

1792A  
EA-02-14  
Gale Creek  
Aquatic Project

March 19, 2002

Concerned Citizen,

The McKenzie Resource Area of the Eugene District Bureau of Land Management has completed the Environmental Assessment (EA) and Finding of No Significant (FONSI) for the Gale Creek Aquatic Restoration Project. The proposed project area is located approximately 30 miles east of Springfield, Oregon in Sections 2 and 11, T. 17 S., R. 2 E., Will. Mer. of the Bear/Marten Watershed.

You have expressed an interest in receiving copies of Environmental Assessments for district projects. Enclosed is a copy of the Environmental Assessment for your review and any comments. Public notice of this proposed action will be published in the Eugene Register Guard on March 20, 2002. The EA will also be available on the internet at <http://www.edo.or.blm.gov/nepa>. The public comment period will end on April 19, 2002. Please submit comments to me at the district office, by mail or by e-mail at [OR090mb@or.blm.gov](mailto:OR090mb@or.blm.gov) by close of business (4:15 p.m.) on or prior to April 19, 2002. If you have any questions concerning this proposal, please feel free to call Nikki Swanson at 683-6161.

Comments, including names and street addresses of respondents, will be available for public review at the district office, 2890 Chad Drive, Eugene, Oregon during regular business hours (7:45 a.m. to 4:15 p.m.), Monday through Friday, except holidays, and may be published as part of the EA or other related documents. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Sincerely,

Emily Rice, Field Manager  
McKenzie Resource Area

Enclosure

**ENVIRONMENTAL ASSESSMENT**

**OR-EA-02-14**

A Proposal to Conduct Aquatic Restoration Project  
in the Gale Creek Watershed

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## 1.0 Purpose of and Need for Action

The Bureau of Land Management (BLM) proposes to implement an aquatic restoration project in the Gale Creek drainage during the summers of 2002 and 2003.

The underlying purpose of the Gale Creek Aquatic Restoration Project is to improve habitat for aquatic species such as cutthroat trout, spring chinook, steelhead, macroinvertebrates, red-legged frogs and harlequin ducks. Absence of large wood and streamside large conifers, combined with densely populated areas of hardwood, fish barriers, and an eroding native surface road contribute to a poor quality stream for fish and water quality.

Action is also needed to help implement objectives on Riparian Reserve lands and the Aquatic Conservation Strategy Objectives. These are described in the Northwest Forest Plan and the Eugene District Resource Management Plan, and the Bear/Marten watershed analysis (July 1998).

Gale Creek is located within the Bear/Marten Watershed. The proposed project is among several identified within the Bear/Marten Watershed Analysis (July 1998). The proposed project would occur within the Central Cascades Adaptive Management Area (CCAMA) and within a selected Riparian Reserve. Gale Creek enters Marten Creek near its confluence with the McKenzie River approximately 30 miles east of Springfield, Oregon. The Gale Creek drainage is approximately 3,800 acres. The BLM manages nearly 800 acres. The analysis area is located within T.17S., R.2E., Sections 2 and 11 of the Willamette Meridian (see Appendix 1, Project Area Map for location). Section 2 is private land and Section 11 is land managed by the BLM.

### 1.1 Conformance

This environmental assessment (EA) is tiered to the *Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl*, April 1994, and the *Eugene District Record of Decision and Resource Management Plan (RMP)*, June 1995 as amended by the *Record of Decision (ROD) for Amendments to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, January 2001. Actions described in this EA are in conformance with the Aquatic Conservation Strategy (ACS) Objectives listed on page B-11 of the Northwest Forest Plan (NFP), and in **Appendix D** of this Environmental Assessment. These documents are available for review at the Eugene District Office of the BLM, Eugene, Oregon.

The above referenced documents are available for review at the Eugene District Office of the BLM, Eugene, Oregon or on the internet at <http://www.or.blm.gov/nwfp.htm>. The Analysis File contains additional information used by the interdisciplinary team (IDT) to analyze impacts and alternatives and is hereby incorporated by reference.

All of the above listed documents are available for review at the Eugene District Office of the BLM, Eugene, Oregon.

### 1.2 Monitoring

Monitoring guidelines are established in the 1995 RMP/ROD, Appendix D, and the 1994 Standards

and Guideline, pp. E-1 to E-10. Monitoring will be conducted to determine to what degree the project has met the objectives.

### **1.3 Scoping**

The scoping process identified the agency and the adjacent landowners concerns relating to the proposed project and defined the issues and alternatives that would be examined in detail in the EA. The project was included in the November 2001, Eugene BLM Eye to the Future publication.

Additional issues, concerns, and opportunities were identified by the interdisciplinary team (IDT) assigned to develop the restoration project.

#### **1.3.1 Issues Identified**

Scoping identified the following issues:

1. *How would activities affect erosion and sediment delivery to streams?*
2. *How would activities affect the stream channel and habitat for aquatic dependent species?*
3. *How would activities affect terrestrial federally listed species, specifically the northern spotted owl and northern bald eagle?*

#### **1.3.2 Issues Identified, But Eliminated From Further Analysis**

*How would activities affect the adjacent timber stands?*

This issue was eliminated from further analysis due to the relatively low levels of trees that would be removed as part of the proposed action. The removal of 29 trees from an area of approximately 2 acres would leave the stand within densities typical of stands of this age and would not approach any biological threshold.

## 2.0 Alternatives Including The Proposed Action

### 2.1 Alternatives Considered

#### 2.1.1 Alternative I - Instream Restoration and Road Closure Alternative (Proposed Action)

The BLM proposes to do instream restoration by doing several activities in and around the stream. Placing approximately 50 trees in Gale Creek (Section 11) for aquatic habitat enhancement would occur via pulling over trees from the adjacent riparian area and sideslopes, and excavator placement of trees thinned from a nearby stand. Approximately 1.2 miles of road (the native surface portion of 17-2E-2) would be closed. The pool level would be raised below a culvert on the 17-2E-2 road to facilitate fish passage. Conifer release and planting in the riparian area of Gale Creek would also take place in order to accelerate the development of large conifers for future in-channel wood recruitment. (Map 1 in Appendix 1). Appendices 2 and 3 describe project design features and seasonal restrictions. Below is a detailed description of each action:

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##### Pulling of Trees into Gale Creek

In the downstream portion of the project area, where conifers are currently well-stocked, 13 trees from the adjacent riparian area and adjacent side-slopes would be pulled over and placed in the stream channel at designated locations using a truck mounted, hydraulically driven yarder and cables. Most of these trees are upslope or on the adjacent terrace. Few are currently within the active floodplain. Selected trees would fall directly into the stream channel or would be pulled downhill short distances into the stream channel. Selected trees are typically within 50 to 300 feet of the stream channel. All of the trees to be pulled over are Douglas-fir that range in diameter from 15 to 44 inches. In addition, there are 4 trees (decay class 1-2 logs) that are currently down that would be pulled into the stream channel.

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##### Excavator Placement of Trees into Gale Creek

In the upstream section (middle of section 11), an adjacent timber stand would be thinned, the trees yarded along an existing cat road, and then placed into the stream using an excavator. In the area of stream where these logs would be placed, there are few large conifers in the riparian area. Twenty-nine trees would be cut and 4 down logs (decay class 1-2) moved in an area of approximately 2 acres. The majority of trees are Douglas-fir and hemlock, although there are a few big leaf maple trees that would also be cut down and moved to the stream channel. Selected trees range in diameter from 12-49 inches. The excavator would travel on the existing road as well as in the riparian area along Gale Creek to access the proposed stream structure locations.

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##### Closure of the Native Surface Portion of Road 17-2E-2

The native surface portion of the 17-2E-2 Road would be closed from its junction with the 17-2E-2.1 road to the section line between sections 11 and 14. Culverts would be removed to restore stream channels. Waterbars would be constructed to decrease erosion along the road prism. In some areas, tillage may be conducted to enhance infiltration of the old road bed. At one location, a portion of this road would be redesigned to become a side channel to Gale Creek

The portion of the 17-2E-2 road which is on BLM land (Section 11) was addressed in the McKenzie Transportation Management Recommendations EA (OR 090-01-27, October 2001). However, the portion on private land (Section 2) was not covered in that document. To add clarity, the entire native surface portion of this road is included in the proposed action for this project.

#### Fish Passage

Boulders would be placed within Gale Creek, downstream of the culvert at the 17-2E-2 road crossing (aggregate portion), to raise the pool level to facilitate year-round passage for all fish species.

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#### Conifer Release and Planting in the Gale Creek Riparian Area

In the project area that is downstream of the low water ford crossing (near the center of Section 11), riparian silviculture treatments would occur to enhance existing conifer stocking and growth. There are seedling and sapling sized, naturally seeded conifers in this area as well as some cedar that have been planted and tubed as part of a previous restoration project. Hardwoods, such as alder, would be cut and brush would be cleared to release existing small conifers. In areas lacking small conifers, additional planting would also occur. If available, cottonwoods would also be planted.

