United States Department of the Interior

BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT OFFICE
3040 Biddle Road
Medford, Oregon 97504
email address: or110mb@or.blm.gov

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

1792(OR116)

MAR 28 2008

Dear Interested Public:

The enclosed *Environmental Assessment* (EA) for the Birdseye Creek Culvert Removal Project is being distributed for a 15-day public review period.

The Ashland Resource Area of the Medford District Bureau of Land Management (BLM) proposes to improve fish and aquatic habitat by removing an existing culvert that presently provides a barrier to fish passage.

We welcome your comments on the content of the EA. We are particularly interested in comments that address one or more of the following: (1) new information that would affect the analysis, (2) information or evidence of flawed or incomplete analysis; (3) BLM's determination that there are no significant impacts associated with the proposed action beyond those impacts addressed in the *Medford District Proposed Resource Management Plan/ Environmental Impact Statement,* and (4) alternatives to the Proposed Action that would respond to purpose and need. Specific comments are the most useful.

Comments, including names and addresses, will be available for public review. Individual respondents may request confidentiality. If you wish to withhold your name and/or 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 but we cannot guarantee anonymity. 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.

All comments should be made in writing and mailed to Edward Reilly, Ashland Resource Area, 3040 Biddle Road, Medford, OR 97504. Any questions should be directed to the Ashland Planning Department at (541) 618-2497.

Sincerely,

John Gerritsma
Field Manager
Ashland Resource Area

Enclosure

ENVIRONMENTAL ASSESSMENT

For

Birdseye Creek
Culvert Removal

United States
Department of the Interior

Bureau of Land Management
Medford District

Jackson County, Oregon

ENVIRONMENTAL ASSESSMENT
FOR
Birdseye Creek Culvert Removal

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT

JACKSON COUNTY OREGON
EA COVER SHEET

RESOURCE AREA: Ashland

ACTION/TITLE: Culvert Removal

EA NUMBER: OR-116-08-02

LOCATION: T. 37 S., R. 4 W., section 4, W.M., Jackson County Oregon (See Map 1)

List of Preparers	Title	Responsibility
Brad Tong	Botanist	Special Status Plants, Botany
Ted Hass	Soil Scientist	Soils
George Arnold	Wildlife Biologist	T&E Animals, Wildlife
Chris Volpe	Fisheries Biologist	Fisheries, Riparian
Dave Squyres	Hydrologist	Hydrology & Watershed
David Knutson	Heritage Technician	Cultural Resources
Edward Reilly	Environmental Coordinator	NEPA Compliance

ENVIRONMENTAL ASSESSMENT
FOR
Birdseye Creek Culvert Removal

A. WHAT IS BLM PROPOSING?

The Ashland Resource Area of the Medford District BLM proposes to remove a culvert on a closed road in Birdseye Creek to provide unimpeded fish passage.

B. WHERE IS THE PROJECT LOCATED?

The culvert is located on forest access road 37-4-4.03. The legal description is T. 37 S., R. 4 W., in section 4, W.M., Jackson County Oregon (Map 1).

C. WHY IS BLM PROPOSING THIS PROJECT?

The culvert is sited on top of a small bedrock fall, and often becomes obstructed with debris on its upstream end. These two factors make the culvert a barrier to all life stages of fish that would migrate upstream to access spawning and rearing habitat in the upper reaches of Birdseye Creek. Based on anticipated resource management and public access needs, the road would not be needed in the foreseeable future. The BLM is proposing to remove the culvert to provide increased fish habitat. Removing the culvert would restore upstream passage to migratory and resident salmonids for an additional 0.8 miles of historically accessible habitat, and would help attain Aquatic Conservation Strategy (ACS) Objectives.

