
<td>0</td>
<td>434</td>
<td>372</td>
</tr>
<tr>
<td>Site Prep for Natural Regeneration</td>
<td>0</td>
<td>102</td>
<td>42</td>
</tr>
<tr>
<td>Roads and Landings:</td>
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<td>New Road Miles Constructed</td>
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<td>0.2</td>
<td>0.2</td>
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<td>Existing Road Miles Improved</td>
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<td>Road Miles Obliterated</td>
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<td>8.7</td>
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<td>Road Miles Now Open but Closed After Timber Sale</td>
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<td>5.7</td>
<td>5.7</td>
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<td>Roads Closed Now and Naturally Decommissioned</td>
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<tr>
<td>Road Miles Now Closed, May Be Used, Re-closed</td>
<td>0</td>
<td>10.7</td>
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Table 2-5. Response to Purpose and Need (Improved Vegetative Characteristics)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of VSS in each class</td>
<td>No effect</td>
<td>Improvement</td>
<td>Improvement</td>
</tr>
<tr>
<td>Acres of improved species composition</td>
<td>0</td>
<td>552</td>
<td>432</td>
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<tr>
<td>Acres of improved stand structure</td>
<td>0</td>
<td>571</td>
<td>432</td>
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<tr>
<td>Acres of improved stand density</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres reduced insect &amp; disease activity</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres of reduced fuel loading</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres of improved growth and health</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
</tbody>
</table>
Table 2-6. Effects of the Alternatives

<table>
<thead>
<tr>
<th>Issue and Indicators</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
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</thead>
<tbody>
<tr>
<td>Roadless Character and Wilderness Potential</td>
<td>(No Action)</td>
<td>(Proposed Action)</td>
<td></td>
</tr>
<tr>
<td>Acres of roadless area eliminated from</td>
<td>0</td>
<td>542</td>
<td>0</td>
</tr>
<tr>
<td>wilderness consideration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres remaining eligible for wilderness cons.</td>
<td>2,135</td>
<td>1,593</td>
<td>2,135</td>
</tr>
<tr>
<td>Effects on wilderness attributes</td>
<td>No Effect</td>
<td>Some Adverse Effects</td>
<td>No Effect</td>
</tr>
<tr>
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<td>Low Risk with trend toward further improvement</td>
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Identification of the Preferred Alternative

Alternative 2, the proposed action, is the preferred alternative for the Sloan-Kennally timber sale. This alternative is described in detail on pages 2-4 through 2-7 of Chapter 2, and includes the management requirements and mitigation measures on pages 2-12 through 2-18.
# Chapter 1

## Purpose and Need

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Chapter 1. Purpose of and Need for Action

Introduction

This Final Environmental Impact Statement (FEIS) analyzes and discloses the potential site-specific effects of the proposed Sloan-Kennally Timber Sale on resources and issues within and surrounding the planning area on the McCall Ranger District of the Payette National Forest. This analysis is tiered to and supplements the analysis in the FEIS (Final Environmental Impact Statement) prepared for the Payette National Forest Land and Resource Management Plan (USDA 1988b), hereafter referred to as the Forest Plan.

Background

The Payette National Forest initially released a Draft Environmental Impact Statement (DEIS) for the Sloan-Kennally Timber Sale in August, 1994. Since that time, events have occurred on the Forest and changes have occurred in Forest policy and management direction that required revision of the project proposal. The result was a need to revise the DEIS to include a new proposed action that responded to these changes. The changed events include:

Events on the Forest:

- Nearly 290,000 acres on the Payette National Forest burned in wildfires in the late summer and fall of 1994.

Although the fires did not burn into the planning area for this sale, they did require the attention of Interdisciplinary (ID) Team members in suppression efforts and, after the fires, in developing post-fire salvage sales. This caused the Payette National Forest to delay the Sloan-Kennally project timeline.

- The Forest experienced a major flood event in January, 1997.

Impacts from the floods were most noticeable in specific areas outside the planning area. Minor flood damage on other ownership's within the Gold Fork Watershed shall be considered along with this project in relation to water quality in Cascade Reservoir. ID Team members were involved in flood damage repair projects, again deferring the Sloan-Kennally project timeline.

Changes in Forest policies and management direction:

- The Forest incorporated INFISH management direction (USDA 1995) into the Forest Plan.

INFISH established management direction for inland native fish habitat, including that within the Sloan-Kennally planning area. Wider stream side buffers and standards and guidelines for activities within the buffers required adjustments to the Sloan-Kennally project and planned activities so that the proposed action would be in compliance with INFISH direction.
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- The Forest Service and Bureau of Land Management released the Upper Columbia River Basin Draft Environmental Impact Statement and associated Scientific Assessments. The scientific assessments provided a potential source of new information to be considered in the analysis. This information was at a large scale and needs to be validated at the local level.

- The Forest is taking an ecosystem and watershed-level approach to management activities wherever possible.

The original Sloan-Kennally DEIS only looked at the project on a more localized scale. This FEIS will expand it to a watershed-level or beyond where appropriate.

- The Chief of the Forest Service presented an interim roadless direction for activities in roadless areas and a natural resource agenda which has four key areas of focus for Forest Service activities.

New interim direction has resulted in a change in the way the Forest Service analyzes and manages roadless areas. A final policy will be forthcoming sometime after this project is completed. Therefore, this FEIS must now conform to this interim direction. The natural resource agenda identifies four key areas of focus for Forest Service activities: watershed health and restoration, sustainable forest ecosystem management, forest roads, and recreation. Activities proposed in this FEIS will further promote achievement of this agenda.

Other events requiring response:

- Bull trout were listed as threatened under the Endangered Species Act.

As a result of this listing, Forest fish biologists were required to prepare biological assessments and consult with the U.S. Fish and Wildlife Service (USFWS) on the effects of ongoing Forest projects on bull trout. This deferred ID team participation on the Sloan-Kennally project.

- Cascade Reservoir is now classified as a Water Quality Limited Body under the Clean Water Act.

Based on comments received on the DEIS, there needed to be a better analysis of the effects of this project on water quality in Cascade Reservoir. There also needs to be additional design measures implemented to help reduce the input of phosphorous into the Gold Fork River system.

- The Lynx has been proposed for listing under the Endangered Species Act.

While the Lynx was considered in the DEIS as a Region 4 sensitive species, the proposed listing has necessitated a more comprehensive look at the effects of this project on the species.

- The range of the Ute ladies-tresses, a plant listed as threatened under the Endangered Species Act, has been extended to include the Payette National Forest.

Similar to the Lynx, Ute ladies-tresses was considered as a sensitive species, but now takes on a greater importance in analyzing the effects of this project on the plant.
**Purpose and Need**


Vegetative manipulation after this time takes on a different perspective. There are now forest structure guidelines the Payette applies to timber harvest that were not applicable at the time of the 1994 DEIS. This FEIS takes into account new information brought to light since the release of the 1999 DEIS on the roll of fire in the ecosystem and how that may have modified information found in the Southwest Guidelines to be more specific to local conditions.

In summary, a number of changes and events resulted in Forest-wide actions requiring the attention of Sloan-Kennally ID Team members. The 1994 DEIS was shelved for four years while ID team members were involved with these other activities. In addition, several events required changes in the design and analysis of the proposed Sloan-Kennally project.

In 1998, the Payette assembled a new ID Team to update and reanalyze the proposed Sloan-Kennally project in light of the changes that had occurred and to complete the NEPA analysis. This FEIS responds to public comments on the 1999 DEIS, and incorporates changes in aforementioned silvicultural prescriptions and acres treated.

**Proposed Action**

The McCall Ranger District of the Payette National Forest proposes to harvest and regenerate timber stands in the vicinity of Sloans Creek and Upper Kennally Creek in the Gold Fork watershed (Figure 1-1). Proposed improvements to the road system would contribute to higher water quality in Cascade Reservoir. In addition, the proposal includes watershed improvement projects that would improve overall water quality in the planning area.

The Proposed Action would:

- **Harvest** an estimated 3.8 million board feet (MMBF) of timber from approximately 571 acres in the Sloan-Kennally planning area using tractor/jammer and helicopter logging systems. Harvest prescriptions include 516 acres of Even-Aged Regeneration harvest, 19 acres of Selection harvest, and 36 acres of Patch Clear Cuts (3 acres or less in size).

- **Reconstruct/improve** an estimated 24.8 miles of existing roads to meet current and future resource management needs in the area. Improvements will consist of graveling entire segments of roads, spot graveling near stream crossings, improving drainage through blading and shaping, and installing culverts where needed.

- **Reduce sediment generation** from existing roads by graveling 4 miles of road including 1 mile of road located in T. 17 N., R. 5 E., section 7, which was identified in the Gold Fork Watershed Analysis (1996) as a problem source of sediment and a high priority for treatment.

- **Obliterate** an estimated 8.7 miles of system and non-system road in the planning area which have been identified as having sediment problems and are no longer needed for the long term management of National Forest resources.
• Ensure stocking levels of desired species by planting Douglas-fir, ponderosa pine, and western larch seedlings on approximately 434 acres.

• Treat harvest generated fuels on an estimated 571 acres. Treatments will include tractor piling on 453 acres, excavator piling on 21 acres, broadcast burning on 82 acres, jackpot burning on 6 acres, and lopping and scattering on 9 acres.

Planning Area

The Sloan-Kennally planning area covers about 5,100 acres in the Sloans and Kennally Creek drainages of the Gold Fork watershed in T. 17 N., R. 4 E., section 25; T. 17 N., R. 5 E., sections 28, 29, 30, 31, 32, and 33; T. 16 N., R. 4 E., section 1; and T. 16 N., R. 5 E., sections 4, 5, 6, 7, 8, 9, 18, and 19, Boise Meridian (Figure 1-2). This is the broad planning outline that encompasses all proposed activities. It does not delineate the actual acres proposed for harvest, nor is it necessarily the area that will be analyzed for effects on each issue or resource.

There are approximately 132,300 acres in the Needles Roadless Area on the Payette National Forest adjacent to and partly within the Sloan-Kennally planning area (Figure 1-3). About 2,100 acres of the Roadless Area are within the planning area boundary. The Forest Plan has allocated these acres for timber, recreation, wildlife, range, and watershed management (Forest Plan p. IV-219 to IV-225). The Forest Plan allocated 95,816 other acres as proposed wilderness (p. IV-310).

Access to the area is from the west, over the Paddy Flat Road No. 50388 from Farm to Market Road over Paddy Flat Summit. The planning area lies entirely within Valley County, Idaho and is on the McCall Ranger District of the Payette National Forest. The planning area is about 13 miles southeast of McCall and 10 miles east of Highway 55. The planning area is described in more detail in Chapter 3.
Figure 1-1. Vicinity Map of the Sloan-Kennally Planning Area
Figure 1-2. Sloan-Kennally Planning Area
Figure 1-3. Sloan-Kennally Planning Area With Roadless Area Boundary
Chapter 1

Purpose and Need

The purpose of the proposed action is to improve the existing condition of timber stands within the Sloan-Kennally planning area in accordance with the goals, objectives, and Desired Future Condition described in the Forest Plan (Forest Plan, pages IV-50 to IV-69). In particular, the proposed action addresses the Forest Plan goal to “manage suited timber acres to near site potential to produce commercial crops of trees suitable for timber production.” The Proposed Action would meet this direction by increasing long-term health, diversity, and productivity of the timber resource while providing short-term wood products and reducing risks from insects, disease, and wildfire.

The need for the proposed action is generated by the difference between existing timber stand conditions in the planning area and the desired conditions for stands in the area as stated and discussed below in three categories: 1) Forest Structure; 2) Stand Characteristics and Conditions from a Historic Perspective; and 3) Stand Growth and Health.

Forest Structure

Forest structure refers to Vegetative Structure Stages (VSS) or the amount and distribution of open, young, mid-aged/mature and old forest in the planning area. These structural objectives were adopted from the Southwestern Goshawk Guidelines and made policy in a July 1996 Payette Forest policy letter. These VSS desired conditions are meant to sustain a balance of forest structure across the planning area to provide for wildlife habitat, biodiversity, and wood products on a sustainable basis. The current condition compared with the desired condition helps determine the areas that are available for treatment. Table 1-1 shows the existing and desired VSS.

Table 1-1. Percent of Vegetative Structural Stages (VSS) in the Planning Area

<table>
<thead>
<tr>
<th>Vegetative Structural Stage (VSS)</th>
<th>Desired Condition</th>
<th>Current Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>10-20%</td>
<td>6%</td>
</tr>
<tr>
<td>Young Forest</td>
<td>20-30%</td>
<td>11%</td>
</tr>
<tr>
<td>Mid-aged to Mature Forest</td>
<td>40%</td>
<td>19%</td>
</tr>
<tr>
<td>Old Forest</td>
<td>20%</td>
<td>64%</td>
</tr>
</tbody>
</table>

The various VSS are represented by the following strata:

- open - strata 29, 41, 42, 70, and 20 and 21 when they are less than 10 years old.
- young forest - strata 30, 32, and 20 and 21 when they are greater than 10 years old.
- mid-aged and mature forest - strata 22, 33, 34, and 35.
- old forest - strata 23, 24, 25, 26, 41 and 42 in working groups 7, 8, and 9.

See strata and working group definitions in Appendix F. See Figure 3-1 for strata locations, Figure 3-2 for working groups, and Figure 1-4 for VSS within the planning area.
Figure 1-4. VSS: Open, Young, Mid-Aged to Mature, and Old Forest in the Planning Area
Chapter 1

Stand Characteristics and Conditions from a Historic Perspective

The Forest has recently incorporated ecosystem management principles into its projects. This section looks at forest vegetation from a historic perspective at the stand level (historic norms). Historic norms refers to stand characteristics and conditions (not including the extremes) that occurred in the past, prior to fire exclusion. Having an understanding of these conditions helps establish limits of acceptable change and provides a reference for a desired condition. Where the current condition differs from the desired condition, treatment should be proposed. Most of the planning area is within historic mixed severity and lethal fire regimes (Sanders, 1998).

Existing Condition of Stand Characteristics

The main habitat types that occur within the planning area include: grand fir/blue huckleberry, grand fir/mountain maple, subalpine fir/blue huckleberry, and subalpine fir/beargrass. These habitat types are common in historic mixed severity and lethal fire regimes.

Insect and disease occurrence can be generally described as: scattered Douglas-fir beetle infestations, mountain pine beetle in dense patches of lodgepole pine; previous spruce beetle infestations; western pine beetle in the scattered ponderosa pine; evidence of past spruce budworm infestations; widespread dwarf mistletoe; and western gall rust in the younger lodgepole pine. Presently there is not an epidemic occurrence of any of these pathogens.

Six wildfires greater than 15 acres have burned within the Gold Fork watershed since 1960. Only the 1979 East Fork Kennally fire, which burned 1,240 acres, has affected a large area in recent years. A total of 95 fires since 1960 have burned 1,928 acres in the Gold Fork watershed. Of these fires, 83 were lightning-caused and 12 were human-caused. The area was minimally affected by the large fires of 1989 and 1994. Current fuel loading ranges from 6 to 26 tons per acre within the planning area. The project fire and fuels specialist completed a hazard risk assessment for this project which shows the Gold Fork Watershed is at a moderate to high risk of fires burning outside of historic norms. The planning area would generally burn within historic norms.

2,300 acres, or 45 percent of forested land within the planning area, is in the mixed conifer working group which includes mainly the cool moist grand fir habitat types. This corresponds to the historic mixed severity fire regime. There are small areas of historic non-lethal fire regime within the areas of mixed severity fire regime. These small islands of non-lethal regimes probably behaved more like mixed severity fire regimes (fire had to come from adjacent moister sites unless each of these small islands got a direct lightning strike, which is unlikely). The remainder of the area, 2,801 acres or 55 percent of the forested land, is made up of the subalpine fir, lodgepole pine, and Engelmann spruce working groups. This corresponds to the historic lethal fire regime. Figure 3-2 shows how these two historic fire regimes are distributed across the planning area.

In areas not previously treated by timber harvest (3,304 acres of strata 23, 24, 34, and 35 or 65 percent of the forested area, mostly within the roadless area), fire exclusion has altered stand characteristics and conditions. Stand structure, species composition, stand density, insects and disease occurrence, fuel loading, and potential fire severity are now at the upper limits of historic norms, with some departures from historic, especially in the lodgepole pine cover type. That is, 100 years ago. if these conditions
existed, a wildfire could have occurred at any time that would have replaced these older stands with younger ones.

In partially harvested areas (1,226 acres of strata 21, 22, and 26, or 24 percent of the forested area) with canopy closures exceeding 50 percent, more shade tolerant species such as grand fir are regenerating than was historically present. Though fuels have been treated in these former harvest units, excessive fire-intolerant grand fir in the understory creates increased susceptibility to crown fires, thus potentially greater tree mortality during fire events. Some stands with canopy closures less than 50 percent are inadequately stocked with young trees and are in need of treatment.

Of the remaining acres in the planning area, 275 (five percent) are older clearcuts which are now fully stocked plantations, and 296 (six percent) are lands unsuited for commercial timber management.

Desired Condition of Stand Characteristics

The desired condition is to mimic historic conditions as closely as possible while avoiding conditions that would encourage wildfire and insect and disease outbreaks. From a historic perspective, about 338 acres in the planning area are in a non-lethal fire regime (dry sites), while the remaining area, 4,763 acres, are in mixed severity and lethal fire regimes (moist and wet sites). The non-lethal fire regime is characterized by uneven-aged stand structure while mixed and lethal fire regimes are characterized by even-aged stand structure with a remnant overstory. The difference between mixed and lethal fire regimes is patch size (mixed has smaller patches) and amount and distribution of the remnant overstory after a fire event (mixed has more remnant overstory).

In both the mixed and lethal fire regimes, regeneration of early seral species such as western larch, Douglas-fir, lodgepole pine, and ponderosa pine is encouraged. Stand densities are managed to avoid stagnation and excessive mortality (see stand growth and health below), though under purely historic conditions excessive densities in these fire regimes occurred prior to a fire event. Insect and disease activity and impacts do not exceed a low to moderate level. Fuel loadings are generally less than 15 tons per acre.

Stand Growth and Health

The Forest Plan provides direction on the growth of timber stands (Forest Plan, pages IV-50 to IV-69). The Plan stresses density management because it is essential in maintaining stand health and providing the desired wood products. Though Forest Plan direction is somewhat contrary to purely historic conditions as mentioned above concerning stand densities, density management is essential in providing wood products and to avoid conditions that would promote wildfire. In addition, stand growth is a good indicator of stand health. If a stand is growing well it is most likely healthy. Healthy stands are necessary to avoid the sudden changes in the forest condition caused by wildfire and insects and disease that would eventually occur in unhealthy stands.

Existing Condition of Stand Growth and Health

About 65 percent of the forest land (strata 23, 24, 34, and 35) is experiencing tree mortality related to slow growth, advanced age, density, and insect and disease infestation. These are areas that have not been harvested in the past and have not experienced fire in over 100 years. Forest inventory data
summarizes show current growth in strata 23 and 24 (3,137 acres) to be negative; that is, mortality is exceeding growth. In strata 34 and 35 (167 acres), growth is below site potential. Approximately 24 percent of the forest land (strata 21, 22, and 26), or 1,226 acres, has slow growth related to poor stocking and/or has undesirable species composition. Refer to the Payette Intensive Forest Inventory (USDA 1991-92) for current growth information within these strata.

Desired Condition of Stand Growth and Health

Stands are healthy and growing vigorously to near site potential. Stands with negative growth (strata 23 and 24), due to old age and high densities, are converted to young vigorous stands of Douglas-fir, western larch, lodgepole pine, or ponderosa pine where stand densities are managed to maintain growth and health. Stands with growth below site potential (strata 34 and 35) are either thinned or converted to young stands that have the same species composition and density management as mentioned above. Stands with poor stocking and/or undesirable species composition (strata 21, 22, and 26) are treated and regenerated to young stands of the species mentioned above. Stocking levels of crop trees at the fifth year after regeneration would range from 250 to 335 trees per acre.

Tracking How the Alternatives Address the Purpose & Need

In Chapter 3, the first section entitled "Vegetation" describes how each alternative addresses the purpose of and need for the project. To track how the alternatives address the purpose and need, a set of criteria evaluates vegetative outputs in Chapter 3.

These criteria include:

- Forest Structure - Percent of VSS (Vegetative Structure Stages) in each class
- Stand Characteristics and Conditions - Acres of improved characteristics and conditions for species composition, stand structure, stand density, insects and disease, and fuel loading
- Stand Growth and Health - Acres of improved growth and health

Management Direction

The Proposed Action follows Forest Plan direction. Because no single acre on the Forest can serve all uses at once, the Forest Plan allocates different emphases to different areas of the Forest, based on the land’s capabilities. In the Forest Plan, the Forest is divided into 26 Management Areas. The Sloan-Kennally planning area lies in Management Area 20. Management Area 20 provides for roaded, multiple-use management, including timber management (Forest Plan, pages IV-218-225). Additional direction can be found in the Forest-wide goals, objectives, desired future condition, and standards and guidelines on pages IV-1 to IV-132 of the Forest Plan. Pertinent and specific resource management direction begins each resource section in Chapter 3 of this document.

The Forest Plan directs and integrates management of the entire Forest, including roadless areas. The FEIS for the Forest Plan analyzed a range of development and non-development alternatives for all of the Forest’s roadless areas. Based on that analysis, the Forest Plan recommended some roadless areas for wilderness and assigned others to non-wilderness management. The Forest Plan assigned part of the
Needles Roadless Area to general forest management, including timber harvest. The south east portion of the Sloan-Kennally planning area is in the portion of the roadless area assigned to general forest management. However, Forest Plan decisions allow development, rather than mandate it. The site-specific effects must be examined before development can occur. The Chief of the Forest Service has released an interim policy dealing with management in roadless areas. This policy will determine if, how, or when entry in the Needles Roadless Area will proceed with this project.

In addition, this project follows recent changes in management direction not covered in the Forest Plan. These changes include: identification of sensitive species by the Regional Forester, the listing of bull trout, Ute ladies-tresses, and the proposed listing of lynx under the Endangered Species Act, adoption of ecosystem management principles by the Payette National Forest, completion of the phase I and II Watershed Management Plans for the Cascade Reservoir Watershed (see below), following of the Management Recommendations for the Northern Goshawk in the Southwestern United States, and incorporation of INFISH guidelines to the Forest Plan.

The Idaho Division of Environmental Quality has completed Phase I and II Watershed Management Plans for the Cascade Reservoir Watershed. Phase I identified water quality standards within the reservoir for reduction of algal growth, point and non-point sources of nutrient loading, and subwatershed-specific load allocations and reductions required to meet in-reservoir water quality standards. Phase II further refined the instream parameters. The management plans have determined that to attain acceptable water quality improvements within the Gold Fork watershed, a 30% reduction in overall phosphorus load is required.

**Desired Condition**

Desired conditions for each resource in the planning area are described in more detail in Chapter 3. These represent Forest-wide desired future conditions, standards and guidelines, goals, and objectives from the Forest Plan applied at the site-specific project level. They also incorporate new direction such as adoption of the Northern Goshawk guidelines, INFISH direction, and ecosystem management principles.

Management objectives are designed to move the planning area toward a desired future condition. The desired future condition is a general description of what the Forest should be like in about 50 years. It is the condition resulting from meeting the goals, objectives, and standards and guidelines of the Forest Plan. The ID Team combined the desired future condition with public comments on the 1994 DEIS and recent changes in management direction to create an integrated desired condition for this area.

The desired condition of the Sloan-Kennally planning area in about 50 years includes:

- The planning area is managed for timber, wildlife habitat, water quality, dispersed recreation, and a variety of other resources to contribute to the overall health and productivity of the ecosystem.
- Vegetative succession and structural stages are within their desired condition (Table 1-1).
- Both natural and prescribed fires contribute to diversity by creating landscape mosaics which resemble historic conditions. Multiple fire regimes are present and operate within a historical range of variation for frequency, severity, and ecological effects.
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• Timber stands contribute to a sustained yield of timber products. Periodically the area is entered for management; timber is cut, trees are planted, and dense stands are thinned to increase the growth and yield of the remaining trees. As a result, most stands are resilient and vigorous, with minor effects from insects and diseases.

• Most timber stands have structure in the form of snags, down logs, scattered large live trees, and young trees resembling natural conditions.

• A network of old forest habitat extends through the area. Animal populations dependent on old forests are stable. Large, dead trees remain across the landscape and support woodpeckers and other snag-dependent species. Elk numbers are stable and at target levels.

• Habitat exists for threatened, endangered, and sensitive (TES) fish and wildlife species to contribute to viable populations across the Forest. TES plant species and special vegetation habitats are adequately preserved and represented in the area.

• Soils retain more than 90 percent of their natural productivity. Riparian areas are in good condition. Streams provide clean, cool water, and good fish habitat within and downstream of the planning area. Water quality is contributing to the continued improvement of Cascade Reservoir.

• Roads unneeded for long-term management of the area have been restored to productivity and now blend into the landscape. Vehicles are allowed only on designated roads and trails. Dispersed recreation opportunities are available within the area.

Decisions to be Made

The Responsible Official for this project is the Forest Supervisor. Based on the analysis in this document, the Forest Supervisor will make the following decisions and document them in a Record Of Decision accompanying or following a Final EIS:

Should the planning area be entered for timber harvest and regeneration at this time?

If so:
• How many acres should be treated?
• Where and how are those acres to be treated?
• What measures are taken to move other Forest resources toward their desired conditions?
• What management requirement and mitigation measures are necessary to meet the Forest Plan standards and guidelines for all resources?
• What monitoring requirements are appropriate to evaluate project implementation?
Scoping and Issues

Scoping is the process used to identify the issues raised by a proposed action. The Forest Service obtains input from the public and from agency resource specialists through the scoping process and uses that information to determine issues for a proposed project. The Forest began the scoping process for the Sloan-Kennally timber sale in 1991 by placing a Notice of Intent to Prepare an Environmental Impact Statement in the March 19, 1991 issue of the Federal Register. The notice invited comments on the proposed timber sale and on the scope of the environmental analysis and potential issue categories. The Forest also solicited comments from people on a forest-wide mailing list and issued a press release to the McCall newspaper, The Star News. In response to these scoping activities, the Forest received 10 oral and written comments during a 45-day comment period with an additional written comment received in February, 1992. In addition, the Forest conducted a public field trip in June of 1992.

An interdisciplinary team analyzed initial comments from the public, combined them with management concerns, and developed the issues for the proposed timber sale. The Sloan-Kennally project record contains additional information on the scoping and issue development process.

The Forest released a Draft EIS for the Sloan-Kennally timber sale in August of 1994 and received public comment, but a final EIS was not completed. After an extended delay for reasons outlined on pages 1-1 and 1-2, a new ID Team revalidated the original issues against a new proposed action in 1998 and updated their analyses to reflect knowledge gained from more recent field visits, inventories, changes in Forest Service management emphasis, listing of species under the Endangered Species Act, as well as public input received on this project and other Forest projects. The Forest published a revised Notice of Intent in the Federal Register on May 6, 1999, soliciting additional comments on the scope of analysis. More information on the public involvement aspect of scoping is in Chapter 4.

Three categories of issues emerged: Major issues used to formulate alternatives to the proposed action; other issues that do not lead to a new alternative but are analyzed in terms of environmental consequences; and issues not analyzed because they are addressed through project design or mitigated as standard operating procedures and do not require tracking through the document.

Issues are grouped by resource and described with an issue statement, some background information to clarify the issue, and a list of indicators used to measure the environmental effects of each alternative.
Major Issue Resulting in Formation of an Alternative

Roadless Character and Wilderness Potential

Issue:
Proposed management activities within the roadless area could modify the roadless character. Wilderness attributes could be affected which in turn may affect the area’s potential for wilderness designation.

Background:
The proposed Sloan-Kennally Timber Sale planning area lies partially within the Needles Roadless Area (RARE II #4-451). While timber harvest activities can modify the roadless character of an area, the degree of change is a function of the actions. If roads are built and large areas are clearcut, then modifications can be significant. If only selective harvest by helicopter occurs with no new roads constructed, then the impacts will be far less. Any action can have an affect on the wilderness potential of the area treated.

The Needles Roadless Area contains approximately 132,340 acres on the Payette National Forest. The Forest Plan allocated a combination of management prescriptions including general forest management, undeveloped recreation, and recommended wilderness. Nevertheless, public opinion remains divided over the allocation, and interest remains high regarding the effects of development on the roadless character and wilderness potential of the roadless area.

The Forest Plan recommended that approximately 61 percent of the Needles Roadless Area be managed to protect its wilderness qualities until Congress passes legislation determining the final status of the area. Another 5 percent shall remain in an undeveloped state and the remaining 34 percent was recommended for general forest management. These recommendations did not mandate actions, and any actions would be analyzed in site specific NEPA documents.

The portion of the Needles Roadless Area that would be affected by the Sloan-Kennally Timber Sale is within the 25,383 acres the Forest Plan allocated to general forest management. The Plan did not, however, specify what types of harvest should occur, or to what degree it should occur. While the proposed action would not construct roads within the roadless area, there may be timber harvest activities that would change the character of the roadless area and its wilderness potential.

The Interior Columbia River Ecosystem Management Project (USDA & USDI 1996) identified the North Fork Payette, including the Sloan-Kennally planning area, as having low ecological integrity. It identified roadless areas as potential strongholds for threatened and endangered species.

Indicators:
• Acres of roadless area eliminated from wilderness consideration
• Acres remaining eligible for wilderness consideration
• Effects on wilderness attributes
• Effects on roadless character
Other Issues Addressed

These issues are not used to formulate alternatives to the proposed action, but the ID team determined they will be analyzed in terms of environmental consequences. These effects will be summarized in Chapter 2 (Table 2-6, Comparison of Alternatives) and analyzed in Chapter 3.

**Soil Productivity**

**Issue:**
Proposed management activities may affect long term soil productivity through increased soil compaction, displacement, puddling, and erosion.

**Background:**
The effects of timber sale, and other activities (e.g. roads, trails, and log deck landings) can commit areas to nonproductive uses for long periods of time. The indicator is termed Total Soil Resource Commitment. The Forest Plan directs that no more than 5 percent of an activity area be in this condition. Currently 3 percent of the planning area is considered committed.

Random movement of heavy equipment (e.g. timber harvest, site preparation and brush disposal activities) can directly affect soil properties linked to on-site productivity, reducing the soil’s ability to provide nutrients, and moisture. The indicator is termed Detrimental Disturbance. The Forest Plan directs that no more than 20 percent of an activity area be in this condition.

**Indicators:**
- Total Soil Resource Commitment (5% or less)
- Detrimental Disturbance (20% or less)

**Water Resources**

**Issue:**
Proposed management activities may affect accelerated erosion as well as water yield and timing and rate of peak flows within the Kennally Creek watershed and downstream in the Gold Fork River. The Gold Fork River flows into Cascade Reservoir where additional water quality concerns exist.

**Background:**
Timber harvest and associated activities such as road construction, reconstruction, brush disposal, and site-preparation can adversely affect water quality primarily through increases in accelerated erosion. A high percentage of the impacts can be reduced through application of appropriate Best Management Practices (BMPs), and Soil and Water Conservation Practices (SWCPs).
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Water quality is a major concern within the Gold Fork watershed because all of the water flows into Cascade Reservoir. The State of Idaho identified Cascade Reservoir and the lower portion of the Gold Fork River (from Flat Creek to Cascade Reservoir) as water quality limited water bodies (WQLW). The State designated both water bodies as 303(d) water quality limited because they are not in compliance with Idaho water quality standards and therefore do not fully support their beneficial uses.

The State has developed the Cascade Reservoir Phase II watershed Management Plan, which requires a 30% reduction in the pollutant phosphorous (Idaho Division of Environmental Quality, 1998).

Management activities can also affect water yield and timing, and duration of peak flow through alterations in the forest canopy. Hydrologic risk analysis is a subjective assessment which uses a Canopy Removal Index (CRI), Rosgen stream types (RST), riparian inventory information and a channel stability index (CSI) to determine what effect timber harvest will have on channel stability.

Indicators:
- Percent sediment yield over natural
- Hydrologic Risk

Fish Habitat

Issue:
Proposed management activities may affect certain habitat components for resident fish species in the planning area and downstream.

Background:
This issue is closely tied to the water resource issue. Fish habitat components are indicators of the ecological condition of the surrounding watershed. Habitat exists in the planning area for native and stocked trout species and other fish species including introduced brook trout, native redband trout, and bull trout. Redband trout are a management indicator species (MIS) (Forest Plan pages IV-36 and 40) because they represent fish species that are sensitive to habitat alterations. Bull trout have been found outside the planning area in other parts of the Gold Fork watershed, and are listed as threatened under the Endangered Species Act. Management activities involving land disturbance can create areas of accelerated erosion that introduce sediment to streams, affecting habitat for fish. Because of INFISH buffers, effects to other habitat components are not expected to occur to a degree where fish would be adversely affected.

Indicator:
- Risk of sediment affecting fish habitat
**Wildlife Habitat**

**Issue:**
Proposed management activities may affect the habitats of threatened, endangered, proposed, and sensitive (TES) wildlife species and Management Indicator Species (MIS) in and around the planning area.

**Background:**
Timber harvest activities can adversely affect wildlife habitat primarily by altering vegetation and building access roads that increase human presence and wildlife vulnerability. In particular, effects to the habitats of TES species could affect wildlife population numbers and viability. No threatened or endangered wildlife species have been seen in the planning area. Region 4 sensitive species goshawk and great grey owls have been observed in the area. Timber harvest activities could affect habitat for these and other TES species for which suitable habitat is present.

MIS (management indicator species) are those whose populations levels indicate the effects of Forest management activities on the habitat on which they depend. The Payette selected four MIS (elk, pileated woodpecker, Williamson’s sapsucker, vesper sparrow) because their habitat requirements encompass a diverse range of forest vegetative stages. Suitable habitat for elk, pileated woodpecker and Williamson’s sapsucker exists in the planning area. Elk are habitat generalists that prefer a distribution of cover and forage areas, along with security and travel corridors. Pileated woodpeckers and Williamson’s sapsuckers prefer old and mature forest habitat with snags and down logs for nesting and foraging. Three indicators will be used to analyze the effects of proposed activities on these species’ habitats.

**Indicators:**
- Vegetative Structural Stage (VSS) distribution
- Old growth habitat in Circle 23
- Elk Habitat Effectiveness (EHE)

**Recreation**

**Issue:**
Proposed management activities may affect recreation use through road closures and access management in the planning area.

**Background:**
Timber harvest activities can affect the existing and future recreation uses and opportunities within the Sloan-Kennally planning area. These timber activities need to fulfill the Forest Plan’s recreation Standards and Guidelines to satisfy public expectations for a satisfying recreation experience. Recreation use within the Sloan-Kennally planning area occurs mainly in a dispersed fashion for such
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uses as sightseeing, hunting, fishing, and firewood gathering. Closing roads and restricting access may affect recreational use.

Indicators:
- Recreation Visitor Days (RVDs) affected
- Miles of road and trail access affected

Economics/Socio-economics

Issue:
The economic efficiency of Forest Service timber sales is a public concern. The amount of timber harvested, the mix of harvest systems, silvicultural prescriptions, and related costs can influence this efficiency. Timber harvest associated with the Sloan-Kennally Timber Sale would also affect timber-linked jobs and income in the West Central Idaho Highlands.

Background:
Traditionally, the economic well-being of communities near the Forest has depended on resources from the forest -- primarily timber, range land, and recreation. This timber sale may provide economic and socio-economic values and opportunities to the communities surrounding the Payette. These can include jobs and income and payments to counties.

Indicators:
- Net value
- Cost per MBF harvested
- Jobs and income within the West Central Idaho Highlands
- Payments to counties

Issues Not Analyzed

Besides the major and other issues identified above, the ID Team also analyzed the effects of the alternatives on other relevant issues and resources, including visual quality, air quality, biological diversity, heritage resources, range, TES plants, and noxious weeds.

Concerns with these issues are addressed through project design, management requirements, or mitigation measures that appear in Chapter 2. These analyses are detailed in the project record and are summarized below, and will not be tracked further in this document.

Visual Quality

The issue is that proposed management activities may affect visual quality in the planning area. Timber harvest activities can modify the existing scenery as seen from roads, trails, campgrounds and other
sensitive locations. Harvest-related activities need to meet visual quality objectives established by the Forest to meet public expectations for a satisfying experience and, in some situations, a near-natural appearing landscape. The Sloan-Kennally planning area is mainly seen by the public from the Sloans Point Road that runs through it and the Kennally Creek Road which runs adjacent to the area. In both of the action alternatives, the cutting unit prescriptions have been designed to comply with the Visual Quality Objective (VQO) Standards and Guidelines as established in the Forest Plan (see project record for details).

Air Quality

Proposed management activities may affect air quality within the airshed that contains the planning area. Timber harvest activities can increase fuel loading and fire hazard, with potential subsequent effects on air quality. Prescribed burning can contribute to increased smoke conditions in and around the planning area. The air quality analysis in the project record concluded that the action alternatives would generate smoke from prescribed burning and dust from logging traffic that would temporarily reduce local air quality. However, all alternatives would meet Forest Plan direction for air quality, as well as all State and Federal clean air standards. Prescribed burn plans for slash pile and/or broadcast burning would be designed to meet state and federal clean air standards (see Chapter 2, Management Requirements).

Biological Diversity

Proposed management activities may affect components of biological diversity in and around the planning area. The 1994 DEIS addressed biological diversity as a separate issue. This document does not present biological diversity as a separate resource or issue but rather incorporates its analysis in several other resource sections. The many components of biological diversity are better addressed directly by the resources most affected. Information and analysis concerning key components of biodiversity are included in the resource sections of Chapter 3. More specifically, the Vegetation section discusses forest structure, stand characteristics from a historic perspective, and stand growth and health; the Water Resources section discusses water quality, water yield and riparian areas; the Soil Productivity section analyzes effects to long-term soil productivity; the Fish Habitat section describes effects on stream channel conditions and fish habitat; the Wildlife Habitat section addresses threatened, endangered and sensitive species, management indicator species, old growth, vegetative structural stages; snags, and habitat security; and the Roadless Character and Wilderness Potential, Recreation, and Economics/Socio-economics sections analyze effects on the human components of the ecosystem.

Heritage Resources

The Forest Archaeologist completed a heritage resource survey, locating one heritage resource site within the planning area boundary (see project record). It is an historic ditch that lies outside a harvest unit and will be avoided by all activities. All alternatives will meet Forest Plan direction for protection of heritage resources. Furthermore, if any sites are discovered during sale activities, the Forest Service would stop work in the area until an archaeologist evaluates the site and its importance and apply protective measures if warranted (see Chapter 2, Management Requirements).
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Range

The issue is that proposed management activities may affect permittee operations and range land conditions in the planning area. The area is within a sheep and goat allotment, although all grazing activities occur well outside the planning area. Forage conditions within the planning area are low in productivity, and currently the allotment is not being grazed. The Forest Range Conservationist determined none of the alternatives would adversely affect the range resource.

TES Plants

The Forest Botanist surveyed in and around planning area and found no threatened, endangered, or sensitive plants. Therefore, the project would have no effect on TES plants (see BA in project record). If new plants are listed under the Endangered Species Act or added to the sensitive plant list, the Forest will conduct additional surveys to ensure that there will be no effect to TES plants.

Noxious Weeds

The issue is that proposed management activities may cause an increase in noxious weed infestations in the planning area. The planning area is within the Payette River Weed Management Area. A comprehensive Noxious Weed Management Plan is being developed between all landowners and managing agencies. These areas replace jurisdictional boundaries in favor of natural boundaries that facilitate cooperation, coordination, and implementation of effective integrated weed management programs for noxious weeds. There are no known Forest priority noxious weeds within the project area (survey information is available at the New Meadows Ranger District). Other noxious weeds present are Canada thistle (Cirsium arvense) and Yellow toadflax (Linaria vulgaris). St. Johnswort (Hypericum perforatum) is most likely present but not identified in the current inventory.

Management requirements common to all action alternatives allow the control of noxious weeds, if found in the sale area, using methods that meet current Forest direction (Table 2-1). Knutson-Vandenburg (KV) opportunities eligible for funds generated by the timber sale include noxious weed survey and treatment.

Should action alternatives increase currently established noxious weed infestations, these management requirements would allow for their immediate control.

The movement of new noxious weeds into the area, primarily spotted knapweed (Centauraea maculosa), is of highest concern. Prevention is the most desirable treatment. In the year following ground disturbance, a noxious weed specialist would inventory the sale area to identify, map, and treat new weeds if present (Table 2-1).

Permits and Licenses

Except for some road maintenance, proposed activities are within National Forest System lands. The Forest Service would use standard land survey procedures to ensure adjacent nonfederal lands are not encroached upon by unauthorized federal activities. Existing permitted uses of National Forest System lands would be protected during project implementation. The project can be implemented through a standard Forest Service timber sale contract with project-specific provisions. The Forest will include a
provision in the timber sale contract to collect funds for timber hauled over a segment of Road No. 50401, which is cost shared with the State of Idaho. Any work involving activities within a stream channel with live water, such as culvert installation as part of road improvements, will require a stream alteration permit (404 Permit) from the Idaho Department of Water Resources.

**Preview of Remaining Chapters**

**Chapter 2. Alternatives Considered** - This chapter describes in detail a no action alternative, the proposed action, and an alternative designed to address the issues. This complete description includes the management requirements and mitigation measures that go along with the proposed action and alternatives to avoid or minimize environmental impacts. Monitoring items to assess various aspect of the project are also included Chapter 2.

**Chapter 3. Affected Environment and Environmental Effects** - This chapter combines two major parts of a NEPA analysis: the affected environment and the environmental effects associated with the proposed action and alternatives. This chapter describes the physical, biological, and human resources of the environment that may be affected and the effects the proposed action and alternatives may have on those resources. These have been combined to give the reader a more concise and connected picture of what the resources are and how the proposed action or alternative may affect them.

**Chapter 4. Public Involvement** - This chapter contains a summary of public involvement the Forest conducted for the project. It also lists recipients of the DEIS.

**Chapter 5. List of Preparers** - This chapter identifies Payette National Forest personnel who contributed to the preparation of this document.
Projected appearance of the EAR prescription at (A) 1 year; (B) 30 years; and (C) 75 years after harvest
Chapter 2
Alternatives Considered

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Chapter 2. Alternatives Considered

Introduction

This chapter describes the alternatives considered for the proposed project and summarizes the environmental effects of each of the alternatives. Chapter 2 contains the following sections:

Alternatives Considered but Eliminated from Detailed Study - discusses two groups of alternatives that were not carried forward in this analysis, and provides rationale for not studying them in detail:

1. Alternatives considered but eliminated from detailed study in the 1994 DEIS - These were the alternatives in the 1994 DEIS that were considered but eliminated during the initial analysis.

2. Alternatives considered but eliminated between the 1994 DEIS and the 1999 DEIS - These were the alternatives that were analyzed in the 1994 DEIS, but, for reasons described, were not carried forward in the 1999 DEIS.

Alternatives Considered in Detail - describes the alternatives that the ID Team analyzed in depth.

Elements Common to Both Action Alternatives - describes the factors each alternative shares.

Management Requirements - summarizes legal and other management obligations the Forest Service will comply with to minimize or avoid adverse environmental effects.

Mitigation Measures - summarizes actions to be applied to the selected alternative which were designed to reduce or prevent undesirable effects from proposed activities.

Comparison of the Alternatives - summarizes and compares the environmental effects of the alternatives.

Identification of the Preferred Alternative - identifies the alternative selected by the Deciding Official for implementation.

Alternatives Considered but Eliminated from Detailed Study

Several alternatives and variations were originally considered but not studied in detail in the 1994 DEIS. The ID team eliminated four action alternatives that had been analyzed in the 1994 DEIS. The rationale for elimination is explained below.

1. Alternatives considered but eliminated from detailed study in the 1994 DEIS

These alternatives, briefly described below, contributed to the reasonable range of alternatives but were not carried forward in the analysis of the 1994 DEIS for reasons described here and in Chapter 2.

• Several public comments indicated a desire for two land management strategies: expand the proposed Needles Wilderness boundary to include the ridge west of the South Fork of Kennally Creek, and recommend the entire roadless area within the Sloan-Kennally planning area for wilderness. These strategies would require reevaluating land allocation decisions made in the
Forest Plan and were not appropriate for the scope of analysis in a project EIS.

- Another alternative proposed constructing several miles of road in the southwestern portion of the roadless area. Field surveys showed the area to be steeply sloped and to contain fragile, erodible soils. Road construction in this area would be costly and would create a high risk of erosion by disturbing the fragile soils. The District Ranger decided the risk was too great and eliminated any proposed road construction in that area.

- The ID team developed two alternatives early in the DEIS process, one with no new road construction, and the other with no timber harvest within the roadless portion of the planning area. After several iterations with these alternatives, the ID Team developed one alternative to accomplish the objectives of these alternatives (eliminate the impact of road building on stream sedimentation and protect the roadless area’s integrity for future wilderness consideration), and to address biodiversity as well. This became Alternative 5 in the 1994 DEIS).

- The ID team developed an alternative solely to address the biodiversity issue. Its objective was to harvest timber using mostly uneven-aged silvicultural systems to minimize fragmentation of forest cover and preserve wildlife travel corridors. This alternative also became Alternative 5 in the 1994 DEIS. Several proposed units were dropped, including units within the roadless area requiring road construction and those that might affect areas heavily used by big game.

### 2. Alternatives considered but eliminated between the 1994 DEIS and the 1999 DEIS.

Because of the many changed conditions since the release of the 1994 DEIS, the proposed action and alternatives considered are no longer feasible. The four alternatives are described below, with a brief explanation of why they were eliminated from detailed study in this document. These were essentially Alternatives 2 through 5 in the 1994 DEIS.

- Alternative 2 (the proposed action) in the 1994 DEIS was designed to meet the Forest Plan objectives for timber management as closely as possible while striving to meet the standards and guidelines for other resources. It would have treated 969 acres and harvested 9.7 million board feet (mmbf). It would have entered the Needles Roadless area and built 4.2 miles of road, 1.5 of which was in the roadless area, and reconstructed 13.0 miles. All harvest would have been with ground based systems and used an even-aged silvicultural prescription. Stream buffers would have been those in the Forest Plan before the adoption of INFISH. It would have closed and rehabilitated 14 miles of system and non-system road.

  This alternative was eliminated because it did not follow the current Forest direction to manage for goshawk or protect native fish with the INFISH buffers. It also did not do enough to fully mitigate the effects of sediment on Cascade Reservoir. It would have built road in the Needles Roadless Area, which is not currently allowed under the Forest Service Chief’s interim roadless policy. It did not address the needed protection measures for Ute ladies-tresses.

- Alternative 3 was a modification of the proposed action and was designed to provide additional mitigation for water resources, soil productivity, fisheries, and wildlife. It accomplished this by reducing harvest acres to 725 and 7.2 mmbf. Silvicultural prescriptions remained even-aged. Helicopter harvest was also prescribed for 38 acres, and road construction decreased to 1.6 miles. Road reconstruction decreased to 11.2 miles. It did not build roads in the Needles Roadless Area, although it still harvested 48 roadless acres. It would have closed and rehabilitated 14 miles of system and non-system road.
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This alternative was eliminated for many of the same reasons as Alternative 2. It did not follow the current Forest direction to manage for goshawk or protect native fish with the INFISH buffers. It also did not do enough to fully mitigate the effects of sediment on Cascade Reservoir. It did not address the needed protection measures for Ute ladies-tresses.

• Alternative 4 emphasized timber management more strongly than the proposed action by treating more acres in the roadless area. It would have treated 1,073 acres and harvested an estimated 10.7 mmbf. Even-aged management was emphasized, although there were also 14 acres of commercial thinning. There would have been 969 acres of ground based harvesting and 104 acres of helicopter logging. It would have constructed 4.2 miles of road, with 1.5 miles of that in the roadless area. Road reconstruction was scheduled for 13.0 miles. A total of 245 acres would have been harvested in the roadless area. It would have closed and rehabilitated 14 miles of system and non-system road.

This alternative was eliminated for the same reasons as Alternative 2, plus it did not address lynx habitat protection.

• Alternative 5 was designed to emphasize conservation of biodiversity within the project area with additional consideration given to water resources and big game. It featured uneven-aged management as much as possible. It tried to maintain the overmature timber component, protect travel corridors, minimize fragmentation, and retain or restore unique or essential habitats or components of the ecosystem. It harvested only 363 acres and 2.9 mmbf. There were no roads constructed, either within or outside the roadless area. There were 7.4 miles of road reconstruction. It would have closed and rehabilitated 14 miles of system and non-system road.

This alternative was eliminated for the same reasons as Alternative 3, plus it did not address lynx habitat protection.

Alternatives Considered in Detail

The ID team analyzed three alternatives; each is described in detail. All acreage figures are best current estimates and are subject to adjustments as the Forest collects more precise information.

Alternative 1 (No Action)

The No Action alternative is required by the National Environmental Policy Act and serves as a baseline for analyzing effects. Under no action, current management of the area would continue as directed in the Forest Plan, except that this proposed timber sale and its associated activities and mitigation measures would not be implemented. The roadless portion of the planning area would not be developed, thus providing the opportunity to reevaluate the area for wilderness designation at a future date. This alternative would likely have little or no short-term impacts to the environment; however, it would not meet the Forest Plan timber management direction for this area nor the Purpose and Need for this proposal (see Figure 1-2).
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Roads

No roads would be constructed or reconstructed. No road obliteration would occur. Normal road maintenance would continue.

Harvest and Silvicultural Systems, Slash Disposal and Site Preparation

No timber harvest, silvicultural treatments, or slash disposal and site preparation would occur at this time. If wildfire or major outbreaks of insects or diseases affect the timber, the Forest may plan, analyze, and implement appropriate salvage or other harvest treatments in the area. Public firewood cutting would continue.

Reforestation

No reforestation connected to this project would occur. Other reforestation initiatives may occur.

Alternative 2 (Proposed Action)

The ID team developed this alternative after the 1994 Draft EIS. Since that Draft was published, many changes in management direction have occurred. The changes incorporated in this proposal are: INFISH direction, habitat requirements for sensitive species (mainly goshawk), snag and down woody requirements, additional hydrologic analysis to identify water quality improvement needs, and Historic Range of Variability (HRV) concepts. This alternative is consistent with the Forest Service Chief’s interim roadless policy and natural resource agenda.

Figure 2-1 illustrates Alternative 2.

No Forest Plan amendments would be required with this alternative. A total of 571 acres would be treated. Appendix C contains a table showing harvest, silvicultural, and site prep treatments for each unit.

Roads

Under this alternative, there would be minimal new road construction. Road improvements would consist of activities such as reopening roads that have not been recently used or maintained, graveling portions of roads within the planning area and along the haul route, and replacing culverts. Other activities include closing roads currently open and obliterating roads that are no longer needed to manage National Forest System lands. Appendix D displays the current status, use, and final status of all roads in the planning area.

- New road construction 0.2 miles
- Road improvements 24.8 miles
  - road graveling 4.0 miles
  - pre-haul maintenance (blading, dips, brushing) 20.8 miles
- Road closures 22.4 miles
  - roads open now but closed after the sale 5.7 miles
  - roads closed now, used for sale, then reclosed 10.7 miles
  - roads closed now, naturally decommissioned 6.0 miles
- Road obliteration 8.7 miles
Figure 2-1. Alternative 2
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Harvest Systems

The harvest systems that would be used in this alternative are:

- tractor/jammer (T/J) 463 acres
- helicopter (H) 108 acres

Tractor skidding would occur within those units having road access and where slopes are less than 45 percent. All tractor units would have designated skid trails. Jammer skidding would occur from existing roads where skidding distance is less than 300 feet and where slopes exceed 45 percent. Helicopter yarding would occur where tractor or skyline logging is not feasible due to lack of road access.

Silvicultural Systems

The silvicultural prescriptions that would be used in this alternative are:

- even-aged regeneration (EAR) 516 acres
- free selection (FS) 19 acres
- patch clearcut with reserve trees (PCCR) 3 acres
- patch clearcut (PCC) 33 acres

The overall purpose of the silvicultural prescriptions is to enhance the growth and health of timber stands in this area in a way that recognizes and reflects historic norms. The prescriptions used are described below.

The **EAR prescription** would regenerate mature, even-aged stands in areas of lethal and mixed severity fire regimes, using variable retention concepts (Franklin and others, 1997). Mainly large trees would be left either as dispersed individuals or aggregated clumps, or a combination of both. The main objectives for leaving these trees are: 1) to provide wildlife habitat after logging and before tree establishment, 2) to enhance stand structure, and 3) to help maintain forest connectivity across the landscape.

Once regenerated (mainly by planting), these stands would be composed of Douglas-fir, ponderosa pine, and western larch, with some grand fir and Engelmann spruce in the understory, and with an overstory of large ponderosa pine, Douglas-fir, and some grand fir and larch. The number of trees retained would vary from 10 to 25 trees per acre and would be mainly large-diameter trees. The exact number of trees to leave, and whether trees would be clumped or dispersed, would be decided when the final silvicultural prescription is completed and would be based mainly on the quality of trees present to leave, snag recruitment needs, and visual concerns.

The **FS prescription** is used in one stand containing a mix of historic non-lethal and mixed severity fire regimes. This prescription would maintain and/or help create a multi-layered stand structure. Commercial thinning would occur in the understory. Salvage and sanitation cuts would occur in the overstory. Small openings about one-quarter acre in size would occur in the drier portion of the stand to encourage natural regeneration of ponderosa pine and Douglas-fir. Where there is ponderosa pine in the overstory one-third could be removed. This prescription would not change the VSS class.

The **PCC prescription** is used in stands that are ready to regenerate and are kept to less than 3 acres in order to provide habitat for foraging goshawk young. Most of these patches are located in goshawk post-fledging areas (PFA). Eleven patches are located within PFA 1 in the roadless area and five patches...
Alternatives Considered

are located within PFA 2 (see Figure 3-11). Between 5 and 10 reserve trees would be left within these patches to maintain squirrel populations for foraging goshawk young. The roadless area patches would be broadcast burned and would regenerate naturally to ponderosa pine, Douglas-fir, western larch, and grand fir.

**Slash Disposal and Site Preparation**

Prescribed fire would be utilized to prepare planting sites and/or reduce activity fuels following timber harvest on approximately 562 acres. The slash disposal prescriptions that would be used in this alternative are:

- tractor pile and burn 453 acres
- excavator pile and burn 21 acres
- broadcast burn 82 acres
- jackpot burn 6 acres
- lop and scatter 9 acres

Machine piling and subsequent burning would be accomplished on slopes less than 45%, primarily following ground-based harvest. Tractor slash piling would be allowed off designated skid trails on slopes less than 35 percent. On slopes 35 percent to 45 percent, excavator piling from designated skid trails would be required. Slash would be managed by either burning or lopping and scattering. Broadcast burning would be applied to units within the roadless area boundary, where access is limited, and to slopes exceeding 45% following harvest. With broadcast burning some pull back of slash from reserve trees will be necessary to insure their survival. Jackpot burning would be applied to localized fuel concentrations, such as units having sparse fuels. Slash may be lopped, scattered, and left unburned where post-harvest fuel loadings do not warrant burning.

**Reforestation**

Approximately 434 acres would require the planting of tree seedlings, mainly ponderosa pine, Douglas-fir, and western larch. Seedlings would be planted so that stocking levels of crop trees at the fifth year would range from 250 to 335 trees per acre (page IV-60, Forest Plan). Approximately 102 acres would be regenerated naturally, mainly in PCC in the goshawk young foraging areas.

- tree planting 434 acres
- natural regeneration 102 acres

Regeneration success around the project area has been good. Regeneration records for past timber sales in the area such as the Rapid Camp Timber Sale demonstrate this (see District files). Fifth-year stocking surveys show an average of 343 trees per acre. Most units meet Forest Plan stocking standards even though these sales were harvested before the Plan was completed. The Payette Forest’s regeneration success continues to be high, with a 1998 first-year survival rate of 90.3 percent.

**Knutson-Vandenbarg (KV) Opportunities**

The following opportunities would be eligible for KV funds generated by the timber sale:

- 434 acres of tree planting, site preparation and survival exams
- 102 acres of site preparation for natural regeneration
- 20 acres of noxious weed survey and treatment

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Chapter 2

**Alternative 3**

This alternative (see Figure 2-2) addresses the roadless character issue in Chapter 1 by not entering the Needles Roadless Area with timber harvest units 102, 320-330, 339, 432, 435, 715, and 717. This alternative would address specific public concern that roadless areas are maintained in their current state. It would also address findings of the Upper Columbia River Basin scientific assessments which show that some roadless areas are aquatic and terrestrial strongholds. All other harvest units, roads, silvicultural prescriptions, logging systems, Riparian Habitat Conservation Areas (RHCAs), mitigation, monitoring, and KV opportunities would remain the same as Alternative 2. However, acres treated with timber harvest, slash disposal, and reforestation would all decrease proportionately from elimination of the above described units. Appendix C contains a table showing harvest, silvicultural, and site prep treatments for each unit.

**Roads**

Under this alternative, there would be minimal new road construction. Road improvements would consist of activities such as opening closed roads, graveling portions of roads within the planning area and along the haul route, and replacing culverts. Other activities include closing roads currently open and obliterating old system and non-system roads. Appendix D displays the current status, use, and final status of all roads in the planning area.

- **New road construction** 0.2 miles
- **Road improvements**
  - road graveling 24.8 miles
  - pre-haul maintenance (blading, dips, brushing) 4.0 miles
- **Road closures**
  - roads open now but closed after the sale 20.8 miles
  - roads closed now, used for sale, then reclosed 5.7 miles
  - roads closed now, naturally decommissioned 10.7 miles
- **Road obliteration**
  - 6.0 miles
  - 8.7 miles

**Harvest Systems**

The harvest system that would be used in this alternative is:

- tractor/jammer (T/J) 432 acres

Tractor skidding would occur within those units having road access and where slopes are less than 45 percent. All tractor units would have designated skid trails. Jammer skidding would occur from existing roads where skidding distance is less than 300 feet and where slopes exceed 45 percent.

**Silvicultural Systems**

The silvicultural prescriptions that would be used in this alternative are:

- even-aged regeneration (EAR) 432 acres
Figure 2-2. Alternative 3
Chapter 2

The overall purpose of the silvicultural prescriptions is to enhance the growth and health of timber stands in this area in a way that recognizes and reflects historic norms. The prescriptions used are described below.

The **EAR prescription** would regenerate mature, even-aged stands in areas of lethal and mixed severity fire regimes, using variable retention concepts (Franklin and others, 1997). Mainly large trees would be left either as dispersed individuals or aggregated clumps, or a combination of both. The main objectives for leaving these trees are: 1) to provide wildlife habitat after logging and before tree establishment, 2) to enhance stand structure, and 3) to help maintain forest connectivity across the landscape.

Once regenerated (mainly by planting), these stands would be composed of Douglas-fir, ponderosa pine, and western larch, with some grand fir and Engelmann spruce in the understory, and with an overstory of large ponderosa pine, Douglas-fir, and some grand fir and larch. The number of trees retained would vary from 10 to 25 trees per acre and would be mainly large-diameter trees. The exact number of trees to leave, and whether trees would be clumped or dispersed, would be decided when the final silvicultural prescription is completed and would be based mainly on the quality of trees present to leave, snag recruitment needs, and visual concerns.

