

**U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT  
EUGENE DISTRICT  
MIDDLE SIUSLAW - OXBOW CREEK AQUATIC AND RIPARIAN  
HABITAT RESTORATION PLAN**

**ENVIRONMENTAL ASSESSMENT No. OR090-EA-01-12**

**PURPOSE AND NEED**

Oxbow Creek is a fourth order tributary of the Siuslaw River with origins located in the Central Coast Range, Western Lane County, Oregon. The head waters begin in T20S, R7W, Sections 5, 8 and 16. The confluence with the Siuslaw is located in T20S, R7W, Section 3. History shows that the Siuslaw River and its tributaries supported large runs of salmon, trout and other fish species. Harvesting of timber resources, agriculture and human settlement and related habitat alteration and harvests of fish have led to fish runs that number a fraction of their original size. The purpose of this restoration plan is to improve the quality and quantity of appropriate habitats in the Oxbow Creek drainage to benefit all fish species, other aquatic organisms, riparian plant communities, and wildlife species found here. The site specific analysis of future restoration proposals described herein will be tiered to this document.

**CONFORMANCE**

The proposed action and alternatives are in conformance with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl, April 1994 (ROD)*, and the *Eugene District Record of Decision and Resource Management Plan, June 1995 (Eugene District ROD/RMP)* as amended by the *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, USDA Forest Service and USDI Bureau of Land Management January 2001*. The analysis contained in these Environmental Impact Statements (EIS's) are incorporated into this document by reference.

Project areas would be surveyed for Special Status and Survey and Manage species (categories A and C) using current protocols. These pre-disturbance surveys would be completed prior to the Decision Notice. In the event a Special Status or Survey and Manage species is present, the appropriate mitigation or project modifications would occur.

The proposed action and alternatives are also in conformance with the Aquatic Conservation Strategy in the Northwest Forest Plan. Information summarized in the Middle Siuslaw - Oxbow Creek Aquatic and Riparian Habitat Restoration Plan is from the Eugene District Siuslaw Watershed Analysis (February 1996). Information and analysis are also tiered to the Eugene District Upper Siuslaw River Aquatic Habitat Restoration Plan (USRAHRP) OR090-EA-98-17.

The proposed action will follow general conditions related to fill removal activities as listed in the renewal permit (FP-13963) issued by the Oregon Department of State Lands (September 26, 2000).

## **OBJECTIVES**

1. Remove migration barriers to all aquatic species. When necessary replace problem barriers, culverts or bridges with new ones that address aquatic animal migration and stream hydraulics.
2. Decommission roads to help achieve Riparian Reserve, Aquatic Conservation Strategy and watershed objectives.
3. Improve the quality of available pools and increase pool quantity in reaches with a low pool to riffle ratio.
4. Increase stream structure and complexity to benefit aquatic species.
5. Increase the availability of spawning, rearing and refuge habitat for all aquatic species.
6. Improve the connectivity of the stream and floodplain.
7. Design and implement projects that collect woody debris and organic litter.
8. Reduce stream velocities in bedrock dominated reaches by placing an adequate number and size of instream structures.

## **BACKGROUND**

In 1996, the Siuslaw Watershed Analysis (SWA) was completed under interim guidelines established by the Watershed Analysis Coordination Team of the Regional Ecosystem Office (REO). The Aquatic Habitat Restoration plan for the Upper Siuslaw River Basin (Environmental Assessment No. OR090-EA-98-17), completed in 1998, was based on the SWA.

## **DESCRIPTION OF EXISTING ENVIRONMENT**

As described in the Upper Siuslaw River Aquatic Habitat Restoration plan (USRAHRP), Oxbow is a fourth order tributary in T.20S., R.7W., Section 3. The Bureau of Land Management (BLM) manages a short section near the mouth and most of the headwaters. The BLM land use allocation for T.20 S., R.7 W., Sec. 3 is Late Successional Reserve (LSR) and Sec. 9 is General Forest Management (GFMA). Forty thousand acres of the basin burned in August 1966 and was salvage logged following the Oxbow burn. The salvage operation (1966-77) did more stream related damage than the fire, with 15 miles of stream being cleaned of woody debris (USDI, [1968]). Currently, the area is vegetated

predominately with 30 year old conifer in the uplands and hardwoods along the major tributaries. The lower mile of Oxbow is low gradient, partially unconfined, and partially secondarily confined due to channel down cutting.

