

# East Beaver Project

## Environmental Assessment

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Salem District  
Tillamook County, Oregon

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Responsible Agency: USDI - Bureau of Land Management

Responsible Official: Stephen M. Small, Field Manager



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# ***EAST BEAVER PROJECT ENVIRONMENTAL ASSESSMENT***

## **1.0 INTRODUCTION**

This EA will analyze the impacts of proposed road repair, stabilizing and decommissioning on the human environment. The EA will provide the decision maker, the Tillamook Resource Area Field Manager, with current information to aid in the decision-making process. It will also determine if there are significant impacts not already analyzed in the Environmental Impact Statement for the Salem District's Resource Management Plan (1995) and whether a supplement to that Environmental Impact Statement is needed or if a Finding of No Significant Impact is appropriate. Section 1 of this EA for the proposed East Beaver Project provides a context for what will be analyzed in the EA, describes the kinds of actions we will be considering, defines the project area, describes what the proposed action needs to accomplish, and identifies the criteria that we will use for choosing the alternative that will best meet the purpose and need for this proposal.

### **1.1 Proposed Action**

The Tillamook Resource Area, Salem District Bureau of Land Management (BLM), proposes to implement forest management activities within a portion of the Beaver Creek 6<sup>th</sup> Field Watershed. The proposed forest management activities include constructing or repairing roads for access into the project area, and repairing, stabilizing and/or decommissioning BLM-controlled roads that have been damaged by past storm events and/or are not accessible from existing roads (*EA Sections 2.0 and 3.0*).

#### **1.1.1 Project Area**

#### **1.1.2 Location and Vicinity<sup>1</sup>**

The East Beaver Project area is approximately 10 miles southeast of the town of Tillamook, Oregon, in the Beaver Creek subwatershed of the Nestucca River watershed. The project area includes BLM- and US Forest Service-managed lands within sections 28, 29, 31, 32 and 33 of Township 2 South Range 8 West, section 6 of Township 3 South Range 8 West, and sections 1, 2, 10 and 11 of Township 3 South Range 9 West, Willamette Meridian (Figure 1).

The proposed project area is located on Oregon and California Railroad Lands (O & C Lands) within the Riparian Reserve (RR) and Adaptive Management Reserve (AMR) land-use allocations (LUA). The AMR LUA is Adaptive Management Area (AMA) overlain by Late Successional Reserve (LSR). BLM-administered land is intermixed with US Forest

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<sup>11</sup> Project Area is defined as that area that is directly affected by project operations (e.g. thinning units, area cleared for landings, roads and rights-of-way). The area around the Project Area, especially BLM managed lands in the same contiguous block of ownership, is referred to as the project area vicinity or similar term.

Service (USFS), Oregon Department of Forestry (ODF), and privately owned industrial timberland in the project area.

## **1.2 Purpose of and Need for Action**

### **1.2.1 Need for the Action**

Large storms during the winter of 2008 damaged several roads in the East Beaver Creek drainage. The county portion of East Beaver Creek road was completely washed out in one location (T3S R9W sec. 15), which eliminated vehicle access to all landowners above that point. Several BLM-controlled roads in the drainage were damaged by landslides and washouts, and the lack of access has hampered efforts to repair or maintain those roads. The proposed forest management activities (road access, decommissioning, sidecast removal) are needed in the project area to reduce ongoing resource damage caused by the BLM-controlled roads and address long-term BLM road management in the project area.

### **1.2.2 Purpose (Objectives) of the Project**

This project has been designed under the Salem District Record of Decision and Resource Management Plan, May 1995 (ROD/RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (see EA section 1.3).

The East Beaver Project area is within the Adaptive Management Reserve (AMR) (Adaptive Management Area overlain by Late-Successional Reserve) and Riparian Reserve land use allocations (ROD/RMP p. 5; Northwest Forest Plan(NWFP) pp. A-4, A-5; EA section 1.3). The following ROD/RMP and NWFP objectives would be applied to achieve the purpose of this project.

1. Maintain water quality standards (ROD/RMP p.2) and improve stream conditions by:
  - Removing or replacing stream crossing culverts that restrict stream flows and fish passage, or pose a threat of future failure.
  - Providing habitat for special status, SEIS special attention and other terrestrial species (ROD/RMP p. 9).
  - Meeting all Aquatic Conservation Strategy (ACS) Objectives (constructing or repairing roads for access into the project area, ROD/RMP pp. 5-6).
2. Protect, manage, and conserve federal listed and proposed species and their habitats to achieve their recovery in compliance with the Endangered Species Act, approved recovery plans, and Bureau special status species policies (constructing or repairing roads for access into the project area ROD/RMP p. 28).
3. Maintain and develop a safe, efficient and environmentally sound road system (ROD/RMP p. 62) and reduce environmental effects associated with identified existing roads within the project area (ROD/RMP p. 11) by:
  - Providing appropriate access for timber harvest, silvicultural practices, and fire protection vehicles needed to meet the objectives above;
  - Perform road maintenance to prevent road deterioration or failure and to prevent road generated sedimentation that exceeds Oregon Department of Environmental Quality (ODEQ) standards.

### **1.3 Conformance with Land Use Plan, Statutes, Regulations, and other Plans**

The following documents direct and provide the legal framework for management of BLM lands within the Salem District and for this project:

1. *Salem District Record of Decision and Resource Management Plan*, May 1995 (ROD/RMP): The ROD/RMP has been reviewed and it has been determined that the proposed road management activities conform to the land use plan terms and conditions (e.g. complies with management goals, objectives, direction, standards and guidelines) as required by 43 CFR 1610.5 (BLM Handbook H1790-1). Implementing the ROD/RMP is the reason for doing these activities (ROD/RMP p.1-3);
2. *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl*, April 1994 (the Northwest Forest Plan, or NWFP);

3. *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, January 2001.

The analysis in the East Beaver Project EA is site-specific, and supplements and tiers to analyses found in the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994 (RMP/FEIS). The RMP/FEIS includes the analysis from the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl*, February 1994 (NWFP/FSEIS). The RMP/FEIS is amended by the *Final Supplemental Environmental Impact Statement for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, November 2000.

Information from the *Nestucca Watershed Analysis*, October 1994, has been incorporated into the development of the proposed activities and into the description of the East Beaver Project EA's affected environment and environmental effects (*EA section 3.0*) and is incorporated by reference.

The above documents are available for review in the Tillamook Resource Area Office.

### 1.3.1 Survey and Manage Species Review

The East Beaver Project is consistent with court orders relating to the Survey and Manage mitigation measure of the Northwest Forest Plan, as incorporated into the Salem District Resource Management Plan.

On December 17, 2009, the U.S. District Court for the Western District of Washington issued an order in *Conservation Northwest, et al. v. Rey, et al.*, No. 08-1067 (W.D. Wash.) (Coughenour, J.), granting Plaintiffs' motion for partial summary judgment and finding a variety of NEPA violations in the BLM and USFS 2007 Record of Decision eliminating the Survey and Manage mitigation measure. Previously, in 2006, the District Court (Judge Pechman) had invalidated the agencies' 2004 RODs eliminating Survey and Manage due to NEPA violations. Following the District Court's 2006 ruling, parties to the litigation had entered into a stipulation exempting certain categories of activities from the Survey and Manage standard (hereinafter "Pechman exemptions").

Judge Pechman's Order from October 11, 2006 directs: "Defendants shall not authorize, allow, or permit to continue any logging or other ground-disturbing activities on projects to which the 2004 ROD applied unless such activities are in compliance with the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004), except that this order will not apply to:

- A. Thinning projects in stands younger than 80 years old;
- B. Replacing culverts on roads that are in use and part of the road system, and removing culverts if the road is temporary or to be decommissioned;

C. Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions; and

D. The portions of project involving hazardous fuel treatments where prescribed fire is applied. Any portion of a hazardous fuel treatment project involving commercial logging will remain subject to the survey and management requirements except for thinning of stands younger than 80 years old under subparagraph a. of this paragraph.”

Following the Court’s December 17, 2009 ruling, the Pechman exemptions are still in place. Judge Coughenour deferred issuing a remedy in his December 17, 2009 order until further proceedings, and did not enjoin the BLM from proceeding with projects. Nevertheless, the East Beaver Project has been reviewed in consideration of both the December 17, 2009 and October 11, 2006 order. Because the road decommissioning portion of the East Beaver Project entails replacing culverts on system roads that are in use and removing culverts on roads that are to be decommissioned, we have made the determination that this portion of the project meets Exemption B of the Pechman Exemptions (October 11, 2006 Order). The new access road construction portion of the project does not fall under a Pechman Exemption; therefore the area affected by the road is being surveyed to protocol as required by the 2001 ROD. For the above reasons, we have determined that the East Beaver Project may still proceed to be implemented even if the District Court sets aside or otherwise enjoins use of the 2007 Survey and Manage Record of Decision since the Pechman exemptions would remain valid in such case and the required surveys would have been completed.

### 1.3.2 Relevant Statutes/Authorities

This section is a summary of the relevant statutes/authorities that apply to this project.

- Oregon and California Act (O&C) 1937 – Requires the BLM to manage O&C lands for permanent forest production, in accord with sustained-yield principles. Management of O&C lands must also protect watersheds, regulate streamflow, provide for recreational facilities, and contribute to the economic stability of local communities and industries.
- Federal Land Policy and Management Act (FLPMA) 1976 – Defines BLM’s organization and provides the basic policy guidance for BLM’s management of public lands.
- National Environmental Policy Act (NEPA) 1969 – Requires the preparation of EAs or EISs on federal actions. These documents describe the environmental effects of these actions and determine whether the actions have a significant effect on the human environment.
- Endangered Species Act (ESA) 1973 – Directs Federal agencies to ensure their actions do not jeopardize threatened and endangered species.
- Clean Air Act (CAA) 1990 – Provides the principal framework for national, state, and local efforts to protect air quality.

- Archaeological Resources Protection Act (ARPA) 1979 – Protects archeological resources and sites on federally-administered lands. Imposes criminal and civil penalties for removing archaeological items from federal lands without a permit.
- Clean Water Act (CWA) 1987 – Establishes objectives to restore and maintain the chemical, physical, and biological integrity of the nation’s water.
- Magnuson-Stevens Fishery Conservation and Management Act of 1996, (P.L. 94-265) as amended and reauthorized by (P.L. 109-479), (2007)
- The Migratory Bird Treaty Act, Executive Order 13186, and Migratory Bird Treaty Reform Act of 2004.

Additional authorities and management direction are described in EA section 3.10, Table 4.

## 1.4 Scoping

External scoping (seeking input from people outside of the BLM) was conducted by means of a scoping letter for the East Beaver Project sent out to 18 municipal government agencies, nearby landowners, and interested parties on the Tillamook Resource Area mailing list on March 4, 2011. In addition, a description of the proposal was included in the Salem District Project Updates for Fall 2010 and Winter 2011, which were mailed to more than 1000 individuals and organizations.

A total of six comment communications were received as a result of this scoping. Five of the six communications were simple statements of support and require no response. A letter from the Rocky Mountain Elk Foundation (Project Record Document 12) had some suggestions that are summarized and responded to by BLM in *Section 1.4.1*. The scoping comment letters, emails and telephone conversation records are available for review at the Tillamook Resource Area Office, 4610 Third Street, Tillamook, Oregon. Internal scoping was conducted by the Interdisciplinary Team (IDT) through record searches, field reviews and the project planning process. There have been ongoing discussions with the Hebo Ranger District, Siuslaw National Forest, regarding the proposed new road construction on USFS lands. There have also been discussions with ODF and Tillamook County Public Works about present and future access needs into the project area.

### 1.4.1 Scoping Comments and BLM Responses

**Project Record Document 12**  
**Bill Richardson**  
**Rocky Mountain Elk Foundation**

### Comment 1:

*“The Rocky Mountain Elk Foundation suggests improvement of forage habitat for wildlife should be an objective of the project. Within the project area early seral stage forage habitat for deer, elk and other wildlife species is in short supply.*

*If roads are to be decommissioned, consider turning them into linear meadows or forage plots by:*

- *Seeding the former road way and any disturbed soil with a native forage seed mix of high forage value for deer and elk*
- *Planting native shrubs producing fruit, nuts or browse for wildlife*
- *Leave a foot-trail for recreational access on road beds which are to be ripped up”*

### BLM Response:

Thank you for the comment. The portions of decommissioned roads that are not disturbed by culvert removal or sidecast pullback would generally be allowed to revegetate naturally. It is expected that red alder and salmonberry would rapidly colonize the road surface. There would be no serious impediment to foot access across the sections of road to be decommissioned in the proposed action.

## **1.5 Decisions To Be Made**

The following decisions will be made through this analysis:

- To determine if a Supplemental Environmental Impact Statement (SEIS) should be prepared based on whether the proposed action would result in significant impacts to the human environment not already analyzed in the EIS prepared for the Salem District RMP and its amendments.
- If there are any such additional impacts that are significant, we will determine whether the project proposal could be modified to mitigate the impacts so an SEIS would not be necessary. If we determine there is no need to prepare an SEIS we will document this determination in a Finding of No Significant Impacts (FONSI).

## **2.0 ALTERNATIVES**

### **2.1 Alternative Development**

Pursuant to Section 102 (2) (E) of the National Environmental Policy Act (NEPA) of 1969, as amended, Federal agencies shall "...study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." This EA will analyze the effects of the current "proposed action" and "No Action alternative" (which provides the baseline to evaluate effects), as well as an alternative that would repair the existing damage on BLM-controlled roads.

## **2.2 Planning and Implementation Process**

The BLM would require the contractor selected to work on this project to accomplish the following actions as required in the contract written by the BLM. The BLM would develop the contract to implement the actions described below and the project design features (PDFs) that follow (*EA section 2.4.1*). These actions and the PDFs, taken together, form the best management practices (BMPs) that the IDT developed based on the principles of the BMPs described in Appendix G of the RMP/FEIS and Appendix C of the RMP which the IDT adapted to the site specific conditions of the proposed East Beaver Project.

## **2.3 Alternative 1: No Action**

The No Action alternative describes the baseline against which the effects of the proposed action can be compared, i.e. the existing conditions in the project area and the continuing trends in those conditions if the BLM does not implement the proposed project. Consideration of this alternative also answers the question: "What would it mean for the objectives to not be achieved?" The No Action alternative means that no road management actions would occur at this time. If this alternative were to be selected, the following items would not be done in the project area at this time: road construction, renovation, maintenance or decommissioning; and stream crossing activities such as culvert upgrades or removal.

Because the project area is not accessible by road at this time, the only activities that would occur on BLM lands within the project area are those that can be accomplished via foot or off-highway vehicle (OHV) travel. It is assumed that management on private lands and other public agency lands adjacent to the project area would be affected in the same way.

Selection of the No Action alternative would not constitute a decision to change the land use allocations of these lands. Selection of the No Action alternative would not set a precedent for consideration of future action proposals.

## **2.4 Alternative 2: The Proposed Action – New Access Road, Decommission 3.5 Miles of Existing BLM-Controlled Road**

The Proposed Action involves new road construction, road maintenance/repair, and road decommissioning. To provide access into the project area, a new low standard road approximately 0.3 miles in length would be constructed across Siuslaw National Forest land in

section 10 (Figure 1). Necessary maintenance and repairs would be made on the County- and BLM-controlled portions of the East Beaver Road (road 3-9-2) for approximately 2.9 miles (to the junction of road 3-8-6 at the Bays Creek Bridge). From that junction, the remaining 3.2 miles of the East Beaver Road and approximately 0.3 miles of road 2-8-33 would be decommissioned (Figure 2). Decommissioning would involve removing approximately 36 stream-crossing culverts, installing numerous non-drivable waterbars at strategic locations to divert water off the road surface, removing failing sidecast material at one or more locations adjacent to East Beaver Creek, and blocking the road to vehicle traffic at the junction of road 3-8-6. A large aluminum culvert at MP 4.80 would be removed, disassembled and hauled to a storage location outside the project area for use at another site.

A large road washout at milepost (MP) 5.2 on road 3-9-2 would be treated by dewatering the stream above the washout, constructing a temporary access road up through the washout, and removing the plugged culvert that caused the problem to restore the stream back into the channel. The gully at that washout would be re-contoured to the extent practicable with material from the removal of the plugged culvert and the remaining road fill.