The **PCC prescription** is used in stands that are ready to regenerate and are kept to less than 3 acres in order to provide habitat for foraging goshawk young. Most of these patches are located in goshawk post-fledging areas (PFA). The two patches are located within PFA 1 (Figure 3-11). Between 5 and 10 reserve trees would be left within these patches to maintain squirrel populations for foraging goshawk young.

**Slash Disposal and Site Preparation**

Prescribed fire would be utilized to prepare planting sites and/or reduce activity fuels following timber harvest on approximately 432 acres. The slash disposal prescriptions that would be used in this alternative are:

- tractor pile and burn  406 acres
- excavator pile and burn  21 acres
- broadcast burn  2 acres
- jackpot burn  3 acres
- lop and scatter  0 acres

The acreage treated by machine piling and burning is similar to that in Alternative 2. Very little broadcast burning is proposed because the majority of units that would have been broadcast burned were within the roadless area, and those have been dropped from Alternative 3. Machine piling and burning would be accomplished on slopes less than 45%, primarily following ground-based harvest. Broadcast burning and jackpot burning treatments would be applied to steep slopes or units having sparse, localized fuels. Slash may be lopped and scattered where post-harvest fuel loadings do not warrant burning.

**Reforestation**

Approximately 372 acres would require the planting of tree seedlings, mainly ponderosa pine, Douglas-fir, and western larch. Seedlings would be planted so that stocking levels of crop trees at the fifth year would range from 250 to 335 trees per acre (page IV-60, Forest Plan). Approximately 42 acres would be regenerated naturally.
Alternatives Considered

- tree planting 372 acres
- natural regeneration 42 acres

_Knutson-Vandenburg (KV) Opportunities_

The following opportunities would be eligible for KV funds generated by the timber sale:

- 372 acres of tree planting, site preparation and survival exams
- 42 acres of site preparation for natural regeneration
- 20 acres of noxious weed survey and treatment

_Elements Common to Both Action Alternatives_

The action alternatives have certain things in common. They comply with State and Federal laws and regulations and meet Forest Plan standards and guidelines for all resources. In addition, the action alternatives share the following elements:

_Timber Sale Date_

The Sloan-Kennally timber sale is scheduled for offering in Fiscal Year 2000. Road work and timber harvest would take place between approximately 2001 and 2004.

_General Planning Boundary_

To maintain continuity during analysis, all alternatives developed for the sale have the same planning area boundary (Figure 1-2).

_Riparian Habitat Conservation Areas (RHCA)_

Current management guidelines for activities in watersheds covered by INFISH call for establishment of riparian habitat conservation areas (RHCA's), which include landslide-prone areas. The Gold Fork River Watershed Analysis utilized two methods to analyze the hazards for mass wasting on the Payette National Forest: aerial photo analysis, and field investigation. The project hydrologist examined three sets of aerial photographs, taken in 1962, 1988, and 1994 to track the history of mass wasting in the watershed. In 1995, he field identified and verified the mapped failures. Three areas were considered to have high hazard rating for mass wasting: the headwaters of Rapid Creek, the North Fork of Kennally Creek, and the eastern portion of the East Fork of Kennally Creek. The entire planning area for Sloan-Kennally is considered to have a low hazard rating for mass wasting. Detailed maps of landslide-prone areas used for project design can be found in the Gold Fork Watershed Analysis (1996) in the project record.

INFISH buffers listed below constitute the minimum widths for riparian area protection. Field verification may result in wider buffer requirements for some areas.

- 300 feet either side of fish-bearing streams.
- 150 feet either side of non-fish-bearing perennial streams.
- 50 feet either side of non-fish-bearing intermittent streams.
- 150 feet around ponds, lakes, reservoirs, and wetlands greater than 1 acre in size.
- 50 feet around seeps, springs, bogs, wetlands, and lakes less than 1 acre in size, and around landslide-prone areas.
Chapter 2

Management Requirements

Management requirements are one general type of mitigation used by the Payette National Forest. These requirements are designed to reduce or prevent undesirable effects from proposed activities. When applied, these requirements can avoid a potential effect, minimize the effect by limiting the action, rectify the effect, reduce the effect through maintenance, or compensate for the effect. The management requirements in Table 2-1 are to be implemented either during or after the proposed project in order to meet the stated objectives. These requirements reflect standard operating procedures for the protection of Forest resources. The source of the requirements is generally the Forest Plan, but other sources can be laws or regulations, or guidelines or provisions developed by the Forest Service, or specifically by the Payette National Forest. These management requirements do not include all applicable Forest Plan or legal direction, but instead focus on specific resource issues or concerns with this project.

Table 2-1. Management Requirements

<table>
<thead>
<tr>
<th>Management Requirement</th>
<th>Objective</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain a minimum of 80 percent of an activity area in a non-detrimentally disturbed condition.</td>
<td>Protect or maintain the quality of soil properties that affect soil productivity.</td>
<td>Forest Plan IV-73</td>
</tr>
<tr>
<td>Maintain site productivity at 90 percent or greater of natural potential.</td>
<td>Ensure sustainability of forest ecosystems by protecting or maintaining soil productivity.</td>
<td>Forest Plan IV-73</td>
</tr>
<tr>
<td>Total or essentially total soil resource commitment will not exceed 5 percent of the activity area.</td>
<td>Limit the extent of soil committed to nonproductive land uses such as roads and landings to the minimum necessary for Forest management.</td>
<td>Forest Plan IV-73</td>
</tr>
<tr>
<td>Apply BMPs (Best Management Practices) as described for Soil and Water Conservation Practices to all ground disturbing activities (see Appendix E).</td>
<td>Reduce or minimize effects of management activities on soil and water resources.</td>
<td>Forest Plan IV-71, FSH 2509.22, Soil and Water Conservation Practices Handbook.</td>
</tr>
<tr>
<td>Conduct field verification to delineate perennial, intermittent, and ephemeral streams, seeps, springs, and bogs for riparian and wetland buffers.</td>
<td>Ensure protection of riparian areas and wetlands.</td>
<td>Forest Plan IV-93 to IV-95, INFISH (USDA 1995).</td>
</tr>
<tr>
<td>Comply with the Cascade Reservoir Phase II Watershed Management Plan.</td>
<td>Ensure protection of beneficial uses</td>
<td>Forest Plan IV-71</td>
</tr>
<tr>
<td>Meet INFISH standards and guidelines for all applicable activities including timber harvest, road management, fire/fuels. Prohibit activities in stream corridor and landslide-prone RHCAs that are inconsistent with INFISH without first doing a watershed analysis.</td>
<td>Protect habitat for inland native fish.</td>
<td>Forest Plan as amended by INFISH (USDA 1995).</td>
</tr>
</tbody>
</table>
## Alternatives Considered

<table>
<thead>
<tr>
<th>Management Requirement</th>
<th>Objective</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Store fuel and perform refueling outside of RHCAs.</td>
<td>Reduce the potential for fuel spills reaching live water.</td>
<td>Forest Plan as amended by INFISH(USDA 1995).</td>
</tr>
<tr>
<td>Report immediately to Contracting Officer, Sale Administrator, District Ranger and</td>
<td>Prevent disturbance to threatened, endangered or sensitive wildlife species</td>
<td>Endangered Species Act; Project Biological Assessment</td>
</tr>
<tr>
<td>Forest Wildlife Biologist any threatened, endangered or sensitive species found in the</td>
<td></td>
<td></td>
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<tr>
<td>project area during management activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protect elk during calving. This may require periodic management activity restrictions</td>
<td>Prevent disturbance to elk during calving periods.</td>
<td>Forest Plan, IV-30</td>
</tr>
<tr>
<td>between May 1 and July 15 in activity calving areas.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protect elk wallows by providing thermal and hiding cover for two sight distances</td>
<td>Protect wallows and prevent disturbance to elk.</td>
<td>Forest Plan; IV-30</td>
</tr>
<tr>
<td>around the wallow and by excluding equipment from the wallow.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain levels of snag and down logs at densities and size classes appropriate for</td>
<td>Provide suitable habitat for primary and secondary cavity nesting species,</td>
<td>Forest Plan, IV-29, PNF Snag and Coarse Woody Debris Guidelines</td>
</tr>
<tr>
<td>the forest strata in the harvest units.</td>
<td>as well as wide variety of other species that used snags and down logs for</td>
<td>(Evans and Martens, 1995).</td>
</tr>
<tr>
<td>Post signs on main travel routes advising the public of increased logging traffic</td>
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<td></td>
</tr>
<tr>
<td>Public safety and information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate fuel conditions in harvest units and treat fine fuel loadings that exceed</td>
<td>Minimize the amount and duration of emissions, and reduce fire hazard.</td>
<td>Forest Plan, IV-87 and IV-124 to 127. Forest Fire Action Plan, Chapter 50</td>
</tr>
<tr>
<td>Forest Plan standards. Develop &amp; implement prescribed burn plans for slash pile and</td>
<td>Minimize impacts from prescribed fire to air quality, soils, and other</td>
<td></td>
</tr>
<tr>
<td>or broadcast burning that meet state &amp; federal clean air standards, and coordinate</td>
<td>resources.</td>
<td></td>
</tr>
<tr>
<td>with all resources to address concerns.</td>
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</tr>
<tr>
<td>If a heritage site is discovered during project implementation, stop activities in</td>
<td>Protect heritage resources until they can be evaluated for eligibility to</td>
<td>National Historic Preservation Act, Forest Service Manual, Forest</td>
</tr>
<tr>
<td>the area until a Forest Service archaeologist evaluates the site and its importance,</td>
<td>the National Register.</td>
<td>Plan.</td>
</tr>
<tr>
<td>and any protective measures recommended by the archaeologist are applied.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control noxious weeds if found in the sale area using methods that meet current</td>
<td>Reduce competition with native vegetation</td>
<td>Forest Plan IV-44</td>
</tr>
<tr>
<td>Forest direction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If any TES plant species are found during project activities, stop those activities</td>
<td>Protect TES and Watch plant species and their habitats.</td>
<td>Forest Plan IV-29; Forest Service Region 4 direction; FSM 2670</td>
</tr>
<tr>
<td>that may affect the plants until a Botanist can survey the area and assess effects.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mitigation Measures

The mitigation measures listed in Table 2-2 are designed to reduce or prevent adverse effects that would otherwise result from implementing either of the action alternatives. They were developed to address site-specific environmental concerns that were not sufficiently addressed in the sale layout or through management requirements. Each mitigation measure includes an objective, enforcement mechanism, person responsible for enforcement, an effectiveness rating, and the basis for that rating.

The following criteria were used to arrive at the effectiveness rating:

HIGH: The mitigation is highly effective (estimated at greater than 90%), and one or more of the following types of documentation is available:

1. Research or literature - that is applicable to the project area.
2. Administrative studies and past monitoring - that is applicable to the project area.
3. Experience - professional judgment based on experience and education.
4. Fact - that is evident by logic or reason.

MODERATE: The mitigation is moderately effective (estimated at 60 to 90%), and documentation (as above) is available. Or logic and/or experience indicates that the mitigation is highly effective but documentation is lacking, and the mitigation may be modified if necessary to achieve its objective.

LOW: The mitigation is somewhat effective (estimated at less than 60%). Documentation of the mitigation is unavailable or professional judgment indicates limited success in implementation of the mitigation or in meeting its objective. Implementation of this mitigation needs to be monitored, and the mitigation may be modified if necessary to achieve its objective.

UNKNOWN: Effectiveness is unknown or unverified; there is little or no documentation, or applied logic is uncertain. The mitigation needs both effectiveness and validation monitoring to determine success in meeting objective.

Table 2-2. Mitigation Measures

<table>
<thead>
<tr>
<th>Mitigation Measure</th>
<th>Objective</th>
<th>Enforcement Mechanism</th>
<th>Enforcement Responsibility</th>
<th>Effectiveness/Basis for rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use designated skid trails for ground-based equipment operations. When necessary to work off of designated skid trails, minimal passes should be made over the same area. On slopes over 35% restrict tractors to skid trails.</td>
<td>Limit detrimental disturbance of soils to confined areas that will be reclaimed after use to meet long-term soil productivity goals.</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
<td>HIGH: Froehlich et. al, 1981; Clayton, 1990; USDA 1997c (North Fork Payette Post-fire Project monitoring report); experience</td>
</tr>
<tr>
<td>Mitigation Measure</td>
<td>Objective</td>
<td>Enforcement Mechanism</td>
<td>Enforcement Responsibility</td>
<td>Effectiveness/ Basis for rating</td>
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<tr>
<td>Brush disposal and site prep will occur only when soil is dry to the touch and does not form a ball when pressure is applied by hand. This approximates 60 percent of field capacity.</td>
<td>Limit detrimental disturbance of soils.</td>
<td>Timber Sale contract</td>
<td>Contract Administrator</td>
<td>LOW: Standards and Guidelines for Soil and Related Resources, USDA 1981.</td>
</tr>
<tr>
<td>Reclaim all primary designated skid trails, temporary roads, and landings after use by: ripping compacted soils to 16 inches or depth of compaction, partially pulling fill slopes on trails with cut slopes over 24 inches high, water barreling, pulling slash over the trail to achieve a minimum 50% ground cover, seeding, and fertilizing prior to seasonal runoff events. Any exceptions require consultation and approval of a hydrologist.</td>
<td>Restore and stabilize detrimentally disturbed soils prior to seasonal runoff events. Prevent accelerated erosion of phosphorus-rich topsoil.</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
<td>HIGH: Cafferata, 1983; Johnson, 1995; USDA 1997c (North Fork Payette Post-fire Project monitoring report); experience; fact</td>
</tr>
<tr>
<td>Permit equipment operations outside of or during the normal operating season only when they can be conducted without damage to soil &amp; water resources</td>
<td>Minimize the extent of sediment routing to stream channels.</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
<td>MODERATE: Fact, experience</td>
</tr>
<tr>
<td>Identify and approve water diversion location(s) prior to use. Project sale administrator and/or engineer will coordinate with the fish biologist and hydrologist in identifying suitable sites.</td>
<td>Minimize impacts to stream banks and potential sediment delivery to streams.</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
<td>MODERATE: Fact and experience</td>
</tr>
<tr>
<td>Gravel identified road segments and contributing areas of stream crossings designated for graveling prior to log hauling.</td>
<td>Reduce sediment input into streams.</td>
<td>Timber sale contract</td>
<td>Contract Administrator, Engineering rep.</td>
<td>MODERATE: Burroughs and King 1989</td>
</tr>
<tr>
<td>Mitigation Measure</td>
<td>Objective</td>
<td>Enforcement Mechanism</td>
<td>Enforcement Responsibility</td>
<td>Effectiveness/Basis for rating</td>
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</tr>
<tr>
<td>Divert flow from stream courses around project activities such as culvert installation. Use appropriate sediment control methods such as straw bales or silt fence to avoid or reduce direct sediment input to streams. Seed, mulch, and fertilize disturbed areas.</td>
<td>Minimize direct input of sediment to stream channels during road-related work.</td>
<td>Timber sale contract</td>
<td>Engineering rep., Contract Administrator</td>
<td>LOW: Fact, experience</td>
</tr>
<tr>
<td>Close intermittent use roads after post-sale activities by physically blocking access. This could be accomplished with guard rail-type closures, gates, or earthen barriers and slash placement. Road surfaces will be scarified, seeded, and have drainage structures installed.</td>
<td>Eliminate unmanaged traffic and increase the rate of soil stabilization for controlling erosion and sedimentation.</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
<td>MODERATE: Burroughs and King 1989; experience</td>
</tr>
<tr>
<td>Rehabilitate all stream crossings along temporary roads and skid trails prior to the end of the normal operating season unless specifically designed to meet Forest Plan requirements for passing stream flows and debris.</td>
<td>Reduce sediment input into streams.</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
<td>MODERATE: Fact, experience</td>
</tr>
</tbody>
</table>

### Fish Habitat

<p>| Transfer and store all fuels in containment areas outside of RHCAs. Line the containment area with material sufficiently impervious to contain spilled fuel. | Reduce the potential for spilled fuels to reach and affect fish habitat. | Spill prevention plan, sale contract, 40 CFR 112 | Contract Administrator | MODERATE: Fact experience |</p>
<table>
<thead>
<tr>
<th>Mitigation Measure</th>
<th>Objective</th>
<th>Enforcement Mechanism</th>
<th>Enforcement Responsibility</th>
<th>Effectiveness/ Basis for rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-site fuel storage over 660 gallons will require a spill contingency plan approved by the Forest Service. The plan will contain, at a minimum, response procedures for handling a spill, the measures to be taken, and a map of designated containment locations. This plan and a spill response kit will be carried in all transport vehicles.</td>
<td>Reduce response time should a spill occur that potentially endangers fish habitat.</td>
<td>Spill prevention plan, sale contract, 40 CFR 112</td>
<td>Contract Administrator</td>
<td>MODERATE: fact, experience</td>
</tr>
<tr>
<td>A pilot car with a CB (citizens band) radio will precede fuel transport vehicles carrying 660 gallons or more when they are transporting fuel over roads administered by the Forest Service.</td>
<td>Reduce risk of fuel spill.</td>
<td>Spill prevention plan, sale contract</td>
<td>Contract Administrator</td>
<td>MODERATE: experience, logic</td>
</tr>
<tr>
<td>Restrict helicopter fuel storage, fueling, and servicing to designated areas at least 300 feet from fish-bearing streams.</td>
<td>Reduce the potential for spilled fuels to reach and affect fish habitat.</td>
<td>Sale contract</td>
<td>Contract Administrator</td>
<td>MODERATE: logic</td>
</tr>
<tr>
<td>Wildlife Habitat</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>No timber harvest operations from March 1 through August 15 within goshawk post fledging areas.</td>
<td>Protect nesting and fledgling goshawks</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
<td>Moderate: Management Recommendations for the N. Goshawk in the Southwestern United States (USDA 1991a), Personal communication with V. Saab (1998)</td>
</tr>
<tr>
<td>Air Quality and Fire/Fuels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protect residual timber in reserve-tree units through directional felling and slash pullback away from residual trees in helicopter units.</td>
<td>Minimize mortality during broadcast burning by reducing fuel accumulations near leave trees.</td>
<td>Timber sale contract, prescribed fire burn plan</td>
<td>Contract Administrator, Prescribed Fire Burn Boss</td>
<td>MODERATE: Fact, Experience</td>
</tr>
</tbody>
</table>
### Chapter 2

<table>
<thead>
<tr>
<th>Mitigation Measure</th>
<th>Objective</th>
<th>Enforcement Mechanism</th>
<th>Enforcement Responsibility</th>
<th>Effectiveness/Basis for rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply water or other dust abatement substances when needed to haul route roads during log haul.</td>
<td>Minimize air quality impacts from log haul traffic; increase traffic safety; protect road surface</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
<td>HIGH: Experience, fact.</td>
</tr>
</tbody>
</table>

**Heritage Resources**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Enforcement Mechanism</th>
<th>Enforcement Responsibility</th>
<th>Effectiveness/Basis for rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid new crossings of historic ditch PY-162 by all activities. Crossings will be restricted to locations where ditch was destroyed in the 1970's. Forest archaeologist will assist with other crossing locations as required.</td>
<td>Protect PY-162 from additional impacts.</td>
<td>Timber sale contract</td>
<td>Contract Administrator</td>
</tr>
</tbody>
</table>

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Seasonal road closure to reduce big game vulnerability during hunting season
Monitoring and Evaluation

Monitoring and evaluating the project give the decision-maker and the public information on the progress and results of implementing project activities. Monitoring collects data to see if the project produced the effects predicted in the scientific analyses presented in Chapter 3. Monitoring results will be evaluated to determine what, if any adjustments are needed. The Forest will evaluate whether the standards and guidelines for each resource are appropriate, and indicate whether resource objectives, management direction and Best Management Practices have been met. If they are not met, the Forest Service may adjust this project and future projects. Table 2-3 summarizes the monitoring that would occur if an action alternative is implemented. Appendix G contains detailed monitoring and evaluation plans.

Table 2-3. Monitoring Plan Summary

<table>
<thead>
<tr>
<th>Resource</th>
<th>Monitoring Item</th>
<th>Priority</th>
<th>Timing</th>
<th>Personnel</th>
<th>Monitoring Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil and Water</td>
<td>Long term soil productivity on tractor logged and piled units</td>
<td>High</td>
<td>Once, soon after units are tractor piled</td>
<td>Hydrologist/ Soil Scientist &amp; Technician</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Soil and Water</td>
<td>BMP &amp; SWCP implementation and effectiveness</td>
<td>High</td>
<td>At least once per year, for the duration of the sale</td>
<td>Hydrologist/ Hydrologic Technician</td>
<td>Implementation and effectiveness</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Baseline water quality conditions (TMDL)</td>
<td>High</td>
<td>Monthly, depending on flow and access</td>
<td>Hydrologist/ Hydrologic Technician</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Fish Habitat</td>
<td>INFISH compliance</td>
<td>High</td>
<td>Annually for the duration of the sale</td>
<td>Fish Biologist/ Technician</td>
<td>Implementation</td>
</tr>
<tr>
<td>Wildlife Habitat</td>
<td>Snag Habitat</td>
<td>High</td>
<td>Once after unit marking</td>
<td>Wildlife Technician</td>
<td>Implementation</td>
</tr>
<tr>
<td>Recreation</td>
<td>ROS, recreation use, and recreation facilities</td>
<td>Moderate</td>
<td>Before, during, &amp; after the sale</td>
<td>Recreation Planner/ Technician</td>
<td>Implementation</td>
</tr>
<tr>
<td>Visual Quality</td>
<td>Implementation of VQOs</td>
<td>Moderate</td>
<td>Before, during, &amp; after the sale</td>
<td>Recreation Planner/ Technician</td>
<td>Implementation</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Air quality and smoke management</td>
<td>Moderate</td>
<td>After prescribed burning</td>
<td>District fire/fuels Specialist</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Fire and Fuels</td>
<td>Pre- and post- burn fuel inventories</td>
<td>Moderate</td>
<td>Before and after slash disposal</td>
<td>District fire/fuels Specialist</td>
<td>Implementation</td>
</tr>
<tr>
<td>Timber</td>
<td>Regeneration and survival success</td>
<td>High</td>
<td>First, third, and fifth years after planting, fifth year for naturals</td>
<td>District Silvicultural Personnel</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Range</td>
<td>Noxious Weeds</td>
<td>High</td>
<td>Year following disturbance</td>
<td>Range Technician</td>
<td>Effectiveness</td>
</tr>
</tbody>
</table>
Chapter 2

Comparison of the Alternatives

This section compares the alternatives described in detail in this chapter. Table 2-4 compares activities and outputs of the alternatives, Table 2-5 compares how each alternative responds to the purpose and need for the project, and Table 2-6 compares the effects of the alternatives on the issues described in Chapter 1. See Chapter 3 for a complete description of effects and the scientific basis for the results presented in the tables.

Table 2-4. Summary of Outputs and Activities by Alternative.

<table>
<thead>
<tr>
<th>Output or Activity</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres treated</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Est. Volume Harvested (million board feet)</td>
<td>0</td>
<td>3.9</td>
<td>2.3</td>
</tr>
<tr>
<td>Acres by Silvicultural Prescriptions:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Even-aged Regeneration (EAR)</td>
<td>0</td>
<td>516</td>
<td>432</td>
</tr>
<tr>
<td>Free Selection (FS)</td>
<td>0</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Patch Clearcut with Reserve Trees (PCCR)</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Patch Clearcut (PCC)</td>
<td>0</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>Acres by Harvest System:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractor/Jammer</td>
<td>0</td>
<td>463</td>
<td>432</td>
</tr>
<tr>
<td>Helicopter</td>
<td>0</td>
<td>108</td>
<td>0</td>
</tr>
<tr>
<td>Acres of Fuel Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractor Pile and Burn</td>
<td>0</td>
<td>453</td>
<td>406</td>
</tr>
<tr>
<td>Excavator Pile and Burn</td>
<td>0</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Broadcast Burn</td>
<td>0</td>
<td>82</td>
<td>2</td>
</tr>
<tr>
<td>Jackpot Pile and Burn</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Lop and Scatter</td>
<td>0</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Acres of Reforestation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planted</td>
<td>0</td>
<td>434</td>
<td>372</td>
</tr>
<tr>
<td>Site Prep for Natural Regeneration</td>
<td>0</td>
<td>102</td>
<td>42</td>
</tr>
<tr>
<td>Roads and Landings:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Road Miles Constructed</td>
<td>0</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Existing Road Miles Improved</td>
<td>0</td>
<td>24.8</td>
<td>24.8</td>
</tr>
<tr>
<td>Road Miles Obliterated</td>
<td>0</td>
<td>8.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Road Miles Now Open but Closed After Timber Sale</td>
<td>0</td>
<td>5.7</td>
<td>5.7</td>
</tr>
<tr>
<td>Roads Closed Now and Naturally Decommissioned</td>
<td>0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Road Miles Now Closed, May Be Used, Re-closed</td>
<td>0</td>
<td>10.7</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Table 2-5. Response to Purpose and Need (Improved Vegetative Characteristics)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of VSS in each class</td>
<td>No effect</td>
<td>Improvement</td>
<td>Improvement</td>
</tr>
<tr>
<td>Acres of improved species composition</td>
<td>0</td>
<td>552</td>
<td>432</td>
</tr>
<tr>
<td>Acres of improved stand structure</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres of improved stand density</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres reduced insect &amp; disease activity</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres of reduced fuel loading</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres of improved growth and health</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
</tbody>
</table>
### Table 2-6. Effects of the Alternatives

<table>
<thead>
<tr>
<th>Issue and Indicators</th>
<th>Alternative 1 (No Action)</th>
<th>Alternative 2 (Proposed Action)</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roadless Character and Wilderness Potential</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres of roadless area eliminated from wilderness cons.</td>
<td>0</td>
<td>542</td>
<td>0</td>
</tr>
<tr>
<td>Acres remaining eligible for wilderness cons.</td>
<td>2,135</td>
<td>1,593</td>
<td>2,135</td>
</tr>
<tr>
<td>Effects on wilderness attributes</td>
<td>No Effect</td>
<td>Some Adverse Effects</td>
<td>No Effect</td>
</tr>
<tr>
<td>Effects on roadless character</td>
<td>No Effect</td>
<td>Some Adverse Effects</td>
<td>No Effect</td>
</tr>
<tr>
<td><strong>Soil Productivity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total soil resource commitment (5% or less)</td>
<td>3%</td>
<td>2.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Detrimental disturbance (20% or less)</td>
<td>Less than 20%</td>
<td>Less than 20%</td>
<td>Less than 20%</td>
</tr>
<tr>
<td><strong>Water Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Kennally Creek Subwatershed: Percent sediment yield over natural</td>
<td>24.4%</td>
<td>26.5%</td>
<td>26.5%</td>
</tr>
<tr>
<td>Hydrologic risk</td>
<td>Low</td>
<td>Low to Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Lower Kennally Creek Subwatershed: Percent sediment yield over natural</td>
<td>53.4%</td>
<td>55.6%</td>
<td>55.6%</td>
</tr>
<tr>
<td>Hydrologic risk</td>
<td>Low</td>
<td>Low to Moderate</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Fish Habitat</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk of sediment affecting fish habitat</td>
<td>Low Risk</td>
<td>Moderate Risk</td>
<td>Moderate Risk</td>
</tr>
<tr>
<td>Short-term:</td>
<td>Low Risk</td>
<td>Low Risk with trend</td>
<td>Low Risk with trend</td>
</tr>
<tr>
<td>Long-term:</td>
<td>Low Risk</td>
<td>toward further improvement</td>
<td>toward further improvement</td>
</tr>
<tr>
<td><strong>Wildlife Habitat</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetative Structural Stage (VSS) distribution</td>
<td>No Effect</td>
<td>Improving Trend</td>
<td>Improving Trend</td>
</tr>
<tr>
<td>Verified old growth maintained in Circle 23</td>
<td>2.7%</td>
<td>2.7%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Elk Habitat Effectiveness (EHE)</td>
<td>Meets target IRA</td>
<td>Meets target IRA</td>
<td>Meets target IRA</td>
</tr>
<tr>
<td><strong>Recreation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miles of road and trail access affected</td>
<td>0</td>
<td>5.7 Miles of Road</td>
<td>5.7 Miles of Road</td>
</tr>
<tr>
<td>Recreation Visitor Days (RVDs) affected</td>
<td>No Effect</td>
<td>Short-term Loss</td>
<td>Short-term Loss</td>
</tr>
<tr>
<td><strong>Economics/Socio-economics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present Net Value (all resources)</td>
<td>-$253,300</td>
<td>-$417,600</td>
<td>-$359,100</td>
</tr>
<tr>
<td>Cost per MBF Harvested</td>
<td>0</td>
<td>$277.12</td>
<td>$262.47</td>
</tr>
<tr>
<td>Jobs (per year for 10 years)</td>
<td>0</td>
<td>4.0</td>
<td>2.4</td>
</tr>
<tr>
<td>Income (per year for 10 years)</td>
<td>0</td>
<td>$170,500</td>
<td>$100,000</td>
</tr>
<tr>
<td>Payments to counties</td>
<td>0</td>
<td>$65,400</td>
<td>$53,400</td>
</tr>
</tbody>
</table>
Identification of the Preferred Alternative

Alternative 2, the proposed action, is the preferred alternative for the Sloan-Kennally timber sale. This alternative is described in detail on pages 2-4 through 2-7 of Chapter 2, and includes the management requirements and mitigation measures on pages 2-12 through 2-18.

A view of the project area
Chapter 3

Affected Environment
and
Environmental Effects

Introduction ....................................................... 3-1
Vegetation .......................................................... 3-1
Roadless Character and Wilderness Potential ............ 3-13
Soil Productivity .................................................. 3-25
Water Resources ............................................... 3-29
Fish Habitat ......................................................... 3-40
Wildlife Habitat .................................................. 3-49
Recreation .......................................................... 3-74
Economics/Socio-economics .................................. 3-79
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Chapter 3. Affected Environment and Environmental Effects

Introduction

Chapter 3 describes the physical, biological, and human resources of the environment that may be affected by the alternatives presented in Chapter 2, and the effects that the alternatives may have on those resources. Affected Environment and Environmental Effects have been combined into one chapter to give the reader a more concise and connected depiction of what resources exist and what may happen to them under the alternatives. The environmental effects analysis forms the scientific and analytic basis for the comparison of alternatives shown at the end of Chapter 2.

The first section, Vegetation, describes how the alternatives address the purpose and need of the project proposal. It evaluates how outputs would differ between alternatives using criteria established in Chapter 1 to address the project’s purpose and need.

CRITERIA: Percent of VSS in each class
Acres of improved species composition
Acres of improved stand structure
Acres of improved stand density
Acres of reduced insect and disease activity
Acres of reduced fuel loading
Acres of improved growth and health

Scope of the Analysis

The analysis area for direct and indirect effects is the planning area (5,100 acres), as shown in Figure 1-2. The effects to vegetation are addressed below under the following headings: 1) Forest Structure, 2) Stand Characteristics and Conditions (Historic Norms), and 3) Stand Growth and Vegetative Health. Refer to the Purpose and Need section in Chapter 1 for additional background information.

The analysis area for cumulative effects is Payette National Forest System lands within the four subwatersheds as shown in Figure 3-4. This area includes an estimated 22,584 acres.

This analysis focuses on tree vegetation. General information on the responses of grasses, forbs and shrubs to disturbance may be found in Forest Habitat Types of Central Idaho (Robert Steele and others, 1991) and other specific habitat type technical reports such as The Grand Fir/Mountain Maple Habitat Type in Central Idaho (Steele and Geier-Hayes 1992).
Chapter 3

Forest strata were used to assess stand characteristics, conditions, growth, and health for this analysis (see Figure 3-1). Timber stand examinations, a timber cruise and on-the-ground review provided additional information and strata verification. Figure 3-2, working groups, shows the current forest composition changes across the planning area. All numbers are estimates based on the best current and available information.

Much of the thought behind historic norms (how stands should be treated to mimic historic conditions) comes from work done by Stephen Barrett in Rapid River (Barrett, 1987) and knowledge of the land including habitat types, moisture conditions, elevation, slope, and aspect. Additional references are in Appendix B and the planning record.

Desired Condition

Refer to Chapter 1, pages 1-8 through 1-12 for the desired condition for vegetation.

Current Condition

During the last 60 years, vegetation in the planning area has been primarily influenced by fire exclusion and timber harvest. Prior to that, vegetation characteristics and conditions were influenced by natural events (see Figure 3-3). Refer to Chapter 1, pages 1-10 through 1-12 for a more complete description of the existing condition of vegetation in the planning area.

An even-aged regeneration (EAR) silvicultural system retaining 10 to 25 trees per acre
Figure 3-1. Planning Area Strata

Strata
21 Partial Cuts 10 - 50% Canopy Closure
22 Partial Cuts 50 - 90% Canopy Closure
23 Mature/Overmature > 70% Canopy Closure
24 Mature/Overmature 35 - 70% Canopy Closure
25 Partial Cuts 50 - 90% Canopy Closure > 100 years old
32 Plantations - Sapling/Poles
34 Immature/Mature 35 - 70% Crown Closure
35 Immature/Mature 70 - 100% Canopy Closure
41 Unsuitable for Timber Management 10 - 35% Canopy Closure
42 Unsuitable for Timber Management 35 - 70% Canopy Closure
70 Aspen/Hardwood

Planning Area
Figure 3-2. Planning Area Timber Working Groups (WG)
Figure 3-3. Mixed Severity and Lethal Fire Regimes
Chapter 3

Direct and Indirect Environmental Effects

Three categories are used to determine the need for the proposal as well as address the effects to vegetation. *Forest Structure* will determine acres to be treated across the planning area. Because the current amount of mid-aged/mature and old forest, 83 percent, exceeds the desired amount of 60 percent, the difference of 23 percent should be moved to the open category by harvesting timber to sustain the desired structural stages over time. *Stand Characteristics and Conditions (Historic Norms)* will determine how individual stands should be treated in order to mimic historic conditions. *Growth and Health* is used to refine silvicultural prescriptions so that treatments would more closely meet Forest Plan objectives while still being historically proper (for example, timely planting and thinning to enhance growth).

The criteria for each of these categories are:

**Forest Structure** (displayed in Table 3-1)
- the change in percent of VSS in each class

**Stand Characteristics and Conditions (Historic Norms)** (displayed in Table 3-2)
- acres of improved species composition
- acres of improved stand structure
- acres of improved stand density
- acres of reduced fuel loading
- acres of reduced insect and disease occurrence and impact
- acres of reduced fuel loading

**Stand Growth and Health** (displayed in Table 3-3)
- acres of improved stand growth and health.

**Forest Structure**

Table 3-1 shows the difference between the desired condition and the alternatives in terms of percent of the project area by VSS class.

**Table 3-1. Percent VSS Class By Alternative Within the Planning Area**

<table>
<thead>
<tr>
<th>VSS Class</th>
<th>Desired Condition</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openings</td>
<td>10-20%</td>
<td>6%</td>
<td>16%</td>
<td>14%</td>
</tr>
<tr>
<td>Young Forest</td>
<td>20-30%</td>
<td>11%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-aged to Mature Forest</td>
<td>40%</td>
<td>19%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Old Forest</td>
<td>20%</td>
<td>64%</td>
<td>59%</td>
<td>61%</td>
</tr>
</tbody>
</table>
Alternative 1 (No Action) - There would be no change in the current condition. Forest structure would continue to be mainly mid-age to mature and old forest, with little open and young forest. This would not create or sustain the desired forest structure in the long term. Mature and old forest stages would gradually increase over time until a disturbance event (wildfire or future proposed prescribed fire or timber harvest) converts these older stands to openings.

Alternatives 2 and 3 - These alternatives would move forest structure closer to the desired condition and would help sustain a balance of VSS in the long term. Alternative 2 would convert 139 more acres of mature and old forest to openings than Alternative 3.

Vegetative Characteristics and Conditions (Historic Norms)

Alternative 1 - This alternative would not meet the desired condition or the Purpose and Need for this proposal. Stand characteristics and conditions would move outside of historic norms until some form of disturbance occurs such as wildfire, prescribed fire, or timber harvest.

In strata 23, 24, 34, and 35, stand densities and fuel loadings would continue to increase with the associated risk of wildfire. Stand structure would become more irregular instead of even-aged or storied. The percentage of shade tolerant grand fir would continue to be greater than was historically present. If allowed to continue indefinitely, a lack of a seed source for western larch, Douglas-fir, and ponderosa pine would prevent regeneration of these species unless done artificially. Western larch is currently declining. The activity and impact of insects and disease would continue to increase due to increasing age and stand density. As time goes on, when wildfires occur, fire severity could be outside historic norms with the potential to be catastrophic.

In strata 22 and 26, a greater proportion of grand fir would continue to regenerate and grow and would eventually comprise most of the stand where historically there was more large western larch, Douglas-fir, and ponderosa pine. Departure from historic species composition has already occurred due to past timber harvest, as many of the more valuable western larch, Douglas-fir, and ponderosa pine were removed when these stands were harvested years ago.

Alternatives 2 and 3 - These alternatives would move toward the desired condition and meet the Purpose and Need for this proposal by:

- Improving species composition by natural regeneration and planting of early seral species
- Improving stand structure by maintaining historic even-aged and storied (two ages) stand conditions that mimic mixed severity and lethal fire regimes
- Reducing fuel loading by reducing existing fuels and managing activity fuels to Forest Plan standards
- Reducing stand density by reducing stand age and/or number of trees per acre
- Reducing insect and disease activity and impacts by enhancing growth and vigor of stands
- Reducing the potential for wildfire outside historic norms

Alternative 2 would convert an estimated 320 acres of (strata 23, 24, 34, and 35) mature and old forest to young forest of mainly early seral species (ponderosa pine, Douglas-fir, lodgepole pine, and western larch), including reducing densities on 19 acres. This alternative would also treat 251 acres of previously treated stands (strata 21, 22, and 26) in order to increase stocking and to improve species composition by planting early seral species, ponderosa pine, Douglas-fir, and western larch.
Chapter 3

Alternative 3 would convert an estimated 181 acres of mature and old forest (strata 23, 24, 34, and 35) to young forest (ponderosa pine, Douglas-fir, lodgepole pine, and western larch) and treat 251 acres of previously treated stands (strata 21, 22, and 26) for the same reasons as Alternative 2.

For stands treated, Alternatives 2 and 3 would mimic the vegetative effects of historic wildfire. The EAR prescription would retain an overstory of western larch, ponderosa pine, Douglas-fir, and grand fir and would ensure a larger percentage of early seral species in the understory, mainly ponderosa pine, Douglas-fir, and western larch. The FS prescription, used only in unit 339 and only in Alternative 2, would maintain and enhance the multistoried conditions already present. Stand density, fuel loading, insect and disease activity, and the risk of large, stand-replacing wildfire would all be reduced on these acres. Table 3-2 displays acres treated to move or maintain the area within historic norms for these conditions.

Table 3-2. Acres of Improved Vegetative Characteristics and Conditions

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres of Improved Species Composition</td>
<td>0</td>
<td>552</td>
<td>432</td>
</tr>
<tr>
<td>Acres of Improved Stand Structure</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres of Improved Stand Density</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres of Reduced Insect and Disease</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
<tr>
<td>Acres of Reduced Fuel Loading</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
</tbody>
</table>

Growth and Vegetative Health

**Alternative 1** - This alternative would not move toward the desired condition or meet the Purpose and Need for this proposal. Within strata 23, 24, 34, and 35, growth would continue to decline as age, density, and mortality increase (see discussion above). Within stratum 21 and some strata 22 and 26, stocking would continue to be low with excessive amounts of grand fir in both the overstory and understory. In both cases, stands would not be growing to near site potential or growing the desired species (see Current Condition). This would affect current and future yields of wood products.

**Alternatives 2 and 3** - These alternatives would move toward the desired condition and meet the Purpose and Need for this proposal within the constraints of forest structure objectives. Alternative 2 would treat 320 acres of strata 23, 24, 34, and 35 (previously untreated), and Alternative 3 would treat 181 acres. Most of these acres would change from an old forest condition into a young forest that would be healthy and vigorous. Alternative 2 would treat 251 acres of previously treated areas -- strata 21, 22, and 26 -- in order to improve stocking and composition; Alternative 3 would treat the same 251 acres. These treatments would improve growth and allow these stands to come closer to meeting Forest Plan growth and yield objectives. Refer to Forest Plan Growth Assumptions in the project record. Growth within these areas would then approach site potential. See Table 3-3.
Vegetation

Table 3-3. Acres of Improved Vegetative Growth and Health by Alternative

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres of Improved Growth and Health</td>
<td>0</td>
<td>571</td>
<td>432</td>
</tr>
</tbody>
</table>

Cumulative Effects

Strata 41, 42, and 70 are unsuitable for timber management and are located in the upper elevations of the cumulative effects area. Consisting largely of meadows or small stands of timber on poor soils, these strata will always be in the open VSS stage. They are relatively static components of the landscape that do not change over time. If strata 41, 42, and 70 are removed from the equation, the current VSS distribution changes substantially (see Table 3-4).

Past Actions

Timber harvest has occurred on an estimated 3,690 acres within the cumulative effects area during the last 30 years. This harvest has created varying levels of openings in the forest canopy, from clearcuts and plantations on an estimated 724 acres (strata 20 and 32 respectively), to partial cuts on about 1,272 acres (stratum 21) with canopy closures of residual mature trees of less than 50 percent, to partial cuts on an estimated 1,694 acres with canopy closures of residual mature trees greater than 50 percent. Where timber harvest has occurred and the forest canopy was sufficiently opened up, early seral species (ponderosa pine, Douglas-fir, lodgepole pine, and western larch) are now growing in even-aged stands. In clearcuts, no remnant overstory occurs as it did historically; however, much of the past timber harvest consisted of partial cuts. In some of the partial cuts with less than 50 percent canopy closure and in all of the partial cuts with greater than 50 percent canopy closure, grand fir is regenerating largely to the exclusion of other species.

Table 3-4. Percent of VSS in the Cumulative Effects Area from Past Actions

<table>
<thead>
<tr>
<th>Vegetative Structural Stage (VSS)</th>
<th>Desired Condition</th>
<th>Current Condition with Strata 41, 42 and 70</th>
<th>Current Condition without Strata 41, 42 and 70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>10-20</td>
<td>42</td>
<td>3</td>
</tr>
<tr>
<td>Young Forest</td>
<td>20-30</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Mid-aged to Mature Forest</td>
<td>40</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Old Forest</td>
<td>20</td>
<td>39</td>
<td>66</td>
</tr>
</tbody>
</table>
Chapter 3

Current and Future Actions

Portions of two timber harvest units in the Rapid 21 Timber Sale were harvested in the summer of 1999. There are no other proposed vegetation management projects within the cumulative effects area in the foreseeable future. The effects of these units on VSS percentages would be negligible (only a few acres), the silvicultural prescriptions would mimic historic conditions, and growth and health of these stands would be improved. Table 3-5 displays VSS for the foreseeable future for the cumulative effects area. This table includes the proposed Sloan-Kennally Timber Sale.

Table 3-5. Percent of VSS in the Cumulative Effects Area from Future Actions

<table>
<thead>
<tr>
<th>Vegetative Structural Stage (VSS)</th>
<th>Desired Condition</th>
<th>Future Condition with Strata 41, 42 and 70</th>
<th>Future Condition without Strata 41, 42 and 70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>10-20</td>
<td>44</td>
<td>7</td>
</tr>
<tr>
<td>Young Forest</td>
<td>20-30</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Mid-aged to Mature Forest</td>
<td>40</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Old Forest</td>
<td>20</td>
<td>38</td>
<td>64</td>
</tr>
</tbody>
</table>

A forester uses an increment borer to determine the age of a tree.
Figure 3-4. Cumulative Effects Area for Vegetation
Chapter 3

Irreversible and Irretrievable Commitments

Alternatives 2 and 3 would improve growth in treated stands and move them toward their site potential for growth. Slow tree growth and mortality would continue in Alternative 1. Potential timber growth and yield would be lost for an undetermined period of time. This would be an irretrievable loss.

Roads, permanent skid trails, and landings are an irretrievable commitment of these areas from timber production. Alternatives 2 and 3 would build 0.2 mile of new road; no alternative would build permanent skid trails. Landings would also be returned to productivity. Alternatives 2 and 3 would obliterate and return nearly 9 miles of existing road to productivity. Alternative 1 would not.

Future high intensity lethal fires would occur at some time in the future, partly as a result of fire exclusion and/or the lack of fuel treatment. The timber resource would be affected to some degree and might take decades to return to productivity. Wildfires, including escaped prescribed burns, cannot be totally avoided. While all alternatives would risk this irretrievable loss, the action alternatives would decrease the risk of high intensity wildfire in the future.

Forest Plan Consistency

Alternatives 2 and 3 are consistent with Forest Plan direction for timber management, as treated stands are suitable for timber production and would grow to near site potential.

The prescribed burning in the action alternatives would meet the Forest Plan direction of decreasing overall fuel accumulations in intensively managed timber stands. In areas of light fuel loads, lopping and scattering or not treating slash may be adequate. In other harvest areas prescribed burns would reduce the natural and activity fuel to low-risk levels. Where post-harvest fuel loadings exceed Forest plan guidelines and prescribed fire treatments are not feasible, then Forest specialists would analyze site-specific information to determine if further treatments are needed or if the wildfire risk is acceptable.

Healthy plantation between Units 425 and 427 in project area
Roadless Character and Wilderness Potential

ISSUE: Proposed management activities within the roadless area could modify the roadless character. Wilderness attributes could be affected which in turn may affect the area's potential for wilderness designation.

INDICATORS:
- Acres of roadless area eliminated from wilderness consideration
- Acres remaining eligible for wilderness consideration
- Effects on wilderness attributes
- Effects on roadless character

Scope of the Analysis

The proposed planning area will be the area analyzed for direct and indirect effects (see Figures 3-5 and 3-6). The entire Needles Roadless Area is the area analyzed for cumulative effects (see Figure 3-7).

Desired Condition

The Forest Plan does not state a desired condition for roadless character, nor does it provide direction for roadless areas as a resource. However, the Forest Plan allocated the sale planning area to development that would result in a roaded, developed condition. It also makes land allocations and gives Management Area direction that crosses over roadless boundaries. These land allocations are discussed below.

Current Condition

The entire roadless area has 162,430 acres. A portion of the Needles Roadless Area is allocated by the Boise and Payette Forest Plans as recommended wilderness (approximately 100,200 acres), part to remain in an undeveloped state but still suitable for helicopter harvest (approximately 9,000 acres), and the remaining area, including the project area, available for general forest management (approximately 63,000 acres). Most of the area still possesses the characteristics it had when the Plan was published in 1988. There have been minor entries into the area and adjustments based on more site specific information since the Plan.

Project planning, such as this EIS, need not analyze a wilderness alternative for roadless areas allocated to non-wilderness in the Forest Plan. However, the impacts on the roadless condition and wilderness potential must be analyzed and disclosed. Roadless areas retaining wilderness qualities at the end of this planning period will be reevaluated for wilderness in the next planning period. This will be done as part of the revision of the Payette Forest Plan. The impacts of this sale will be incorporated into that analysis. The term "roadless character" refers to an area of at least 5,000 acres, without developed and maintained roads and with substantial natural character. Roadless areas have varying degrees of wilderness characteristics. Wilderness is defined in the Wilderness Act of 1964; one requirement is a roadless, undeveloped condition.
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The indicators for this issue come directly from the Wilderness Act and are the same measures used by the Forest Service to analyze a roadless area’s eligibility for wilderness. They best portray an area’s condition for potential wilderness and the effects of a development alternative on that condition.

Considerable public interest has been expressed for wilderness designation for all or portions of the Needles area. A large majority of Roadless Area Review and Evaluation (RARE II) public comments favored wilderness designation for this area, and a portion of the area was recommended for wilderness in the 1979 RARE II EIS. Needles was one of five roadless areas to receive the most public comment and interest during the October 1983 public involvement process. The vast majority of comments favored a wilderness designation. Portions of the area have been included in various wilderness bills before Congress.

The Payette National Forest portion of the Needles Roadless Area was analyzed in RARE I and RARE II (code #4-451), and reevaluated in the Forest Plan (code #12911). It was analyzed in conjunction with the adjoining Needles Roadless Area on the Boise National Forest. The supporting analysis for that decision is documented in Appendix C, Roadless Area Evaluation, of the FEIS for the Forest Plan (USDA 1988).

The Forest Plan FEIS Appendix C analyzed wilderness potential in terms of eight wilderness attributes in the 1964 Wilderness Act. The four required attributes are:

- Natural integrity
- Natural appearance
- Opportunity for solitude
- Opportunity for primitive recreation

In addition, four supplementary attributes (special features) are:

- Outstanding ecological features
- Outstanding geological features
- Outstanding scenic features
- Outstanding historic/cultural features

The discussions below are organized by the four required attributes, plus special features. Wilderness character is partly a subjective judgment. In addition to the above relatively objective measures of wilderness character, there are also subjective ways to describe wilderness character. This EIS acknowledges the personal nature of such judgments, recognizes the fact that they will be different for each individual, and does not attempt to express them.

Current Roadless Character in the Needles Roadless Area

The Needles Roadless Area lies between Long Valley in the west and the South Fork Salmon River in the east, and between the Lick Creek Road in the north and the Warm Lake Road in the south. Access is by the surrounding roads and by trail systems into most of the major drainages; however, some places can only be reached by cross-country hiking. Private and State lands in Long Valley lie to the west, the Secesh Roadless Area borders on the north, and the Caton Lake Roadless Area adjoins the east boundary.
Roadless Character and Wilderness Potential

Soils are derived from granites of the Idaho Batholith. In general, they are light-colored, coarse-textured, and rocky. Elevations range from 3,650 feet to over 9,000 feet. Precipitation ranges from 35 to 60 inches a year and falls mostly as snow during the winter and early spring months.

Lands at lower elevations are steep and strongly dissected by streams, with brush fields and moderate to dense stands of ponderosa pine and Douglas-fir. Higher elevation lands are U-shaped glacial valleys with steep side slopes and gently sloping alluvial bottoms, adjacent to high peaks, rocky ridges, and cirque basins. Lodgepole pine and subalpine fir are the dominant tree species. Ground cover varies from ninebark, thimbleberry, currants, grouse whortleberry, and pinegrass in lower elevations to sparse clumps of elk sedge in the higher elevations.

The area supports a wide range of backcountry recreation such as hunting, fishing, camping, horseback riding, hiking, backcountry skiing, and trail bike use. Snowmobile use is increasing, and the area also provides opportunities for rock climbing and photography. There are an estimated 104 miles of trail open to motorized use, and 71 miles of non-motorized trail.

This area contains streams that are important to anadromous fish, as well as streams that support only resident fish. Those streams supporting anadromous fish are considered critical habitat for threatened chinook salmon. Chinook salmon and steelhead trout, another threatened fish species, are found in some area streams that drain into the South Fork Salmon River. These streams provide important spawning and rearing habitat. Threatened bull trout are present in the upper Gold Fork River drainage, and may occur in the headwaters of Lake Fork Creek. Upstream of the Kennally Creek confluence, Gold Fork River is considered priority bull trout habitat. Large densities of brook trout, as well as non-game fish are also found in some area streams.

The area includes habitat for Payette National Forest Management Indicator Species Rocky Mountain Elk, pileated woodpecker, and Williamson’s Sapsucker, and for Region 4 sensitive species spotted frog, fisher, wolverine, boreal owl, flammulated owl, northern goshawk, great gray owl, northern three-toed woodpecker, and white-headed woodpecker. Mountain goat, mule deer, black bear, and cougar also occur. The area provides habitat for gray wolf and peregrine falcon, both federally listed species, as well as Canada lynx, a species proposed for listing. Big-game winter range occurs along the South Fork Salmon River, and bald eagles occasionally migrate along the river corridor. Travel corridors for lynx, fisher, and wolverine are found at higher elevations.

The Needles area has over 50 alpine lakes, most of which are in the Lick Creek Range in the western third of the area. The main streams in the area are the South Fork Salmon River, Buckhorn Creek, Kennally Creek,fitsum Creek, East Fork Lake Creek, Gold Fork River, and Dollar Creek. The western third of the area drains into the North Fork Payette River below McCall. The eastern two thirds of the area drains into the South Fork Salmon River, which is an important anadromous drainage for threatened chinook salmon and steelhead trout.

All or portions of three sheep allotments occur within the roadless area: North Fork Lick Creek, Lake Fork, and Jughandle. The Lake Fork and Jughandle allotments have a deferred rotation grazing system, and the North Fork Lick Creek allotment has a seasonal (fall) system. All allotments have a low level of structural improvements.
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There are few active mining claims in the Needles Roadless Area and low potential for future locatable mineral or energy development. Some limited placer activity occurs in the southern portion of the area, but most of this is "recreational" suction dredging.

Prehistoric and historic Nez Perce Indian trails cross the mountain range accessing the South Fork of the Salmon River, and North Fork of the Payette River Valleys for the seasonal harvest of summer chinook and sockeye salmon. These Native American trails were used into the early part of the 20th century. Today, Native American people continue to harvest summer chinook salmon from the South Fork of the Salmon River; however, no longer using the traditional trails. There is evidence of historic Forest Service trail maintenance activities. Otherwise, little is known about the historic use of this area.

Historic wildfire occurrence in this area ranges from moderately low in the northern section to moderately high and high in the southern section. Recent major wildfires include an estimated 700 acres in the 1994 Blackwell Fire; 100 acres in the 1989 Foolhen Fire; 125 acres in the 1989 Green Mountain Fire, and 1,200 acres in the 1979 Kennally Creek Fire. No recent major insect or disease infestations have occurred in this area. Prescribed Natural Fires were allowed to burn during the period of 1977-1988 as a part of the Lake Fork Fire Management Area Plan, which no longer exists. Significant "natural fires" during this time include the Golden Lake Fire of 600 acres, and the Jughandle Fire of 400 acres.

No federally listed plant species are known to occur in this roadless area. Tobias' saxifrage and Idaho douglasia, Region 4 sensitive plant species, are known to occur in the area. There are no inventoried locations of noxious weeds within the roadless area.

Natural Integrity: The natural integrity is generally high, as this is a large area with few effects from past development. The lack of significant grazing in the area has contributed to high natural integrity. There is a radio repeater site on top of Nick peak, although it has minimal impact on the natural integrity. Twin Lakes, Boulder Lake, Maloney Lake, Maki Lake, and Louis Lake all have dams and some sort of headgate system associated with them. The dams on Maki and Maloney lakes have been breached, but are still in place.

Natural Appearance: The natural appearance for this area is high, although appearance has been recently changed by a number of large wildfires, most notably the Blackwell Fire in 1994. Over 3,000 acres have burned in the last 25 years within the roadless area. Evidence of suppression activities are minimal and has only slightly altered the natural appearance.

Opportunities for Solitude: The area has high opportunities for solitude due to its substantial size, rugged topography, and limited access. Although opportunities are somewhat limited in portions of the area that are adjacent to heavily used access roads and trails, much of the area may be reached only by steep trails or cross-country travel. Only a few trails have the ability to support motor bike use, and they provide challenging trail bike riding. The area's rugged topography also provides excellent and challenging hiking, horseback riding, rock climbing, and backcountry skiing. Portions of the area are used by snowmobiles in the winter. Because of the noise associated with these machines, and the time of year that it occurs, solitude can be reduced for great distances. Areas near the high alpine lakes are utilized fairly heavily during the short summer months.

Opportunities for Primitive Recreation: The area also has high opportunities for primitive recreation due to its substantial size, rugged topography, and limited access.
**Roadless Character and Wilderness Potential**

**Special Features:** Jughandle Mountain, Nick Peak, and The Needles (located just off the Payette National Forest within the Boise National Forest portion of the roadless area) are a few of the scenic landmarks. These rocky areas also provide habitat for a small population of mountain goats. The Lick Creek Block Stream, a National Natural Landmark candidate, is also located partially within the roadless area. The adjacent South Fork Salmon River is being studied for potential inclusion in the Wild and Scenic River System.

Further general descriptions of the Needles Roadless Area and its wilderness attributes appear in the Forest Plan’s Final EIS; Appendix C, pages 79 to 85. That description in herein incorporated by reference.

**Sloan-Kennally Planning Area**

The eastern half of the planning area lies within the roadless area and comprises approximately 2,135 acres, or a little more than one percent of the entire Needles Roadless Area. The rest of the planning area is roaded and partially logged and does not have any wilderness attributes. Payette personnel reanalyzed the roadless boundary within the planning area as well as the rest of the roadless area on the Payette National Forest in March 1999 and made adjustments where needed. Those changes will be displayed under the effects common to all alternatives. The Boise and Payette National Forest portions will both be reevaluated as part of the Forest Plan revision process. *The following description applies to the roadless portion of the planning area:*

The rock type is Idaho batholith granitics and the soils are light textured and sandy. The forest cover types include grand fir/Douglas-fir forest along most of the north, northeast, west, south and southwest portions of the area. The remainder is spruce-fir forest type.

Wilderness qualities exist east of the planning area, but are very limited within it. The ridge just west of the east planning area boundary separates the present and past activities in the Paddy Flat area from the undisturbed area to the east and north. From almost anywhere within the planning area, past timber harvest, roads, vehicle noise and generally altered conditions can be observed. The wilderness qualities of naturalness, solitude primitive recreation and special features are only minimally present.

**Natural Integrity:** Past development to the north and west of the area has altered the natural integrity somewhat. The entire area sits in a bowl with ridges to the south and east, and with its small size, focuses attention to the developed areas surrounding it. Vegetation may have been altered slightly by past fire suppression, although not significantly. Unlike most of the roaded portion of the planning area, much of the roadless portion is in the spruce/fir/lodgepole types. These areas are at the upper end of their natural range of variation for fire frequency. They are at the point they could burn naturally at any time. However, the natural integrity of the area is generally intact.

**Natural Appearance:** The natural appearance of the area is high. No wildfires have burned in the area within the last 60 years of more.

**Opportunities for Solitude:** Chances for solitude are limited within the planning area. Noise from vehicles, ATV’s, and chainsaws in summer and snowmobiles in winter are apparent from most, if not all, of the planning area. There are few people who visit the area except during the fall hunting season. In conjunction with the remainder of the roadless area to the east, solitude opportunity would be moderate.
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Opportunities for Primitive Recreation: Chances for primitive recreation are moderate to high. There are no trails that traverse the area. The only trail in the area just touches the southern edge, and then just for a short distance. There are limited spots for campsites and there is almost no evidence of past dispersed camp sites.

Special Features: There are no special features in the area.

Direct and Indirect Environmental Effects

The effects can be described objectively and quantitatively in terms of acres developed and roaded thereby made unsuited for future wilderness consideration. They can also be described narratively with reference to the five types of wilderness attributes described in the “Current Condition” section and listed as indicators above. This section will describe effects both ways.

The effects of development to the roadless area were determined by overlaying mapped areas of expected effects with current conditions in the Forest’s Geographical Information System, as seen in Figures 3-6 and 3-7. These overlays in conjunction with personal knowledge of the area and aerial photos allowed the extent and degree of the effects to be described in terms of acres and the wilderness attributes and impacts on the roadless character. All discussion of effects refers only to that portion of the planning area that is roadless, essentially the eastern half of the planning area, and not the developed portion.