Above the first stream fork in Section 9, roads parallel the south fork road (20-7-4) and the west fork (19-7-25.1). A large log and associated debris above the road culvert near the confluence acted as a stabilizer for the basin until they washed out in 1992. Woody structure is sparse in the channel with only seven key pieces greater than 0.6m in diameter and 10.0m in length found in the first 4200 feet of stream channel (ODFW, 1998). In 1993 BLM placed woody structure in the lower reaches of the channel, including two large perpendicular log placements near the mouth. The primary purpose was to stabilize the channel. A pool was blasted below the lowermost log to facilitate fish migration into Oxbow Creek. In 1994, the blast pool eroded into an area upstream of the blast pool under the lower most log placement causing loss of accumulated substrates to the next upstream structure. Observations in February of 2000 showed that a jam (at ~300 stream feet) had formed at this site and re-stabilized the channel (see photo 1). Other structures of alder and small conifer were hand placed by convict work crews in the reaches above to 2700 stream feet. The majority of these structures have since broken apart during flood episodes.

Oxbow, to its first forks, has some patches of abundant spawning gravels, but lacks rearing habitat and refuge areas for fish species. Of the 80 pools recently surveyed in the first 2850 feet of stream only 3 percent had pool depth of greater than 1.0m and could be considered suitable rearing habitats. From 2850 to 4228 stream feet, 39 pools were surveyed with no pools found greater than 1.0m (ODFW, 1998). In several recent years lower Oxbow Creek has gone dry during extended dry periods, but flows remained in the forks, particularly where beavers created deeper pools. Coho, chinook, steelhead and cutthroat use the basin. When the stream dries out, the fish appear to move into the Siuslaw. During these dry periods BLM personnel have observed these fish species in the Siuslaw near the confluence.

Riparian areas are dominated by red alder. Beaver activity is common in the upper parts of the basin, and creates some larger temporary, deeper pools. Roads parallel many parts of the creek and its forks, reducing riparian vegetation and creating some sources of sediment. Some of the roads, no longer maintained, are being naturally revegetated. BLM conducted a riparian conversion project in the lower reaches in 1993. The original plot designs were modified to facilitate contracting, so the anticipated changes were only partially realized. Monitoring of the conversion sites continues. Plans for more of this type of project were designed in the late 1990's, but initiation was curtailed for logistic reasons.

Suitable marbled murrelet habitat exists within a quarter mile of the eastern most culvert replacement proposal (culvert1), in section 4. There is no suitable spotted owl or bald eagle habitat within a quarter mile of all other project proposals.

## **PROPOSED ACTION**

The Proposed Action includes five general categories of work. One or more activities may be performed at each of the project locations over a period of five years.

### **1. Culvert Rehabilitation**

Culverts may create barriers to the movements of anadromous fish and other aquatic species, and contribute to modifications in natural hydrologic processes that may create flood and erosion hazards. Four types of rehabilitation are proposed in the Oxbow Creek Basin:

a. Removal. Culverts are removed and not replaced. The removal involves digging out and lifting the culvert. The channel where the culvert is removed is shaped and stabilized to reduce the potential for erosion.

b. Replacement. The existing culvert is removed by digging out and lifting from its location in the streambed. The culvert is replaced with another culvert or a half-arch. The type of replacement and size would depend upon the existing substrates, flows at the site and the need to provide for movement of anadromous fish and aquatic organisms up and downstream. Additional excavation may be needed to accommodate a larger structure or a structure of a different type. Excavated areas would be stabilized and protection provided to reduce the potential for erosion.

c. Improved access. For culverts creating a barrier to movements of anadromous fish and other aquatic organisms, and where removal or replacements are not feasible, access to the culvert may be created or improved by placement of structural material in the channel. This structural material would be primarily logs and boulders placed to elevate the stream channel and create pools to facilitate movement into the culvert. Short-term disturbance of the stream channel and stream bank may occur as a result of accessing the channel with equipment and materials, and from working within the stream channel.

d. Improved culvert passage. When culverts are too steep to permit passage and either replacement or removals are not feasible, passage through the culvert may be facilitated by placement of baffles, weirs, or similar type structures in the culvert. This breaks up velocity barriers and provides resting places for fish and other aquatic organisms.