D. DECISIONS TO BE MADE

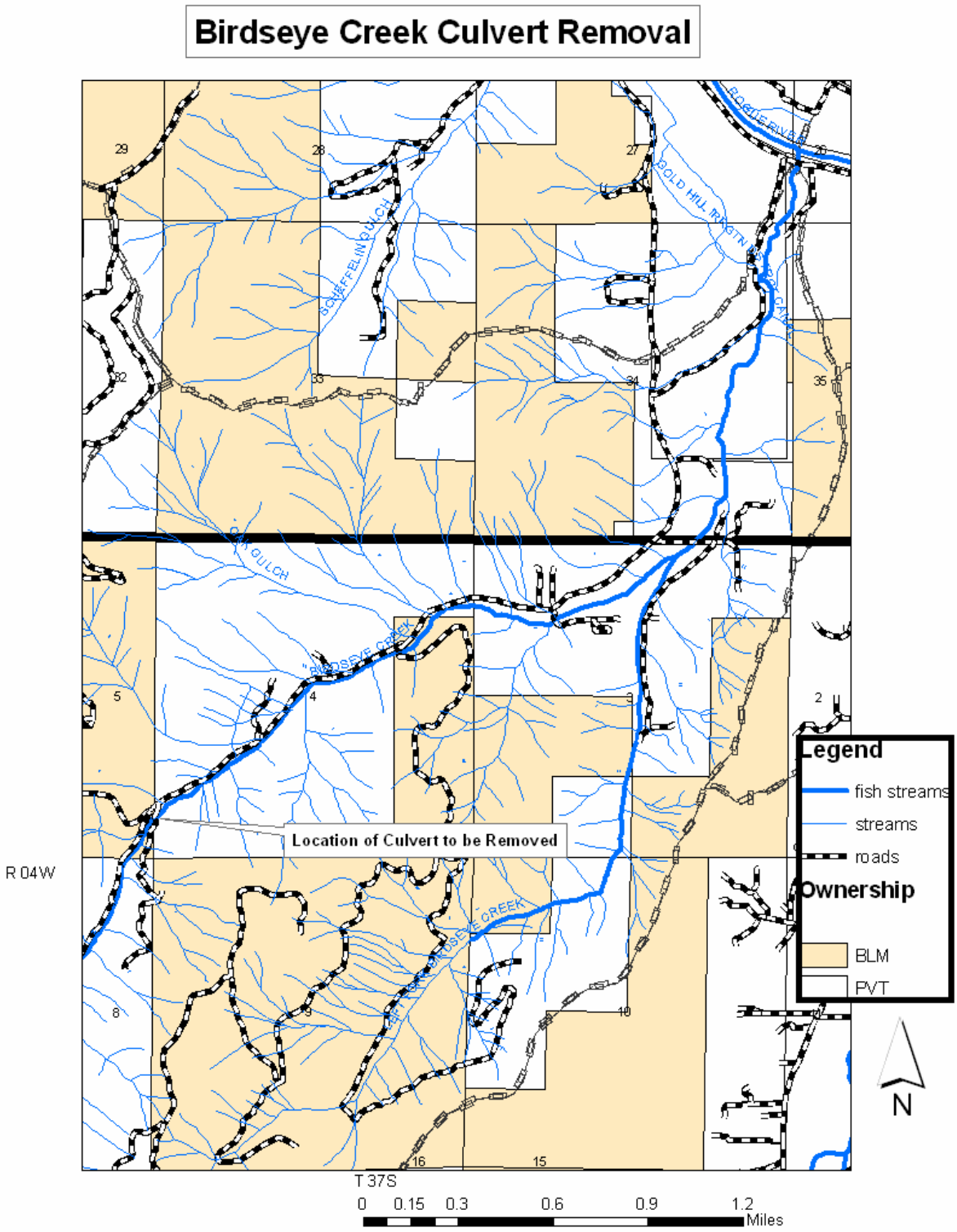
The Ashland Resource Area Field Manager must decide whether to implement the Proposed Action as designed or whether to select the No-Action Alternative. The decision will also include a determination whether or not the impacts of the proposed action are significant to the human environment and whether an Environmental Impact Statement must be prepared before the Manager makes a decision.

E. MANAGEMENT DIRECTION AND RELATIONSHIP TO STATUTES, REGULATIONS, AND OTHER PLANS

The proposed action is in compliance with and is tiered to the *Medford District Record of Decision and Resource Management Plan* (RMP) as amended by the *Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from the Bureau of Land Management Resource Management Plans Within the Range of the Northern Spotted Owl* (USDI 2007). The 1995 Medford District Resource Management Plan incorporated the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Northwest Forest Plan) (USDA and USDI 1994).