Effects Common to All Action Alternatives

In March of 1999, Payette National Forest personnel reanalyzed the entire Needles Roadless Area boundary within the Payette National Forest using the December 11, 1998 Roadless Area Inventory and Evaluation Protocol for the Southwest Idaho Ecogroup (USDA 1998). Adjustments were made to the roadless boundary wherever appropriate. The net result is an increase of 38 acres within the planning area and 3,660 acres within the Needles Roadless area. The new boundary is used to determine the effects following proposed development.

Directly, timber harvest and road building would change the physical and biological aspects of the area -- topography, vegetation, wildlife habitat. Indirectly, the character of the general vicinity (the recreation setting) would change because of the sights and sounds and other reminders of humans would be present. The modified surroundings will heighten the sensation of being in a developed area. Visitors seeking an undeveloped primitive experience would choose not to visit this area. The area would be considered developed and removed from the roadless area.

Direct and indirect effects would both make it unlikely that Congress will further consider the affected areas for inclusion into the National Wilderness Preservation System. Development essentially disqualifies them from future wilderness consideration.

Because there are no special features in the planning area, there would be no direct or indirect effect to them.

None of the alternatives would affect the Payette National Forest recommended wilderness (Management Area 19) or the Boise National Forest Recommended Wilderness (Management Area 54).
Figure 3-5. Roadless Area Effects from Alternative 2
Figure 3-6  Roadless Area Effects from Alternative 3
Acres Eligible for Future Wilderness Consideration

Acreage - The most impactive action, Alternative 2, would remove, at most, 542 acres, a total of 0.3 percent of the roadless area. There would still be a large area (161,888 acres) eligible for wilderness. The sale planning area lies along the western edge of the roadless area and proposed activities would only impact a small corner of the roadless area. Therefore, this sale would not significantly diminish the Needles Roadless Area’s potential for wilderness. There would still be over 99 percent of the area eligible for wilderness. The five wilderness characteristics described above would remain unchanged within this area.

Manageability - Neither action alternative would have much effect on the manageability of the area as wilderness. The planning area lies in a small, isolated drainage in one corner of the roadless area. The eastern edge of the planning area is the South Fork of Kennally Creek. There is a ridge just west of the creek, within the Sloan-Kennally planning area. This ridge would provide a geographically distinct wilderness boundary. In terms of manageability, this physical boundary would be an improvement over the current roadless boundary which follows roads, past harvest units, or other man-made disturbances. Table 3-5 shows the roadless acreage developed in the planning area.

Table 3-5. Roadless Acres Developed in Planning Area

<table>
<thead>
<tr>
<th>Consequences</th>
<th>Alt. 1</th>
<th>Alt. 2</th>
<th>Alt. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles of New Road Construction in Roadless Area</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Acres Directly Affected by Timber Harvest (stumps, slash, etc.)</td>
<td>0</td>
<td>139</td>
<td>0</td>
</tr>
<tr>
<td>Acres Indirectly Affected by Timber Harvest (between harvest units)</td>
<td>0</td>
<td>403</td>
<td>0</td>
</tr>
</tbody>
</table>

Effects on Wilderness Attributes

Alternative 1 (No Action)
None of the roadless area would be developed; therefore, there would be no direct, indirect, or cumulative effects on the roadless resource or wilderness attributes. Existing activities, including motorcycle and ATV riding, snowmobiling, woodcutting, and hunting, would continue to infringe on naturalness and solitude. Otherwise, natural appearance and integrity, opportunity for solitude, and opportunities for primitive recreation as described under “Current Condition” would be affected mainly by natural forces. There would be no effect to special features because none are present in the planning area.

Alternative 2 (Proposed Action)
Timber harvest would affect wilderness attributes along the western portion of the roadless area within the planning area. An estimated 139 acres would be directly affected by timber harvest. Another estimated 403 acres between the harvest units would be indirectly affected and be excluded from the roadless area. The natural appearance would be changed and the natural integrity would be lost. Opportunities for solitude would be lost during harvest and associated activities but would return to near pre-development conditions in 10-15 years. Primitive recreation opportunities would be lost for the foreseeable future. The existing activities, including motorcycle and ATV riding, snowmobiling, woodcutting, and hunting, would continue to infringe on naturalness and solitude to a slightly greater degree than under Alternative 1. However, because of past development, there would not be a large change from the existing condition. There would be no effect to special features. About 1,593 acres within the planning area and 161,888 acres within the roadless area would remain eligible for wilderness consideration.
Alternative 3
This alternative was developed to eliminate impacts to the roadless resource. The effects would be the same as Alternative 1. None of the roadless area would be developed; therefore, there would be no direct, indirect, or cumulative effects on the roadless resource or wilderness attributes. Existing activities, including motorcycle and ATV riding, snowmobiling, woodcutting, and hunting, would continue to infringe on naturalness and solitude. Otherwise, natural appearance and integrity, opportunity for solitude, and opportunities for primitive recreation as described under “Current Condition” would be affected mainly by natural forces. There would be no effect to special features because none are present in the planning area.

Figures 3-5 and 3-6 illustrate the developed areas by alternative. Table 3-7 summarizes the effects of the alternatives.

Table 3-7. Direct and Indirect Consequences of Alternatives

<table>
<thead>
<tr>
<th>Consequences</th>
<th>Alt. 1</th>
<th>Alt. 2</th>
<th>Alt. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres of Roadless Area Eliminated from Wilderness Consideration</td>
<td>0</td>
<td>542</td>
<td>0</td>
</tr>
<tr>
<td>Acres Remaining Eligible for Wilderness Consideration in Planning Area</td>
<td>2,135</td>
<td>1,593</td>
<td>2,135</td>
</tr>
<tr>
<td>Acres Remaining Eligible for Wilderness Consideration in Roadless Area</td>
<td>162,430 (100%)</td>
<td>161,888 (99.7%)</td>
<td>162,430 (100%)</td>
</tr>
<tr>
<td>Effects on Wilderness Attributes in the Planning Area</td>
<td>None</td>
<td>Natural Integrity - reduced</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Natural Appearance - reduced</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Solitude - short term loss</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Primitive Recreation - long term loss</td>
<td></td>
</tr>
<tr>
<td>Effects on Roadless Character in the Planning Area</td>
<td>None</td>
<td>542 acres will no longer have roadless character</td>
<td>None</td>
</tr>
</tbody>
</table>

Cumulative Effects
Several past actions have affected the size or status of the Needles Roadless Area since the area was analyzed under RARE II and by the Forest Plan FEIS. The Preliminary Analysis of the Management Situation (PAMS) for the Southwest Idaho Ecogroup Forest Plan Revision (Boise, Payette and Sawtooth National Forests) (USDA 1997) displayed changes to the size of the Needles Roadless Area (p. C-6 to C-9). There were a couple of things that contributed to these changes.

First, different technologies were used to determine acres for the current Forest Plan FEIS than are used today. Geographic Information Systems (GIS) are used today and are more accurate in calculating acreages. For the Boise National Forest, this difference was a gain of 40 acres. For the Payette, it was a gain of 368 acres. Second, there have been other changes since the Forest Plans and RARE II, including adjustments made for past actions as they became evident and exclusions as a result of new actions, such as timber sales and land exchanges. For the Boise, these types of adjustments accounted for a reduction of 7,490 acres, and for the Payette, a reduction of 1,873 acres (Table 3-8).
Table 3-8. Needles Roadless Area Past Actions

<table>
<thead>
<tr>
<th>Forest</th>
<th>Forest Plan Acres</th>
<th>Forest Plan Acres (GIS)</th>
<th>Difference in Acres</th>
<th>Net Changes Since Forest Plan</th>
<th>Revision Adjustments</th>
<th>Current Roadless Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boise</td>
<td>37,541</td>
<td>37,581</td>
<td>40</td>
<td>-7,490</td>
<td>0</td>
<td>30,091</td>
</tr>
<tr>
<td>Payette</td>
<td>130,204</td>
<td>130,572</td>
<td>368</td>
<td>-1,873</td>
<td>3,640</td>
<td>132,339</td>
</tr>
</tbody>
</table>

In addition to the past actions, other approved activities can and would continue, such as timber sales, hunting, motorcycle and ATV use, and other dispersed recreation. Neither the Payette nor Boise National Forests have any timber sales scheduled in the foreseeable future.

The Payette is currently finalizing a land exchange with the State of Idaho. When complete (expected sometime in 1999) four sections of state land within the Needles Roadless Area will become National Forest System lands. These sections are undeveloped and meet the criteria for roadless. This exchange will potentially add 2,640 acres to the Needles Roadless Area. Three of these sections, approximately 1,920 acres, lie within Management Area 19, the area recommended for wilderness in the current Forest Plan. The fourth section is within Management Area 22, an area the current plan identifies for undeveloped recreation. There are no Forest lands within the roadless area that will be exchanged to the state.

The Southwest Idaho Ecogroup Forest Plan revision, scheduled to be complete by December 31, 2000, will evaluate all roadless areas on the three Forests. This evaluation involves reviewing the roadless areas for their potential as wilderness areas using the wilderness criteria described above. When the reevaluation is complete, the revised Forest Plan may establish or change management direction for recommended wilderness.

Considering all the above actions, there would be a large and viable roadless area of around 165,500 acres for future wilderness consideration (Figure 3-7). How this area is recommended for management will be decided in the Forest Plan Revision process which includes several opportunities for public comment and input.

Irreversible and Irretrievable Commitments

Roadless character and wilderness qualities are essentially nonrenewable resources. Any development of a roadless area is an irreversible commitment of the resource to a non-wilderness condition for the long term. In addition, because the natural process of succession moves so slowly, such development would also represent an irreversible impact within our lifetimes. The developed area would be disqualified from wilderness consideration for the foreseeable future. The proposed action, Alternative 2, would have these effects. Alternative 1 (No Action) and Alternative 3 would not.

Forest Plan Consistency

The Forest Plan allocates the planning area to development, including timber harvest and road construction. Development in this portion of the roadless area is, therefore, consistent with the Forest Plan.
Figure 3-7. Cumulative Effects Analysis Area for Roadless Character in the Needles Roadless Area
Soil Productivity

ISSUE: Proposed management activities may affect long-term soil productivity through increased soil compaction, displacement, puddling, and erosion.

INDICATORS: Total soil resource commitment (5% or less)
Detrimental disturbance (20% or less)

Scope of the Analysis

For both direct and indirect, and cumulative effects, the planning area serves as the analysis area for soils. The existing information on the soil resource is provided by the Soil Hydrologic Reconnaissance Report (USDA, 1973) for the McCall Ranger District. Dominant land types include Maturely Dissected Mountain Slope Land (120e and 120e-1), alluvial lands (101), Moderately Dissected Mountain Slope Lands (120b), with smaller areas of Glacial Plastered Mountain Slope Lands (108) and Rocky Glacial Scoured Land (118). The inherent erosion hazard for landtype 120b is low to moderate; all other landtypes in the planning area have a moderate inherent erosion hazard.

Desired Condition

Ensure that soil productivity is protected or maintained at a level equal to or greater than 90 percent of natural potential (Forest Plan, page IV-73). This is accomplished by: a) limiting the extent of Detrimental Disturbance to no more than 20 percent of the activity area following project implementation, and b) limiting Total Soil Resource Commitment to no more than 5 percent of the activity area. This is a cumulative 5 percent that includes existing land uses such as roads, trails, and campgrounds. For the purposes of this analysis, the activity area and the planning area are the same.

Current Condition

Geologically, the area is located within a portion of the Idaho batholith known as central core granitics. In general, local rock types are volcanic in origin, weathering to coarse sand and fine gravel. Much of the area has formed through uplift, erosion, alluvial deposition, and glacial processes. The soils are weakly developed and have dominantly sandy and coarse loamy textures. Surface textures are generally loamy sand to sandy loam and subsoil textures are generally loamy sand to sandy loam. Infiltration rates are dominantly rapid (7.5 to 10.0 inches/hour). Soils are moderately deep (20 to 40 inches), with smaller areas of shallow (0 to 20 inches) and deep (40 to 60 inches) soils.

Soil productivity is necessary for the regeneration of harvested areas. Using areas for roads and log landings converts them to an essentially non-productive condition. There have been 1,501 acres harvested in the planning area between 1964 and the present. Currently there are approximately 124 acres of roads in the planning area.

Total Soil Resource Commitment (TSRC): TSRC occurs when an area is converted to an essentially non-productive site for a period of time that exceeds 50 years. These conversions have the greatest and
most permanent impact on the soil resource. For the purpose of this analysis, TSRC is calculated for the identified planning area and is expressed in percent of planning area. According to Forest Plan Standards and Guidelines, no more than 5 percent of a planning area should be in a committed condition. The total soil resource commitment is calculated using the assumptions that 1 mile of road is equal to a variable acreage amount depending on average slope of the landtype which the road travels through, and that there is one acre of landings for every 50 acres logged by tractor or skyline. The total soil resource commitment is an indicator of existing effects on the soil resource and is useful to measure relative effects of project alternatives. The calculated total soil resource commitment for the existing condition of the planning area is 3.0 percent.

**Detrimental Disturbance (DD):** DD occurs when the natural characteristics of the soil are altered to a degree that results in immediate or prolonged degradation of resource quality standards. DD can result from timber management and other activities that produce unacceptable levels of soil degradation by compacting, moving, eroding, heating, or puddling the soil. DD is greatest with ground-based yarding methods of timber harvest, less with skyline, and least with helicopter yarding methods. Past DD is likely to exist throughout the planning area, especially in areas of past harvest activities. The exact extent of existing DD is not known and would be difficult to determine. However, based on past monitoring of DD on the McCall District, although some individual harvest units might not meet the 20 percent DD standard, it is likely that the planning area would. To reach this conclusion, the project hydrologist reviewed DD monitoring results from 1991 through 1995 for the McCall and New Meadows Districts. Of these, only the results from units that most likely resemble past harvest and yarding practices were used. The low percent area detrimentally disturbed was 21% and the high 54%. Average area detrimentally disturbed was 37 percent. There are 1,501 acres harvested in the planning area. Thirty seven percent of 1,501 is 555 acres, the total acreage considered detrimentally disturbed. The planning area totals 3,100 acres. 555 acres of detrimentally disturbed area represents 10.7 percent of the planning area, which meets DD guidelines.

**Direct and Indirect Environmental Effects**

**Effects of Timber Harvest and Road Construction**

Timber harvesting affects soil productivity by causing soil compaction, soil puddling, ground cover disturbance, and soil displacement. Road construction converts land to a non-productive state for vegetation production due to soil displacement, compaction, and ground cover disturbance.

Soil compaction affects productivity by reducing pore space and altering soil structure. Air and water movement is reduced in compacted soils which can affect respiration in roots. Compaction reduces root penetration and establishment. Surface compaction reduces infiltration, possibly increasing runoff and erosion. Compaction in surface layers also can make it difficult for seedlings to become established.

Soil puddling occurs when the soil has been manipulated in a saturated or nearly saturated condition. The structure of puddled soils is destroyed, reducing infiltration and possibly increasing surface runoff.

Soil displacement and ground cover disturbance occur when machinery or logs scrape or gouge the surface. Removal of surface organic matter (litter and duff layers) can expose the mineral soil to erosion and compaction from raindrop impact. Displacement and removal of surface organic and mineral layers will reduce the amount of available nutrients.
Detrimental Disturbance can be mitigated by limiting the extent of equipment movement (ground-based yarding) through the use of designated skid-trails, and by restricting brush disposal equipment operation to periods when the soil is dry and less susceptible to compaction. Refer to Chapter 2, management requirements and mitigation measures for details.

**Summary of Direct and Indirect Effects**

Alternative 1 - No additional acres of soil would be totally committed from timber harvest or road construction. No acres would be put back into production. The TSRC would remain at 3.0 percent. No additional acres of DD would be produced, leaving an estimated 10.7 percent of the planning area detrimentally disturbed.

Alternatives 2 and 3 - These alternatives would totally commit approximately an additional 0.62 acres by constructing 0.2 miles of road in the Flat/French subwatershed, and put back into production 28 acres of road by obliterating 8.7 miles of road. For both alternatives this would result in a reduction in TSRC to 2.5 percent. Based on the analysis of current levels of DD where equipment was allowed to operate randomly within a harvest unit and on monitoring results from more recent timber sales where equipment movement was restricted within a harvest unit (see project record), DD levels are expected to remain the same as Alternative 1 and meet Forest Plan standards for both the planning area and in individual harvest units.

**Cumulative Effects**

Cumulative effects are the effects of the alternatives combined with conditions in the watershed from past, present, and reasonably foreseeable future actions. Past and present effects have been described in the direct and indirect effects portion of the chapter.

In the foreseeable future, no timber will be harvested from the planning area or from the Payette National Forest portion of the Gold Fork watershed except for two small timber sales currently under contract. TSRC levels for the 5,100 acre planning area are expected to remain close to the same, approximately 2.5 percent. As the road system network in the other portions of the drainage are inventoried and assessed, it is anticipated that TSRC levels will remain about the same.

Detrimental Disturbance levels are expected to meet Forest Plan standards due to management requirements and mitigation measures which reduce the areal extent of impacts from harvest activities and then treat some of the affected areas (i.e. use of and obliteration of designated skid trails).

There are approximately 200 acres of Timber Stand Improvement (TSI) in the northern portion of the planning area planned for the future and a potential for increased wildfire activity (prescribed fire). These activities should not negatively affect long term soil productivity. No new roads would be constructed with either action. TSI work would not increase DD, but prescribed fire may increase acres of severely burned soils. However, this increase would be minimal due to mitigation such as limiting burning to periods when the soil moisture level is adequate to prevent severely burned soils.
Irreversible and Irretrievable Commitments

There would be a net reduction of approximately 27 acres of irretrievably committed land due to the obliteration of 8.7 miles of non-system roads in both action alternatives and the construction of 0.2 mile of road. None of the alternatives would irreversibly affect the soil resource.

Forest Plan Consistency

All alternatives would be consistent with the Forest Plan for the soils resource.

A deck of logs on a landing
ISSUE: Proposed management activities may affect accelerated erosion, water yield, and timing and rate of peak flows within the Kennally Creek watershed and downstream in Gold Fork River. The Gold Fork River flows into Cascade Reservoir where additional water quality concerns exist.

INDICATORS: Percent sediment yield over natural
Hydrologic risk

Scope of the Analysis

The analysis area for direct and indirect effects on water resources is Middle Kennally Creek (10,079 acres) and Lower Kennally Creek (9,110 acres) subwatersheds (Figure 3-8). The cumulative effects analysis area is the Gold Fork Watershed. Most harvest activity would occur in the Middle Kennally Creek subwatershed. One 39 acre unit is located in the Flat/French Creek subwatershed and is analyzed in the cumulative effects section. Another 37 acre unit is located in the Upper Kennally Creek subwatershed and is also analyzed in the cumulative effects section. Middle Kennally Creek and Lower Kennally Creek both have mixed ownerships, including private individuals, and state and federal agencies. Middle Kennally Creek subwatershed is 83% Federal lands, while Lower Kennally Creek subwatershed is 13% Federal lands.

Desired Condition

The Desired Condition for water quality is to improve degraded watershed and riparian areas wherever possible and protect areas presently in good condition (Forest Plan, pages IV-91 and IV-92). Meet or exceed Idaho Water Quality Standards and protect beneficial uses (page IV-70).

Current Condition

The proposed Sloan-Kennally Timber Sale is located within the Gold Fork River watershed. Mean annual precipitation within the watershed ranges from 35 to 45 inches, most of which falls as snow between November and April. Given that most of the precipitation falls as snow, peak streamflows occur during the months when the snow begins to melt, May and June.

Kennally Creek is a major tributary to the Gold Fork River, which is divided into eight subwatersheds. Four of these subwatersheds are located principally within the Payette National Forest and contain the headwater streams of Kennally Creek.

Landforms in the watershed were formed principally by two different agents. Glaciation formed the higher elevations within the watersheds. Landform features range from glacially scoured ridges and slopes, to valley bottoms formed by deposition of glacial material. Fluvial processes (running water) dissected the lower (6,500 feet and below) portions of the watersheds. Natural sediment yields for the drainage range from 4 to 45 tons per square mile per year, and average 25 tons per square mile per year.
Figure 3-8. Subwatersheds In Relation to the Sloan-Kennally Planning Area
The landforms of the planning area are a product of prevailing climatic conditions, rock types, glacial history, and recent management effects. In addition, topographic position (aspect and elevation) has strong local influence on weathering rates and resultant landforms. In general the landform most present is maturely dissected mountain slope, and low relief land. This landform typically has rounded ridge tops and broadly concave-shaped drainage bottoms. The main source of sediment are landslides in the glaciated portion, and surface erosion in the fluvial portion of the watershed.

Timber harvest and road construction are activities affecting watershed resources in the Kennally Creek drainage and are addressed in this analysis. Other activities, which include wildfire, livestock grazing, recreation, and mining, have affected watershed resources.

Two subwatersheds analyzed for this proposal have had previous timber harvest activities. Twenty-one timber sales were documented between 1964 and 1992 in Middle Kennally Creek subwatershed. The Lower Kennally Creek subwatershed is located primarily on state and private land. Timber harvest activities have occurred in this area as well.

Road construction has occurred in conjunction with timber harvest and other forest development activities, such as campgrounds and trails. There are approximately 82 miles of road in the Middle Kennally subwatershed and 115 miles of road in the Lower Kennally subwatershed.

The Payette National Forest has inventoried, field checked, and cataloged all roads within the planning area (Appendix D data table). This data table describes each road's status (open or closed), condition, any proposed work, and proposed future management. The road inventory was utilized in an evaluation process called TOTE (see planning record). Resource specialists use the TOTE process to determine appropriate access management for the planning area and to evaluate which roads create resource problems and how best to resolve the problems (i.e. through road improvements, road closures, or road obliteration).

Other activities within the watershed include, but are not limited to, livestock grazing, and recreation. These activities have potential to influence the water resources of Kennally Creek and are analyzed qualitatively.

The subwatersheds of Kennally Creek fall within portions of the Jughandle sheep allotment. In the 1998 grazing season, 1,600 yearling sheep were permitted to use the Jughandle allotment. Historically, grazing use occurs in the northern portions of the watershed in the vicinity of Jughandle Mountain, and the headwaters of Rapid, Camp, and the North Fork of Kennally Creek. Currently there is no permitted livestock grazing occurring within the Payette National Forest's portion of the planning area; however, livestock grazing does occur on the off-forest portions of the watershed.

Riparian Areas

The Forest conducted stream channel condition and riparian inventories in 1991. Within the planning area, approximately 23 miles of perennial stream, 7 miles of intermittent stream, and over 36 acres of wetland areas were mapped and described (Riparian Inventory, Sloan-Kennally Timber Sale, USDA, 1991). Major drainages within the planning area include Kennally Creek, major tributaries of Kennally Creek, the South Fork of Kennally Creek, and Sloans Creek. The present condition of each stream is discussed below.
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A stream channel stability rating of “good” means that stream banks are stable, vegetation is vibrant and healthy, mid to late seral plant species predominate, and substrate is predominately rocks and boulders. A stream channel stability rating of “fair” means that banks are starting to lose their stability, vegetation is not as healthy, and early to mid-seral plant species predominate, and substrate is mostly gravel size or smaller. A rating of “poor” means that stream banks are predominately unstable, vegetation is sparse, and substrate is almost entirely gravel size or smaller.

Kennally Creek flows west and southwest along the northern boundary of the planning area. Channel stability in the upper reach near Kennally Creek campground rated good, but stability in the lower reach rated poor because of excess accumulations of sand. Although this reach received a poor stability rating, there is little development above the reach, and the cause of the sand accumulations are natural landslides coming off glaciated trough walls from outside the analysis area. Riparian vegetation extends an average of 40 feet from high water on either bank and consists of mature stands of Douglas-fir and Englemann spruce. Alder and huckleberry are present in the midstory, and the understory is a mix of forbs, grasses, and sedge.

Major tributaries of Kennally Creek, both perennial and intermittent, have their source areas in the southeast portion of the planning area and flow north and west to join Kennally Creek. Channel stability’s range from fair to good. Sand sized substrate is common in both developed, and undeveloped portions of the watershed. Overstory vegetation is a mixture of fir and pine, depending on elevation and aspect. Alder and willow communities are present in the midstory at some locations, and forbs and grasses are continuous in the understory. Riparian widths range from 20 to 106 feet from either bank. Beaver activity and low-gradient wet meadows are features of note.

The South Fork of Kennally Creek is a steep-gradient boulder channel, with a stepped profile. This stream flows from south to north and is located within the Needles Roadless Area. This channel is stable and has abundant riparian vegetation consisting of Englemann spruce, spirea, forbs, and mosses.

Sloans Creek is also a steep-gradient channel but is formed in finer, less stable soils. Riparian widths range from 30 to 100 feet. Channel stability is fair due to bank cutting, debris jams, scour, and sediment deposits. In private land this stream is bordered by logging roads which restrict the channel and erode directly into the stream.

In 1991, the Forest conducted basin-wide fish habitat surveys within the planning area (data on file at McCall Ranger District). The findings were consistent with riparian surveys in that streams had stable banks but had high percentages of surface fines.

Hydrologic Risk Rating

Hydrologic risk is an assessment of the potential change in flow regimen from management activities and its subsequent impact to stream channel stability. The project hydrologist determined hydrologic risk for both Middle and Lower Kennally Creek subwatersheds using a modified procedure of the Forest Practices Cumulative Watershed Effects Process for Idaho (Idaho Department of Lands, 1995). Hydrologic risk is a function of the Canopy Removal Index (CRI) and the Channel Stability Index (CSI). The CRI is a calculation that is similar to equivalent clearcut area. CRI for each subwatershed was determined by using the Forest timber strata database. The CSI is a numerical rating of the ability of a channel to withstand streamflow forces. CSI for each subwatershed was determined from the channel stability rating for the Rosgen stream types (RST) that have the highest sensitivity to disturbance within the subwatersheds. RST
were determined through the riparian inventories completed for each subwatershed. In combination, the CRI and CSI are used to determine the Hydrologic Risk Rating (HRR) for each alternative in each subwatershed. Currently the HRR for Middle Kennally is low; for Lower Kennally, it is moderate.

Water Quality

Water quality consists of various physical, chemical, and biological parameters that may affect designated beneficial uses. The parameter of most concern is sediment. Sediment production is most affected by road construction, and use, and to a lesser degree by timber harvest activities and fire. The BOISED sediment model was utilized to estimate current sediment rates, both natural and human induced, and to predict relative effects of proposed alternatives. Existing sediment yields were determined for the Middle and Lower Kennally Creek subwatersheds. Existing sediment yields are the result of natural sediment production (variable by landtype) combined with above natural sediment produced from logging and road building activities. These values are expressed as a percent over natural and are currently at 24 and 53.4 percent over natural respectively.

The Forest established three water quality monitoring stations in 1992 to evaluate the trend of phosphorus levels in Kennally and Rapid Creeks. Stations were located on Kennally Creek at the Forest Service boundary, Rapid Creek at the Forest Service boundary, and Powelson Creek at its confluence with Kennally Creek. An additional station on the South Fork of Kennally Creek was established in 1993 as a control. Samples were taken once a month for the period between April and November. In 1993 the Powelson and South Kennally Creek sites were discontinued and the monitoring efforts were concentrated on Kennally and Rapid Creeks at the Forest boundary to better assess how much phosphorus was originating from Payette National Forest lands. Both ortho and total phosphorus concentrations measured during the 1992-1998 period were within the natural range for forested watersheds (Salminen and Beschta 1991). The EPA-recommended limit of 0.05 mg/l total phosphorus has not been exceeded in the planning area. Phosphorus levels in both subwatersheds are likely the result of natural chemical weathering of the geologic parent material and nutrient cycling within the forest floor. See the project record for a summary of water quality monitoring results.

Beneficial Water Uses

The Clean Water Act (CWA) requires that each state protect their surface waters from pollution. The State of Idaho has developed and enforced water quality standards for the protection of state waters. Once designated, beneficial uses are protected from impacts that may impair the use through application of numerical and narrative water quality criteria. Existing uses of waters that are not designated are also protected. Both federal and state rules protect all existing uses through the antidegradation policy. Kennally Creek does not have designated beneficial uses identified.

Beneficial uses of the Gold Fork River and its tributaries include domestic and agricultural water supply, cold water biota, salmonid spawning, and primary and secondary contact recreation.

Under section 303(d) of the Clean Water Act (CWA), the portion of Gold Fork River from Flat Creek to Cascade Reservoir and Cascade Reservoir have been identified as water-quality limited. Pollutants for the Gold Fork River section are nutrients and sediment. Pollutants for the reservoir are dissolved oxygen, pH, and nutrients. Nuisance algae growth resulting from nutrient loading has impaired beneficial uses of the reservoir, specifically fishing, swimming, boating, and agricultural water supply.
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A three-phase plan is being developed to achieve water-quality improvements in Cascade Reservoir. Phase I was implemented in January of 1996 and consisted of an initial water-quality assessment and nutrient reduction goal. The Phase II Watershed Management Plan was completed in December, 1998 with the goal of refining and augmenting information available in the Phase I plan. The purpose of both the Phase I and II management plans is to improve water quality in Cascade reservoir through the joint efforts of affected government agencies and landowners. Both plans utilize a watershed management approach to address water quality concerns. Because of the direct relationship between algal growth, depleted dissolved oxygen, and high total phosphorus concentrations within the water column, the reduction of total phosphorus is being specifically targeted as a mechanism for overall water quality improvement. An Implementation Plan will be developed around June, 2000. This plan is a sub-watershed specific outline of projects that have been and will be initiated to effect required water-quality improvements within Cascade Reservoir. Finally, Phase III will be a plan evaluation and monitoring summary to determine if the remedial actions undertaken were successful, and if not, what further actions are needed. This Watershed Management Plan constitutes the functional equivalent of a total maximum daily load (TMDL) (EPA, 1991) and is consistent with Idaho Code 39-3601. Because the Watershed Management Plan for Cascade Reservoir includes the portion of the Gold Fork River that is water-quality limited, no specific separate action has been undertaken to address that segment. However, it is hoped that by addressing the water-quality problems of Cascade Reservoir with a watershed-wide approach that beneficial use of the water-quality limited segment of the Gold Fork River will be met as well.

Load Allocations and Compliance Strategy

As part of the management plan to improve the quality of water in Cascade Reservoir, IDEQ (Idaho Department of Environmental Quality) identified the need for a 37 percent reduction in total phosphorus. To accomplish this overall reduction, point source pollution reductions totaling 7 percent and non-point source (i.e. forestry activities) reductions totaling 30 percent of the total phosphorus load by watershed (management induced plus natural loads) must be achieved. The Watershed Management Plan acknowledged that “Attainment of the 30% overall non-point source reduction may be difficult in some watersheds (i.e. Gold Fork) where natural phosphorus loading represents the majority of the total load.......Therefore, it is reasonable to expect that the 30% non point source reduction goal may be reached by implementation measures resulting in greater than 30% in some subwatersheds to offset less than 30% reductions in others.” (IDESQ, 1998).

For non-point sources, the Forest will use the feedback loop to achieve water quality goals (IDESQ, 1998). Involved agencies will conduct instream and/or qualitative monitoring throughout the watershed to evaluate the overall effectiveness of best management practices (BMPs) and other restoration projects such as road graveling and road obliteration in reducing phosphorus loading. If found ineffective, the Forest will modify the practices.

Relationship Between Load Allocation and Forestry Activities

Within the forested portion of the Gold Fork River watershed three landowners manage the majority of the watershed. They are the Boise Cascade Corporation, Idaho Department of Lands, and the Forest Service (the Boise National Forest and the Payette National Forest). They are working collectively to ensure that the water quality goals brought forth in the Cascade Reservoir Phase II Watershed Management Plan will be attained. The primary focus has been graveling road segments that were identified as high sediment producers in the Gold Fork River Watershed Analysis. When the Watershed Management Plan was
released, approximately 56 miles of high sediment producing road segments had been graveled, one mile had been paved, and two miles had been ripped and seeded. It is unknown what restoration projects other than those on the Payette National Forest have been undertaken or completed since then. That information will be available in the Implementation Plan due in June, 2000. On the Payette National Forest, approximately 15 stream crossings along Road No. 50388 totaling 1 mile, four stream crossings and eroding areas on Road No. 50397 totaling 0.84 mile, and 1.97 miles of Road No. 50401 (which was identified as a high sediment producer) will be graveled. Additional stream crossings will be graveled during implementation of the timber sale. All planned graveled projects are listed in Appendix D.

Direct and Indirect Environmental Effects

Background

Timber harvest and road construction can alter the quality and quantity of water resources, and affect stream channel stability and riparian values. Cause and effect relationships are complex and variable in time and space. For example, the amount of sediment eroded from upland slopes may not be equivalent to the amount leaving a basin because sediment tends to be stored behind obstructions (logs and boulders), in flood plains, channel banks, and reservoirs. Timber harvest can increase water yields and accelerate channel erosion, but the specific effects depend on a complex array of variables, including climate, drainage basin characteristics, and logging methods. Gradually, as forests become reestablished, the watershed will recover its pre-harvest water and sediment yields. Recovery rates are also variable: water yield changes may recover in 15 to 30 years, while sediment yield increases often peak the year following disturbance and return to pre-activity levels within approximately 3 to 5 years.

Increased sediment yields are often the most significant adverse effect of logging and roading on forest streams. Increases in the amount of sediment delivered to stream channels can negatively affect fish and aquatic habitat as well as channel stability. Stable channels and healthy riparian areas are important for carrying peak flows and sustaining late-season low flows. Sediment loading can also be related to nutrient loading since nutrients such as phosphorous attach to fine soil particles. Concentrations of phosphorous in rock sediments measured in Gold Fork granodiorite equaled 0.03 percent by weight (Clayton and Kennedy, 1985). Soil phosphorus content was evaluated by both the Forest Service and IDEQ. The only significant difference identified was between the A and C horizons. The A horizon soils showed higher concentrations of both bioavailable (417 and 2.5 mg/kg of soil respectively) and total phosphorus (617 and 4.9 mg/kg of soil, respectively).

Increased water yields are another potential effect of logging and roading. Changes in peak flows, low flows, and total water yields have been demonstrated in numerous studies (Megahan, 1976). Peak flows in the Kennally Creek watershed generally are the result of snow melt runoff. Occasional peak flows result from mid-winter rain-on-snow events and summer thunderstorms. Forest management has variable effects on water yields including:

- Road construction intercepts subsurface flow and increases the amount of compacted surfaces, thereby reducing infiltration and increasing runoff.
- Loss of canopy cover reduces snow interception and evapotranspiration, increasing runoff.
- Exposure to sunlight and wind increases snow melt rates.
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- Fire suppression increases the number of trees which increases canopy cover and decreases the amount of snow available for snow melt.

An increase in peak flows can increase channel instability where channel conditions are poor and increase sedimentation. Timber harvest is usually expected to increase low flows (Zuniga, 1992) and could be considered a beneficial effect of the project by downstream water users.

Changes in sediment and water yields can affect channel stability and riparian resources through complex processes of channel adjustment. Over time, channels are adjusted to prevailing climate and watershed conditions. With changes in water and sediment supplies, stream channels may adjust their shape, position, and size. These adjustments can have adverse effects on water resources by adding sediment previously stored in channel banks, removing bank vegetation, changing channel shape, and overall negatively affecting aquatic and riparian habitat. An increase in sediment supply can cause lateral instability, braiding, and scour. An increase in water supply can cause vertical instability and downcutting. Site-specific responses to the project are difficult to predict with accuracy; however, some generalizations can be made.

Road reconstruction and timber harvest could increase the amount of sediment reaching Kennally Creek and its tributaries. Road improvements such as graveling and water management (water bars, and relief culverts) decrease erosion and sedimentation. Road obliteration can cause sediment increases in the short term (1-3 years) and a decrease in sediment in the long term (> 3 years). The BOISED sediment yield prediction model was used to estimate the general magnitude of expected change from each timber harvest alternative. The model accounts for natural erosion rates and increases expected from the activity using averages derived from research studies. The model accounts for factors such as slope, logging method, road management, and silvicultural prescription, and is representative of conditions and likely effects. Another related effect of timber harvest and associated activities is the potential for increased phosphorous loading. Potential phosphorous increases from the proposed activity can be qualitatively estimated based on an evaluation of total soil disturbance expected from each alternative (see soil resources section). Different combinations of harvest prescriptions (clearcut versus shelterwood), yarding methods (tractor versus helicopter), miles of road work, and post harvest treatments (tractor piling versus broadcast burning) will affect actual changes in phosphorous loading. Effects also depend on future climate and operating conditions, factors that cannot be accurately predicted.

Research indicates that relatively small increases in phosphorous can be expected following timber harvest activities and that practices which control site disturbance and erosion will minimize effects (USDA Forest Service, 1980).

In sum, effects on phosphorous levels as a result of timber harvest are expected to be minor. Change in phosphorous levels was not quantified but is estimated based on the amount of modeled sediment change.

Summary of Direct and Indirect Effects

Alternative 1 - In Middle Kennally subwatershed no activities would occur. Existing annual sediment would peak at 24.4 percent over natural. In Lower Kennally Creek no activities would occur. Existing annual sediment would peak at 53.4 percent over natural. Approximately one mile of road identified in the Gold Fork Watershed Analysis (1996) as a high sediment producer would be graveled, but other watershed improvement projects would not be completed. There would be no alteration in forest canopy as a result of this alternative; therefore, the Hydrologic Risk Rating (HRR) would remain the same: low in
Middle Kennally subwatershed and moderate in Lower Kennally subwatershed. Revegetation of existing harvest units would gradually reduce water yields over time, but changes would be slight and masked by year-to-year variability in climate. Sediment yields would remain the same or decrease slightly over time. Channel conditions would remain the same or improve slightly, with gradual stabilization of degraded stream banks.

Alternative 2 - In the Middle Kennally subwatershed this alternative would reconstruct 6.9 miles of existing road, gravel 2.4 miles of road, obliterates 3.4 miles of road, restore one stream crossing, and remove timber on 384 acres. Sediment yields would peak at 26.5 percent over natural and decline to existing sediment levels (No Action) by the year 2002. After the year 2002, sediment levels would fall below modeled existing levels. A net sediment reduction (timber harvest generated sediment minus watershed restoration sediment reductions) would occur by the year 2004, and the annual delivered sediment load would drop to about 11.8 percent below existing sediment levels. In the Lower Kennally subwatershed this alternative would reconstruct 6.0 miles of existing road, gravel 1.6 miles of road, obliterates 5.1 miles of road, and remove timber on 130 acres. Sediment yields would peak at 55.6 percent over natural and decline to existing sediment levels (No Action) by the year 2003. After the year 2004 sediment levels would fall below modeled existing levels. A net sediment reduction (timber harvest generated sediment minus watershed restoration sediment reductions) would occur by the year 2010 and the annual delivered sediment load would drop to about 0.3 percent below existing sediment levels. The Hydrologic Risk Rating (HRR) would not change from the No Action alternative; Middle Kennally would have a low HRR and Lower Kennally would have a moderate HRR. Water yield increases are not expected to degrade stream channels or riparian areas.

Alternative 3 - Actions would be similar to those in Alternative 2 except that timber would be removed from 267 acres in the Middle Kennally subwatershed. Sediment yields would peak at 26.3 percent over natural and decline to existing sediment levels (No Action) by the year 2002. After the year 2002 sediment levels would fall below modeled existing levels. A net sediment reduction (timber harvest generated sediment minus watershed restoration sediment reductions) would occur by the year 2004 and the annual delivered sediment load would drop to about 12 percent below existing sediment levels. In the Lower Kennally subwatershed, actions would be the same as in Alternative 2. Sediment yields would peak at 55.5 percent over natural and decline to existing sediment levels (No Action) by the year 2003. After the year 2004 sediment levels would fall below modeled existing levels. A net sediment reduction (timber harvest generated sediment minus watershed restoration sediment reductions) would occur by the year 2010 and the annual delivered sediment load would drop to about 0.4 percent below existing sediment levels. The Hydrologic Risk Rating (HRR) would be the same as in Alternative 2.

**Cumulative Effects**

Two harvest units were not analyzed for direct and indirect effects. One 39 acre harvest unit is located in the Flat/French Creek subwatershed which is almost entirely off-forest; the other 37 acre unit is located within the Upper Kennally Creek subwatershed. No effects are anticipated to the water resource because both units are located near the top of broad ridges where there is no live water nor any inventoried riparian or wetland features. All applicable management requirements and mitigation measures will be implemented in these harvest units.

HRR is an appropriate model to display relative hydrologic risks in response to timber harvest activities, however, the assessment lacks site-specific verification of this area's climate, geology, and soil types. The Gold Fork Watershed Analysis (1996) conducted an extensive study of hydrologic change for
subwatersheds in the Gold Fork watershed. The analysis utilized parameters that are more sensitive than HRR is to site-specific factors affecting peak flows. Parameters include precipitation, snow water equivalents, stream flow, flood frequency, wind data, temperature/elevation relationships, vegetative cover, relative humidity, and snow melt.

Results from the analysis concluded that, from a water yield perspective, the Gold Fork River watershed, as well as its individual subwatersheds, is probably not much different than it was during pre-human times. This is primarily attributed to fire suppression activities within the watershed.

In 1994 wildfires swept over approximately 300,000 acres of land within and adjacent to the Payette National Forest. Approximately 100,000 acres burned within the Payette River watershed. All of the burned acreage was outside the Gold Fork River watershed.

In 1997 a rain-on-snow event occurred across central Idaho causing extensive damage. In the Gold Fork River watershed, one small (<1 acre) cutslope failure occurred on Forest Road No. 498 during that time.

Future development of forest resources is expected within the Kennally Creek watershed. At present, there are no foreseeable timber sales identified on the Payette National Forest. Watershed restoration opportunities have been identified for the Payette National Forest portion of the watershed. Response to wildfires in the Gold Fork Watershed portion of the proposed Needles Wilderness may change in the future to allowing some ignitions to burn. Outside the proposed wilderness full suppression of wildfires is anticipated. Prescribed fire may be used as a management tool in these areas as well. Implementation of these activities would occur either in conjunction with timber harvest activities or as stand alone projects. Livestock grazing is expected to continue at current levels, though adjustments in grazing systems may lead to improvement in headwater streams.

In 1999, the Payette National Forest harvested about 1.2 million board feet of timber on approximately 5,000 acres of land located north and west of this planning area. Effects to water quality were analyzed in the Rapid 21, Camp Creek, and Rapid Timber Sales Environmental Assessment (1997) and were expected to be minor in the short term and improving in the long term due to treatment of identified sediment producing areas. In addition about 200 acres of thinning will occur in the northern portion of the Sloan-Kennally planning area. There should be no effects to water quality from this project because thinning units will be accessed by 4-wheelers on existing closed roads.

In the Gold Fork River watershed, IDEQ has emphasized the Forest should implement sediment reduction activities, primarily the treatment of roads. Within the Gold Fork River watershed there are approximately 587 miles of road. The Gold Fork River Watershed Analysis identified road segments that are high sediment producers. These segments generally are located adjacent to streams. Approximately 56 miles of these identified road segments have been graveled, one mile has been paved, and two miles have been ripped and seeded. Treatments of high sediment producing segments will continue in the future. In addition, grazing practices on private lands have been improved to reduce livestock densities and limit access to stream banks and riparian areas (Idaho Division of Water Quality 1998).

Other foreseeable future actions include: 1) Exchanging the western ¼ of section 1 in T. 16 N., R. 4 E. to the State of Idaho. The BLM has also exchanged some land to the State in portions of sections 12 and 13, T. 16 N., R. 4 E. The State will incorporate an existing grazing permit and harvest some timber on those lands. 2) An increase in development in the Paddy Flat Subdivision. 3) An increase in both dispersed and developed recreation use in the Gold Fork watershed as populations in surrounding areas increase.
On the Boise National Forest there are two planned timber sales within the Gold Fork watershed. The Spruce Creek sale will harvest around 12 million board feet of timber on approximately 1,870 acres and the North Gold sale will harvest around 6 million board feet of timber on approximately 800 acres. The Boise National Forest completed environmental analyses for both timber sales. Effects for activities occurring on other lands in the foreseeable future are expected to be less than effects from past activities. This would be accomplished by more restrictive management requirements and/or mitigation measures to accomplish direction set forth in the Cascade Reservoir Phase II Watershed Management Plan.

**Irreversible and Irretrievable Commitments**

Sediment produced in any alternative would be an irretrievable commitment. No commitment would be irreversible.

**Forest Plan Consistency**

The no action alternative as well as all action alternatives would be consistent with the Forest Plan for watershed resources.
ISSUE: Proposed management activities may affect certain habitat components for resident fish species in the planning area and downstream.

INDICATOR: Risk of sediment affecting fish habitat

Scope of the Analysis

The analysis area for direct and indirect effects on fish habitat covers Sloans Creek and several of its tributaries, the South Fork of Kennally Creek, and Kennally Creek and several unnamed perennial and intermittent tributaries that originate within the planning area (Figure 3-10). Effects are analyzed for streams within the planning area and downstream to the confluence of Kennally Creek with the Gold Fork River. The area for assessing cumulative effects encompasses the Kennally Creek subwatershed to its confluence with the Gold Fork River. This analysis addresses the resources and habitat components that would be affected if an action alternative is selected.

Desired Condition

The Desired Condition for streams in this area comes from the Forest Plan, as amended by INFISH (USDA 1995). The Forest Plan states: "Habitat for resident fish is expected to be maintained in present condition (i.e., the condition in 1988 when the Forest Plan was released). Potential mitigation measures will be identified during each project" (Forest Plan, page IV-41). The incorporation of INFISH to the Forest Plan in 1995 provided additional management direction. Actions that reduce fish habitat quality would be inconsistent with INFISH direction. The intent of INFISH is to protect habitat and populations of resident native fish through the use of riparian management objectives, standards and guidelines for timber harvest and other activities, and monitoring requirements.

Current Condition

A combination of land management activities including road construction and timber harvest have affected the condition of fish habitat in the vicinity of the proposed sale. Roads have encroached on riparian areas and stream channels, reducing the width of riparian areas and increasing the amount of sediment entering streams. Past timber harvest in some riparian areas has reduced the ability of these areas to act as sediment filters, sources of woody debris, and possibly thermal insulators. Livestock grazing has also created local areas susceptible to erosion and increased sedimentation and decreased streambank stability. Past actions and their effects on streams are discussed more thoroughly in the Water Resources section.

In September and October 1991, Forest Service personnel conducted basinwide fish habitat surveys of Kennally Creek, South Fork of Kennally Creek, and portions of unnamed perennial tributaries (data on file at McCall Ranger District). They conducted surveys only within the planning area and only in stream reaches with fish present.
Figure 3-9. Fish Habitat Analysis Area
Sloans Creek was surveyed in July of 1995. Surveys were conducted within the planning area on Sloans Creek and one tributary (data on file at McCall Ranger District).

High levels of surface fines and high width-depth ratios are apparent when comparing survey data with values from INFISH riparian management objectives and the Idaho Natural Conditions Database (Overton et al. 1995) (Table 3-9). Large woody debris, though not quantified, appeared to be adequate in surveyed reaches. Limited temperature data indicate stream temperatures are within an acceptable range.

Kennally Creek. Sloans Creek and their tributaries contain habitat for native redband trout, introduced brook trout, and other non-salmonid fish species. The redband trout is listed in the Forest Plan as a management indicator species (MIS) because it represents species sensitive to habitat alterations. Brook trout and redband trout were found in streams within the planning area as noted below.

**Kennally Creek** - Kennally Creek is a low to steep gradient stream (1 to 7 percent) 18 to 30 feet wide. The reaches surveyed had stable banks (in excess of 95 percent) although localized areas of instability were found; high levels of surface fines (35 to 41 percent); and few pools (pool-to-riffle ratios of 0.15 to 0.51). Large woody debris was not quantified but appeared abundant. Limited stream temperature data indicates that water temperatures are not a limiting factor to trout in the planning area. Both brook and redband trout were documented throughout Kennally Creek.

**Kennally Creek tributary 3** - Kennally Creek tributary 3 is a steep gradient (5 to 7 percent) high energy stream 7 to 10 feet wide; it is the largest unnamed tributary to Kennally Creek. Surveyed reaches had stable banks (in excess of 90 percent); high levels of surface fines in the substrate (38 percent); and abundant pools (pool-to-riffle ratio of 1.0). Large woody debris appeared abundant. Brook and redband trout were found in the portions of this tributary surveyed.

**South Fork Kennally Creek** - The South Fork Kennally Creek is a steep gradient (9 percent), high energy, 10 to 13 foot wide stream. Bank stabilities, surface fines, pool habitat, and woody debris are similar to that described above for tributary 3. A series of natural waterfalls near the mouth of this stream precludes fish from utilizing habitat in this stream.

**Sloans Creek** - The reach of Sloans Creek surveyed is a low gradient (1.7 percent) channel less than 3 ½ feet wide with low gradient riffles and scour pools. The substrate was predominantly fine sediment (89 percent). Streambanks were near 100 percent stable. One tributary to Sloans Creek had low gradient riffles and scour pools formed by wood. Streambanks were nearly 100 percent stable. The substrate was predominantly fines (90 percent). There was evidence of past logging nearly to the streambank, with about a 25 foot buffer. No fish were found in the surveyed reach, but high densities of brook trout occur downstream (Gold Fork Watershed Analysis 1996).
### Table 3-9. Summary of Fish Habitat Characteristics (from data on file at Payette National Forest, McCall Ranger District).

<table>
<thead>
<tr>
<th>Stream</th>
<th>Woody Debris #/100m</th>
<th>Summer Temperature °C</th>
<th>Width/Depth</th>
<th>% Bank Stability</th>
<th>% Surface fines</th>
<th>Pools/100m</th>
<th>Average width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sloans Cr.</td>
<td>4</td>
<td>NA</td>
<td>16</td>
<td>100</td>
<td>89</td>
<td>4.6</td>
<td>0.9</td>
</tr>
<tr>
<td>Kennally Cr.</td>
<td>NA</td>
<td>NA</td>
<td>32</td>
<td>97</td>
<td>30</td>
<td>NA</td>
<td>7.1</td>
</tr>
<tr>
<td>East Fork Kennally</td>
<td>NA</td>
<td>10</td>
<td>27</td>
<td>62</td>
<td>36</td>
<td>NA</td>
<td>5.3</td>
</tr>
<tr>
<td>South Fork Kennally</td>
<td>NA</td>
<td>11</td>
<td>25</td>
<td>100</td>
<td>25</td>
<td>2.7</td>
<td>3.7</td>
</tr>
<tr>
<td>INFISH RMOs</td>
<td>1.2</td>
<td>15 (adult holding)</td>
<td>&lt;10</td>
<td>&gt;80</td>
<td>NA</td>
<td>6.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 (spawning and rearing)</td>
<td></td>
<td></td>
<td></td>
<td>3.5</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.9</td>
<td>7.6</td>
</tr>
<tr>
<td>ID NCD</td>
<td>10.9</td>
<td>10</td>
<td>21</td>
<td>97</td>
<td>25</td>
<td>2.1</td>
<td>3.0-4.7</td>
</tr>
<tr>
<td></td>
<td>11.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.5</td>
<td>4.7-6.0</td>
</tr>
<tr>
<td></td>
<td>14.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.9</td>
<td>6.0-7.6</td>
</tr>
<tr>
<td></td>
<td>7.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.5</td>
<td>7.6-9.2</td>
</tr>
</tbody>
</table>

1. Large woody debris, A channels. Methods may not be comparable between streams and INFISH or NCD.
2. Maximum summer temperature.
3. Upstream of planning area.
4. Riparian Management Objectives from INFISH (USDA 1995)
5. Idaho Natural Condition Database (Overton et al. 1995) mean values for A-channels.
6. Data not available.

The functioning of fish habitat elements were analyzed for the Kennally Creek drainage as part of the biological assessment for the potential effects of ongoing Forest actions on bull trout (Walker 1998). A number of elements (temperature, sediment, width/depth ratios, riparian areas) were assessed as functioning at an "unacceptable risk". Others (pool frequency and quality, streambank condition, floodplain connectivity, overall disturbance regime) were assessed as functioning "at risk" compared to values established by the U.S. Fish and Wildlife Service (USFWS 1998). These values were established for salmonids, and more specifically for bull trout habitat requirements. This assessment encompassed the entire Kennally Creek drainage but indicates that the existing condition of fish habitat is less than optimum for salmonids.
Threatened, Endangered, and Sensitive Fish Species

**Bull Trout** - Bull trout are listed as a threatened species by the U.S. Fish and Wildlife Service. Bull trout have not been found in the analysis area or elsewhere in the Kennally Creek drainage, with a possible exception in 1985 in lower Kennally Creek (Gold Fork Watershed Analysis 1996). Bull trout occur in another part of the Gold Fork watershed in upper Gold Fork and in the North and South Forks (Gold Fork Watershed Analysis 1996). Habitat within the Kennally Creek drainage is accessible to bull trout.

Kennally Creek, Sloans Creek, and tributaries have been surveyed for bull trout by Forest Service personnel, Boise Cascade Corporation, and Idaho Department of Fish and Game. In the summer of 1994, presence/absence surveys were conducted on Boise Cascade Corporation lands in the lower reaches of Kennally and Sloans Creeks using electroshocking and snorkeling methods (data on file at McCall Ranger District). In 1998, likely spots were snorkeled in the upper portion of the Kennally Creek drainage and Sloans Creek was electroshocked by IDFG (Apperson, 1998). Other tributaries to Kennally Creek have been inventoried by Forest Service personnel in association with the Rapid 21, Camp Creek, and Rapid Camp timber sales. Bull trout were not observed during any of these inventories (surveys on file at McCall Ranger District).

**Westslope Cutthroat Trout** - Westslope cutthroat trout are a Forest Service Region 4 Sensitive Species. Native westslope cutthroat trout have not been found during surveys in the analysis area or in other Kennally Creek tributaries (surveys on file at McCall Ranger District). Behnke (1990) notes that cutthroat are not known to be native to major Snake River tributaries below Shoshone Falls, such as the Payette River system.

Direct and Indirect Environmental Effects

*Effects common to both action alternatives*

For alternatives 2 and 3, effects to components of fish habitat other than those related to sediment are not expected to occur to a degree where fish or their habitat would be adversely affected, because of the established Riparian Habitat Conservation Areas (RHCA). RHCA widths were designed to protect the areas that help maintain the integrity of aquatic ecosystems. This includes riparian corridors and other areas that influence the delivery of coarse sediment, organic matter, and woody debris to streams, provide root strength for channel stability, shade the stream, and protect water quality (Naiman et al. 1992). Riparian buffers of 100 feet or more have been reported to provide as much shade for streams as undisturbed, late successional/old growth forests in the Oregon coast range and western Cascade mountains (Steinblums 1977). Erman et al. (1977) reported that the composition of benthic invertebrate communities in streams with buffers greater than 100 feet were indistinguishable from those in streams flowing through unlogged watersheds. These widths should also be sufficient to maintain and provide other riparian functions such as delivery of organic matter and woody debris and bank stability (Brazier and Brown 1973, Gregory et al. 1987, Steinblums et al. 1984, Beschta et al. 1987, McDade et al. 1990, Belt et al. 1992).

*Sedimentation*

The introduction of sediment to Kennally Creek and its tributaries is of concern because of its detrimental effects to fish and fish habitat. Land disturbance associated with timber harvest activity and some types of
road reconstruction (e.g., blading, culvert installation or replacement) would create areas susceptible to erosion and sediment production. Sediment that reached live water would be transported quickly, transported over a longer time period, or deposited. Salmonids are typically negatively affected by increasing amounts of sediment (Bjornn and Reiser 1991).

A review of studies related to the effects of fine sediment on salmonids by Chapman and McLeod (1987) concluded that survival to emergence decreases as fine sediment increases in the spawning gravels, the loss of pool volume due to sediment deposition reduces the suitability of a stream for adults, macroinvertebrates decrease in biomass and diversity, and winter carrying capacity is decreased.

Fine sediment (<6.33 mm) deposited in spawning areas can trap or smother eggs and embryos, reducing reproductive success of spawning adults. In spawning areas, egg deposition, development, and survival become limited when sediment fills the spaces between gravel, preventing the flow of oxygen and the flushing of metabolic wastes. Emerging fry and aquatic insects, a food source for fish, can be trapped and smothered by deposited sediment (Phillips et al. 1975). Juvenile coho production was reduced as levels of fine sediment increased in artificial streams (Crouse et al. 1981).

Sediment also influences habitat quality. Sedimentation of deep pools and coarse substrate limits the physical space available to juvenile fish for rearing and overwintering. Spawning habitat is affected when the amount of fine sediment in spawning gravels increases to the point where gravel becomes so cemented that fish are unable to excavate a redd (Furniss et al. 1991).

Stream turbidity can also be detrimental. Migrating salmonids avoid waters with high silt loads or cease migration when such loads are unavoidable (Cordone and Kelley 1961). Bell (1986) cited a study in which salmonids did not move in streams where the suspended sediment concentration exceeded 4,000 mg/l. Newly emerged fry appear to be more susceptible to even moderate turbidity than older fish. Chronic turbidity reduced growth and caused more young salmon and steelhead to emigrate from laboratory streams than did clear water (Sigler et al. 1984).

The RHCA widths were developed to be adequate to protect streams from non-channelized sediment inputs (USDA 1995). Broderson (1973) studied three watersheds in western Washington and found that 200 foot buffers would effectively limit sediment in most situations. A review by Belt et al. (1992) of studies in Idaho (Haupt 1959a and 1959b, Ketcheson and Megahan 1990, Burroughs and King 1985 and 1989) and studies in other areas (Trimble and Sartz 1957, Packer 1967, Swift 1986) concluded that 200-300 foot riparian filter strips are generally effective at protecting streams from sediment from non-channelized flow.

The established RHCA widths for this project are expected to be wide enough to prevent non-channelized sediment from reaching fish-bearing streams in the planning area. Field verification to delineate perennial, intermittent, and ephemeral streams, seeps, springs, and bogs would occur to ensure all appropriate areas are included and protected in RHCA (see management requirements for Soil Productivity/Water Resources in Chapter 2). Proper implementation of INFISH direction, and avoidance of activities inconsistent with INFISH (see Fish Habitat management requirement) would protect habitat from non-channelized sediment.

The established buffers may not totally protect streams from sediment produced on harvest units or skid trails in upslope areas or on reconstructed roads that is carried in channelized flows (e.g., through culverts or through upland ephemeral channels) (Belt et al. 1992). Channelized flow can travel in excess of 1,000

3-45
No riparian buffer width would eliminate the risk of channelized sediment reaching streams. Road crossings are another source of sediment delivery.

**BOISED**

Interpretation of sediment deposition is partially based on BOISED model outputs. The BOISED model provides a relative comparison of sediment production among alternatives considered for a project and does not provide absolute measures (Reinig et al. 1991).

For the Sloan-Kennally timber sale, sediment production was predicted using BOISED in the Middle Kennally and Lower Kennally subwatersheds for each alternative. Modeled sediment outputs between the two action alternatives were similar enough that they are considered to be essentially the same in terms of effects to fish habitat.