From July 1 through September 15, 2001 two-culvert removal/replacement projects are proposed to occur in the Oxbow Creek drainage. The project sites are denoted on maps 1 and 2 provided in the appendix. The maps are titled "Oxbow Creek Project" and are listed as T.20S, R7W, Sec. 4 and 9. The two culverts in section 4 are migration barriers to salmonids and other aquatic organisms (see photos 2 and 3). Fish presence was detected above the barrier culverts in section 4. A site survey conducted in June 2000 showed juvenile coho salmon directly below culverts in section 4. Suitable salmonid habitats exist above the upper most barrier culvert on road 20-7-4 (0.67 miles south of the

19-7-25.1 road). In section 9, six culverts are proposed for removal as part of the planned road closure (road 20-7-4).

The culvert removal/replacement projects under road 19-7-25.1 would be placed at or below current stream grade (if below - by up to two feet). These culverts may be filled with cobble/rubble sized substrates after placement. Supplemental jump weirs may be installed below these passages during the culvert installation phase or in years following if future grade adjustments related to aquatic organism passage are found to be necessary. During the installation phase, identified barrow sites will be used to temporarily store existing fill adjacent to the old culverts. Barrow site fill will be replaced around the new culvert placements.

## 2. Channel Structure

Channel structuring involves placement of materials in the channel to raise the channel elevations and to increase the complexity of habitat in the channel. Materials used in this process are primarily logs, boulders, stumps, rock and gravel. Designs are based on existing structural features occurring naturally in the system, and on structures previously developed by the Eugene District, other BLM Districts, or other agencies. Proposed structures are designed to be specific to a location, and take into account existing channel and riparian features.

Materials may be delivered to designated sites at the project location well in advance of project work and stockpiled at the project site; or they may be delivered to the site at the time they will be used, reducing the need for stockpiling and handling.

Creation of structural features utilizes some hand work, but primarily involves use of heavy equipment to deliver and place the materials. Once in place, the larger structural materials are generally anchored to the substrate using cables and epoxy. Smaller logs, rock and gravel may be allowed to move in response to the current. Because of the lack of retention features, many of the materials, particularly logs and stumps, would move out of the river system if not anchored. Once anchored, they create collection points to retain placed material or materials entering the channel from adjoining slopes. The use of heavy equipment is proposed for moving and placing the structural materials.

a. Heavy equipment. Structural materials for most project work would be delivered to the channel and placed in position in the channel using spiders (walking excavators), excavators, front end loaders or similar equipment. Temporary access is generally created from existing roads through the riparian area to the channel. Most access routes would be less than 200 feet in length, and are generally located in areas where riparian vegetation restoration is planned, and may be sub-soiled after project work is completed to create planting sites. The development and rehabilitation of the access routes are designed to reduce the potential for erosion and channel disturbance, and in many locations utilize existing older roads and accesses.

Several types of channel structures are proposed. The structures are placed in combinations in and along the channel. Design depends upon the existing conditions and potential of the site. The following descriptions are for the general types of structures used:

a. Weirs. Weirs are full-spanning structures of logs, boulders and/or stumps. They extend up the bank to protect against erosion around the end of the weir. The height and length depend on the individual site conditions.

b. Jetties. Jetties are structures of boulders, logs and/or stumps extending from the bank into the channel but not spanning the channel. They are designed to redirect flow and to create diverse habitats along the margins of the channel.

c. Ramp logs. Ramp logs are logs with one end up on the bank and the other end extending into the channel. They function similarly to jetties.

d. Log and boulder placement. Individual or clusters of logs, boulders, and/or stumps are placed in the channel in various positions to break up flows, create small islands, and increase habitat diversity.

e. Gravel placement. Because of the limited gravel delivery to the stream channel, gravels may be placed in the channel to facilitate development of salmonid spawning areas. Gravel is usually placed in the channel above the locations where it is needed, and the current is used to distribute the gravel to the structures.