Two existing road washouts on road 2-8-33 that block access to the upper portion of that road would be left as they are, and the three culverts in that road beyond the washouts would be left in place. Any future maintenance work on those culverts would have to be done by hand. As discussed later in this document, the expectation is that ODF would construct a new access road connecting with road 2-8-33 which would allow for future maintenance of those culverts.

Only work necessary to open the roads and repair or replace culverts with a high risk of failure would be done at this time. Future maintenance or repair work would continue when needed, and would not be covered by this alternative.

### ***Connected Actions***

None

#### **2.4.1 Project Design Features**

The following is a summary of the design features that reduce the risk of effects to the affected elements of the environment. Water quality PDFs were developed to protect water quality from non-point source pollution based on identified beneficial uses and meet the intent of the Clean Water Act. The proposed action would be implemented consistent with the Best Management Practices (BMPs) contained in Appendix C of the ROD/RMP.

##### Design features specific to water quality

- New road construction associated with providing access to BLM administered lands and associated waste disposal sites would be completed while avoiding unstable slopes, wetlands and, where feasible avoids Riparian Reserves and stream crossings (R1, R2, and R3).

- All new road construction and in-stream work (culvert installation, replacement or removal) would be limited to the dry season. The BLM would maintain the authority to suspend maintenance activities based on changes in the weather patterns. Ground disturbing activities associated with road construction, culvert replacement or removal and road decommissioning would be suspended when conditions exist that may cause the generation of excessive sediment, such as intense or prolonged rainfall, or when the road surface is deteriorating due to freeze-thaw cycles or from excessive use. The in-channel culvert work would be completed during periods of low flow where the delivery of sediment to the stream is considered to be low risk; complete road stabilization work prior to the onset of the fall rains where it is unlikely that the road stabilization work would result in an adverse impact by adding additional amounts of turbidities in excess of state standards based on identified beneficial uses of the water (R5 and R35).
- Project design mitigations or features would be developed between engineering, soils and hydrology during IDT field trips for the removal of deep fill culverts where it is reasonably expected that the activity of the removal of the deep fill would add additional amounts of sediment to the main stem of East Beaver Creek (R 29).
- Excavated material that will be created as a result of road decommissioning activities will be required to be stabilized in place or end hauled out of the project area if they are likely to contribute sediment to the stream course during the wet season (R6).
- Temporary sediment containment structures (such as silt fences, retention ponds, straw bales, and bark-bags etc.) would be installed in areas where there is potential for sediment delivery to streams such as at stream crossings and in ditch lines. These structures would be removed when no longer needed or at completion of the project. (R9)
- The exposed fill slopes and ditch lines from culvert replacement that is adjacent to the inlets of culverts and could potentially provide a sediment source to the stream course would be mulched. This mulch would consist of weed free material and approved by the resource area weed specialist (R11)
- The decommissioned portions of the roadway would be hydrologically stable and closed to public access (R14 and R18).

#### Other design features

- All work occurring within the stream channels where water is present would be restricted to the Oregon Department of Fish and Wildlife instream work window for the area (July 1 – Sept. 15).
- Daily timing restrictions to reduce impacts to marbled murrelets: Activities would not begin until 2 hours after official sunrise and would end 2 hours before official sunset.
- The monitoring and evaluation of disturbed sites will be conducted to determine the need to establish native plant materials to mitigate erosion and reduction of invasive/non-native plants. Sterile rye grass may be used to enhance initial mitigation for erosion plus support the establishment of introduced and natural native plant associations over time.
- Prior to entering the project area each work season, or before returning to the watershed after leaving it, any heavy machinery (with the exception of vehicles used for daily personnel travel) would have all dirt and adhering vegetation removed by power-washing.

## **2.5 Alternative 3: New Access Road, Repair and/or Improve Damaged BLM-Controlled Roads**

Alternative 3 involves new road construction and maintenance/repair of existing roads. To provide access into the project area, a new low standard road approximately 0.3 miles in length would be constructed across US Forest Service land in section 10, the same as in Alternative 2. Necessary maintenance and repairs would be made on the County- (sections 2 and 11 only) and BLM-controlled portions of the East Beaver road (road 3-9-2) and road 2-8-33. Damage to the County road downstream from the new access road would not be repaired, as that is the responsibility of Tillamook County. Several damaged or poor condition culverts on the BLM-controlled roads would be replaced with culverts designed to pass 100-year flow events with debris. The large road washout at MP 5.2 on road 3-9-2 would be repaired and the plugged culvert that caused the problem would be replaced with a concrete ford. Two existing road washouts on road 2-8-33 that block access to the upper portion of that road would be repaired.

Only work necessary to open the roads and repair or replace culverts with a high risk of failure would be done at this time. Future maintenance or repair work would continue when needed, and would not be covered by this alternative.

### ***Connected Actions***

None

### **2.5.1 Project Design Features**

Project design features are the same as those for Alternative 2.

## **2.6 Alternatives Considered But Not Analyzed In Detail**

### **Temporary Access into Project Area and Stabilize BLM Roads**

The IDT considered an alternative that would provide access to the project area by constructing some form of temporary access (such as temporary bridges or fords) across the washed-out County road segment in section 15 and stabilized all the BLM-controlled roads above that location in the watershed. This alternative was not analyzed in detail because the Oregon Department of Forestry (ODF) intends to have permanent access into the project area if BLM has not already done so, which would require ODF to build a new road into the area and then remove a large portion of the waterbars and likely replace several culverts removed by BLM in order to access ODF lands. This would negate any benefits from the temporary access road and road stabilization approach, and so this alternative was dropped from further consideration in the EA.

### **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS**

This section of the EA describes the current condition and trend of the affected resources and the environmental effects of the alternatives on those resources. The interdisciplinary team of resource specialists (IDT) reviewed the elements of the human environment, required by law, regulation, Executive Order and policy, to determine if they would be affected by the proposed action (BLM Handbook H-1790-1: p. 137), [40 CFR 1508.27(b)(3)], [40 CFR 1508.27(b)(8)] (EA section 3.10), as well as the issues raised in scoping (EA *section 1.4.1*).

The resources potentially affected by the proposed activities are described in the following sections: Hydrology, Fisheries and Aquatic Habitat, Soils, Wildlife, and Recreation.

#### **3.1 Reasonably Foreseeable Future Actions Related to the East Beaver Project**

##### **Fish Habitat Enhancement**

BLM is analyzing a separate project under another EA to do fisheries habitat enhancement work within the Salem District. It is anticipated that there would be some form of fish habitat enhancement on East Beaver Creek, both within and downstream from the project area for this EA, in the next five to ten years. Implementation of the Proposed Action in this EA would limit access to East Beaver Creek above the Bays Creek Bridge in section 6, so the most reasonable expectation is that any future fish enhancement work would be limited to placing logs at strategic locations in the stream channel with a helicopter. The actual location of these types of structures is unknown at this time. Implementation of Alternative 3 would provide future access to the existing road system, so the expectation is that future fish enhancement work would not be limited to helicopter log placement and could occur at any time.

##### **Oregon Department of Forestry New Access Road**

ODF has indicated a desire to construct a new permanent access road across BLM and State lands in section 28 that would connect road 2-8-33 with the existing road network in the Trask River drainage to the north (Figure 1). This road would give ODF access to State lands in the upper East Beaver Creek drainage that are currently inaccessible because of the damage to the East Beaver road system. It is expected that this road would be constructed within the next five to ten years. This road would be needed under Alternatives 1 and 2, but would not be needed under Alternative 3 which would repair the existing roads, thereby restoring access to those ODF lands.

##### **East Beaver Creek County Road**

Tillamook County has indicated that they do not have the resources to repair the damaged sections of East Beaver Creek Road that they control, nor do they have the resources to continue to maintain that road in the future. The expectation is that the County will not repair the road in the near or distant future, and that access into the rest of the road system will have to be from another road. Future road damage from storm events is likely; however those roads are downstream from this project area and are not required for access to BLM-managed lands.

## 3.2 Hydrology

### 3.2.1 Affected Environment

#### Physical Setting

The project is located in a northeast to southwest facing, narrow, rugged mountain valley. It is in a Key Watershed as defined by the Northwest Forest Plan. Elevations in the area of proposed roadwork range from approximately 640 feet to 1,680 feet. The area receives about 120 inches of precipitation annually and has high rainfall intensity (approximately 5.5 to 6.0 inches in a 24-hour period).

In 2002, DEQ issued a Total Maximum Daily Load (TMDL) Order (Nestucca Bay Watershed TMDL) covering the 4<sup>th</sup> Field watershed that includes East Beaver Creek from the confluence with Beaver Creek to the headwaters. East Beaver Creek was identified in the TMDL Order for stream bed fines (sedimentation). The EPA or DEQ do not have numerical standards for fine sediment that could potentially affect the waters by the formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other beneficial uses. For listing purposes, a target of 20% streambed fines was used as an indicator of fine sediment impairment to salmonids (the most sensitive “resident biological community”). According to DEQ, East Beaver Creek currently is meeting the TMDL Standards for fines material (Nestucca Bay Watershed TMDL, DEQ, April, 2002).

DEQ has identified fisheries, public water supply, private water supply, recreation and contact recreation as the dominant identified beneficial uses for the waters of East Beaver Creek. The public water supply is related to a municipal watershed for the Beaver Creek Water District. The municipal watershed is located within the Beaver Creek Watershed and not within the Upper East Beaver Creek 7<sup>th</sup> Field sub-watershed.

The East Beaver Creek project area is within the Nestucca River 4<sup>th</sup> Field Watershed (HUC 17100203). BLM administered lands consist of approximately 16% of the affected 7<sup>th</sup> Field HUC. Please refer to Table 1 for a breakdown of land ownership within the East Beaver Creek 7<sup>th</sup> Field Sub-watershed.

**Table 1: East Beaver Creek Sub-watershed Ownership**

7 <sup>th</sup> Field HUC #	7 <sup>th</sup> Field HUC Name	Owner	Acres	Percent of 7 <sup>th</sup> Field HUC
17100203020701	East Beaver Creek	BLM	1608	16.1
		Other Private	1084	10.9
		Private Industrial	1507	15.1
		ODF	1565	15.7
		USFS-SNF	4193	42.2
		<b>Subtotal</b>	<b>9957</b>	

## Drainage Network

The physiographic shape of the sub-watershed is elongated or hot dog shaped. This indicates that there is a high amount of order 1 and 2 streams drain into the mainstem of East Beaver Creek. This is especially true in the upper part of the sub-watershed. Why is this important?

The bifurcation ratio of an elongated shaped sub-watershed generally results in having a high ratio of 1st order and 2nd order streams to 3rd order streams. This type of drainage network is characteristic of elongated shaped sub-watersheds. The storm hydrograph of an elongated sub-watershed generally results in a relatively short turnaround time between the time when rainfall hits the ground and the discharge of the main stem is at bankfull.

The addition of the amount of roads in the sub-watershed that are acting as conduits for runoff from mid-slope to the main stem of East Beaver Creek is reducing the time lag between rainfall reaching the ground surface and the occurrence peak flow discharge of East Beaver Creek. There is a high amount of mid-sized debris being transported from the combination of confined channel, elevated peak flows and short hydrologic response time to precipitation events.

## Geology and Landslides

The project area is underlain by rocks of the Tillamook Volcanics, primarily submarine, basalt tuff and breccia with minor amounts of weak and erodible basaltic sandstone, mudstone, and mudflow breccia (Wells et al, 1994).

Streamside landslides and shallow, rapid-moving landslides are the major erosional processes delivering debris to the channel system. Beaver Creek sub-watershed has been identified as having the highest debris flow potential and having the second highest number of roads crossing high and extreme landslide areas in the Nestucca River watershed (Nestucca Watershed Analysis, 1994). During field trips in 2011, field evidence of recent landslides in the upper portion had occurred.

## Project Roads

Nearly all of the roads proposed for treatment are located at or near the valley bottom paralleling East Beaver Creek where there essentially is no floodplain. Some of the road segments are directly adjacent to the East Beaver Creek channel. Within the East Beaver Creek sub-watershed there are approximately 9.6 miles which cover 1.8 % of BLM administered lands. The road data is presented in Table 2.

**Table 2: Road Mileage within sub-watershed**

East Beaver Creek Roads	All lands	BLM administered lands	Within 100 feet of East Beaver Creek for all lands	Within 100 feet of East Beaver Creek for BLM administered lands
Miles	76	9.6	3.7	0.9
Acres	230.3	29.1	11.2	2.7

The major disturbance to the road system in place in the upper portion of the sub-watershed was from the storm damage that occurred in 2007. A debris load in a feed tributary to East Beaver Creek plugged a culvert thereby diverting storm flow from the channel into the inside ditch, resulting in two landslides on road 2-8-33. These landslides resulted in a debris load being transmitted through a feeder tributary to East Beaver Creek, which plugged a culvert on road 3-9-2 (MP 5.21), diverted all the streamflow onto the road surface and washed out a significant segment of the road. The following photos display the results of this chain of events.



Photo 1 showing inside ditch erosion from diversion of blocked culvert on road 2-8-33.



Photo 2 showing increased ditch line down cutting as slope of road increases.



Photo 3 showing the inside ditch entering the landslide face.



Photo 4 showing resulting landslide on road 2-8-33 that resulted in a debris torrent that was delivered to a feeder tributary to East Beaver Creek.



Photo 5 shows the debris torrent in Photo 4 that blocked a culvert downstream of the confluence of the headwaters of East Beaver Creek and a feeder tributary within S33, T2S and R8W. Stream flow was diverted around the blocked culvert and onto a BLM controlled road.



Photo 6 showing the gully that was created by diverting the stream flow from the plugged culvert onto the BLM administered road near the confluence of the headwaters and a feed tributary to East Beaver Creek.

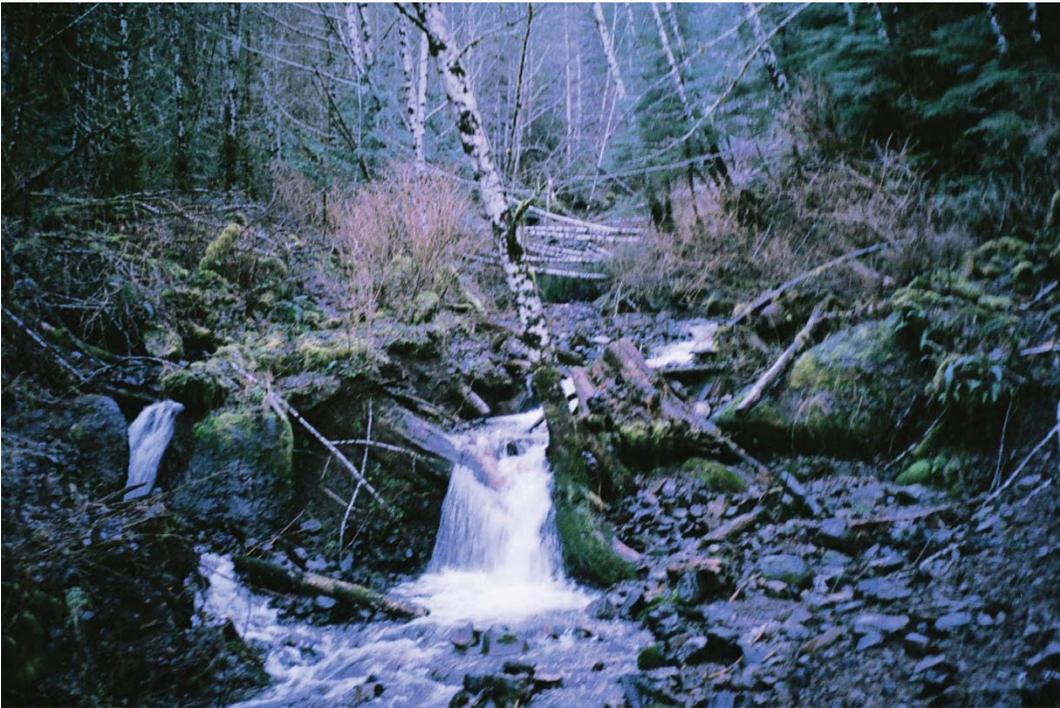


Photo 7 shows the debris load still present in the headwaters of east Beaver Creek just upstream of the blocked culvert on road 3-9-2.