The proposed action and alternatives are in conformance with the direction given for the management of public lands in the Medford District by the Oregon and California Lands Act of 1937 (O&C Act), Federal Land Policy and Management Act of 1976 (FLPMA), the Endangered Species Act (ESA) of 1973, the Clean Water Act of 1987, Safe Drinking Water Act of 1974 (as amended 1986 and 1996), Clean Air Act, and the Archaeological Resources Protection Act of 1979.

Map 1. Project Area



F. ALTERNATIVES ELIMINATED FROM DETAILED STUDY

Replace the existing culvert with a larger culvert – Installing a larger culvert and modifying the culvert orientation would still restrict upstream fish passage because of the underlying bedrock falls and as such, continued maintenance of this road would not be a sound financial decision.

G. ALTERNATIVES CONSIDERED IN DETAIL

1. Alternative 1 - No Action Alternative

Under the "no action" alternative, the culvert would not be removed and the road would continue to be closed to vehicular traffic. Fish passage would continue to be blocked by the culvert. No maintenance would occur unless damage is discovered. The culvert would continue to be at risk of filling during moderate or greater flood events. The majority of the road segment is located behind a large pile of rip rap boulders which have been placed on the road prism above the culvert.

2. Alternative 2 – Proposed Action

Under Alternative 2, the Proposed Action, the fish barrier culvert would be removed. The road segment across the stream would still be inaccessible to vehicles, as there would be no stream crossing to provide access. Fish passage would be reestablished and ACS objectives would be met. If access to the lands on the opposite side of the stream are ever needed in the future, other avenues of crossing could be explored.

Project Design Features

1. During construction operations, water in the stream would be diverted in a manner (e.g. a pipe or lined ditch) that would minimize stream sedimentation. The contractor would be required to submit a water diversion plan to BLM for approval prior to beginning instream work. This project design feature would be waved if the stream were found to be dry at the time work begins. The Contractor would be responsible for meeting all State and Federal requirements for maintaining water quality.

2. Road fill material would be pulled back with the streamside slopes and reestablished to natural contours.

3. Excess excavated fill material would be removed from the stream crossing area and placed in a stable location outside of Riparian Reserves. Debris and sediment that has collected on the upstream end of the culvert would also be removed and placed in a stable location outside of Riparian Reserves.

4. Native riparian tree species, including both hardwoods and conifers, would be planted to speed up recovery time.

5. Movement of sediment downstream from the worksite would be minimized through the use of filtering materials such as straw bales or coconut fiber logs/bales.

6. Streambanks at the crossing would be stabilized as soon as possible following culvert removal and exposed soils would be seeded, mulched, and planted with native grass and native riparian tree species.

7. Refuel power equipment, or use absorbent pads for immobile equipment, at least 150 feet from water bodies, to prevent the direct delivery of contaminants into a water body (or as far as possible from a water body depending on site conditions).

8. Develop and implement an approved spill containment plan that is in accordance with Oregon Department of Environmental Quality requirements.

9. Culvert removal work would occur during dry weather conditions generally late summer to early fall to best avoid wet conditions.

10. All in-channel work would be done during the summer instream work period (June 15th to September 15th).

11. Follow ODFW guidelines for timing of in-water work, where relevant, except where the potential for greater damage to water quality and fish habitat exists.

12. Project must meet applicable terms and conditions to implement reasonable and prudent measures from the Programmatic Biological and Conference Opinion, specifically including: 1) Consideration should be given to restoring the stream channel and reconnecting the floodplain at the site, and 2) When removing woody debris from the road-crossing inlet, place the debris downstream of the road crossing

13. To minimize the spread of noxious weeds:
    a. Vehicle and equipment use off existing roads in the project area would be limited to the dry season.
    b. Mechanical equipment would be power washed and cleaned of all soil and vegetative material before entering the project area
    c. Seeding of native grasses and/or an approved seed mix on disturbed soil would occur.
    d. Noxious weed populations in the project area would be treated prior to ground disturbing activity with subsequent treatments occurring as necessary and as funding is available.

14. A barricade or rip rap would be placed to block the approach to the exposed stream bank on the Birdseye Creek Rd. side of the crossing (west side). The intent would be to create an impassable barrier to vehicles.