### 3. Riparian Restoration

The purpose of riparian restoration is to increase the percentage of conifers in the riparian area as a future source of large woody material in the channel, and snags and woody debris in the riparian area. Riparian zones are currently dominated by red alder, with some big leaf maple and mixed-age conifers. Restoration efforts are planned primarily for the red alder-dominated communities.

In developing accesses from existing roads into the stream channels, routes are selected that facilitate riparian restoration. Red alder along the access routes are removed, with the downed trees placed in nearby riparian areas or in the stream channel. Once the stream channel project work is completed, the access routes may be subsoiled to create suitable conditions for planting of trees. Additional red alder may be removed in patches adjoining or away from the access routes to reduce shading in planting sites. Brush may be removed from additional adjoining sites. The sites where trees and brush are removed away from the access routes are not usually subsoiled. Trees are felled using chain saws or other hand equipment, or are girdled and allowed to die and fall over time, or felled using heavy equipment (i.e., excavator). Brush is generally removed in areas where trees are felled or girdled. Conifers and larger big leaf maple are preserved wherever possible. Where younger conifers are present, competing vegetation may be removed to release conifers for quick structural development.

During the subsequent planting season, usually the winter months following site preparation, trees are planted in the prepared locations. Species for planting include Douglas-fir, western redcedar and western hemlock, depending on the site conditions and proposed species mix. Trees are generally tubed to reduce browsing. Competing vegetation is controlled by placing mats around the trees, or by brushing during subsequent years.

#### 4. Road Stabilization

Several options are identified for addressing problems to the aquatic system created by roads. The road network that extends throughout the Oxbow Creek Drainage project area is managed by BLM and private owners. Frequently multiple users have rights of way on existing roads. Options for addressing problems in the aquatic system due to roads depend upon decisions made cooperatively by the agencies, companies and individuals that control or use a particular road segment. Options identified for road rehabilitation include:

a. Surfacing of roads. Roads, particularly those used in wetter periods, may be surfaced with rock or paved to reduce the potential for silt entering the aquatic system.

b. Improved drainage. In addition to modifying culverts, drainage may be improved by water-barring, providing sub-surface drains, improving ditching, or other steps that would reduce erosion hazard, reduce water interception, and reduce hazards for slope and fill failure. Road cuts and fills may be treated to reduce erosion and potential for slumping.

c. Limit access. Access may be restricted to limit the types of activities, and times of the year when vehicle travel may be permitted. This may be done by using signing, gating, barriers, administrative limitations, or other methods.

d. Road closure. Roads may be barricaded to limit or eliminate traffic, subsoiled and planted, or reshaped by moving road fill so that the land surface more closely resembles natural contours. To reestablish natural drainage patterns roads may be bladed so that the existing gravel lift is moved into the ditch line and concentrated flows are reduced. Water bars, rolling dips and the out sloping of the road prism would direct surface water to the forest floor. As mentioned in the proposed action, under culvert rehabilitation, culverts and cross drains would be removed as part of closing Road 20-7- 4. Drain dips would be established at the cross drain removal locations and stream bank slopes and channels would be reestablished at the stream locations where culverts are removed and not replaced. Vegetation removed during the riparian conversion process may be placed on the road to provide slash and organic debris to the mineral soil and as a filter strip designed as sediment barriers.

#### 5. Monitoring

Prior to implementation of culvert replacement work, sampling to estimate current juvenile salmonid,

other fish species populations and amphibian presence may be conducted in selected habitats using seining/electrofishing. Reference macroinvertebrate samples may also be collected at some sites above the barrier culverts prior to replacement.

## **ANALYSIS OF IMPACTS**

### Critical Elements

There would be no adverse impacts from the proposed action to regional or local air quality, prime or unique farmlands, cultural resources, floodplains, areas of critical environmental concern, environmental justice, native American religious concerns, threatened or endangered species, invasive nonnative species, hazardous or solid waste, wild and scenic rivers or wilderness. Water quality, riparian zones, and the habitat of the threatened coho salmon are expected to benefit from the proposed actions.