Photo 8 showing the bank erosion from diverting the bulked stream flow into the County section of East Beaver Creek Road approximately two miles downstream of BLM administered lands.

Most of the road failures occurred at stream crossings when debris flows/torrents came down and overwhelmed the drainage structures. The triggering mechanism was landslides within the uppermost portion of a feeder tributary to East Beaver Creek within section 33. Many of these road locations were also damaged during previous large storm events including 1964, 1978, 1996, 2006, and 2007. The most extensive erosion that occurred is located at MP 5.21 on road 3-9-2. There a debris torrent came down a tributary channel during the 2008 storm event and blocked a concrete armored, 72 inch culvert, diverting the East Beaver Creek onto a segment of the road, deeply cutting a portion of the road (see Photo 5). Currently the diverted stream channel appears stable, overlying competent hard bedrock.

A small number of the road failures were caused by floating woody debris blocking drainage structures, not associated with land sliding. In a few instances, it appears that some culverts failed due to water flow exceeding the culvert design capacity or due to the lack of relief culverts. In most cases of debris flow/torrent situations, the lack of road maintenance was not a factor in the damage to the road.

### **3.2.2 Environmental Effects Alternative 1: No Action**

Motorized vehicles, with the exception of occasional OHVs, are not accessing the project area. None of the roads in the project area, including the roads proposed for treatment, are being maintained other than with some limited hand clearing of debris in culvert inlets and water barring.

Under the No Action Alternative, project roads would continue to receive no maintenance due to blocked access. Road surfaces would continue to erode and deliver sediment and fines material to the main stem and its feeder tributaries from a lack of maintenance. In addition, without road maintenance and repair, roadside ditches and stream culverts would continue to fill with sediment and debris. Consequently, the risk of additional landslides and road washouts associated with the current road system would increase each year largely depending on the timing and magnitude of storm events.

#### **Cumulative Effects**

Under this alternative, without out any maintenance of the existing culverts, including the cleaning of the inlets and repair of the culverts, the risk for additional washouts would increase over time.

Reasonably foreseeable future actions include the new ODF road in the upper watershed. The new road would likely be built along the contours in the upper portion of the sub-watersheds. These hill slopes are relatively steep landforms (approximately 50 to 80 percent slope gradient). The road request would be non-discretionary under the licensing agreement between BLM and ODF. Under this agreement, BLM can request reasonable road recommendations such as employing full bench, end-haul techniques. The proposed road could result in the occurrence of landslides in the upper portion of the sub-watershed depending on it's

location on the ground, the design features applied to road location and construction, and the magnitude and timing of winter time storm events.

While unlikely, it is possible that landslides associated with the ODF road could potentially result in the exceedance of the TMDL Standard for sedimentation by the introduction of large amounts of fines material and debris load into the main stem of East Beaver Creek. The combination of the failure of the road prism from additional washouts and the potential for triggering mechanism from the ODF road could potentially lead to the occurrence of an adverse cumulative effect to water quality from the no action alternative.

### **3.2.3 Environmental Effects Alternative 2: The Proposed Action**

Under Alternative 2, the potential for effects to water quality would be minimized with the application of the prescribed project design features (PDFs). The water quality PDFs are based on site specific application of road related Best Management Practices (BMPs). BMPs are designed to minimize the potential for non-point source pollution based on known practices that are effective in meeting the Clean Water Act (CWA). Please refer to the attached Water Quality Management Plan (Table 6) for a complete list of BMP's to be applied to Alternative 2.

The culvert removal on the feeder tributaries would be done during periods of low flow, and would remove fill material and restore the natural stream channels. Most of these culverts have a relatively small amount of fill material that would need to be stabilized and stockpiled in a manner that it would not be delivered to the main stem or the stream course. It is expected that less than 10 cubic yards of sediment would be generated by the removal of the 34 shallow fill culverts. These feeder tributaries are well vegetated and of sufficient distance from the main stem and the side channels that it is unlikely that sufficient sediment would be transported to the main stem to be measurable.

The two exceptions are the removal of the culverts at MP 3.12 and MP 4.80. The culvert located at MP 3.12 has approximately 670 cubic yards of fill material over it that would be removed. The removal of the pipe and stabilization of the fill material would be accomplished in the same manner as the other culverts. It is estimated that the removal could potentially generate up to five cubic yards of fine material. However as with the other culverts, the stream course is well vegetated and is of sufficient distance to the main stem that is unlikely that the activity generated fines material would be transported to the main stem and measurable.

Construction of a new low standard access road across the Siuslaw National Forest would have no effect on water quality because the closest surface water is approximately 1,000 feet away and there is no causal mechanism for transport of sediment from the planned road location to any surface water.

The removal of the large aluminum culvert at MP 4.80 has the greatest potential to add fine material to the main stem of East Beaver Creek, since it is directly in the main stem. However

there is very little if any fill material that will need to be removed except for the overlying road prism. This culvert was placed almost direct in the main stem with little or no modification of the existing stream banks. The stream banks are well armored and the armoring would remain in place as much as possible. As with the shallow fill culverts, the removal would occur during periods of low flow and the prescribed PDFs would be applied. BLM staff would be on site during the removal of the culvert to obtain pre-project and post-project turbidity measurements, which would determine if State water quality standards were being met.

The removal of the plugged culvert at MP 5.21 should not result in additional fine material being introduced into the main stem as the channel is currently dry and the removal of the culvert would be done during low flow. No new culvert would be installed, rather the channel crossing at the road way would be restore. To gain access to the large culvert, the large washout would be reshaped to allow for an excavator to travel to the large culvert. The old road prism where the large washout currently exists would be rehabilitated. Without a culvert near the confluence of East Beaver Creek and this feeder tributary within section 33, there is low risk of an additional washout occurring from another triggering mechanism causing a debris movement down from the upper portion of the sub-watershed.

### **Cumulative Effects**

Under Alternative 2, the project level activities should reduce the potential for a washout resulting from lack of maintenance and repair of existing culverts. The road prism is relatively stable and not actively delivering sufficient fine material into the main stem of East Beaver Creek to adversely affect water quality. However, there are reasonably foreseeable future actions that could potentially lead to a long-term adverse cumulative effect to water quality.

ODF Access Road: The potential for a cumulative effect to occur would be in result of the construction triggering another series of landslides in the upper portion of the affected sub-watershed. This was analyzed under Alternative 1 and the findings are incorporated into the effects analysis for Alternative 2.

Fish Structures: For all practical purposes there is no floodplain that exists within this stream reach. Recent surveys by ODFW identifies this as a transport reach with little or no wood present in the stream course. With the lack of a floodplain associated with this reach of the main stem the placement of large wood structures could cause the diverting of the stream flow against the road prism. This could potentially lead to the road prism being undercut and large amounts of the road prism being eroded and fine material being delivered to the main stem of East Beaver Creek. This most likely would result in the exceedance of the TMDL Standard for East Beaver Creek. Without access to the affected portion of the road prism, the BLM would be prevented from mitigating the damage to the road prism. The exceedance of the TMDL Standard and the inability to mitigate the source of the fines material entering the main stem of East Beaver Creek would lead to the occurrence of a long-term adverse cumulative effect to water quality.

Conclusion: Project level activities are unlikely to result in the occurrence of a cumulative watershed effect. The addition of reasonably foreseeable actions could potentially result in the occurrence of an adverse effect to water quality from the likely exceedance of the TMDL

Standard for East Beaver Creek. Without the ability of the agency to mitigate the loss of stability affected roadway and the introduction of the fines material into the main stem of East Beaver Creek would most likely result in exceeding TMDL Standards for East Beaver Creek and a long-term adverse effect to water quality.

### 3.2.4 **Environmental Effects Alternative 3: Repair/Improve Road Damage**

Under Alternative 3, twelve new culverts would be installed and twenty-nine culverts would be replaced. The culvert at MP 3.12 would be replaced and the inlet would be reshaped and the outlet would be armored. The large aluminum culvert at MP 4.80 would remain in place. The large washout of the roadway at MP 5.21 would be reshaped and reconstructed, and the plugged culvert would be replaced with a concrete ford. It is estimated that less than 10 cubic yards of sediment would be delivered to the main stem of East Beaver Creek from all these actions. The new access road construction across Forest Service land would have no effect on water quality; the same as described for the Proposed Action.

Since all of these projects would be accomplished during periods of low flow and would be accomplished within the restraints of the prescribed PDFs, it is unlikely that they would result in an adverse effect to water quality.

#### **Cumulative Effects**

Since none of the project level activity would result in excessive fines being delivered to the stream course, these actions by themselves would not result in an adverse cumulative effect to water quality. However, there are reasonably foreseeable future actions that could potentially lead to an adverse cumulative effect to water quality.

ODF Road: The potential for an adverse cumulative effect to occur from the construction of the ODF roadway in the upper portion of the affected sub-watershed if a landslide did occur was analyzed under Alternative 1 and 2 and the findings are incorporated into the effects analysis for Alternative 3.

Fish Structures: This was analyzed under Alternative 2 and the findings are incorporated into the effects analysis for Alternative 3. However the one exception would be that the BLM would be able to respond to water quality impacts from the in-channel work and potentially mitigate the damage to the road prism.

The exceedance of the TMDL Standard would most likely occur but the agency would be able to mitigate the source of the fine material entering the main stem of East Beaver Creek. This could potentially mitigate the exceedance of the TMDL Standard for fines material to the main stem of East Beaver Creek and not result in the occurrence of a long-term adverse cumulative effect to water quality.

Conclusion: Project level activities are unlikely to result in the occurrence of a cumulative watershed effect. The effects of the ODF Road and the BLM Fish Structures could potentially add large amounts of fine material to the main stem of East Beaver Creek. This has the potential to result in the exceedance of the TMDL Standard for sedimentation for East Beaver Creek. It is anticipated that the effects to water quality would be short-term in nature rather than long-term because the BLM would have the potential to respond to the environmental effects from the above activities and ensure that the effects to water quality would be mitigated. It is unlikely that a long-term adverse cumulative effect to water quality would result.

### **3.3 Threatened or Endangered Fish Species or Habitat and Fish Species with Bureau Status, Essential Fish Habitat**

#### **3.3.1 Affected Environment**

Oregon Coast (OC) coho are listed as “Threatened” under the Endangered Species Act (ESA). The listing is posted in Federal Register notice Vol. 73 No. 28 dated February 11, 2008. The effective date of this listing was May 12, 2008 and also designates Critical Habitat (CH) for the Oregon Coast coho evolutionary significant unit (ESU). OC coho and designated Critical Habitat is present in East Beaver Creek adjacent to and associated with the proposed action. All populations of coho and chinook are covered by the Magnuson-Stevens Fisheries Conservation and Management Act (MSA); chinook distribution ends a few miles downstream of coho distribution in the action area. Oregon Coast steelhead are also present in the same distribution as OC coho; all potential effects described for coho will be the same for steelhead.

#### Existing Habitat Conditions

There are approximately 10 miles of fish habitat in the mainstem of East Beaver Creek. The terrain within the East Beaver Creek sixth field is very rugged and steep consequently the majority of small 1<sup>st</sup> and 2<sup>nd</sup> order tributaries in the watershed do not support fish. Approximately 90% of the streams adjacent to proposed road repair or decommissioning activities are small (1<sup>st</sup> and 2<sup>nd</sup> order), non-fish bearing streams. They are primarily origin and transport reaches. Typically, they have bankfull widths of less than 5 feet. Channels are typically steep and moderately to strongly confined by hillslopes. Channel types are mostly cascade and step-pool. Cobble and boulder substrates dominate these smaller stream channels; multiple debris torrents are evident in the action area.

The mainstem of East Beaver Creek has had a great deal of disturbance from road building, stream cleaning, repeated road failures and debris torrents. Harvested stands make up the majority of the upper watershed area which limits potential large woody debris (LWD) sources in the short and medium (20 to 60 years) timeframes. Riparian transects (ODFW 2010) noted very few conifers (seven trees greater than 35 inches DBH per 1000 feet stream in the 0 to 100 foot “source zone”) along the stream reaches surveyed.

### Fish use and Critical Habitat conditions

Fish use is restricted almost exclusively to the larger mainstem channel of East Beaver Creek due to steep stream gradients on most tributaries. Oregon Coast coho are present in East Beaver Creek in greater abundance than the percentage of habitat (6% of the coho habitat in the Nestucca is found in East Beaver Creek- juvenile production is concentrated in the upper 2-3 miles and accounts for 7-18% of the juvenile coho rearing in the Nestucca) Bio Surveys LLC 2004 . Distribution and Critical Habitat in East Beaver Creek goes approximately 0.5 miles upstream of the large aluminum culvert at MP 4.80. Both of these streams are considered to fall within gradient and flow criteria generally accepted as high quality OC coho habitat. This stream segment is noted in the “North Coast Stream Project Guide to Restoration Site Selection Phase II as a moderate priority for restoration work on ODF managed lands in the action area; federal lands were not ranked (ODFW 1997).

Habitat data for East Beaver Creek is from an ODFW Aquatic Habitat Inventory (AQI) throughout the project area completed in 2010. This survey included four reaches and started in the NW ¼ of section 11, T3S R9W, and ended just below the large aluminum culvert located at MP 4.80. The four surveyed reaches (1 - 4) overlay OC coho critical habitat on East Beaver Creek; that habitat extends approximately ½ mile further upstream.

### East Beaver Creek

East Beaver Creek stream reaches are generally low gradient, averaging from 1.3 - 4.9 %. The active channel width is approximately 11 to 14 meters, stream channels are moderately entrenched, and the channel is constrained by terraces and hillslopes. Channel substrates are dominated by gravel and cobble. The stream channel in East Beaver Creek, mostly downstream from the Bays Creek bridge, has been actively moving over the last few years, creating new scour and deposition areas, and accessing old channels and alcoves. A large amount of gravel has moved into these reaches and created new terraces and increased spawning gravels throughout OC coho critical habitat however stream bank erosion is high in all reaches. East Beaver Creek throughout the BLM ownership has had several rounds of fish habitat enhancement work including LWD placement projects from the early 80’s up to the mid 90’s.

### **3.3.2 Environmental Effects Alternative 1: No Action**

The no action alternative has the greatest potential of affects to OC coho and Oregon Coast Chinook and their habitat. With the current lack of road access to this watershed area there are several known locations (associated with the road) that pose risks to both coho and chinook and their habitat. These two locations are old culverts; one is in a deep fill. Both of these sites have the potential to introduce large quantities of sediment to East Beaver Creek if plugging or failure occurs. Salmon spawning in this area would be occurring in the November-March period, and the large winter storms also are more probable in this time frame. The majority of culverts in the project area are undersized and due to the high incidence of debris torrents plug often. These conditions would continue. Due to the timing of road crossings plugging or failing during the spawning period, the likelihood of direct affects to adult coho and chinook or eggs in the stream

gravels in the vicinity of road crossings are high. The risk of these road failures increases with time due to the lack of road maintenance on project roads.

### 3.3.3 **Environmental Effects Alternative 2: The Proposed Action**

The fisheries analysis area for the East Beaver Creek Projects is divided into two areas to logically address impacts to listed fish and their habitat. The road maintenance portion (including road building) and the road decommissioning portion are the two distinct actions. The direct and indirect effects analysis area is limited to any area that may be disturbed by project actions, stream reaches adjacent to, and downstream of, proposed treatment areas to the lower boundary of the Siuslaw National Forest on East Beaver Creek, as well as streams that may be potentially affected by hauling materials to or from the project area. The Cumulative Effects analysis area encompasses all of the East Beaver Creek drainage designated as the Beaver Creek sixth-field (HUC # 171002030207).

The main concern for the fisheries resource is how the proposed action would affect sediment inputs, water quality, stream channels, temperature, and shade. Other concerns include the potential sources of large wood available for the stream to recover naturally.

The discussion below is intended to disclose any environmental impacts, both positive and negative, to OC coho and their habitat directly, indirectly or cumulatively, resulting from the East Beaver Project Proposed Action. The sources of negative impacts to OC coho come from road construction and culvert work (maintenance and decommissioning). Effects are addressed by proposed project action below.