Every increase in short term percent over natural sediment can increase deposition to the stream channel. Sediment deposition is interpreted as a relative increase from the existing condition. These relatively small increases in percent over natural sediment may relate to changes in the stream and subsequent consequences to fish habitat, depending on existing habitat conditions and the sediment transport capabilities of the stream. Increases in sediment as indicated by BOISED would likely cause increased deposition in downstream areas. Sediment transported downstream would affect water quality or settle in low gradient reaches, reducing habitat for fish species.

Short term increases in sediment would occur from construction and use of landings, skid trails, and other ground disturbance associated with harvest activity. Immediate sediment reductions would occur from graveling road surfaces and spot graveling stream crossings. Long term decreases in sediment production would occur from road obliterations, rehabilitation of disturbed areas, etc.

**Bull trout**

The U.S. Fish and Wildlife Service has listed bull trout as threatened under the Endangered Species Act. Critical habitat for this species has not yet been proposed. Recent surveys have not found bull trout in the Kennally Creek drainage or downstream, therefore the alternatives for this project would have no effect on bull trout.

**Westslope Cutthroat trout**

Recent surveys have not found native westslope cutthroat trout in the Kennally Creek drainage or downstream; therefore, the alternatives for this project would have no effect on this species.

Alternative 1 (No Action) - Activities would not occur that would potentially introduce sediment to streams, affecting fish habitat. The existing condition of fish habitat would persist, as described above in the Current Condition section. Habitat conditions may improve over time, depending on the nature and extent of future activities in the vicinity. Actions designed to decrease long-term sediment production (i.e., road obliterations) would also not occur. Existing sources of sediment deposition to fish habitat would remain, with a low short term (1-3 years) and long term (>3 years) risk of effects to fish habitat.

Alternative 2 - In the short term (1-3 years), there is a moderate risk of channelized sediment affecting fish habitat. Harvest would occur on 553 acres, creating disturbed and exposed areas susceptible to
erosion such as landings, skid trails, and harvested areas. Without mitigation, channelized sediment originating from these areas would be transported to streams. Mitigation has been added to address sediment production from these areas and is expected to minimize the extent of sediment routing to streams, prevent accelerated erosion, and restore and stabilize disturbed soils prior to seasonal runoff events (see soil and water mitigation items). Successful implementation of this mitigation would reduce but not completely eliminate sediment entry to streams.

Road reconstruction and use include activities that can disturb soil and increase sediment (blading, driving over stream crossings, removing vegetation) and activities that can reduce sediment (graveling road surfaces and crossings, improving drainage patterns). Some of the roads occur within RHCAs where both sediment producing and sediment reducing activities would occur. Road obliterations are part of this proposed action and would reduce a sediment source.

Roads that would be used cross streams at several locations and contribute sediment at these locations. About 10 to 12 stream crossings were estimated from maps. Some sediment introduction at these crossings is unavoidable; however, culverts and other crossings and associated contributing areas would be graveled to reduce sediment delivery. Following INFSH direction for roads management would provide another mechanism to reduce or avoid adverse effects.

In the long term (>3 years), the risk of additional sediment inputs affecting fish habitat would be reduced to a low level, below the level that would occur with no action. A net sediment reduction would occur primarily because of road obliterations and graveling. BOISED indicates sediment levels would fall below modeled existing levels. In the long term, some chronic sediment sources primarily associated with roads would be eliminated or reduced.

Alternative 3 - As with Alternative 2, in the short term there is a moderate risk of channelized sediment affecting fish habitat. The only difference between Alternative 2 and 3, concerning effects to fish habitat from sediment, is the amount of ground disturbed by harvest activity that would be susceptible to generating channelized sediment flow. Harvest under this alternative would occur on 425 acres.

The same number of roads would be used and road treatments would remain the same; therefore, short term and long term effects from roads, crossings, obliterations etc. would not change from Alternative 2.

The same mitigation would be applied to reduced sediment. In the long term (>3 years), the risk of additional sediment inputs affecting fish habitat would be reduced to a low level, below the level that would occur with no action. A net sediment reduction would occur primarily because of road obliterations and graveling. BOISED indicates sediment levels would fall below modeled existing levels. In the long term, some chronic sediment sources primarily associated with roads would be eliminated or reduced.

Cumulative Effects

The area for assessing cumulative effects encompasses the Kennally Creek subwatershed to its confluence with the Gold Fork River. Either action alternative would contribute to cumulative effects that can potentially affect fish habitat in the Kennally Creek subwatershed and possibly downstream in the Gold Fork River. This is the area where sediment inputs would likely travel and, in combination with other factors, affect fish habitat.
Fish Habitat

In the Sloans Creek drainage, only the headwaters are on National Forest System lands. The remainder flows primarily through private land. The upper portion of the Kennally Creek drainage is on National Forest System lands, and the remainder is on private and state lands.

Private land activities include residential development, agricultural and grazing use, timber harvest, and road construction, reconstruction, and maintenance. Idaho Department of Lands and Forest Service administered lands are managed for timber harvest, access, recreation, and grazing.

Future actions expected in the Kennally Creek subwatershed that could potentially affect fish habitat by introducing sediment to streams include a land exchange with the state and probable harvest and grazing activities on the exchanged section (a portion of section 1, T. 16 N., R. 4 E.), planned tree thinnings in plantations and natural stands, continued residential development in the Paddy Flat subdivision, an increase in recreational use at dispersed and developed campsites, and harvest on the Rapid 21 and Camp Creek Timber Sales.

Additional resource protection on Forest Service administered lands was gained in 1995 when INFISH management direction was added to the Forest Plan. The intent of INFISH is to provide greater protection for fish habitat and native fish populations. Wider riparian buffers (RHCAs) than those specified in the Forest Plan for this area, and specific standards and guidelines for timber, grazing, and other activities to avoid impacts to fish habitat are part of INFISH direction.

The Cascade Reservoir Phase II Watershed Management Plan is aimed at improving water quality in Cascade Reservoir and its tributaries. Compliance with this direction is required on Federally and State administered lands. Compliance by private landowners is voluntary. Implementing this plan should eventually lead to improved water quality through phosphorus reductions. On lands around Cascade Reservoir this would be accomplished primarily by reducing sources of sediment.

The impact to fish habitat from the incremental effect of this project, added to the above actions is expected to be very small, based on the project design, BOISED modeling, mitigation added to lessen sediment delivery, and the expected long term reduction in sediment associated with the project related to road obliterations, graveling, etc. The implementation of both INFISH direction and the Cascade Reservoir Phase II Watershed Management Plan (Idaho Department of Environmental Quality 1998), described above, should eventually result in an improving trend in water quality in the Kennally Creek subwatershed.

Irreversible and Irretrievable Commitments

Irreversible commitments in terms of loss of fish habitat are not expected from either action alternative because even though short-term sediment increases would occur, BOISED indicates a long-term net reduction in sediment. Irretrievable losses in habitat quality would occur if sediment is introduced to streams. Density independent fish mortality could occur as described above.

Forest Plan Consistency

All alternatives as displayed in this document meet Forest Plan direction, including INFISH direction.
ISSUE: Proposed management activities may affect the habitats of threatened, endangered, proposed, and sensitive (TES) wildlife species and Management Indicator Species (MIS) in and around the planning area.

INDICATORS: Vegetative Structural Stage (VSS) distribution
Old growth habitat in Circle 23
Elk Habitat Effectiveness (EHE)

Scope of the Analysis

Effects from proposed activities are analyzed over several areas for wildlife habitat. For structural stages and associated species, the area analyzed for direct and indirect effects is goshawk home range (Figure 3-10). For old growth habitat, the area analyzed for direct and indirect effects is theoretical pileated woodpecker home range Circle 23. For elk habitat effectiveness (EHE), the area analyzed for direct and indirect effects is Issue Reporting Area (IRA) 456 (Figure 3-12). An IRA is a geographical unit for 5,000 acres or more used for Forest and project planning to assess relative changes in elk habitat. IRAs are part of a larger analysis area called an Elk Management Unit (EMU). An EMU is a geographical unit that represents elk movement and home ranges. The planning area and IRA 456 are both within in EMU 17 (Figure 3-13). For pileated woodpeckers, the planning area is analyzed for direct and indirect effects. For lynx habitat, direct and indirect effects are analyzed at the 5th level HUC (Kennally Creek watershed).

The area analyzed for cumulative effects for vegetative structural stages and old growth is theoretical pileated woodpecker home range Circle 23 (Figure 3-14). The cumulative effects analysis area for elk habitat effectiveness is EMU 17.

Direct, indirect, and cumulative effects on threatened, endangered, proposed, sensitive, and management indicator species and their habitat are described in relation to the habitat indicators listed above.

Desired Condition

Provide a variety and diversity of habitat to support viable populations of all native vertebrate species (Forest Plan, page IV-25).

Manage threatened and endangered species habitat consistent with recovery plan objectives (Forest Plan, page IV-25). There is no Forest Plan direction specific to sensitive species; the effects of the alternatives on certain basic habitat requirements are analyzed.

Sustain populations of Management Indicator Species over the long term (Forest Plan, page IV-25). Management Indicator Species are used to measure the impacts of management actions on other groups of wildlife species that have similar habitat requirements. For big game, manage as specified in the Forest Plan (page IV-207) for EMU 17.
Wildlife Habitat

Retain five percent of the forested acres in mature and overmature condition within each theoretical pileated woodpecker home range. Ensure that at least two and one-half percent of the forested acres meets the Forest Plan (Thomas, 1979) definition of old growth (Forest Plan, page IV-34).

The Upper Columbia River Basin Scientific Assessment focuses on ecological integrity as an indicator of ecosystem health. Forest Integrity and Terrestrial Community Types contain elements that deal with the wildlife resources. The elements include:

- Amount of snags and downed woody material present
- Fragmentation and loss of mature and old forest
- Roads and disturbance

These elements are discussed in this and other resource sections in this chapter. How these elements are affected and their relationship to wildlife species are evaluated as part of the species’ habitat requirements, if they apply.

Current Condition

Past activities and events, such as wildfire, fire suppression, livestock grazing, timber harvest, road construction, recreation, and firewood gathering in the analysis area as well as on adjacent Federal, State and private lands, have affected habitats that the area provides for various wildlife species. The 1994 fires on the Payette and Boise National Forests did not affect wildlife habitat in this analysis area.

Past harvest and firewood activities have removed some stands of mature and overmature forest and snags that once provided habitat for species requiring older forest with large interior blocks. For other species, the suppression of fire has provided more densely forested areas with heavy cover and thick shrub areas.

Habitat diversity is fairly high in the Sloan-Kennally planning area, primarily because of a variety of aspect, slope, diversity, and types. The most common wildlife habitats are Douglas-fir forests, ponderosa pine woodlands, and subalpine fir/Engelmann spruce forests.

The current condition of the stands in the planning area also reflects more than 70 years of effective fire suppression. Without a natural thinning mechanism, densities of coniferous trees have increased substantially over pre-settlement conditions. As competition for moisture and sunlight have increased, tree stress, insects, and disease have become more prevalent. Grand fir reproduction has become established beneath the seral overstory. On north-facing slopes, grand fir is crowding out ponderosa pine and Douglas-fir.

Vegetative Structural Stages

For this analysis, wildlife habitats are divided into four Vegetative Structural Stages (VSS) that are currently used to assess goshawk habitat (nesting, post fledging, and prey species foraging) on the Forest. These VSS are based on Forest strata that can be used to differentiate between vegetation on various size and age classes. The four VSS are: open, young forest, mid-aged to mature forest, and old forest. The open VSS includes meadows, burn openings, young plantations and very open timber stands of species other than ponderosa pine. The young forest includes sapling and pole-sized stands and advanced regeneration found either naturally or in older plantations. The mid-aged to mature forest includes stands
dominated by immature and mature sawtimber, and old forest is dominated by older mature and overmature trees.

Because certain animals may occupy specific vegetative stages, wildlife distribution can be reduced in an area where all stages are not present to some degree. Conversely, sustaining habitat and food chains for a broad variety of species enhances biodiversity and distribution.

Table 3-10 shows the four VSS, the strata used to determine each, and the desired and current conditions in the Sloan-Kennally area. Desired conditions were derived from Management Recommendation for the Northern Goshawk In the Southwest U.S. (Reynolds, et al. 1992) and adapted to the Payette National Forest.

**Table 3-10. Current and Desired VSS in the Goshawk Home Range**

<table>
<thead>
<tr>
<th>VSS</th>
<th>Strata</th>
<th>Acres</th>
<th>Current Percent</th>
<th>Desired Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>20 &amp; 21 (&lt;10 yrs)</td>
<td>259</td>
<td>4%</td>
<td>10 - 20%</td>
</tr>
<tr>
<td></td>
<td>29 &amp; 70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>41 &amp; 42 (wet 1-6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Young Forest</td>
<td>20 &amp; 21 (&gt;10 yrs)</td>
<td>885</td>
<td>15%</td>
<td>20-30%</td>
</tr>
<tr>
<td></td>
<td>30 &amp; 32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-aged to</td>
<td>22, 33, 34, 35</td>
<td>1,102</td>
<td>19%</td>
<td>40%</td>
</tr>
<tr>
<td>Old Forest</td>
<td>23, 24, 25, 26</td>
<td>3,710</td>
<td>62%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>41 &amp; 42 (P. pine)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Old Growth**

Within the general old forest structural stage is a more specific habitat type called *old growth*. Old growth has been defined by Thomas (1979) and adapted by the Payette Forest Plan to include the following characteristics: 1) fifteen trees per acre greater than 21 inches diameter at breast height, 2) two or more canopy layers, 3) 70 percent crown closure or more within those canopy layers, 4) at least 0.5 snags per acre, and 5) some trees with heart rot. This definition is an average condition over a stand and does not apply to every acre.

Old growth provides a unique wildlife habitat because of a high plant biomass, structural complexity, and many microsites. Many wildlife and plant species depend on the microsites provided by down logs and deep organic matter layers in old-growth forest. In addition, various fungi fulfill important functions in old-growth forest, such as providing a macro food source for small mammals and increasing soil fertility for trees and other plants (USDA 1991b).
Figure 3-10. Goshawk Home Range

Legend:
- Planning Area
- Goshawk Home Range
Threatened and Endangered Species

The U.S. Fish and Wildlife Service identified the following threatened, endangered or proposed to be listed species as potentially occurring on the Payette National Forest:

**Gray Wolf** - The planning area is not within the Central Idaho Gray Wolf Recovery Area (USDA and Fish and Wildlife Service 1987), and any translocated wolves are considered an experimental nonessential population. This document analyzes effects on the basis of the availability of prey (primarily elk) and the likelihood of human interaction with any wolf.

**Bald Eagle** - No suitable eagle nesting habitat is found within or adjacent to the planning area. However, suitable habitat is found at Cascade Reservoir approximately 10 miles west of the planning area. No proposed management activities would affect foraging habitat; therefore, this species will not be discussed further in this EIS.

**Grizzly Bear** - There have been no confirmed reports of grizzlies being present in this part of Idaho for decades. The probability of grizzly bear occurrence in this area is so extremely low that the species will not be discussed further in this EIS.

**Peregrine Falcon** - On August 20, 1999, the Peregrine falcon was removed from the endangered species list. To maintain consistency in this analysis, the FEIS will address effects to peregrines. Peregrine falcons were not found during general wildlife surveys, and little or no nesting habitat exists within or adjacent to the planning area. No recent occurrences have been reported. The planning area has not been identified as a key area for peregrine recovery because there is no evidence of them occurring in the area. However, peregrines may incidentally fly over or forage in the planning area.

**Proposed Species**

**Northern Idaho Ground Squirrel** - The U.S. Fish and Wildlife Service proposed the northern Idaho ground squirrel for listing in March, 1998. Northern Idaho ground squirrels occur in dry meadows and adjacent forest clearings surrounded by ponderosa pine and Douglas-fir forest between 4,000 feet and 5,000 feet elevation. The dry meadows have shallow (less than 3 feet to bedrock derived from basalt with small inclusions of deeper pockets of well-drained soil. Vegetation is dominated by stiff sage. Current squirrel colonies are found in land types 101-2, 130-1, 131-1, 132b-1, 132a, 132b, 134 (USDA 1973). This habitat is not found in the planning area; therefore this species will not be discussed further in this EIS.

**Canada Lynx** - The U.S. Fish and Wildlife Service proposed the lynx for listing on July 8, 1998. This species is associated with boreal subalpine fir and lodgepole forested environments. They forage on snowshoe hare and mice, voles, squirrels and birds. Lynx are not common in Idaho, being primarily restricted to northern Idaho. Primary criteria for lynx habitat are forested elevations above 5,000 feet composed of stands of spruce, subalpine fir and lodgepole pine. Primary foraging habitat is young pole stage lodgepole pine where they prey on snowshoe hare. Denning habitat is mature spruce and subalpine fir forest with extensive downfalls. Suitable habitat for this species is found in the Needles roadless area both within and adjacent to the planning area.
Sensitive Species

Field crews completed a pre-field and field review, following Payette National Forest wildlife survey procedures, to determine sensitive species that could occur in the project area. This review included the Conservation Data Center database (CDC, 1999), relevant publications, and consultation with knowledgeable individuals and agencies. From these reviews, nine sensitive species have been determined to be possible, potential, or likely residents of the project area. Based on suitability of the habitat and/or reported occurrence in or near the project area, four species are given a low probability of occurrence, two species are given a medium probability of occurrence, and three species are given a high probability of occurrence; five other species are not given any probability of being present (Table 3-11). All species rated as having a low, medium, or high probability of occurrence will be analyzed in this document.

Table 3-11. Sensitive Species Probability Checklist for Sloan-Kennally Planning Area

<table>
<thead>
<tr>
<th>Name</th>
<th>Probability of Occurrence</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spotted Frog</td>
<td>X</td>
<td>Poor Habitat</td>
</tr>
<tr>
<td>Fisher</td>
<td>X</td>
<td>Suitable Habitat</td>
</tr>
<tr>
<td>Spotted Bat</td>
<td>X</td>
<td>Edge of Range, No Records</td>
</tr>
<tr>
<td>Townsend's big-eared Bat</td>
<td>X</td>
<td>No Known Caves in Area</td>
</tr>
<tr>
<td>Wolverine</td>
<td>X</td>
<td>Poor Habitat</td>
</tr>
<tr>
<td>Boreal Owls</td>
<td>X</td>
<td>Poor Habitat</td>
</tr>
<tr>
<td>Columbia sharp-tailed Grouse</td>
<td>X</td>
<td>No Habitat</td>
</tr>
<tr>
<td>Flammulated owls</td>
<td>X</td>
<td>Poor Habitat</td>
</tr>
<tr>
<td>Goshawk</td>
<td>X</td>
<td>Suitable Habitat - Observed</td>
</tr>
<tr>
<td>Great Gray Owl</td>
<td>X</td>
<td>Suitable Habitat - Observed</td>
</tr>
<tr>
<td>Harlequin Duck</td>
<td>X</td>
<td>No Habitat</td>
</tr>
<tr>
<td>Mountain Quail</td>
<td>X</td>
<td>No Habitat</td>
</tr>
<tr>
<td>Three-Toed Woodpecker</td>
<td>X</td>
<td>Suitable Habitat</td>
</tr>
<tr>
<td>White-headed Woodpecker</td>
<td>X</td>
<td>Suitable Habitat</td>
</tr>
</tbody>
</table>

Probability of occurrence = probability of the species occurring in an area over a one-year period.

Information from Idaho Department of Fish and Game, the Conservation Data Center (1999), and wildlife field surveys were used to determine whether any Forest Service Intermountain Region Sensitive Species or their habitats are present or potentially present within the watershed.

**Spotted Frog** (*Rana pretiosa*) - The spotted frog has a wide distribution over northern and central Idaho and surrounding states. Locally, the spotted frog has been observed from the head waters of the Weiser River in the western side of the Payette National Forest to Big Creek on the east side of the Forest. Spotted frogs are most likely found near permanent water such as marshy edges of ponds or lakes, in algae-grown overflow pools of streams, or near springs with emergent vegetation during the breeding period. They may move considerable distances from water after breeding, often frequenting mixed conifer and subalpine forest, grasslands, and brushlands of sage and rabbitbrush. Spotted frogs are thought to hibernate in holes near springs or other areas where water is unfrozen and constantly renewed.
Fisher (*Martes pennanti*) - Fishers were nearly extinct in Idaho by the 1930s, but were extensively reintroduced throughout the State. These introductions were very successful, and fishers are becoming more common and widely distributed.

Fisher in north central Idaho use principally mature and old-growth forest habitats during summer, and switch to a combination of young and old growth habitats in winter (Jones 1990). During both summer and winter, fisher have a strong affinity for forested riparian habitats and use stream corridors for travel. Home ranges are about 80 square kilometers for males and 40 square kilometers for females. Fisher prefer large-diameter Engelmann spruce trees and hollow grand fir logs for resting sites. Grand fir habitat types are most preferred, especially the wetter types. According to the CDC database (1999) the closest reported observations of a fisher is eight miles north of the planning area. No fisher or fisher sign was observed during general wildlife surveys.

A portion of the roadless area within the Sloan-Kennally planning area would likely be considered suitable habitat. The area has grand fir as well as old forest types and riparian habitat.

Wolverine (*Gulo gulo*) - The wolverine is a wide-ranging species throughout the mountains of Idaho, with documented movements of up to 378 kilometers in Alaska (Groves 1987). The highest number of wolverine reports in Idaho are centered in the Sawtooth Mountains, where recent studies have confirmed the presence of a wolverine population (Bachman, et al. 1990). There are no recorded sightings of wolverine in or around the planning area (CDC 1999). Field crews found no wolverine sign during wildlife surveys of the planning area.

On the Challis and Sawtooth National Forests, wolverines were found principally in mixed conifer habitats dominated by lodgepole pine cover types. They often used spruce-fir stands along stream bottoms and adjacent meadows (Bachman, et al. 1990). Elevations where wolverines were found by these authors ranged from 5,800 to 7,800 feet in winter, and would likely be higher in summer. An important part of their habitat requirements appears to be "large mountainous, essentially roadless areas" (Groves 1987). The Needles Roadless Area provides areas of suitable habitat.

Boreal Owls (*Aegolius funereus*) - These owls have been intensively studied on the eastern portions of the Payette National Forest (Hayward 1988). No observations of boreal owls were recorded on the western side of the Payette. It is unlikely that these owls occur in the planning area, but the potential for boreal owl use of the Sloan-Kennally area cannot be ruled out. The CDC database (1999) has no records of boreal owls in the planning area, and Stephans and Sturts (1991) list them as a breeding species in the planning area but without confirmed records.

Flammulated Owl (*Otus flammeolus*) - nesting habitat was described in detail by Bull, et al. (1990) for northeastern Oregon. They depicted important habitat characteristics as large diameter dead trees located on ridges, and upper slopes with east or south aspects in stands of large diameter ponderosa pine, Douglas-fir, and grand fir in the overstory.

These owls have been found primarily in large, open understory stands of ponderosa pine on the Payette National Forest (Moore and Fredrick 1991). These stands typically had a 64 percent canopy closure and an average diameter at breast height (D.B.H.) of 13 inches. This habitat is found in the planning area.

Goshawk (*Accipiter gentilis*) - Little is known about goshawk habitat requirements on the Payette, but recent nest locations on the New Meadows and Council Districts were in ponderosa pine, Douglas-fir, and
grand fir habitat types consisting of mature timber with scattered old growth trees (Jeffries 1997). Two goshawk nest sites have been found within the planning area. There are two post-fledgling/family areas associated with these nest sites and are shown in Figure 3-11.

The goshawk is a habitat generalist that uses a wide variety of forest types and conditions (USDA Forest Service 1991). The presence of prey species may determine habitat use. Winter prey species may be critical to goshawk survival. Caswell (1954) noted that goshawks were the major predators of blue grouse in his Cuddy Mountain study area.

Goshawk home range areas are about 6,000 acres in size and have been divided into three components: 1) a nest site core area, 2) a post-fledgling/family area, and 3) a foraging area (USDA Forest Service 1991). Of these, the nest area is the most habitat specific. Nest areas require about a 30-acre stand of large old trees with a dense canopy cover. Most goshawks have two to four alternate nest areas within their home range. The post-fledgling/family area and foraging area can consist of a wide variety of habitats as long as prey are abundant.

**Great Gray Owl (Strix nebulosa)** - Great gray owls use mixed coniferous and hardwood forest usually bordering small openings or meadows. They forage along edges of clearings. In the Intermountain Region, great grays occur primarily in the lodgepole pine/Douglas-fir/aspen zone and in ponderosa pine (USDA Forest Service 1991).

In 1995 Payette wildlife field crews surveyed for great gray owls in the planning area using tape-recorded vocalizations without receiving a response. According to Atkinson (1989), lack of a response does not indicate an absence of owls in the area for a variety of reasons. In fact, there is a confirmed sighting for this species in the southern end of the planning area (1995).

**Three-toed Woodpecker (Picoides tridactylus)** - These woodpeckers are closely associated with lodgepole pine and spruce, often in mixed conifer stands (Bull, et al. 1986). This woodpecker opportunistically uses areas of high levels of wood-boring insect outbreak and especially burned over areas where trees have recently died. Three-toed woodpeckers feed by scaling off the bark of dead and dying trees, resulting in a pile of bark at the base of the tree (Spahr, et al. 1991).

Although no recent burns have occurred in the planning area, the higher elevations have scattered, small diameter lodgepole pine and spruce trees that would provide suitable feeding and nesting habitat. Lower elevation areas and dry hillsides in the project area are dominated by ponderosa pine, Douglas-fir, and grand fir, and likely receive little use by this species of woodpecker. Although habitat appears marginal over most of the project area, enough suitable habitat is apparently present to support low populations.

**White-headed woodpecker (Picoides alboholarvatus)** - White headed woodpeckers are found in mixed conifer forests from 3,500 to 9,000 feet elevation. Nests are excavated in large diameter, usually greater than 23 inches, dead pines and firs in moderate to advanced stage of decay. They prefer open-canopied stands of mature and overmature trees.

No white-headed woodpeckers were found during surveys of the project area, but because of the size of the area, these woodpeckers could have eluded detection. Stephens and Sturts (1991) list them as breeders in this latitude/longitude but without confirmed records. The species is not listed in the CDC database (1999) for the project area.
Chapter 3

Management Indicator Species (MIS)

The National Forest Management Act regulations directed National Forests to identify Management Indicator species (MIS). MIS are species whose population levels indicate the effects of Forest management activity on the habitat they need to survive. By monitoring MIS and their habitats, forest managers can estimate effects on other wildlife species on the Forest and develop activities that meet goals and objectives for wildlife management. The following species were selected as MIS because their habitat requirements encompass a diverse range of forest successional stages (Forest Plan, page II-27).

Rocky Mountain Elk - The Forest plan established a minimum Elk Habitat Effectiveness (EHE) rating for IRA 456 which is 20 and for EMU 17 it is 68, to indicate whether the elk habitat is capable of sustaining or increasing elk populations. These ratings are calculated through the West-Central Idaho EHE model (Idaho Department of Fish and Game et al., 1983), which rates perfect elk habitat as 100 percent. Elk are suitable indicator for other species of wildlife that require a variety of successional stages and habitat types.

In the past, habitat for elk has been modified by management activities. The cover is currently considered adequate, and the juxtaposition of cover with forage is fair. The current EHE for IRA 456 is 51, and for EMU 17 is 62.

Pileated Woodpecker - Pileated woodpeckers represent wildlife associated with multi-canopy, old growth and mature forest that provide snags and large down logs for foraging, perch sites, nesting, and roost cavities (Forest Plan, page II-27). These woodpeckers are fairly common on the Payette National Forest. Pileated woodpecker create cavities that are used by species incapable of excavating their own nesting or roosting cavities, such as the boreal owl and the flying squirrel.

Williamson’s Sapsucker - The Williamson’s sapsucker represents cavity-dependent species that are associated with mature forest and require snags for nesting, roosting and foraging (Forest Plan, page II-27). Dense, mature forest is necessary for high population densities, and deciduous trees in the understory are beneficial. These woodpeckers are present throughout central Idaho; however, it is not likely they are abundant in the Sloan-Kennally planning area because of the habitat condition and the variety of tree species.

Direct and Indirect Environmental Effects

This analysis is based on information from the Idaho Department of Fish and Game, Idaho CDC, U.S. Fish and Wildlife Service, wildlife field inventories, plant inventories, published studies on wildlife habitat relationships, wildlife distribution monographs, elk habitat relationship modeling, and the use of professional judgment by the project biologist.
Figure 3-11. Goshawk Post-Fledgling/Family Areas Within the Planning Area

- Proposed Harvest Units
- Planning Area
- Post Fledgling Areas
Disturbance created by the sounds and sights of timber harvest and related activities would have some negative effects on all species considered in this analysis. Most disturbances would result in temporary displacement to other areas within or near the planning area. These effects would last for the duration of the project, roughly 2 to 5 years.

**Vegetative Structural Stages**

While timber harvest and slash treatment do not directly emulate natural fire regimes, they can be used as tools to maintain some of the structural stage diversity. Forestry techniques can mimic natural disturbances by restoring a more natural range of species composition and density and by leaving residual forest structure such as trees, snags, and down logs.

The No Action Alternative would not directly affect structural stages in the planning area. Structural stages would likely not change in the short term (1-5 years). Close to 80 percent would remain as old and mid-aged to mature forest. Only five percent of the planning area would consist of the open structural stage (see Table 3-12).

Over the long term (5-50 years), no action would first result in an increase in the old and mid-aged forest stages, and then the conversion of the old forest stages to the open stage through large, stand-replacing wildfire. Fire is the dominant agent of change for natural succession of this area, and these stands would eventually reach the age where change would occur due to advanced levels of stand density, mortality, and fuel loading. The amount, timing, and location of change would depend on a complex set of climate, fuel, topography, and ignition variables.

Both Action Alternatives would convert varying amounts of mid-aged and old forest stands to open and young forest stages (see Table 3-12). Alternative 2 would convert more acres (571) to open and young forest through patch clearcut with reserve trees, free selection, and even-aged regeneration. Populations of wildlife species adapted to a variety of successional stages and early seral stages could increase locally. Populations of species adapted to old and mature forest could decrease locally.

**Table 3-12. Percent of Structural Stages in the Goshawk Home Range by Alternative**

<table>
<thead>
<tr>
<th>Vegetative Structural Stage (VSS)</th>
<th>Desired Condition</th>
<th>Alternative 1 No Action</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>10-20%</td>
<td>4%</td>
<td>23%</td>
<td>11%</td>
</tr>
<tr>
<td>Young Forest</td>
<td>20-30%</td>
<td>15%</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>Mid-Aged to Mature Forest</td>
<td>40%</td>
<td>19%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Old Forest</td>
<td>20%</td>
<td>62%</td>
<td>57%</td>
<td>59%</td>
</tr>
</tbody>
</table>

**Old Growth**

A Forest Plan old growth analysis was conducted following Payette National Forest protocol (USDA 1997b). This protocol uses a theoretical piledated woodpecker home range represented by a 10-mile diameter circle. The Sloan-Kenally planning area is included in Circle 23. To meet the Forest Plan standards on page IV-34, a minimum of 5 percent of old growth or mature forest is needed within piledated home range Circle 23, of which 2.5 percent must be old growth as defined by Jack Ward Thomas (1979).
Wildlife Habitat

Forest Service strata information shows that 10,756 acres, or 34.5 percent of Circle 23, is mature and overmature forest. This exceeds the minimum 5 percent requirement.

A 1997 Forest Service inventory crew field-verified 2.7 percent of the forested acres meets this old growth definition. These verified stands would not be affected by known or proposed timber activities. In the fall of 1999, a Forest Service inventory crew field-verified an additional 149 acres of old growth, bringing the total verified acres within Circle 23 that meets the old growth definition to 3.2 percent (see planning record). These acres were contained in three stands of 78 acres, 36 acres, and 35 acres within which harvest units were located. A maximum of 36 acres would be harvested and would reduce the 35 and 36 acre stands below the 30 acre Forest Plan standard but leave 61 acres of the 78 acre stand. These stands are not set aside from harvest because they in excess of the Forest Plan standard.

In addition to the verified old growth, the Forest developed a predictive model for estimating old growth utilizing strata 23 and 24 and data collected within these strata. Applying the predictive model showed this to include only 3 acres of potential old growth (0.0001 percent of the forested acres). The model predicted 2.1 percent of the circle would consist of potential old growth. However, because 3.2 percent has already been field verified (the 2.7 percent from 1997 plus the 0.5 percent in 1999), the model can be seen as very conservative. Once the Forest Plan standard was met, field verification discontinued.

Alternative 1 (No Action) would not harvest any of the 10,756 acres (34.5 percent) of mature and overmature forest in Circle 23. Of those acres, 648 acres (2.1 percent) are predicted old growth. There would be no direct effects on mature, overmature, or potential old growth.

As described in the structural stage discussion above, Alternative 1 would indirectly result in allowing wildfire to determine where, when, and how much potential old growth and mature and overmature forest is converted to early structural stage.

Alternative 2 would harvest 257 acres of mature and overmature forest, leaving 10,499 acres (33.7 percent) in Circle 23. Of the 257 acres, 36 acres of verified old growth would be directly affected. During the fall of 1999, Payette National Forest field crews surveyed all potential old growth stands which contained harvest units. They found seven units within Alternative 2 were entirely or partially within these old growth stands. Five of the units are small (3 acres each) and are located in a 78 acre old growth stand. After harvesting these five units, a 63 acre old growth stand would remain. The sixth unit is old growth in part, with the eastern 15 acres meeting the criteria and the remaining 22 acres not meeting the criteria. The seventh unit is old growth in part, with the southern 6 acres meeting the criteria and the remaining 5 acres not meeting the criteria. The indirect effect is that after harvesting the sixth and seventh units, stands with only 21 and 29 acres respectively having old growth characteristics would remain, and they would no longer qualify as Forest Plan old growth (must be a minimum of 30 acres). For the untreated acres, indirect effects would be the same as Alternative 1.

Alternative 3 would harvest 137 acres of mature and overmature forest, leaving 10,619 acres (34.1 percent) in Circle 23. Of the 137 acres, 15 acres of verified old growth would be directly affected. Field verification crews found one 37 acre unit of Alternative 3 was partially within the potential old growth stands containing harvest units. The eastern 15 acres of this unit fell within a 36 acre old growth stand. The indirect effect is that after harvesting this stand, only 21 acres having old growth characteristics would remain, and it would no longer qualify as Forest Plan old growth (minimum 30 acres). For the untreated acres, indirect effects would be the same as Alternative 1.
Table 3-13 shows the effects to old growth in Circle 23 by acres and percentage of Circle 23.

Table 3-13. Old Growth Habitat and Mature/Overmature Harvested and Remaining by Alternative

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acres</td>
<td>Percent</td>
<td>Acres</td>
</tr>
<tr>
<td>Old growth harvested</td>
<td>0</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>Verified Old growth remaining</td>
<td>1,000</td>
<td>3.2</td>
<td>914</td>
</tr>
<tr>
<td>Verified Old Growth set aside to meet Forest Plan standard</td>
<td>851</td>
<td>2.7</td>
<td>851</td>
</tr>
<tr>
<td>Mature and overmature forest harvested</td>
<td>0</td>
<td>0</td>
<td>257</td>
</tr>
<tr>
<td>Mature and overmature forest remaining</td>
<td>10,756</td>
<td>34.5</td>
<td>10,499</td>
</tr>
</tbody>
</table>

Threatened and Endangered Species

Gray wolf - Wolves are a wide-ranging predator that could occupy nearly any place in central Idaho where big game populations occur. In summer months this would include nearly all habitats and elevations. Thirty-five wolves from Canada were transplanted into the Frank Church Wilderness in 1995 and 1996. Wolves are believed to be present in the project area.

There would be no direct or indirect effects to the gray wolf as the result of Alternative 1. No habitat modification would occur.

The potential project effects on gray wolf habitat from Alternatives 2 and 3 are related to the effects on big game populations and road densities. High road densities have been shown to reduce wolf populations (Mech 1989), and a major reduction of big game populations could potentially reduce the prey base. Roads in the sale areas are scheduled to close after project activities are completed, but the additional open roads and disturbance associated with project activities would slightly reduce habitat quality during the years of the project. Wolves are not likely to be disturbed by timber harvest activities except in the vicinity of a den. Should a den be located during project activities, the Forest Service would work with the Nez Perce Tribe, U.S. Fish and Wildlife Service, and harvest contractors to determine protection buffers that may be needed and timing of activities in the buffer area.

Effects on potential wolf habitat are probably similar to elk habitat effects, which are shown in the "Elk Habitat Effectiveness" model (Idaho Department of Fish & Game, et. al. 1983) results in Tab. 3-15. These results indicate that ungulate habitat would not differ significantly after the sale compared with existing conditions. During the sale, the EHE value would decrease due to disturbance from newly opened road and harvest activities. The newly open roads would be closed to public vehicle access after the sale. After the sale, the EHE value would improve over the existing condition because of better forage/cover juxtaposition and reduced road densities.
Cumulative Effects

The proposed harvest projects will increase fragmentation in the planning area, but a large area of unfragmented habitat would remain in the Needles Roadless Area to the north and east of the project area. There are no reasonably foreseeable actions which would cause additional fragmentation on Payette National Forest lands near the planning area.

Species Viability

The gray wolf is covered by recovery plans as previously noted. These plans address viability of the species throughout its range and provide guidelines to return the species to sustained viability. Since the planning area is outside of the recovery area outlined for the gray wolf, this proposed action would in no way compromise that effort.

Determination

Based on the discussion of direct, indirect, and cumulative effects presented above, the project wildlife biologist has determined Alternative 1 of the Sloan-Kennally Timber Sale will not affect the gray wolf, and Alternatives 2 or 3 of the Sloan-Kennally Timber Sale will not jeopardize the continued existence of the gray wolf.

Peregrine - There would be no direct or indirect effect to the peregrine falcon as the result of Alternative 1. No habitat modification would occur.

The timber harvest prescriptions in Alternatives 2 or 3 are unlikely to directly affect peregrine falcons but could affect their habitat or their bird prey base. The additional edge habitat and openings that develop with the removal of trees in proposed units would change bird populations and species compositions and improve peregrine falcon hunting opportunities. The road reconstruction activities would have minimal effects on potential peregrine habitat.

Cumulative Effects

The proposed harvest projects will increase fragmentation in the planning area, but a large area of unfragmented habitat would remain in the Needles Roadless Area to the north and east of the planning area. There are no reasonably foreseeable actions which would cause additional fragmentation on Payette National Forest lands near the planning area.

Species Viability

The peregrine falcon is covered by a recovery plan. This plan addresses viability of the species throughout its range and provide guidelines to return the species to sustained viability. The peregrine hack sites in Adams County would not be compromised by proposed activities, and recovery of the population would not be affected.
Chapter 3

Determination

Based on the discussion of direct, indirect and cumulative effect presented above, the project wildlife biologist has determined Alternatives 1, 2, or 3 of the Sloan-Kennally Timber Sale will not affect the peregrine falcon.

Proposed Species

Canada Lynx - Lynx are not believed to be present in the planning area. They were not observed during field surveys, and the Conservation Data Center data file has no documented sightings or sign within the area. The Needles Roadless area provides suitable habitat for this species.

There would be no direct or indirect effect to lynx or lynx habitat as the result of Alternative 1. No habitat modification would occur.

As recommended in the draft “Canada Lynx Conservation Assessment Strategy” (9/12/99) a lynx analysis unit (LAU) has been identified, the Kennally Creek watershed, and potential denning and foraging habitat has been mapped. Approximately 23 percent of the LAU has been identified as potential denning habitat and 3 percent as potential foraging habitat. The affects to lynx habitat have been analyzed using the recommended conservation measures described in the draft assessment.

Project activities in Alternatives 2 and 3 would affect potential lynx habitat; approximately 5 percent of the potential denning habitat type would be treated in both alternatives. Potential foraging habitat would not be affected by either alternative. Proposed harvest would not affect travel corridors or connectivity within the LAU. Proposed activities may have some direct affect on the lynx if it is present during timber sale activities.

Cumulative Effects

The proposed harvest would increase fragmentation of the forested area within the planning area, but would not affect large areas of the LAU. There are no reasonably foreseeable actions which would cause additional fragmentation on Payette National Forest lands near the planning area.

Determination

Based on the discussion of direct, indirect and cumulative effect presented above, the project wildlife biologist has determined Alternatives 1, 2, or 3 of the Sloan-Kennally Timber Sale will not jeopardize the continued existence of the Canada lynx.

Sensitive Species

Spotted frog - There would be no direct or indirect effect to the spotted frog as the result of Alternative 1. No habitat modification would occur.

It is unlikely that proposed harvest or road construction and reconstruction activities in Alternative 2 or 3 would negatively affect spotted frog habitat in the project area. These frogs have been found inhabiting...
disturbed sites on the Payette Forest (USDA Forest Service 1992), and water yields in the areas would likely increase or remain stable as a result of project activities.

Project activities will have no effect on the spotted frog or its habitat.

**Fisher** - There would be no direct or indirect effect to the fisher as the result of Alternative 1. No habitat modification would occur.

The potential effects of proposed project activities in Alternative 2 or 3 on fisher habitat would be a short-term reduction in habitat equal to the area of the proposed regeneration cuts because fishers would avoid these openings for about 50 years (Jones 1990). Over a period of more than 50 years, the openings would provide a young forest habitat component that could improve fisher habitat (this does not consider the possible effects of future harvest in the area).

Alternatives 2 or 3 would not adversely affect fisher habitat or populations and would not contribute to a trend towards Federal listing.

**Wolverine** - There would be no direct or indirect effect to wolverine as the result of Alternative 1. No habitat modification would occur.

The primary effects of Alternatives 2 and 3 activities on wolverine habitat are related to road reconstruction in the project area. During the project, harvest activities and public activities would reduce the likelihood that wolverines would occur in the Sloan-Kennally area. The open roads during the project would increase the potential for shooting or trapping of wolverines by the public. The road system would not likely preclude wolverine use of the area after project activities are completed and road closure is implemented. The administrative use of the area would be infrequent and a negligible impact on wolverine use.

Alternatives 2 or 3 would not adversely affect wolverine habitat or populations and would not contribute to a trend towards Federal listing.

**Boreal Owl** - There would be no direct or indirect effect to boreal owls as the result of Alternative 1. No habitat modification would occur.

With Alternatives 2 and 3, potential boreal owl habitat could be slightly affected by timber harvest units in the Sloan-Kennally area by decreasing the amount of spruce and subalpine fir trees and decreasing large snags. However, less than one percent of the subalpine fir would be harvested, and most of the potential habitat is at a higher elevation than proposed harvest units.

Alternatives 2 or 3 would not adversely affect boreal owl habitat or populations and would not contribute to a trend towards Federal listing.

**Flammulated Owl** - There would be no direct or indirect effect to flammulated owls as the result of Alternative 1. No habitat modification would occur.

These owls could be affected by the proposed harvest in both Alternatives 2 and 3. A reduction in old-growth habitat characteristics would reduce habitat quality for these owls. The extent that harvest
units are used by these owls is unknown. Alternative 2 would treat approximately four percent of the ponderosa pine type found in the planning area and Alternative 3 would treat approximately three percent.

Alternatives 2 or 3 would not adversely affect flammulated owl habitat or populations and would not contribute to a trend towards Federal listing.

**Northern Goshawk** - There would be no direct or indirect effect to goshawk as the result of Alternative 1. No habitat modification would occur.

Alternatives 2 and 3 would meet goshawk needs. Although some of the units within the post-fledging areas are larger than recommended by the *Management Recommendations for the Northern Goshawk in the Southwestern United States* (Reynolds et al. 1992), sufficient post-fledging habitat will be left. As described by Grahm et al. 1997 “in forest with mixed fire regimes, multiple openings larger than 2 ha were likely at any one time”. Percentages of various ages of forested stands outlined by the Forest Supervisor (memo, July 15, 1996) are shown below. Nesting, post-fledging, and foraging habitat would be maintained, and population numbers would likely remain stable (Table 3-14).

The effects of these proposed harvests on goshawk prey species are less certain, but populations of prey species such as ruffed grouse and Columbia ground squirrels could increase. Blue grouse populations should be unaffected. Douglas-fir provides an important food source for blue grouse, and Douglas-fir should increase in harvest units over time. Large, high-elevation, "woolly" or bushy Douglas-fir are also important to blue grouse (Pekins, et al. 1991), and reserve tree guidelines incorporated into the design of harvest units in Alternatives 2 and 3 would provide a legacy of these trees in harvest units.

Project related actives would be restricted near the nest sites from March 1 through August 15 (Table 2-2, Mitigation Measures). This would protect the nest and nestling from disturbance until they fledge (Personal communications, Saab et al., 1998).

### Table 3-14. Effects to Goshawk Habitat/VSS Class by Alternative

<table>
<thead>
<tr>
<th>VSS</th>
<th>Strata</th>
<th>Desired %</th>
<th>Alt 1</th>
<th>Alt 2</th>
<th>Alt 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>20 &amp; 21 (&lt;10yrs)</td>
<td>10-20 %</td>
<td>FA</td>
<td>4%</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>29 &amp; 70</td>
<td></td>
<td>PFA 1</td>
<td>20%</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>41 &amp; 42 (wg 1-6)</td>
<td></td>
<td>PFA 2</td>
<td>10%</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>20 &amp; 21 (&gt;10 yrs)</td>
<td>20-30 %</td>
<td>FA</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>22, 33, 34, 35</td>
<td></td>
<td>PFA 1</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PFA 2</td>
<td>2%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Mature</td>
<td></td>
<td>40 %</td>
<td>FA</td>
<td>19%</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>22, 33, 34, 35</td>
<td></td>
<td>PFA 1</td>
<td>19%</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PFA 2</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Old Forest</td>
<td>23, 24, 25, 26</td>
<td>20 %</td>
<td>FA</td>
<td>62%</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td>41 &amp; 42 (P. pine)</td>
<td></td>
<td>PFA 1</td>
<td>57%</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PFA 2</td>
<td>88%</td>
<td>84%</td>
</tr>
</tbody>
</table>

FA = foraging area  
PFA = post-fledgling area
Wildlife Habitat

Alternatives 2 or 3 would not adversely affect goshawk habitat or populations and would not contribute to a trend towards Federal listing.

**Great Gray Owl** - There would be no direct or indirect effects to great gray owls as the result of Alternative 1. No habitat modification would occur.

In Alternatives 2 and 3, guidelines for snags, riparian areas, pileated woodpecker old growth requirements, and goshawk habitat requirements would provide for the habitat needs of the owl. The potential for foraging and nesting would not be reduced because adequate suitable habitat would remain.

Alternatives 2 or 3 would not adversely affect great gray owl habitat or populations and would not contribute to a trend towards Federal listing.

**Three-toed Woodpecker** - There would be no direct or indirect effect to the three-toed woodpecker as the result of Alternative 1. No habitat modification would occur.

Alternative 2 and 3 would treat approximately 2 percent of the three-toed woodpecker habitat found in the planning area. Approximately 3,346 acres of habitat would remain untreated.

Alternatives 2 or 3 would not adversely affect three-toed woodpecker habitat or populations and would not contribute to a trend towards Federal listing.

**White-headed Woodpecker** - There would be no direct or indirect effect to the white headed woodpecker as the result of Alternative 1. No habitat modification would occur.

In Alternatives 2 and 3, the proposed harvest would remove a few large-diameter ponderosa pine, which could reduce white-headed woodpecker food supplies and nest sites. Because only a few large trees would be removed, the effects are expected to be minimal.

Alternatives 2 or 3 would not adversely affect white-headed woodpecker habitat or populations and would not contribute to a trend towards Federal listing.

**Management Indicator Species**

**Rocky Mountain Elk** - EHE values indicate the relative effects of each alternative on summer elk habitat in general, but site specific impacts may occur that are not adequately addressed by the general model. Information obtained from wildlife surveys, the Idaho Department of Fish and Game, and Lyon, et al. (1985) indicates that the action alternatives could potentially affect elk populations though: 1) displacement during logging and road-building activities, 2) loss of key habitat components, 3) disturbance during elk caving, and 4) increased elk vulnerability during hunting seasons. Elk are very traditional in their use of habitat and yearly migration routes, and disruption of use patterns could adversely affect the local population.

Because elk in the Sloan-Kennally area are conditioned to logging and road disturbance, they are not likely to be displaced for more than a short distance or time periods. Wallows and calving areas are key elk habitat components. The action alternatives would protect major wallows with a two-elk sight distance buffer of hiding cover, but wallow use could be disturbed during harvest activities. Although key calving
areas have not been identified, some calving probably occurs throughout the planning area, and therefore, the action alternatives could slightly disturb calving activities. The likelihood of this disturbance would be reduced by the management requirement that would protect elk during calving (Table 2-1, Management Requirements).

Elk vulnerability is related to the number of hunters and to hunting conditions. The action alternatives would increase elk vulnerability in the short term by increasing access and reducing hiding cover provided by trees. As hiding cover returns, elk vulnerability would decrease. Permanent road closures would also decrease elk vulnerability. As part of the action alternatives, 31.1 miles of road would be closed or obliterated.

EHE values that would result from implementing the Sloan-Kennally alternatives are displayed in Table 3-15. Both system and non-system roads were used in assessing elk habitat effectiveness. All alternatives would meet the Forest Plan EHE target level of 20 in IRA 456.

<table>
<thead>
<tr>
<th>Table 3-15. Elk Habitat Effectiveness Ratings by Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Alternative 1</td>
</tr>
<tr>
<td>Alternative 2</td>
</tr>
<tr>
<td>Alternative 3</td>
</tr>
</tbody>
</table>

**Pileated Woodpecker and Williamson’s Sapsucker** - Effects on habitat for these species would be very similar, they both require old and mature forest, as well as snags and down logs for nesting and foraging. Forest guidelines for snag and coarse woody debris retention within the timber sale boundaries are incorporated into the action alternatives and would provide habitat for these and other cavity-dependent wildlife species (see Chapter 2, Management Requirements). Comparing direct effects, Alternative 1 (No Action) would have no short-term effect on snags or down logs. Alternative 2 would affect more acres than Alternative 3; however, both alternatives would meet species requirements.

**Cumulative Effects**

**Past Actions**

The two human actions that have had the most cumulative effects on wildlife habitat in the past are fire suppression and timber harvest. Fire suppression activities over the last 75-90 years have modified forest vegetation conditions. In general, tree species have shifted from seral to climax, and stand ages, densities, fuel loads, insects and disease activity, and mortality have increased. Fire suppression has favored wildlife species adapted to climax, closed-canopy forest conditions.

Timber harvest over the same period of time has had a different set of effects. Harvest has generally converted older structural stages to younger ones and reintroduced seral species through reforestation. Harvest has also increased access, which has affected local populations of wildlife. Elk and other game animals are now more vulnerable to disturbance and hunting pressure. Increased roads have also allowed livestock to access riparian areas and other habitats. Species dependent on mature and old forest stands,
Figure 3-12. IRA 456
such as pileated woodpecker and Williamson’s sapsucker, have been affected by a reduction in large standing snags and down logs.

Hunting, trapping, livestock grazing, pesticide use, animal damage control, and firewood gathering have also adversely affected populations of some species. Overall, the combination of these and other effects has changed wildlife distribution and populations from what they were before Euro-American settlement.

The 1994 large wildfires on the Payette (Corral, Blackwell, Chicken, and Thunderbolt fires) did not burn in the Sloan-Kennally planning area. They did burn a small portion of the north end of EMU 17 and also affected habitat across a large area many miles to the north of the planning area. The Payette National Forest Broadscale Assessment for the Post-fire Landscapes (USDA Forest Service 1995) analyzed effects of the fires on MIS and TES species and concluded that the fires were not likely to adversely affect the viability of any species.

**Ongoing and Proposed Actions**

Fire suppression, hunting, trapping, animal damage control, firewood gathering, and timber harvest will likely continue on National Forest, State, and private lands. Hunting, trapping, and animal damage control would have the cumulative effect of reducing or regulating some wildlife populations, particular big game like elk and deer, and predators like coyote, fisher, and martin. Fire suppression, recreational development and use, grazing, firewood gathering, and timber harvest would have cumulative effects on wildlife habitat, both in terms of disturbance and habitat modification.

Known future projects within the Sloan-Kennally analysis area include:

- Harvest and grazing of land exchanged to the State of Idaho (a portion of section 1 in T. 16 N., R. 4 E.). This increase of disturbance and habitat modification could affect many wildlife species. The extent and duration of these affects are difficult to assess. Some species may leave the area and move into adjacent stands which are less disturbed.

- Pre-commercial thinning within and adjacent to the planning area is planned sometime within the next two to three years. Thinning will occur primarily in young lodgepole pine and ponderosa pine stands. The intent of the thinning is to release young stands of trees. All thinning projects will follow Payette National Forest Plan Standards and Guidelines and have negligible affects on wildlife. Thinnings would likely improve forest structure for wildlife species.

- Harvest on adjacent private land would likely have little effect on wildlife species. The majority of this land has already been extensively altered. Additional management would do little to affect wildlife habitat.

**Old Growth**

Within Circle 23 the Draft EIS analyzed only one additional timber sale that would remove any mature and overmature timber or potential old growth. The Camp Creek 21 Timber Sale harvested 16 acres of mature and overmature timber in the time period between the release of the DEIS and the publication of this FEIS. The effects of this recent timber harvest are included in the direct and indirect effects section. There are no reasonably foreseeable future timber sales in Circle 23. However, timber sales may be
planned at some point in the future. If and when they are planned, the Forest Service will analyze the effects of the Sloan-Kennally timber sale on old growth as part of its baseline information.

This type of old growth analysis is a conservative approach to displaying potential effects on wildlife habitat and species. Although many species (like the pileated woodpecker, boreal owl, three-toed woodpecker, white headed woodpecker, flammulated owl, great gray owl, northern goshawk, fisher, and wolverine) are often referred to as old growth dependent, they are actually adapted to a variety of old and mature forest habitat conditions. It is likely that pileated woodpecker and many other old-growth dependent species would use a large portion of existing old and mature forest.

Pileated woodpecker circles on the east side of the Forest include circles 21 through 43. The project wildlife biologist estimated the percentages of old growth found in each of these circles (see project record). This analysis shows that the estimated acres of Jack Ward Thomas old growth in these circles range from 0 percent to 10.0 percent of the forested acres. In all cases, no old growth would be harvested until 2.5 percent old growth has been field verified and Forest Plan requirements for old growth have been met.

**Elk Habitat**

The cumulative effects area for elk is EMU 17. Both action alternatives would improve EHE for EMU 17 and move it closer to the Forest Plan target of 68.

**Table 3-16. Elk Habitat Effectiveness Ratings by Alternatives**

<table>
<thead>
<tr>
<th>Percent Elk Habitat Effectiveness</th>
<th>EMU 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 1 During Sale</td>
<td>62</td>
</tr>
<tr>
<td>Alternative 2 During Sale</td>
<td>62</td>
</tr>
<tr>
<td>Alternative 3 During Sale</td>
<td>62</td>
</tr>
</tbody>
</table>

3-70
Figure 3-13. IRA 456 within EMU 17
Figure 3-14. Theoretical Pileated Woodpecker Home Range Circle 23
Irreversible and Irretrievable Commitments

No irreversible or irretrievable commitments of wildlife habitat would occur in Alternative 1. Some mature and overmature trees and snags would be lost under the action alternatives. The loss would be essentially irreversible for 100 to 300 years. However, no major loss of snag habitat in the project area is expected due to adherence to the management requirement for retaining snags in harvest units (see Chapter 2. Management Requirements). Also, all snags existing outside harvest units would be retained.

Forest Plan Consistency

All alternatives would be consistent with Forest Plan direction.

A tree snag with a wildlife nesting cavity near the top
Chapter 3

Recreation

ISSUE: Proposed management activities may affect recreation use through road closures and access management in the planning area.

INDICATORS:
- Recreation Visitor Days (RVDs) affected
- Miles of road and trail access affected

Scope of the Analysis

For recreation resource, the area that may be directly, indirectly, and cumulatively affected is contained within the Lower Kennally Creek, Middle Kennally Creek, and Flat French subwatersheds. The planning area is located southeast of McCall and 10 miles east of Highway 55. It can be viewed from Road Nos 50388, 50397, and 50401.

Desired Condition

The desired condition for recreation opportunities is to maintain the present distribution of recreation opportunity spectrum (ROS) settings, as well as the integrity and character of each of these settings, as designated by the Forest Plan. The goal for access management is to provide appropriate access on roads, trails, and other areas that is compatible with management direction and objectives and to consider public safety and minimize conflicts between users. The desired condition of recreation facilities is to create and enhance developed and dispersed campsites, trailheads and interpretive facilities in the Roaded Natural and Roaded Modified ROS settings, and maintain a quality trail system in all ROS settings.

Current Condition

The analysis area has moderately high recreation qualities due to its scenery, proximity to McCall, ease of access, and access to a large trail system.

Recreation Visitor Days (RVDs) are estimated by available recreation facilities, recreation opportunities, and current recreation uses in the planning area. Effects on user access are estimated by changes in the number of roads and trails available for public use.

Recreation Facilities

Recreation facilities within or adjacent to the planning area include several sites. Kennally Creek Campground, a Sensitivity Level 1 (SL1) facility, is located just north of the project area. A developed trailhead and horse use facility are located at the campground. This trailhead provides access to a large trail system accessing the unique backcountry of Blackmare, Needles, and Fitsum Summits. Trails include Kennally Creek Trail No. 102, the Needles Trail No. 101, and Blackmare Summit Trail No. 099. Forest system roads in the area include Road No. 50388 located on the northern boundary of the analysis.
area, Road No. 50401 located on the western edge of the analysis area, and Road No. 50397 located through the middle portion of the planning area.

**Recreation Setting and Use**

The planning area offers recreation opportunities in both developed and undeveloped recreation settings. Recreation uses in the area are not concentrated and include hiking, hunting, horseback riding, fishing, huckleberry picking, pleasure driving, firewood cutting, snowmobiling, trail biking, and off-road vehicle use. Use of the area by snowmobilers and hunters is increasing.

The Forest Plan divided the Forest into ROS settings that emphasize different recreation opportunities. The Recreation Opportunity Spectrum (ROS) settings in the planning area are Roaded Natural and Roaded Modified (Figure 3-15). A Semi-Primitive Motorized ROS setting is located east of South Fork Kennally Creek and is part of the proposed Needles Wilderness.

The planning area has approximately 120 snow-free days annually. Recreational use is moderate to high. Approximately 2,800 recreation visitor days (0.6 RVDs per acre) occurred in the planning area in 1997. Visitors to the area originated from both local and nonlocal recreational users. Kennally Creek Campground received an additional 2,516 RVDs.

**Access Management**

Access management could also have an impact on the recreational opportunities in the analysis area. Many of the existing roads in the planning area were originally constructed for timber management. Although these roads have provided recreation access over the years, they can also have negative impacts on other resources, such as wildlife habitat, soils, and water quality. Forest Plan direction on access management is to review the transportation system for site-specific projects to determine restriction needs related to safety, resource protection, user conflicts, or maintenance needs (Forest Plan p. IV-118)

**Direct and Indirect Environmental Effects**

**Effects on the Recreation Facilities**

Both action alternatives would have minimal effects on the recreation facilities. The harvest units are located approximately 0.5 miles or more from both Kennally Creek Campground and the trail system beginning at the campground and therefore would not affect these facilities.