H. EFFECTS OF IMPLEMENTATION

1. Soil and Water Resources

The soil identified in the culvert removal area is Vannoy soil series. The Vannoy soil is moderately deep, well drained on hillslopes. It formed in colluvium derived dominantly from metamorphic rock. Typically, the surface is covered with a layer of needles, leaves, and twigs about ¾ inches thick. The surface layer is dark brown silt loam about 4 inches thick. The next layer is reddish brown silt loam about 7 inches thick. The subsoil is yellowish red clay loam about 27 inches thick. Weathered bedrock is at a depth of about 38 inches. Permeability of the Vannoy soil is moderately slow. The depth to bedrock ranges from 20 to 40 inches. In some areas the surface layer is gravelly or very gravelly loam. Runoff is medium and the potential for

water erosion is moderate on slopes less than 35 percent.

The culvert proposed for removal is within a Riparian Reserve and crosses Birdseye Creek, a perennial stream in the Rogue River Gold Hill Watershed. Birdseye Creek from mile 0 to 1.4 is included on the Department of Environmental Quality's 303(d) list of water quality limited streams. The listing is for exceeding maximum desirable summer water temperature.

The stream reach immediately upstream of the road crossing has an average bankfull width of seven feet and an average bankfull depth of 0.8 feet. The stream gradient through this reach is approximately 11 percent. This channel reach has been impacted by past upstream activities, that have resulted in erosion and sediment deposition to instream habitats. The stream channel and riparian area for this reach are rated as Functional-at-Risk.

The segments of road on either side of the culvert proposed for decommissioning are stable and either rocked and in good condition, or completely overgrown with dense vegetation colonizing the road prism. The road is stable and does not appear to be contributing sediment to the nearby stream.

Alternative 1 - No-Action: Under Alternative 1, the road would continue to be managed under BLM's current road management policy. No maintenance would occur unless offsite damage is discovered. It is unlikely that the culvert would be replaced in the foreseeable future. The culvert would continue to be at risk of failing during high flow events which could potentially cause local channel scour and deliver sediment to Birdseye Creek.

Alternative 2 - Proposed Action: The proposed action would follow through with a Rogue River Gold Hill Watershed Analysis (USDI 2001) recommendation to remove or replace fish passage barriers, especially those within anadromous fish habitat. The proposed action would remove a failing culvert, and eliminate access to a road that is currently no longer needed. The proposed culvert removal project would involve: removal of the culvert located at the crossing of the Birdseye Creek; restoring the stream crossing to the natural stream gradient and valley form; reestablishing streamside slopes to the natural contour; removing the excavated fill material and placing it in a stable location; and establishing native vegetation on the disturbed area.

Alternative 2 would have no direct or indirect effect on temperature in the 303(d) listed portion of Birdseye Creek. Removing the culvert would have a small, localized direct effect on summer stream temperature in the upstream reach in the vicinity of the culvert removal. The stream segment that is currently flowing through the culvert would be exposed to solar radiation when the culvert is removed. Because the stream has a south/north orientation at the stream crossing, vegetation on both sides provides shading (USDA and USDI 2004). Streamside vegetation adjacent to the stream crossing may be damaged during the culvert removal, slightly enlarging the exposed opening. The total length of exposed stream would be less than 25 feet. The stream crossing would not be shaded until vegetation becomes established. Native riparian tree species, including both hardwoods and conifers, would be planted to speed up recovery time. Any increase in stream temperature at the proposed project site would be extremely small (fractions of a degree) and not likely to affect the listed portion of Birdseye Creek, which is roughly two miles downstream from the proposed culvert removal. The long-term benefit of riparian vegetation replacing the road stream crossing would be greater than the short-term loss of stream shading.

Adverse sediment impacts to Birdseye Creek would be minimized through implementation of Best Management Practices (see Proposed Action Description).

The in-channel work associated with the culvert removal would result in localized, short-term (limited duration) turbidity/sediment increases. Any turbidity and sediment increases resulting from the culvert removal would be within the scope of the increases analyzed in the Medford District PRMP/EIS (USDI 1994, p. 4-18, 4-19).