### Proposed Action

All proposed actions require some disturbance of the road right of way, riparian zone or stream channel. All actions are in locations that have been previously disturbed by management activities. The extensive existing road network provides access for most locations for which activities are proposed. No new roads would be created as a result of the proposed actions, although temporary access would be needed for movement of equipment and materials from existing permanent roads to restoration sites in the riparian and stream channel. Where available, existing access routes and roads would be utilized for access into and through the riparian area. All temporary accesses and most of the existing access routes that would be utilized for project work would be rehabilitated and/or revegetated after project work is completed.

The primary immediate impacts of the proposed actions are the reduction in existing riparian vegetation, the potential transitory increase in sediment production, disruption of riparian soils, and potential disturbance of aquatic communities. Timing of the work during low water periods, maintenance of buffers around work in riparian areas and on-site steps to control erosion would be used to limit potential impacts. In the longer term, the proposed actions would increase the available aquatic habitat, increase the supply of large conifers, improve passage for fish and other aquatic species, reduce potential for erosion, and improve hydraulic processes.

Project areas would be surveyed for Special Status and Survey and Manage species (categories A and C) using current protocols. These pre-disturbance surveys would be completed prior to the Decision Notice. In the event a Special Status or Survey and Manage species is present, the appropriate mitigation or project modifications would occur.

The proposed action would not effect spotted owls or bald eagles. Due to the potential for audio disturbance to marbled murrelets during the critical nesting period, the proposed action may affect and is likely to adversely effect marbled murrelets.

Prior to beginning on-ground project work on an individual project, BLM will complete all required Endangered Species Act consultation, conferencing, and protocol clearances.

Access, project activities and timing of project work would take into account potential impacts on wildlife, such as nesting periods. The primary impact is expected to be disruption from operation of heavy equipment in riparian areas and the stream channel. The disruptions would be short-term.

As a result of the placement of structures in the stream, water surface levels would be raised at all flow levels. During peak flows more water would flow into riparian areas. Project designs would reduce the potential for erosion. The flooding of riparian areas provides a positive benefit for deposition of silts in riparian areas and increased groundwater infiltration. Previous stream projects that have raised water levels have resulted in an increase in wetlands in the adjoining riparian area. The projects are expected to contribute to an overall improvement in water quality.

1. Culvert Rehabilitation. Culvert removal or replacement requires excavating around the existing culvert and lifting the culvert from the stream channel crossing. Additional excavation may be required to accommodate a larger replacement culvert or bridge. The primary impact is the temporary, transient increase in siltation resulting from excavation and movement of the culvert or bridge materials. The proposed action is likely to reduce long term erosion and sedimentation by reducing the risk for fill failure during high flow events.

The FY 2001 removal/replacement of the eight culverts in the Oxbow Creek drainage (T.20S, R.07W, Sections 4, 9) would include all impacts stated in the previous paragraph. All actions are in areas that have previously been disturbed by management activities. No new roads would be created as a result of the proposed actions. Although a temporary and transient increase in sediment is projected to occur, impacts are expected to be minimized due to the timing of these actions (low flow summer months).

Removal and replacement of the culverts in Section 4 would require that Road 19-7-25.1 be temporarily closed to the public in the project area. Signs related to closure location and time periods would be posted in appropriate locations.

2. Channel Structure. While some channel structure placement may be done from existing roads, most require improving existing secondary access routes or development of temporary access from existing roads into the stream channel. The access is used for moving machinery and materials from the road into the channel. In previous channel structure project work, most of the access routes through the riparian zone followed existing old roads or trails. Where such old roads or trails are present, they would be utilized in lieu of developing new access routes. Some disturbance to vegetation and soils occurs as a result of the development and use of access routes. Where compaction occurs, the access routes would be subsoiled to break up the compaction and prepare the site for planting. Following

completion of project work, the access routes would be rehabilitated to reduce potential erosion and trees would be planted along access routes and adjoining areas to both rehabilitate the access routes and increase the future source of large woody materials. Ground vegetation, primarily of rapidly growing annuals and perennials, begins recovery within months of the completion of project work.

Within the channel, heavy equipment would move for variable distances up and down the channel to place the logs, boulders, and smaller rock. The movement and placement of materials may disrupt the channel bed and banks, producing a transient increase in silt at the project location. In most project locations bedrock is the dominant substrate, reducing potential impacts and silt production from project activities. No mortality of salmonids has been observed from channel structuring. Disturbed banks would be protected through placement of boulders or logs at the time machinery is removed from the creek.