**Effects on the Recreation Setting, Use, and Access**

The impacts of timber management activities would also have moderate effects on the recreation settings and use. The analysis area contains 12,867 acres of Semi primitive (SPM), 1,641 acres of Roaded Natural (RN) and 8,492 acres of Roaded Modified (RM). Ninety-five percent of the timber harvest activities are located in the RM setting, while the remaining five percent are located within the RN setting. The RN setting indicates that the area is characterized by a predominantly natural-appearing environment with moderate evidences of management activities. The RM setting indicates that the area is characterized as having been modified by man in such a manner that the modifications are readily evident to the casual forest observer. Road construction and timber harvest in the action alternatives would have minor impacts to the recreation opportunities. The leave-tree cutting units would be moderately evident in the Roaded Natural setting with negligible effects.
Figure 3-15. ROS Setting in the Planning Area
Alternatives 2 and 3 would have no direct effect on the approximately 2,800 recreation visitor days or ROS settings in the analysis area. The proposed project would have an indirect effect on the adjacent Kennally Creek Campground. Logging traffic and harvest operations would temporarily reduce recreational use on Road Nos. 388 and 401, the Kennally Creek campground, and the associated trailhead due to traffic, dust, noise, and safety hazards. Use and safety may be specifically affected if log decks and landings are located on or adjacent to the roads.

Other than camping, the predominant uses by recreationists are with motorcycles and horses. The majority of these users are traveling east and west on the trails leading from Kennally Creek Campground and are not using the planning area directly. Recreation use in Alternative 1 would decrease slightly as downed trees block access to the area and make it difficult for recreationists to travel through the forest. Recreation use in the action alternatives would decrease slightly during the duration of the sale, but would return to presale levels.

The action alternatives would have similar impacts to road access. Both alternatives call for approximately 8.7 miles of road obliteration and 5.7 miles of roads open now but to be closed after the timber sale. A majority of the proposed road obliterations have not been accessible to vehicles during the past 10 to 15 years due to a combination of vegetation, earthen barriers, and/or gates. The remaining 5.7 miles of road closure would have an impact on access by eliminating present vehicle access while allowing foot and some motorized traffic.

Cumulative Effects

Effects on the Recreation Setting, Use and Facilities

This project, when considered with past, present, and foreseeable effects, would not cumulatively affect the ROS setting or recreation facilities.

Recreation Use

Because the planning area is an access point for the proposed Needles Wilderness Area, the location of cutting units is critical to the semi primitive or wilderness experiences offered in this general area. The area has received extensive timber management activity in the past, and each successive timber project entry may change the long-term Recreation Visitor Day use estimates. Future harvest activities on National Forest, State, and private lands would likely have a cumulative impact on recreation use during the sale activities due to traffic, dust noise, and safety hazards. It is estimated that recreation use under Alternatives 2 and 3 would be reduced (10-15 percent) when combined with the other sale activities, but would slowly increase over the course of 5-10 years and return to previous levels.

Access

The project's contribution to cumulative effects on public road access within the planning area would be minimal because few road miles would be obliterated. Many of the old roads which are presently revegetated and inaccessible to vehicles would continue to remain inaccessible.
Irreversible and Irretrievable Commitments

Though there are no irreversible commitments to the recreation attributes, an irretrievable commitment includes the closure of 5.7 miles of road which indicates a net change in vehicle access.

Forest Plan Consistency

All alternatives as displayed in this project are consistent with Forest Plan direction for ROS setting, use, facilities, and access.

A mountain biker rides a Payette National Forest trail
ISSUE: The economic efficiency of Forest Service timber sales is a public concern. The amount of timber harvested, the mix of harvest systems, silvicultural prescriptions, and related costs can influence this efficiency. Timber harvest associated with the Sloan-Kennally Timber Sale would also affect timber-linked jobs and income in the West Central Idaho Highlands.

INDICATORS: Net Value
Cost per MBF harvested
Jobs and income within the West Central Idaho Highlands
Payments to counties

Scope of the Analysis

The area most likely to be affected directly, indirectly, or cumulatively is the Forest's Zone of Influence, which is the West Central Idaho Highlands and the communities within them (Table 3-17). Outside the Highlands, effects would generally be so diffused and minor that they would not be measurable. The Sloan-Kennally planning area is within Valley County, Idaho.

Desired Condition

Choose the most cost effective mix of logging systems, road development, and silvicultural prescriptions that meets the land management objectives in the long run (Forest Plan, page IV-65). Provide for net public benefits nationally while also assisting local communities that depend on outputs from the National Forest. The economic effects of Forest management on communities was an important issue in developing the Forest Plan.

Current Condition

National Forests in the West Central Idaho Highlands have offered for sale a relatively constant supply of timber since the early 1950's. The supply of timber has resulted in lumber manufacturing and logging jobs in the West Central Idaho Highlands. The supply of timber to the local timber industry has been fairly constant since the 1940's; however, the number of jobs has fluctuated with economic conditions. Recently, the amount of timber offered for sale from the National Forests in the West Central Idaho Highlands has dropped, partly due to the listing of anadromous fish as threatened and endangered species. Recent listing of the bull trout as a threatened and endangered species will likely further reduce timber offered for sale from National Forests. If the drop in timber offered for sale continues as expected, drops in employment in the timber industry are expected.

Payments to Counties

Counties that contain National Forest lands receive 25 percent of the Forest's gross receipts. This money is used by the counties to fund local schools and county roads. Timber sales usually generate the largest share of the payments. The size of the payment is proportional to the percent of National Forest lands
within the county, not the level of outputs from each county. The amount of payment to counties is related to the volume and value of the timber sold by the National Forests. During the late 1980's and early 1990's, payments to the counties have increased primarily due to an increase in the value of timber sold. This trend is now being reversed due to reduced timber sale offerings. An increase in the sale of smaller diameter, lower value white woods will also reduce projected payments to counties.

Recreation on National Forests in the West Central Idaho Highlands has been steadily increasing over the past several decades. User fees paid by recreationists and by recreation developers such as ski areas and outfitters are a minor amount when compared to timber sale receipts and generate a very small portion of the 25 percent fund received by the counties. However, the increase in recreation brings a significant amount of money into the local economy of the West Central Idaho Highlands, especially to resort communities. Local governments are in favor of both recreation and timber industry, and feel that they are both valuable assets to the economy of the West Central Idaho Highlands.

Economics

Economic efficiency in National Forest timber management can be measured in terms of net value and costs per MBF harvested. Net value is determined by subtracting all costs of the project (support costs for timber, engineering, mitigation, and other resource analysis) from the expected revenues that result from a project. Cost per MBF harvested measures efficiency based on units of output, not total output.

Only market values are considered in the analysis for the Sloan Kennally project. Non-market values such as hunting and dispersed recreation were not considered in the net value. There may be some temporary displacement of these activities during project implementation; people would hunt and recreate in other areas of the Forest during timber sale activities. Upon completion of sale activities, hunting and recreation is expected to return to present levels. The projected outputs of these recreational activities were calculated in the Forest Plan with consideration of timber management activities.

Socio-economics

The Forest’s supply of natural resources has resulted in economic growth in local communities. Timber, recreation, and range form an important part of the economic base in the Zone of Influence. The Forest through its management decisions, controls the levels of outputs coming off the Forest, thereby affecting employment and income levels in the Zone of Influence communities.

The Upper Columbia River Basin Ecosystem Management Project has identified economic resiliency of counties within the Payette’s Zone of Influence as having low and moderate ratings (USDA and USDI 1996). A high rating indicates an economy based on a mix of industries and having the ability to cope with changes affecting economic health and vitality. A low rating indicates an economy dominated by one or two industries and having a low ability to cope with changes in the industry.

Timber-linked Employment and Income

Robison, Hormaechea, and Katzer (1989) showed each MMBF harvested provided 10.4 jobs and $440,874 in income. Table 3-17 shows how this timber-linked employment was distributed among the West Central Idaho Highlands communities in 1987. Two lumber mills in the West Central Idaho Highlands have recently been closed, at Horseshoe Bend and Council Idaho. The mill closures were
attributed to reductions in the timber supply. Timber linked employment and income and its distribution among the various communities have not been updated to reflect the mill closures.

The timber volume planned in the timber sale portion of the Sloan-Kennally project is part of the Payette National Forest’s allowable sale quantity (ASQ) of 805 million board feet per decade. If the sale is not offered, the Forest’s planned volume for the year in which the sale was to occur may decline as result, affecting the regional economy. Changes in harvest levels translate into changes in timber industry employment and income levels. Timber linked employment and income may be affected as well.

<table>
<thead>
<tr>
<th>Community</th>
<th>Employment (Number of Jobs)</th>
<th>Income (Thousands of Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Timber Linked</td>
</tr>
<tr>
<td>Cambridge</td>
<td>198</td>
<td>37</td>
</tr>
<tr>
<td>Cascade</td>
<td>507</td>
<td>211</td>
</tr>
<tr>
<td>Council</td>
<td>608</td>
<td>273</td>
</tr>
<tr>
<td>Emmett</td>
<td>2,485</td>
<td>1,172</td>
</tr>
<tr>
<td>Garden Valley</td>
<td>152</td>
<td>28</td>
</tr>
<tr>
<td>Horseshoe Bend</td>
<td>263</td>
<td>230</td>
</tr>
<tr>
<td>McCall</td>
<td>1,860</td>
<td>210</td>
</tr>
<tr>
<td>Midvale</td>
<td>85</td>
<td>17</td>
</tr>
<tr>
<td>New Meadows</td>
<td>362</td>
<td>207</td>
</tr>
<tr>
<td>Payette/Ontario/Weiser</td>
<td>6,532</td>
<td>17</td>
</tr>
<tr>
<td>Riggins</td>
<td>334</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>13,387</td>
<td>2,437</td>
</tr>
</tbody>
</table>

### Direct and Indirect Environmental Effects

**Economics**

Economic efficiency in government business, including timber sales, is a concern of American taxpayers. Economic efficiency was estimated for the action alternatives using a computer program. The program estimates the economic viability by subtracting all timber harvest and delivery costs (including KV and BD) from the value of the logs at the mill. Yarding cost is normally the largest logging cost and also the cost with the greatest variability. The program estimates yarding cost using the following parameters: yarding method, average tree diameter, yarding distance, volume cut per acre, percent of volume harvested, and scaling defect. Two yarding methods, tractor and helicopter, were considered in the alternative analysis for the proposed Sloan-Kennally Timber Sale. The average tractor yarding cost was $77/MBF and average helicopter yarding cost was $266/MBF. The road costs were considered a direct cost to the sale. Forest Service costs for preparing and administering the sale were also estimated.

Table 3-18 displays the estimated costs per MBF for the action alternatives. Logging, road, and brush disposal (BD) are costs that the purchaser must cover. The Knutson-Vandenburg (KV) cost for
reforestation is subtracted from gross receipts. The logging costs shown are stump to mill. Costs per MBF harvested are a measure of economic efficiency. The higher the costs per MBF the less the Forest will receive for the logs.

Table 3-18. Costs per MBF Harvested by Action Alternative

<table>
<thead>
<tr>
<th>Costs</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logging</td>
<td>$180.52</td>
<td>$121.73</td>
</tr>
<tr>
<td>Road</td>
<td>$41.98</td>
<td>$71.59</td>
</tr>
<tr>
<td>KV</td>
<td>$29.89</td>
<td>$42.33</td>
</tr>
<tr>
<td>Brush Disposal</td>
<td>$24.73</td>
<td>$26.82</td>
</tr>
<tr>
<td>Total</td>
<td>$277.12</td>
<td>$262.47</td>
</tr>
</tbody>
</table>

The logging cost for Alternative 3 was less since more expensive helicopter yarding was dropped from the alternative. Road costs for Alternative 3 were greater on a per MBF basis although road costs were the same on a total cost basis for both alternatives. The cost per MBF were higher due to less timber volume harvested to prorate against the total road cost. KV and BD unit costs per MBF were higher for Alternative 3 because the helicopter units dropped from Alternative 2 had no planting costs and limited brush disposal costs.

Table 3-19 shows the estimated net value of the alternatives after the costs were subtracted. Mitigation and watershed improvement costs are included as costs. The cost for Alternative 1 (no action) is for NEPA analysis and supporting work. Timber values are presently high and may change at the time of the timber sale with the supply and demand for timber products.

The estimated returns to county governments represent 25 percent of the gross timber receipts by alternative for the proposed Sloan Kennally Timber Sale. The 25 percent funds are earmarked for schools and county roads and are presently allocated to the counties in proportion to the amount of Payette National Forest contained by each county. Valley County receives 38.1 percent, Idaho County receives 34.6 percent, Adams County receives 22.0 percent, and Washington County receives 5.3 percent of the 25 percent of gross receipts from any timber sold on the Payette National Forest. There has been a recent movement to abolish the 25 percent funds received by the counties at the national level and replace them with other forms of payments to counties. The Valley County Commissioners have indicated they would rather have the 25 percent of timber sale receipts and the associated timber-linked jobs than a flat payment without the associated timber harvest. Abolishing or replacing the 25 percent fund has not been done at this time, nor is there any certainty that it will be done.

Table 3-19. Net Value of Alternatives

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returns to Counties</td>
<td>$0</td>
<td>$65,400</td>
<td>$53,400</td>
</tr>
<tr>
<td>Returns to Government</td>
<td>($253,300)</td>
<td>($417,600)</td>
<td>($359,100)</td>
</tr>
</tbody>
</table>

The value for returns to the government are negative for several reasons. The loss to the government in Alternative 1 reflects the estimated cost of this environmental analysis and supporting overhead. The loss to the government in Alternatives 2 and 3 includes the cost of the analysis, supporting overhead, sale preparation, sale administration, and $100,000 to gravel 4.0 miles of road to reduce sediment and
associated phosphorous input into Cascade Reservoir. All of the estimated costs are subtracted from the estimated returns realized from the sale of the timber. Forest Service timber support costs have increased due to additional analysis requirements, national and regional policy changes, recent lawsuits, and additional mitigation requirements. The value of the timber offered for sale has decreased due to an increase in offering of lower value small diameter whitewoods. The costs in harvesting have also increased due to increased reliance on expensive helicopter yarding and a reduction in the use of more economical ground based harvest systems. Alternatives 2 and 3 would be below-cost sales, meaning it costs the Forest Service more to prepare the timber sales than the amount of money collected from the sale of the timber. The action alternatives are not deficit sales; rather, the value of the timber sold should pay for all required reforestation and other sale contract related activities. The Payette National Forest has determined other methods of achieving the goals for managing the Sloan-Kennally planning area, such as service contracts, would be less economical than offering a timber sale.

**Socio-economics**

Small west-central Idaho communities were partially settled for and have traditionally depended on Forest resources. The relative socio-economic importance of mineral, range, timber, and recreation (hunting, fishing, hiking, camping, sight-seeing, etc.) resources may change with time, but the communities neighboring the Payette National Forest will continue to depend on Forest resources for their socio-economic well-being.

The Forest Plan established an average ASQ (allowable sale quantity) to be an appropriate balance between socio-economic and other forest values. As stated, research indicates that each MMBF of timber harvested on the Payette yielded $441,000 income and 10.4 job years. Part of the purpose of the Sloan-Kennally project is to contribute to the Forest ASQ. The appropriate magnitude of the contribution (MMBF) is discussed in this document.

Table 3-20 displays the timber jobs and income associated with each alternative of the Sloan-Kennally timber sale. The job and income figures are expressed as annual averages for a ten-year period.

**Table 3-20. Jobs and Income by Alternative (Jobs and Income Per Year for Ten Years)**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs</td>
<td>0</td>
<td>4</td>
<td>2.4</td>
</tr>
<tr>
<td>Income</td>
<td>0</td>
<td>$170,500</td>
<td>$100,000</td>
</tr>
</tbody>
</table>

The Alternative 1 would provide no timber-linked jobs or income. Alternative 2 would provide the most jobs and income of the action alternatives.

**Cumulative Effects**

The Sloan-Kennally Timber Sale is part of the total timber sale program on the Payette National Forest. Reductions in the timber harvest levels would have a cumulative effect of reducing timber-linked jobs and income in the West Central Idaho Highlands. Recently the amount of timber offered for sale by the National Forests in the West Central Idaho Highlands has been decreasing. Recent projections by the Boise and Payette National Forests indicate the amount of timber offered for sale may decline by 50 percent or more from the 10-year average ASQs in the Forest Plans. A 50 percent decline is roughly
Chapter 3

equivalent to 75 MMBF per year. The loss of 75 MMBF equates to a loss of 780 timber-linked jobs in the West Central Idaho Highlands, as well as $33,066,000 per year in income. In addition, 115 Forest Service jobs with associated incomes are expected to be lost between the two Forests.

The projected decrease in timber offered by the Forests would have the largest effect on rural communities with high levels of timber-linked income, as displayed in Table 3-17. Returns to counties would also decrease, reducing funds available for county roads and schools.

Reduced timber volumes offered for sale from the Forests have reduced the internal economics and efficiency of the Forest's timber program. Analyzing and preparing NEPA documents for planned timber sales which do not occur also reduces the economic efficiency of the Forest Service timber program.

The action alternatives would slow the decreasing trend of timber offered and the associated effects. Alternative 1, No Action, would accelerate the decreasing trend in timber offered for sale and the associated economic and socio-economic effects.

Irreversible and Irretrievable Commitments

Losses in jobs, income, and payments to counties in the No Action Alternative represent irretrievable losses. Such losses assume that no replacement volume is available and that the sawtimber is processed at West Central Idaho Highlands mills. If cumulative job losses change the local economy permanently and there is no replacement industry of employment realized, then job and income losses may become irreversible. The action alternatives would provide jobs, income, and payments to counties in the short term.

Forest Plan Consistency

This analysis of economics and efficiency is consistent with Forest Plan direction. There is no Forest Plan direction regarding socio-economic impact assessment.
This section contains disclosures of effects that are required by federal law, regulation, or policy.

**Prime Farm Land, Rangeland, and Forest Land**

The planning area does not contain prime farm land or rangelands. "Prime" forest land is a term used only for non-federal land, which would not be affected by proposed activities. Regardless of the alternatives selected for implementation, National Forest System lands will be managed with sensitivity to any adjacent private and public lands. All alternatives are in accordance with the Secretary of Agriculture Memorandum 1827 for prime farm land, rangeland, and forest land.

**Energy Requirements and Conservation Potential**

Alternative 2 requires the most road work and logging and will have the least potential for conserving energy. In terms of petroleum products, the energy required to implement either action alternative is insignificant when viewed in light of production costs and the effects on the national and worldwide petroleum reserves.

**Environmental Justice**

The actions under Alternatives 2 or 3 would not adversely affect disadvantaged or minority groups because of the planning area's distance from large population centers and the diffuse level of adverse impacts on any social group. A timber sale such as this proposal would not produce hazardous waste or conditions that might affect human populations.

**Wetlands and Floodplains**

No wetlands or floodplains would be filled under any alternative. Alternatives 2 and 3 would improve some road crossings of streams to reduce long-term sediment production and delivery. These activities are permitted under the Corps of Engineers Nationwide Permits, Section 330.5(a). Because no drainage of wetlands would occur and no wetlands or floodplains would be altered, the goal and intent of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) would be met. This is documented in Chapter 3, Soil Productivity and Water Resources sections.

**Unavoidable Adverse Environmental Impacts**

Proposed activities would likely produce unavoidable adverse effects on some components of the environment. Actions that benefit one component can have at least temporary adverse effects on another. A reasonable range of alternatives has been considered, and the alternatives include management requirements and mitigation measures to avoid or reduce adverse environmental impacts.
Chapter 3

Unavoidable adverse impacts are described in detail in Chapter 3. One resource, roadless character and wilderness potential, would be affected. About 542 acres of 132,339 total roadless acres would no longer be eligible for wilderness consideration. Natural appearance and integrity of the area would decrease. There would be a short-term loss of solitude and a long-term loss of primitive recreation opportunity.

**Short-term Uses of the Human Environment and the Maintenance of Long-term Productivity**

Short-term uses are those that generally occur on a yearly basis, such as livestock grazing or timber harvest. Long-term productivity refers to the capability of the land to provide market outputs and amenity values for future decades. The quality of life for future generations depends on the capability of the land to maintain its productivity.

For the Sloan-Kennally proposed project, management requirements and mitigation measures built into the action alternatives ensure that long-term productivity will not be impaired by the application of short-term management practices. For some resources, such as timber and water quality, long-term productivity is expected to increase as a result of the action and required mitigation.

**Conflicts with Other Agency Goals and Objectives**

Research, interviews, and public involvement with other federal and state agencies indicate there are no other major conflicts between the provisions of the proposed activities and the goals and objectives developed for other governmental agencies.

A small stream tributary
Chapter 4

Public Involvement

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Chapter 4. Public Involvement

Public Involvement Summary

The Forest began the public involvement process for the Sloan-Kennally timber sale in 1991 by placing a Notice of Intent to Prepare an Environmental Impact Statement in the March 19, 1991 issue of the Federal Register. The notice invited comments on the proposed timber sale and on the scope of the environmental analysis and potential issue categories. An invitation to comment was also sent to people on a planning mailing list, and a press release was sent to the McCall newspaper, The Star News. In addition, the Forest conducted a public field trip in June of 1992.

On May 6, 1999, the Forest published a revised Notice of Intent to Prepare an Environmental Impact Statement in the Federal Register. The ID team used comments received from this notice and combined them with all other previous comments to this project proposal. In June of 1999, the Forest released a Draft EIS for public comment. It received a total of 11 response letters. All comments helped identify issues and the scope of the analysis for the proposed Sloan-Kennally Timber Sale.

A full detail of meetings, telephone calls, written correspondence, and other public involvement communication is in the project record.

List of Recipients of the Final EIS

The following is a list of the businesses, agencies, and individuals to whom this Final EIS for the Sloan-Kennally Sale has been sent. This list includes respondents to the Draft EIS, those who requested copies, required agencies, and other involved parties. Additional copies of this document are available by request from the Payette Forest Supervisor’s Office in McCall Idaho.

Businesses and Media

Boise Cascade Corporation
Croman Corporation
Evergreen Forest Products
J.I. Morgan Inc.
Long Valley Advocate
Rocky Mountain Log Homes: Patrick Connell
Simpson, Thacher & Bartlett: Bob Cusumano
The Star News

City and County Officials/Congressional Delegation

Adams County Commissioners
John Hatch, Congressman Mike Crapo
Rep. Twila Hornbeck
Rep. Gertrude Sutton
Rep. Donna Jones
Chapter 4

Rep. Helen Chenoweth
Senator Judith Danielson
Senator Mary Hartung
Senator Larry Craig
Valley County Board of County Commissioners

Federal Agencies

Advisory Council on Historic Preservation
APHIS
Agriculture, U.S. Department of:
Forest Service
  Director, Environmental Coordination
  General Service Administration, Office of Planning and Analysis
National Agricultural Library
Natural Resource Conservation Service
Environmental Protection Agency
Federal Energy Regulatory Commission
Interior, U.S. Department of:
  Bureau of Land Management,
    Cascade Resource Area Manager
  Office of Environmental Affairs
  U.S. Fish & Wildlife Service
Rural Electrical Administration

Organizations

Alliance for Wild Rockies
American Wildlands: Judith Brawer
Boise State University: JYL Hoyt
Colorado State University
Columbia River Inter-Tribal Fish Committee
Defenders of Wildlife: David Zaber
The Ecology Center
Forest Guardians
Idaho Conservation League
Idaho Rivers United
Idaho Sporting Congress
Idaho Wildlife Federation
Nez Perce Tribe: Paul Kucera, Fisheries Dept.
Nez Perce Tribal Executive Committee: Samuel Penney
Northwest Timber Workers
Payette Forest Watch
Payette N.F. Grazing Association: Welden Branch
Shoshone-Bannock Tribes: Arnold Appenay
Shoshone-Paiute Tribes of Duck Valley
State Agencies

Idaho Department of Lands (Clearwater Area Office, McCall Area Office)
Idaho Department of Fish & Game
Idaho Department of Water Resources
Southwest Idaho Division of Environmental Quality

Individuals

Ron Hamilton
Roger Phillips
Richard Renstrom
Brock Rainey
Erik Ryberg
John Swanson

Commentors to the Draft EIS

In June, 1999, the Payette National Forest released the Sloan-Kennally Timber Sale DEIS. Following a 45 day public comment period, several public agencies, organizations, and individuals submitted comments to the Forest. Each comment letter, listed below by author, is assigned a number to track through the review and response process in this Chapter.

List of Commentors

<table>
<thead>
<tr>
<th>Letter No.</th>
<th>Commentor Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brock Rainey</td>
</tr>
<tr>
<td>2</td>
<td>Idaho Wildlife Federation (Norman C. Anderson)</td>
</tr>
<tr>
<td>3</td>
<td>John R. Swanson</td>
</tr>
<tr>
<td>4</td>
<td>Richard Renstrom</td>
</tr>
<tr>
<td>5</td>
<td>Boise Cascade Corporation (Dave Van De Graaf)</td>
</tr>
<tr>
<td>6</td>
<td>Alliance for the Wild Rockies (Don Smith)</td>
</tr>
<tr>
<td>7</td>
<td>Erik Ryberg on behalf of The Ecology Center, Inc., Payette Forest Watch, Inc., and The Idaho Sporting Congress, Inc.</td>
</tr>
<tr>
<td>8</td>
<td>Ron C. Hamilton</td>
</tr>
<tr>
<td>9</td>
<td>Valley County Board of County Commissioners</td>
</tr>
<tr>
<td>10</td>
<td>U.S. Environmental Protection Agency (Richard B. Parkin)</td>
</tr>
<tr>
<td>11</td>
<td>Idaho Division of Environmental Quality (Diane Riley)</td>
</tr>
</tbody>
</table>
Comments and Responses to the Draft EIS

The ID Team reviewed each public comment and addressed those comments that were substantive in nature. Each comment and response is listed by letter number and by its resource topic in alphabetical order.

Comments on Access and Road Closures

Comment from Letter 4: Suggestion to turn closed and obliterated roads into trails to maintain access to the forests.

Response: During the analysis process, the project recreation specialist identified roads to keep open to travel by foot, ATV, and motorcycle. The analysis identified an opportunity to convert 0.4 miles of Road No. 50174 and 0.4 miles of Road No. 50332 to trails. The remaining roads in the planning area to be closed are short spur roads that do not provide access for recreation opportunities or destinations or are no longer needed for resource management.

Comment from Letter 7: The document must show the location of all temporary roads including those that the timber sale administrator is going to permit to be built.

Response: The need for and location of temporary roads depend on factors normally determined on-site during logging operations. Based on site-specific review of all proposed harvest units, there will likely be a need for one temporary road into unit 427 with an estimated length of approximately 1,000 feet. No temporary roads will be constructed to access units within the roadless area. The timber sale administrator is required to apply all management requirements and mitigation measures listed in Chapter 2 to temporary roads and non-permanent landings, including obliteration after use. Because the area has been surveyed for the presence of heritage resources and sensitive plants, we foresee no impacts to these or any other resources from temporary roads.

Comment from Letter 7: Will the closed roads receive maintenance? Will they be closed to all motorized vehicles, including motorcycles?

Response: Road No. 50397 is scheduled to be closed with a gate and would continue to maintained for administrative use. Roads scheduled for closure with earthen berms would be maintained prior to closure and would remain accessible to motorcycle and ATV use as described in the Payette National Forest travel plan. Maintenance on these roads would occur as needed. The annual review and update of the Forest travel plan provides the public a forum with which to make changes to access management decisions. For more information on specific road plans within the Sloan-Kennally planning area, see Appendix D in the EIS.

Comment from Letter 9: Road obliteration, closure and decommissioning was difficult for us to follow. We suggest that the FEIS include a larger scale color coded map illustrating the roads to be constructed, improved, graveled, obliterated, closed and decommissioned. In addition, we recommend that roads currently in use but proposed for closure be signed for one full year prior to closure. This would allow forest visitors to provide specific feedback about the effects of prohibiting use of these roads.
Response: We will take your suggestion for a color map under advisement. We have found from past experience that color maps increase printing costs upwards of 6 times. For one recent EIS, the printing cost jumped from the typical $2,000 per EIS to nearly $12,000 for the same size document with color maps. We will make some changes to improve the clarity of the maps and tables associated with road obliteration, closures and decommissioning. We will provide Valley County with a large scale color coded map along with the FEIS.

We will also consider posting signs on roads scheduled for closure prior to the actual closure. To delay a decision on road closures for a year or more would result in delaying the decision on the timber sale for that time as well because the effects of the closures are tied directly to resource effects displayed in the EIS. A delay of this magnitude would likely result in new direction, listings, policies, etc. that would require rework of the final document and could possibly eliminate the sale altogether. It is a good suggestion, and we will consider this type of public signing earlier in future NEPA projects.

Comments on Economics

Comment from Letter 5: The sale of timber from the national forests provides jobs in rural, local communities. By treating more of the area, more useable wood could be harvested. This is especially important at the time when both the Boise and Payette National Forests are offering less timber than allowed in their forest plans.

Response: We agree that timber harvest from national forests provides jobs, and an analysis of the number of jobs can be found in the Economic and Socio-economic section in Chapter 3. The Payette must provide a balance between all uses on the national forest, including timber harvest. The analysis in Chapter 3 displays the tradeoffs of levels of timber harvest. In Chapter 2, the section entitled “Alternatives Considered but Eliminated from Detailed Study” provides reasons why other alternatives harvesting more timber were not carried forward. Forest Plans are not guarantees of timber harvest levels, but rather they define the upper limits of harvest within resource constraints at the time.

Comment from Letter 6: Summarize current total yearly volume sawmill production capacity within forest zone of influence. Indicate whether recent forest harvest outputs (e.g. last three years) combined with this timber sale will contribute to meeting existing production capacity.

Response: Mill capacity varies with how many shifts the mills run. The mill capacity of running one shift a day would be about a third of running three shifts a day. The best available information indicated that in 1987, the five mills within the west central highlands produced 203 mbf of timber. Two of these mills, Council and Horseshoe Bend, have since closed. The current mill production is about 150 mbf. The proposed timber harvest from Sloan-Kennally would contribute to meeting the mill’s demand for timber by approximately 2 to 3 percent of the total yearly demand.

Comment from Letter 6: Provide a definition differentiating “below-cost” sale from a “deficit” sale, as stated on page 3-81 of the DEIS.

Response: A below-cost timber sale is one which costs the Forest Service more to prepare the sale, including such things as NEPA preparation, timber sale marking, administration, and reforestation costs, than the money collected from the sale. A deficit sale is one which is advertised for less than the average base rate. Base rates include a minimum timber value plus any mandatory reforestation costs. Advertised or appraised rates include the expected value of the timber sold at the sawmill less logging costs.
Comment from Letter 6: Indicate cost of reforestation.

Response: The average cost for planting is currently about $560 per acre. See page 2-7 in the section entitled “Reforestation and Knutson-Vandenberg (KV) Opportunities.” Planting costs are included in the base rates of the timber sale and by law are guaranteed to be collected.

Comment from Letter 6: Indicate cost of road construction. Indicate source of funding.

Response: The estimated cost of road construction for 0.2 miles of road is $3,600 and will be paid for by the timber purchaser.

Comment from Letter 6: Indicate cost of road reconstruction. Indicate source of funding.

Response: The estimated cost of road improvements is $170,000. Much of the improvement costs are for graveling. Graveling on main roads, which receive public use, will be paid for by the Forest Service using appropriated money; other road improvements will be paid for by the timber purchaser.

Comment from Letter 6: Indicate Payette Forest average TSPIRS cost per thousand board feet for 1997.

Response: The TSPIRS report does not display this information directly; however, we developed a cost per thousand board feet sold in 1997 by dividing the total Payette National Forest timber-related expenses ($10,109,484) by the total timber volume sold and awarded (39.05 mmbf) for an average cost of $258.89 per mbf.

Comment from Letter 6: Indicate how anticipated timber receipts was determined.

Response: The anticipated timber receipts were estimated by the method explained on page 3-79 in the DEIS.

Comment from Letter 6: Indicate anticipated receipts per species cut.

Response: Receipts by species cut was not estimated for individual tree species. The percent of each tree species was used to estimate total receipts.

Comment from Letter 9: The economic and socio-economic assessment does not adequately document that the local economy has declined rapidly in recent years. Recreation on National Forests cannot make up the loss in the 25% fund due to falling timber harvest levels. The DEIS describes the value return to the government as negative, in part, due to the cost of NEPA analysis, timber sale preparation, and Forest Service overhead costs. We believe it’s worth noting that these expenditures would be more efficient if the acres treated increased.

Response: The economics and socio-economics issue is related to the efficiency of the Forest Service timber sale program and the timber-linked jobs and income associated with the Sloan-Kennally Timber Sale. The issue was identified based on public and in-house scoping. The rapid decline in the local economy had not been raised as an issue. We agree that the amount of National Forest timber offered can have an effect on the local economy and have displayed this by determining the number of timber-linked jobs and income associated with this timber sale. We have not tried to analyze or document all the factors that are affecting the local economy.
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We agree that the economy of scale in treating more acres could reduce the unit cost and increase returns to the Government. However, we believe we are treating the acres within the planning area that are reasonable to achieve the desired future condition of vegetation while maintaining a balance with other resource objectives. Treating additional acres could actually reduce the returns to Government if those treatments involved higher costs of helicopter yarding low value whitewoods in the roadless area, the area in greatest need for treatment.

Comments on Fire and Air Quality

Comment from Letter 6: Indicate whether the 55% of forest land in planning area composed of subalpine fir, etc., is within historic range of variability for fire risk.

Response: The lodgepole pine and subalpine fir cover type, mainly within the roadless area, is at the upper limits of historic range of variation. Lethal wildfire could occur at anytime under the right conditions. Most of this area would likely burn as it has historically because it is within the HRV.

Comment from Letter 6: Indicate existing fuel loadings for each forest type.

Response: The Sloan-Kennally planning area is dominated by two forest types: mixed conifer and lodgepole pine/subalpine fir. Downed woody fuel loading ranges from 9 to 26 tons per acre in mixed conifer stands. In the lodgepole pine/subalpine fir forest type, fuel loading averages 12 tons per acre.

Comment from Letter 6: Indicate fire risk per forest type as determined by Fire-Based Hazard/Risk Assessment model run.

Response: Fire risk is reported by subwatershed, not forest type, for the Payette National Forest. A fire hazard/risk assessment for the Payette National Forest was completed in 1998. This assessment superimposed vegetation conditions with historic fire occurrence to depict areas most at risk from fires burning outside of the historic range of variation (HRV) for a given fire regime. Three subwatersheds which in whole or in part comprise the watershed were analyzed to arrive at a risk-rating: Flat-French, Lower Kennally Creek, and Middle Kennally Creek. Due to ingrowth from the shade tolerant conifer component and selective timber harvest, 4,502 acres of the 9,616 acres in these subwatersheds are outside of the HRV. In addition, two of the three subwatersheds had a high or moderate occurrence of fires from 1957 to 1997. Considering the results of the hazard risk assessment, the watershed is at a moderate to high risk of fires burning outside of HRV. This information can be found in the Fire/Fuels analysis report, located in the project file.

Comment from Letter 7: How will slash be gathered, exactly, for burning?

Response: This information is provided in Appendix C of the EIS which gives the specific details of slash disposal for each proposed harvest unit in both action alternatives.

Comment from Letter 9: The DEIS includes no assessment of large wildfire probability based on the relative risk of fire ignition in the Gold Fork basin. Nor does it evaluate the adverse effects of a large wildfire on wildlife and endangered species, or its accompanying threat of increased sediment and phosphorous production. In other words, the full environmental cost of no action or taking only limited
action is not displayed for the decision maker or for improved public understanding of the huge problem that exists in Valley County’s forested lands.

Response: A fire hazard/risk assessment was conducted for the entire Payette National Forest, and relevant discussion is located in the project file. In this assessment, historic fire occurrence and vegetation conditions are considered to rank watersheds as low, moderate, or high risk of burning outside of the historic range of variation. The process does consider probability of ignition (as well as vegetation conditions) to assign a risk rating associated with the likelihood of a fire burning outside of its HRV. This assessment determined the fire risk to be moderate to high in the Gold Fork watershed. The risk is greatest in the roadless area and lower in the area already under management. Under existing policy, fire starts in the roaded and roadless areas of the watershed will be actively suppressed.

Because our tools to effectively manage the roadless portion of the Gold Fork watershed are currently limited, we can have little or no influence on fuel loadings and subsequent wildfires and their resulting impacts on wildlife and water quality with any alternative. The most significant constraint is the interim roads policy which precludes road construction within roadless areas. Economic considerations largely preclude harvesting the low-value timber using helicopters. Also, prescribed natural fires, now called Wildland Fire Use for Resource Benefits (WFURBs), cannot be applied to non-wilderness lands under existing Forest Plan direction or before a Forest Fire Management Plan is written. The effects of large wildfires would be virtually the same under even the most aggressive action alternative. With no ability to influence large wildfires with the proposed Sloan-Kennally Timber Sale, dispaying effects which do not materially differ between any alternative would not help the decision-maker select an alternative.

Comment from Letter 10: Per our scoping comments, we believe you should describe the smoke management program that IDEQ is developing for Southern Idaho and how you intend to adhere to its requirements.

Response: The Southwest Idaho Ecogroup (Boise, Sawtooth, and Payette NFs) have voluntarily entered into the Montana/Idaho State Airshed Group. This group has addressed regional air quality concerns and jointly developed the smoke management program. This consortium, formed in 1978 in Montana, has expanded to involve Northern Idaho (who joined in 1990) and Southern Idaho (who joined in 1999). These three units and the associated members have signed a Memorandum of Understanding (MOU) and operate under a joint operating plan. By signing this MOU, the Payette National Forest agrees to comply with the monitoring and go/no-go direction provided by the group.

The overall area is divided into 25 geographically distinct airsheds. The Payette NF is part of airsheds 14 and 15. The objectives of the group are to reduce air quality impacts to urban areas, facilitate the use of burning to improve resource conditions, improve communication between private and public landowners who utilize burning, and reduce cumulative smoke impacts through coordinated scheduling. An executive board oversees the group, which involves representatives from the State of Montana, Industry groups, the Department of Interior, Forest Service, and Idaho Division of Environmental Quality. A Monitoring Unit, based in Missoula, Montana, evaluates weather forecasts and cumulative impacts of burns. Prior to September of each year, representatives from each member submit a list of prescribed burns planned for the entire calendar year. This list provides the Monitoring Unit with information which describes the burn location, type, and fuel variables. Starting September 1 of each year, the Monitoring Unit evaluates weather forecasts and the cumulative acreage planned for burning for each day. If adverse weather conditions such as poor dispersion or unacceptable air quality impacts are likely, they contact the local airshed coordinator with a “no-go” decision. The Montana/Idaho State Airshed Group will serve to
ensure/improve compliance with local, state, and federal air quality regulations by coordinating activities over a regional scale, and by regulating the timing and amount of burning to minimize undesired cumulative effects of smoke.

**Comment from Letter 11:** We request that any wildland or prescribed fire be conducted consistent with the Federal Clean Air Act and any associated federal, state, and local policies and regulations.

**Response:** It is our intention to fully comply with direction provided in the Federal Clean Air Act and other regulations, such as the National Ambient Air Quality Standards, in our prescribed burning activities.

**Comment from Letter 11:** The Draft EIS indicates that air quality was an issue that was not analyzed because the potential effects were avoided or eliminated through management requirements. If the Forest Plan and the Forest Fire Action Plan are a few years old, they would not reflect all the recent changes in federal and state regulations and policies related to wildland and prescribed fire. We are therefore providing the following information that needs to be included in your evaluation.

**Response:** Thank you for providing the information describing recent revisions in air quality regulations. During the preparation of the Draft EIS, the Fire Planner for the team prepared an Air Quality Analysis which projected smoke impacts resulting from the proposed slash disposal in this sale. This analysis was based on Federal and State regulations and policies related to wildland and prescribed fire, the same as those you recommended. The analysis is located in the planning project file because impacts to visibility and air purity were within guidelines established by relevant legal direction. Using the Simple Approach Smoke Estimation Model (SASEM), the Fire Planner found compliance with air quality regulations for PM-10, total suspended particulates, and visibility impacts to Class 1 airsheds within 200 km of the analysis area given the prescription conditions planned for burning. In addition, collaboration, monitoring, and burn scheduling with the Montana/Idaho State Airshed Group will ensure compliance with policies regulating air quality.

**Comment from Letter 11:** We support a coordinated effort between state, interstate, federal, and local agencies. All planned wildland and prescribed fire activities must include careful consideration of air quality impacts and requirements.

**Response:** Coordinated, multi-agency planning will be conducted to ensure compliance with air quality regulations. Refer also to response to Letter 10 above.

**Comment from Letter 11:** The 1977 CAA amendments made it very clear that the Federal Government is subject to the CAA requirements.

**Response:** We agree; the Forest Service is subject to and will comply with the 1977 CAA.

**Comment from Letter 11:** A conformity determination must be made for projects emitting air pollutants over specified de minimis levels to show that the projects will not contribute to any NAAQS violations.

**Response:** SASEM modeling showed that the proposed air pollutants would not contribute to any NAAQS violations.
Comments on Fish and Fish Habitat

Comment from Letter 1: Improvement in the areas mentioned will be a great benefit to bull trout habitat.

Response: Thank you for your comment.

Comment from Letter 6: Indicate whether streams in analysis area meet RMO standards in compliance with PACFISH/INFISH.

Response: See pages 3-41 and 3-42 of the DEIS. Table 3-9 displays available data and INFISH RMOs. These data indicate high width/depth ratios when compared to INFISH RMOs. Large wood appears to be adequate, and temperature data indicate stream temperatures are within an acceptable range. Pool habitat is lacking in some areas. Bank stability's met RMOs, with the exception of the East Fork of Kennally Creek, which is upstream of the project area. Established RHCAs (stream buffers) that follow INFISH direction are part of the project design and will protect habitat components relating to RMOs (temperature, bank stability, pool habitat, etc.).

Comment from Letter 6: Indicate presumption as to why bull trout are not now found in Kennally Creek. Also, indicate season of each year in which bull trout surveys were performed in analysis area.

Response: The Cascade and Gold Fork dams created barriers and prevented establishment of migratory bull trout populations. In addition, bull trout in the Gold Fork drainage may have been out-competed by introduced brook trout which are well established in Kennally Creek. Expansion of the bull trout population that exists in another part of the Gold Fork watershed is unlikely because of existing brook trout populations. Regardless of the reasons, recent surveys have not found bull trout in the analysis area. The reason(s) why they are not found here was not critical to the fish habitat analysis for Sloan-Kennally. Forest Service crews conducted their surveys from mid-September to mid-October of 1991, and at the end of July in 1998. Boise Cascade Corporation surveyed streams outside the analysis area in mid- to late August of 1994. The Idaho Department of Fish & Game surveyed nearby areas outside this analysis area in late July of 1998.

Comment from Letter 6: Indicate/summarize INFISH direction for roads management.

Response: This information has been added as Appendix H of the FEIS.

Comment from Letter 6: Indicate road density in RHCAs within planning area. Indicate number of miles of road to be closed in RHCAs. Indicate number of miles of roads to be obliterated in RHCAs.

Response: The road density in RHCAs in the planning area is 5.23 miles/ sq. mile. There are 3.55 miles of road in RHCAs scheduled to be in a closed status after the sale. There are an additional 1.02 miles of road in RHCAs that will be obliterated. Some of these roads segments may already be in a closed or naturally decommissioned status and will not be used by the sale. In addition, 1.38 miles of road in RHCAs will be graveled. This graveled figure includes 0.52 miles that will closed after the sale and is included in the 3.55 miles noted above.
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Comment from Letter 7: A forthright showing of how this project will affect fish habitat and populations is necessary. A complete set of data figures for the affected streams should be shown, including results of sediment studies, riparian health, streambank stability, flows, and temperature.

Response: Data were collected in 1991 specifically for the Sloan-Kennally project. Additional fish presence/absence surveys were done in 1998. This data is summarized in Table 3-9. See pages 3-39 to 3-47 of the DEIS for the analysis of effects to fish habitat. Also refer to the Water Resources section on pages 3-29 to 3-38 of the DEIS for additional information on riparian areas and channel stability. The Sloan-Kennally planning area has not received extensive study or long term monitoring of habitat elements because it is not occupied by any threatened, endangered, or sensitive fish species. The DEIS describes the protection of fish habitat elements that will occur because of established buffers (RHCAs).

Comment from Letter 8: Questions the logic of the fuel transportation restriction and need for a pilot car over unsurfaced dirt roads on page 2-17. Is the surface the problem or the width of the road or the gallons being transported? Suggests the Forest Service review their liability on the regulation of something for which they lack authority.

Response: The reasons for fuel-related mitigation are stated as objectives in Table 2-2. They address reducing response time in the event of a spill, reducing the risk of a spill, and reducing the chance of fuel reaching live water. The problem relates to larger quantities of fuel transported over narrow, unsurfaced roads. We believe we have the authority to require such protection measures on Forest Development roads on National Forest System lands within the timber sale contract.

Comments on Forest Health

Comment from Letter 1: I believe the best choice for the area is Alternative 2. It will improve stand structure and species composition while reducing the threat of insects and fire.

Response: Thank you for your comment.

Comment from Letter 5: Concern that not enough acres are being treated given the amount of mature and old forest that is present, and that because of the health problems in these mature forests, adjacent lands owned by Boise Cascade Corp. lands could be adversely affected.

Response: Acres proposed for treatment are limited for two primary reasons: (1) there is a large component of roadless in the planning area; and (2) past timber harvest and other resource management objectives/constraints limit what can be done in the roaded portion of the planning area.

Approximately one-half of the planning area is in the Needles Roadless Area (Figure 1-3 in DEIS, page 1-7). These lands are largely at the upper limits of historic norms for stand structure, species composition, stand density, fuel loading, and insect and disease occurrence. Growth is slowing and mortality is occurring due to age, density, and insect and disease activity. Tree mortality remains at endemic levels (not epidemic) for the area. A hazard-risk assessment was completed for three subwatersheds in the Gold Fork watershed. The watershed as a whole is at a moderate to high risk of burning outside of historic norms according to the model used, but the planning area would mostly burn within historic norms - except possibly for some mixed conifer islands - because of the large amount of the lodgepole pine cover type. The roadless portion of the planning area consists mostly of the lodgepole
pine and subalpine fir cover type. Because it is uneconomical to yard lodgepole pine with a helicopter and because the Forest Service is presently prohibited from building roads in roadless areas due to the National interim roads policy, most of this area cannot be treated at this time. The entire area was still considered in the analysis. The roaded portion of the planning area has been managed intensively for timber production. These roaded lands provide a forested condition for other resources such as wildlife, fish, and recreation while providing timber for local mills. Some of these lands are left untreated or lightly treated to protect other resources; for example, providing elk cover, riparian buffer for fish, and habitat for goshawk.

Regarding possible risk to timber stand health on adjacent Boise Cascade lands, we offer this assessment. Because of past treatment in the roaded portion of the planning area, there are no significant health problems (insects and disease) on these lands that would cause adverse effects on BCC lands. The managed lands are adjacent to Boise Cascade lands, providing a buffer from the roadless area where health problems do exist. Timber types in the roadless area are different from timber types on BCC lands. The roadless area contains lodgepole pine forest, while BCC lands contain a mixed conifer forest. Because of this, insect and disease problems in the roadless area should not affect BCC lands. For example, mountain pine beetle in lodgepole pine in the roadless area would not infest the mixed conifer forest on BCC lands.

Comment from Letter 6: The draft EIS states that “insect and disease occurrence” “are now at the upper limits of historic norms.” On the same page (1-10) it states that “Presently there is not an epidemic occurrence of any of these pathogens.” Please clarify.

Response: Insect and disease occurrence is at the upper limits of historic range of variation (HRV) but until major mortality starts to occur and uncharacteristic fuel loadings build up so that an uncharacteristic wildfire would occur, the area remains within HRV. Epidemic levels of pathogens can occur and still be within HRV, especially in the lodgepole pine cover type.

Comment from Letter 6: Provide validity and effectiveness monitoring results supporting assertion that proposed silvicultural “treatment”, i.e. logging and planting, will result in conversion of existing forest type to a “regeneration of early seral species such as western larch, Douglas-fir, lodgepole pine, and ponderosa pine”.

Response: Page 2-7 of the DEIS, under the heading “Reforestation”, describes regeneration success within the Sloan-Kennally planning area. The successful tree planting program on the Payette National Forest over many years is partly a result of planting the species mentioned. Reforestation files are available at the Forest Supervisor’s Office and at each Ranger District.

Comment from Letter 9: We believe this proposed project is a prime example of a Forest Service management philosophy shift in recent years that will treat too few acres to effect timely improvement in forest ecosystem health on federal lands. The DEIS describes a 5,100 acre planning area in a portion of the Gold Fork River basin where 3,304 acres have fuel loading and timber stand conditions that are at the upper limits of historic norms for fire severity potential. The desired condition speaks of a need to have 4,763 acres in a healthy condition. Yet, the only alternatives studied in detail proposed to treat 534 acres and 425 acres respectively.

Response: The numbers quoted above can give a somewhat misleading picture of what is available for treatment. If a reader of the DEIS considers the big picture, it should be apparent why the limited acreage
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is proposed for treatment. For instance, while there are 3,304 acres at the upper limits of historic norms for fuel loading and timber stand conditions, Figures 1-3 (roadless area), 1-4 (stand ages), 3-2 (working groups) and 3-3 (fire regimes) show the majority of these acres are within the roadless area and consist of lodgepole pine and spruce/fir types with mixed and lethal severity fire regimes. The fact that no roads can be built in the roadless area to treat these low value whitewood stands limits opportunities for treatment. Also in considering where the goshawk nests and associated Post Fledgling Areas are located (Figure 3-11), additional limits to available treatable lands become apparent.

While the DEIS states the desired condition is to have all stands in a healthy condition, many of these acres are in the roadless area where treatment at this time is impractical. Some timber stands are in a healthy condition now and others will be treated with this project. Other constraints limiting treatment at this time are active goshawk nests, INFISH buffers, visual retention standards, and water quality concerns with Cascade Reservoir. Treating the acres in Alternative 2 in the FEIS is what is feasible at this time.

Comment from Letter 9: Our comments are intended to encourage more activity on your part to restore health to forest ecosystems.

Response: Thank you for your comment; please refer to the response above.

Comments on Old Growth Timber

Comment from Letter 6: Provide definition differentiating old-growth and mature forest.

Response: This definition can be found in the glossary in Appendix A, pages A-8 and A-10 in the EIS. Old growth is a subset of mature/old forest.

Comment from Letter 6: The DEIS indicates there will be a reduction in acres of old growth within the analysis area. Indicate estimated forest-wide aggregate acres of remaining old growth.

Response: This is beyond the scope of the cumulative effects analysis for old growth for this project. Theoretical Home Range Circle #23 is the area analyzed for cumulative effects. Within the circle, we estimate there are 10,499 acres of mature and overmature stands when all known actions are considered. The Forest has ground verified 851 acres (2.7 percent) of old growth in Circle # 23 that will be retained, after which further inventories were not conducted. The Forest predictive model estimated there is between 0 and 10 percent old growth (an estimated total of 22,100 acres) in the circles on the east side of the Forest (circles 21 - 43). These have not been ground validated and, as explained in the DEIS, this is probably a very conservative estimate.

Comments on Roadless Area

Comment from Letter 2: Upper Columbia River Basin assessments identified this roadless area as a potential stronghold for threatened and endangered species.

Response: The Upper Columbia assessments identified all roadless areas as potential strongholds for threatened and endangered species. However, no T&E species have been identified in the planning area. In addition, very few acres are planned for treatment in the roadless area and those that are, will be logged.
using a helicopter. The effects to all resources except roadless character and wilderness potential are minimal as described in Chapter 3 of the EIS.

**Comment from Letter 2:** The roadless area being at the heads of drainages with steep highly erosive soils will have big impacts on soils, water, fish, and wildlife habitat.

**Response:** While it is true the roadless area within the planning area includes the heads of drainages, all harvest activities are proposed in the lower parts of these drainages. The analysis in Chapter 3 of the EIS for the resources listed above show minimal impacts rather than large adverse impacts. In fact, under either action alternative, the long term effects to these resources are improvements over the existing condition.

**Comment from Letter 2:** Encroaching on the roadless area, even these few acres, will affect wilderness values and the area’s potential for wilderness designation.

**Response:** We partially agree; however, the extent of those effects under the proposed action are minor when looking at the roadless area as a whole (542 acres out of 162,430 acres). Two alternatives which would protect potential wilderness values and roadless character, are considered in this analysis. Alternative 1, No Action, and Alternative 3, which was developed specifically to address wilderness concerns, are discussed in detail in Chapter 3.

**Comment from Letter 2:** We strongly recommend roadless areas be maintained in their current state.

**Response:** Thank you for your comment. See response above. Alternatives 1 and 3 consider that option.

**Comment from Letter 3:** Fully preserve all roadless areas.

**Response:** Thank you for your comment. See response above. Alternatives 1 and 3 consider that option.

**Comment from Letter 3:** Designate the Needles Wilderness of 205,000 acres.

**Response:** This is beyond the scope of this project. Wilderness areas can only be designated by Congress.

**Comment from Letter 7:** The roadless area must be evaluated in light of recent Regional direction and its boundaries must be verified. No logging should occur in the roadless area unless it is disclosed as being within the roadless area.

**Response:** All entries into the roadless area are consistent with National and Regional direction. No road construction is proposed within the roadless area under either alternative as disclosed in Chapters 2 and 3. All harvest would be done with helicopters to existing roads. All proposed harvest and resulting impacts in the roadless area are fully disclosed in the Roadless Character and Wilderness Potential section of Chapter 3, pages 3-13 through 3-24, of the DEIS.

As stated on page 3-18 of the DEIS, the roadless area boundary on the Payette National Forest was validated using the 1998 Roadless Area Inventory and Evaluation Protocol for the Southwest Idaho Ecogroup. Based on this evaluation, the Forest added 3,640 acres to its portion of the Needles Roadless
Area. The Boise National Forest has validated the roadless boundary of its portion of the Needles Roadless Area. All impacts to the roadless area described in the EIS are based on this updated boundary.

Comment from Letter 9: The evaluation of Roadless Character and Wilderness Potential appears to be misleading. It uses the tracking indicators of "acres of roadless area eliminated from wilderness consideration" and "acres remaining eligible for wilderness consideration." Since Congress is the final arbiter in the decision about wilderness, it seems a bit disingenuous for the Forest Service to make this determination at this stage in the analysis. It does seem appropriate to determine the effects on wilderness attributes and roadless character.

Response: It is true that only Congress can designate wilderness. Our analysis displays what would likely be available for consideration as wilderness by Congress. If the analysis of effects on wilderness attributes shows these attributes have been eliminated by timber harvest, i.e. large areas of stumps, etc., the logical conclusion is these areas have been eliminated from wilderness consideration. The determinations in the EIS, however, do not preclude Congress from considering all the roadless area for wilderness, in a separate process.

Comment from Letter 10: Our concern is the irreversible loss of roadless character by harvesting a portion of the Needles Roadless Area under the preferred Alternative. Without a clearer explanation as to why this area cannot be avoided, we believe Alternative 2 should not be selected.

Response: We acknowledge your concern for the irreversible loss of roadless character by harvesting in the Needles Roadless Area. The Forest Plan allocated the portion of the Needles Roadless Area within the planning area to general forest management. The Plan anticipated the area would be managed to achieve, among other things, the desired future condition for timber. The primary reason for proposing entry into the roadless area is to meet the purpose and need of this project. Alternative 3 of the DEIS displays the effects and tradeoffs of avoiding roadless area entry and maintaining the roadless character.

Comment from Letter 10: Please discuss how this alternative (Alternative 2) is in compliance with the Forest Service Interim Rule on the Temporary Suspension of Road Construction and Reconstruction In Unroaded Areas.

Response: The Interim Rule prohibits most road construction within the unroaded portions of RARE II inventoried roadless areas, of which the Needles Roadless Area within the project area qualifies. Alternative 2 will not construct any roads, including temporary roads, within the boundaries of the roadless area. The Interim Rule does not prohibit timber harvest within roadless areas as long as roads are not constructed. Therefore, Alternative 2 is in full compliance with the Interim Rule.

Comments on Soil and Water

Comment from Letter 6: Indicate whether the Gold Fork River Watershed Analysis followed the six step process for Ecosystem Analysis at the Watershed Scale. Indicate step six recommendations.

Response: The Gold Fork River Watershed Analysis did not follow the six step process for Ecosystem Analysis at the Watershed Scale. The six step process is used in cases of proposed modifications to RHCAs and other established standards. The Sloan-Kennelly project does not propose to modify any standards with either action alternative; therefore, the six step process is not required. The analysis we
used followed the basic structure outlined in Version 2.1 of the Standard Methodology for Conducting Watershed Analysis put forth by the Washington Forest Practices Board. Adaptations were made in the analysis to accommodate Idaho State regulations and Forest Service data collection formats. Recommendations were made in the form of “Resource Sensitivity Reports.” The two methodologies are very similar; both procedures characterize the human, aquatic, riparian, and terrestrial conditions, processes, and interactions at the watershed scale. While both methodologies are not decision-making documents, they establish the context for making decisions in environmental analyses. The Resource Sensitivity Reports identified road segments within the planning area which produce unacceptable levels of sedimentation and are targeted for graveling prior to log haul. The complete watershed analysis is included in the project record.

Comment from Letter 6: Indicate whether, and the extent to which, roads that have been obliterated currently contribute eroded sediment to nearby streams. Indicate the number of miles of these roads in RHCAs.

Response: This information is included in the DEIS. Please refer to Appendix D - Road Use and Status. Within Appendix D, please see the condition column for information on whether these roads are contributing sediment to nearby streams. There are 7.22 miles of road within RHCAs in the planning area.

Comment from Letter 6: The Forest Practices Water Quality Audit, DEQ, 1993, states that road construction associated with the North Kennally Creek Salvage sale indicated “poor planning of road drainage, direct discharge to streams.” Indicate proximity of this road to the analysis area, whether this road will be used in the proposed action, and it’s current condition.

Response: The Forest does not have a copy of this audit, however, the ID Team Leader contacted the letter’s author regarding the audit. The author indicated the audit was not specific on where or which road was involved or exactly what the specific problem was. When questioned about the issue, the timber sale administrator for the North Kennally Creek Salvage sale indicated there was no road construction involved, even temporary roads. The timber sale contract contains no plans for road construction. This was a small sale with all units located on existing roads. We are therefore not sure which road the audit was referring to; however, the North Kennally Creek Salvage sale and the roads used to remove the timber are located north and outside of the Sloan-Kennally planning area. The roads in the North Kennally Creek Salvage sale area are currently in good condition and will not be used for the Sloan-Kennally project.

Comment from Letter 6: Indicate validity and effectiveness monitoring results for BOISED model.