#### New Road Construction and Road Renovation

All proposed new construction (approx. 0.3 miles) for this project would occur near the ridge in the most stable portion of the hillslope and is over 1000 feet from East Beaver Creek. The road renovation is proposed on approximately 0.88 miles of existing roads. Implementing the road construction and renovation as proposed would have no effect on OC coho, their critical habitat, or Essential Fish Habitat under MSA for the following reasons; lack of proximity of renovation activities to LFH, the soils present are well-drained and there are no streams or areas with poor drainage or that show indications of current or past slope movement, and the project design features would minimize or eliminate impacts.

#### Road Maintenance

The 2.52 miles of minimal road maintenance, clean culverts, spot rock, small slide removals and one culvert replacement, are limited in potential to affect ESA or MSA fish. These actions are likely to generate small amounts of sediment that will be transported to East Beaver Creek; the actions that will mobilize sediment are limited to the live stream culvert cleanout and the culvert replacement.

### Decommissioning - Culvert Work

All proposed culvert work on live streams would be done in the dry season (ODFW instream work window is July 1 – Sept 15) when most of these streams have very low or no flow. Work on 26 live stream crossings and large aluminum pipe are the primary actions that have effects to fish (OC coho, Chinook and steelhead). All design features outlined above and those necessary to be consistent with ESA Section 7 consultation requirements would be implemented.

Work on the small stream crossings would likely input a small amount of sediment (< 1cu yard per crossing) to these channels. These small headwater streams have minimal capacity to carry sediment downstream during the dry season, however these streams competency increases as the rainfall increases. Any sediment generated from the culvert work would likely settle out within a short distance downstream. This sediment would remain in these small channels until the first heavy fall and winter storms raise stream flows and move it downstream when background turbidity levels are normally at their highest.

The other source of stream sediments that may result on some of these culvert removals would come from the streams natural response to the removal of the culvert. Some of these streams depending on slope and channel roughness may either begin to aggrade, or head cut. These processes would likely occur in the next few years and primarily during larger rainfall events. Fine sediments mobilized by construction activities will settle out in downstream substrates resulting in a minor increase in substrate embeddedness, this effect is anticipated to be localized (within a few hundred feet) near each site and last until increasing flows remobilize these fine sediments (much of these sediments may be stored in the tributaries - see hydrology section).

### Stream Temperature

Streams in the section of road to be decommissioned are small (3-6 foot active channel width) with the exception of the large aluminum pipe. The small 1<sup>st</sup> and 2<sup>nd</sup> order waterways would have very little or no flow during the typical dry season when thermal exposure has the potential to increase stream temperature. There are a few trees, primarily alders that would need to be removed during this decommissioning project. In addition short stream segments currently under the road bed will be exposed. It is anticipated that exposed soils will rapidly be colonized by red alder which should begin to shade these small channels within 5 years. Taking these factors into account, it is highly unlikely that the proposed project would alter stream temperature, precluding effects to spawning or rearing coho, Chinook or steelhead.

### Physical Integrity

The proposed project will alter stream channel physical integrity, the proposed culvert removals will allow these small streams to respond to the physical processes acting on them, primarily slope.

The proposed culvert work (see culvert work above) would likely have short term (1 to 3 years) impacts on physical integrity (see *EA Section 3.2.3*). Due to the size of the stream channel where the large aluminum culvert is located and its location at a stream bend, changes would be most visible and probable at this site.

### Large Woody Debris

As any trees located on culverts to be removed are to be placed in the removal site or downstream a small beneficial effect to this habitat component would be realized. Most of these trees (primarily alder) are not located directly on coho habitat, so the benefits would be to sediment storage and routing processes as well as a source of nutrients for the stream.

### Road Density

There would be a short-term increase in road length of approximately 0.3 miles during the projects and then a net decrease in road length of approximately 3.2 miles as a result of the proposed actions. Reduction of road density, especially roads that are within 100 feet of listed fish and critical habitat, are recognized as benefits.

Direct effects to OC coho would occur at several of the culvert removal sites. These effects vary from behavioral changes (suspension of feeding or avoidance) where turbid water enters East Beaver Creek to a good chance of direct mortality. To remove the large aluminum pipe an anticipated 300-500 juvenile coho will need to be moved out of the work site; this is accomplished using electrofishing equipment. Some mortality (approximately 5%) is anticipated and covered in the programmatic ESA consultation for these types of projects. Most adverse effects resulting from the proposed restoration activities are expected to be minor and of short duration (weeks to two years). Degraded water quality and increased turbidity resulting from instream construction will last a maximum of a few weeks. Riparian disturbance and disturbed soils resulting from accessing work sites will stabilize and begin to vegetate in one year. In the long term, the proposed restoration activities are expected to improve water quality.

### *Conclusion:*

The environmental effects resulting from implementing the proposed action alternative are anticipated to have a short term negative effect on OC coho. The incorporated design features, proximity of project actions to OC coho, and seasonal restrictions for this project would reduce adverse effects to OC coho and their habitat. In summary the proposed actions are expected to have short term effects on ESA and MSA listed fish resulting from culvert work. Using experience and criteria set forth by the ESA regulatory agency (National Marine Fisheries Service (NMFS)) regarding effects determinations, the proposed action “*May Affect, Likely to Adversely Affect*” OC coho or their designated Critical Habitat. These actions are also considered “*May Adversely Affect*” activities to Essential Fish Habitat as defined by the Magnuson Stevens Fisheries Conservation Act for coho and Chinook. Effects to Oregon Coast steelhead are considered the same as those to OC coho; however the actions proposed will not contribute to the need to list the species under the Endangered Species Act.

### Cumulative effects

The potential effects of the proposed road by ODF in the upper portion of the watershed to OC coho, chinook or their habitat (discussed in the hydrology/water quality section) could be large; however the potential of overlap in time is remote. Under the proposed action portions of the road work, culvert removals would be complete in an anticipated 1-2 years and the total sediment input to East Beaver Creek is anticipated to be minimal (10-15 cubic yards). If future large landslides occur (most probably tied to large hydrologic events) a similar channel response to the

2008 storm would be anticipated in the upper few miles of East Beaver Creek. Effects noted after this event included a high rate of channel instability (bank erosion, channel migration, gravel deposits).

The instream restoration project focused on the area between Bays Creek Bridge and the large aluminum culvert would not have effects cumulative to fish with the proposed action due to differences in timing. The addition of large wood placed in this portion of stream in jams after the planned road decommissioning in 2012 would begin to catch bedload, aggrading the channel upstream and locally lowering the gradient, increasing complex pools. Depending on the placement location of these jams there are 3-5 locations that could interact with the road, interactions which would mobilize road surface and fill material. The fill material, predicted to be coarse material in large part, would be sorted by the large wood jams and become a small fraction of the bedload in this transport stream. As this is an active stream system these road-stream interactions are probable in the future without the large wood placement, however large wood placement may increase the number and magnitude of interactions. In either case the effects to listed fish or their habitat would likely occur during large storm events, when this stream channel will be actively moving bedload from multiple sources. A functional or measurable change to habitat, spawning or rearing, is not probable as the loss of one specific habitat is often replaced or replicated somewhere else. Direct effects (including mortality) to spawning and rearing fish or their eggs, are possible as the stream reacts to the addition of large wood, the scope and intensity are dependent on the time frame of the storm event.

### **3.3.4 Environmental Effects Alternative 3: Repair/Improve Road Damage**

The road work associated with this alternative is very similar in both scope and effects to the proposed action as it includes many of the same sites. The road work on USFS is the same as described in the proposed action. The large aluminum culvert will be left in its current location and condition. The primary change from the proposed action is the addition of multiple culverts sized to pass 100 year events (47 replaced/added versus 37 removed in alternative 2), the placement of a ford to replace a plugged culvert at MP 5.35 and the repair of two washouts at MP 0.19 and MP 0.30 of road #2-8-33.

Culvert replacements on live streams in close proximity to East Beaver Creek have the potential to release approximately 15 cubic yards of sediment at the time of replacement and when fall rains increase flows. These small inputs of turbid water and sediment would be anticipated to have no more than localized, short term, and non-lethal effects to OC coho. Juvenile coho in the vicinity of some of these culvert replacements would be expected to alter their behavior depending on the duration and intensity of turbidity entering East Beaver Creek, likely responses include suspension of feeding, moving away from or into the turbid waters. As in alternative 2 some minor changes to critical habitat are possible (slight increase in substrate embeddedness) at the time of culvert replacement and again with the fall rains that increase flows.

## Cumulative effects

The potential of effects from the instream restoration project could be the same as those discussed in the proposed action but most likely be much less. If this road was repaired the large wood structure locations and their configuration would be modified to minimize the potential of interaction with the road. With modification of locations and/or structure types and access to address any road effects from storms, the potential of cumulative effects to fish or their habitat are virtually eliminated.

### **3.4 Soils and Geology**

The primary concern and focus of this analysis is how would the proposed project action affect soil erosion and slope stability. The analysis area is defined as the activity area of the proposed road work. For cumulative effects, the scale is Beaver Creek 6<sup>th</sup>-field watershed. Potential off-site effects (i.e., sediment/water quality) are analyzed in the Hydrology in Section 3.2 and Fish Species with Bureau Status, Essential Fish Habitat and other Fish in Section 3.3.

Data sources used for characterizing current conditions include BLM GIS and the Tillamook County Soil Survey (USDA, NRCS, unpublished report but available on the web at [http://www.or.nrcs.usda.gov/pnw\\_soil/or\\_data.html](http://www.or.nrcs.usda.gov/pnw_soil/or_data.html)). The Resource Area soil scientist has field-checked the project area.

### **Affected Environment**

#### ***Physical Setting***

The project is located in a northeast to southwest facing, narrow, rugged mountain valley. Elevations in the area of proposed roadwork range from approximately 640 feet to 1,680 feet. The area receives about 120 inches of precipitation annually and has high rainfall intensity (approximately 5.5 to 6.0 inches in a 24-hour period).

The project area is located in a Tier 1 Key Watershed as defined by the Northwest Forest Plan where one of the management objectives is to reduce existing road mileage. Several miles of roads have previously been decommissioned in this watershed including approximately 1.6 miles of the mid-sloped Bedtime Road (3-8-6.3) in the project area.

The road density in Beaver Creek sub-watershed is 5.8 mi/mi<sup>2</sup> and the roaded area, assuming an average road width of 25 feet, is 2.7 percent. About half of the 23 miles of road present in the upper 6 miles of the East Beaver Creek drainage are mid-slope roads. Nearly all of the roads proposed for treatment are located at or near the valley bottom paralleling East Beaver Creek where there is essentially no floodplain. Some of the road segments are directly adjacent to the East Beaver Creek channel. Roads are dominantly insloped, having surfaces that are sloped so that all water drains toward the ditch or cut-slope. Most roads grades are gentle to moderate (2

to15%). They cross approximately 39 streams, mainly small 1st and 2<sup>nd</sup> order headwater streams.

### ***Geology and Soils***

The project area is underlain by rocks of the Tillamook Volcanics, primarily submarine, basalt tuff and breccia with minor amounts of weak and erodible basaltic sandstone, mudstone, and mudflow breccia (Wells et al, 1994).

The primary soils within the project area are the Klootchie, Necanicum, Klistan, and Hemcross soil series. They formed from volcanic ash (Andisols). They are deep (>40 inches rock), well drained soils with thick, dark colored, surface layers rich in organic matter and weakly developed subsoils. Soil textures are dominantly medial silt loam and very gravelly medial loam. Soil properties include low bulk density, high infiltration rate, low cohesion, low bearing strength and poor compactability. The potential soil erosion risk for these soils is moderate on slopes of less than 20%, and it is severe to very severe on slopes 20%, and greater.

### ***Erosion and Landsliding***

Streamside landslides and shallow, rapid-moving landslides are the major erosional processes delivering sediment to the channel system. Beaver Creek subwatershed has been identified as having the highest debris flow potential and having the second highest number of roads crossing high and extreme landslide areas in the Nestucca River watershed (Nestucca Watershed Analysis, 1994).

A small number of the road failures were caused by floating woody debris blocking drainage structures, not associated with landsliding. Most of the road failures were caused by debris flows/torrents came down and overwhelming drainage structures. Many of these areas were also damaged by previous large storm events. The most extensive erosion that occurred is located at MP 5.21 on road 3-9-2. There a debris torrent came down a tributary channel during the 2008 storm event and blocked a concrete armored, 72 inch culvert, diverting the East Beaver Creek onto a segment of the road, deeply cutting a portion of the road (*EA section 3.2.1*).

At this time, most project roads appear to have stabilized, showing few signs of surface erosion or instability such as sunken grades or fill slope failures. The diverted stream at MP 5.21 is now flowing over competent hard bedrock and is no longer downcutting.

#### **3.4.1 Environmental Effects Alternative 1: No Action**

The No Action alternative would result in the continuation of current conditions and trends at this site as described in the Affected Environment, above. Specifically, all project roads and most other roads with the upper drainage would continue to remain inaccessible and receive no maintenance other than with some limited hand clearing of debris in culvert inlets and water barring. Roadside surfaces would continue to erode and roadside ditches and culverts would

continue to fill with sediment and debris. The risk of additional landslides and road washouts would increase each year depending on timing and magnitude of storm events.

### **Cumulative Effects**

At the 6th-field watershed scale, the combined effect of the foreseeable management activities and the No Action Alternative would be small and be difficult to distinguish from current conditions. The foreseeable management action would result in site effects including short-term erosion, removal of approximately 1.25 acre of productive forestland, and addition of approximately 0.4 mile of road mileage in a Tier 1 Key Watershed. The new road would contour across a very steep (~50 to 80%) mountain slope. Its construction could potentially lead to a landslide in the portion of the drainage where there is slight risk of slide material reaching a headwater stream. Repairing the 2-8-33 road would substantially reduce the erosion that is now occurring.

### **3.4.2 Environmental Effects Alternative 2: The Proposed Action**

The proposed action would have a small, adverse effect on soil productivity because nearly all of the ground disturbance would occur in existing road right-of-ways where most of the soil productivity has already been lost. Soil productivity associated with the new road construction would be lost on approximately 0.3 acre. After the project is completed, the road mileage in the Tier 1 Key Watershed would be reduced by approximately 3.2 miles.

The use of heavy equipment to accomplish this action would expose mineral soils to erosion and slightly increase the risk of landsliding. These potential impacts would be reduced through project planning and project design feature implementation such as restricting all new road construction and in-stream work (culvert installation, replacement or removal) to the dry season (EA *Section 2.4.1*). The risk of soil reaching a stream from the road construction is small because the nearest water body (the mainstem East Beaver Creek) is located roughly 1,000 feet downslope, separated by a couple of topographic benches.

Outside of stream crossings, most road related surface erosion would likely return to near pre-treatment levels within the first or second year after project completion. The greatest risk for substantial erosion would occur with decommissioning 36 stream crossings, especially at the larger crossings including MP 3.12, MP 4.80, and MP 5.21. At these locations, there may be surface erosion and some minor side hill failures and channel incisions up to several years (2 to 5 years) depending on the timing and magnitude of storm events following treatment. In the long-term, the proposed action would substantially reduce or eliminate chronic erosion and stream crossing failures.

### **Cumulative Effects**

At the 6th-field watershed scale, the combined effect of the foreseeable management activities and the No Action Alternative would likely be small and be difficult to distinguish from current conditions. The effects of the ODF roadwork would be same as those analyzed under Alternative 1 and 2. There a few details about the proposed action of the fish-habitat

enhancement project. It is assumed, due to the cost and difficulty of transporting logs with a helicopter, that there would be relatively few logs placed into upper East Beaver Creek. Consequently, measureable soil and geologic cumulative effects are unlikely.

### 3.5.3 **Environmental Effects Alternative 3: Repair/Improve Road Damage**

Under this alternative, the road work would be similar in scope to that of the Propose Action, Alternative 2. It would include the same new road work in section 10. Work would be done on most of the same stream crossings. Under this alternative, approximately 12 new culverts would be installed and approximately 29 culverts would be replaced. All of these culverts are judged to be at high risk of failure and would be replaced with culverts design to pass 100-year flow events. Unlike Alternative 2, the large aluminum culvert would not be removed and a concrete ford would be installed at the large washout.