#### **2.1.2 Alternative II - Road Closure Alternative**

Under this alternative the closure of road 17-2E-2 would occur. Removal of cross drains and stream crossings, installation of waterbars/drain dips, and some tillage of the road bed surface would occur. No side channel restoration would be conducted in conjunction with the road closure work. There would be no instream restoration (via pulling or excavator placement), fish passage work, or conifer release and planting (Map 2 in Appendix 1).

#### **2.1.3 Alternative III - No Action Alternative**

Under this alternative, no restoration activities would be carried out. The native surface portion of the 17-2E-2 road would not be closed and sedimentation problems would continue to impact water quality. Fish passage would not be restored at the 17-2E-2 Road crossing. The addition of large woody material into Gale Creek and conifer release would not occur at this time (Map 3 in Appendix 1).

#### **2.2 Alternatives Considered But Eliminated From Further Analysis**

An alternative to use trees from a nearby area of wind-thrown trees (Goodpasture Salvage Site) was considered. This alternative was eliminated from further analysis because of the haul distance involved as well as the necessary road improvements to make the native surface portion of the 17-2E-2 road passable for log trucks.

An Alternative to improve, rather than close the native surface portion of the 17-2E-2 Road was also eliminated from further analysis because alternate access is available in non-floodplain locations along an existing private road. This alternative did not meet the objectives of the proposed project.

### 3.0 Affected Environments

This chapter will describe relevant components of the existing environment. The plants and animals do not differ significantly from those discussed in Chapter 3 of the Eugene District Proposed RMP/EIS 1994.

#### 3.1 Vegetation

The vegetation in the project area consists of two main types. A mixed hardwood type with scattered Douglas-fir occupies the immediate area of Gale Creek. Hardwood species present are primarily big leaf maple, cottonwood and red alder. The age of this type is less than the surrounding forest on the slopes above the flood plain. This upland forest is primarily Douglas-fir (100-120 years of age and occasional older remnants) with a density of approximately 80 trees per acre and an understory of Western hemlock and Western red cedar.

Along the western side of Gale Creek, within the northern 1/3 of the project area, a clearcut unit with regenerated Douglas-fir forest, approximately 10 years in age, extends down to within 50 to 75 feet of the stream.

The southern 1/3 of the project area, the portion where only road closure is proposed, consists of a Western hemlock forest resulting from a selective harvest of old growth Douglas-fir in the 1940s. Sections of the road proposed for closure have Western hemlock reproduction within and adjacent to the existing road.

Scot's Broom (*Cystisus scoparius*) and False Brome (*Brachypodium sylvaticum*) occur along the native surface portion of road 17-2E-2 at the base of the clearcut. Scot's or Scotch broom is considered a noxious weed by the Oregon State Department of Agriculture. They were probably introduced by logging equipment or vehicle use of the road.

False Brome is an invasive grass species which is able to spread densely shaded area such as forests. False Brome quickly spreads and out competes native grasses and forbs, reducing species diversity in the understory. False Brome is a perennial grass that spreads by seeds. It flowers from July to August. Ideally, the grass would be removed prior to flowering.

False Brome is an invasive species that has been recommended to be added to the state noxious weed list. Presently, few sites of False brome occur on the Eugene District, making control even more important, to prevent the spread and impacts of this species. The scotch broom would be removed at the same time as the false brome, preventing its spread into a new area (see Appendix 3).

#### 3.2 Wildlife

##### 3.2.1 Threatened and Endangered Species

###### 3.2.1.1 Northern Spotted Owl (*Stix occidentalis caurina*) - Threatened.

One historic site center with an unmapped LSR core exists near the project area. The core home range for this site likely includes Section 11 and, to a lesser degree, parts of Sections 3 and 12. A pair was last detected at the site in 2001.

About half of the 565 acres of forested stands in Section 11 are considered suitable nesting habitat, including most of the habitat within 0.25 mile of the project area. The remaining half functions as dispersal habitat (used for roosting and foraging). No critical habitat exists in or near the project. The closest Critical Habitat Unit, OR-16, is located over 1.5 miles to the north.

Any portion of the suitable nesting habitat in the section could be in use during a given year. Therefore, surveys would be conducted during the year(s) the project occurs to determine if owls are present and if they are nesting.

#### **3.2.2.2 Northern Bald Eagle (*Haliaeetus leucocephalus*) - Threatened**

No known bald eagle nests or midwinter roosts exist in the area. Parts of Section 11 are considered potential suitable nesting habitat based on age class and proximity to the McKenzie River. Areas within 0.25 mile (0.5 mile line-of-sight) of the project would be surveyed in the year(s) the project occurs to determine if eagles are present and nesting.

### **3.2.2 Other Wildlife Species**

#### **3.2.2.1 Osprey**

One historic known active osprey nest exists in Section 11. Surveyors were unable to locate this nest the last time monitoring was attempted in 1999. It is possible that this nest has blown down. The area would be surveyed in the year(s) the project occurs to determine if an osprey nest is present and occupied.

#### **3.2.2.2 Aquatic Dependent Wildlife Species (BLM Special Status Category in Parenthesis)**

*Amphibians*: Based on surveys, Cascade torrent salamanders (Bureau Tracking), Red-legged frogs (Bureau Tracking), Dunn's salamander and Pacific giant salamanders are known to occur in Gale Creek and/or its tributaries. Tailed frogs (Bureau Tracking) may also be present in the nearby tributaries.

*Harlequin Ducks* (Bureau Assessment): The area was last surveyed for harlequin ducks in 1997, when a pair was located during the breeding season in nearby Marten Creek. Gale Creek is considered likely nesting habitat for this species based on stream and stand characteristics, water quality, macroinvertebrate preybase, lack of human disturbance and proximity to the McKenzie River.

### **3.3 Survey and Manage**

#### **3.3.1 Red Tree Voles**

Surveys were conducted for red tree voles. One unknown species nest structure was located and removed as a candidate tree to be pulled over for in-stream structures. The project area would be managed consistent with direction in the current management recommendations for the species and the recent survey and manage ROD/SEIS (January 2001).

#### **3.3.2 Fungi, Bryophytes, and Lichens**

*Hydnum umbilicatum* and *Craterellus tubaeformis* were found incidentally during other surveys. Sporocarps of these fungi were found scattered in the area where trees would be pulled over and at the southern end of the project area where no disturbance would take place.

*Hydnum umbilicatum* is a Survey and Manage Component B species. Direction is to manage all known sites. Currently, there are no management recommendations for this species. An interim management document has been prepared on the Eugene District to provide guidance until management recommendations become available from the Regional Ecosystem Office. On the Eugene district, this species is common.

*Craterellus tubaeformis* is a Component D species. Direction is to manage high priority sites. Until high priority sites can be determined, all known sites are to be managed. Currently, there are no management recommendations for this species. On the Eugene district, this species is common.

### **3.4 Soils**

Three soil types would be impacted by the project: Fluvents, Klickitat, and Peavine.

Fluvents are deep soils that occupy the nearly level flood plain and overflow channels of lower Gale Creek. Texture and drainage are highly variable. These soils formed in recently deposited sediments derived from mixed sources and are subject to chronic disturbance from periods of flooding. Fluvents are highly stratified sands, silts, and gravel to a depth of 40 to 60 inches. A fluctuating water table rises and falls with stream level during periods of heavy runoff. Silty surface textures are more sensitive to disturbance, especially machine traffic, than the coarser components. The Fluvents occur on the north end of project area where channel is less confined. Segments of the existing road traverse these soils, especially in Section 2. There is a narrow band of Fluvents in the log placement segments also.

The steep side slopes within the source areas and portions of the tree pulling area contain Klickitat soils. These are deep (50 inches average), well drained, stony loams. Coarse content can be as high as 50%, which can limit rooting depth and make trees subject to windthrow. This soil is moderately productive.

The other upland soil that occurs is Peavine silty clay loam. This soil is the dominant south of the ford, where road decommissioning is the only action proposed, and occurs with Klickitat in the tree pulling area. Peavine is moderately deep (38 inches average) and highly productive. This soil has low strength properties when wet and is very subject to compaction.

### **3.5 Hydrology and Water Quality**

The proposed Gale Creek stream restoration project site begins approximately 0.75 mile above the confluence with the McKenzie River and extends upstream for another mile. Gale Creek, a fourth order tributary, flows in a northerly direction and drains a watershed of 3,803 acres (5.9 mi<sup>2</sup>).

The proposed project site is along the mainstem Gale Creek at a location which is generally oriented in a north-south position. The lower reach of Gale Creek within the project area has a broad flood plain and is an unconstrained Rosgen class B channel (Bear-Marten WA, 1998). Surrounding side-slopes are steep at approximately 60-70 percent. Gale Creek is low gradient (3%) in the lower reach, but steepens to 9% approximately 1/4 mile upstream from the existing low water crossing of Road 17-2E-2. The instream work proposed would occur in the lower gradient portion of Gale Creek.

Stream side or flood plain vegetation is predominantly a shrub, hardwood, and grass mixture. Conifers dominate the surrounding side-slopes and can also be found in the floodplain. Stream shading effects

are supplied by the surrounding steep hill slopes. No continuous water temperature monitoring of Gale Creek has been conducted. During fish habitat surveys, temperatures of the mainstem Gale Creek ranged from 13-14°C (55-57°F). Continuous water temperature monitoring was conducted from July to September 2001 on four tributaries to Gale Creek within this project area. Seven day moving average maximum temperatures of these streams were between 13.6 - 14.5°C (56-58°F), well within State water quality criteria of 17.8°C (64°F).