The primary sediment delivery mechanism resulting from the culvert removal would be streambank erosion during bankfull flows following completion of instream work. The project design features and best management practices would minimize the potential for streambank erosion. Streambank erosion resulting from the culvert removal would continue to occur during successive bankfull events until vegetation becomes sufficiently established to protect the banks. It could take up to two winters for the streambanks to stabilize after the culvert removal. In general, the long term benefits of removing the culvert outweigh the relatively short term, localized, small sediment pulse that may be in introduced in Birdseye Creek.

2. Fish

The proposed culvert removal would occur adjacent to and within the stream channel of Birdseye Creek (roughly at river mile 3.4), a perennial fish bearing stream. Birdseye Creek supports populations of anadromous steelhead trout and cutthroat trout in the vicinity of the culvert, and lower reaches support threatened Southern Oregon/Northern California (SONC) coho salmon. Birdseye Creek at and upstream of the location of the proposed culvert removal (to approximate river mile 4.2) is considered both Essential Fish Habitat (EFH) and Coho Critical Habitat (CCH) by the National Marine Fisheries Service (NMFS).

<u>Alternative 1 - No Action:</u> The No-Action alternative would have no additional effects to SONC coho salmon, CCH, or EFH in Birdseye Creek as no change from the status quo would occur. The barrier culvert would remain to obstruct fish passage, and the culvert would likely continue to clog on occasion, increasing both the risk of failure and the likelihood that the culvert would require maintenance. Aquatic Conservation Strategy objectives # 2 and 3 would not be restored.

<u>Alternative 2 - Proposed Action:</u> As outlined in the Programmatic Biological and Conference Opinion (NMFS 2007) for culvert removal, the proposed action has been determined to "*likely adversely affect (LAA)*" SONC coho salmon, CCH, and EFH in Birdseye Creek. The programmatic Biological and Conference Opinion defines LAA actions for culvert work as those within Riparian Reserves that would likely result in ground disturbance with sediment delivery mechanisms to stream channels, and any instream work.

Removal of the culvert would likely cause a short term pulse of fine sediments into the mainstem channel of Birdseye Creek, and an increase in turbidity downstream of the project site for several hours during the period of major work in the stream. Given that the culvert is located within CCH/EFH, sediment and turbidity generated from removing the culvert would impact listed habitat in Birdseye Creek. Impacts would likely be of short duration, and significantly affect only a few pools (juvenile salmonid rearing habitat). Turbidity from instream work would be greatest at the project site, and would clear rapidly in subsequent downstream habitats because there would be very little flow in Birdseye Creek during the period prescribed for work, and any turbidity would quickly settle out of solution in the slow pools as a thin layer of fine sediment. As all work would occur during the dry season, and as sediment capture devices (straw bales or booms) would be required, the majority of sediment released by removing the culvert and road fill would settle out in the first pool downstream of the project area. This sediment would remain in this pool until flushing flows during the wet season mobilized it to downstream habitats.

Depending upon the nature of subsequent high flow events, the sediment would either slowly migrate downstream as multiple pulses, where it would be stored until the next high flow event or, in the case of a large flood event, either be deposited on a flood plain (a natural deposition area) or transported through listed habitat as a single pulse of increased turbidity. Some erosion of the fill slopes could occur during these same high flow events, until such time as vegetation stabilizes the slopes. In all, a maximum total of one cubic yard of sediment could potentially be released into the stream system as a result of this project (Hass 2007).

Direct effects to salmonids include reduced opportunities to feed and potential avoidance of disturbed areas altogether during the short period of elevated turbidity. Indirect effects include habitat modification of the pool downstream of the culvert removal location, as the majority of mobilized sediments would be stored for several months in this pool. Several other downstream pools may be slightly impacted should a layer of fine sediment be deposited over substrate. This could potentially lead to decreased production of aquatic macro-invertebrates, and hence a reduction in food supply to juvenile salmonids. As described, the first significant flows following culvert removal would mobilize this sediment and transport it downstream. Adherence to Project Design Features and Best Management Practices as described under Alternatives, Proposed Action, should help to minimize these sediment related impacts.