Project actions would likely result in similar soil and geologic effects as those analyzed under Alternative 2. In the long-term, this alternative would reduce or eliminate chronic erosion and stream crossing failures. The 100-year sized culverts would be less likely to fail than the existing culverts, but they would likely fail if a debris torrent were to occur. Roads in the project area would be expected to receive future maintenance or repair when needed.

#### **Cumulative Effects**

Unlike the Proposed Action, it is assumed that ODF would not construct a new road across BLM therefore; there would be no additional soil disturbance and loss in soil productivity nor additional road mileage.

There are few details about the proposed action of the fish-habitat enhancement project. Under this alternative, it is assumed relatively large number of logs placed would be placed by ground-based equipment into upper East Beaver Creek.

For the fish-habitat enhancement project, there is uncertainty in the performance of wood structures for this type of stream system. The stream reaches proposed for treatment are narrow and confined by steep mountain slopes, essentially have no floodplains, and have an abundant supply of bedload. It is difficult to predict potential effects without more project details. Considering the hydrologic and geomorphic context of the project, there is a non-discountable risk that the treatment could result in undesirable consequences including an abrupt change in channel locations, substantial increase in channel and bank erosion, and loss of the nearby road prism.

At the 6th-field watershed scale, the combined effect of the foreseeable management activities and this alternative would likely be small and be difficult to distinguish from current conditions. However, there is a non-discountable risk that the fish-habitat enhancement project could result in measureable cumulative effects to soils.

### **3.5 Threatened or Endangered Wildlife Species, Habitat and/or Critical Habitat**

There are two Endangered Species Act (ESA) list species whose range includes the East Beaver Project area; the northern spotted owl and the marbled murrelet. Both of these species are listed as Threatened under ESA. The following analysis will consider impacts to spotted owls and marbled murrelets generally within the East Beaver Creek subwatershed and the immediately surrounding areas.

#### **3.5.1 Affected Environment**

With the exception of a few acres, all of The BLM lands in the East Beaver Project area are within the bounds of Designated Critical Habitat for the northern spotted owl and the marbled murrelet, the two Endangered Species Act listed terrestrial wildlife species that have the potential to occur in the project area. Most of the Forest Service lands within the project area are also marbled murrelet critical habitat but none of it is spotted owl critical habitat. Within one-quarter mile of the proposed activity sites there are approximately 430 acres of late successional forest that could be considered suitable habitat for the spotted owl and marbled murrelet all of which occur on BLM and USFS lands. These stands are generally 100-140 years old and have good structural diversity, however they are not old-growth stands and therefore the actual amount of high quality suitable marbled murrelet habitat may be overstated somewhat. The one-quarter mile distance from activity sites is important in that it is considered by the US Fish and Wildlife Service to be the threshold at which disturbance effects to owls and murrelets associated with noise generation are no longer occurring. A portion of the Moon Creek Spotted Owl Reserve Pair Area occurs along approximately 2.5 miles of the nearly seven mile long project area.

The nearest northern spotted owl site is on Forest Service land within the East Beaver Creek drainage approximately one-third of a mile southeast of the lower project area. This owl site was last known to be occupied in 2004 and was last surveyed in 2007 with no further detections beyond the 2004 occupancy.

The nearest known marbled murrelet site is slightly more than one-eighth of a mile northwest of the closest point where the noise disturbing activities would be occurring, in Section 3. The site is located just over the ridge in the adjacent Bear Creek drainage. This site was discovered in 1992 but, according to the Forest Service, has not been surveyed since.

#### **3.5.2 Environmental Effects Alternative 1: No Action**

Currently the bottom of the canyon of the upper East Beaver Creek drainage is inaccessible by full size motor vehicles and appears to be only lightly used by OHV traffic. The lack of human disturbance along the creek and the lower slopes of the canyon would be beneficial to spotted owls and marbled murrelets if they inhabit the unsurveyed suitable habitat, although that possibility is remote. Portions of the upper slopes, generally along the northern boundary of the watershed are accessible by motor vehicle from private lands but because of locked gates also do

not get much traffic. Not repairing or decommissioning the road would have no effect on the suitability of the habitat but would have an overall beneficial effect to spotted owls and marbled murrelets in that there would be no disturbance from any project work nor would there be any increase in the very light human use occurring presently.

### ***Cumulative Effects***

If the East Beaver road is not repaired in some fashion, activities such as stream restoration and timber harvest would not occur for much of the area. Without access to the upper reaches of the watershed Oregon Department of Forestry is investigating the possibility of constructing a road from the east to access ODF land there. This road would be approximately 0.4 miles and access perhaps 160 acres of ODF land. The construction may remove a few mature trees and disturb a 10 acre patch of suitable habitat however with no adverse effects occurring from the No Action alternative there would not be cumulative effects relative to the ODF road construction.

### **3.5.3 Environmental Effects Alternative 2: The Proposed Action**

The proposed action would not involve any habitat modification for either the murrelet or the spotted owl, but would involve about 17 days of noise disturbance along the approximately 7 mile long project area during the dry season. The dry season generally would include the very end of the spotted owl critical breeding period (June to early July) and the non-critical breeding period (later July – Sept.) and would include the latter half of the marbled murrelet critical breeding period and all of the non-critical period. The disturbance would be sequential and would not occur at all locations all of the time; the new road construction on Forest Service land would occur first in one year (most likely 2011), and the remainder of the work would occur in a subsequent year (2012). Some site activity areas may be disturbed for a few hours while others may be disturbed for up to a whole day. The largest activity area, the removal, disassembly, and hauling out of the large aluminum culvert would take about four days but is not within the one-quarter mile disturbance distance to listed species habitat.

A secondary effect of the project would be to increase general human use by the newly re-opened three miles of road (up to Bays Creek bridge) which in and of itself is not likely to result in additional adverse effects but nevertheless would result in a less undisturbed habitat condition.

Due to the extremely low probability that unknown owl and murrelet nests are in the project area, adverse effects are not reasonably certain to occur. However due to the proximity of noise generating activities to unsurveyed suitable habitat there is some potential for effect although not likely to adversely affect either the murrelet or the spotted owl. The design feature that limits the hours of activity to those outside of the dawn and dusk murrelet activity period would also reduce any possible impacts to murrelets.

Due to the low probability of minor disturbance to spotted owls and marbled murrelets this project would conform to and thus be included in the “Informal Programmatic Consultation for Activities With Potential to Disturb Spotted Owls (*Strix occidentalis caurina*) and Marbled

Murrelets (*Brachyramphus marmoratus*) Within the North Coast Planning Province for FY 2010-2013 (13420-2009-I-0152)”, for which a “Letter of Concurrence” has been received.

### ***Cumulative Effects***

Fish Restoration Project – The proposed action would preclude equipment access in the watershed above the Bays Creek bridge crossing. If a fisheries restoration project were to occur it would entail hauling trees/logs and boulders to the Bays Creek bridge area and then using a helicopter to place the materials in the stream above. This activity would be far more disturbing than any of the proposed action activities but would occur in a different year. All of the suitable habitat would be disturbed essentially simultaneously but for a shorter duration due to the nature of helicopter use. If cumulative effects were to occur they would be from disturbing the same habitat in different years which, in the case of owls would increase the possibility of realizing actual effects since very often owls do not breed in subsequent years. A better scenario for owls would be, if the fisheries project were to occur, that it occurs in the same year as the road decommissioning thus limiting the entire disturbance to one year.

ODF Road proposal – If the Oregon Department of Forestry were to construct a new road into the upper reaches of the watershed that would disturb approximately 10 acres and may remove a few suitable habitat trees, these impacts would add to the overall disturbance of suitable habitat within the potential home range of spotted owls. This additional disturbance would be of a small enough scale relative to the impacts of the Proposed Action as to be negligible. In other words, if the Proposed Action does not result in impacts such as nesting failure (if unknown owls are there), then it is not likely the additional impacts associated with the ODF road would cause a failure.

### **3.5.4 Environmental Effects Alternative 3: Repair/Improve Road Damage**

As with the other alternatives, Alternative 3 would not involve any habitat modification for the spotted owl and marbled murrelet. This alternative would involve considerably more disturbance since road repair would occur along the full length of the project. Estimated time that noise generating activities would occur would be approximately 30 days spread out over the length of the project. Some areas would have concentrated noise generation for only a few hours and for others it may be as much as two days. The main difference between Alternatives 2 and 3 is that there would more sites with noise disturbance in the project area. Additionally, the entire seven mile project area would again be open to public travel that would result in additional unquantified disturbance although is not likely to change the outcome for the spotted owl or marbled murrelet beyond that described below.

Due to the extremely low probability that unknown owl and murrelet nests are in the project area adverse effects are not reasonably certain to occur. Because there is unsurveyed suitable murrelet habitat within the disturbance distance of part of the project area, daily time restrictions would be required and would reduce any potential disturbance during the crepuscular hours (dawn and dusk) when murrelets leave and return to their nests. Due to the low probability of minor disturbance to spotted owls and marbled murrelets this project would conform to and thus

be included in the “Informal Programmatic Consultation for Activities With Potential to Disturb Spotted Owls (*Strix occidentalis caurina*) and Marbled Murrelets (*Brachyramphus marmoratus*) Within the North Coast Planning Province for FY 2010-2013 (13420-2009-I-0152)”, for which a “Letter of Concurrence” has been received.

**Cumulative Effects**

Fish Restoration Project – If Alternative 3 were selected then vehicle access to the upper end of the watershed would be available therefore making a fish restoration project more feasible. If a fish project were to occur it would be in some subsequent year after completion of the East Beaver Project. As with the cumulative effects associated with the Proposed Action, disturbance associated with heavy equipment use would be cumulative from the multi-year standpoint where there is a greater likelihood of impacting owls in a breeding year than if all of the disturbance were generated in a single year. Murrelets however are more likely to attempt to breed every year if other factors are right, such as ocean conditions, therefore there may be a greater likelihood of overall impact to murrelets from having multiyear disturbances. Ultimately, due to the low likelihood of unknown owls or murrelets being present coupled with no impacts to suitable habitat, the cumulative impacts associated with disturbance are not likely to change the current condition for either species.

ODF Road proposal – If Alternative 3 were selected then there would be no need for ODF to construct a new road to access their lands in the upper watershed because access would be provided from the repaired East Beaver road.

**3.6 Special Status Sensitive Species (BLM Manual 6840 and US Forest Service Manual 2670), SEIS Special Attention (Salem RMP (Survey and Manage)), Migratory Bird Treaty Act and Other Selected Wildlife Species and Habitat**

Table 3 shows a list of species covered by the various policies and management direction whose range includes the East Beaver Project area. Only those species which are shown to be *Affected* in the impact synopsis column will be discussed further in the analysis. In general the area of analysis for these species is the East Beaver Creek subwatershed and the immediately surrounding areas.

**Table 3: Species Status for the East Beaver Project**

Project Name: East Beaver		
Common Name	Status*	Impact Synopsis
<b>Mammals:</b>		
Fringed Myotis	BLM&FS-Sen.	Not affected – negligible impact to low quality habitat
Red Tree Vole	BLM&FS-Sen., S&M	Not affected – No disturbance to suitable habitat
Fisher	FS- Sen.	Not affected – historic range, currently extirpated.

<b>Project Name: East Beaver</b>		
<b>Common Name</b>	<b>Status*</b>	<b>Impact Synopsis</b>
<b>Birds:</b>		
Bald Eagle	BLM&FS-Sen.	Not affected – No impact to suitable habitat
Black Swift	MBTA	Not affected – No habitat within project area
Bufflehead	FS Sen.	Not affected – No habitat within project area
Harlequin Duck	BLM&FS-Sen.	Not affected – No impact to suitable habitat
Marbled Murrelet	ESA-Thtnd.	<b>Affected</b> – Suitable habitat within ¼ mile of project.
Northern Spotted Owl	ESA-Thtnd.	<b>Affected</b> – Suitable habitat within ¼ mile of project.
Olive-sided Flycatcher	MBTA	Not affected – No impact to suitable habitat
Peregrine Falcon	MBTA, BLM&FS Sen.	Not affected – No habitat affected
Purple Finch	MBTA	Not affected – Preferred habitat not in project area
Purple Martin	BLM-Sen.	Not affected – No habitat affected
Rufous Hummingbird	MBTA	<b>Affected</b> – improved habitat in stabilized areas
Willow Flycatcher	MBTA	Not affected – Preferred habitat not in project area
<b>Reptiles and Amphibians:</b>		
Northwestern Pond Turtle	BLM&FS-Sen.	Not affected – No habitat within project area
Painted Turtle	BLM-Sen.	Not affected – No habitat within project area
<b>Invertebrates (Mollusks):</b>		
Crowned tightcoil (snail)	BLM-Sen.	<b>Affected</b> – small possibility species could occur in road construction area
Evening Field slug	BLM&FS-Sen., S&M	Not affected – Preferred habitat not in project area
Oregon Megomphix	S&M	<b>Affected</b> – small possibility species could occur in road construction area
Pacific Walker (snail)	BLM&FS-Sen.	Not affected – No habitat in project area
Puget Oregonian (snail)	BLM-Sen.,S&M	<b>Affected</b> – small possibility species could occur in road construction area
Salamander slug	BLM&FS-Sen.	<b>Affected</b> – small possibility species could occur in road construction area
Spotted taildropper (slug)	BLM&FS-Sen.	<b>Affected</b> – small possibility species could occur in road construction area
Tillamook Westernslug	BLM&FS-Sen.	<b>Affected</b> – small possibility species could occur in road construction area
Warty jumping slug	S&M	<b>Affected</b> – small possibility species could occur in road construction area
<b>Invertebrates (Arthropods):</b>		
Johnson's Hairstreak (butterfly)	BLM&FS-Sen.	Not affected – No habitat affected
Roth's Blind Ground Beetle	BLM&FS-Sen.	Not affected – Little suitable habitat, may not be in range
ESA Thtnd	Endangered Species Act Threatened list	S&M Survey and Manage species
BLM Sen.	Sensitive Species under Manual BLM 6840	MBTA Migratory Bird Treaty Act - Birds of Conservation Concern
FS Sen.	Sensitive Species under Manual FS 2670	

### 3.6.1 Affected Environment

#### Terrestrial Mollusks – BLM and FS Sensitive Species and Survey and Manage

The forest stand where the new road construction (approximately 1450 feet or < 1.5 acres) would occur is a 40 year old plantation of almost exclusively Douglas-fir with a few red alders, bigleaf maples and western hemlock mixed in. The area was broadcast burned following harvest and planting. There is very little coarse woody debris and the duff layer is not well developed. Sword fern dominates the shrub layer although it is not particularly dense. Huckleberry and Salmonberry can also be found. Canopy closure in the stand is relatively high. This forest stand is low quality habitat for the warty jumping slug and the Tillamook westernslug only because these species have been found in a wide variety of habitats including young plantations. Both of these species are very common slug species in the northern Oregon Coast Range. Although it is highly unlikely that the other mollusk species found on the table above would occur in the project area they are nevertheless considered because surveys would look for them also.

The remainder of the project area would occur on and adjacent to roads where habitat for sensitive mollusks is lacking.

#### Migratory Bird Treaty Act

Rufous Hummingbird – The rufous hummingbird is the only species on the USFWS’s *Birds of Conservation Concern*, 2008 (most recent list) that could be impacted by the proposed action. Rufous hummingbirds can be found in a variety of habitats as long as there is a well-developed shrub layer, including conifer forests with somewhat open understories.

#### Elk

Elk are a relatively common species within the East Beaver Creek drainage and impacts to elk resulting from BLM actions are generally not analyzed in NEPA documents. However during the scoping period the BLM did receive a comment regarding elk habitat management and thus information is provided for the public to see the potential impacts to elk from the differing alternatives.

Cover and forage for elk are not limiting in the project area with ample grass, forb and shrub development to meet the current needs of elk. Most of the watershed is in early/mid seral condition with portions of the BLM and USFS land in late-successional condition. The East Beaver Road right-of-way contains large quantities of grasses and shrubs on the sides of the rock surface as do most of the old undrivable roads in the watershed. Late in the winter elk tend to be on the lower slopes where there has been little snow and grasses remain green. During the growing season elk can be found on all terrain, including the ridges.