Current stream characteristics in Gale Creek are simplified as compared to historic conditions. Changes in streamflow patterns, bedload transport characteristics, and large woody material recruitment in the Gale Creek drainage are likely the result of the interaction of past and present management activities (e.g. road building and timber harvesting) with naturally occurring events (e.g. fires, floods, and debris torrents). Road building reduced the amplitude and frequency of stream meander patterns by constricting Gale Creek to a narrower valley floor which in turn reduced its ability to access a segment of its natural flood plain.

With regard to sedimentation, water quality is degraded as compared to historic conditions. Segments of Road 17-2E-2 are currently delivering sediment and surface runoff directly into Gale Creek as well as its tributaries in the lower portion of the project area. At four locations, there are either plugged culverts, or no culverts at all and the streams are flowing down the road. Eroded tire tread marks are becoming more eroded and a section of road at the beginning of the project (North end) is a mud wallow. During winter storm events, muddy water flows into Gale Creek near the stream crossing of the graveled portion of road 17-2E-2. This situation has worsened during the last 10 years and the road is impassable to vehicular traffic.

### **3.6 Fish Habitat**

Cutthroat trout are found throughout Gale Creek. Some of the cutthroat likely spend their entire life within Gale Creek. A portion of the population may migrate into Marten Creek or the McKenzie River to forage and return to Gale Creek for spawning. Various species of sculpins are found in the lower gradient portions of Gale Creek. Identification of individual species and their distribution has not been determined. Historical surveys indicate that Gale Creek was utilized by spring chinook salmon and steelhead trout. Recent surveys have not found either of these species within the project area.

Habitat surveys conducted in 2001 describe a moderately unconfined, low gradient channel (3% average) in the project area, made up primarily of riffles and rapids (83%). Pools are present in low amounts (12%). Streambed substrate consists of boulders and cobble except in the few areas where large wood is present and gravels are predominant. The amount of large woody material (LWM, >24" dbh and >32' long) is 8 pieces per mile which is well below recommended levels for a stream of this size and gradient.

The low amounts of instream wood is due primarily to past management. In the 1940's, the portion of the road proposed to be closed was constructed to access timber in the area. In the reach of stream below the ford (middle of Section 11), the road is parallel to Gale Creek and within the floodplain. Conifers were removed from the riparian area, decreasing recruitment potential. Instream wood in good condition was likely salvaged. The resulting loss of LWM in the stream channel has decreased the amount of low-velocity, complex habitat available to fish and other aquatic organisms. The loss of structure in the channel has also reduced accumulations of gravels decreasing the amount of available

spawning habitat for cutthroat trout and altering the macroinvertebrate community. The location of the road combined with the lack of instream wood and resulting channel degradation has led to a decrease in connectivity of Gale Creek to its floodplain.

The culvert on the 17-2E-2 (Section 2) road is currently impassable to resident fish. The pool below has filled in with boulders at the outlet and the jump height into the culvert is greater than 1 foot. There are no other passage barriers in the fish bearing portions of the Gale Creek Drainage. Restoring passage at this culvert would open up approximately 1 mile of upstream habitat.

Sedimentation from the native surface portion of 17-2E-2 road negatively impacts the water quality of Gale Creek. Fine sediments can decrease fish egg survival by decreasing the oxygen flow to the eggs.

### **3.7 Transportation System**

The 17-2E-2 Road parallels Gale Creek for much of its length. This road runs across Giustina Resources land in Section 2 and BLM land in Section 11. Most of the road in Section 2 is graveled. The native surface portion of the 17-2E-2 road begins at the junction with 17-2E-2.1 road in Section 2. The native surface portion of the road is within the floodplain of Gale Creek for much of the way until approximately the center of Section 11. There are many places along the road where drainage structures are no longer functioning and tributary streams are running down the road surface. Due to the current road condition and its negative impacts to water quality, this road was recommended for closure in the McKenzie TMR EA (October 2001).

### **3.8 Cultural Resources**

The proposed Gale Creek in-stream fisheries project and the closure of that portion of BLM road 17-2E-2 which lies in Sec. 11, T. 17 S., R. 2 E. poses no threat to known cultural values. The project is situated in an area with low potential for cultural resources values. Additionally, road construction, past logging activities, and the normal course of stream erosion have introduced a high degree of disturbance into the project area. In light of these conditions and the fact that the area has a low potential for cultural resource values, no cultural resource survey will be conducted in advance of the proposed project.

## 4.0 Environmental Consequences

This section incorporates the analysis of cumulative effects in the *USDA, Forest Service and the USDA, Bureau of Land Management Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Related Species Within the Range of the Northern Spotted Owl*, February 1994, (Chapters 3 &4) and the *Eugene District Proposed RMP/EIS*, November 1994 (Chapter 4). None of the alternatives in this Proposed Action would have cumulative effects on resources beyond those analyzed in these documents. The following analysis has a cumulative effects section that supplements those analyzed in the above documents and provides site-specific information and analysis particular to the alternatives considered.

### 4.1 Alternative I - Instream Restoration and Road Closure Alternative (Proposed Action)

#### 4.1.1 Issue 1 - How would activities affect erosion and sediment delivery to streams?

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##### *Direct and Indirect Effects:*

##### *Instream Placement of Trees*

Direct effects of tree lining and yarding from the source areas would be displacement and disturbance of surface soil and organics. Given that these sites have moderate to high productivity, soil exposure is not expected to persist for more than 5 years before full vegetative cover is reestablished. Any effects are expected to be short-term and be eliminated when disturbed sites are revegetated to pre-activity levels. By suspending the leading end of the trees, as much as practicable, continuous channels or erosion paths would be minimized. Hillslope erosion would be further abated because soils have good permeability, are strong, and they resist detachment. Mitigation measures (found in Appendix 3) would be employed to rehabilitate any disturbed sites which could potentially lead to sediment input.

Disturbance of soils and vegetation by dragging trees downslope could possibly provide an avenue for direct sediment input to Gale Creek. A soil disturbance trough from the source site to a tree placement site could alter surface and subsurface flow patterns and lead to an increase in the amount of sediment reaching the creek. Short-term increases in turbidity as a result of sediment from root masses are anticipated at approximately 3 cubic yards of soil potentially reaching the stream. The majority of this sediment is expected to settle out in a few hours with no residual effects. The sediment which settles out is expected to be flushed out of the system during the first fall storms.

Direct effects associated with tree placement by machines would be displacement of surface soils and compaction within the travelways. Compaction would be minimized by the fact that implementation would occur when soil moisture content is low. Use of an existing skid trail to transport trees from source areas would reduce the extent of new disturbance. Trips would be few in number and effects would be concentrated (approximately 10 short skid trails).

Indirect effects of tree placement with machines would be the loss of infiltration and corresponding loss of growth potential within compacted skid trails. These effects would be mitigated by excavator tillage as needed following operations.

### *Fish Passage*

Equipment would be utilized in the channel of Gale Creek to improve fish passage at the outlet of the culvert on the graveled portion of Road 17-2E-2 (Section 2). This cannot be accomplished from the road with available equipment. Disturbance of the channel bank and vegetation would be necessary for equipment access. This may result in short-term soil compaction and sedimentation into the stream from the bank. Once in the stream, short-term disturbance of gravels would occur during boulder placement at that location. The contractor will have a spill containment kit on site to use in the event that there is an oil or hydraulic fluid leak from the equipment. Following the completion of this part of the project, the disturbed bank would be tilled, seeded, and mulched with native materials to reduce erosion.

### *Road Closure*

Direct effects of road closure work include the temporary addition of sediment to 12 tributary streams during the removal of fill material on Road 17-2E-2. The impacts to water quality at these locations are expected to be short-term, as the first fall rains following the activity would move the sediment downstream. In the long-term, stream-side conditions would be improved and the potential for road-related sedimentation would be greatly reduced since the road would be left in an erosion resistant condition (this action meets ACS Objectives 4, 5). By conducting the work during low flow periods (July 1 to October 31), the amount of sediment delivered to these streams would be minimized. Minor excavation to restore the natural stream channel configurations at these sites and tilling the road where subgrade conditions allow would minimize future sediment recruitment from the road prism (this action meets ACS Objective 3, 5). Restoration of the stream banks and channel bottoms at the 12 locations would eliminate existing artificial barriers to the sediment transport as well as reduce the risk of future road/culvert failures due to lack of maintenance. Tilling or storm-proofing the road near these streams would also reduce road-related runoff to contribute to the restoration of natural stream flow (meets ACS Objective 6). Construction of a new side channel to Gale Creek would result in short term erosion until exposed soils are revegetated and river gravel, boulders, and wood are seated into the substrate. This restoration work would restore flood plain inundation in site specific area and fully meet the intent of ACS Objective 7.