Long term effects of this project would be beneficial to fish populations and habitat. Connectivity to upstream habitats in Birdseye Creek would be restored as a result of the culvert removal. Implementation of this project would eliminate the risk of the culvert becoming obstructed to the point of failure, which would release a much larger volume of sediment than removing the culvert would. In addition, Aquatic Conservation Strategy Objectives # 2 and 3 would be improved as a result of culvert removal (see ACS appendix A).

3. Wildlife (Terrestrial)

Alternative 1 - No Action: Under the "no action" alternative, the culvert would not be removed; the road would continue to be managed under BLM's current road management policy. No maintenance would occur unless offsite damage is discovered. If future maintenance occurred, those animals present in the immediate vicinity of the operations would be subject to short-term disturbance; however, this would be a minor impact. There would be no disturbance to habitat from a future culvert maintenance or removal operation.

Alternative 2 - Proposed Action: Habitat immediately adjacent to the culvert proposed to be removed would be degraded or removed during culvert removal. Because only a small amount of habitat would be affected, and because much of the habitat will reestablish after the culverts are gone, the impact to terrestrial wildlife habitat would be minor.

Those animals present in the immediate vicinity of the operations would be subject to short-term disturbance; however, this would be a minor impact.

Suitable habitat for proposed or listed threatened/endangered species would not be affected by the proposed project.

4. Special Status Botanical Species

Alternative 1 - No Action: Under the "no action" alternative, the culvert would not be removed; the road would continue to be managed under BLM's current road management policy. No maintenance would occur unless offsite damage is discovered. If future road maintenance

occurred, the road prism or previously disturbed ground (from culvert removal) does not provide suitable habitat for BLM Special Status Plants and Fungi. Actions occurring within the road prism or in previously disturbed ground would have no effect on BLM Special Status Plants and Fungi, including those listed or proposed under the Endangered Species Act of 1973, as amended.

Alternative 2 – Proposed Action: The road prism or previously disturbed ground (from culvert removal) does not provide suitable habitat for BLM Special Status Plants and Fungi. Actions occurring within the road prism or in previously disturbed ground would have no effect on BLM Special Status Plants and Fungi, including those listed or proposed under the Endangered Species Act of 1973, as amended.

5. Invasive, Nonnative Species

Alternative 1 – No-Action: Under the "no action" alternative, the culvert would not be removed; the road would continue to be managed under BLM's current road management policy. No maintenance would occur unless offsite damage is discovered. Future road maintenance could leave disturbed soil along the road bed that would favor nonnative plant species.

Alternative 2 - Proposed Action: The proposed project would leave exposed disturbed mineral soil. This will provide an environment that favors invasive nonnative plant species. Seeding and weed treatment, by project design, would reduce subsequent noxious weed establishment. Project Design Features for equipment washing would reduce potential sources of invasive species.

6. Cultural Resources

There are no known cultural resources associated in the vicinity of the culvert proposed for removal. If any indication of cultural resources is found during implementation of the proposed action, all work would stop until a qualified archaeologist could review the site and mitigation measures are enacted.

7. Critical Elements

The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order and must be considered in all EAs.

Critical Element	Affected Yes	Affected No	Critical Element	Affected Yes	Affected No
Air Quality		**X**	T & E Species		**X**
ACECs		**X**	Wastes, Hazardous/Solid		**X**
Cultural Resources		**X**	Water Quality		**X****
Farmlands, Prime/Unique		**X**	Wetlands/Riparian Zones		**X****
Floodplains		**X****	Wild & Scenic Rivers		**X**
Nat. Amer. Rel. Concerns	.	. **X**	Wilderness		**X**
Invasive, Nonnative Species		**X***	Energy Resources (EO 13212)		**X**
			Environmental Justice		**X**

*These affected critical elements could be impacted by the implementing the Proposed Action. Impacts are being avoided by project design.

**These affected critical elements would be impacted by implementing the Proposed Action. The impacts are being reduced by designing the Proposed Action with Best Management Practices, Management Action/Direction, Standard and Guidelines as outlined in the Environmental Impact Statements (EIS)/Record of Decisions *(RMP) (USDI BLM 1995(a))(USDA FS; USDI BLM 1994*) tiered to in Chapter 1. The impacts are not affected beyond those already analyzed by the above-mentioned documents.