### **3.6.2 Environmental Effects Alternative 1: No Action**

#### Terrestrial Mollusks – BLM and FS Sensitive Species and Survey and Manage

Under the No Action alternative the new road segment would not be constructed therefore habitat conditions for terrestrial mollusks would remain unchanged for the foreseeable future and no potential sites would be disturbed. The forested area would continue to function as low quality mollusk habitat in the near term and over time would gradually improve as the stand ages and natural processes create conditions more favorable to mollusks such as large down wood, increased shrub layer and well developed duff layer. In the very long term (many decades to

centuries) the existing roads in the project area would gradually revert back to a more natural forest condition that would favor terrestrial mollusks including the sensitive species considered here.

#### Migratory Bird Treaty Act

Rufous Hummingbird - Currently the East Beaver project area includes a good amount of suitable habitat for the rufous hummingbird in the more open forest stands and along roads where the brush layer is well developed. The lack of vehicle traffic and road maintenance in the subwatershed is contributing to improving habitat for the bird as shrubs and small trees encroach on the roads. There is not a shortage of habitat in or around the project area thus selection of the No Action alternative would have little impact either negatively or positively on the rufous hummingbird.

#### Elk

The current condition is ideal for elk. With little human disturbance elk are comfortable being down on the road and are not particularly skittish. Some hunters undoubtedly pursue elk in the drainage (mostly using quads) but to a much lower degree than when there is regular vehicle access into the canyon. Forage opportunity is most likely comparable to other forested areas of the northern coast range where elk are common.

#### *Cumulative Effects*

Fish Restoration Project – If the No Action alternative is selected there would be little likelihood that any fish restoration projects would occur.

ODF Road proposal – If the No Action alternative is selected there would be a high likelihood that ODF would construct a road into the upper reaches of the watershed to access their land. This construction would be non-discretionary therefore the BLM would have little ability to control impacts to Special Status, Survey and Manage or Migratory Bird species. Depending on if ODF maintains their new road in an open-to-the-public condition, there could be a small disturbance increase to elk. None of these impacts would affect population viability of any of the species discussed above.

### **3.6.3 Environmental Effects Alternative 2: The Proposed Action**

#### Terrestrial Mollusks – BLM and FS Sensitive Species and Survey and Manage

If the Proposed Action were implemented the only potential habitat impacts to sensitive or Survey and Manage mollusk species would be from the construction of the new road segment on Forest Service land that would permanently remove about 1.5 acres of low quality habitat from the landscape. Compared to the amount of high quality habitat that can be found elsewhere in and around the East Beaver Creek subwatershed, the loss of such a small amount of habitat would be inconsequential to the viability of any of these species.

Impacts to individual mollusks could occur from the road construction if they are found within the construction area. Due to the low quality of the mollusk habitat it is unlikely that the

crowned tightcoil, salamander slug, spotted tailedropper or Puget Oregonian would be found there but there is a reasonable, although still low, possibility that the warty jumpingslug or the Tillamook westernslug could be found due to those species commonness.

The first round of protocol surveys has been completed on this proposed road construction area and no Special Status Sensitive Species or Survey and Manage species were found. The second and final round of surveys will be conducted in or about the first week of June 2011. If during the second round of surveys any of the Survey and Manage species is found then the site will be marked and recorded and alternatives to the proposed road location would have to be investigated. If any of the Sensitive Species are located other than the Tillamook westernslug, then the site would be managed according to Forest Service policy for maintaining species population viability. No special management would occur for Tillamook westernslug sites due to this species prevalence.

The portion of East Beaver road that would be decommissioned (above Bays Creek bridge) would over the long term gradually revert back to mixed coastal forest and again provide good habitat for sensitive or Survey and Manage mollusk species.

#### Migratory Bird Treaty Act

Rufous Hummingbird – The proposed action would have a minor effect on the rufous hummingbird. The new road construction is not likely to negatively impact hummingbird habitat since the currently closed stand with little understory shrub development is not good habitat. Constructing the road would open the stand slightly and provide a modicum of edge that would encourage shrub development and thus improve foraging and potentially nesting habitat. Due to the season that the road construction would occur there is only a slight possibility that hummingbirds would still be nesting where direct impacts to individuals could occur. The re-opening of East Beaver road between the new construction and the Bays Creek bridge area would necessitate road maintenance which could result in reduced foraging habitat along the road side compared to the No Action alternative. The decommissioning of the road above Bays Creek bridge would result in improved habitat for the hummingbird by providing more forage and nesting opportunity. All told the impacts resulting from implementation of the Proposed Action would be very minor or could result in an overall positive impact to rufous hummingbirds.

#### Elk

With the reopening of about three miles of the East Beaver road disturbance impacts to elk would increase. Forage and cover opportunities would not be appreciably affected however the grass seeding of exposed soil associated with project activities may provide a small increase in palatable forage and may attract elk to those areas during certain times of the year.

#### ***Cumulative Effects***

Fish Restoration Project – If the Proposed Action alternative is selected there would be a slight possibility that a fish restoration project may be implemented in the future, however that possibility remains small due to the much higher cost of using helicopters to do the structure

placement work due to the lack of access to the upper stream reaches. Regardless, the nature of the fish project would not add additional effects beyond those realized by the Proposed Action.

ODF Road proposal – The likelihood that ODF would construct a road into the upper reach of the watershed would remain high if the Proposed Action is selected since there would still not be access there from below. Consequently, impacts to Special Status, Survey and Manage, and Migratory bird species may be higher due to the non-discretionary nature of the ODF road being built through good quality suitable habitat. Elk would also see a slight increase in disturbance above what is occurring now. None of these impacts would affect population viability of any of the species discussed above.

### 3.6.4 **Environmental Effects Alternative 3: Repair/Improve Road Damage**

#### Terrestrial Mollusks – BLM and FS Sensitive Species and Survey and Manage

Impacts associated with Alternative 3 would be very similar to those identified in the Proposed Action with the exception that the existing road above Bays Creek Bridge would be repaired and would not revert back to mollusk habitat in the foreseeable future.

#### Migratory Bird Treaty Act

Rufous Hummingbird - Impacts associated with Alternative 3 would be very similar to those identified in the Proposed Action with the exception that the existing road above Bays Creek Bridge would be repaired and would not result in more hummingbird foraging and nesting habitat. With all of the road repaired and open, road maintenance would be required along the roadside that would result in a reduced amount of suitable habitat adjacent to the roads. While Alternative 3 would have the greatest negative effect of all of the alternatives it would nevertheless not result in any substantial impact to hummingbird populations or is not likely to result in any greater risk of direct impacts to individuals than alternative 2.

#### Elk

Alternative 3 would have the greatest impact on elk. With the reopening of about seven miles of the East Beaver Road to motorized vehicle access disturbance impacts to elk would be greatest. As with the other alternatives, forage and cover would not be appreciably affected. Disturbance to elk, particularly during hunting season would be similar to those in other northern Oregon Coast Range drainages where road access is available. This alternative would not result in any negative impacts to elk populations in the area.

#### ***Cumulative Effects***

Fish Restoration Project – If Alternative 3 is selected the possibility that a fish restoration project would be implemented in the foreseeable future is high. Direct access to the restoration reaches of the stream would be provided by the repaired road making the project more economically feasible. Regardless, having a restoration project ongoing would not likely add any impacts beyond those impacts already described.

ODF Road proposal – Since there would be little reason for ODF to construct the road access from the east if access is provided by Alternative 3, there would not be any potential for cumulative effects to occur.

## **3.7 Recreation**

### **3.7.1 Affected Environment**

Recreation throughout the project area consists primarily of seasonal hunting and minor off-highway vehicle (OHV) use. The road system does not connect to any other road systems within the area and the terrain is relatively steep. The project area is not considered a destination point for recreational use.

### **3.7.2 Environmental Effects Alternative 1: No Action**

The current condition within the area provides limited motorized travel. The road having washed out has limited traffic into the area to either OHV or foot travel. Under this alternative, OHV use will likely continue with a potential for an increase in use.

### **3.7.3 Environmental Effects Alternative 2: The Proposed Action**

The proposed action would provide a means of entry by all classes of vehicles. This would allow for publics to again access to the lower portions of the drainage. The upper portions of the roadway will be decommissioned providing the opportunity to hike and hunt with limited potential of meeting other users. OHV travel may continue but would be limited due to the natural terrain.

This action would also provide a means to monitor the types and amount of use within the area.

### **3.7.4 Environmental Effects Alternative 3: Repair/Improve Road Damage**

This alternative would provide a means of entry by all classes of vehicles. This would allow for publics to again access to the entire road system in the drainage. Recreational use would be restored to the conditions before the county road washed out.

## **3.8 Invasive, Nonnative Species (Executive Order 13112)**

### **3.8.1 Affected Environment**

The East Beaver Project area is approximately 10 miles southeast of the town of Tillamook, Oregon, in the Beaver Creek sub watershed of the Nestucca River watershed. Examples of forest management activities within the affected area that will create soil disturbance and influence the spread of invasive/non-native invasive plant species are: commercial and pre-commercial thinning, young stand maintenance, new road construction, road decommissioning, road

maintenance, culvert replacements, and off highway vehicle (OHV) trails. Activities that do not necessarily create disturbance but influence the spread of weed seeds are recreational hiking, biking, horseback riding, fishing, and hunting. Other sources of seed dispersal are from wildlife that are either passing through or frequent the area, water movement, and wind. Many past and present management activities tend to open dense forest setting and disturb soils therefore providing opportunities for widespread weed infestations to occur. Many, if not all of the weed species designated as category B (established infestations) on the Oregon Department of Agriculture's (ODA) noxious weed list are present throughout the area. Because they are present in and adjacent to the project area, newly formed seed is readily available and/or an established seed bank is present. Most non-native weed species are not shade tolerant and will not persist in a forest setting as they compete for light when tree canopies close and light to the understory is reduced. So, based on what we know about invasive plants distribution, dispersal mechanisms and their ability to establish in newly disturbed sites we can expect new and old populations to fluctuate over time within the analysis area based on these factors as described.

Existing vegetation within the East Beaver Project area consists of various ages of conifer overstory, scattered pockets of hardwoods, an understory of common shrubs and scattered populations of grasses and forbs. Varieties of habitats are represented throughout the project area (substrates, rock, features, elevations, slopes, aspects, water, and topography). Any ground-disturbing activity that occurs within these habitats offers opportunity for the introduction of noxious weeds and/or invasive non-native plant species based on the existence of a seed source. Species that have been identified within the East Beaver Creek sub-watershed include Bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), Scotch broom (*Cytisus scoparius*), Tansy ragwort (*Senecio jacobaea*), Armenian blackberry (*Rubus armeniacus*), Himalayan blackberry (*Rubus discolor*), St. Johns-wort (*Hypericum perforatum*), Oxeye daisy (*Leucanthemum vulgare*), Shining geranium (*Geranium lucidum*), and Herb Robert Geranium (*Geranium robertianum*). These species were located along road edges and exposed areas that tended to have soil disturbance (i.e. open meadows, past commercial thinning, riparian areas and OHV trails). These species are designated as category B (established infestations) on the ODA noxious weed list. These aggressive weed species are prevalent throughout western Oregon and proliferate easily through vectors such as human traffic, animal movement, wind, and water. Some degree of noxious/exotic weed introduction or spread is probable as management activities occur in the project area.

### 3.8.2 Environmental Effects Alternative 1: No Action

Most invasive/non-native species are located along existing roadway edges within or immediately adjacent to the road prism. An increase of these populations can be expected to occur if the No Action alternative is chosen. Plant communities within the project area would continue to be dependent on ecological processes currently in place. Based on the available light source associated with the existing road prism an increase in the non-native or invasive plant species populations is expected to occur over time until there is complete canopy closure from the existing roadside conifer and hardwood trees. Most invasive/non-native species are not shade tolerant and most likely will be out-competed for light. Existing populations will continue to act as a seed source and contribute to potential soil disturbance sites within an expected reasonable vicinity of the parent population.

### **3.8.3 Environmental Effects Alternative 2: The Proposed Action**

Any increase in available light or soil disturbance throughout the project area will promote the possible introduction of invasive/non-native plant species. Mitigation measures have been identified to mitigate new populations (*EA Section 2.4.1*). An Environmental Assessment has been completed for the Northern Coast Range that allows for the treatment of invasive/non-native plant species on BLM managed lands, therefore treatments will be applied to control invasive/non-native plant populations where appropriate.

### **Cumulative effects for Alternatives 2 and 3**

No cumulative effects are expected with regard to invasive/non-native plants because the project would not contribute to the spread of invasive species populations or to the introduction of new species with the implementation of project design features and because little or no difference in the composition or numbers of invasive/non-native species populations have been observed in similar projects on BLM lands in the vicinity.

### **3.8.4 Environmental Effects Alternative 3: Repair/Improve Road Damage**

The environmental effects of Alternative 3 would be similar in scope and magnitude to the effects of Alternative 2.

## **3.9 Special Status and SEIS Special Attention Plant Species and Habitat**

It is the policy of the BLM to conserve Threatened and Endangered species and the ecosystems they depend upon primarily by prescribing management for conservation of lands these species inhabit (BLM Manual Chapter 6840). The primary goals of the Threatened and Endangered Species Program are inventory, monitoring, plan preparation, and plan implementation to ensure the maintenance and recovery of these species.

Similarly, it is BLM policy to manage Candidate species and their habitats to ensure that BLM actions do not contribute to the need to list any Candidate species as Threatened or Endangered. The Oregon BLM Director has the authority to designate Sensitive (or Special Status) Species, which are to be managed under the same policy as Candidate species. It is also BLM policy to carry out management for the conservation of state-listed plants. Surveys being conducted for the East Beaver Project area are compliant with these management policies.

### **3.9.1 Affected Environment**

The forest stand where the new road construction (approximately 1400 feet or < 1.5 acres) would occur is a 40 year-old plantation of almost exclusively Douglas-fir with a few red alders, bigleaf maples and western hemlock mixed in. The area was broadcast burned following harvest and planting. There is very little coarse woody debris and the duff layer is not well developed. Sword fern dominates the shrub layer although it is not particularly dense. Huckleberry and Salmonberry can also be found.

Surveys were completed in May of 2011 throughout the new proposed road location project area and no Threatened or Endangered, Survey and Manage or Special Status plant species were found. There is no other viable habitat involved in this project that requires surveys based on critical habitat conditions.

### 3.9.2 Environmental Effects Alternative 1: No Action

There would be no effects to Threatened and Endangered, Survey and Manage or Special Status and Special Attention plant species and habitats under the No Action alternative.

### 3.9.3 Environmental Effects Alternative 2: The Proposed Action

There would be no effects to Threatened and Endangered, Survey and Manage or Special Status and Special Attention plant species and habitats under Alternative 2.

### 3.9.4 Environmental Effects Alternative 3: Repair/Improve Road Damage

There would be no effects to Threatened and Endangered, Survey and Manage or Special Status and Special Attention plant species and habitats under the Alternative 3.

## 3.10 Review of Elements of the Environment Based On Authorities and Management Direction

**Table 4: Elements of the Environment Review based on Authorities and Management Direction**

Element of the Environment /Authority	Remarks/Effects
Aquatic Conservation Strategy	In compliance with PCFFA IV (Civ. No. 04-1299RSM), this project complies with the Aquatic Conservation Strategy described in the Northwest Forest Plan and RMP. This project also complies with the PCFFA II (265 F.3d 1028 (9th Cir. 2001)) by analyzing the site-scale effects on the Aquatic Conservation Strategy. EA sections 3.2, 3.3, 3.4 and 3.11 show how the East Beaver Project meets the Aquatic Conservation Strategy in the context of the PCFFA cases.
Air Quality (Clean Air Act as amended (42 USC 7401 et seq.))	This project is in compliance with this direction because there would be no effects on air quality.
Cultural Resources (National Historic Preservation Act, as amended (16 USC 470) [40 CFR 1508.27(b)(3)], [40 CFR 1508.27(b)(8)])	This project is in compliance with this direction and it would have no effect on this element because cultural resource inventories of the affected area would precede management actions that include any ground disturbing activities that could potentially damage cultural resources.
Ecologically critical areas [40 CFR 1508.27(b)(3)]	This project would have no effect on this element because there are no ecologically critical areas present within the project area.
Energy Policy (Executive Order 13212)	This project is in compliance with this direction because it would not interfere with the Energy Policy (Executive Order 13212).