Indirect effects associated with the road closure work would include small amounts of sediment generated during fill removal at stream crossings and channel reconfiguration to create a side channel could result in localized increased sediment in Gale Creek. This impact is expected to be short-term as the fall and winter storms would disperse the sediment downstream. Sediment and bedload materials stored in the channels above the undersized or non-functional culverts is likely to mobilize after the stream crossings are removed.

### *Conifer Release and Planting:*

No measurable effects to stream temperature are expected as a result of hardwood thinning to release conifers due to the relatively small size of the openings and the topographically shaded nature of Gale Creek within the project area.

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Cumulative Effects:

Closing Road 17-2E-2 and conducting stream channel restoration as part of that action would improve drainage and runoff characteristics in this basin. The road is currently a source of sediment to Gale Creek. Implementation of this proposal, combined with other ongoing and planned road renovation, restoration, and road closure work in the McKenzie Watershed (both on BLM and private lands) would result in a reduction of road related sediment delivery to streams in the future and water quality would be improved.

**4.1.2 Issue 2 - How would activities affect the stream channel and habitat for aquatic dependent species ?**

Direct and Indirect Effects:

*Instream Placement of Large Wood*

The volume of large woody material (LWM) would immediately increase in the stream, on the floodplain, and in the riparian area within 100-150 feet of the stream channel. This increase would directly affect the amount of habitat available for aquatic species in the project area. Large wood plays an important role in the formation of large pools, provides cover and increases the retention time of leaf litter. All of these components would increase with implementation of the proposed action.

Other indirect, beneficial effects from the addition of large wood to Gale Creek would be the accumulation of gravel substrate and the reconnection of Gale Creek with its floodplain in some areas. If large wood is added to Gale Creek, streambed materials that would otherwise be transported through the system would accumulate, and eventually stabilize. With the accumulation of bedload materials, the median particle size for streambed materials within the project site would decrease to more gravel sized constituents as is seen in the few areas where large wood is currently present in Gale Creek. As the bedload materials accumulate, localized areas of streambed are expected to aggregate thus reconnecting Gale Creek to its floodplain. These effects would begin following stream flows of sufficient size to begin bedload movement and are expected to last until flows are sufficiently large to remove large woody material placed along Gale Creek.

Restoration in Gale Creek would provide benefits such as, increased stream and riparian zone habitat diversity, reconnection to a restored floodplain, a more diverse macroinvertebrate preybase, creation of down log and pool habitats, accumulation of gravel substrate, and the regulation of water flow and temperature (particularly during summer months). Overall these benefits would result in increased cover, forage and nesting opportunities for amphibians as well as increasing quality habitat for fish and aquatic macroinvertebrates. Macroinvertebrates are a major component of the diet of fish and harlequin ducks and the increase in diversity and numbers of macroinvertebrates would immediately benefit these species.

As a result of pulling and positioning trees into the stream channel, there may be some localized, short-term increases in turbidity during implementation of the projects and during the first fall storm. Increases in turbidity should quickly return to background levels.

The addition of large wood into Gale Creek would lead to the attainment of ACS Objectives 1, 3, 7, and 9.

### *Road Closure*

Fine sediment can decrease egg survival in salmonids. High levels of suspended sediment can decrease the ability of fish to locate food due to low visibility. (direct) As a result of closing the 17-2E-2 road, short term sedimentation would increase briefly during and immediately after proposed road closure activities, however, (indirect) chronic sedimentation occurring from this road would decrease. ACS Objectives 3, 4, 5, 6, and 7 would be attained.

Fish populations would benefit from reduced sedimentation. Amphibians in the nearby tributaries would benefit from restoration of natural flow patterns due to road removal. Harlequin ducks would have improved nesting habitat due to decreased human disturbance as a result of the road closure. Closure of this road would lead to the attainments of ACS Objectives 4 and 5.

### *Fish Passage*

Raising the pool level and thus restoring year-round passage to the 17-2E-2 culvert would reconnect approximately 1 mile of upstream habitat thus leading to the attainment of ACS Objective 2.

### *Conifer Release and Planting*

The thinning of dense stands of alder would release existing conifer seedlings and saplings thus increasing their growth rate. In areas currently lacking conifers, they would be planted. In the future, these conifers will become a source of large wood for Gale Creek and structural diversity will be enhanced (ACS Objective 8).

### *Cumulative Effects:*

Cumulative effects within the watershed in the next 10 years would benefit the habitat of aquatic dependent species with no adverse effects expected. The benefits are expected to be slight at the 5<sup>th</sup> field watershed scaled due to the small scale and intensity of this and similar projects in the watershed. No other stream restoration or road closure projects are planned in these sections. Similar projects are planned on other federal and private lands in the watershed within the next ten years.

## **4.1.3 Issue 3 - How would activities affect terrestrial federally listed species, specifically the northern spotted owl and northern bald eagle?**

### **4.1.3.1 Northern Spotted Owl**

#### *Direct and Indirect Effects:*

***Disturbance:*** Since surveys would be conducted during the year(s) the project would occur and seasonal restrictions applied if necessary, there would be no noise disturbance effects to nesting owls or their young due to any activities associated with the action alternatives. Benefits to nesting habitat would be realized due to decreased potential for human disturbance as a result of the road closure actions.

***Habitat Modification:*** This alternative would remove roughly 50 trees from the project area stand for placement into Gale Creek. A maximum of 15 of these might be suitable for

nesting based on age and structure. Approximately 24 additional trees would be used as “tailholds” to facilitate pulling over and moving trees. An estimated 12 of these trees might be suitable for nesting based on age and structure. These would be protected from cable damage and likely remain alive and standing after project completion. Potential nest trees are plentiful in the Section and none would be removed, damaged or disturbed during the nesting season (unless owls are not nesting) and known nest trees would not be removed at any time. This would result in negligible direct or indirect effect to owls, their young, or their habitat due to tree removal. No designated Critical Habitat would be affected by the action alternatives.

The indirect effects of restoration activities would benefit owls through improvement of stream channel and riparian zone habitats, and their subsequent closer resemblance to natural/pre-road conditions. This would decrease the chance of loss of late successional potential nesting trees in these areas due to bank erosion, while benefitting many riparian zone wildlife species, many which are prey for spotted owls.

Cumulative Effects:

Cumulative effects within the watershed in the next 10 years would benefit spotted owls through benefits to their preybase and reduced potential for human disturbance to nesting due to road closure. No adverse effects are expected. The benefits are expected to be slight due to the small scale and intensity of this and similar projects in the watershed. No other stream restoration or road closure projects are planned in these sections. Similar projects are planned on other federal and private lands in the watershed within the next ten years

#### **4.1.3.2 Northern Bald Eagle**

Direct and Indirect Effects:

**Disturbance:** Since surveys would be conducted during the year(s) the project would occur and seasonal restrictions applied if necessary (Appendix 2), there would be no noise disturbance effects to nesting eagles or their young due to any activities associated with the action alternatives. Eagles would benefit from reduced potential for human disturbance due to closure of the existing road.

**Habitat Modification:** Although possible, it is very unlikely that any of the trees removed from the project stand for in-stream structures (see spotted owls above) would be potential nest trees. Eagles generally prefer nest trees on a higher slope position and/or those within line-of-sight of a water forage area.

If eagles are found to be nesting, potential nest trees would not be removed, damaged or disturbed during the nesting season. Known nests would not be removed at any time. This would result in negligible direct or indirect effects to eagles, or their habitat, due to tree removal.

Indirect effects would include benefits to the water quality and fish populations (eagle prey base) in the McKenzie River, a major forage resource for this species.

Cumulative Effects:

Cumulative effects within the watershed in the next 10 years would benefit eagles through benefits to their preybase and reduced potential for human disturbance to nesting due to road closure. No adverse effects are expected. The benefits are expected to be slight at the 5<sup>th</sup> field watershed scale due to the small scale and intensity of this and similar projects in the watershed. No other stream restoration or road closure projects are planned in these sections. Similar projects are planned on other federal and private lands in the watershed within the next ten years

## 4.2 Alternative II - Road Closure Alternative

### 4.2.1 Issue 1 - How would activities affect erosion and sediment delivery to streams?

Direct and Indirect Effects:

*Road Closure*

Direct effects of road closure work include the temporary addition of sediment to 12 tributaries during the removal of fill material on Road 17-2E-2. The impacts to water quality at these locations are expected to be short-term, as the first fall rains following the activity would move the sediment downstream. In the long-term, stream-side conditions would be improved and the potential for road-related sedimentation would be greatly reduced since the road would be left in an erosion resistant condition (this action meets ACS Objectives 4, 5). By conducting the work during low flow periods (July 1 to October 31), the amount of sediment delivered to these streams would be minimized. Minor excavation to restore the natural stream channel configurations at these sites and tilling the road where subgrade conditions allow would minimize future sediment recruitment from the road prism (this action meets ACS Objective 3, 5). Restoration of the stream banks and channel bottoms at the 12 locations would eliminate existing artificial barriers to the sediment transport as well as reduce the risk of future road/culvert failures due to lack of maintenance. Tilling or storm-proofing the road near these streams would also reduce road-related runoff to contribute to the restoration of natural stream flow (meets ACS Objective 6). The main difference between this alternative and that of the Proposed Action is that a new side channel to Gale Creek would not be constructed in conjunction with road closure work. The existing floodplain condition would be maintained and ACS Objective 7 would be attained.