Response: The most recent monitoring of the BOISED model is described in a paper entitled “R1-R4 and BOISED Sediment Prediction Model Tests Using Forest Roads in Granitics” (Ketcheson, et al., 1999). The conclusions drawn from the paper may be summarized as such. The BOISED model appears to over-predict sediment delivery. The mass erosion component of the model predicted volumes of mass erosion well. However, mass erosion is more episodic than the model predicted. The last revision of the BOISED User’s Guide was December 1991.

Comment from Letter 6: Indicate current estimated yearly tons of sediment delivered to the Middle and Lower Kennally Creek subwatersheds. Indicate estimated tons of sediment entering streams for each of next five years.
Response: Pages 3-33 through 3-36 of the DEIS give current and projected sediment delivery over time for each alternative. Delivery is expressed as percent over natural because the model was developed as a quantitative index of cumulative sediment delivery from different management proposals within a watershed. It is inappropriate to use BOISED as a highly reliable prediction of absolute sediment quantities (pg. 3, BOISED User Guide).

Comment from Letter 6: Indicate whether M-K modeling for sediment has been performed. If yes, indicate results of said monitoring.

Response: The M-K model was not utilized in the Sloan-Kennally analysis.

Comment from Letter 6: Indicate cost of road obliteration. Indicate source of funding.

Response: The cost of road obliteration depends on a variety of factors. Most notably these factors would be: the number of stream crossings rehabilitated, the amount of fill material moved, and the amount of debris readily available for placement as ground cover. An estimated range of cost is $2,500 to $5,000/mile. Possible sources of funding for this work are congressionally appropriated soil improvement money, KV funds, and other collections from the timber sale contract.

Comment from Letter 7: The DEIS does not address how road density will change over time. Will, for example, the new roads be open before the old roads have been closed? Will there be any point when road density is greater than it is now?

Response: Road density is one data component for the Elk Habitat Effectiveness (EHE) model, the results of which are summarized on pages 3-65 and 3-68 of the DEIS. Additionally, page 3-27 summarizes the effects on soil productivity through road uses and closures. Please also refer to Appendix D, Road Use Status, for a summary of planned road uses, closures, and expected timing of closures. Road density will not be higher than it is now. Only 0.2 miles of road will be constructed, which will not measurably add to the road density, even if constructed before any other roads are closed.

Comment from Letter 7: When will the watershed improvements and other elements of the project occur? The Forest Service has argued in court that if there is not an exact date specified for when a project is to be implemented, it does not ever, technically, need to be implemented.

Response: Table 2-2 on page 2-14 of the DEIS lists the required mitigation measures and their planned implementation. For example, placing gravel on certain road segments and at designated stream crossings is required prior to any log haul. Also, Appendix D - Road Use Status, indicates the approximate timing of watershed improvement projects under the “Proposed Management” column.

Comment from Letter 7: Concerns for soil productivity and the need for evaluation and disclosure for this project.

Response: Refer to Mitigation Measures described on pages 2-14 and 2-15 of the DEIS. Also, Soil Productivity is thoroughly evaluated on pages 3-25 through 3-28 of the DEIS.

Comment from Letter 7: What are the soil types and where are the landslide prone areas? Will logging occur on any steep slopes or any unstable soil types?
Response: Refer to the Soil Productivity section, page 3-25 of the DEIS, for information on land types and unstable soils. While we are unclear about your definition of steep slopes; some helicopter logging is proposed on slopes estimated to be 45 to 55 percent. According to the Gold Fork River Watershed Analysis, the Sloan-Kennally planning area is outside any identified landslide prone areas.

Comment from Letter 7: What evidence do you have to suggest (and base your judgment on) that detrimental disturbance will be below 20% and soil productivity will be above 90% for the entire area?

Response: Refer to the Soil Productivity section in the DEIS, starting on page 3-26, for a description of the methods used to analyze detrimental disturbance and soil productivity.

Comment from Letter 7: Can you legally add sediment to these streams?

Response: Yes. Refer to page 3-34 in the DEIS for strategies to comply with the TMDL.

Comment from Letter 7: How do BMPs satisfy the State requirement for “monitoring and surveillance” of water quality?

Response: The implementation of BMPs is also a State requirement. More information would be needed to specifically address this question. Page 3-33 of the DEIS describes the past instream monitoring completed, and page 2-19 describes the instream monitoring that will be done. We suggest the commentor contact the Idaho Department of Lands directly to more thoroughly answer this question. The contact for this area is John Lillehaug at (208) 634-7125.

Comment from Letter 7: What is the ECA of the area?

Response: The Sloan-Kennally analysis did not utilize ECA (Equivalent Clearcut Acres) for determining effects on the water resource. Instead, the indicators used in the analysis include percent sediment yield over natural and hydrologic risk. Hydrologic risk is determined using Canopy Removal Index, which is similar to ECA, and Channel Stability Index.

Comment from Letter 8: Mitigation measures on page 2-15 reference reclaiming roads by piling on slash to 50% ground cover. This has been interpreted by the agency to be logs and stumps of relatively large size, creating passage barriers to wildlife and humans trying to move through the area. I also hope the hydrologists will begin to use the appropriate seed mix so that native species are not forced out by introduced species.

Response: If restoration of hydrologic function is the objective of road reclamation, continued human use of the road will be discouraged. Sites on which roads are converted to trails represent a balanced need for providing recreation access while protecting other resources. Materials such as logs and rocks available on-site dictate what will be used as ground cover on reclaimed road surfaces. Project work administrators have traditionally used a mixture of woody materials four inches in diameter and greater for reclamation. Materials three inches in diameter and less can present a fire concern. Large-sized materials are often placed at the beginning of a reclaimed road to discourage human use, allowing vegetation to reestablish and hydrologic function to be restored. By limiting large material to the beginning of a road reclamation project, it is unlikely to create passage barriers to living things trying to move through an entire area. Native seed mixes are the seed of choice for reclamation projects on the Payette National Forest for several years now.
Comment from Letter 10: How does this project relate to the TMDL (Total Maximum Daily Loading) efforts by the Idaho Department of Environmental Quality to restore water quality to the Gold Fork River and Cascade Reservoir?

Response: As a result of your comment, more information has been added to the FEIS Water Resources section (pages 3-33 through 3-35) which more completely defines the relationship between the Cascade Reservoir Phase II Watershed Management Plan, Cascade Reservoir TMDL, and the Sloan-Kennally Timber Sale proposal.

Comment from Letter 10: Since roads are a major contributor of sediment, we recommend additional information to supplement Table 2-2, Mitigation Measures. Give the criteria to be used to select roads for closure or obliteration. Explain if the roads are candidates for closure or obliteration include only those used in the project or all problematic roads in the watershed. Describe the current state of the roads that will be reconstructed.

Response: This information may be found in Appendix D - Road Use and Status. The roads evaluated for this project were limited to the planning area; however, the Gold Fork Watershed Analysis referenced in the DEIS evaluated all roads within the watershed. Emphasis was given to roads identified in that document. An additional field evaluation of all roads occurring in the planning area was conducted as well.

Comment from Letter 10: Give the current road density and how will it change post-harvest. What is meant by obliteration?

Response: The current road density in the planning area is 4.7 mi/sq mi. The resultant road density with an action alternative would be 3.9 mi/sq mi. The term “obliteration” is defined in the document’s glossary, Appendix A.

Comments on Timber

Comment from Letter 6: Indicate proposed estimate for cut per tree species for preferred alternative. Indicate proposed tree species to be cut for alternative three in roadless area.

Response: For Alternative 2, the estimated percent of timber cut by volume by species is: 4.6% ponderosa pine, 26.5% Douglas-fir and western larch, 33.8% grand fir, 26.1% lodgepole pine, 7.9% Englemann spruce, and 1.1% subalpine fir. For Alternative 3, the estimated percent of timber cut by volume by species is: 3.4% ponderosa pine, 25.3% Douglas-fir and western larch, 34.7% grand fir, 7.7% Englemann spruce, 28.0% lodgepole pine, and 0.9% subalpine fir. This information can also be found in the project record.

Comment from Letter 6: Indicate proximity of the North Gold and Spruce Creek timber sales to the analysis area.

Response: The North Gold timber sale is located approximately 1 mile east of the southern-most finger of the Sloan-Kennally project area. The Spruce Creek timber sale is approximately 3 miles south of the Sloan-Kennally project area.
Comment from Letter 7: What sort of success has the Forest Service had with regard to regeneration in the project area and surrounding the project area?

Response: See page 2-7 in the DEIS, “Reforestation.” Most plantations were successful. The few failures were a result of planting the wrong species in cold pockets (low lying areas). These areas were replanted with the correct species and are now stocked. Experience has proven that lodgepole pine are cold tolerant and are the preferred species to plant or regenerate naturally in the low lying areas.

Comment from Letter 7: Will any Douglas-fir or ponderosa pine greater than 21 inches dbh be logged? Will any large ponderosa pine trees be removed in the overstory removal units?

Response: There are no proposed overstory removal units for any alternative. Past treatment in the roaded portion of the planning area took most of the large ponderosa pine so that few are left. If a large ponderosa pine is available to leave, it would most likely be left (see EAR prescription, page 2-6 of the DEIS). However, some large diameter ponderosa pine and Douglas-fir, especially those with disease, will be removed to facilitate stand regeneration. It is likely that the more abundant Douglas-fir trees greater than 21” dbh would be harvested rather than pine. Pages 3-58 and 3-59 of the DEIS contain more information on the amount of mature and old forest in the planning area.

Comment from Letter 8: Concern with regeneration certification process and with the Forest Service’s ability to naturally regenerate the patch clearcuts.

Response: Natural regeneration will be certified at the fifth year after site preparation. These small patch clearcuts (PCC) in the southern PFA (post fledgling area) are all 3 acres and less. A Payette Forest Policy letter dated October 23, 1996 (see project record), states that for created openings of 3 acres or less, planting will be discouraged. A number of reasons are listed. Because of the amount of lodgepole pine in the area, natural regeneration should be successful within 5 years (Gary Eckert, personal communication). Regeneration will be a mix of lodgepole pine, grand fir, Douglas-fir with some ponderosa pine and western larch (based on seed source present). Site preparation will be broadcast burn. A change from the DEIS will remove the reserve trees, allowing more light to enter the stand, and encouraging the regeneration of the more early seral species.

Comment from Letter 8: Concern with leaving large diameter reserve trees, especially ponderosa pine and Douglas-fir, which would be susceptible to bark beetle attack. How will these trees be managed in the future?

Response: On average, approximately 11 trees per acre will be left to provide a future two-storied stand similar to the figure on page 2-24 on the DEIS. This number allows sufficient light for regeneration to occur and become established in units that are greater than 3 acres. These overstory trees are left to provide for future snag recruitment, more diverse wildlife habitat, a forested appearance, to meet the NFMA requirement of only clearcutting when no other viable options are available, to mimic historic fire regimes, and to provide for more options in the future given the current revision of the Forest Plan. It may be necessary at some point in the future to remove some or all of the overstory in order to maintain the health and growth rates of the understory, but this will depend on the desired future condition at that time.
Comment from Letter 8: It is doubtful that the desired future condition depicted in Table 1-1 and on page 1-13 can be met in the next fifty years.

Response: It is true that it may be difficult to meet the VSS desired future condition depicted in Table 1-1 in the long term. This will depend on whether a road system is permitted in the roadless area so that timber harvest could be used or that some other means of vegetation management such as prescribed fire is allowed. Half of the planning area is roadless with mostly old forest timber types.

Comments on Wildlife

Comment from Letter 3: May I suggest that this area be managed as a wildlife, fish, plant habitat sanctuary preserve.

Response: Thank you for your comment. This type of consideration is beyond the scope or purpose and need for this project. However, Alternative 1, No Action, would essentially maintain the current condition of the area.

Comment from Letter 4: In the absence of fire, it is necessary to use timber harvest to maintain some of the forest in the early to mid-stages of forest succession to provide habitat for many species of wildlife that are dependent of these early stages for survival. Your plan correctly addresses this problem of an aging forest.

Response: Thank you for your comment. The effects of the project on wildlife species can be found in Chapter 3.

Comment from Letter 5: You are putting heavy emphasis on management of goshawks. The use of "Management Recommendations for Northern Goshawk in the Southwestern United States" is inappropriate. The Payette National Forest is not in the southwestern U.S.; there is no data to substantiate whether these guidelines work or not; there is a much better tool available to use when analyzing goshawk habitat, a model developed for timber types present in the Sloan and Kennally Creek areas.

Response: You are correct in noting the Payette National Forest is not in the southwestern United States. "Management Recommendations for Northern Goshawk in the Southwestern United States" was the best available information at the time the draft EIS was written. Since the release of the DEIS, the Forest has become aware of information indicating that larger timber stand openings may be appropriate for goshawk management in areas of lethal fire regimes (Graham et al 1997). In response to this new information, we modified timber harvest units in both action alternatives. One five acre unit was added, and four existing units were increased in size by one to eight acres. A total of 18 acres of harvest were added to both action alternatives, all outside the roadless area. The ID team determined that harvesting these additional acres would have no detrimental effect on any resource.

The goshawk model you refer to is not completely developed. The results have not been published nor has there been an opportunity for peer review. Once the model is finished and peer review completed, the Payette National Forest will consider the feasibility of using the new model.

Comment from Letter 5: Indicate whether a Conference Report regarding lynx has been received from the Fish and Wildlife Service.
Chapter 4

Response: The Payette National Forest had not formally conferenced on lynx with the Fish and Wildlife Service at the time the DEIS for the Sloan-Kennally Timber Sale was released because a final decision on project activities had not been made. Initial conferencing has been completed. The Payette National Forest wildlife biologist determined the Sloan-Kennally Timber Sale is not likely to jeopardize the continued existence of the Canada lynx.

Comment from Letter 6: Indicate whether travel corridors for lynx, fisher, and wolverine will be affected by the proposed action.

Response: This analysis is complete for the final alternatives. See the Biological Evaluation and Assessment for sensitive wildlife species in this final EIS. The BA for lynx addresses travel corridors. Lynx travel corridors also function as travel corridors for fisher and wolverine.

Comment from Letter 6: Indicate whether logging contractors will be informed of the need to comply with the Migratory Bird Treaty Act.

Response: This is the position of the Forest Service that timber harvest does not violate the Migratory Bird Treaty Act. This response is based on recent court rulings that the MBTA does not apply to timber sales.

Comment from Letter 7: We do not support the Forest’s decision to limit elk habitat to a degree lower than was decided in the Forest Plan.

Response: It is unclear what your comment is based upon because all alternatives will meet or exceed the Forest Plan target levels for EHE for elk. While there may be some fluctuations during the sale, post sale EHE levels will improve. At no time will EHE’s drop below the Forest Plan target of 20 for IRA 456. See pages 3-64 and 3-62 through 3-69 of the DEIS for more specific information.

Comment from Letter 7: Regarding wildlife, we are not convinced by the assertions in the document about sensitive species, particularly goshawk, and by the inadequate monitoring plans set forth. The Forest Service continues to misapply its old growth standards.

Response: It is difficult to respond to this comment or correct perceived inadequacies in monitoring plans without knowing a specific concern. The Payette National Forest disagrees it is misapplying its old growth standard with this project or on other forest-wide projects. We would need more specific information regarding how we might be misapplying our old growth standard in order to address this comment.

Comment from Letter 7: Ghost roads need to be measured and included in the elk analysis.

Response: All roads have been included in the elk habitat analysis. A thorough field reconnaissance of the project area was conducted to locate all roads, including previously unrecorded “ghost roads.”

Comment from Letter 7: What support does the Forest have that road closures to motorized vehicles will benefit elk?

Response: Research has shown there is a positive correlation between reduced motorized access and reduced home range size and increased survival rates for elk (Cole et al 1997).
Comment from Letter 7: What would the EHE be if the timber sale is implemented but the road closures and road obliteration do not occur?

Response: We did not calculate EHE on this possibility since road closures and obliteration are integral parts of the action alternatives. See Chapter 2 for a complete description of all elements of the alternatives. The EHE calculations in the Wildlife Habitat section of Chapter 3 are accurate disclosures of implementation of the alternatives.

Comment from Letter 8: Why are you unduly applying restrictions to the choices of future nest sites when geographical location seems very important in this region the goshawk occupies?

Response: We do not believe we are unduly applying restrictions to the choices of future nest sites. The birds will be able to choose nest sites wherever they want. The area identified as potential nest areas, and thus excluded from timber harvest, with this action are actually dense stands of sawtimber.

Comment from Letter 8: Between the elk and goshawk restriction you have effectively removed the heart of a logging season.

Response: The goshawk seasonal restrictions have been modified to extend the logging season. The elk management requirements are part of the Forest Plan Standards and Guidelines and have not proven to be overly restrictive to timber harvest in the past.

Comment from Letter 8: Elk Habitat Effectiveness model is not a good tool and should be modified as part of the Forest Plan Revision.

Response: Thank you for your comment. Forest Plan revision issues are beyond the scope of this proposal. The Payette National Forest uses the “Elk Habitat Effectiveness Model” to monitor habitat for elk, a management indicator species, as our current forest plan dictates. The Forest is considering appropriate ways to measure and assess management actions on elk and other wildlife species during its Forest Plan revision process.

Miscellaneous

Comment from Letter 3: This logging and roading project will decimate soil, water, air, wildlife, plant, scenic-visual, recreation, and roadless-wilderness resources.

Response: The analysis in Chapter 3 does not show this level of adverse effects to the described resources. Actually, for many of the resources under either action alternative, there is an improvement over the existing condition.

Comment from Letter 5: In summary, Boise Cascade does not favor any of your alternatives. A far more aggressive approach is needed to manage in this area. Alternative 2 is the best presented, but it treats far too few acres to be effective.

Response: The greatest need for treatment lies in the roadless area, and much of the area is low value whitewoods. Without the option of building roads to access the area, economics do not allow treatment of most of this area. We have increased the acreage proposed for treatment outside the roadless area slightly.
in response to other comments regarding the goshawk guidelines and local conditions. These adjustments reflect what the Forest can reasonably put forward in the project area at this time and give reasonable consideration to other resources.

Comment from Letter 7: Please note I have already commented on this timber sale some years ago and these comments should be regarded as a supplement to those first comments.

Response: All comments on the 1994 DEIS were used in developing this EIS. All previous comments were used to develop issues and alternatives and generally guide the scope of the analysis.

Comment from Letter 7: We note that the purpose and need stated for this project is to “produce commercial crops of trees suitable for timber production.” That is an antiquated and unsuitable reduction of the many uses of National Forest lands, particularly roadless areas and areas with endangered species. Further, the two action alternatives do not meet your obligation for a full range of alternatives.

Response: National Forests are to be managed for multiple uses, including timber production. Producing crops of trees suitable for timber production does not mean doing so at the expense of other resources. Until it is revised, the Payette National Forest remains guided by its current Forest Plan, which is the source of the purpose and need statement. The harvest prescriptions proposed in this project are sensitive to other resources and changing times and values. Chapter 1 of the EIS describes changed conditions on the Forest which helped shape our current project proposal. Chapter 3 of the EIS displays the effects of the project on other resources, many of which would benefit as a result of either action alternative. There are no threatened or endangered species in the project area, as disclosed in Chapter 3. Maintaining roadless values was the major issue raised by the public and resulted in developing Alternative 3, which avoids entering the roadless area.

As for two action alternatives not meeting our obligation for a full range of alternatives, we believe they do when combined with the alternatives not considered in detail described in Chapter 2. Alternative development is driven by the issues. The only major issue raised was effects to roadless resources. There was no other major issue for the Sloan-Kennally proposal and, therefore, no further reason to consider developing a greater range of alternatives.

Comment from Letter 7: We are very concerned about water quality, noxious weeds, wildlife habitat, old growth, the effects of the 1994 fires on the landscape as a whole, and forest fragmentation.

Response: The Payette National Forest shares your concern. We have tried to design this project to beneficially affect all resources where possible. The project will improve water quality, both within the project area and downstream in Cascade Reservoir. There will be improvements in wildlife habitat and minimal impacts to old growth and fragmentation. Noxious weeds are not expected to increase in the project area and if they do, control measures are outlined in Chapter 1 of the DEIS on page 1-22. The specific impacts can be found in the appropriate resource section in Chapter 3. The 1994 fires did not burn in the project area and were not analyzed in detail here. The effects of the fires on the landscape are beyond the scope of this project and were analyzed in detail by several other analyses including the Broadscale Assessment of the Post-fire Landscapes (USDA Forest Service, 1995a).

Comment from Letter 7: We are looking forward to seeing the Record of Decision (ROD) when it is completed and the FEIS, and ask you also send along the plant and wildlife and fish Biological Evaluations (BE’s) at that time.
Response: We will send you both the ROD and FEIS when it is complete and will include the plant BE. The wildlife and fish BE's are incorporated into the DEIS and FEIS as part of the wildlife and fish sections in Chapter 3 (under "sensitive species" headings).

Comment from Letter 8: As part of the purpose and need for the proposed action you identified the Chief of the Forest Service's interim roadless policy and something termed the natural resource agenda. It is not appropriate to include this direction [the natural resource agenda] in this document as though it were policy when it has not followed the prescribed public comment period and review normally provided.

Response: The natural resource agenda was not identified as part of the purpose and need of this project. Page 1-8 of the DEIS states that the purpose of this action is to improve the existing condition of timber stands within the Sloan-Kennally project area according to the goals, objectives, and Desired Future Condition described in the Forest Plan. The need is generated by the difference between the existing timber stand conditions and the desired conditions. The natural resource agenda does not implement any decision, but rather provides general guidance for activities on National Forest Lands. Site specific actions, such as this timber sale, will analyze the effects, both positive and negative, of incorporating elements of the natural resource agenda.

The four elements of the natural resource agenda, watershed health and restoration, sustainable forest ecosystem management, forest road management, and recreation, were all considered to some degree in the project design. Watershed restoration is very important in the Sloan-Kennally area and downstream in Cascade Reservoir, a water body that has been severely degraded in the past from a number of different sources. Restoration opportunities focus primarily on management of the road system in the project area. Treatment of specific timber stands was designed to meet sustainable ecosystem management objectives. Because of the interim roadless policy, proposing activities to meet the purpose and need within the roadless area was severely limited. Many of the stands outside the roadless area have been treated in the past and have limited options to further the purpose and need.

While the natural resource agenda may sound like a new policy, it is mainly placing emphasis on principles at the heart of Forest Service management since its inception. The agenda did lend a "flavor" to how the project was fine tuned, but other laws, regulations, and policies such as the Endangered Species Act, the Clean Water Act, INFISH, the Region 4 Sensitive Species program, and the interim roadless policy, had far more reaching influence on the design of this project than the natural resource agenda did.

Comment from Letter 9: Alternatives considered but eliminated from detailed study in the DEIS did include options that doubled the acres treated in the planning area. However, without a detailed specific effects analysis, it was difficult for us to determine why each was rejected or what forest ecosystem health benefits, if any, would be generated from treating more acres. Some of the reasons for rejecting these alternatives from detailed study were not well documented. It appears prudent to evaluate a variation of alternative 4 that would be tuned to eliminate road construction in the Needles Roadless Area while treating the maximum number of acres feasible within that area.

Response: The descriptions of why these alternatives were eliminated from detailed study will be expanded in the FEIS. Finding two active goshawk nests within the project area after completing the 1994 DEIS had a significant effect on what treatment could occur near the nest and in the post fledgling areas. This in itself eliminated several hundred acres of potential harvest that was anticipated in 1994. The virtual elimination of road construction in order to meet sediment concerns tied to the TMDL for Cascade Reservoir also played a role in reducing acres available for treatment. Applying INFISH buffers to

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streams in the area further reduced treatment acres. Ute’s ladies-tresses potential habitat was protected with the INFISH buffers so Ute’s ladies-tresses itself did not reduce potential treatment acres. When all the above was taken into account, Alternative 2 of the 1999 DEIS represents what was left of the old Alternative 4 from the 1994 DEIS. We have assessed new information on goshawk brought to light since the 1999 DEIS was issued and slightly increased the acres proposed for treatment with the FEIS. We have also reviewed the Needles Roadless Area for additional opportunities. The economics of helicopter logging low value whitewoods was a driving factor in the decision to forgo additional treatment at this time.

Comment from Letter 9: After reviewing the DEIS, we also remain concerned about the Chief of the Forest Service implementing an interim roadless area management policy that appears to have become more or less permanent without site specific effects on forest ecosystem health. The natural resource agenda also appears to have been implemented without National Environmental Policy Act analysis addressing the negative as well as the positive effects of this policy.

Response: The interim roadless policy is not permanent. We expect a Draft Transportation Rule out for public comment in the fall or early winter of 1999, with the Final Transportation Rule due out in the summer of 2000. The interim rule expires 18 months from March 1999 or when the final rule is adopted, whichever comes first. The site specifics on forest ecosystem health should be part of the Draft Transportation Rule when it comes out for comment. That will be the appropriate time to provide your comments on the adequacy of the analysis. As stated in the response to Letter 8 above, the natural resource agenda does not implement a decision, but rather provides general guidance for activities on National Forest Lands. Site specific actions, such as this timber sale, will analyze the effects, both positive and negative, of incorporating elements of the natural resource agenda.
August 26, 1999

David F. Alexander
Payette National Forest
P.O. Box 1026
McCall, Idaho 83638

Dear David,

I have received and reviewed the "Draft Environmental Impact Statement for the proposed Sloan-Kennally Timber Sale." Of the Alternatives available I believe the best choice for the area is Alternative 2o. Harvesting trees on the proposed area in my opinion, will improve stand structure and species composition while reducing the threat of insects and fire. Improvements in the areas mentioned will also be a great benefit to Bull Trout habitat.

Thanks for the opportunity to comment.

Sincerely,

Brock Rainey

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DEIS Letter No. 2

September 7, 1999

David Alexander, Forest Supervisor
Payette National Forest
P.O. Box 102
McCall, ID 83638

RE: Sloan-Kennally Timber Sale DEIS

Our main concern is proposed logging in the Needles Roadless Area (RARE II # 4-451)

Your DEIS states:
1. "Any action can have an affect on the wilderness potential of the area treated."
2. "... there maybe timber harvest activities that would change the character of the roadless area and its wilderness potential."

Upper Columbia River Basin assessments indentified this roadless area as potential strongholds for threatened and endangered species.

The roadless area being at the heads of drainages with steep highly erosive slopes will have a big negative impact on soils, water, fish and wildlife habitat. Enroaching on the roadless area, even these few acres, will affect wilderness values and area’s potential for wilderness designation. We strongly recommend roadless areas be maintained in their current state.

Respectfully submitted,

Norman C. Anderson, Chm. Forest Committee

Prominent signature

4-28
DEIS Letter No. 3

John R. Swanson
3400 Edmund Blvd.
Minneapolis MN 55406

21 July 1994

Payette National Forest
P.O. Box 136
McCall, Idaho 83638

Dear Sirs:

Please accept the following comment concerning the

The logging and roadbuilding project will destroy soil water, mine
Wildlife, fish, plants, scenic values, recreation, and Woodland-Wilderness
resources.

May I suggest that this area be managed in a Wildlife-Fish-Plant Habitat
Conservation Program. With special Conservation Value Areas the
Northern Idaho-owned Quemahund, Canida, Tuley, Spleck Inigo, Peshalino,
and Wehto Creek, Bull Run, Owl's Nest Reservoir, Stump Bango, and
West Fork Wallowa Reservoir.

So fully preserve all Roadless Areas
and to include Quemahund, Mcinnally Creek, East Fork, Wehto Reservoir Creek,
and West Fork Oswaal Creek in the National Wild and Scenic Rivers System
So preserve all old growth
With an active program to obliterate all roads.
So preserve should near National Forest System

and to designate the Needles Wilderness of 205,000 Acres.

Sincerely,

John R. Swanson
Richard C. Renstrom  
Author and Photographer

July 1, 1999

David Alexander  
Forest Supervisor  
Payette National Forest  
P.O. Box 1026  
McCall, ID 83638

Dear Mr. Alexander:

I have reviewed the Draft EIS for the Sloan-Kennelly Timber Sale and would like to make the following comments:

In the absence of fire, it is necessary to use timber harvest to maintain some of the forest in the early to mid-stages of forest succession to provide proper habitat for the many species of wildlife that are dependent on these early stages for survival. Your plan correctly addresses this problem of an aging forest.

The only suggestion I have is to turn roads into trails of those roads you will either close or obliterate. We recreationists are slowly losing access to our forests because of road closures. In the Boise National Forest a number of old roads have been closed to cars but left open to trail bikes. With some grass seeding and a lack of road grader maintenance to keep them open for cars, these old roads soon get grown in with vegetation and stabilize. The erosion problem is solved, yet the public still retains access to the area.

This policy was followed after a public hearing where we grouse hunters asked for such a plan in the Sagehen Reservoir area, and it has worked beautifully.

I am enclosing a flyer on my new book that should be of interest to your staff wildlife biologists.

Sincerely,

[Signature]

4-30
July 14, 1999

Dear Dave,

Please consider this letter as Boise Cascade’s comments on the “Draft Environmental Impact Statement for the Proposed Sloan-Kennally Timber Sale.”

We have reviewed the Draft EIS, and have personal knowledge of the area involved. Our comments are as follows:

1. Boise Cascade Corporation owns land in the Sloan Creek and Kennally Creek drainages. In fact, our lands border part of the project area boundary.

   We have many concerns as to the health of your forest and how insects or disease problems on National Forest land might impact our forest. Fire is also a major concern. Your document points out some of these risks.

   On page 1-10, you state “the project fire and fuels specialist completed a hazard risk assessment for the project which shows the area is at a moderate to high risk of fires burning outside of historic norms.

   And

   “In areas not previously treated by timber harvest (3,304 acres of strata 23, 24, 34, and 35 or 65 percent of the forested area), fire exclusion has altered stand characteristics and conditions. Stand structure, species composition, stand density, insects and disease occurrence, fuel loading, and potential fire severity are now at the upper limits of historic norms, with some departures from historic, especially in the lodgepole pine cover type.”

   On page 1-11, you continue to state: “In partially harvested areas (1,226 acres of strata 21, 22, and 26, or 24 percent of the forested area) with canopy closures exceeding 50 percent, a greater amount of shade tolerant species,
such as grand fir, is regenerating than was historically present. Though fuels have been treated in these former harvest units, excessive fire-intolerant grand fir in the understory creates increased susceptibility to crown fires, thus potentially greater tree mortality during fire events."

And

"About 65 percent of the forest land (strata 23, 24, 34, and 35) is experiencing tree mortality related to slow growth, advanced age, density, and insect and disease infestation. These are areas that have not been harvested in the past and have not experienced fire in over 100 years. Forest inventory data summaries show current growth in strata 23, and 24 (3,137 acres) to be negative; that is, mortality is exceeding growth. In strata 34, and 35 (167 acres), growth is below site potential."

Even though you recognize this serious problem on several thousand acres, your most aggressive proposed alternative (2) only treats 553 acres. As an adjoining landowner, we find this to be unacceptable. A far larger percentage of the area needs treatment, not only to protect the resources of the Forest Service, but also minimize the risk to adjoining forest ownerships, including Boise Cascade's.

Alternative 2 is the best you propose, but it is not nearly enough.

2 You are putting heavy emphasis on management of goshawks. Your document refers to "Management Recommendations for Northern Goshawk in the Southwestern United States" (page VI). Use of this document for setting land management practices on the Payette National Forest is inappropriate. First off, the Payette is not in the Southwestern United States. Second, these guidelines have been touted as the proper way to manage goshawks in dry Southwestern forests, but there is no data to substantiate whether they work or not. And third, there is a much better tool available to use when analyzing goshawk habitat. This model, developed in timber types present on the Payette, is available to the "ECO Team" revising the Payette Forest Plan. The "goshawk model" should be the tool to determine habitat needs on this sale, as well as on other Payette Forest projects.

3 The sale of timber from the national forests provides jobs in rural, local communities. By treating more of the area, more useable wood could be harvested. This is especially important at the time when both the Boise and Payette National Forests are offering far less timber than allowed in their forest plans.

In summary, Boise Cascade does not favor any of your alternatives. A far more aggressive approach is needed to manage in this area. Alternative 2 is the best presented, but it treats far too few acres to be effective.
Also, the best tools available should be used to analyze impacts. In the case of goshawks, this is the model developed for timber types present in the Sloan, Kennally Creek areas.

Thanks for considering our comments.

Sincerely,

[Signature]

Dave Van De Graaff
Region Timberlands Manager
September 10, 1999

David F. Alexander
Payette NF
P.O. Box 1026
McCall, ID 83638


We recommend the final EIS address the following:

1. Indicate whether the Gold Fork River Watershed Analysis followed the six step process for Ecosystem Analysis at the Watershed Scale. Indicate step six recommendations.

2. Indicate whether streams in analysis area meet RMO standards in compliance with PACFISH/INFISH.

3. The draft EIS indicates that "Habitat within the Kennally Creek drainage is accessible to bull trout." Indicate presumption as to why bull trout are not now found in Kennally Creek. Also, indicate season of each year in which bull trout surveys were performed in analysis area.

4. Provide definition differentiating old-growth and mature forest.

5. The draft EIS states that "A majority of the proposed road obliterations have not been accessible to vehicles during the past 10 to 15 years due to a combination of vegetation, earthen barriers, and/or gates." Indicate whether, and the extent to which, these roads currently contribute eroded sediment to nearby streams. Indicate the number of miles of these roads in RHCAs.

6. Indicate road density in RHCAs within planning area. Indicate number of miles of road to be closed in RHCAs. Indicate number of miles of roads to be obliterated in RHCAs.

7. The draft EIS states: "Following INFISH direction for roads management would provide another mechanism to reduce or avoid adverse effects." Indicate/summarize INFISH direction for roads management.

8. The Forest Practices Water Quality Audit, DEQ, 1993, states that road construction associated with the North Kennally Creek salvage sale indicated "poor planning of road drainage -- direct discharge to streams."
proximity of this road to analysis area, whether this road will be used in the proposed action, and its current condition.

9. The draft EIS indicates that there will be a reduction in acres of old growth within analysis area. This reduction is stated to be within Forest Plan requirements for old growth acres within the analysis area. Indicate estimated forest-wide aggregate acres of remaining old growth.

10. Indicate whether the 55% of forest land in planning area composed of subalpine fir, etc., is within historic range of variability for fire risk.

11. Indicate existing fuel loadings for each forest type.

12. Indicate fire risk per forest type as determined by Fire-Based Hazard/Risk Assessment model run.

13. The draft EIS states that "insect and disease occurrence" are now at the upper limits of historic norms". On the same page (1-10) it states that "Presently there is not an epidemic occurrence of any of these pathogens." Please clarify.

14. Provide validity and effectiveness monitoring results supporting assertion that proposed silvicultural "treatment", i.e. logging and planting, will result in conversion of existing forest type to a "regeneration of early seral species such as western larch, Douglas-fir, lodgepole pine, and ponderosa pine."

15. Indicate proposed estimate for cut per tree species for preferred alternative. Indicate proposed tree species to be cut for alternative three in roadless area.

16. Indicate whether a Conference Report regarding lynx has been received from the Fish and Wildlife Service.

17. Indicate whether "Travel corridors for lynx, fisher, and wolverine", "found at higher elevations", will be effected by proposed action. Indicate whether tree cutting will take place in these identified corridors.

18. Indicate location of proximity of North Gold and Spruce Creek timber sales to analysis area.

19. Indicate validity and effectiveness monitoring results for BOISED model, indicating year of last model revision.

20. The draft EIS states that "Existing sediment yields were determined for the Middle and Lower Kennally Creek subwatersheds. Indicate current
DEIS Letter No. 6

estimated yearly tons of sediment delivered to the Middle and Lower Kennally Creek subwatersheds. Indicate estimated tons of sediment entering stream for each of next five years.

21. Indicate whether M-K modeling for sediment has been performed. If yes, indicate results of said modeling.

22. Indicate whether logging contractors will be informed of need to comply with the Migratory Bird Treaty Act in not "taking" such birds without an incidental take permit from Fish and Wildlife Service.

23. Summarize current total yearly volume (mmbf) sawmill production capacity within forest zone of influence. Indicate whether recent forest harvest outputs (e.g. last three years) combined with this timber sale will contribute to meeting existing production capacity.

24. Provide definition differentiating "below-cost" sale from a "deficit" sale, as used on page 3-81 of the draft EIS.


27. Indicate cost of road reconstruction. Indicate source of funding.

28. Indicate cost of road obliteration. Indicate source of funding.

29. Indicate Payette forest average TSPIRS cost per thousand board feet for 1997.

30. Indicate how anticipated timber receipts was determined.

31. Indicate anticipated receipts per species cut.

Thanks,

Don Smith
Idaho representative
Dear Mr. Alexander,

Thank you for the opportunity to comment on the Sloan-Kennally timber sale DEIS. These comments are submitted on behalf of The Ecology Center, Inc., Payette Forest Watch, Inc., The Idaho Sporting Congress, Inc., and myself. Please note that I have already commented on this timber sale on behalf of The Ecology Center, Inc. and several other parties some years ago, and these comments should be regarded as a supplement to those first comments, which I am confident are still in your files.

We support road obliteration in all watersheds, including those of Sloan-Kennally, and we also support, though much less enthusiastically, most road closures. We do not support forest management decisions which depart from promises made in the Forest Plan and which limit non-commercial uses of the Forest in favor of commercial ones. We do not support the Forest’s decision to limit elk habitat to a degree lower than was decided in the Forest Plan.

What sort of success has the Forest Service had with regard to regeneration in the project area and surrounding the project area? We note that some plantations have required fences (to keep livestock away) for many years after planting. This is a good indication of difficult regeneration. The nearby Camp Creek area had poor regeneration when it was first logged, also. We have observed very stunted trees, and areas with no trees, in the vicinity of the project area. What is the elevation of the area? What is the elevation of the highest units? Will elevation play a role in the regeneration?

We note that the purpose and need stated for this project is “to produce commercial crops of trees suitable for timber production.” That is an antiquated and unsuitable reduction of the many uses of National Forest lands, particularly roadless areas and areas with endangered species. Further, the two action alternatives do not meet your obligation for a full range of alternatives.

The roadless area must be evaluated in light of recent Regional direction and its boundaries must be verified. No logging should occur in the roadless area unless it is disclosed as being within the roadless area. The PNF has a particularly difficult time with this. Three times in my own history of involvement with this Forest now has the Forest Service tried to log inside roadless areas without acknowledging the effects, and three times you have had to modify your plans. Not a record which suggests that careful effort is put into timber sale analysis.

Regarding wildlife, we are not convinced by the assertions in the document about sensitive species, particularly goshawk, and by the inadequate monitoring plans set forth. The Forest must show that it will actually do what it says it will do, and include some
reasons why it should be believed: The Forest Service continues to mis-apply its old growth standards, as I have been saying for years now.

The document must show the location of all temporary roads including those that the timber sale administrator is going to permit to be built. The PNF seems to have a difficult time persuading its timber sale administrators that they are not in fact timber sale planners - they have numerous roads built and landings put on for example archeological sites which were never evaluated in the environmental documents. Is that sort of thing going to happen in this timber sale, too? If so, kindly tell us in advance where it is going to happen this time.

So-called “ghost” roads need to be measured and included in the elk analysis given the PNF’s recent admission that up to 1/3 its total road mileage is in uninventoried roads. We want to know the exact condition of elk habitat and precise EHE figures which are accurate.

As for fish, the EIS should include specific and justified reasons how the project is not going to continue the trend established by so many other timber sales on the PNF that were designed to “produce commercial crops of trees.” A forthright showing of how this project will affect fish habitat and populations is necessary. A complete set of data figures for the affected streams should be shown, including results of sediment studies, riparian health, streambank stability, flows, and temperature.

The DEIS addresses road density but does not do so in a way which shows how road density will change over time, particularly during the timber sale, which may take many years. Will, for example, the new roads be open before the old roads have been closed? Will there be any point when road density is greater than it is now?

Will any ponderosa pine trees over 21" dbh be logged? If so, why? How would logging them meet the purpose and need? Will any Douglas-fir trees over 21" dbh be logged? Approximately how many large diameter (>21" dbh) ponderosa pine trees will be logged in this project? Will any large ponderosa pine trees be removed in the overstory removal units?

Will the closed roads receive maintenance? Will they be closed to all motorized vehicles, including motorcycles? What support does the Forest have that this type of closure will benefit elk?

When will the watershed improvements and other elements of the project occur? The Forest Service has argued in court that if there is not an exact date specified for when a project is to be implemented, it does not ever, technically, need to be implemented.

What would the EHE be if the timber sale is implemented but the road closures and road obliteration do not occur?

Soil stability, TSRC and detrimental degradation studies in the area and in similar soils from similar logging techniques need to be disclosed and evaluated in light of this project. We are very concerned about soil productivity.

What are the soil types and where are the landslide prone areas? Will logging occur on any steep slopes or any unstable soil types?

What evidence do you have to suggest (and base your judgment on) that detrimental disturbance will be below 20% and soil productivity will be above 90% for the entire area?

How will slash be gathered, exactly, for burning?
Can you legally add sediment to these streams?
How do the BMPs satisfy the State requirement for "monitoring and surveillance" of water quality?
What is the ECA of the area? We remain very concerned about water quality, noxious weeds, wildlife habitat, old growth, the effects of the fires of 1994 on the landscape as a whole, and forest fragmentation.
We look forward to seeing the ROD when it is completed and FEIS, and ask you also send along the plant and wildlife and fish BE's at that time to the Seattle address above.

Sincerely,

Erik Ryberg
DEIS Letter No. 8

Ron C. Hamilton
PO Box 4223
McCall, ID 83638

July 16, 1999

District Ranger Randy Swick
PO Box 1026
McCall, ID 83638

RE: Sloan-Kennally Timber Sale Draft EIS

Dear Sir,

As part of the purpose and need for the proposed action you identified the Chief of the Forest Service's interim roadless policy and something termed the natural resource agenda. The ghost policies of this administration and its agency heads is probably the most frustrating that most people have ever had to deal with. The "agenda" is primarily a word of mouth program that has not been given the review and comment legally mandated any of the agency policy or regulations previously written. It is not appropriate to include this direction in this document as though it were policy when it has not followed the prescribed public comment and review normally provided. I suggest you display why the document complies, but do not alter plans or programs to make them comply with what I believe to be utterances of a chief that, like the administration, wishes to function at the fringe of the law.

Your DEIS points out that the Southwestern Guidelines by Reynolds were adapted as the management policy for northern goshawk on the Payette. On page 3-55 of the DEIS you say that nest areas require "large old trees with a dense canopy cover." The developers of the guidelines one of which is a personal friend, found that statement generally true in the southwest where the guideline was developed. Both men have visited the Payette and looked at nesting-fledging sites and they believe that dense stands of sawtimber sized timber is all that is preferred by the goshawk in this area. The several nest sites on the Council District and Boise Cascade lands seem to support this. Why are you unduly applying restrictions to the choices of future nest sites when geographical location seems very important in this region the goshawk occupies? At page 2-17 it would appear to be excessively redundant to have an operation restriction especially once nesting is occurring on a site and the fledging site is known. Between the Elk and Goshawk restrictions you have effectively removed the heart of a logging season. Such restrictions actually place impacts on other resources such as soils and watersheds.

On page 2-17 you have a restriction on the transport of fuel and the need for a pilot car over unsurfaced dirt roads. The logic of this restriction escapes me. Is the surface the problem or the width of the road, or the gallons being transported? Having dealt with the Department of Transportation about a similar issue on other situations I suggest you review the liability the Forest Service takes on when it takes on the regulation of something they do not have assigned authority for. Just what constitutes the kind of surface, or road type needs some more definitions based on the overly zealous personnel the agency employs some capacities.

In the mitigation measures section at page 2-15 reference is made to reclaiming of roads, trails, etc by the piling on slash to 50% ground coverage. That has been interpreted by the agency to be logs and stumps of relatively large size. The application of the interpreted standard results in movement and passage barriers to wildlife and humans so inclined to try and move through the area. If the "slash" truly were a mixture of all sizes of material it would not result in such a barrier while achieving the same results. I also hope that the hydrologists will begin to use the appropriate seed mix so that native species are not forced out by introduced species.

Fertilizer applied to the site when insufficient moisture is present is a deterrent to the germination and growth of vegetation.

In the monitoring plan table 2-3, there is no discussion of the regeneration certification process for the areas that will be naturally regenerated and when they will be certified. There is also not a discussion of when a planting is certified to meet the 5-year regeneration requirement required under NFMA. It is difficult to determine if the PCC of page 2-6 and 2-7 is considered.
even-aged under NFMA. That situation is supposed to regenerate the more fire resistant seral species like western larch and ponderosa pine. However, the size of opening is marginal in getting the more than 60% full sunlight necessary to achieve that goal. It is also apparent that site preparation is minimal, reducing the success rate.

Having reviewed some of the marked units in this proposal it was difficult to put in perspective what would actually occur on the ground with what is described in the desired future stands. It was obvious that several of the large Douglas fir that were left were extremely susceptible to beetle attack in the near future. Recovering that volume would help the economics of the sale, especially in the cable and helicopter units.

Elk Habitat Effectiveness is identified as an indicator for a management indicator species. There is no indication in the document how the monitoring of this is occurring. Part of the influence for the effectiveness is reflected to the degree of the Sloan-Kennally area is adjacent to some very roaded private and state lands. Yet based on elk numbers, which are illustrated by longer hunting seasons, more predation hunting and payments, rising population trend counts, the elk numbers continue to increase. How will the Forest modify the model if these items can not be verified? Has the Forest begun to look at other more peer reviewed models such as the elk vulnerability model developed in Oregon and reported in journals and magazines published by the Rocky Mountain Elk Foundation? If EHE is not a good tool or the parameters are not right this should be modified as the Forest Plan is revised.

The current proposal calls for leaving a large number of large diameter trees, primarily ponderosa pine, on many of the harvested areas, but there is little disclosure about the management of these trees and the future treatments of these areas. An illustration at the beginning of chapter 2 shows the same trees 75 years later. From the illustration there were no other treatments apparent on this site depicted. This means to me that the trees should be expected to live for at least 75 years in good health. If they will never be harvested then one could infer that the economic worth of the species they provide habitat ranges in value from $15,000 to least $37,000 per acre, considerably more in the future. Assuming each tree is worth about $1500 market value. At least some future treatment considerations should be discussed to evaluate the worthiness of the current proposal. I suggest that without silvicultural treatments in the future the value of all the trees left will be lost in large part to insect, disease or fire. In my view not a very good picture to portray to a public that expects the agency to meet the legal mandates of sustained yield.

Based upon the rate of timber harvest on the Payette Forest and the McCall District it is very difficult to believe that in fifty years the vegetation structure and succession stages will meet the conditions depicted in the table 1-1 and at page 1-13. Based upon current trends in the administration it will probably have a special designation that doesn’t allow timber harvest even if it is burned or killed. It is obvious that man is not considered in your ecosystem management principles so your success in implementing it will probably not be good from his perspective.

Thank you for considering my comments.

Sincerely,

Ron C. Hamilton
Consulting Forester
August 31, 1999

David F Alexander, Forest Supervisor
Payette National Forest
P O Box 1026
McCall, ID 83638

Dear Mr Alexander,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement analyzing the proposed Sloan-Kennally Timber Sale.

The Board of Valley County Commissioners reluctantly supports Alternative Two, the proposed action, as the best management project from among the alternatives analyzed in detail. However, we believe this proposed project is a prime example of a Forest Service management philosophy shift in recent years that will treat too few acres to effect timely improvement in forest ecosystem health on federal lands in Valley County. The DEIS describes a 5,100 acre planning area in a portion of the Gold Fork River basin where 3,304 acres have fuel loading and timber stand conditions that are at the upper limits of historic norms for fire severity potential. The desired condition speaks of a need to have 4,763 acres in a healthy condition. Yet, the only alternatives studied in detail propose to treat 534 acres (Alternative Two) and 425 acres (Alternative Three) respectively. In addition, the DEIS states that there are no current plans to treat additional lands within that same planning area. It seems to us that the Payette National Forest has not learned from disastrous 1994 wildfires that consumed nearly 300,000 acres of forested land and adversely affected many natural resources important to Valley County including outdoor recreation, threatened and endangered plant/animal species, water quality, native fish and timber.

Alternatives considered but eliminated from detailed study in the DEIS did include options that doubled the acres treated in the planning area. However without a detailed specific effects analysis, it was difficult for us to determine why each was rejected or what forest ecosystem health benefits, if any, would be generated from treating more acres. For example, it would seem that the decision maker would want to look at Alternative Four since the purpose and need focuses on improving forest structure, timber stand characteristics plus stand growth and health. Some of the reasons for rejecting
these alternatives from detailed study were not well documented. For example, one of the reasons given was that the alternatives did not address needed protection measures for Ute ladies-tresses, a threatened plant species. Yet the DEIS stated that based on a ground survey no threatened, endangered or sensitive plants were found in or around the planning area. Another explanation given was that the alternatives were not responsive to protecting habitat for the Canadian Lynx. Habitat for the lynx was found within the planning area but no effort was apparently made to evaluate the prey base. Since the snowshoe hare forms a key ingredient to supporting Lynx in the winter, is there sufficient food in the Needles area to support animals found or introduced? We do know that lynx introduced in Colorado are starving because they are not finding enough food to survive the hard winters. It appears prudent to evaluate this aspect of Alternative Four that would be tuned to eliminate road construction in the Needles Roadless Area while treating the maximum number of acres feasible within that area.

The proposed action includes reconstructing about 20 miles of existing road plus graveling four miles to assist in reducing sediment and improving driving safety which we support. Road obliteration, closure and decommissioning was difficult for us to follow and we think for the public as well. We suggest that the FEIS include a larger scale color coded map illustrating the roads to be constructed, improved, gravelled, obliterated, closed and decommissioned. In addition, we recommend that roads currently in use but proposed for closure be signed for a period of one full year prior to closure. This would allow Valley County citizens and forest visitors to provide specific feedback about the effects of prohibiting use of these roads.

In the Affect Environment and Environmental Effects chapter, the evaluation of Roadless Character and Wilderness Potential appears to be misleading. It describes using the tracking indicator of "acres of roadless area eliminated from wilderness consideration". Since Congress is the final arbiter in the decision about wilderness, it seems a bit disingenuous for the Forest Service to make this determination at this stage in the analysis. This same statement applies to the indicator "acres remaining eligible for wilderness consideration". It does seem appropriate to determine the effects on wilderness attributes and roadless character. Our position remains the same regarding additional Wilderness acres in and around Valley County - there is no reason to add more acres to the Wilderness already existing. Special management needs can be addressed through a revised Forest Plan.

The economic and socio-economic effects assessment does not adequately document that the local economy has declined rapidly in recent years. In fact, the dramatic downward slide for Valley County has occurred faster than the salmon have disappeared from the South Fork of the Salmon River. We note that currently salmon in the South Fork are listed as an endangered species. There is no way that recreation on National Forest lands can make up the loss in the 25% fund due to timber harvest falling to near zero volume. Small seasonal surges of recreation dollars do flow into the valley businesses but the effect does little to improve the tax base in relation to the increased demand for County services. The DEIS describes the value return to the government as negative, in part, due to the cost of the NEPA analysis, timber sale preparation and Forest
DEIS Letter No. 9

Service overhead costs. We believe it's worth noting that these expenditures would be more efficient if the acres treated increased. We note as a frame of reference that up to 250,000 board feet of timber can be removed and up to 1 mile of road can be constructed with a categorical exclusion. This project proposes to harvest 3.5 or 2.2 million board feet depending upon which alternative is finally selected.

Our major concern relates to a deeply held belief that too few acres are being treated to sufficiently improve forest ecosystem health in time to achieve the conditions needed to withstand a large wildfire event. The DEIS includes no assessment of large wildfire probability based on the relative risk of fire ignition in the Gold Fork basin. Nor does it evaluate the adverse effects of a large wildfire on wildlife and endangered species, or its accompanying threat of increased sediment and phosphorous production. In other words, the full environmental cost of no action or taking only limited action is not displayed for the decision maker or for improved public understanding of the huge problem that exists in Valley County's forested lands.

After reviewing the DEIS, we also remain concerned about the Chief of the Forest Service implementing an interim roadless area management policy that appears to have become more or less permanent without analyzing site specific effects on forest ecosystem health. The natural resource agenda also appears to have been implemented without a National Environmental Policy Act analysis addressing the negative as well as the positive effects of this policy.

Our comments are intended to encourage more activity on your part to restore health to forest ecosystems. Valley County has been visited by large wildfires too often in the recent past and the effects on the environment, recreation opportunities and local economy has been swift and strongly negative. We do appreciate the opportunity to comment. Please contact Leland G. Heinrich, Valley County Clerk, should you need more information.

Terry F. Gestrin, Chairman

F. Phillip Davis, Commissioner

Thomas W. Kerr, Commissioner
DEIS Letter No. 10

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Ref. 94-042-AFS

September 13, 1999

Reply To
Am Of ECO-088

David F. Alexander, Forest Supervisor
US Forest Service
Payette National Forest
P.O. Box 1026
McCall, Idaho 83638

Dear Mr. Alexander:

The Environmental Protection Agency (EPA) has reviewed the draft environmental impact statement (EIS) for the Sloan-Kennally Timber Sale (EIS No. 990221). This project proposes to harvest and regenerate timber stands. About 3.5 million board feet of timber from 553 acres would be harvested using principally an Even-Aged Regeneration harvest prescription. Our review was conducted in accordance with our responsibilities under National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act. Section 309, independent of NEPA, specifically directs EPA to review and comment in writing on the environmental impacts associated with all major federal actions. Please refer to, EPA's Section 309 Review: The Clean Air Act and NEPA, that was attached to our June 9, 1999 scoping comments for further explanation of our EIS review responsibility.

Based on our review, we have rated the draft EIS, EC-2, Environmental Concerns - Lack of Information. Attached is an explanation of the EPA rating system and our detailed comments. This rating and a summary of these comments will be published in the Federal Register.

Overall, we are pleased to see that the present proposal reflects a reduction in acres and boardfeet that would be harvested, as well as the number of miles of new roads that would be built when compared with the original proposal presented in the 1994 draft EIS. Our principle concern with the 1994 proposal was the additional degradation to 303(d)-listed waterbodies outside the project area. The draft EIS shows lower sediment yield over the long-term. It appears this is due primarily to fixing problem sources of sediment (such as improving or obliterating roads).
However, our chief concern with this draft EIS is the lack of information in a number of areas but particularly with how this project relates to the TMDL (Total Maximum Daily Loading) efforts by the Idaho Department of Environmental Quality (DEQ) to restore water quality to the Gold Fork River and Cascade Reservoir, the two 303(d)-listed water bodies. Addressing these concerns would greatly improve the overall quality of the EIS.

Our other concern is the irreversible loss of roadless character by harvesting a portion of the Neetles Roadless Area under the preferred alternative. Without a clearer explanation as to why this area cannot be avoided, we believe Alternative 2 should not be selected.

If you have any questions, please call me at 206-553-8574 or Andy Smith of my staff at 206-553-1750.

Sincerely,

[Signature]
Richard B. Parkin, Unit Manager
Geographic Implementation Unit
Public Involvement

DEIS Letter No. 10

Detailed Comments on the Sloan-Kennally Timber Sale

Water Quality

The draft EIS identifies the Cascade Reservoir and the Gold Fork River as impaired under Section 303(d) of the Clean Water Act since these waterbodies are listed. The State of Idaho must develop a TMDL, which is essentially a plan to restore the water quality. Both waterbodies are outside the project area but are fed by the Kennally Creek watersheds.

In our December 19, 1994 comment letter on the first draft EIS, our overall concern with this project was that it would exacerbate existing exceedances of water quality standards. The EIS does a good job explaining the water quality issues in the project area but the EIS would be improved if further discussion was given on how this project is consistent with any TMDL and how the Kennally Creek watersheds are contributing to the water quality violations.

On May 19, 1999, the Forest Service Regional Foresters (1, 4, and 6) and BLM State Directors (OR, WA, ID, and MT) released to their Forest Supervisors and District Managers the Forest Service and Bureau of Land Management Protocol for Addressing Clean Water Act Section 303(d) Listed Waters. One purpose of the Protocol is to support State development of TMDLs. The Protocol calls on the Forest Service and BLM to proactively develop Water Quality Restoration Plans (WQRP). These plans may be required even if a TMDL has already been established. This is because TMDLs allocate loads and do not necessarily include specific actions collectively that will achieve the load allocations. Common elements of a WQRP include:

1. Condition assessment and problem description;
2. Goals and objectives;
3. Management actions to achieve objectives;
4. Implementation schedule;
5. Monitoring/evaluation plan; and
6. Public participation plan.

Therefore, we recommend that the EIS be revised to include more information on TMDL development and what expectations there will be for the Payette National Forest to help Idaho implement the TMDL. It appears that IDEQ determined in the Cascade Reservoir Phase II Watershed Management Plan that a 37 percent reduction of the total phosphorus loading to the Cascade Reservoir is needed to improve water quality. Of that 37 percent, 30 percent must come from non-point sources such as forestry activities. It was also noted that a majority of the loading from non-point sources is natural...
phosphorus loading. However, it was not clear in the EIS whether this Management Plan is the TMDL or if one will be developed from it.

If there is a TMDL, the EIS should explain the loading reduction that has been apportioned to the Payette National Forest and how you will go about achieving that apportionment. The EIS points out that the EPA-recommended limit of 0.05 milligram per liter total phosphorus has not been exceeded in the planning area (according to measurements taken at four different sites by the Forest Service over a period of 8-months and longer in 1992 and 1993). While this is good, the EIS needs to explain what this means in terms of any further obligations a TMDL may impose on the Payette National Forest to reduce loading.

If there is no TMDL, the EIS should discuss how the Forest Service is supporting Idaho’s development of a TMDL for the Gold Fork River and Cascade Reservoir. Depending on the apportionment, the Forest Service may have a very small or large role in implementing the TMDL. If Idaho is counting on a large reduction in loading from the Forest Service, then per the Protocol, the Forest Service should be proactive in developing a WQRP. If the Kennally Watershed is a major non-point source, then we should be certain that whatever is done within the Sloan-Kennally Project area, does not make it more difficult for Idaho to meet their CWA obligations.

The draft EIS provides a good explanation of water quality issues and Best Management Practices (BMPs) that will be used. It also gives the short-term and long-term impacts in terms of percent sediment yield above natural background. The analysis shows that there will be an overall improvement in the long term which is good. But the EIS would be improved if the project was described in the context of plans to restore the water quality of the Gold Fork River and the Cascade Reservoir, as well.

Rocks

The draft EIS points out that road construction and use contribute more to sediment production than do timber harvest activities and fire. We agree with that statement and thus we emphasized in our scoping letter that roads be thoroughly discussed. There essentially will be no new roads built and there will be 24.8 miles of road improvements, 22.4 miles of road closures, and 8.7 miles of road obliteration. Currently there are 197 miles of roads in the Middle and Lower Kennally subwatersheds. It appears that there will be an overall reduction in road miles and improvement in existing roads which should result in less sediment production.

However, since roads are a major contributor of sediment, we recommend additional information to supplement that given in Table 2-2 Mitigation Measures. Give the criteria to be used to select roads for closure or obliteration. Explain if the roads that
are candidates for closure or obliteration include only those used in the project or all problematic roads in the watershed. Give the current road density and how will it change post-harvest. Some information is given on what is entailed by road closure in Table 2-2 but it is not clear what is meant by obliteration. Describe the current state of the roads that will be reconstructed (i.e., the roads may be closed and revegetated or open but in poor state of repair).