Element of the Environment /Authority	Remarks/Effects
Environmental Justice (E.O. 12898, "Environmental Justice" February 11, 1994)	This project is in compliance with this direction because it would have no effect on low income populations.
Facilitation of Hunting Heritage and Wildlife Conservation (Executive Order 13443)	The project is in compliance with this direction because it would increase public access and hence hunting opportunities to the East Beaver Creek road system.
Fish Habitat, Essential (Magnuson-Stevens Act Provision: Essential Fish Habitat (EFH): Final Rule (50 CFR Part 600; 67 FR 2376, January 17, 2002)	This project is in compliance with this direction because it would have minimal short-term adverse effects and long-term beneficial effects on MSA species and Essential Habitat. Effects to this element are addressed in text (EA section 3.3).
Farm Lands, Prime [40 CFR 1508.27(b)(3)]	The project would have no effect on this element because no prime farm lands are present in the project area.
Floodplains (E.O. 11988, as amended, Floodplain Management, 5/24/77)	This project is in compliance with this direction because the proposed treatments would not change or affect floodplain functions.
Hazardous or Solid Wastes (Resource Conservation and Recovery Act of 1976 (43 USC 6901 et seq.) Comprehensive Environmental Repose Compensation, and Liability Act of 1980, as amended (43 USC 9615)	This project would have no effect on this element because no Hazardous or Solid Waste would be stored or disposed of on BLM lands as a result of this project.
Healthy Forests Restoration Act (Healthy Forests Restoration Act of 2003 (P.L. 108-148)	This project is in compliance with this direction, as the only vegetation that would be removed is for new road construction and culvert removal.
Migratory Birds (Migratory Bird Act of 1918, as amended (16 USC 703 et seq)	This project is in compliance with this direction because treatments would generally enhance habitat for migratory birds. Addressed in text (EA section 3.6).
Native American Religious Concerns (American Indian Religious Freedom Act of 1978 (42 USC 1996)	This project is in compliance with this direction because no Native American religious concerns were identified during the scoping period (EA section 1.4).
Noxious weed or non-Invasive, Species (Federal Noxious Weed Control Act and Executive Order 13112)	This project is in compliance with this direction because Project Design Features would prevent establishment of new populations of invasive plant species and because vegetation development would result in decline in both number and vigor of invasive plant populations in the project area. Addressed in text (EA section 3.8)
Park lands [40 CFR 1508.27(b)(3)]	The project would have no effect on this element because there are no parks within or adjacent to the project area.
Public Health and Safety [40 CFR 1508.27(b)(2)]	The project would have no effect on this element because public access would be controlled within the project area during operations and the project would not create hazards lasting beyond project operations.
Threatened or Endangered Species (Endangered Species Act of 1983, as amended (16 USC 1531)	This project is in compliance with this direction because there would be no adverse effects on Threatened or Endangered Species (EA sections 3.3 and 3.5).
Water Quality –Drinking, Ground (Safe Drinking Water Act, as amended (43 USC 300f et seq.) Clean Water Act of 1977 (33 USC 1251 et seq.)	This project is in compliance with this direction because Oregon State water quality standards would be adhered to and the area hydrology would not be changed measurably. Addressed in text (EA section 3.2).

Element of the Environment /Authority	Remarks/Effects
Wetlands (E.O. 11990 Protection of Wetlands 5/24/77) [40 CFR 1508.27(b)(3)]	This project is in compliance with this direction because no wetlands are within the project. (EA section 3.2).
Wild and Scenic Rivers (Wild and Scenic Rivers Act, as amended (16 USC 1271) [40 CFR 1508.27(b)(3)]	This project is in compliance with this direction because there are no Wild and Scenic Rivers within or adjacent to the project area.
Wilderness (Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.); Wilderness Act of 1964 (16 USC 1131 et seq.)	This project is in compliance with this direction because there are no Wilderness Areas or areas being considered for Wilderness Area status in or adjacent to the project area.

### 3.11 Compliance with the Aquatic Conservation Strategy

Based on the environmental analysis described in the previous sections of the EA, Tillamook Resource Area staff have determined that the project complies with the ACS on the project (site) scale. The project complies with the four components of the Aquatic Conservation Strategy, as follows:

- **ACS Component 1 - Riparian Reserves:** The project would comply with Component 1 by maintaining canopy cover along all streams and wetlands, which protect stream bank stability and water temperature. Addressed in text (EA sections 3.2 and 3.3)
- **ACS Component 2 - Key Watershed:** The project would comply with Component 2 by establishing that the East Beaver Project is within the Upper Nestucca Key Watershed and the proposed restoration project is consistent with management direction in Key Watersheds. (RMP p.7).
- **ACS Component 3 - Watershed Analysis:** The project would comply with Component 3 by incorporating the following recommendations from the Nestucca Watershed Analysis.
  - Remove unnecessary or undesirable roads by pulling back sidecast and removing culverts.
  - Maintain or improve road drainage by replacing decaying and undersized culverts.
  - Reduce road mileage in the Upper Nestucca River Key Watershed and reduce road densities across the watershed.
- **ACS Component 4 - Watershed Restoration** The project would comply with Component 4 by decommissioning 3.5 miles of existing road directly adjacent to East Beaver Creek. Removal of 36 culverts and stabilization of storm-damaged areas would have immediate and long-term positive effects to water quality and fisheries habitat in East Beaver Creek.

Tillamook Resource Area staff have reviewed this project against the ACS objectives at the project or site scale with the following results.

The No Action alternative does not retard or prevent the attainment of any of the nine ACS objectives because this alternative would mostly maintain current conditions. Alternatives 2

and 3 do not retard or prevent the attainment of any of the nine ACS objectives for the following reasons.

- 1. ACSO 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.** Addressed in Text (*EA sections 3.2, 3.3*). In summary:

**No Action Alternative:** The No Action alternative would maintain the development of the existing vegetation and associated stand structure at its present rate. The current distribution, diversity and complexity of watershed and landscape-scale features would be maintained.

**Action Alternatives:** Alternatives 2 and 3 would have little or no effect on vegetation or other watershed and landscape-scale features.

- 2. ACSO 2: Maintain and restore spatial and temporal connectivity within and between watersheds.** Addressed in Text (*EA sections 3.2, 3.3, 3.4, 3.5, 3.6*) In summary:

**No Action Alternative:** The No Action alternative would have little or no effect on connectivity within the affected watershed.

**Action Alternatives:** Due to the nature of this project, Alternatives 2 and 3 would have little or no effect on connectivity within or between watersheds.

- 3. ACSO 3: Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.** Addressed in Text (*EA sections 2.4.1, 3.2, 3.3, 3.4*). In summary:

**No Action Alternative:** It is assumed that the current condition of physical integrity would continue to degrade over time as the road system continues to fall apart in the project area.

**Action Alternatives:** Under the proposed action alternative, physical integrity of short channel segments at existing stream crossings would be altered for one to several years following removal of approximately 36 culverts. Alterations would be localized in channel surfaces, banks and beds at stream crossings. Following stream crossing work, there will likely be some channel adjustments when existing undersized structures, which are increasing sediment deposition upstream and reducing sediment deposition and increasing scour downstream, are removed. Similarly, repair or replacement of culverts under alternative 3 would affect stream channels for a short period of time. In the long-term, these alternatives would maintain and restore the physical integrity of the aquatic systems at these stream crossings and reduce the potential for future culvert and road fill failures.

- 4. ACSO 4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.** Addressed in Text (*EA sections 2.4.1, 3.2, 3.3, 3.4*). In summary:

**No Action Alternative:** It is assumed that the current condition of the water quality would continue a gradual downward trend with more sediment delivery and higher turbidity due to a poorly maintained road system.

**Action Alternatives:** Sediment delivery rates and turbidity levels in the affected subwatershed are likely to increase slightly over the short-term as a direct result of road maintenance, decommissioning and repair activities. Sediment increases would be minimal in the mainstem East Beaver Creek and would not be expected to affect recognized beneficial uses. Over the long-term (beyond 3-5 years), current conditions and trends in turbidity and sediment yield would likely be improved under the both action alternatives. Neither of these alternatives would be unlikely to have any measurable effect on other water quality parameters including bacteria, stream temperatures, pH, or dissolved oxygen.

**5. ACSO 5: Maintain and restore the sediment regime under which aquatic ecosystems evolved.** Addressed in Text (*EA sections 2.4.1, 3.2, 3.3, 3.4*). In summary:

**No Action Alternative:** It is assumed that the current levels of sediment delivered to streams would continue to increase due to lack of road maintenance and ongoing road failures in the project area..

**Action Alternatives:** Short-term localized increases in stream sediment can be expected during road decommissioning and repair activities (mainly at stream crossings). Project planning, PDFs and BMPs would be implemented to minimize sediment delivery to streams. Over the long-term (beyond 3-5 years), the sediment inputs would decrease under both alternatives.

**6. ACSO 6: Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.** Addressed in Text (*EA sections 2.4.1, 3.2, 3.3, 3.4*). In summary:

**No Action Alternative:** No change in in-streams flow would be anticipated.

**Action Alternatives:** No change in in-stream flow would be anticipated.

**7. ACSO 7: Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.** Addressed in Text (*EA sections 2.4.1, 3.2, 3.3, 3.4*). In summary:

**No Action Alternative:** There is a very small amount of floodplain and no wet meadows or wetlands in the project area. Existing floodplains would not be affected under this alternative.

**Action Alternatives:** The small amount of floodplain present in the project area would not be affected under either of the action alternatives.

**8. ACSO 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. Addressed in Text (EA sections 2.4.1, 3.2, 3.3, 3.4). In summary:

**No Action Alternative:** The current species composition and structural diversity of plant communities would continue along the current trajectory.

**Action Alternatives:** The action alternatives would have no effect on the species composition or structural diversity of plant communities in or near riparian areas or wetlands. The only vegetation, including trees, which would be disturbed, is located in the road prism over existing culverts that would be removed. Coarse woody debris distribution and amounts would not be affected.

9. **ACSO 9: Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.** Addressed in Text (EA sections 2.4.1, 3.2, 3.3, 3.5, 3.6, 3.9). In summary:

**No Action Alternative:** Habitats would be maintained over the short-term and continue to develop over the long-term with no known impacts on species currently present.

**Action Alternatives:** The action alternatives would have no adverse effect on riparian dependent species.

## 4.0 LIST OF PREPARERS

**Table 5: List of Preparers**

Resource	Name
IDT Leader	Bob McDonald
Botany	Kurt Heckerth
Engineering	Joel Churchill
Fisheries	Matt Walker
Hydrology/ Water Quality	Peter Adams
Recreation	Debra Drake
Soils and Geology	Dennis Worrel
Wildlife	Andy Pampush

## 5.0 CONTACTS AND CONSULTATION

### 5.1 Consultation

#### 5.1.1 Wildlife Consultation

Due to the low probability of minor disturbance to spotted owls and marbled murrelets this project would conform to and thus be included in the “Informal Programmatic Consultation for

Activities With Potential to Disturb Spotted Owls (*Strix occidentalis caurina*) and Marbled Murrelets (*Brachyramphus marmoratus*) Within the North Coast Planning Province for FY 2010-2013 (13420-2009-I-0152)”, for which a “Letter of Concurrence” has been received.

### **5.1.2 Fisheries Consultation**

Consultation on the road decommissioning portion of this project(USFWS and NMFS) will be completed by including it in the completed Aquatic Restoration Biological Opinion (ARBO) *USDI – US Fish and Wildlife Service. June 14, 2007. Biological Opinion and Letter of Concurrence USDA Forest Service, USDI Bureau of Land Management and the Coquille Indian Tribe for Programmatic Aquatic Habitat Restoration Activities in Oregon and Washington That Affect ESA-listed Fish, Wildlife and Plant Species and their Critical Habitats. US Fish and Wildlife Service, Portland OR. 258 pages.* The new road construction on USFS land would have “No Effect” on ESA-listed fish and would not require further consultation.

## **5.2 Public Scoping and Notification - Tribal Governments, Adjacent Landowners, General Public, and State County and local government offices**

For information on project scoping, see *EA section 1.4*.

The EA and FONSI will be made available for public review from May 27, 2011 to June 13, 2011 and posted at the Salem District website at <http://www.blm.gov/or/districts/salem/plans/index.php>. Written comments should be addressed to Stephen M. Small, Field Manager, Tillamook Resource Area, 4610 Third Street, Tillamook, Oregon, 97141. Emailed comments may be sent to [robert\\_mcdonald@blm.gov](mailto:robert_mcdonald@blm.gov).

## **6.0 LITERATURE CITED**

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## **7.0 ADDITIONAL SUPPORTING DATA AND MAPS OF THE ACTION ALTERNATIVES**

### **7.1 Water Quality Management Plan**

#### **Introduction**

Water Quality Management on BLM-administered lands that are covered under the East Beaver Project EA is based on the site specific application of Best Management Practices (BMPs) and disclosed as Project Design Features (PDFs).

#### **Best Management Practices**

Best Management Practices are required by the federal Clean water Act as amended to mitigate the potential for non-point source pollution. Non-point source pollution is pollutants detected in concentrated water (e.g. stream or lake) from a wide range of forest management activities on federal lands administered by the Bureau of Land Management (BLM). BMPs are considered the primary methods for achieving Oregon's water quality standards.

The overall goal is not to strictly adhere to the wording of the BMP, but rather to implement the intent of the prescribed BMP. That is to protect, promote and enhance water quality in order to meet federal and state water quality objectives. In that matter, BMPs are site specific and the implementation of the BMP is tailored to the "on the ground" conditions. The following BMPs are site specific application to forest management activities undertaken by the East Beaver Environmental Analysis on the Tillamook Resource Area.

**Table 6: Best Management Practices**

BMP No.	Practice Technique
R1, 2, 3	New road construction associated with providing access to BLM administered lands and associated waste disposal sites would be completed while avoiding unstable slopes, wetlands and, where feasible avoids Riparian Reserves and stream crossings
R5, 35	All new road construction and in-stream work (culvert installation, replacement or removal) would be limited to the dry season. The BLM would maintain the authority to suspend hauling or maintenance activities based on changes in the weather patterns. Ground disturbing activities associated with road construction, culvert replacement or removal and road decommissioning would be suspended when conditions exist that may cause the generation of excessive sediment, such as intense or prolonged rainfall; or when the road surface is deteriorating due to freeze-thaw cycles or from excessive use. The in channel work of culvert work would be completed during period of low flow where the delivery of sediment to the stream habitat is considered to be low risk; complete road stabilization work prior to the onset of the fall rains where it is unlikely that the road stabilization work would result in an adverse impact by adding additional amounts of turbidities in excess of state standards based on identified beneficial uses of the water.
R29	Project design mitigations or features would be developed between engineering, soils and hydrology during IDT field trips for the removal of deep fill culverts where it is reasonably expected that the activity of the removal of the deep fill would add additional amounts of sediment to the main stem of east beaver Creek.
R6	Excavated material that will be created as a result of road decommissioning activities will be required to be stabilized in place or end hauled out of the project area if they are likely to contribute sediment to the stream course during the wet season
R9	Temporary sediment containment structures (such as silt fences, retentions ponds, straw bales, and bark-bags etc.) would be installed in areas where there is potential for sediment delivery to streams such as at stream crossings and in ditch lines. These structures would be removed when no longer needed or at completion of the project.
R11	The exposed fill slopes and ditch lines from culvert replacement that adjacent to the inlets of culverts and could potentially provide a sediment source to the stream course would be mulched. This mulch would consist of weed free material and approved by the resource area weed specialist.