Indirect effects associated with the road closure work would include small amounts of sediment generated during fill removal at stream crossings that could be expected to move down Gale Creek. This impact is expected to be short-term as the fall and winter storms would disperse the sediment through the system downstream. Sediment and bedload materials stored in the channels above the undersized or non-functional culverts may mobilize after the stream crossings are removed.

Cumulative Effects:

Closing Road 17-2E-2 would improve drainage and runoff characteristics in this basin. The road is currently a source of sediment to Gale Creek. Implementation of this proposal, combined with other ongoing and planned road renovation, restoration, and road closure work in the McKenzie Watershed (both on BLM and private lands) would result in a reduction of road related sediment delivery to streams in the future and water quality would be improved.

**4.2.2 Issue 2 - How would activities affect the stream channel and habitat for aquatic dependent species ?**

Direct and Indirect Effects:

*Road Closure*

Fine sediment can decrease egg survival in salmonids. High levels of suspended sediment can decrease the ability of fish to locate food due to low visibility, (direct). As a result of closing the 17-2E-2 road, short term sedimentation would increase briefly during and immediately after proposed road closure activities, however, (indirect) chronic sedimentation occurring from this road would decrease. ACS Objectives 3, 4, 5, 6, and 7 would be attained.

*Other Restoration Activities*

Under this alternative, no instream restoration activities would occur. ACS Objectives 1, 2, 3, 7, 8, and 9 would not be attained to the same degree as in Alternative I. Large woody material would not be added to the stream channel. Habitat quality and complexity would not be improved in the near future as it would take many years for large conifers to naturally enter the stream channel. As compared to the proposed action, smaller debris would be less likely to be retained and habitat complexity would remain low. Gravels would continue to move through this reach and would not be accumulated. Gale Creek would not be reconnected to its floodplain until large wood began to naturally enter the stream channel. Small conifers that are currently being suppressed by alder and other hardwoods would continue to grow slowly until natural succession occurred in the future.

The benefits would be similar to, but less than, those described for Alternative I. For amphibians, benefits would be limited to slight improvements in water quality and stream connectivity due to restoration of natural flow patterns in nearby tributaries. Harlequin ducks would still benefit from improved nesting habitat due to closure of the existing road. Fish passage would not be improved and approximately 1 mile of fish habitat would remain inaccessible during summer low flow periods.

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Cumulative Effects:

Cumulative effects within the watershed within the next 10 years would be the same or very similar to those described for Alternative I. Any differences would not be measurable at the watershed scale.

**4.2.3 Issue 3 -How would activities affect terrestrial federally listed species, specifically the northern spotted owl and northern bald eagle?**

**Northern Spotted Owl**

Direct and Indirect Effects:

Direct and indirect effects due to Alternative II are the same or similar to those described for Alternative I with the exception that no habitat modification would occur because no trees would be thinned, pulled over or used for tailholds. Alternative II would result in no direct or indirect effects to owls, their young, or their habitat due to disturbance or habitat modification.

Cumulative Effects:

Cumulative effects within the watershed within the next 10 years would be the very similar to those described for Alternative I. Differences in the type and amount of cumulative effects, when compared to Alternative I, are negligible due to the small scale and intensity of the project and would not be measurable at the watershed scale.

**Northern Bald Eagle**

Direct and Indirect Effects:

Direct and indirect effects due to Alternative II are the same or similar to those described for Alternative I with the exception that no habitat modification would occur because no trees would be thinned, pulled over or used for tailholds. Alternative II would result in no direct or indirect effects to owls, their young or their habitat due to disturbance or habitat modification.

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Cumulative Effects:

Cumulative effects within the watershed within the next 10 years would be very similar to those described for Alternative I. Differences in the type and amount of cumulative effects, when compared to Alternative I, are negligible due to the small scale and intensity of the project and would not be measurable at the watershed scale.

### **4.3 Alternative III - No Action Alternative**

#### **4.3.1 Issue 1 - How would activities affect erosion and sediment delivery to streams?**

Direct and Indirect Effects:

There would be no direct effects to surface soils with this alternative. No displacement or compaction would occur. There would be no localized short term additions of sediment to Gale Creek or its tributaries associated with project implementation. Under this alternative, many of the Aquatic Conservation Strategy Objectives (#3, #4, #5, and #6) may not be met because taking no action would not necessarily maintain the physical integrity of the aquatic system, water quality, or the sediment regime in this drainage. Twelve existing stream crossings would not be removed, drainage at two seeps would not be improved, and it is possible that mass movement could occur and degrade water quality. The existing road would continue to erode and direct sediment into Gale Creek.

Hillslope erosion rates and sediment input regime would remain at present levels. Natural processes such as wind, disease, and fire will continue to cause upslope disturbances which may affect potential sediment input to Gale Creek. Road-related sedimentation and run-off to Gale Creek and its tributaries may escalate due to the lack of road maintenance.

Cumulative Effects:

No change is anticipated from present conditions. No new skid roads would be made, and no existing ones would be used or decommissioned. Opportunities to restore 12 stream crossings where there are currently undersized or non-functional culverts and the creation of an erosion resistant road prism would be postponed to a later date. Detrimental effects from possible culvert failures and road introductions of sediment could occur due to lack of maintenance, and it is unknown what the cumulative ramifications may be.

**4.3.2 Issue 2 - How would activities affect the stream channel and habitat for aquatic dependent species?**

Direct and Indirect Effects:

The movement of bedload would continue unabated in Gale Creek. Opportunities for the accumulation of gravel and smaller size materials would not be provided. Streambed material accumulation would not be augmented and stabilized until a natural event of sufficient size and scope allows for the recruitment of large trees and pieces of woody material. Water quality would not be immediately improved. Aquatic dependent organisms using Gale Creek and its floodplain would not receive benefits due to stream restoration or road closure. Potential human disturbance due to the existing road would not be reduced for harlequin ducks. Several nearby tributaries of Gale Creek would remain diverted and continue to reduce connectivity for some amphibian species. ACS Objectives 1-9 will not be met as compared to the action alternatives.

Cumulative Effects:

Cumulative effects within the watershed within the next 10 years would be similar to those described for the Action Alternatives I and II. Differences in the type and amount of cumulative effects, when compared to Alternative I, are negligible due to the small scale and intensity of the project and would not be measurable at the watershed scale.

**4.3.3 Issue 3 - How would activities affect terrestrial federally listed species, specifically the northern spotted owl and northern bald eagle?**

**4.3.3.1 Northern Spotted Owl**

Direct and Indirect Effects:

Direct and indirect benefits to owl nesting habitat due to habitat improvement and reduction in the potential for human disturbance as well as an increase in available prey base would not be realized under this alternative.

Cumulative Effects:

Cumulative effects within the watershed within the next 10 years would be similar to those described for the Action Alternatives I and II. Differences in the type and amount of cumulative effects, when compared to Alternative I and II, are negligible due to the small scale and intensity of the project and would not be measurable at the watershed scale.

**4.3.3.2 Northern Bald Eagle**

Direct and Indirect Effects:

Direct and indirect benefits to water quality in the McKenzie River and fish prey base in Gale Creek and the McKenzie River, as well as reduction in the potential for human disturbance to nesting habitat would not be realized under this alternative.

Cumulative Effects:

Cumulative effects within the watershed within the next 10 years would be similar to those described for the Action Alternatives I and II. Differences in the type and amount of cumulative effects, when compared to Alternative I and II, are negligible due to the small scale and intensity of the project and would not be measurable at the watershed scale.

## 4.4 Other Environmental Effects - Common To All Action Alternatives

### 4.4.1 Survey and Manage Species

#### 4.4.1.1 Fungi, Bryophytes, and Lichens

Surveys for Survey and Manage non-vascular species (bryophytes and lichens) will be completed during the 2002 field season following established protocols. Most of the area was surveyed in winter 2002. No Survey and Manage bryophyte and lichen species were found in the project area. Surveys for aquatic flora were done in the summer of 2001. The project file contains a list of species included in the survey. Any sites found would be managed according to current management recommendations for that species to maintain the integrity and habitat components required by the species found.

For bryophytes and lichens in general, creating holes in the canopy by dropping trees closely mimics natural windfall. Dropping trees would create localized effects of increased sunlight to the forest floor, creating pockets of denser brush and tree seedlings. The tree seedlings may grow up to add another layer to the canopy.

*Hydnum umbilicatum* and *Craterellus tubaeformis* were found incidentally during other surveys. The scorocarps were found scattered in the area where trees would be dropped. The majority of sites were found in adjacent forest that would not be treated.

*Hydnum umbilicatum* is a Survey and Manage, Component B species. The BLM is directed to manage all known sites. Currently, there are no management recommendations for this species. An interim management document has been prepared on the Eugene District to provide guidance until management recommendations become available from the Regional Ecosystem Office. *Craterellus tubaeformis* is a Component D species, direction is to manage high priority sites, and until high priority sites can be determined, manage all known sites

Creating holes in the canopy by dropping trees closely mimics natural windfall. Dropping trees will create localized effects of increased sunlight to the forest floor, creating pockets of denser brush and tree seedlings. The tree seedlings may grow up to add another layer to the canopy.