**Roadless Areas**

The EIS contains good discussion on the impact to the Needles Roadless area from the preferred alternative. This section clearly discusses the issues of roadless areas and how the preferred alternative would negatively impact the roadless character to a portion of the area. It is true that a large portion of the Needles Roadless area would remain intact for consideration as a wilderness (Alt. 2 impacts directly and indirectly 542 acres of roadless area, a total of 0.3 percent of the Needles roadless area), but this is the essence of cumulative impacts by which a large roadless area is slowly whittled down in size over time.

Please discuss how this alternative is in compliance with the Forest Service Interim Rule on the Temporary Suspension of Road Construction and Reconstruction in Unroaded Areas. Without a clear explanation as to why timber must be harvested in the Needles Roadless Area, we believe Alternative 2 should not be selected.

**Air Quality**

Per our scoping comments, we believe you should describe the smoke management program that IDEQ is developing for southern Idaho and how you intend to adhere to its requirements.
September 9, 1999

Mr. Don Anderson
Payette National Forest
P.O. Box 1
New Meadows, ID 83654

Dear Mr. Anderson:

This letter is in response to the Federal Register notice (Vol. 64, No. 131, July 9, 1999) of availability of the Draft Environmental Impact Statement (EIS) for the Sloan-Kennally Timber Sale on the Payette National Forest. Our comments address air quality issues related to the use of wildland and prescribed fire. We appreciate the need to use prescribed fire as a forest health tool but this must be done in conjunction with protecting human health and welfare. We request that any wildland and prescribed fires be conducted consistent with the Federal Clean Air Act and any associated federal, state, and local policies and regulations.

The Draft EIS indicates that air quality was an issue that was not analyzed because the potential effects were avoided or eliminated through management requirements. The management requirements cited on page 2-13 are the Forest Plan and Forest Fire Action Plan. I could not find these references in the Bibliography (Appendix B) to determine when they were prepared. If they are even a few years old, they would not reflect all the recent changes in federal and state regulations and policies related to wildland and prescribed fire. We are therefore providing the following information that needs to be included in your evaluation.

The Idaho Division of Environmental Quality (DEQ) has the primary responsibility to carry out the requirements of the Federal Clean Air Act in Idaho. DEQ is concerned about smoke emissions for several reasons. The state is 64 percent federal lands and federal land managers plan to expand their fire programs ten fold or more.

Health standards for particulate matter (PM) are the primary concern for smoke management. For areas that do not meet the standards, DEQ must develop plans that can take several years to prepare to meet the standards. Idaho currently has several areas that do not meet one or more of the National Ambient Air Quality Standards (NAAQS). In July 1997, EPA adopted new NAAQS for fine particulate matter. Smoke emitted from forest fires is a common source of fine particulate matter.

The Federal Government is subject to all federal, state, and local air quality regulations. The Federal General Conformity Rule states a conformity determination must be made for federal projects emitting air pollutants over specified de minimis levels to show that the projects will not contribute to any NAAQS violations.
The Federal Clean Air Act established a national visibility goal for 156 national parks and wilderness areas which are referred to as Class I areas. Idaho has all or portions of five Class I areas. EPA's new regional haze regulations (July 1, 1999) require that states develop plans to address regional haze.

By state law, Idaho cannot regulate agricultural burning but can encourage and support voluntary programs. In the spirit of this law, Idaho prefers to have voluntary rather than mandatory programs related to wildland and prescribed fire. Idaho has an air quality advisory and air stagnation advisory that can impact wildland and prescribed fire operations. There are prohibited substances that cannot be burned such as garbage, tires, and plastics. There has been a Memorandum of Understanding (MOU) between DEQ and the U.S. Forest Service (USFS) Regions 1, 4, and 6 since 1988. A voluntary smoke management program for forest burning in northern Idaho has been in place since 1990. The program was recently expanded to include southern Idaho.

EPA released its "Interim Air Quality Policy on Wildland and Prescribed Fires" in May, 1998. The objective of the policy is to provide for fire to function naturally in the wildlands while protecting public health and welfare. The policy provides great incentive for states and federal land managers to work together to develop state smoke management programs.

We support a coordinated effort between state, interstate, federal, and local agencies. All planned wildland and prescribed fire activities must include careful consideration of air quality impacts and requirements. We look forward to working with you as you develop the Final EIS and at the individual project level as well. Thank you for the opportunity to comment and if you have any questions, please contact me by phone at (208)373-0214, by e-mail at driley@deq.state.id.us, or at the address on the letterhead.

Sincerely,

Diane Riley
Air Quality Analyst
Air Quality Management Unit

Enclosure

cc: COF
Smoke Management File
Specific Comments on Federal Register Notice Vol. 64, No. 131; July 9, 1999

Idaho Division of Environmental Quality

The Idaho Division of Environmental Quality (DEQ), Air and Hazardous Waste Division specifically, has the primary responsibility to carry out the requirements of the Federal Clean Air Act (CAA) in Idaho. DEQ has a central office in Boise and six regional offices (see Attachment 1). The central office air quality staff issue stationary source permits, oversee compliance and enforcement, and support ambient air quality monitoring and planning activities. The regional office air quality staff operate the monitoring sites, conduct source inspections, work with the local communities, handle complaints, and prepare and implement plans.

DEQ is concerned about smoke emissions for several reasons. The state of Idaho is 64 percent federal lands and is surrounded by states where wildland and prescribed fires can be a major source of emissions. The Federal Wildland Fire Management Policy and Program Review Implementation Action Plan Report (May 1996) calls for an expanded program to reintroduce fire in fire-dependent ecosystems. This may mean a tenfold or more increase in the use of wildland and prescribed fire. Recently released EPA regulations and policies have increased the need for managing fire emissions. The following paragraphs discuss the most relevant regulatory issues for wildland and prescribed fire.

National Ambient Air Quality Standards

The National Ambient Air Quality Standards (NAAQS) are established by EPA to protect human health and welfare. There are NAAQS for the following six air pollutants: carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, lead, and particulate matter (see Attachment 2). An area that violates any of the NAAQS is designated nonattainment for the specific NAAQS(s). Of the six, particulate matter (PM) is the pollutant of most concern for smoke emissions. Once an area has been designated nonattainment, DEQ must prepare an attainment plan to meet the NAAQS by EPA specified deadlines. A nonattainment area plan can take several years to complete and generally includes background information, air quality and meteorological assessments, emissions inventories, control measures, modeled attainment demonstrations, and contingency measures for the specific nonattainment area. Idaho state currently has three nonattainment areas for PM$_{10}$: Portneuf Valley (Pocatello area), Pinehurst, and Sandpoint. A portion of Kootenai County (Coeur d'Alene area) is a proposed PM$_{10}$ nonattainment area. In addition, the Fort Hall Indian Reservation is a tribal/EPA nonattainment area for PM$_{10}$ (see Attachment 3). The NAAQS violations are the result of exceedences of the 24-hour PM$_{10}$ NAAQS in the winter as well as an exceedence of the annual PM$_{10}$ NAAQS in Power-Bannock Counties. These nonattainment areas have not had exceedences in over three years and are ready to be redesignated as attainment areas.

There is also a statewide State Implementation Plan (SIP). The statewide SIP includes information on DEQ's general authority to regulate air quality, stationary source permitting, compliance, enforcement, and monitoring programs, nonattainment area plans, rules, statewide emissions inventory, and air stagnation advisories.
DEIS Letter No. 11

There are currently six NAAQS for PM. This is because the PM NAAQS were recently reviewed by the EPA by a court order. Prior to July 1997, there were only two, the annual and 24-hour PM$_{10}$ NAAQS. PM$_{10}$ stands for PM less than 10 micrometers in aerodynamic diameter which is equivalent to 1/25,000th of an inch. Last July 1997, EPA promulgated new PM NAAQS. The pre-existing NAAQS will remain in place for areas that do not meet them (nonattainment areas). The new PM$_{10}$ NAAQS are the same in value, but are now to be reported differently and violation calculations are different. In addition, there is now an annual and 24-hour PM$_{2.5}$ NAAQS. PM$_{2.5}$ stands for PM less than 2.5 micrometers in aerodynamic diameter which is 1/4 the size of PM$_{10}$.

Attainment/nonattainment designations for the new PM$_{2.5}$ NAAQS will begin in the year 2002. PM$_{2.5}$ can lodge deeply in the lungs and are more likely to cause health effects than PM$_{10}$. The majority of PM from smoke emissions is composed of organic and elemental carbon, and inorganic ash in the PM$_{2.5}$ size class. Toxic gases such as polynuclear aromatic hydrocarbons (PAH) can condense and absorb into particles. DEQ believes that the new PM$_{2.5}$ NAAQS will be more difficult to meet compared to the PM$_{10}$ NAAQS, particularly for wildland and prescribed fire.

DEQ operates an extensive ambient air monitoring network to monitor for the NAAQS (see Attachment 4 and 5). Sites are located in Idaho’s major urban areas as well as a few remote areas. The data from DEQ’s network is available to the public.

General Conformity

The 1977 CAA amendments made it very clear that the Federal Government is subject to the CAA requirements. Section 118(a) states that any air polluting activity under the jurisdiction of the Federal Government “shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of air pollution in the same manner, and to the same extent as any governmental entity.”

The 1990 CAA amendments added that the above shall apply to any requirement whether substantive or procedural, any fees or charges imposed by state and local agencies to defray program costs, and any federal, state, or local exercise of authority, process, or sanctions. The 1990 amendments also required EPA to establish the transportation and general conformity regulations. The general conformity rule, promulgated in November 30, 1993, applies to non-transportation related federal activities such as prescribed fire. A conformity determination must be made for projects emitting air pollutants over specified de minimis levels to show that the projects will not contribute to any NAAQS violations. If a project is found to contribute to NAAQS violations, then emissions must be reduced or offset (another source’s emissions are reduced). Attachment 6 is a table that indicates the de minimis levels for the different nonattainment areas.
DEIS Letter No. 11

Visibility

The 1977 CAA amendments, section 169A, established the following national visibility goal:
“Congress hereby declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution.” One hundred and fifty six Class I areas were established in 1977 and included all national parks greater than 6,000 acres, all wilderness areas greater than 5,000 acres, and a few other areas. Class I areas are subject to the most stringent restrictions on how much additional pollution (increment) can be allowed. States containing Class I areas were to develop long term strategies and monitoring programs to meet this national goal. Only seven states have approved visibility plans. All other states, including Idaho, are under federal implementation plans. Idaho has all or portions of five Class I areas: Selway-Bitterroot, Hell’s Canyon, Sawtooth, Craters of the Moon, and Yellowstone (see Attachment 3).

In the mid-1980’s, the IMPROVE (Interagency Monitoring of Protected Visual Environments) network began operation. There are currently 75 sites (see Attachment 7) in or near Class I areas. These sites monitor visibility through optical, particle, and visual measurements. This data is available to the public. The data are used to establish background visibility levels, identify chemical species and emission sources, and document long-term visibility trends for assessing progress toward the national visibility goal.

The 1990 CAA amendments established the Grand Canyon Visibility Transport Commission (GCVTC) which issued a report to Congress with recommendations in 1996 on how to address visibility for 16 Class I areas in the Colorado Plateau. Southwestern Idaho was identified as a clean air corridor for these Class I areas. The Western Regional Air Partnership (WRAP) has formed to implement the recommendations from the GCVTC report. The recommendations were used by EPA to develop the new regional haze regulations which were published on July 1, 1999. The regulations require all states to develop visibility plans to address regional haze impairment to Class I areas within their state and to Class I areas outside their state which may be affected by emissions from within their state.

Smoke Management

Idaho has two advisory programs related to smoke management. The air quality advisory program is primarily to address woodstove and fireplace emissions during the winter. There are air quality advisory programs in each of Idaho’s four PM10 and one proposed PM10 nonattainment areas. When air quality reaches critical levels, burn bans may apply to open burning. While this program focuses on the winter months, air quality is monitored year round and an advisory can be activated at any time. An air stagnation advisory issued by DEQ bans all open burning and can apply to any area in the state experiencing critical air quality levels (IDAPA 16 01 01 550-562). An air stagnation advisory is issued when a NAAQS violation is possible or occurring. There are also restrictions for burning of some materials such as trade waste, residential solid waste, garbage, tires, and plastics (IDAPA 16 01 01 600-616).
Public Involvement

DEIS Letter No. 11

By state law, Idaho cannot regulate agricultural burning but can encourage and support voluntary programs. In the spirit of this law, Idaho prefers to have voluntary rather than mandatory programs related to wildland and prescribed fire. A Memorandum of Understanding (MOU) between DEQ and the U.S. Forest Service (USFS) Regions I, 4, and 6 has been in effect since 1988. The MOU is an agreement for the agencies to share information with each other. There has been a voluntary smoke management program for forest burning in northern Idaho since 1990. This is a joint program with the state of Montana and operates from September through November. Daily forecasts are made to determine if any restrictions are needed. As of fall, 1999, the program will include southern Idaho and the spring/summer burn seasons for both Montana and Idaho.

EPA released its “Interim Air Quality Policy on Wildland and Prescribed Fires” on May 21, 1998. The objective of the policy is to provide for fire to function naturally in the wildlands while protecting public health and welfare. The policy provides great incentive for states and federal land managers to work together to develop state smoke management programs. The programs, certified by the EPA, can be voluntary or mandatory at the state’s choice, and will not be a required component of a SIP. If a NAAQS violation occurs due to wildland or prescribed fire emissions and there is a certified state smoke management program, EPA will have the discretion to not designate an area nonattainment or, if the area is already a nonattainment area, to not require a mandatory smoke management program. The policy specifies required elements of a smoke management program and burn plans including minimizing smoke impacts and considering alternative treatments to fire. In addition, if fire emissions are managed within a state smoke management program, then general conformity requirements are met.

Additional Sources of Information


Chapter 5

List of Preparers

Final EIS Interdisciplinary Team Members .................. 5-1
Others Who Contributed to the Analysis .................. 5-2
Chapter 5. List of Preparers

Final EIS

This chapter lists the members of the Interdisciplinary Team and others responsible for preparing this Final Environmental Impact Statement, including background documents. All personnel are employees of the Payette National Forest unless otherwise noted. Experience listed is as of fall, 1999.

Dan Anderson - Forester and Interdisciplinary Team Leader
BS Fisheries; 8 years Forest Service employment. Prepared roadless analysis.

Jim Fitzgerald - Hydrologist
BS Soil and Watershed Management; 14 years Forest Service employment. Prepared soil and water analyses.

Jack Irish - Silviculturist
BS Forest Management; 24 years Forest Service employment. Prepared vegetation management analysis.

Christine Hescock - Wildlife Biologist
BS Wildlife Management; 24 years Forest Service employment. Prepared wildlife habitat analysis and Biological Assessments/Evaluations for TES wildlife species.

Doug Havlin - Prescribed Fire Planner
BS Forest Management, MS Fire Ecology; 10 years Forest Service employment. Prepared fire/fuels and air quality analyses.

Linda Wagoner - Fish Biologist
BS Fishery Science; 7 years Forest Service employment. Prepared fish habitat analysis and served temporarily as writer/editor.

Beth Ludvigsen - Recreation Planner/Landscape Architect
BS Recreation and Forestry, MLA; 15 years Forest Service employment. Prepared recreation and visual quality analysis.

Mike Dixon - Transportation Planner
BS Civil Engineering, BS Forestry; 18 years Forest Service employment. Provided transportation and economic analyses.

Erin Rohlman - Forester
BS Forest Management Science; 16 years Forest Service employment. Served as writer/editor.
Chapter 5

Other Contributors

Sylvia Clark - Range Management Specialist
BS Range Ecology; Minor in Botany, 11 years Forest Service employment. Prepared Range Resource and Noxious Weed analyses.

Alma Hanson - Botanist
MS Botany; 10 years Forest Service employment. Prepared Biological Assessments/Evaluations for TES plant species.

Larry Kingsbury - Archaeologist
MA Anthropology with emphasis on Cultural Resource Management; 11 years Forest Service employment. Prepared Heritage Resource evaluation.

Rod Ludvigsen - Resource Information Specialist (GIS)
BS Forestry; 25 years Forest Service employment. Provided maps and resource data analysis.

Randy Swick - McCall District Ranger
MS Forest Management/Resource Economics; 20 years Forest Service employment. Provided line officer direction for project. Reviewed all documents.
Appendices

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APPENDIX A
GLOSSARY

accelerated erosion or accelerated sediment production - Erosion at a rate greater than natural, usually associated with human activities that either reduce vegetative cover or increase surface runoff.

age class - An age grouping of trees according to an interval of years, usually 20. A single age class would have trees that are within 20 years of the same age, such as 1-20 years or 21-40 years.

alternative - one way of conducting or implementing a proposed project.

anadromous - Moving from the sea to fresh water for reproduction. Chinook salmon and steelhead are anadromous fish.

archaeological site - A geographic locale that contains material remains of prehistoric and/or historic human activity. Also referred to as cultural or heritage resource site.

aspect - The direction a slope faces. A hillside facing east has an east aspect.

background (bg) - the area seen by the viewer beyond the middle ground zone.

bark beetles - A group of beetles that can kill live trees by boring galleries and girdling the inner bark.

basal area - The cross-sectional area of the trunk of a tree or stand of trees at breast height (4.5 ft.)

bedload - Sediment that moves along the stream channel bottom by rolling, sliding, or bouncing.

beneficial use - An actual or potential use that may be made of the waters of the state that is protected against quality degradation. Beneficial uses can include domestic, agricultural, and industrial water supplies, recreation, aquatic life, esthetics, wildlife habitat, and salmonid spawning.

biological diversity or biodiversity - The variety of life and it's processes, including the variety in genes, species, ecosystems, and the ecological processes that connect everything in ecosystems.

BMPs (best management practices) - Practices determined by the Idaho Department of Health and Welfare, Division of Environmental Quality, to be the most effective and practicable means of preventing or reducing the amount of pollution generated by non-point sources.

board foot - A measurement of wood equivalent to a board one foot square and one inch thick. Usually expressed in terms of thousand board feet (MBF) or million board feet (MMBF).

BOISED - A predictive computerized model that estimates cumulative sediment production from road construction, fire, and timber harvest activities in forested watersheds.
**Glossary**

**broadcast burn** - Intentional burning of debris on a designated unit of land, where the fuel has not been piled or windrowed, by allowing fire to spread freely over the entire area.

**buffer** - A land area that is designated to block or absorb unwanted impacts to the area beyond the buffer. Buffers strips along a trail could block views that are undesirable. Buffers along streams can greatly reduce any changes or impacts to stream water quality, temperature, or channel stability.

**canopy** - The part of any stand of trees represented by the tree crowns. It usually refers to the uppermost layer of foliage, but it can also describe lower layers in a multi-storied forest.

**cavity** - A hole in a tree often used by wildlife, especially birds, for resting and reproduction.

**channel stability** - The ability of a stream channel to resist the effects of natural and human-caused disturbance.

**clearcut** - The removal, in a single cut, of all merchantable trees in the harvest unit.

**clearcut with reserve trees** - A clearcut with designated leave trees for wildlife or other purposes. In addition, advanced regeneration suitable for future crop trees is retained where feasible.

**climax conditions** - The late stages of forest succession. Shade-tolerant species make up the majority of trees present.

**coarse woody debris** - Snags, fallen trees, and decaying logs and large limbs distributed across the forest floor that are larger than 3 inches in diameter. Also called large woody debris.

**cold water biota** - Animal and plant life that grow best in water temperatures below 18 degrees C.

**commercial thinning (CT)** - Removal of excess or non-crop trees in young sawtimber stands to improve health and vigor of the remaining trees. This intermediate cut may be used in both uneven-aged and even-aged stands.

**compaction** - A physical change in soil properties that results when pore spaces are reduced in size and soil becomes more dense. Compaction generally occurs when a load is applied to the soil, such as when heavy equipment makes several passes that compress the soil.

**composite subwatershed** - A subwatershed containing more than one drainage basin.

**composition** - The physical and biological characteristics of a landscape. Often, the type of vegetation present, in terms of the species, age class, and physical features.

**connectivity** - The degree to which similar but separated vegetation components of a landscape are connected.

**corridor** - A defined tract of land, usually linear in shape, that enables species to travel between areas of suitable habitat. Corridors enlarge the habitat base for animals with large home ranges, provide for genetic exchange within or between populations, provide a route by which populations can move in
response to environmental change, and allow for dispersal of individuals to maintain a well-distributed population.

cover - Vegetation (usually coniferous) that provides wildlife either protection from the elements (thermal cover) or protection from predators (hiding cover).

critical habitat - Areas designated for the survival and recovery of federally listed threatened or endangered species.

crown fire - A fire that advances through the canopy of a forest.

cumulative effects - Those effects on the environment that result from the incremental effect of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

cut slope - That portion of the slope that is excavated in constructing roads, trails, landings, or skidtrails.

DBH (diameter at breast height) - The diameter of a tree measured 4.5 feet above the ground on the uphill side of the tree.

debris flow - The sudden movement and transport of a liquified matrix of firm soil material and woody debris down a stream or river channel.

decadent (timber stand) - A stand showing slow growth, significant mortality, and declining vigor. Annual mortality generally exceeds annual growth.

detrimental disturbance - The alteration of the natural soil characteristics that results in immediate or prolonged degradation of on-site resource quality standards or a reduction in vegetative growth or production potential. Disturbances include soil puddling, soil compaction, soil displacement, soil erosion, and severely burned soils.

desired condition - In a project analysis document, the Forest-wide desired future condition as applied to a specific project area and modified to fit the site-specific conditions of that area.

desired future condition - In the Forest Plan, a concise but general description by resource of what the Forest should be like 50 years in the future. It is the resulting condition of meeting the goals and objectives by following the standards and guidelines of the Forest Plan.

developed recreation - Recreation that requires facilities that, in turn, result in concentrated use of the area. Examples of developed recreation areas are campgrounds and ski resorts.

direct effects - Effects caused by an action and occurring at the same time and place.

directional felling - Cutting down a tree so that if falls in a desired direction.

dispersed recreation - Recreation that does not occur in a developed recreation setting, such as hunting, scenic driving, and backpacking.
Glossary

disturbance - Any event, such as wildfire or a timber sale, that alters the structure, composition, or function of an ecosystem.

diversity - The distribution and abundance of plant and animal species and communities in an area.

down or downed logs - Fallen trees and large logs lying on the forest floor.

duff - The layer of partially and fully decomposed organic materials lying below the litter and immediately above the mineral soil. It corresponds to the fermentation and humus layers of the forest floor.

dwarf mistletoe - A parasitic plant that grows on many conifer tree species. It reduces tree growth and causes stress that may eventually contribute to the death of the tree. It spreads from one tree to another of the same species.

economic efficiency - A measure of how well inputs are used to achieve outputs when all inputs and outputs (including environmental) are identified and valued.

ecosystem - Naturally occurring, self-maintained system of varied living and non-living interacting parts that are self-organized into biophysical and social components.
edge - The interface between landscape elements of different composition and structure, for example between an open clearcut and a closed-canopy forest.

EHE (elk habitat effectiveness) - A weighted numeric rating system having a value of between 0 and 100 that describes elk habitat quality based on open-road density, road impact rating, forage/cover ratio, and the juxtaposition of forage and cover on the landscape.

EMU (elk management unit) - A geographical analysis unit that represents an elk's movements and home range. Elk management units are made up of smaller units called Issue Reporting Areas (IRA's).

endangered species - An animal or plant that has been given federal protection status because it is in danger of extinction throughout all or a significant portion of its natural range.

entry (timber sale) - Entering a forested area by constructing roads and harvesting timber.

ephemeral stream - A stream that flows only as the direct result of rainfall or snowmelt and has no defined bed or bank.

erosion - A process of weathering, solution, corrosion and transportation of soil and rock material by ice, water, wind, or gravity.

even-aged management - The combination of treatments that result in the creation of a stand of trees of essentially the same age. Regeneration harvest methods that produce even-aged stands include clearcutting, seed tree cutting, and shelterwood cutting.

extensive timber management - A less intensive level of timber management that involves some harvest and usually relies on natural regeneration. Control of competing vegetation and precommercial thinnings are not usually done. Investment levels are low.
fill - Earth or rock moved during road construction and used to build up portions of the roadway.

fill slope - the sloping earth surface on the downhill side of a road resulting from roadway excavation.

fine fuels - Cured grass, leaves, needles, twigs, and small branches that ignite easily and carry fire rapidly.

fine sediment - Or surface fines. Mineral and organic particles smaller than 6.3 millimeters in diameter.

fire group - A grouping of habitat types that have common responses to fire and similar post-fire successional patterns. Fire groups fit within the three fire regimes (see fire regimes, below).

fire return interval - The average time between wildfires in a given ecosystem.

fire scar - A healing or healed-over injury, caused or aggravated by fire, on a woody plant.

fire regimes - The basic fire severity types in coniferous forests:

- Lethal - Fire occurs every 150 or more years. All trees are killed.
- Mixed - Fire occurs every 30 to 75 years. Older, thick-barked, fire-resistant trees survive.
- Non-lethal - Fire occurs every 25 years or less. Kills few trees, but kills and removes weak trees, mostly in the understory.

fire severity - How intensely a fire burns. If fire severity is outside of historic norms, tree mortality could be high. Fires are commonly classed as low, moderate, and high severity.

floodplain - Flat area next to water that is subject to a 1 percent or greater chance of flooding in a given year.

fluvial granitics - Land that has been formed from granite parent material and altered through the erosive force of running water.

forage - Plant material (usually grasses, forbs, and brush) that is available for animal consumption.

forage/cover ratio - The ratio of foraging areas (natural or created openings) to cover areas (usually coniferous forest).

forbs - Broadleaf ground vegetation with little or no woody material.

foreground (fg) - The area seen within 1/4 - 1/2 mile of the viewer.

fragmentation - The splitting or isolating of patches of similar habitat. Habitat can be fragmented by natural events or development activities.

fuel - Any substance or composite mixture susceptible to ignition and combustion.

fuel break - Any natural or constructed barrier utilized to segregate, stop, and control the spread of fire or to provide a control line from which to work.
Glossary

**fuel loading** - The amount of fuel on the ground in different size classes.

**fuel management or treatment** - The planned manipulation and/or reduction of living or dead forest fuels for forest management and other land-use objectives.

**GIS (Geographic Information System)** - A computer system that stores and manipulates spatial (mapped) data.

**granitics** - A. Soils derived from granite. B. Pertaining to relatively coarse-grained, light-colored rocks.

**grazing permit** - A document that authorizes livestock use on National Forest system lands, specifying the number of animals and length of time allowed for grazing.

**ground cover** - All vegetative material as well as rock and rock fragments that are in contact with ground.

**ground water** - The supply of fresh water under the earth's surface in an aquifer or in the soil.

**group selection** - Harvesting all trees in selected small groups (up to two acres in size). An uneven-aged management harvest method that favors shade-tolerant or shade-intolerant tree species, depending upon the size of the group.

**habitat** - The place where a plant or animal lives and grows under natural conditions.

**habitat type** - A distinct assemblage of plants and animals occupying a given area that can be distinguished from surrounding areas on the basis of certain identifiable characteristics, including environmental conditions.

**harvest** - Removal of timber (or a portion of an animal population) to achieve a desired condition.

**helicopter logging** - A method of logging timber that uses helicopters to lift and move logs from the woods to a point where they can be loaded onto trucks for hauling to the mill.

**herbaceous** - Referring to grass and small annual and perennial plants.

**hiding cover** - Vegetation that can hide 90 percent of an adult elk from human view at a distance of 200 feet or less.

**high risk tree** - A tree in a weakened condition, often from stress caused by drought, insects, or disease. A high risk tree is one that will likely die before the next harvest entry.

**historic norms** - An estimate of what the characteristics and conditions of what tree stands were like prior to Euro-American settlement. The extremes are excluded. Characteristics and conditions include stand structure and density, species composition, insect and disease activity, fuel loading, and potential fire severity.

**horizontal diversity** - The distribution and abundance of plant and animal communities and successional stages across an area of land. The greater the number of communities, the higher the degree of horizontal diversity.
hydrologic cycle - Also called the water cycle, this is the process of water evaporating, condensing, falling to the ground as precipitation, and returning to the ocean as run-off.

Idaho batholith - A great mass of intruded igneous rock, mostly granite, that covers much of central Idaho.

ID (interdisciplinary) team - A team of individuals with skills from different disciplines that focuses on the same task or project.

imminently dead tree - A tree that is expected to die within the next 5 years as a result of fire, insects, disease or other stress-causing factors.

indicator - A qualitative or quantitative measure that shows how management alternatives address an issue.

indirect effects - Impacts caused by an action but occurring later in time or farther removed in distance.

individual tree selection or single tree selection - An uneven-aged harvest method that removes selected trees from a stand. The small openings created regenerate naturally over time to maintain or create an uneven-aged stand structure.

infiltration - The rate at which water enters the soil. The infiltration rate is controlled by the structure, porosity and texture of the soil.

inherent erosion hazard - A rating for bare soil based on the soils ability to take in water, resistance of the soil surface to dispersion under impact from rainfall and surface water movement, effect of coarse fragments that reduce surface detachment, and effect of topography. A moderate rating is defined as sufficiently resistant to erosion to permit temporary exposure of bare soil during development or use; a low rating is defined as sufficiently resistant to erosion to permit exposure of bare soil under minimal precautionary restrictions.

intensive timber management - Applying a variety of actions to increase the production of timber stands. Actions may include even-aged harvest, reforestation, commercial or precommercial thinning, and control of competing vegetation.

interior forest - Older forested areas that are large and dense enough to have an internal core of habitat protected from light, drying conditions, and edge species.

interior species - Plants or animals that require dense, forested habitat.

intermittent stream - A stream that flows at certain times of the year in response to high ground water levels or surface sources such as melting snow, and that has a defined bed and banks.

IRA (issue reporting area) - A elk analysis unit of at least 500 acres, a subunit of an EMU.

irretrievable commitments - Losses of production or use for a period of time. An example is suited timber land being used for a skid trail. Timber growth on the land is irretrievably lost while the land is a
skidtrail, but the timber resource is not irreversibly lost because the land could grow trees again in the near future.

**irreversible commitments** - Permanent or essentially permanent resource uses or losses that cannot be reversed, except in the extreme long term. Examples include minerals that have been extracted or soil productivity that has been lost.

**issue** - A public or agency concern about a specific action or area that is addressed and resolved in the NEPA process.

**juxtaposition** - The position of being side by side or close together. Relative to position of forage, cover, and other important habitat components.

**ladder fuels** - Grass, brush, small trees, and dead limbs that allow a ground fire to climb into the crowns of trees.

**landform** - A geographic and topographic pattern (mountain, valley, ridge) of a particular landscape.

**landing** - A roadside location (usually cleared and level) where logs are stored or loaded onto logging trucks.

**landscape** - A heterogeneous land area composed of a cluster of interacting ecosystems that are repeated in similar form throughout.

**landslide prone** - Landslide-prone refers to land that has a probability of mass movement occurring greater than or equal to 10 percent during a period of 100 years.

**landtype** - A grouping of lands that have similar origin, composition, structure, and function.

**landtype association** - A grouping of landtypes that are similar in general surface configuration and origin.

**leave tree** - A live tree left standing in a unit after harvest.

**lop and scatter** - When branches are cut from fallen trees and scattered over the area rather than piled for burning. This allows the slash to lie close to the ground to reduce the fire hazard and accelerate decomposition.

**management area** - An area of land with similar management goals and a common management prescription, as described in the Forest Plan.

**mass movement** - Also mass wasting. Movement of large masses of earth materials in response to gravity.

**mass stability hazard** - A relative rating of the susceptibility of a land unit to mass movement.

**mature timber** - Trees that have attained full development, especially height, and are in full seed production.
**merchantable (timber)** - Meeting standards for minimum size and soundness.

**middleground (mg)** - the area seen between the end of the foreground zone and 3 to 5 miles from the viewer.

**MIS (management indicator species)** - Representative species whose condition and population changes are used to assess the impacts of management activities on similar species in a particular area.

**mitigation** - Actions that avoid, minimize, reduce, eliminate, or rectify impacts from management practices.

**mixed conifer** - Stands composed of a mixture of tree species, primarily ponderosa pine, Douglas-fir, grand fir, and to a lesser extent western larch, subalpine fir, and Engelmann spruce.

**monitoring** - The process of collecting information to evaluate if objective and anticipated or assumed results of a management plan are being realized or if implementation is proceeding as planned.

**mortality (stand)** - The number or volume of trees that died because of fire, insects, disease, climatic factors, or competition from other trees or vegetation. Some mortality volume can be salvaged and thus contribute to total yield.

**National Register of Historic Places** - A formal list established by the National Historic Preservation Act of 1966 of cultural resources worthy of preservation. The register is maintained by the National Park Service and lists archaeological, historic, and architectural properties.

**natural erosion** - The erosion process on a given landform that is not associated with human activities.

**natural regeneration (naturals)** - The renewal of a tree crop by natural seeding or sprouting.

**negative growth** - A condition in stands where mortality and decay are occurring faster than tree growth.

**NEPA** - An abbreviation for the National Environmental Policy act of 1969, which requires environmental analysis and public disclosure of federal actions.

**no action alternative** - The most likely condition expected to exist if management practices continue unchanged. The analysis of this alternative is required for federal actions under NEPA.

**noxious weed** - A designated plant species that causes negative ecological and economic impacts to both agricultural and Forest lands.

**nutrient cycling** - The circulation of chemical elements and compounds, such as carbon and nitrogen, from the soil into living plants and then back into the soil after the plants die.

**obliteration** - The treatment of a disturbed area with the objective of returning productivity and hydrologic function to as near to natural conditions as possible.
Glossary

**old growth** - A forest habitat that has reached the late stages of development. The Payette currently uses an old growth definition for mixed conifer and grand fir that includes criteria for large trees, snags, rot, and canopy levels and closure.

**open road** - An imprint on the land made for or by a four-wheel vehicle over 40 inches in width that will exist for longer than one year and is available for public use.

**open road density** - Miles of open road per square mile.

**overmature timber** - Trees that have attained full development, particularly in height, and are declining in vigor, health, and soundness.

**overstory** - The canopy or uppermost layer of the forest.


**percent of maximum SDI** - A measure of tree density in a stand. Crown closure starts at 25 percent maximum SDI (stand density index), full site occupancy starts at 35 percent maximum SDI.

**percolation** - Downward flow of water through the pores or spaces of rock or soil.

**perennial stream** - A stream that usually flows yearlong, except during periods of extreme drought. It has well-defined channels and shows signs of washing and scouring.

**pile and burn** - Natural or activity fuels that are piled by hand or with equipment and then burned. Fuels are piled in openings where fire spread can be controlled and heat will do minimal damage to surrounding trees.

**pitrun** - Gravel as it naturally occurs in the rock pit, without crushing or screening for size, quality, etc.

**plantation** - A stand of trees resulting from planting or artificially seeding an area.

**PNC (potential natural community)** - The community of plants and wild animals that would become established if all successional sequences were completed without interference. For forest communities, the potential natural community is an old-growth conifer stand.

**precommercial thinning (PCT)** - Removal of excess trees in young stands to improve health and vigor or the remaining trees. The trees removed are too small to be sold as commercial timber.

**preferred alternative** - The alternative identified by the Responsible Official for implementation in an EIS.

**prescribed burning** - The intentional application of fire to wildland fuels under predetermined conditions. This allows the fire to be confined to a specific area while producing the amount of heat and fuel consumption required to achieve planned objectives. These objectives are usually fuel reduction, site preparation for regeneration, or wildlife habitat management.
presettlement - The period from the last major climatic change (about 10,000 years ago) until settlement by Euro-Americans (1850-1900). Presettlement describes the vegetative conditions and natural processes that plants and animals adapted to prior to significant human influence. See also "range of variation" below.

proposed action - The project, activity, or decision that a federal agency intends to implement or undertake, as defined in NEPA regulations.

project area - The preliminary outline of a proposed action or activity that is in the planning stages.

pure subwatershed - A subwatershed containing only one drainage basin.

rangeland - Land on which the native vegetation is predominantly grasses, grass-like plants, forbs or shrubs.

range of variation - The range of sustainable conditions in an ecosystem that is determined by time, processes, native species, and the land itself. The components of functioning ecosystems naturally fluctuate over time, but they generally fluctuate within a natural or historic range of variation. As some components move toward or beyond the limits of that range, other components are affected as well, because they have evolved over time to interact within a limited range of conditions.

re-entry - A follow-up harvest or stand treatment done to keep the stand healthy and growing well.

reforestation - Generally refers to the re-establishment of trees through manual planting.

regeneration - The re-establishment of trees, either naturally or by planting. This term may also refer to the young trees themselves, also called reproduction.

resident fish - Freshwater species of fish that do not migrate to the ocean.

regeneration - The re-establishment of any plant cover, either naturally or by planting.

RHCA - Riparian Habitat Conservation Area. An area designated for special protection or management emphasis under PACFISH. Includes wetlands, streams, bogs, seeps, springs, lakes, landslide-prone areas and the buffer zones protecting these areas.

riparian - Pertaining to land that is next to water, where plants are dependent on a perpetual source of water.

riparian zone or riparian area - The zone of vegetation growing adjacent or in close proximity to a watercourse, lake, swamp, or spring. The vegetation is often dependent on its roots reaching the water table.

road construction - Building a new road.

road impact rating - A rating system designed to show the amount of use on a given road system in an area.
Glossary

road maintenance - Minor upkeep of an existing road to keep it at its current service level.

road reconstruction - Upgrading an existing road to an improved standard.

recreation opportunity spectrum - A system of measuring the land's ability to meet the expectations of recreation users. Six recreation categories, from primitive (natural) to urban (highly modified) describe the settings, activities, and experiences an area offers. Below are the settings used in the Sloan-Kennally analysis:

Semi-primitive Motorized (SPM): A moderate to large undeveloped landscape that is characterized as natural or natural-appearing and receives light recreation use. Motorized use is permitted.

Roaded Natural (RN): A moderate to large area that is characterized by predominantly natural-appearing environments with moderate evidences of human activities and modifications.

Roaded Modified (RM): A moderate to large developed landscape that is characterized as having been modified by man. In a forest setting the modifications are roads and obvious management activities (timber harvests, mining, etc.). The recreation travel expectation is related to all types of motorized access.

recreation visitor day (RVD) - A 12 hour period of 1 or more people.

Rosgen stream types - A classification system developed to characterize natural streams. Characteristics include slope, gradient, channel substrate, sinuosity, entrenchment, and width/depth ratio.

rotation age - The age at which an even-aged stand of timber is considered ready for harvesting.

sale area - The geographic area covered by a timber sale.

sanitation/salvage cut - The harvest of dead, dying, defective, and insect- or disease-infested trees before they become unmerchantable.

sawtimber - Trees that are 8 inches DBH or larger that can be made into lumber.

scarification - Exposing or roughing mineral soil surface for better seed germination.

scoping - The process the Forest Service used to determine, through public involvement, the range of issues that the planning process should address.

section 7 consultation - Consultation required by the Endangered Species Act with the appropriate jurisdictional agency for a listed species.

sediment - Soil and rock debris that has been delivered to a water body.

sensitive species - A plant or animal species that is susceptible or vulnerable to management activity impacts or habitat alteration. These species are identified by and specific to Forest Service Regions.
sensitivity level - A particular measure of viewer interest in the scenic qualities of a landscape. Three sensitivity levels are used, each identifying a different level of user concern. Two of the sensitivity levels apply to this analysis:

- Sensitivity Level 1, referrers to designated travel routes and use areas with moderate to high use.
- Sensitivity Level 2, referrers to designated travel routes and use areas with low to moderate use.

seral stage - The developmental phase of vegetation with characteristic structure and plant species composition.

shelterwood (SW1, SW2, SW3) - An even-aged system of timber management that removes all the mature to overmature trees in a series of two or more cuts within 30 years. In this EIS, the shelterwood regeneration cut (SW2) is designed to leave at least 15 trees per acre for seed, shade, aesthetics, and wildlife habitat. The overstory removal cut (SW3) is designed to remove most of the shelter once regeneration is established.

silviculture - The care and tending of stands of trees to meet specific objectives.

silvicultural prescription - The method selected to manage a forest stand. Silvicultural prescriptions are broken into two broad types: even-aged and uneven-aged. Even-aged prescriptions include clearcut, patch clearcut (less than 3 acres in size), seed tree, and shelterwood. Uneven-aged prescriptions include individual tree selection and group selection. Other non-regeneration prescriptions include thinnings and sanitation/salvage cuttings.

site potential - The inherent potential of a site to grow timber.

site preparation - The general term for preparing a site for regeneration. It is usually accomplished with fire or mechanical disturbance.

skidding - Dragging logs from the stump to a collection point.

skid trail - A route used by loggers to drag logs from stump to landing.

skyline logging - A logging system using steel cable, tower, and a powered winch to elevate logs from their position in the woods and carry them to a point where they can be loaded on to trucks.

slash - The woody debris left on the ground after timber harvest or left after a storm, fire, or other event. Slash includes unused logs, uprooted stumps, broken stems, branches, twigs, leaves, bark, and chips.

slash filter windrow - Woody debris placed along a slope to trap and hold sediment coming off a hill or road above.

snag - A standing dead tree.

soil - A dynamic natural body on the surface of the earth in which plants grow. It is composed of mineral, organic, and living materials.

soil compaction - A reduction in volume of the soil generally due to increased loads or vibration at the soil surface. Detrimental soil compaction has been defined as one or more of the following conditions in
Glossary

relation to natural conditions: a 50 percent reduction in natural pore space; less than 15 percent macropore space; or a 15 percent increase in soil bulk density.

soil displacement - The horizontal movement and removal of soil from a site, by erosion or mechanical means. Detrimental displacement has been defined as the removal of more than 50 percent of the natural A horizon from more than 20 percent of the project area, excluding roads and permanent facilities.

soil productivity - The capacity of the soil to support growth of specified plants, plant communities, or sequences of plant communities.

species composition - The different tree species within a stand, usually expressed as a percentage within each age class.

stand - A group of trees that occupies a specific area and is similar in species, age, and condition.

stand density - A measure of how crowded a stand is. Measures of density include: trees per acre, square feet of basal area, stand density index (SDI), and percent of maximum SDI.

stand health - The physical well-being of a stand; freedom from defect or disease.

stand structure - The different sizes and ages of trees within a stand.

stocking - The number of trees in a stand. Usually expressed as trees per acre or as a relative measure: well stocked, fully stocked, overstocked, or understocked.

strata - A stand delineation based on visible criteria: size class, crown density, and past management.

substrate - The bottom of a stream, usually composed of mud, sand, gravel, and/or boulders.

subwatershed - A subdivision within a watershed.

succession - The replacement in time of one plant community with another. The prior plant community (or successional stage) creates conditions that are favorable for the establishment of the next stage.

successional stage - A recognizable condition of a plant community that occurs during its development from bare ground to climax.

suited land - Forest land designated in the Forest Plan to be managed for timber production on a regulated basis.

summer range - The area essential for big game to carry out their reproductive cycles.

surface erosion - The wearing away of the land surface by running water or wind.

surface fire - A fire burning along the surface without significant movement into the understory or overstory, with flame length usually below 1 meter. Also called ground fire.

sustainability - The ability to maintain a desired condition or flow of benefits over time.
talus - Rock debris at the base of a cliff or slope.

TES (threatened, endangered, and sensitive) species - See definitions for each in this glossary.

thermal cover - A stand of coniferous trees at least 40 feet tall with an average crown closure of 70 percent or more that acts as shelter from the weather.

threatened species - Plant or animal species likely to become endangered throughout all or a specific portion of their range within the foreseeable future, as designated by the U.S. Fish and Wildlife Service.

timber sale - An amount of National Forest timber sold to and logged by a private company and logged under terms of a timber sale contract. Often called "sale" for brevity.

timber sale contract - The binding document between the Forest Service and timber purchaser that states how the sale will be logged.

timber type - Timber stands or groups of stands that have the same general vegetative composition.

total soil resource commitment (TSRC) - The conversion of a productive site to an essentially nonproductive site for 50 years or more. Examples are permanent ski trails, roads, recreational trails, and log landings.

tractor logging - A logging method that uses tractors or skidders to carry or drag logs from the stump to a collection point.

transitory range - Land suitable for livestock gazing on a temporary basis. For example, following timber harvest, grasses and forbs are available for grazing until the tree canopy closes again and shades them out.

treated acres - In this EA, the treated acres equal the acres within harvest unit boundaries.

underburn - A light broadcast burn under an existing forest canopy. A prescribed fire to reduce fuels without damaging existing trees.

understory - The trees, brush, and other vegetation growing beneath the canopy or overstory in a stand of taller trees.

uneven-aged management - A silvicultural system involving manipulation of a tree stand to simultaneously maintain continuous high forest cover, recurring regeneration of desirable species, and orderly growth and development of trees through a range of diameter or age classes. The cutting methods that create and maintain uneven-aged stands are individual tree selection and group selection.

unit (harvest or cutting) - The area of land where harvest will or has taken place.

unsuited land - Forest Service land that is not managed for timber production for various reasons.
Glossary

**variety class** - Distinctive landscape classifications relative to the Payette National Forest.

Variety Class A: A landscape that has features with unusual or outstanding visual qualities relative to surrounding landscapes.

Variety Class B: A landscape which contains a variety in form, line, color and texture, but have average visual qualities.

Variety Class C: A landscape that has low quality visual features relative to the surrounding landscape.

**vegetation management** - Referred to in this analysis as the management of stands of trees.

**vertical diversity** - The diversity in a stand that results from the complexity of the aboveground structure of the vegetation. The more tiers of vegetation or the more diverse the species makeup (or both), the higher the degree of vertical diversity.

**viability** - The ability of a wildlife or plant population to maintain sufficient size so that it persists over time in spite of normal fluctuations in numbers; usually expressed as a probability of maintaining a specific population for a specified period.

**viable population** - A wildlife or plant population that contains an adequate number of reproductive individuals appropriately distributed across a planning area to ensure the long-term existence of the species.

**visual quality objectives (VQO's)** - Categories of acceptable landscape alteration measured in degrees of deviation from the natural-appearing landscape. Three categories apply to this analysis:

Retention (R): human and management activities are not visually evident to the general Forest visitor.

Partial Retention (PR): human and management activities may be visually evident but should be subordinate to the characteristic landscape and appear natural to the general Forest visitor.

Modification (M): human and management activities may be visually evident to the general Forest visitor but should not be visually offensive. Natural form, line, color, and texture should be major elements in the design of human and management activities.

**water quality** - Refers to the chemical, physical, or biological characteristics that describe the conditions of a river, stream, or lake.

**waterbar** - An earthen barrier across a road or skidtrail, used to divert water and reduce erosion. It is usually designed to allow limited vehicle passage.

**watershed** - A total area of land above a given point on a waterway that contributes runoff water to the flow at the point. A major subdivision of a drainage basin.

**wetlands** - Areas that are inundated by surface or groundwater sufficient to support vegetation or aquatic life that requires saturated conditions.
**water yield** - The runoff from a watershed, expressed as surface water flow.

**wilderness** - Undeveloped federal land that is managed to preserve its natural condition and primitive character. Federal Wilderness areas are designated by Congress.

**windfirm** - Term for trees with deep root systems that are resistant to being blown over.

**windthrow** - Trees uprooted by the wind.

**winter range** - The area where big game species fine food and cover during severe winter weather.

**wood fiber production** - The growing, tending, harvesting, and regenerating of merchantable trees.

**working group** - A broad grouping of timber based on species composition and stand productivity.

**yarding** - Moving logs from the stump to a deck, road, or landing where they can then be loaded onto trucks.

**zone of influence** - The area that is economically and socio-economically influenced by Forest Service management activities.
APPENDIX B

BIBLIOGRAPHY

REFERENCES

Apperson, K. 1998. Fish Biologist, Idaho Department of Fish and Game; McCall, Idaho. Personal communication.


References


Appendix B


Gold Fork Watershed Analysis. 1996. Prepared for Boise Cascade Corporation (BCC), Boise ID.


B-3


Appendix B


References


Appendix B


### APPENDIX C

**HARVEST UNIT INFORMATION**

Silvicultural Prescriptions for Alternative 2.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Acres</th>
<th>Silvicultural Prescr.</th>
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* silvicultural prescriptions:
  EAR = even aged regeneration
  PCCR = patch clearcut with reserve trees
  PCC = patch clearcut
  FS = free selection
## Appendix C

Silvicultural Prescriptions for Alternative 3.

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* silvicultural prescriptions: EAR = even aged regeneration, PCCR = patch clearcut with reserve trees, PCC = patch clearcut
Appendix D Description

This section will display for the reader the effects on roads and road management as a result of the action alternatives. The following table lists roads by number, length, status, current condition, whether it is used by the sale or not, what work will be done to it, the proposed long-term management and reason. The first seven pages are in table format and the last page is a map for reference. A large scale map can be found in the project record.
## APPENDIX D - ROAD USE STATUS

### Sloan-Kennally Road Management Plan

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<thead>
<tr>
<th>Road Number</th>
<th>Length</th>
<th>Status</th>
<th>Condition</th>
<th>Used by Sale</th>
<th>Proposed Work</th>
<th>Proposed Management</th>
<th>Reason</th>
<th>Action with Sale (miles)</th>
<th>Closed / Open / Close</th>
<th>Closed / Naturally Decommissioned</th>
<th>Closed / Open / Obelize</th>
<th>Improve</th>
<th>Closed / Obelize</th>
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<td>50388</td>
<td>open</td>
<td></td>
<td>bladed surface washing in spots bladed</td>
<td>yes</td>
<td>spot gravel stream xing and eroding spots</td>
<td>open</td>
<td>main access road</td>
<td>1.00</td>
<td>(1.00 gravel)</td>
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<td>(1.97 gravel)</td>
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<td>control erosion</td>
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<td>1.81</td>
<td>(0.16 gravel)</td>
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<td>yes</td>
<td>light recon to open, install culvert at mp 2.6</td>
<td>temporarily close with wire gate after seasonal close-out work complete. Deep rip and scatter slash on first 0.40 mi of road and for 0.14 mi at mp 2.5 (near stream xing), restore stream xing after planting completed.</td>
<td>3.00</td>
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<td>road is within RHCA and grown in to the extent that walking on it is difficult, no stream crossings so is functioning hydrologically</td>
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<td>Take off system, oblit as needed to restore hydrologic functioning</td>
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<td>repair washing</td>
<td>Temporarily close road with wire gate after seasonal close-out work complete. Restore drainage by pulling culvert and restore drainage way, deep rip and scatter slash on first 0.23 mi after planting completed. Oblit first 0.23 post sale.</td>
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<td>convert to system road, close after planting activities</td>
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<td>0.14</td>
<td>closed nonsys by Kelly hump and heavy vegetation</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>168</td>
<td>0.10 to forest bady</td>
<td>closed nonsys, due to veg</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>170</td>
<td>0.12</td>
<td>closed nonsys, due to veg</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>171</td>
<td>0.11 to forest bady</td>
<td>closed nonsys, due to veg</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>172</td>
<td>0.71</td>
<td>closed nonsys by Kelly hump and heavy vegetation</td>
<td>good</td>
<td>yes</td>
<td>open</td>
<td>Temporarily close with wire gate after seasonal close-out work complete. Oblit after planting</td>
<td>needed for economical harvest</td>
<td></td>
<td></td>
<td>0.71</td>
<td>0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>173</td>
<td>0.11</td>
<td>closed nonsys by heavy vegetation</td>
<td>good</td>
<td>yes</td>
<td>open</td>
<td>Temporarily close with wire gate after seasonal close-out work complete. Oblit after planting</td>
<td>needed for economical harvest</td>
<td></td>
<td></td>
<td>0.11</td>
<td>0.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>174</td>
<td>0.29</td>
<td>closed nonsys due to Kelly hump</td>
<td>unknown</td>
<td>yes</td>
<td>light recon</td>
<td>convert first 0.4 mi. to trail, oblit the remainder after bd, site prep, and planting activities</td>
<td>access unique geologic formation (Sentinal Basin)</td>
<td></td>
<td></td>
<td>0.29</td>
<td>0.29</td>
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</tr>
<tr>
<td>179</td>
<td>0.07</td>
<td>closed nonsys, due to veg</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>181</td>
<td>0.09</td>
<td>closed nonsys, due to veg</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.09</td>
<td></td>
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<td></td>
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<tr>
<td>Road Number</td>
<td>Length</td>
<td>Status</td>
<td>Condition</td>
<td>Used by Sale</td>
<td>Proposed Work</td>
<td>Proposed Management</td>
<td>Reason</td>
<td>Open / Close</td>
<td>Closed / Naturally Decommissioned</td>
<td>Open / Obliterate</td>
<td>Closed / Open / Obliterate</td>
<td>Improve</td>
<td>Closed / Obliterate</td>
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</tr>
<tr>
<td>182</td>
<td>0.11</td>
<td>closed nonsys, but Kelly humps driven over</td>
<td>poor, excessive washing on steep grade</td>
<td>yes</td>
<td>light recon</td>
<td>If use for hauling more than one season then temporarily close with wire gate after seasonal close out work is complete. Oblit after use for hauling is complete, other post harvest activities can utilize 51101 for access</td>
<td>control erosion. High priority</td>
<td></td>
<td></td>
<td>0.11</td>
<td></td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>183</td>
<td>0.36</td>
<td>closed nonsys, but Kelly humps driven over</td>
<td>poor, excessive washing on steep grade</td>
<td>yes</td>
<td>light recon</td>
<td>If use for hauling more than one season then temporarily close with wire gate after seasonal close out work is complete. Oblit after use for hauling is complete, other post harvest activities can utilize 51101 for access</td>
<td>control erosion. High priority</td>
<td></td>
<td></td>
<td>0.36</td>
<td></td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>184</td>
<td>0.10</td>
<td>closed nonsys by heavy vegetation</td>
<td>good</td>
<td>yes</td>
<td>open</td>
<td>Temporarily close with wire gate after seasonal close-out work complete. Oblit after planting</td>
<td>needed for economical harvest</td>
<td></td>
<td></td>
<td>0.10</td>
<td></td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>185</td>
<td>0.22</td>
<td>closed nonsys, due to veg</td>
<td>good</td>
<td>yes</td>
<td>light recon</td>
<td>would be closed due to obit of 182 and closing of 51101. Utilize rolling dips to address erosion on steeper sections. Add to system</td>
<td>control erosion. Close after use due to steep grade. Add to system for timber</td>
<td></td>
<td></td>
<td>0.22</td>
<td></td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>189</td>
<td>0.18</td>
<td>closed nonsys due to gate on 50014</td>
<td>washing and minor gullying debris at stream, there is also a spur that winds through unit 110</td>
<td>yes, including spur</td>
<td>light recon</td>
<td>oblit after planting. Will be defacto closed during operation due to gate on 50014</td>
<td>control erosion</td>
<td></td>
<td></td>
<td>0.18</td>
<td></td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>197</td>
<td>0.42</td>
<td>closed nonsys, due to veg</td>
<td>good brushed in</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>199</td>
<td>0.20</td>
<td>nonsys, due to veg</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>203</td>
<td>0.35</td>
<td>closed nonsys, due to veg</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>232</td>
<td>0.11</td>
<td>closed nonsys, due to veg</td>
<td>brushed in</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td></td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Road Number</td>
<td>Length</td>
<td>Status</td>
<td>Condition</td>
<td>Used by Sale</td>
<td>Proposed Work</td>
<td>Proposed Management</td>
<td>Reason</td>
<td>Open / Close</td>
<td>Closed / Open / Close</td>
<td>Closed / Naturally Decommissioned</td>
<td>Open / Obliterate</td>
<td>Closed / Open / Obliterate</td>
<td>Improve</td>
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</tr>
<tr>
<td>236</td>
<td>0.89</td>
<td>closed nonsys, due to veg</td>
<td>good</td>
<td>yes</td>
<td>light recon</td>
<td>would be closed due to oblit of 182 and closing of 51101, utilize rolling dips to address erosion on steeper sections. Add to system</td>
<td>control erosion. close after use due to steep grade. add to system for timber</td>
<td>0.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>237</td>
<td>0.34</td>
<td>closed nonsys, due to veg</td>
<td>brushed in</td>
<td>yes first 0.18</td>
<td>light recon</td>
<td>obit used section (stream xing) after planting activities are complete, road section not used is naturally decommissioned. Road will be defacto closed during off season due to gate on 51101.</td>
<td>control erosion</td>
<td>0.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>273</td>
<td>0.23</td>
<td>closed nonsys due to inline ditch on 50401 otherwise good</td>
<td>rill at junction 50401</td>
<td>no</td>
<td>none</td>
<td>obit prior to or concurrent with sale activities</td>
<td>control erosion</td>
<td>0.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>278</td>
<td>0.32</td>
<td>closed nonsys due to inline ditch on 50401</td>
<td>good minor fill failure at stream xing</td>
<td>yes</td>
<td>light recon</td>
<td>Temporarily close road with wire gate after seasonal close-out activities. Oblit after site prep, but before planting due to good access off of 50401</td>
<td>control erosion</td>
<td>0.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>282</td>
<td>0.73</td>
<td>closed nonsys due to inline ditch on 50401</td>
<td>good, seed field check</td>
<td>yes</td>
<td>light recon</td>
<td>Temporarily close road with wire gate after seasonal close-out activities. Oblit after site prep, but before planting due to good access off of 50401</td>
<td>control erosion</td>
<td>0.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>306</td>
<td>0.72</td>
<td>closed nonsys due to Kelly bump</td>
<td>good, seed field check, may be culverts</td>
<td>no</td>
<td>none</td>
<td>possible work needed</td>
<td>control erosion</td>
<td>0.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>327</td>
<td>0.27</td>
<td>closed nonsys due to gate on 50014</td>
<td>sheet erosion and minor gullyng. One stream xing with cmp</td>
<td>no</td>
<td>none</td>
<td>obit using Si/KV pior to or concurrent with sale activities</td>
<td>control erosion</td>
<td>0.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>328</td>
<td>0.11</td>
<td>closed nonsys due to gate on 50014</td>
<td>sheet erosion and minor gullyng. One stream xing with cmp</td>
<td>no</td>
<td>none</td>
<td>obit using Si/KV pior to or concurrent with sale activities</td>
<td>control erosion</td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Road Number</td>
<td>Length</td>
<td>Status</td>
<td>Condition</td>
<td>Used by Sale</td>
<td>Proposed Work</td>
<td>Proposed Management</td>
<td>Reason</td>
<td>Open / Close</td>
<td>Closed / Open / Close</td>
<td>Closed / Naturally Decommissioned</td>
<td>Open / Obiterate</td>
<td>Closed / Open / Obiterate</td>
<td>Improve</td>
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</tr>
<tr>
<td>332</td>
<td>1.55</td>
<td>closed nomsys due to Kelly bump</td>
<td>unknown</td>
<td>yes</td>
<td>light recon</td>
<td>convert first 0.4 mi. to trail, obliterate remainder after bd, site prep, and planting activities</td>
<td>access unique geologic formation (Sentinal Basin)</td>
<td></td>
<td>1.55</td>
<td>1.55</td>
<td></td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>334</td>
<td>0.40</td>
<td>closed nomsys due to Kelly bump</td>
<td>unknown</td>
<td>yes</td>
<td>light recon</td>
<td>obliterate after bd, site prep, and planting activities</td>
<td></td>
<td></td>
<td>0.40</td>
<td>0.40</td>
<td></td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>341</td>
<td>0.17</td>
<td>closed nomsys due to gate on 50014</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>leave as is, naturally decommissioned</td>
<td>functioning hydrologically</td>
<td></td>
<td>0.17</td>
<td>0.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>348</td>
<td>0.50</td>
<td>closed nomsys due to gate on 50014</td>
<td>washing and minor gullies. Four stream crossings with cmps</td>
<td>no</td>
<td>none</td>
<td>oblit using SI/KV pier to or concurrent with sale activities</td>
<td>control erosion</td>
<td></td>
<td>0.50</td>
<td>0.50</td>
<td></td>
<td></td>
<td>0.50</td>
</tr>
<tr>
<td>353</td>
<td>0.45</td>
<td>closed nomsys due to gate on 50014</td>
<td>washing and minor gullies delivery into stream. there is also a spur that winds through unit 119</td>
<td>yes, including spur</td>
<td>light recon</td>
<td>oblit after planting. Will be defunct by closed during operation due to gate on 50014</td>
<td>control erosion</td>
<td></td>
<td>0.45</td>
<td>0.45</td>
<td></td>
<td></td>
<td>0.45</td>
</tr>
<tr>
<td>364</td>
<td>1.37</td>
<td>closed nomsys due to gate on 50014</td>
<td>good, washed out culvert</td>
<td>yes last 0.35</td>
<td>light recon</td>
<td>oblit portion used after planting. Road will be defunct seasonally closed due to gate on 50014. Hand work to restore drainage of washed out culvert using SI/KV</td>
<td>control erosion</td>
<td></td>
<td>1.02</td>
<td>0.35</td>
<td>0.35</td>
<td></td>
<td>0.35</td>
</tr>
<tr>
<td>405/454/1009/1034</td>
<td>2.44</td>
<td>open nomsys</td>
<td>fair, washed on steep portion. no stream crossings</td>
<td>yes</td>
<td>light recon. construct 0.2 mi to avoid right of way with bcc</td>
<td>add to system close both at junct with 50401 with gate (year round, behinduce) and at BCC Indry sec 19. Scatter, seed, fertilize</td>
<td>timber mastic</td>
<td></td>
<td>2.44</td>
<td>2.44</td>
<td>0.06</td>
<td>(gravel)</td>
<td>2.44</td>
</tr>
<tr>
<td>406</td>
<td>0.48</td>
<td>closed nomsys due to Kelly bump</td>
<td>good</td>
<td>no</td>
<td>none</td>
<td>scatter, seed, fertilize first few feet of road at junct with 329</td>
<td>control erosion</td>
<td></td>
<td>0.48</td>
<td>0.48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

843
Close: Physically barricade road at access point to prevent motorized use (unless noted), provide for drainage (waterbar), scarify seed and fertilize. Some sections that have steeper grades or that have been prone to erosion will be ripped to depth of compaction and have slash scattered on road surface to achieve a minimum of 50% ground cover.