R14, 18	The decommissioned portions of the roadway and new road construction would be hydrologically stable and closed to public access.
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**Table 7: BLM Sensitive Wildlife That Could Occur Within The East Beaver Project Area**

Common Name	Status*	Impact Synopsis
<b>Mammals:</b>		
Columbia White-tailed Deer ( <i>Columbia River DPS</i> )	ESA-Endgrd.	Not affected – Not in range
Fringed Myotis	BLM-Sen., Salem RMP	Not affected – negligible impact to low quality habitat
Long-eared Myotis	Salem RMP	Not affected – negligible impact to low quality habitat
Long-legged Myotis	Salem RMP	Not affected – negligible impact to low quality habitat
Silver-haired Bat	Salem RMP	Not affected – negligible impact to low quality habitat
Townsend’s Big-eared Bat	BLM-Sen., Salem RMP	Not affected – No roosting habitat in area
Red Tree Vole	BLM-Sen.	Not affected – No older habitat, history of area makes presence unlikely
<b>Birds:</b>		
Bald Eagle	BLM-Sen.	Not affected – No suitable habitat within project area
Black Swift	MBTA	Not affected – No habitat within project area
Harlequin Duck	BLM-Sen.	Not affected – Project not within suitable habitat
Horned Lark ( <i>strigata</i> ssp.)	MBTA	Not affected – Project not within suitable habitat
Lewis’ Woodpecker	BLM-Sen.	Not affected – Project not in suitable habitat
Marbled Murrelet	ESA-Thnd.	Not affected – No suitable or potential habitat exists within the project area.
Northern Spotted Owl	ESA-Thnd.	<b>Affected – See Sec. 3 for analysis</b>
Olive-sided Flycatcher	MBTA	<b>Affected – See Sec. 3 for analysis</b>
Oregon Vesper Sparrow ( <i>affinis</i> ssp.)	MBTA, BLM Sen.	Not affected – Project not in suitable habitat
Peregrine Falcon	MBTA, BLM Sen.	Not affected – No habitat affected
Purple Finch	MBTA	<b>Affected – See Sec. 3 for analysis</b>
Purple Martin	BLM-Sen.	Not affected – No habitat affected
Rufous Hummingbird	MBTA	<b>Affected – See Sec. 3 for analysis</b>
Willow Flycatcher	MBTA	Not affected – Fairly common species in early seral habitat
<b>Reptiles and Amphibians:</b>		
Cope’s Giant Salamander	BLM-Sen.	Not affected – No impact to stream habitat
Northwestern Pond Turtle	BLM-Sen.	Not affected – No habitat within project area
Painted Turtle	BLM-Sen.	Not affected – No habitat within project area
<b>Invertebrates (Mollusks):</b>		

<b>Common Name</b>	<b>Status*</b>	<b>Impact Synopsis</b>
Crowned tightcoil (snail)	BLM-Sen.	<b>Affected – See Sec. 3 for analysis</b>
Evening Field slug	BLM-Sen., S&M	Not affected – Preferred habitat excluded from project
Oregon Megomphix	S&M	<b>Affected – See Sec. 3 for analysis</b>
Pacific Walker (snail)	BLM-Sen.	Not affected – Not in range
Puget Oregonian (snail)	BLM-Sen., S&M	<b>Affected – See Sec. 3 for analysis</b>
Salamander slug	BLM-Sen.	<b>Affected – See Sec. 3 for analysis</b>
Spotted tailedropper (slug)	BLM-Sen.	<b>Affected – See Sec. 3 for analysis</b>
Tillamook Westernslug	BLM-Sen.	<b>Affected – See Sec. 3 for analysis</b>
Warty jumping slug	BLM-Sen., S&M	<b>Affected – See Sec. 3 for analysis</b>
<b>Invertebrates (Arthropods):</b>		
Johnson’s Hairstreak (butterfly)	BLM-Sen.	<b>Affected – See Sec. 3 for analysis</b>

ESA-Endgrd. – Listed under Endangered Species Act as Endangered

ESA-Thnd. – Listed under Endangered Species Act as Threatened

BLM-Sen. – Listed as Sensitive under the BLM’s 6840 Special Status Species Policy

Salem RMP – Species with specific management direction in the Salem RMP

MBTA – Bird covered by the Migratory Bird Treaty Act

S&M – Survey and Manage (SEIS Special Attention Species in Salem RMP)

**Table 8: Detailed Description of Road Work for East Beaver Project**

<b>Alternative 2 - Permanent access off of Wildcat, Decommission above Bays Creek bridge</b>	
<b>Road from Wildcat down to East Beaver Road - Summary of road work - 0.88 mile of road renovation &amp; 0.28 miles of new construction (1200 CY surface rock)</b>	
MP 0.00	Start at junction with Stimson controlled road behind gate - Start renovation of road
MP 0.59	End renovation start new construction
MP 0.87	End new construction start renovation
MP 1.16	End road - junction with East Beaver County Road - Construct curve to make junction to East on East Beaver Road
<b>East Beaver County Road - Summary of road work - 0.40 miles of road maintenance</b>	
MP 0.00	Start at junction with road from Wildcat
MP 0.23	Install new culvert 24" x 30' and add fill material to ramp over pipe
MP 0.40	End County controlled road
<b>Road #3-9-2 (BLM control)- Summary of work 2.52 miles of maintenance &amp; 3.21 miles of decommissioning (34 shallow fill culvert removals [up to 10' of fill depth], 1 deep fill culvert at MP 3.12 and 1 large culvert removal at MP 4.80)</b>	
MP 0.00	Start BLM control section line between T3S R9W section 2 & 11
MP 0.77	<b>Small Slide</b> - Remove slide material 100 CY and replace damaged culvert with 36"x 40' culvert
MP 2.52	Bays Creek Bridge Junction - Place Earth Barricade & start decommissioning work
MP 2.78	Remove 36" x 40' culvert - removal 350 cubic yards of fill material
MP 3.12	<b>Deep Fill</b> -remove 48" x 100' culvert and part of fill - 670 CY of material will be removed from fill and place 20 CY of riprap at outlet
MP 4.62	<b>Large Slide</b> - ramp over slide for temporary truck traffic - remove 36" x 40' culvert and some slide material
MP 4.80	<b>Big AI</b> - Remove large aluminum fish pipe 24' wide X 7' tall - Disassemble and haul to Cedar Creek Shop
MP 5.21	<b>Large washout</b> - Ramp up washout with equipment, remove 72" culvert & block existing ditch channel down road
MP 5.62	Junction left 2-8-33 road
MP 5.73	End BLM road control
<b>Road #2-8-33 - Summary of work - 0.19 miles of decommissioning &amp; 0.81 miles left as is (1 shallow fill culvert removal total)</b>	
MP 0.00	Start junction with road #3-9-2
MP 0.03	Remove 48" x 40' culvert - shallow fill
MP 0.19	Large washout/fill
MP 0.30	Large washout/fill
MP 1.03	End Road

**Alternative 3 - Permanent access off of Wildcat, repair and improve BLM roads above the county washout**

**Road from Wildcat down to East Beaver Road - Summary of road work - 0.88 mile of road renovation & 0.28 miles of new construction (1200 CY surface rock)**

- MP 0.00 Start at junction with Stimson controlled road behind gate - Start renovation of road
- MP 0.59 End renovation start new construction
- MP 0.87 End new construction start renovation
- MP 1.16 End road - junction with East Beaver County Road - Construct curve to make junction to East on East Beaver Road

**East Beaver County Road - Summary of road work - 0.40 miles of road maintenance**

- MP 0.00 Start at junction with road from Wildcat
- MP 0.23 Install new culvert 24" x 30' and add fill material to ramp over pipe
- MP 0.40 End County controlled road

**Road #3-9-2 (BLM control)- Summary of work 5.73 miles of repair and improvement**

**(Add a total of 11 culverts 140 LF 18" and 242 LF 24") (Replace a total of 29 culverts 324 LF 18", 334 LF 24", 180 LF 36", 160 LF 48" & 60 LF 60")**

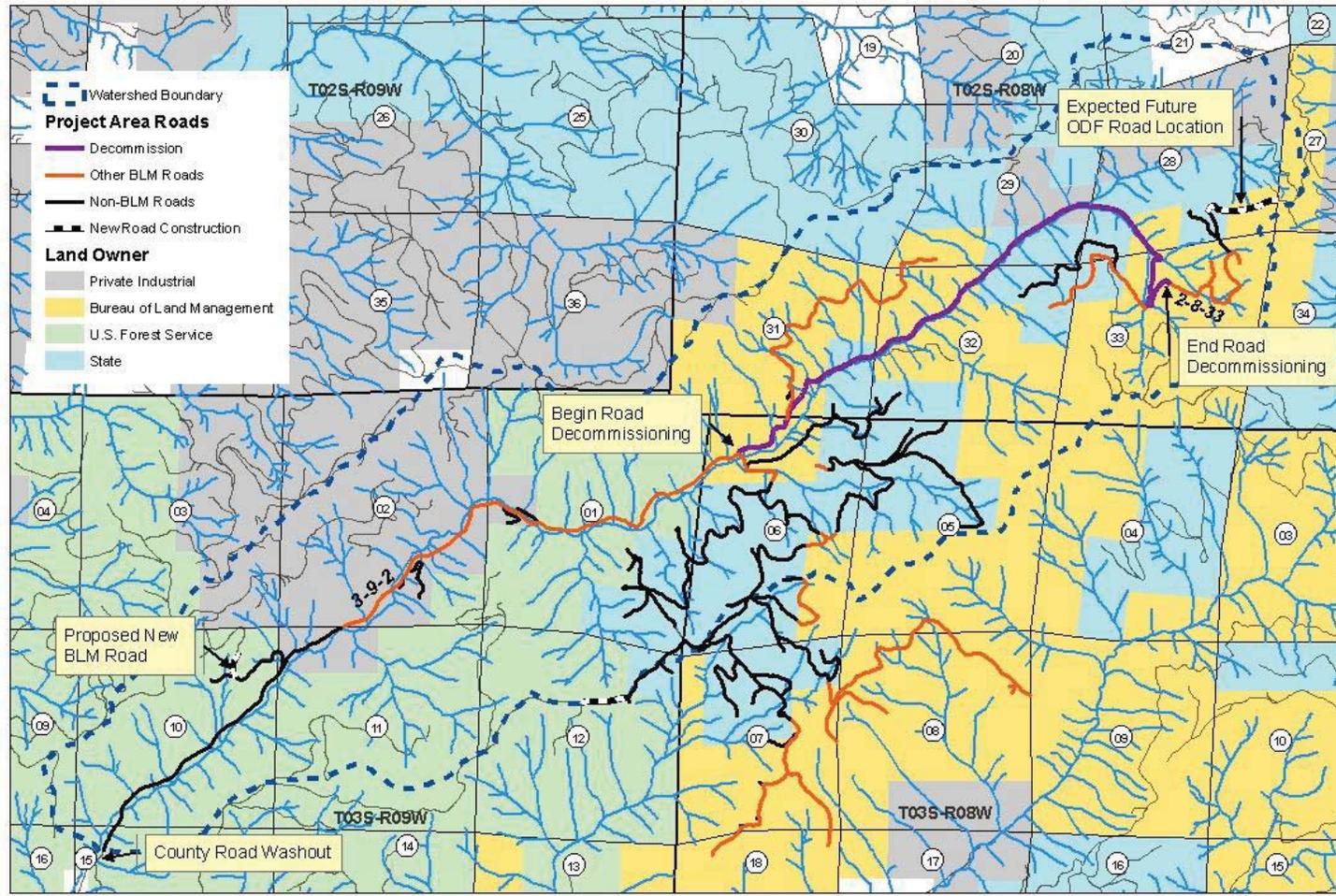
- MP 0.00 Start BLM control section line between T3S R9W section 2 & 11
- MP 0.77 **Small Slide** - Remove slide material 100 CY and replace damaged culvert with 36"x 40' culvert
- MP 2.78 Replace 36" x 40' culvert with 5' of fill
- MP 3.12 **Large Fill** -replace culvert and place riprap at outlet
- MP 4.62 **Large Slide** - Remove slide material and replace culvert (ERFO funded site) 13K
- MP 4.80 **Big AL** - Keep as is
- MP 5.21 **Large washout** - Fix washout and replace 72" culvert with a concrete ford (ERFO funded site) 97K
- MP 5.62 Junction left 2-8-33 road
- MP 5.73 End BLM road control

**Road #2-8-33 - Summary of work - 1.03 miles of road repair and improvement**

**(Replace a total of 7 culverts 270 LF 24" and 40 LF 36") 18K**

- MP 0.00 Start junction with road #3-9-2
- MP 0.19 Large washout/fill - install culvert and reconstruct fill (ERFO funded site) 21K
- MP 0.30 Large washout/fill - install culvert and reconstruct fill (ERFO funded site) 21K
- MP 1.03 End Road

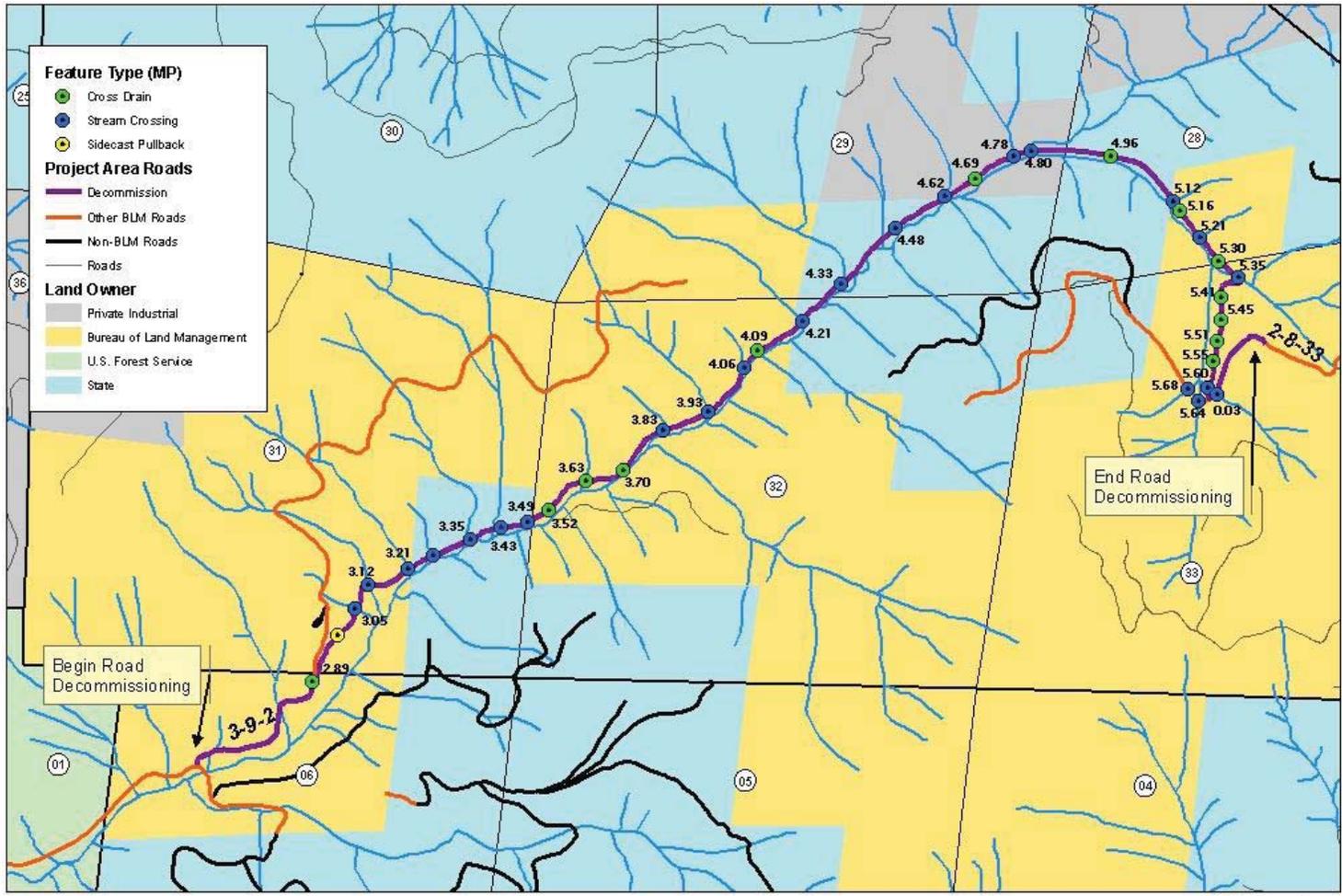
## 7.2 Maps



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

**Figure 1: East Beaver Project Proposed Action**





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**Figure 2: East Beaver Project Proposed Action Details**