Pulling over trees and the equipment used would cause localized disturbance of the forest floor, disrupting moss and hyphal mats of fungi. There are few scorocarps of *Craterellus tubaeformis* and *Hydnum umbilicatum* in the area of tree pulling, although none were in places where they'd be directly impacted. Other Survey and Manage species found during surveys would be managed according to the management recommendations for that species

The proposed project would add more large down wood debris to the area. *Craterellus tubaeformis* would benefit over time as this species uses large down Class four and five logs as substrate.

As pulling over trees mimics a natural disturbance, forest succession would continue, habitat for fungi developing as the duff and humus layer develops.

#### **4.4.1.2 Red Tree Voles**

No nests or nest trees would be cut or physically disturbed by project activities and there would be negligible/no short term effects and neutral or beneficial long term effects to red tree vole habitat in the stand. Red tree voles are not discussed further in this document.

#### **4.4.2 Noxious Weeds**

By mitigating for scot's broom and false brome (see Appendix 3), the population will be reduced or eliminated reducing the probability of false brome spreading across the project area and into adjacent private and public forest lands. Unchecked, false brome would spread across the project area and into adjacent private and public forest lands. Eliminating weeds from the road will maintain plant diversity.

#### **4.4.3. Unaffected Resources**

The following are either not present, or would not be affected by any of the alternatives: Areas of Critical Environmental Concerns, prime or unique farm lands, floodplains, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, Minority populations, or low income populations.

#### **4.4.4 Cultural Resources**

No cultural resources are known to exist in the proposed project area, therefore there would be no direct, indirect, or cumulative effects.

#### **4.4.5 American Indian Rights**

No impacts on American Indian social, economic, or subsistence rights are anticipated. No impacts are anticipated to the American Indian Religious Freedom Act.

#### **4.4.6 Environmental Justice**

To comply with Executive Order 12898 of February 11, 1994, Federal Actions to address Environmental Justice in Minority Populations and Low Income Populations, the Bureau of Land Management, Eugene District, will ensure that the public, including minority communities and low income communities, have adequate access to public information relating to human health or environmental planning, regulations, and enforcement as required by law.

The District has not identified any environmental effects, including human health, economic, and social effects of Federal actions, including effects on minority populations, low income populations, and Native American tribes in this analysis.

## 5.0 Consultation and Coordination

### 5.1 EA Review

This environmental analysis is being mailed out to the following members of the public and organizations:

John Bianco	Roseburg Forest Products Co.
Oregon DEQ	Peter Saraceno
Jim Goodpasture	Giustina Resources
Pam Hewitt	Sierra Club - Many Rivers Group
Charles & Reida Kimmel	Swanson Superior Forest Products Inc.
Lane County Land Management	Craig Tupper
Carol Logan, Kalapooya Sacred Circle Alliance	Jan Wroncy
Oregon Dept of Fish & Wildlife	American Lands Alliance
Oregon Dept of Forestry	Kris and John Ward
Oregon Natural Resources Council	Sondra Zemansky
The Pacific Rivers Council	Robert P Davison
John Poynter	Tom Stave, U of O Library
Leroy Pruitt	John Muir Project
	James Johnston

### 5.2 Fisheries Consultation

Activities proposed are covered by the programmatic Biological Opinion issued for Willamette Spring Chinook (June 28, 1999) and Columbia River Bull Trout (July 8, 1998), so no further consultation is required. The design criteria indicating appropriate work timing and procedures will be followed during the implementation of this project (Appendix 3).

### 5.3 Wildlife Consultation

Spotted owls and bald eagles would be consulted on in the *Programmatic Biological Assessment for Projects with the Potential to Disturb Northern Spotted Owls and/or Bald Eagles in the Willamette Province for FY 2002-2003* and/or the *Programmatic Biological Assessment of FY 2002 Projects in the Willamette Province that would Modify the Habitats of Bald Eagles or Northern Spotted Owls or Modify the Critical Habitat of the Northern Spotted Owl*. Reasonable and Prudent Measures in these assessments include minimizing disturbance to spotted owl pairs, their habitat and their progeny as well as known bald eagle roosts or nests.

For all action alternatives, the Programmatic BA measures would be implemented by applying the seasonal restrictions described in **Appendix 2**.

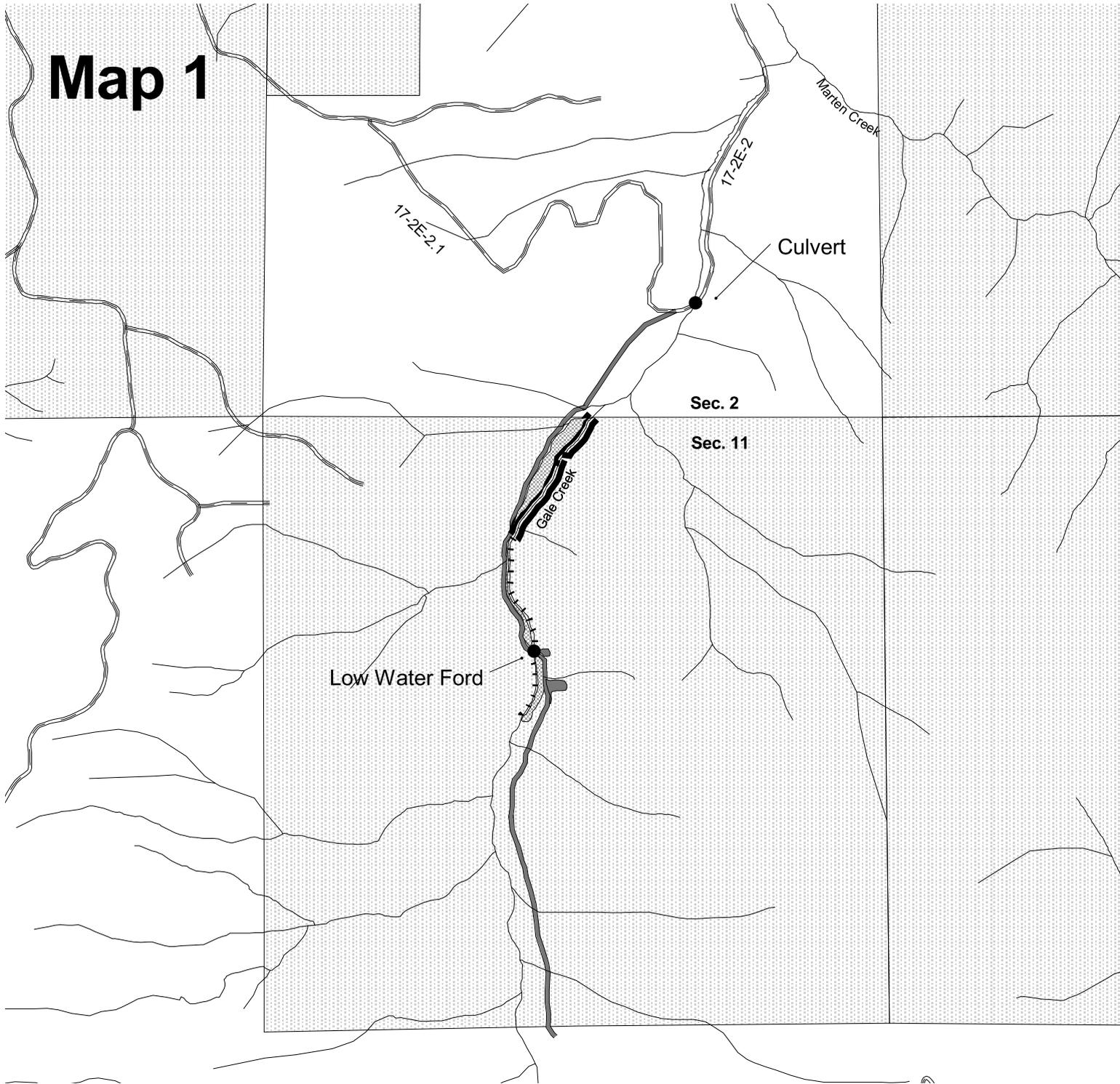
The nearby owl site would be monitored and potential eagle nesting habitat within 0.5 mile of the action area surveyed before the project would begin and in each year the project occurs.

## 6.0 List of Preparers

Each of the interdisciplinary team members listed below contributed to and reviewed this EA and concurs with its contents.