I. PUBLIC PARTICIPATION

Public notice of the availability of this EA was provided through advertisement on the Medford District's website and through direct mailing to interested parties. A copy of this EA is available upon request from the Ashland Resource Area, Bureau of Land Management, 3040 Biddle Rd., Medford, OR 97540, (541)618-2497.

This EA was distributed to the following agencies and organizations.

Organizations and Agencies
Klamath Siskiyou Wildlands Center
Siskiyou Project
Oregon Department Forestry
Oregon Natural Resources Council
Oregon Department of Fish and Wildlife
Oregon Department of Environmental Quality
Rogue River National Forest (RRNF)
The Pacific Rivers Council
Southern Oregon University
Indian Hill LLC
Forest Capital Partners

References Cited

U.S. Department of Agriculture, Forest Service and U.S. Department of the Interior, Bureau of Land Management. 1994. *Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and the Standards and Guidelines for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl*. Portland, OR.

U.S. Department of Agriculture, Forest Service and U. S. Department of the Interior, Bureau of Land Management. 2004(a). *Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl.* Portland, OR.

U.S. Department of Agriculture, Forest Service and U. S. Department of the Interior, Bureau of Land Management. 2004(b). The *Record of Decision Amending Resource Management Plans for Seven Bureau of Land Management Districts and Land and Resource Management Plans for Nineteen National Forests within the Range of the Northern Spotted Owl to Clarify Provisions Relating to the Aquatic Conservation Strategy.* Portland, OR.

USDA, USDI, USDC. 2001. *Biological Assessment for Programmatic USDA ForestService and USDI Bureau of Land Management Activities Affecting Oregon Coast Steelhead Trout, Southern Oregon/Northern California Coast and Oregon Coast Coho Salmon, Southern Oregon/Northern California Coast and Oregon Coast Chinook Salmon within the Southwestern Oregon Province, Oregon*.

U.S. Department of the Interior, Bureau of Land Management, Medford District Office. 1994. *Medford District Proposed Resource Management Plan/Environmental Impact Statement*. Medford, OR.

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U.S. Department of Interior, Bureau of Land Management, Medford District. 2001. *South Rogue-Gold Hill Watershed Analysis*. Version 1.1. Medford, OR.

U.S. Department of Agriculture, Forest Service and U.S. Department of Interior, Bureau of Land Management. 2004. *Draft Sufficiency Analysis for Stream Temperature*. Portland, OR.

Appendix A

The Northwest Forest Plan's (NWFP) Aquatic Conservation Strategy (ACS) has four components: Riparian Reserves, Key Watersheds, Watershed Analysis, and Watershed Restoration. It is guided by nine objectives which are meant to focus agency actions to protect ecological processes at the 5th-field hydrologic scale, or watershed. How the four components of ACS relate to the Birdseye Creek Culvert Removal is explained below:

1. Riparian Reserves: Riparian Reserve widths for streams, springs, wetlands, and unstable soils have been determined according to the protocol outlined in the NWFP's Aquatic Conservation Strategy. As the culvert is located on private lands, it is not technically within a Riparian Reserve. The culvert is obviously within a riparian area, as it spans the mainstem channel of Birdseye Creek.

2. Key Watersheds: Tier 1 Key Watersheds contribute directly to conservation of at-risk anadromous salmonids, bull trout, and resident fish species. They also have a high potential of being restored as part of a watershed restoration program. The Rogue River Gold Hill Watershed is not a Tier 1 Key Watershed.

3. Watershed Analysis: BLM completed the Rogue River Gold Hill (South) Watershed Analysis in 2001. No WA for the north side of the Watershed has been completed.

4. Watershed Restoration: Projects by ODFW and/or BLM include culvert removal and replacement, dam removal, road decommissioning, irrigation ditch fish screens and siphoning, and riparian vegetation re-establishment.

Evaluation of This Action's Consistency with Northwest Forest Plan Aquatic Conservation Strategy Objectives

The nine objectives of the ACS are as follows:

1. Maintain and restore the distribution, diversity, and complexity of watershed and **landscape-scale features** to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

Removing one culvert would have no probability of affecting landscape-scale features, at any scale of analysis.