Obliteration: The restoration of hydrologic function which may include recontouring portions of road prism, deep ripping, slash scattering to 50 percent seeding and fertilizing.

Functioning hydrologically: A road that does not contribute to accelerated erosion, nor does it alter the hill slope hydrology by intercepting ground water, or channelize water through culverts or down road surface.
Figure D-1. Road Status After Project

LEGEND

- Closed
- Gravel
- New Construction
- No Change
- Obliterate
- Planning Area
APPENDIX E
BEST MANAGEMENT PRACTICES
FOR SOIL AND WATER CONSERVATION

FEDERAL CONSISTENCY CHECKLIST FOR PLANNED PROJECTS

Pertinent Sections of the Water Quality Standards are referenced and need to be used in conjunction with the checklist.

1. Have you identified which nonpoint source activities regulated by the Idaho Water Quality Standards are within the project area?

   Yes. Nonpoint sources identified within the project area are: Timber harvest, and forest road reconstruction.  
   **IDAPA 16.01.2003,23.** - Nonpoint source definition.

2. Have you identified the state-approved BMPs for each nonpoint source activity?

   Yes. See attached list of approved BMPs.
   **IDAPA 16.01.2300,05.**

3. For nonpoint source activities which do not have approved BMPs, have you identified practices that demonstrate a knowledgeable and reasonable effort to minimize resulting water quality impacts?

   Yes. (Note: BMPs identified in the *Idaho Agricultural Pollution Abatement Plan* (Idaho Dept. of Health and Welfare, 1983) and the *Best Management Practices for Road Activities*, Volume I and II, (Levinski, 1982) constitute knowledgeable and reasonable effort for these activities.)
   **IDAPA 16.01.2300,04.a.** - Nonpoint source restrictions.

4. Have you provided a monitoring plan which, when implemented, will provide adequate information to determine the effectiveness of the approved or specialized BMPs in protecting the beneficial uses of water?

   Yes. The monitoring plan is included in Appendix G of this EIS.
   **IDAPA 16.01.2300,04.c.II.** - Monitoring plan requirements.

5. Have you provided a process (including feedback from water quality monitoring) for modifying the approved or specialized BMPs in order to protect beneficial uses of water?

   Yes. A monitoring plan is included in Appendix G. A feedback loop is established on the Payette Forest where BMP monitoring for implementation and effectiveness is reported to DEQ yearly, and BMP results are used to modify practices on specific projects. This protects the beneficial uses identified for the project.
   **IDAPA 16.01.2300,04.c.III.** - Modification of BMPs.

6. Have you identified the "appropriate and existing beneficial uses" of water for the water bodies in the
BMPs for Soil and Water Conservation

project area?

Yes. The beneficial uses for project area streams are: cold water biota, salmonid spawning, domestic and agricultural water supply, and primary and secondary contact recreation.

**IDAPA 16.01.2300,01** - Definition of appropriate beneficial uses.

7. Have you determined if a Water Quality Limited water body has been designated within the project area?

Yes. Although not in the project area, Cascade Reservoir is listed as a Water Quality limited body, and Gold Fork River from Flat Creek to Cascade Reservoir is listed as a Water Quality Limited Segment in the October 7, 1994 303(D) Report.

8. Have you determined if an Outstanding Resource Water (ORW) has been designated in the project area?

Yes. There are no Outstanding Resource Waters in the project areas.

**IDAPA 16.01.2003,31**

9. Have you identified the water quality standards and criteria applicable to protecting the "appropriate beneficial uses"?

Yes. Administrative policies and standards of the State Water Quality Standards require protection for appropriate beneficial uses.

**IDAPA 16.01.2200, - 2280** - Water Quality Criteria.

10. Does pre-project planning and design include an analysis of water quality resulting from implementation of the proposed activity sufficient to predict exceedence of water quality criteria for the appropriate beneficial uses(s), or in the absence of such criteria, sufficient to predict the potential for beneficial use impairment?

Yes. The analysis includes an evaluation of current status and predicted condition of beneficial uses in the subject watershed, and addresses physiographic conditions such as landtype, soils, and vegetation that influence erosion and mass wasting. The analysis addresses changes in habitat that may impact the beneficial uses as a result of nonpoint source activities. The analysis of beneficial use impairment shall utilize parameters and protocols outlined in the Statewide Coordinated Monitoring Plan.

**IDAPA 16.01.2050,02** - Administrative policy.
**IDAPA 16.01.2300,02** - Limitation to discharge of pollutants.

**IDAHO WATER DESIGNATION ABSTRACTS**

**Surface Water Quality Beneficial Use Designations**

**Agricultural Water Supply:** Waters which are suitable or intended to be made suitable for the irrigation of crops or as drinking water for livestock (Source: IDAPA 16.01.0200,01a). **Criteria:** General surface water quality criteria. Narrative or "free-form" criteria for hazardous materials, deleterious materials, floating, suspended, or submerged matter, excess nutrients, oxygen demanding materials and sediment. Numeric criteria for radioactive materials (Source: IDAPA 16.01.02250,03 a).
**Domestic Water Supply:** Waters which are suitable or intended to be made suitable for drinking water supplies (Source IDAPA 16.01.02100,01.b). *Criteria:* Numeric criteria for specific constituents (Source: IDAPA 16.01.02250,03.a).

**Cold Water Biota:** Waters which are suitable or intended to be made suitable for protection and maintenance of viable communities of aquatic organisms and populations of significant aquatic species which have optimal growing temperatures below 18 degrees C (Source: IDAPA 16.01.02100,02.a). *Criteria:* Numeric criteria for pH, dissolved oxygen, gas saturation, residual chlorine, water temperature and total ammonia (Source: IDAPA 16.01.02100,02.a and b).

**Salmonid Spawning:** Waters which provide or could provide a habitat for active self-propagating populations of salmonid fishes (Source: IDAPA 16.01.0200,02.c). *Criteria:* Numeric criteria for pH, gas saturation, residual chlorine, dissolved oxygen, water temperature and total ammonia (Source: IDAPA 16.01.02250,02.a and d).

**Primary Contact Recreation:** Surface waters which are suitable or are intended to be made suitable for prolonged and intimate contact by humans or for recreational activities when the ingestion of small quantities of water is likely to occur. Such waters include, but are not restricted to, those used for swimming, water skiing or skin diving (Source: IDAPA 16.01.02100,03.a). *Criteria:* Numeric criteria applied between May 1st and September 30th (recreation season) for fecal coliform bacteria (Source: IDAPA 16.01.02250,01.a).

**Secondary Contact Recreation:** Surface waters which are suitable or are intended to be made suitable for recreational uses on or about the water and which are not included in the primary contact category. These waters may be used for fishing, boating, wading, and other activities where ingestion of raw water is not probable (Source: IDAPA 16.01.02100,04). *Criteria:* Numeric criteria for fecal coliform bacteria (Source: IDAPA 16.01.02250,01.b).

**Wildlife Habitats:** Waters which are suitable or are intended to be made suitable for wildlife habitats. This use applies to all surface waters of the state (Source: IDAPA 16.01.02100,04). *Criteria:* General surface water quality criteria (Source: IDAPA 16.01.02200).

**Aesthetics:** This use applies to all surface waters of the state (Source: IDAPA 16.01.02100,05). *Criteria:* General surface water quality criteria (Source: IDAPA 16.01.02200).

* Different criteria apply to stream segments or water bodies that have been assigned site-specific criteria.

**Groundwater Use Classifications**

**Agricultural Water Supplies:** Waters which are suitable or intended to be made suitable for the irrigation of crops or as drinking water for livestock (Source: IDAPA 16.01.02250,03.a). *Criteria:* General groundwater quality criteria. Narrative or "free-form" criteria for hazardous materials and deleterious materials (Source: IDAPA 16.01.02299,04.a and b). Numeric criteria for radioactive materials (Source: IDAPA 16.01.02299,04.c and d).

**Domestic Water Supplies:** Waters which are suitable or intended to be made suitable for drinking water supplies (Source: IDAPA 16.01.02299,04.a and b). *Criteria:* Numeric criteria for specific constituents (Source: IDAPA 16.01.02250,03.a).

**Special Designations**

**Special Resource Water:** Those specific segments or bodies of water that are recognized as needing intensive protection: a) to preserve outstanding or unique characteristics; or b) to maintain current beneficial use (Source: IDAPA 16.01.02003,54). For special resource waters, new or modified point sources of pollution can not be allowed unless there is no measurable change in the quality of the receiving water body after allowing for an applicable mixing zone.
Designations as a special resource water recognizes at least one of the following characteristics: a) the water is of outstanding high quality, exceeding both criteria for primary contact recreation and cold water biota; b) the water is of unique ecological significance; c) the water possesses outstanding recreational or aesthetic qualities; d) intensive protection of the quality of the water is in paramount interest of the people within a State or National Wild and Scenic River System; or e) intensive protection of the quality of the water is necessary to maintain an existing but jeopardized beneficial use (Source: IDAPA 16.01.02054,01).

**Water Quality Limited Segment**: Any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Clean Water Act (Source: 40 CFR Chapter 1, Section 130,2(j)). Water quality limited segments are to be prioritized for total maximum daily load development. Designation as a water quality limited segment is based on water quality data.

**Wild and Scenic River**: Under the Wild and Scenic Rivers Act (P.L. 90-542 as amended) a river or a section of a river may be classified as a wild river, a scenic river or recreational river. **Wild Rivers** are those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds and shorelines essentially primitive and unpolluted. They represent vestiges of primitive America. **Scenic Rivers** are those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads. **Recreational Rivers** are those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past (Source: Wild and Scenic Rivers Act, Section 2 (b)).

The Wild and Scenic Rivers Act prohibits the Federal Energy Regulatory Commission from licensing hydropower projects on eligible or designated river segments; withdraws public lands within authorized boundaries from entry, sale, or deposition; limits mineral extraction within designated or study river corridors; and requires that management actions necessary to protect such rivers be taken.
BMP EFFECTIVENESS RATINGS

This part of the appendix describes standard Best Management Practices (BMPs) commonly used on the Payette National Forest to minimize effects of timber management and associated activities on soil and water resources. The purpose of Table AD-1 is to:

1. establish the connection between the SWCP employed by the Forest Service and the Rules and Regulations pertaining to the Idaho Forest Practices Act; and

2. provide a qualitative assessment of expected effectiveness that the implemented BMP will have on preventing or reducing impacts on soil and water resources.

The BMPs described herein are tiered to the Soil and Water Conservation Practices (SWCP) Handbook (FSH 2509.22) which is a supplemental document to the Forest Plan. This appendix does not cover all possible practices contained in the Forest Service Handbook, but it does represent the more common practices used to meet State and Forest management objectives. All reasonable practices will be implemented where applicable in the design of selected projects. The District Ranger (through the Presale Forester) is responsible for ensuring that all relevant SWCPs are incorporated into proper B and/or C Timber Sale Contract provisions. The Contracting Officer, through official representative(s), is responsible for ensuring that these provisions are properly administered on the ground.

Each Soil and Water Conservation Practice is described as follows:

Title - Includes the sequential number of the SWCP and a brief title.

Objective - Describes the SWCP objective(s) and the desired results for protecting soil and water resources.

Effectiveness - Provides a qualitative assessment of expected effectiveness that the implemented practice will have on preventing or reducing impacts on soil and water resources. The SWCP effectiveness rating is based on the following criteria:

- Literature/Research (must be applicable to area).
- Administrative studies (local or within similar ecosystem).
- Experience (judgement of qualified personnel by education and/or experience).
- Fact (obvious by reasoned, logical, response).

The expected effectiveness of the SWCP is rated either High, Moderate or Low.

HIGH: Practice is highly effective (greater than 90%), meets one or more of the rating criteria and documentation is available.

MODERATE: Documentation shows that practice is 75% to 90% effective; or Logic indicates that practice is highly effective, but there is no documentation to back it up. Implementation and effectiveness of this practice will be monitored and the practice will be modified if necessary to achieve the mitigation objective.

LOW: Effectiveness is unknown or unverified, and there is little or no documentation; or applied logic is uncertain and practice is estimated to be less than 60% effective. This practice is speculative and needs both effectiveness and validation monitoring.

Compliance - Identifies specific Idaho Forest Practices Act Rule(s) that the implemented practice would meet or exceed.
### Table E-1. BMP Crosswalk

<table>
<thead>
<tr>
<th>BMP Description</th>
<th>Purpose or Objective</th>
<th>Effectiveness and IFPA Compliance</th>
<th>Timber Sale Contract Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWCP 11.05 - Wetlands analysis and evaluation.</td>
<td>Maintain wetland functions and avoid adverse soil and water resource impacts associated with the destruction or alteration of wetlands, bogs, and wet meadows.</td>
<td>HIGH. IFPA Rule 3.h.iii</td>
<td></td>
</tr>
<tr>
<td>SWCP 11.07, 11.11 - Oil spill contingency plan. Petroleum storage, delivery facilities, and management.</td>
<td>Prevent contamination of soil and water resources resulting from leaking delivery systems and storage facilities.</td>
<td>HIGH. IFPA Rules 2.j.i and 2.j.ii</td>
<td>C6.341, B6.34</td>
</tr>
<tr>
<td>SWCP 11.09 - Management by closure to use.</td>
<td>Exclude activities that could result in damages to facilities or degradation of soil and water resources.</td>
<td>HIGH. IFPA Rule 4.d.v(c)</td>
<td></td>
</tr>
<tr>
<td>SWCP 11.14 - Management of snow survey sites.</td>
<td>Protect snow courses and related data sites from effects by land management activities.</td>
<td>HIGH. No related IFPA rules.</td>
<td></td>
</tr>
<tr>
<td>SWCP 13.02 and 14.07 - Slope limitations for tractor operation. Determining tractor loggable ground.</td>
<td>To reduce soil displacement, erosion, and sedimentation by restricting equipment operations to slopes that do not exceed 45 percent gradient.</td>
<td>HIGH. IFPA Rules 3.c.i and 3.c.ii</td>
<td>B6.6422</td>
</tr>
<tr>
<td>SWCP 13.03 - Tractor operation exclusion from wetlands, bogs, and wet meadows.</td>
<td>Avoid adverse soil and water resource impacts associated with the destruction or modification of wetlands, bogs, and wet meadows.</td>
<td>HIGH. IFPA Rule 3.h.iii</td>
<td>B6.61, C6.61#</td>
</tr>
<tr>
<td>SWCP 13.04 - Revegetation of surface-disturbed areas.</td>
<td>Protect soil productivity and water quality by minimizing soil erosion.</td>
<td>MODERATE IFPA Rules 3.d.iii, 3.e.i, and 3.e.ii</td>
<td>C6.607#</td>
</tr>
<tr>
<td>SWCP 13.05 - Slash protection during and after slash windrowing.</td>
<td>To reduce erosion and sedimentation from road surfaces and fill slopes by installing windrows below the fill slope.</td>
<td>MODERATE. No related IFPA rule</td>
<td>A-20, B6.6</td>
</tr>
<tr>
<td>SWCP 13.06 - Soil moisture limitations for tractor operation.</td>
<td>Minimize soil compaction, puddling, rutting, and gullyng with resultant sediment production and loss of soil productivity.</td>
<td>HIGH. No related IFPA rule</td>
<td>A-20, B6.6, B6.42, B6.422 C6.42, C6.425</td>
</tr>
<tr>
<td>SWCP 14.02, 14.08, 14.10 - Timber harvest unit design, tractor skidding design, and log landing location and design.</td>
<td>Design harvest units to maintain soil productivity and water quality by locating landings and skidding patterns to best fit the terrain, avoiding soil erosion, and minimizing surface disturbance.</td>
<td>MODERATE IFPA Rules 3.c.iii, 3.d.i, and 3.d.ii</td>
<td>B6.422, C6.6, C6.410#, C6.411, C6.422</td>
</tr>
<tr>
<td>BMP Description</td>
<td>Purpose or Objective</td>
<td>Effectiveness and IFPA Compliance</td>
<td>Timber Sale Contract Provision</td>
</tr>
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</tr>
<tr>
<td>SWCP 14.03 - Use of sale area maps for designating soil and water protection needs.</td>
<td>Delineate protection areas and special treatment areas to ensure their recognition, consideration, and protection on the ground.</td>
<td>HIGH. No related IFPA rule</td>
<td>B1.1, B6.5, B6.6, C6.51, C6.52</td>
</tr>
<tr>
<td>SWCP 14.04, 15.04 - Limiting the operating period of timber sale activities. Timing of construction activities.</td>
<td>Minimize erosion, sedimentation, and loss in soil productivity by ensuring activities are done in a timely manner when ground conditions are such that detrimental impacts can be avoided.</td>
<td>MODERATE. IFPA Rule 4.c.ix</td>
<td>A-20, B6.31, C6.3, C6.30#, C6.311, C6.312#</td>
</tr>
<tr>
<td>SWCP 14.05, 15.05 - Protection of unstable areas. Slope stabilization and prevention of mass movements.</td>
<td>Identify and protect unstable areas so as to avoid triggering mass movements and resultant erosion and sedimentation.</td>
<td>HIGH. IFPA Rule 3.d.ii</td>
<td>-</td>
</tr>
<tr>
<td>SWCP 14.06, 15.12 - Riparian area designation. Control of construction in riparian areas.</td>
<td>Minimize adverse effects on riparian areas with prescriptions for nearby logging and related land disturbance activities.</td>
<td>HIGH. IFPA Rules 3.g.ii, 3.g.iii, 3.g.iv, 3.f.iv</td>
<td>B6.5, C6.51#, C6.52#</td>
</tr>
<tr>
<td>SWCP 14.09 - Suspend leading end of logs during skyline or cable yarding.</td>
<td>Protect the soil from excessive disturbance and erosion and to maintain the integrity of riparian and other sensitive areas.</td>
<td>MODERATE. IFPA Rule 3.g.ii</td>
<td>C6.42#</td>
</tr>
<tr>
<td>SWCP 14.13, 14.14 - Special erosion prevention measures and revegetation of areas disturbed by harvest activities.</td>
<td>Establish vegetative cover on disturbed sites to reduce erosion and sedimentation from areas where normal revegetation methods or contract provisions do not apply.</td>
<td>MODERATE. IFPA Rules 3.d.iii and 3.e.i</td>
<td>B6.6, C6.6, C6.601</td>
</tr>
<tr>
<td>SWCP 14.16 - Meadow protection during timber harvest.</td>
<td>Avoid damage to the ground cover, soil, and water in meadows.</td>
<td>HIGH. No related IFPA rule</td>
<td>-</td>
</tr>
</tbody>
</table>
## BMPs for Soil and Water Conservation

<table>
<thead>
<tr>
<th>BMP Description</th>
<th>Purpose or Objective</th>
<th>Effectiveness and IFPA Compliance</th>
<th>Timber Sale Contract Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWCP 14.18 - Erosion control structure maintenance.</td>
<td>Ensure that erosion control structures are stabilized and working effectively.</td>
<td>HIGH. No related IFPA rules</td>
<td>B6.6, B6.66, B4.225</td>
</tr>
<tr>
<td>SWCP 14.19 - Acceptance of timber sale erosion control measures before sale closure.</td>
<td>Ensure the adequacy of required timber sale erosion control work.</td>
<td>HIGH. No related IFPA rules</td>
<td>B6.6, B6.63, B6.64, B6.65, B6.66, C6.6</td>
</tr>
<tr>
<td>SWCP 14.20 - Slash treatment in sensitive areas.</td>
<td>Protect water quality and soil productivity in sensitive tributary areas from the use of mechanized equipment for slash disposal.</td>
<td>HIGH. No related IFPA rules</td>
<td>C6.7</td>
</tr>
<tr>
<td>SWCP 14.22 - Modification of the timber sale contract.</td>
<td>Modify the timber sale contract if new circumstances or conditions indicate that planned activities will cause irreversible damage to soil, water, or watershed values.</td>
<td>HIGH. No related IFPA rules</td>
<td>B8.3, C8.3, C3.312</td>
</tr>
<tr>
<td>SWCP 15.02 - General guidelines for the location and design of roads and trails.</td>
<td>Locate and design roads and trails with minimal soil and water resource impacts while considering all design criteria.</td>
<td>MODERATE IFPA Rules 4.b.i, 4.b.ii, 4.b.iii, 4.c.i</td>
<td>C5.2</td>
</tr>
<tr>
<td>SWCP 15.03 - Road and trail erosion control plan.</td>
<td>Prevent, limit, and mitigate erosion and sedimentation through timely implementation of erosion control practices prior to and during ground-disturbing activities.</td>
<td>MODERATE No related IFPA rules</td>
<td></td>
</tr>
<tr>
<td>SWCP 15.06 - Mitigation of surface erosion and stabilization of slopes.</td>
<td>Minimize soil erosion and sedimentation from road cut slopes, fill slopes, and travelways during and after construction.</td>
<td>MODERATE IFPA Rules 4.c.iii, 4.d.ii</td>
<td>C6.607#</td>
</tr>
<tr>
<td>SWCP 15.07 - Control of permanent road &amp; drainage.</td>
<td>Minimize the erosive effects of concentrated water and the degradation of water quality through proper design and construction of road drainage systems and control structures.</td>
<td>MODERATE IFPA Rules 4.c.viii and 4.d.iii, a, b.</td>
<td></td>
</tr>
<tr>
<td>SWCP 15.08 - Pioneer road construction.</td>
<td>Minimize sediment production and mass wasting associated with pioneer road construction.</td>
<td>MODERATE No related IFPA rule</td>
<td></td>
</tr>
<tr>
<td>SWCP 15.09 - Timely erosion control measures for incomplete roads and stream crossings.</td>
<td>To minimize accelerated erosion and sedimentation from disturbed ground created by ongoing construction projects</td>
<td>MODERATE IFPA Rules 4.c.ii, 4.c.iii, 4.c.iv, 4.d.iii</td>
<td>C6.30#</td>
</tr>
<tr>
<td>BMP Description</td>
<td>Purpose or Objective</td>
<td>Effectiveness and IFPA Compliance</td>
<td>Timber Sale Contract Provision</td>
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</tr>
<tr>
<td>SWCP 15.10, 15.18 - Control of road construction excavation and sidecast.</td>
<td>Reduce sedimentation from unconsolidated excavated and sidecast material and</td>
<td>HIGH. IFPA Rules 4.c.iii, 4.c.iv, and 4.d.i</td>
<td></td>
</tr>
<tr>
<td>Disposal of right-of-way and roadside debris.</td>
<td>construction slash caused by road construction, reconstruction, or maintenance.</td>
<td></td>
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</tr>
<tr>
<td>SWCP 15.11 - Servicing and refueling of equipment.</td>
<td>Prevent contamination of water from accidental spills of fuels, lubricants, bitumens,</td>
<td>HIGH. IFPA Rules 2.j.i and 2.j.ii</td>
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<td></td>
<td>raw sewage, wash water, and other harmful materials.</td>
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<tr>
<td>SWCP 15.14 - Diversion of flows around construction sites.</td>
<td>Minimize downstream sedimentation by ensuring that all stream diversions are</td>
<td>HIGH. No related IFPA rules</td>
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<td></td>
<td>carefully planned.</td>
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<tr>
<td>SWCP 15.15 - Stream crossings on temporary roads.</td>
<td>Keep temporary roads from unduly damaging streams, disturbing channels, or</td>
<td>MODERATE. No related IFPA rules</td>
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<tr>
<td></td>
<td>obstructing fish channels.</td>
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<tr>
<td>SWCP 15.16 - Bridge and culvert installation (disposition of surplus material).</td>
<td>Minimize sedimentation and turbidity resulting from excavation for in-channel</td>
<td>HIGH. No related IFPA rules</td>
<td></td>
</tr>
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<td></td>
<td>structures.</td>
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</tr>
<tr>
<td>SWCP 15.17 - Regulation of borrow pits, gravel sources, and quarries.</td>
<td>Minimize sediment production from borrow pits, gravel sources, and quarries, and</td>
<td>HIGH. No related IFPA rules</td>
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<tr>
<td></td>
<td>limit channel disturbances in those gravel sources suitable for development in floodplains.</td>
<td></td>
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</tr>
<tr>
<td>SWCP 15.21 - Maintenance of roads.</td>
<td>Conduct regular preventive maintenance operations to avoid deterioration of the road</td>
<td>MODERATE. IFPA Rules 4.d.i and 4.d.ii</td>
<td></td>
</tr>
<tr>
<td></td>
<td>surface and minimize disturbance to water quality and fish habitat.</td>
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</tr>
<tr>
<td>SWCP 15.22 - Road surface treatment to prevent loss of materials.</td>
<td>Minimize the erosion of road surface materials and reduce the likelihood of</td>
<td>HIGH. No related IFPA rules</td>
<td></td>
</tr>
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<td></td>
<td>sediment production.</td>
<td></td>
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<tr>
<td>SWCP 15.23 - Traffic control during wet periods.</td>
<td>Reduce the potential for road surface disturbance during wet weather and reduce</td>
<td>MODERATE. No related IFPA rules</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sedimentation probability.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWCP 15.24 - Snow removal controls.</td>
<td>Minimize impacts of snow melt on road surfaces and embankments and reduce the</td>
<td>MODERATE. No related IFPA rules</td>
<td></td>
</tr>
<tr>
<td></td>
<td>probability of sediment production resulting from snow removal operations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BMP Description</strong></td>
<td><strong>Purpose or Objective</strong></td>
<td><strong>Effectiveness and IFPA Compliance</strong></td>
<td><strong>Timber Sale Contract Provision</strong></td>
</tr>
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</tr>
<tr>
<td>SWCP 15.25 - Obliteration of temporary roads.</td>
<td>Reduce sediment generated from temporary roads by obliterating them upon completion of their intended use.</td>
<td>HIGH. IFPA Rule 4.d.v.</td>
<td></td>
</tr>
<tr>
<td>SWCP 15.27 - Trail maintenance and rehabilitation.</td>
<td>Minimize soil erosion and water quality problems resulting from trail erosion.</td>
<td>HIGH. No related rules</td>
<td></td>
</tr>
<tr>
<td>SWCP 18.02 - Formulation of fire prescriptions.</td>
<td>Provide for soil and water resource protection while achieving the management objective through the use of prescribed fire.</td>
<td>HIGH. No related IFPA rules</td>
<td></td>
</tr>
<tr>
<td>SWCP 18.03 - Protection of soil and water from prescribed burning</td>
<td>Maintain soil productivity, minimize erosion, and prevent ash, sediment, nutrients, and debris from entering surface water.</td>
<td>HIGH. No related IFPA rules</td>
<td></td>
</tr>
</tbody>
</table>
NONPOINT SOURCE CONTROL PROGRAM 319 UPDATE

Division of Environmental Quality (DEQ)

Idaho Department of Health and Welfare DEQ is responsible for the overall coordination and implementation of the state's nonpoint source programs. Implementation of the Nonpoint Source Management Program is accomplished through interagency coordination with local, state, and federal natural resource agencies. The nonpoint source programs are implemented with assistance from public advisory committees, which provide continuous feedback on the direction and acceptability of the nonpoint source control strategy.

The nonpoint source control strategy is based on the feedback loop concept. BMPs are the backbone of this control program. A process for site-specific application of BMPs is developed under each nonpoint source program, and monitoring is used to evaluate the effectiveness of the BMPs. Changes to BMPs are recommended when they do not support the beneficial uses; monitoring continues to ensure that the revised practices are adequate (The 1992 Idaho Water Quality Status Report, Idaho Department of Health and Welfare, DEQ, December 1992). The nonpoint source program places emphasis on the following actions:

- building on the strength of existing nonpoint programs, such as agriculture and forestry;
- focusing evaluation and monitoring techniques on beneficial use assessments and BMP effectiveness;
- creating public awareness and support through information, education, and citizen participation;
- institutionalizing the feedback loop components in state and federal agency programs using the Clean Water Act requirements; and
- integrating the nonpoint source control program with implementation of the Antidegradation Policy.

See Figure E-1 below for a diagram of the feedback loop process for nonpoint source control.

**Figure E-1. Feedback Loop Process for Nonpoint Source Control**
APPENDIX F
STRATA DESCRIPTIONS

PAYETTE NATIONAL FOREST

Stratification is based on 1995 1:15840 color aerial resource photography. ARC/INFO stratification coverages contain 3 items in the .PAT - they are Wg, Strata, and Key. The Work Group and Strata numbers are defined on the following pages. The item Key is a 3-digit combination of Wg and Strata (first digit Wg, next two digits Strata), for example 124 = Mixed Conifer High Strata 24. Tentatively Suited lands can be displayed by selecting only stratas 20 - 35, and Unsuitied lands by selecting stratas 41 and 42.

WORKING GROUPS

<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = MIXED CONIFER HIGH</td>
<td>75% or more of the trees in the stand are PP-DF-GF-WL; sites capable of producing 85+ cubic ft/ac/yr.</td>
<td></td>
</tr>
<tr>
<td>2 = MIXED CONIFER MODERATE</td>
<td>75% or more of the trees in the stand are PP-DF-GF-WL; sites capable of producing 20-50 cubic ft/ac/yr.</td>
<td></td>
</tr>
<tr>
<td>3 = MIXED CONIFER LOW</td>
<td>75% or more of the trees in the stand are PP-DF-GF-WL; sites capable of producing 20-50 cubic ft/ac/yr.</td>
<td></td>
</tr>
<tr>
<td>4 = SUBALPINE FIR/LODGEPOLE</td>
<td>60% or more of the trees in the stand are AF, or a fairly even mix of AF,LP,ES; all productivities.</td>
<td></td>
</tr>
<tr>
<td>5 = ENGELMANN SPRUCE</td>
<td>60% or more of the trees in the stand are ES; all productivities.</td>
<td></td>
</tr>
<tr>
<td>6 = LODGEPOLE PINE</td>
<td>60% or more of the trees in the stand are LP; all productivities.</td>
<td></td>
</tr>
<tr>
<td>7 = PONDEROSA PINE HIGH</td>
<td>25% or more of the dominate/codominate trees are Ponderosa pine; sites capable of producing 85+ cubic ft/ac/yr.</td>
<td></td>
</tr>
<tr>
<td>8 = PONDEROSA PINE MODERATE</td>
<td>25% or more of the dominate/codominate trees are Ponderosa pine; sites capable of producing 50-85 cubic ft/ac/yr.</td>
<td></td>
</tr>
<tr>
<td>9 = PONDEROSA PINE LOW</td>
<td>25% or more of the dominate/codominate trees are Ponderosa pine; sites capable of producing 20-50 cubic ft/ac/yr.</td>
<td></td>
</tr>
</tbody>
</table>
**Strata Descriptions**

In general, the mix of timber species (by volume) for the above Working Groups is as follows:

Mixed Conifer (group 1,2,3) - 35% GF, 33% DF, 18% PP, 14% other
Ponderosa Pine (group 7,8,9) - 57% PP, 28% DF, 12% GF, 3% other
Subalpine Fir (group 4) - 45% AF, 20% LP, 18% ES, 15% DF, 2% other
Engelmann Spruce (group 5) - 43% ES, 35% AF, 15% LP, 7% other
Lodgepole Pine (group 6) - 77% LP, 11% AF, 5% ES, 5% DF, 2% other

**STRAEA DESCRIPTION**

20 **CLEARCUTS** - harvest areas with seedlings or 0-10% stocking of trees visible on photo. These stands are generally 0-10 years old, and may have a large component of grass or brush present.

21 **PARTIAL CUTS** - cutover areas with a light to moderate residual stocking, and 10-50% crown coverage. These are stands which have been harvested within the past 35 years. Stand age is generally 80-120 years. These are typically seed tree or removal type cuts.

22 **PARTIAL CUTS** - cutover areas with a moderate to heavy residual stocking and >50% crown coverage. These stands have been harvested within the past 35 years. The stand age is generally 70-100 years. These are typically commercial thinnings.

23 **MATURE/OVERMATURE** - these are unmanaged dense, multi-storied stands with crown coverage greater than 70%. The majority of trees, >50%, are large diameter, mature and overmature individuals, with the stand age generally 120-250 years. Nonstockable rock, bare ground, or brush fields occur on less than 10% of the area.

24 **MATURE/OVERMATURE** - similar to Strata 23, except crown coverages are moderate, and range from 35-70%. Nonstockable rock, bare ground, or brush fields can occupy up to 25% of the area.

25 **MATURE/OVERMATURE** - similar to Strata 23, except crown coverages only range from 10-35%. These stands can exhibit an open, parklike condition and often occur on drier slopes and habitats. Nonstockable rock, bare ground, or brush fields can occupy up to 60% of the area.

26 **PARTIAL CUTS** - these stands are similar to Strata 22, except the age is generally over 100 years, with mainly large diameter mature/overmature individuals remaining. Crown coverage is >50%. These are typically shelterwood or sanitation/salvage cuts.

29 **BURNS** - areas where stand replacing wildfire has occurred and where less than 10% stocking of live trees is visible on the photo. These are generally less than 10-20 years old. These areas may have extremely heavy brush.

30 **SAPLING/POLES** - areas stocked with saplings and/or poles (diameters from 2" to 7") which have regenerated naturally, as a result of fire, windstorm, etc. These stands may have anywhere from 100 to over a thousand trees per acres, and crown closure can range from 10% up to 100%. These areas may have a large component of brush. Stand age is from 10 to 50 years.
32  SAPLING/POLES - these are plantations stocked with sapling/poles trees. These stands can have from 150 to 2000 trees per acres, averaging usually 200 "crop" trees. The crown closure in these stands can range from 10% to around 90%. These stands may have a large component of brush. Stand age is from 10 to 40 years.

33  IMMATURE/MATURE - these are low stocked immature stands with a scattered component of mature overstory. Over 50% of the stand is immature sawtimber, generally from 50 to 100 years old. The crown coverage is from 10-35%, and the stands usually occur on drier slopes and less productive habitats. Nonstockable rock, brush fields, or bare ground may occupy up to 60% of the areas.

34  IMMATURE/MATURE - similar to Strata 33 except these areas are moderately stocked with crown closures ranging from 35-70% nonstockable rock, brush fields, or bare ground may occur on 25% of the areas.

35  IMMATURE/MATURE - similar to Strata 33 except these areas are heavily stocked, dense stands with crown closures from 70-100%. Typically these are even-age, single-storied stands. Nonstockable rock, brush fields, or bare ground usually occurs on less than 10% of the area.

41  UNSUITABLE - these are forested lands which are deemed to be unsuitable for any conventional silvicultural management, although salvage opportunities may occur on them. These are low-stocked stands with low site potential and abundance of bare ground, rock outcrops, brush fields, or in the case of some spruce stands a high water table. These stands may lie at the extremes in elevation, moisture regimes, or on oversteepened slopes. Canopy coverage generally range from 10-35%. Ages of the trees can vary, but generally they are mature to overmature.

42  UNSUITABLE - similar to Strata 41 except these areas have a moderate crown closure of from 35 up to 70% or more. They are unsuitable for the same reasons listed above.

60  NONFOREST - areas with less than 10% crown coverage regardless of forest type. These areas included grassland, sagebrush lands, rock, meadows, etc.

61  NONFOREST (CULTIVATED) - these lands may or may not have once been forested but they are currently utilized as crop lands. Minimum size for these strata is 10 acres.

70  ASPEN/HIGH BRUSH - these areas have a hardwood component or high brush which represents 75% or more of the stand. This would included areas such as willow patches, alder glades, riparian stringers of cottonwood, aspen stands, or hill side patches of tall chokecherry and the like.

98  WATER (noncensus) - bodies of water less than 40 acres in size, or streams less than 120 feet wide.

99  WATER (census) - bodies of water greater than 40 acres in size, or streams more than 120 feet wide.
APPENDIX G
MONITORING AND EVALUATION PLAN

This appendix outlines the program for monitoring and evaluating implementation of the Sloan- Kennally timber sale. The monitoring items below will occur if any action alternative is selected.

Monitoring and evaluation are control systems for implementation of the Forest Plan, including this project. Monitoring collects data to show if the project’s resource objectives have been met. Evaluation reviews monitoring results and determines what adjustments are needed. Monitoring and evaluation give the decision maker and the public information on the progress and results of implementing the activities described in the EIS.

The Payette Forest recognizes three broad types of monitoring: baseline (existing condition), project (such as timber harvests), and validation (of Forest Plan assumptions). The Forest Plan, Chapter V, Monitoring provides more details on Forest-level monitoring.

The two types of project monitoring and 1) Implementation monitoring, which determines if activities meet laws, regulations, policies, and Forest Plan standards and guidelines, and 2) Effectiveness monitoring, which determines if the action’s practices and mitigation meet the overall management objectives.

Funding

Funding for monitoring comes from several sources, but the main source is the Forest’s annual budget. Annual monitoring plans are prioritized based on annual budgets and program direction. Specific project activities will not be implemented unless high priority monitoring items related to those activities are properly funded and implemented.

Evaluation of Monitoring Results

Evaluation of monitoring results can lead to further action at the discretion of those doing the evaluating. This could be the ID Team, District personnel, the District Ranger, or the Forest Supervisor. Possible actions include:

- referring the problem to the District Ranger for improved application of the management practice of concern,
- stopping an activity or practice,
- modifying the practice, either for the project (via an amended decision) or for the Forest (with a Forest Plan amendment),
- initiating a Forest Plan exception or amendment,
- revising the cost or output, or
- initiating a Forest Plan revision.

Duration of Monitoring

The duration of monitoring will vary by monitoring item and the results from monitoring and evaluation. When there is no longer a question whether a law, regulation, policy, standard, or guideline is being met, then monitoring
Monitoring

associated with that item will end. If, however, monitoring evaluations reveal that requirements are not being met, then management needs to intervene to correct the situation, as described above.

Revised Monitoring Plan

The original monitoring items identified in the DEIS for the Sloan-Kennally timber sale were reviewed by the ID Team formed in 1998. A revised, updated monitoring plan was developed to reflect changes that occurred in the time period between the Draft and Final EIS’s, and to be more responsive to public comments and budget and personnel constraints.

The monitoring and evaluation plan is summarized in Table G-1 below. Details for each item are on the individual monitoring pages following the table.

Table G-1 Monitoring and Evaluation Plan Summary

<table>
<thead>
<tr>
<th>Resource</th>
<th>Monitoring Item</th>
<th>Priority</th>
<th>Timing</th>
<th>Personnel</th>
<th>Monitoring Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil and Water</td>
<td>Long term soil productivity on tractor logged and piled units</td>
<td>High</td>
<td>Once, soon after units are tractor piled</td>
<td>Hydrologist/Soil Scientist and Technician</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Soil and Water</td>
<td>BMP &amp; SWCP implementation and effectiveness</td>
<td>High</td>
<td>At least once per year, for the duration of the sale</td>
<td>Hydrologist/Hydrologic Technician</td>
<td>Implementation and effectiveness</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Baseline water quality conditions (TMDL)</td>
<td>High</td>
<td>Monthly, depending on flow and access</td>
<td>Hydrologist/Hydrologic technician</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Fish Habitat</td>
<td>INFISH compliance</td>
<td>High</td>
<td>Annually for the duration of the sale</td>
<td>Fish Biologist/Technician</td>
<td>Implementation</td>
</tr>
<tr>
<td>Wildlife Habitat</td>
<td>Snag Habitat</td>
<td>High</td>
<td>Once after unit marking</td>
<td>Wildlife Technician</td>
<td>Implementation</td>
</tr>
<tr>
<td>Recreation</td>
<td>ROS, recreation use, and recreation facilities</td>
<td>High</td>
<td>Before, and yearly during sale activities</td>
<td>Recreation Planner/Technician</td>
<td>Implementation</td>
</tr>
<tr>
<td>Visual Quality</td>
<td>Implementation of VQOs</td>
<td>High</td>
<td>Before, and yearly during the sale</td>
<td>Recreation Planner/Technician</td>
<td>Implementation</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Air quality and smoke management</td>
<td>Moderate</td>
<td>After prescribed burning</td>
<td>District fire/fuels Specialist</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Resource</td>
<td>Monitoring Item</td>
<td>Priority</td>
<td>Timing</td>
<td>Personnel</td>
<td>Monitoring Type</td>
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<td>-----------------</td>
</tr>
<tr>
<td>Fire and Fuels</td>
<td>Pre-and post-burn fuel inventories</td>
<td>Moderate</td>
<td>Before and after slash disposal</td>
<td>District fire/fuels Specialist</td>
<td>Implementation</td>
</tr>
<tr>
<td>Timber</td>
<td>Regeneration and survival success</td>
<td>High</td>
<td>First, third, and fifth years after planting</td>
<td>District Silvicultural Personnel</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Range</td>
<td>Noxious Weeds</td>
<td>High</td>
<td>Year following disturbance</td>
<td>Range Technician</td>
<td>Effectiveness</td>
</tr>
</tbody>
</table>
LONG TERM SOIL PRODUCTIVITY

Program: Soil and Water

Monitoring Item: Project Monitoring, Timber Management, Effectiveness monitoring of timber sale units that are tractor logged and tractor piled.

Locations: 10 to 20 percent of the ground-based harvest units, depending on compliance, within the timber sale area.

Objectives: Effectiveness monitoring of Long Term Productivity. Evaluate effectiveness of utilizing designated skid trails during timber harvest and site preparation practices on soil resources.

Parameters: Ocular and bulk density.

Methodology: Skid trails will be GPS’d to determine extent of area relative to harvest unit area. Bulk densities will be taken on skid trails and undisturbed areas within harvest units to determine whether skid trails are compacted.

Frequency: Monitoring will occur once, soon after units are tractor piled.

Duration: Life of the sale.

Data Storage: All data will be presented and summarized in a seasonal monitoring report summary stored in hard files and in the 2550 Soil Management files.

Analysis: Analysis will consist of computing the total area meeting definitions of “detrimentally disturbed” and “totally committed” in relation to total area allowance contained in Forest Plan Standards and Guidelines for long term soil productivity.

Report: All data will be reported yearly in the monitoring summary results table for the Payette Forest. Written reports will be retained on the District.

Priority: High

Cost: One GS-7 Technician for 9 days, one GS 11 for two days = $1,000

Personnel: Hydrologist/Soil Scientist and Technician

Responsible Individual: East Zone Hydrologist

Responsible Official: McCall District Ranger

Prepared by: Jim Fitzgerald, Hydrologist

Date: 4/98
IMPLEMENTATION OF BMP’S AND SWCP’S

**Program:** Soil and Water

**Monitoring Item:** Project monitoring, timber management. Implementation monitoring of timber BMP’s and SWCP’s.

**Location:** Sloan-Kennally Timber Sale area.

**Objectives:** Determine if site-specific BMP’s and SWCP’s identified in the Decision Notice and EIS are being implemented. Provide qualitative assessment of effectiveness of BMP’s and SWCP’s.

**Parameters:** Various depending on activity being monitored.

**Methodology:** The parameters will be observed ocularly. The project hydrologist will review the Decision Notice and EIS in the office, develop a BMP checklist, and review the implementation of BMPs on the ground.

**Frequency:** When on-site, at least once a year.

**Duration:** For the duration of sale-related activities.

**Data Storage:** All data will be presented and summarized in a seasonal monitoring report summary stored in hard files and in the 2550 Soil Management files.

**Analysis:** Field forms and photographs will be analyzed to answer the following questions:

1. Which of the Soil and Water BMP’s were implemented?
2. Which of the Soil and Water BMP’s appear to be effective at this time?
3. Which of the Soil and Water BMP’s need to be improved?

**Report:** All data will be reported yearly on the monitoring summary results table for the Payette Forest. Written reports will be retained on the District.

**Priority:** High

**Cost:** $3,500/year

**Personnel:** Hydrologist/Hydrologic Technician

**Responsible Individual:** East Zone Hydrologist

**Responsible Official:** McCall District Ranger

**Prepared by:** Jim Fitzgerald, Hydrologist

**Date:** 4/98
Monitoring

BASELINE WATER QUALITY CONDITIONS (TMDL)

Program: Soil and Water

Monitoring Item: Baseline, Effectiveness, Water Quality.

Locations: Two sample stations at Rapid Creek, and Kennally Creek (T.17 N, R.4E, Sec. 25 & 26).

Objectives: Determine baseline water quality conditions. Determine if tributaries to the Gold Fork River are within TMDL parameters.

Parameters: Discharge, temperature, and phosphorus (total and ortho).

Methodology: Stream discharge will be measured using standard USGS Cross-sectional/Velocity method. Grab samples will fixed prior to sampling and sent to the Idaho State Lab for analysis. Temperature data will be gathered using HOBO thermographs.

Frequency: Monthly, depending on flow and access to sites.

Duration: For the duration of sale-related activities.

Data Storage: All data will be presented and summarized in a seasonal monitoring report summary stored in hard files and in the 2550 Soil Management files.

Analysis: Chemical analysis conducted by a certified lab. Data analysis will consist of comparison of the parameter value to applicable state standard.

Report: All data will be reported yearly in the monitoring summary results table for the Payette Forest. Written reports will be retained on the District.

Priority: High

Cost: $2,500/year

Personnel: Hydrologist/Hydrologic Technician

Responsible Individual: Zone Hydrologist

Responsible Official: McCall District Ranger

Prepared by: Jim Fitzgerald, Hydrologist

Date: 4/98

G-6
INFISH COMPLIANCE

Program: Fisheries

Monitoring Item: INFISH compliance

Locations: Sloan-Kennally timber sale area

Objectives: Verify compliance with INFISH RHCA widths, and compliance with INFISH standards and guidelines for activities within RHCAs.

Parameters: Are buffer strip widths adequate, and in compliance with those in the “Inland Native Fish Strategy” (INFISH) EA? Are activities consistent with the standards and guidelines for Timber and Roads Management in INFISH?

Methodology: After unit layout, but prior to harvest, verify that buffer widths are adequate by checking at least 20% of units. Periodically during sale activities visually inspect the sale area for compliance with standards and guidelines.

Frequency: Once prior to harvest, then twice annually during sale activities.

Duration: For the duration of sale-related activities

Data Storage: Electronic files at McCall Ranger District

Analysis/Report: Field notes and site-visit observations of activities

Priority: High

Cost: $750

Personnel: District Fish Biologist, or Fisheries Technician

Responsible Individual: McCall District Fish Biologist

Responsible Official: McCall District Ranger

Prepared by: Linda Wagoner

Date: 12/98
Monitoring

WILDLIFE SNAG HABITAT

Program: Wildlife

Monitoring Item: Snag habitat

Location: Sloan-Kennally planning area

Objective: Determine compliance with the Forest Snag and Coarse Woody Debris Guidelines (Evans and Martens, 1995), which are guidelines for maintaining adequate snags and wildlife trees.

Parameters: Tree diameter, height, species, age class, amount of cavities and degree of decay.

Methodology: Inspect a representative sample of harvest units prior to harvest.

Frequency/Duration: Once, after units are marked on the ground.

Data Storage: Project files

Analysis/Report: MAR report

Priority: High

Cost: $600 plus $125 in vehicle costs

Personnel: One wildlife technician

Responsible Individual: Project wildlife biologist

Responsible Official: McCall District Ranger

Prepared by: Chris Hescock, Wildlife Biologist

Date: 10/98
Appendix G

RECREATION MANAGEMENT

Program: Recreation

Monitoring Item(s): Project monitoring, timber management. Implementation monitoring of Recreation Opportunity Spectrum (ROS), recreation use, and recreation facilities.

Location: Sloan-Kennally Timber Sale area.

Objectives: ROS setting compliance and determining impacts to recreation use and facilities.
   1. Display changes in the ROS settings, Recreation Visitor Days (RVDs) and facilities.
   2. Maintain/update inventory of ROS settings, RVDs database and facilities.
   3. Monitor effectiveness of mitigation measures to meet ROS settings, eliminate impacts to recreation use and facilities.

Parameters: ROS, RVD's in the Forest Plan

Methodology:
   1. Review initial ROS inventory and ground truth.
   2. Field verification of ROS, facilities (campgrounds, miles of trails and roads still available etc.), ease of access to interpretive and recreation sites.
   3. Utilize road counters, field observations, and trail registrations to determine recreation use.

Frequency: Before sale, and yearly during sale.

Duration: For the duration of sale-related activities and once a year for two consecutive years following sale closure.

Data Storage: Data will be summarized in a yearly monitoring report stored in the 2300 Recreation files.

Analysis: Field forms and photographs will be utilized to:
   1. Establish visual record of management activities to document changes in the area's ROS settings, recreation use (RVDs) and recreation facilities.
   2. Maintain/update inventory of ROS, recreation use (RVDs) and recreation facilities.
   3. Assess impacts from management activities.
   4. Monitor the effectiveness of mitigation measures to meet ROS and maintain recreation use and facilities.

Report: Data will be reported in a yearly monitoring summary for the Payette Forest with a copy retained on the District.

Priority: High

Cost: $100/visit

Personnel: Recreation Planner/Recreation Technician

Responsible Individual: Recreation Specialist

Responsible Official: McCall District Ranger

Prepared by: Beth Ludvigsen, Recreation Planner

Date: 12/98
Monitoring

VISUAL QUALITY OBJECTIVES

**Program:** Visual Quality

**Monitoring Item:** Project monitoring, timber management. Implementation monitoring of Visual Quality Objectives.

**Location:** Sloan-Kennally Timber Sale area.

**Objectives:** Visual quality protection, compliance and effectiveness.

**Parameters:** Visual Quality Objectives in the Forest Plan

**Methodology:** The parameters will be measured visually. Personnel will utilize the Forest Plan Standards and Guidelines (Appendix B page B-16) to:
1. Establish photo points.
2. Review initial VQO inventory and actual VQO.
3. Assess visual impacts from management activities.
4. Monitor the effectiveness of mitigation measures to meet VQO's.

**Frequency:** Before and yearly during sale.

**Duration:** For the duration of sale-related activities and the first and fifth field season following sale closure.

**Data Storage:** Data will be summarized in a yearly monitoring report stored in the 2300 Recreation files.

**Analysis:** Field forms and photographs will be utilized to:
1. Establish visual record of management activities to document changes in the area’s view shed.
2. Maintain/update inventory of VQO’s.
3. Assess visual impacts from management activities.
4. Monitor the effectiveness of mitigation measures to meet VQO's.

**Report:** Data will be reported in a yearly monitoring summary for the Payette Forest with a copy retained on the District.

**Priority:** High

**Cost:** $100/visit

**Personnel:** Recreation Planner/Recreation Technician

**Responsible Individual:** Recreation Specialist

**Responsible Official:** McCall District Ranger

**Prepared by:** Beth Ludvigsen, Recreation Planner

**Date:** 12/98
AIR QUALITY

Program: Air Quality/Smoke Management Monitoring

Monitoring Item: Air Quality

Location: Sloan Kennally timber sale units

Objective: Ensure that fuel loadings are treated to minimize the amount of undesirable smoke in the event of future wildfire in the planning area.

Parameters: Forest Plan standards and guidelines for air quality/smoke management.

Methodology: On-site inspections of fuel levels before harvest and at completion of specified fuel treatments.

Frequency/Duration: After prescribed burning has been completed.

Data Storage: District fire and timber management sale folders.


Priority: Moderate.

Cost: Concurrent with fire/fuels monitoring.

Personnel: District fire/fuels specialist

Responsible Individual: District fire/fuels specialist

Responsible Official: McCall District Ranger.

Prepared by: Doug Havlena, Fire Planner

Date: 10/98
Monitoring

PRE- and POST-HARVEST FUEL LOADINGS

Program: Fire and Fuels Monitoring

Monitoring Item: Evaluation of pre- and post-harvest fuel loadings.

Location: Sloan-Kennally timber sale units

Objective: Quantify fuel loading and ensure that fuel loadings are within acceptable limits.


Methodology: On-site inspections of fuel levels before harvest and at completion of specified fuel treatments.

Frequency/Duration: Before and after slash disposal, for the duration of harvest and fuel treatment activities.

Data Storage: District fire and timber sale folders.


Priority: Moderate.

Cost: 8 days x $150/day = $1200

Personnel: District fire/fuels specialist

Responsible Individual: District fire/fuels specialist

Responsible Official: McCall District Ranger

Prepared by: Doug Havlina, Fire Planner

Date: 10/98
REGENERATION AND SURVIVAL SUCCESS

Program: Timber

Monitoring Item: Effectiveness of regeneration efforts in all harvest units needing regeneration.

Location: Sloan-Kennally timber sale area.

Objective: Assess the success of regeneration and survival

Parameters: Regeneration establishment and survival checks.

Methodology: Conduct standard R-4 regeneration/survival checks to sample existing regeneration, plantation survival, and stocking.

Frequency/Duration: First, third, and fifth years after planting. Five years

Data Storage: District files


Priority: High

Cost: Current District costs average $25 per acre. Multiply by acres of regeneration harvest.

Personnel: District silvicultural personnel

Responsible Individual: District silviculturalist

Responsible Official: McCall District Ranger

Prepared by: Jack Irish, Silviculturalist

Date: 10/98
Monitoring

NOXIOUS WEED MONITORING

Program: Range

Monitoring Item: Noxious weeds

Location: Sloan-Kennally planning area

Objective: Determine if any noxious weeds on either the Federal or State Noxious Weed Lists are present

Parameters: Listed Federal and/or State noxious weed

Methodology: Visually inventory road right-of-ways, skid trails, and landings

Frequency/Duration: Inventory the year following ground disturbances

Data Storage: Project files

Analysis/Report: MAR report and annual noxious weed report

Priority: High

Cost: $600 plus $125 in vehicle costs

Personnel: One range technician

Responsible Individual: East Zone range technician

Responsible Official: McCall District Ranger

Prepared by: Tom Kellie, Range Technician

Date: 10/99
APPENDIX H
INFISH DIRECTION FOR ROADS MANAGEMENT

RF-1 Cooperate with Federal, Tribal, State and county agencies, and cost-share partners to achieve consistency in road design, operation, and maintenance necessary to attain Riparian Management Objectives.

RF-2 For each existing or planned road, meet the Riparian management Objectives and avoid adverse effects to in land native fish by:

- completing watershed analysis prior to construction of new roads or landings in Riparian Habitat Conservation Areas within priority watersheds.
- minimizing road and landing locations in Riparian Habitat Conservation Areas.
- initiating development and implementation of a Road Management Plan or a Transportation Management Plan. At a minimum, address the following items in the plan:
  - Road design criteria, elements, and standards that govern construction and reconstruction.
  - Road management objectives for each road.
  - Criteria that govern road operation, maintenance, and management.
  - Requirements for pre-, during-, and post-storm inspections and maintenance
  - Regulation of traffic during wet periods to minimize erosion and sediment delivery and accomplish other objectives.
  - Implementation and effectiveness monitoring plans for road stability, drainage, and erosion control.
  - Mitigation plans for road failures.
  - avoiding sediment delivery to streams from the road surface.
  - Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is infeasible or unsafe.
  - Route road drainage away from potentially unstable stream channels, fills, and hillslopes.
  - avoiding disruption of natural hydrologic flow paths.
avoiding sidecasting of soils or snow. Sidecasting of road materials is prohibited on road segments within or abutting RHCAs in priority watersheds.

**RF-3** Determine the influence of each road on the Riparian Management Objectives. Meet Riparian Management Objectives and avoid adverse effects on inland native fish by:

- reconstructing and drainage features that do not meet design criteria or operation and maintenance standards, or that have been shown to be less effective than designed for controlling sediment delivery, or that retard attainment of Riparian Management Objectives, or do not protect priority watersheds from increased sedimentation.

- prioritizing reconstruction based on the current and potential damage to inland native fish and their priority watersheds, the ecological value of the riparian resources affected, and the feasibility of options such as helicopter logging and road relocation out of Riparian habitat Conservation Areas.

- closing and stabilizing or obliterating, and stabilizing roads not needed for future management activities. Prioritizing these actions based on the current and potential damage to inland native fish in priority watersheds, and the ecological value of the riparian resources affected.

**RF-4** Construct new, and improve existing, culverts, bridges, and other stream crossings to accommodate a 100-year flood, including associated bedload and debris, where those improvements would/do pose a substantial risk to riparian conditions. Substantial risk improvements include those that do not meet design and operation maintenance criteria, or that have been shown to be less effective than designed for controlling erosion, or that retard attainment of Riparian Management Objectives, or that do not protect priority watersheds from increased sedimentation. Base priority for upgrading on risks in priority watersheds and the ecological value of the riparian resources affected. Construct and maintain crossings to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.

**RF-5** Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.
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