<b>NAME</b>	<b>TITLE</b>	<b>RESOURCE/DISCIPLINE</b>
Mike Blow	Wildlife Biologist	Wildlife Habitat
Mary D'Aversa	Hydrologist	Hydrology
Dave DeMoss	Silviculturist	Silviculture
Cheshire Mayrsohn	Botanist	Botany
Mike Sabin	Engineer	Roads/Transportation
Michael Southard	Archaeologist	Cultural Resources
Nikki Swanson	Fisheries Biologist	Fisheries / EA Writer
Sally Villegas	Wildlife Biologist	Wildlife Habitat
Kris Ward	Hydrologist	Water Resources
Rudy Wiedenbeck	Soil Scientist	Soils
Don Wilbur	Landscape Planner	NEPA Coordinator

# Map 1



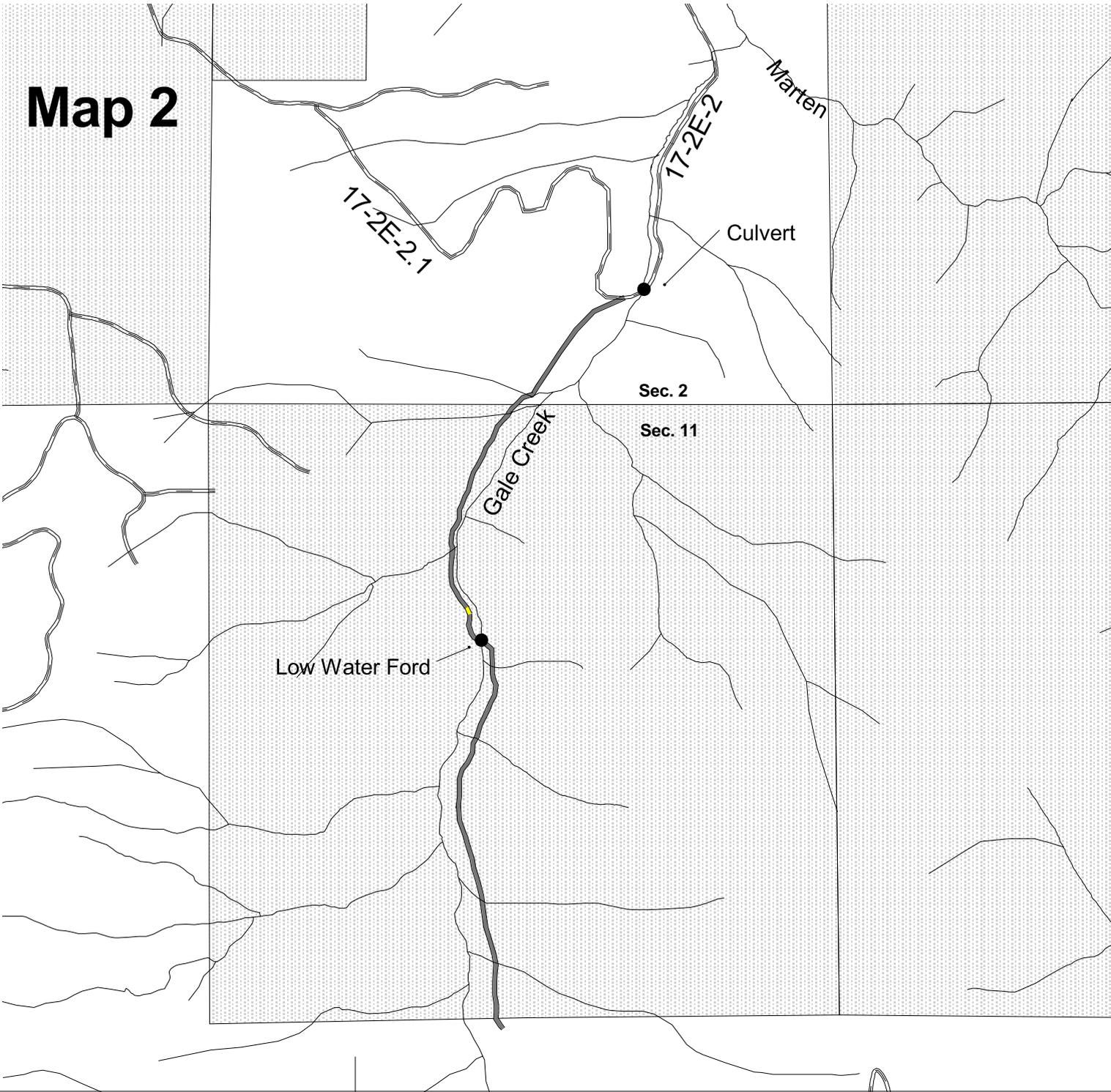
-  Riparian Thinning
-  Thinning Area
-  Log Placement
-  Tree Pulling
-  Streams
-  Roads
-  Road Closure
-  BLM