2. Maintain and restore **spatial and temporal connectivity** within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

Removing the barrier culvert would restore connectivity between lower and upper reaches of Birdseye Creek and enable upstream migratory organisms a physically unobstructed route to spawning and rearing locales in upper Birdseye Creek. This benefit would be significant at both the site level and drainage level scales, as any migratory fish to Birdseye Creek would have access to an additional ~ 0.8 miles, or roughly 18% of all anadromous habitat. At the watershed scale, this effect would scarcely be noticeable, as an increase of 0.8 miles would represent less than 1% of all available anadromous fish habitat in the watershed.

3. Maintain and restore the **physical integrity** of the aquatic system, including shorelines,

banks, and bottom configurations.

At the site level, removing the culvert would restore (in time) the natural bottom configuration of the stream. In the short period, the physical integrity of the banks adjacent to the culvert may be lessened as exposed soil would need some time to recover. Seeding and mulching these exposed areas would discourage soil movement off-site and promote rapid re-colonization by plants, lessening the period of recovery. Neither the short term negative nor long term positive effects to this objective would be discernable at either the drainage or watershed level.

4. Maintain and restore **water quality** necessary to support healthy riparian, aquatic and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Although this project could potentially increase temperature at the site scale during the period that it takes for shade producing vegetation to grow adjacent to the stream, the increase is not expected to be significant to affect survival or growth of aquatic organisms. Reproduction and migration would remain unaffected, as these activities would occur during cooler periods and water temperature would not be an issue. Any increases in water temperature would be undetectable at either the drainage or watershed scale. Localized increases in turbidity could possibly disrupt foraging behavior of juvenile salmonids for several hours. The duration of increased turbidity would be short enough that survival and growth rates should not be measurably affected. Increased turbidity would be the most noticeable at the site level, and would quickly settle out in downstream habitats. It would not be significant at the drainage level, and would have no effect at the watershed scale. Increased sedimentation could degrade habitat in the pool immediately downstream of the project area to the point that insect production and hence growth of juvenile salmonids could be compromised. These fish so affected could potentially be displaced out of the pool and forced to seek more suitable habitats elsewhere. This pool would remain in a degraded state until high stream flows flush the sediment out, delivering to downstream habitats in small undetectable pulses, or flushing it through the system in a large pulse of elevated turbidity. Although significant at the site scale, given the anticipated amount of sediment (estimated at a maximum of 1 cubic yard), and given the time of year that the sediment would be mobilized off site, it would be undetectable at the drainage and watershed scales.

5. Maintain and restore the **sediment regime** under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

See previous discussion, turbidity and sediment. Although this project would have short term site level impacts, removing the culvert would permanently eliminate the risk that the culvert could fail, an event that would release much more sediment. In addition, should the culvert fail, emergency maintenance would be required, a procedure that typically introduces more fine sediment into the stream system, and at a time or reduced flow when the stream is not able to transport and store the sediment naturally. Any affects, positive or negative, would not be detectable at either the drainage or watershed level behind the amount of sediment input unnaturally to aquatic systems from all other sources of disturbance.

6. Maintain and restore **instream flows** sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

Removing a single culvert would have no likelihood of affecting instream flows at either the drainage or the watershed level. Potentially, aggraded material from removing the culvert could cause site level interrupted flows; this is very unlikely to occur from this project, as the culvert is perched atop a bedrock fault, and flows would have nothing to sub under.

7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in **meadows and wetlands**.

Removing a culvert would have no likelihood of affecting this objective at any scale.

8. Maintain and restore the species composition and structural diversity of **plant communities in riparian areas** and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of **coarse woody debris** sufficient to sustain physical complexity and stability.

At the site level, riparian vegetation would be allowed to re-colonize the banks adjacent to the location of the culvert. This positive benefit would be slow to occur, and of no measurable consequence at either the drainage or watershed scale.

9. Maintain and restore **habitat** to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Replacing this culvert would not restore much habitat, but would restore access to habitat (0.8 miles additional habitat). At the site level, the bottom and banks adjacent to the current location of the culvert would eventually be restored to a natural condition (see #3 and #8). These long term benefits would be accompanied by short term localized negative effects to aquatic habitat (see #4 and #5). Effects to habitat would not be discernable at either the drainage or watershed scale.