In the longer term the channel structure alters the complexity of stream habitats. The structures are expected to raise the elevation of the stream channel, increase deposition of gravels and other sediments, and to increase the amount of pool and nursery habitat. Channel changes occur during peak flow periods, with structures designed to influence flows and sediment movement during these flow periods. Some bank erosion during high flow events may result from placement of instream structures .

Anchoring of logs, boulders and stumps with epoxy and cable is done by hand in already disturbed project locations and does not entail additional disturbance to the site.

3. Riparian Restoration. Most riparian restoration projects are designed to be undertaken at the same time as channel structuring. Access for channel structuring is often developed in locations where riparian restoration is proposed. Following completion of channel structure project work the accesses would be subsoiled to prepare them for planting. Machinery and hand cutting may be used to remove additional red alder and brush along the access routes. Additional openings for planting conifer seedlings would be created by felling patches of overstory hardwood trees and by the reduction of understory vegetation using hand tools. Reductions of both this overstory and understory vegetation would provide an increase in the amount of sunlight reaching planted conifer areas providing for seedling survival and growth. The retained trees, particularly red alder and big leaf maple, would increase their lateral branching and crown size following the removal of adjacent trees, reducing the overstory openings over time. The impacts on riparian conditions would be limited due to the patchiness of the overstory removal. The stream would receive little additional sunlight due to the retention of riparian vegetation on the side of the stream opposite the planting sites, and the retention of a tree buffer along the stream on the side where planting is done. Wildlife travel corridors would be maintained. Microclimate conditions along the stream would remain similar to pre-project conditions. Patch cut removal of hardwoods would change the vegetative composition and alter the plant and fungal microclimate from hardwood associated to eventually a conifer associated composition (a desired landscape component).

Over time, it is anticipated that the percentage of riparian areas forested in conifers would increase.

Growth of planted conifers would be accelerated through use of standard silviculture practices such as tubing to reduce browsing and control of competing vegetation.

4. Road Stabilization. Direct impacts on streams from road stabilization activities are minor, and are limited primarily to a transient increase in silt entering streams. In the long term, it is anticipated that the road stabilization will reduce siltation into the streams, and will improve hydrologic functions of the basin by reducing water interception, routing into channels, and loss of water from groundwater storage. Barricading or closing of roads also reduces traffic in riparian areas, together with associated positive impacts on water quality and aquatic communities.

The impacts to vegetative characteristics associated with individual fisheries structures are expected to be relatively low except in access routes used to move materials from roadways to the stream channel. Roding and tree yarding would result in soil disturbance and compaction, and would increase the likelihood of non-native and potentially noxious species entering and/or increasing in the project area. Surface soil disturbance may also result in disruption of soil dwelling fungal hyphae that play an important role in nutrient cycling and decomposition. Mitigation measures for botanical concerns (see mitigations) would help reduce the potential for the increase or spread of non-native species, and high levels of mycorrhizal disturbance. No effect on *Cimicifuga elata* plants within the project area would be expected.

#### Proposed Schedule

The Oxbow Creek Aquatic and Riparian Habitat Restoration Plan is designed as a multiple year plan. The six culvert removals and two culvert removals/replacements and the road decommissioning are planned to be completed during the summer months of FY2001. Additional project work such as stream enhancement and riparian conversions may occur between FY2001-2008. Future project work will require separate National Environmental Policy Act (NEPA) analysis. Project funding availability will be the driving force for future scheduled project work. The ability for cooperating partners to complete enhancement efforts will also affect plan implementation. Stream restoration and road closure efforts in the Oxbow Creek basin are scheduled to begin in July 2001.

### **ALTERNATIVES TO THE PROPOSED ACTION**

#### 1. No Action

Under a No Action Alternative, no additional actions would be taken to increase stream structure, replace culverts, restore riparian areas or stabilize roads. Culvert and road work already occur as part of the district road maintenance program. However, the emphasis would be on road stability and not on assisting with recovery of the aquatic system and its associated fauna. Under the No Action alternative, no stream channel restoration would be done, and riparian restoration would be primarily associated with vegetation manipulation carried out for other purposes. Both the stream and riparian habitats would be expected to show only very gradual recovery over a much longer period of time as a

result of management actions taken under this alternative. Under the No Action alternative, there would be no effect on marbled murrelets or *Cimicifuga elata* plants.