## Gale Creek Aquatic Restoration Project Alternative I Instream Restoration and Road Closure (Proposed Action)

0.2 0 0.2 0.4 0.6 Miles



# Map 2

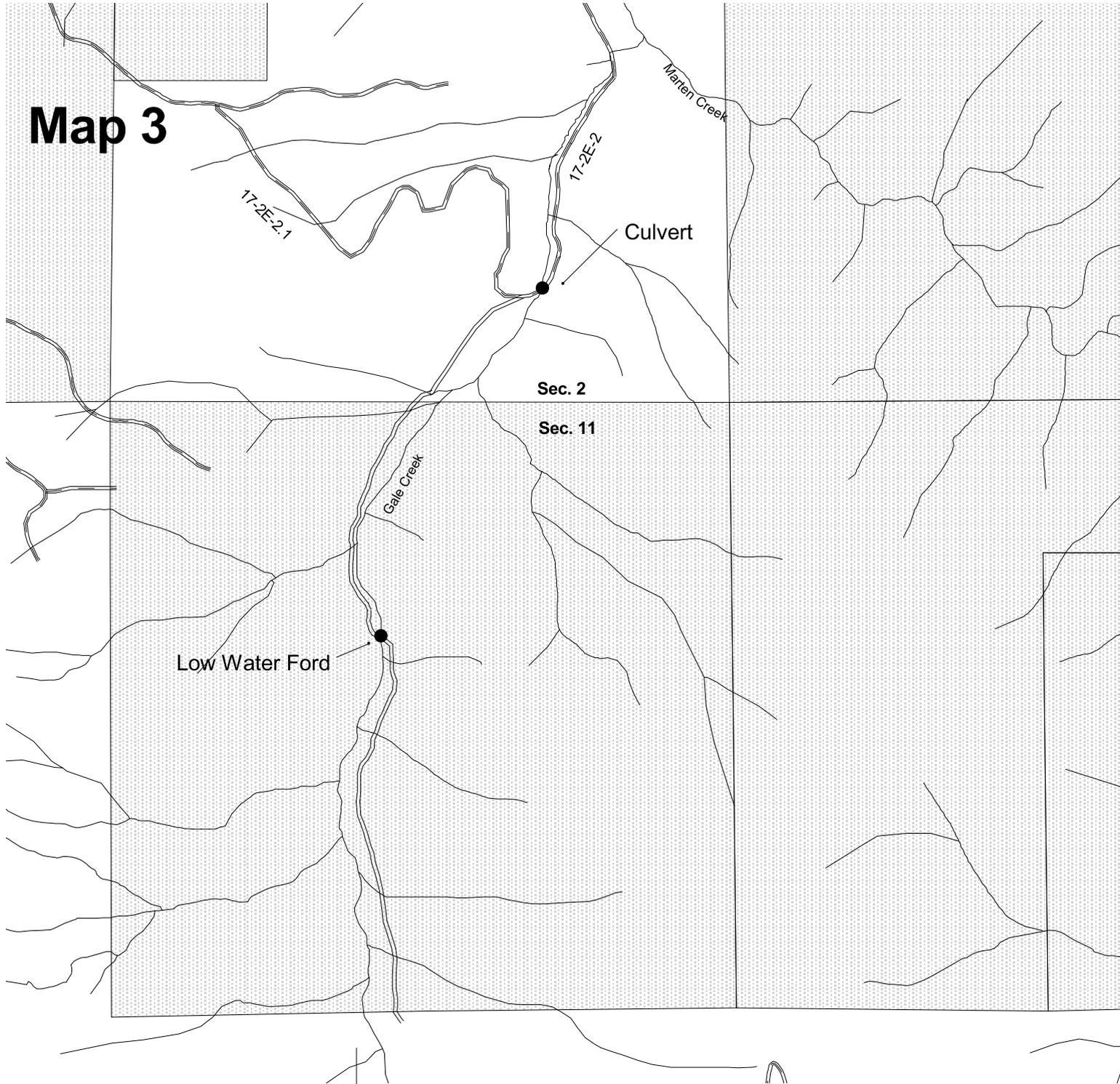


## Gale Creek Aquatic Restoration Project Alternative 2 Road Closure Alternative

-  Streams
-  Roads
-  Road Closure
-  BLM



# Map 3



## Gale Creek Aquatic Restoration Project Alternative 3 No Action Alternative

-  Streams
-  Roads
-  Dirt Road

 BLM

0.2 0 0.2 0.4 0.6 Miles



## Appendix 2 - Seasonal Restrictions For Project Work

Resource	Seasonal Restriction
T&E Wildlife Species Northern Spotted Owl	For activities within a 0.25 mile radius (or further if deemed necessary by an Agency wildlife biologist) of any known spotted owl activity center, a seasonal restriction would be in place between March 1 and July 15. This restriction would be applied to activities within Sections 2 and 11, and may be waived or extended (up to September 30) based on survey information regarding occupation and nesting status. (i.e., owls are not occupying the area or are not nesting).
T&E Wildlife Species Northern Bald Eagle	For activities within a 0.25 mile radius (0.5 mile line-of-sight or further if deemed necessary by an Agency wildlife biologist) of any known eagle nest, a seasonal restriction would be in place between January 1 and August 31. This restriction would be applied to activities within Sections 2 and 11 only if surveys find nesting eagles
Sensitive Wildlife Species Osprey	For activities within a 0.25 mile radius (or further if deemed necessary by an Agency wildlife biologist) of any known active osprey nest, a seasonal restriction would be in place between March 15 and August 15. This restriction would be applied only if surveys find nesting ospreys.
Sensitive Wildlife Species Harlequin Ducks	For activities within a 0.1 mile radius (or further if deemed necessary by an Agency wildlife biologist) of any known active nest or brooding pair, a seasonal restriction would be in place between March 15 and August 1. This restriction would be applied only if surveys find nesting harlequin ducks.
E-4 Special Status Wildlife Species	Consistent with IM No. OR-99-036 (“E-4 Special Provisions”), apply seasonal restrictions or suspension of all harvest and road activities that would occur within 1/4 mile of a known nest of a peregrine falcon, spotted owl, great grey owl, accipiter hawk, merlin, or other owl, hawk or raptor and nesting spotted owls or eagles. These restrictions vary by species and would only be applied should one of these species occur in the affected environment of the analysis area.
In-Channel Work	ODFW instream operating period - July 1 to October 15 (unless a project-specific exception is granted after field review by ODFW personnel)

## Appendix 3 - Design Features

### Alternative I - Instream Restoration and Road Closure Alternative (Proposed Action)

Activity	Design Feature
<b>Tree selection</b>	No trees to be removed from fragile-nonsuitable soils.
<b>Tree Pulling</b>  - preparation of trees  - use of yarder  - use of cables and blocks  - lining path	<p>Selected trees are 50-300 feet from the channel. All 13 trees are Douglas-fir and range in diameter from 15-44 inches (average = 29 inches).</p> <p>If needed, water will be pumped from creek to loosen soil and roots prior to lining. Hose intake will be screened to prevent fish from entering intake.</p> <p>Yarder required to stay on road or pullout surface</p> <p>All tailhold trees would be padded and cabled and/or otherwise protected from impacts. Notching tailhold trees would occur only where necessary. Respool cable where there is high potential to damage standing trees.</p> <p>Utilize directional pulling to avoid damage to standing trees, snags, down wood and other habitat features</p>
<b>Tree Thinning</b>	<p>29 trees in adjacent timber stand would be thinned from an area that is approximately 2 acres. Selected trees are Douglas-fir and hemlock although there are a few bigleaf maple. Trees range in diameter from 12-49 inches (average = 24 inches).</p> <p>Utilize directional falling/pulling to avoid unanticipated damage to nearby live trees and snags.</p>
<b>Yarding of trees</b>  - yarding paths and disturbance to soils	<p>When yarding to the stream channel from the thinning area, remain on existing skid trails and roads where feasible. Close skid roads after use.</p> <p>Choose tree travel corridors to minimize the extent of soil displacement upslope and to minimize disturbance of streambank vegetation.</p> <p>When possible partially suspend logs during yarding; replant disturbed soil with approved native seed mix (consult with Area Soil Scientist).</p> <p>When pulling trees directly into the stream channel, keep yarding distances for individual trees less than 300 feet.</p>
<b>Placement of trees in channel</b>  - selection of placement sites  - design of structures  - anchoring of trees  - skid trails	<p>Sites selected based upon channel shape, presence of natural anchor points, and apparent likelihood of site to retain wood</p> <p>Each site consists of 1-3 trees in a loose accumulation; trees and logs will be positioned at that most stable angle for the site (usually 30-90 degrees from downstream channel edge).</p> <p>Place trees on streambanks or in the stream once; do not relocate tree once in place.</p> <p>No anchors would be used because tree lengths (including rootwad) will be 2-3 times active channel width and approximately 75% of tree will be on the bank.</p> <p>Use existing skid trails whenever possible. Till all compacted trails to 24" depth with an excavator after operations and before fall rains. Plant natives (conifer, cottonwood, grasses) as appropriate.</p>

<p><b>Road Closure</b></p>	<p>Remove all stream crossings and cross drain relief culverts. Recycle corrugated metal pipes. In-channel work is to be conducted during low flow periods (July 1 to October 15) prior to fall rains. At stream crossings, recontour the channel side slopes and seed or plant exposed soils with native plant species in conjunction with erosion control blankets or mulch. Rock and large wood may be placed in the stream channel to simulate natural conditions.</p> <p>Where subgrade conditions warrant and the management objective is to permanently close the road, till the compacted road surface with an excavator to 24" depth. Pull soil/rock material into the ditchline to eliminate ditch function. An excavator can pull small diameter trees and brush from the adjacent forest and coarse woody debris can be placed to block the road bed.</p> <p>Establish drain dips at the cross drain removal locations on closed roads that are not to be tilled. Construct drainage dips, water bars, or lead-off ditches elsewhere on an untilled road to direct surface water to the forest floor and otherwise leave the road in an erosion resistant condition. Construct earthen barricades with brush additions to adequately limit off-highway vehicle traffic.</p> <p>Construct a new side channel to Gale Creek along a segment of Road 17-2E-2 by excavating existing alluvium and the road prism to provide for drainage of the creek into this segment during winter flows. The new channel bottom and side slopes would be graded to simulate natural conditions. Clean river gravel, pebbles, and boulders may be brought in and some large wood may be added to the new channel. Exposed soil would be planted with native species to reduce erosion.</p>
<p><b>In Channel Work (Fish Passage and Instream large wood placement)</b></p>	<p>In channel work would be conducted between July 1 and October 15 and would be limited to within 100 feet of the culvert outlet.</p> <p>The contractor will develop a Spill Prevention, Control, and Countermeasure Plan and the equipment to enact the plan if necessary.</p>
<p><b>Conifer release and planting</b></p>	<p>Trees to be released include naturally produced small conifers as well as cedar planted as part of a previous restoration project. Where existing hardwoods (predominantly alder) are dense, they would be thinned to release the small conifers. In areas lacking in small conifers, planting would also occur.</p>
<p><b>All Proposed Activities</b></p>	<p>False Brome and Scotch Broom would be removed before any disturbance occurs along the road.</p> <p>Special Status Plants and Survey and Manage Bryophytes and Lichens: Any sites found during surveys would be managed according to the management recommendations for that species. Species without management recommendations would be managed according to best professional judgement and input from the Regional Ecosystem Office.</p> <p>Equipment would be inspected to the undercarriage and treads are weed, dirt, and oil free prior to movement to the site.</p>

## Alternative II - Road Closure Alternative

Activity	Design Feature
<p><b>Road Closure</b></p>	<p>Remove all stream crossings and cross drain relief culverts. Recycle corrugated metal pipes. In-channel work is to be conducted during low flow periods (July 1 to October 15) prior to fall rains. At stream crossings, recontour the channel side slopes and seed or plant exposed soils with native plant species in conjunction with erosion control blankets or mulch. Rock and large wood may be placed in the stream channel to simulate natural conditions.</p> <p>Where subgrade conditions warrant and the management objective is to permanently close the road, till the compacted road surface. Pull soil/rock material into the ditchline to eliminate ditch function. An excavator can pull small diameter trees and brush from the adjacent forest and coarse woody debris can be placed to block the road bed.</p> <p>Establish drain dips at the cross drain removal locations on closed roads that are not to be tilled. Construct drainage dips, water bars, or lead-off ditches elsewhere on an untilled road to direct surface water to the forest floor and otherwise leave the road in an erosion resistant condition. Construct earthen barricades with brush additions to adequately limit off-highway vehicle traffic.</p> <p>False Brome and Scotch Broom would be removed before any disturbance occurs along the road.</p> <p>Special Status Plants and Survey and Manage Bryophytes and Lichens: Any sites found during surveys would be managed according to the management recommendations for that species. Species without management recommendations would be managed according to best professional judgement and input from the Regional Ecosystem Office.</p> <p>Equipment would be inspected to the undercarriage and treads are weed, dirt, and oil free prior to movement to the site.</p>

**UNITED STATES DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT  
EUGENE DISTRICT OFFICE**

Finding of No Significant Impact  
for  
An Aquatic Restoration Project in the Gale Creek Watershed  
OR090-EA-02-14

Determination:

On the basis of the information contained in the attached Environmental Assessment, and all other information available to me, it is my determination that implementation of the proposed action or alternative will not have significant environmental impacts not already addressed in the *Record of Decision (ROD) for Admendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (April 1994) and the Eugene District Record of Decision and Resource Management Plan (June 1995)* as amended by the Record of Decision (ROD) for Amendments to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, January 2001 with which this EA is in conformance, and does not, in and of itself, constitute a major federal action affecting the quality of the human environment. Therefore a new EIS or supplement to the existing EIS is unnecessary and will not be prepared.

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Field Manager, McKenzie Resource Area

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Date