## 2. Partial Implementation of Proposed Actions

The Proposed Action Alternative describes a variety of options for culvert, stream channel, riparian, and road restoration work for Oxbow Creek and its tributaries in the project area. The Proposed Action does not require that all actions be implemented; instead, another option is to implement selected portions of the Proposed Action although at reduced scale. Impacts of individual actions would be the same as the Proposed Action. The difference would be in the scope, with fewer positive or negative short or long term impacts.

### **UNAVOIDABLE AND ADVERSE IMPACTS**

No Unavoidable Impacts have been identified for the Proposed Action.

Impacts include a transient increase in sediment from culvert rehabilitation, road stabilization and channel structuring; a temporary reduction in overstory vegetation in riparian areas during riparian site preparation and planting; and disturbance of fishes and invertebrates in the stream channel during culvert rehabilitation and channel structuring.

### **SHORT TERM VS LONG TERM IMPACTS**

Short Term impacts include the transient increase in silt production, reduction of overstory riparian vegetation, disturbance to aquatic organisms and temporary closure of a mainline road.

Long Term impacts of the Proposed Action include benefits such as the increase of conifers in the riparian areas, reduction of silt, improved passage at culverts with a reduction in the potential for road failures, reduced human impacts in riparian areas, an increase in channel complexity, an increase in availability of habitat for native aquatic species, an improvement in water quality, increased stream channel and riparian complexity, and improved hydrologic function.

### **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

No Irreversible or Irretrievable Commitment of Resources have been identified.

### **MITIGATING MEASURES**

The following mitigating measures have been identified:

1. Guidelines established for timing of stream enhancement work by the Oregon Department of Fish and Wildlife (ODFW) would be adopted. Changes to the guidelines would be in

concurrence with BLM and ODFW.

2. To prevent the further spread of noxious weeds, cleaning of heavy equipment would be required prior to entering project areas.
3. Roading of heavy equipment would be kept to a minimum in project areas to prevent the spread of noxious weeds.
4. At project sites retain as much coarse woody material (including stumps) as possible.
5. If funding is available, Scot's broom and/or non-native blackberry (Himalayan and evergreen) plants would be pulled within project areas prior to equipment move-in (at road closure projects) and in the year after project implementation to prevent further spread.
6. To help maintain the existing native plant communities, roadsides would be seeded with native species mixtures. If native seed is not available and seeding is necessary for erosion control, an annual (70%) and perennial (30%) rye mixture would be used with strict guidelines on seed purity.
7. Direct or indirect disturbance to individual plants of *Cimicifuga elata* would be avoided. Avoid all soil or above-ground disturbance to *Cimicifuga elata* plants on the cut-slope of the road. No trees would be planted in an area that would contribute to current or future shading of *Cimicifuga elata* plants. Tree planting adjacent to the final (most southerly) culvert removal is considered a minimal shading risk.
8. All tree falling would occur away from BLM Special Status and Survey and Manage sites.
9. No prescribed burning, tree planting, salvage logging, or other human disturbances would occur in BLM Special Status and Survey and Manage sites.
10. When working in or next to the stream channel spill kits and an approved spill containment plan would be included in operations.
11. To reduce the potential for introduction of silt or petroleum products, when stream depth and channel conditions allow, use of a by-pass or retaining basin may be adopted.
12. Terms and conditions for riparian and instream work as described in the Programmatic Biological Assessment/Biological Opinion for the Oregon Coast Range Province as related to the Coastal Coho Evolutionarily Significant Unit (ESU) would be followed.
13. For Fiscal Year 2001 projects in the Oxbow Creek drainage (culvert replacements) all exposed sites would be hydro-mulched. Straw bales would be used for erosion as directed by

the contracting officer.

14. Petroleum products, chemicals, or other deleterious materials would be prevented from entering the stream. No fresh concrete would come in contact with the active flowing stream.

15. As stated in the special conditions section of Fill Permit No. 13963:

Turbidity shall not exceed 10% above natural stream turbidities as a result of the project. The turbidity standard may be exceeded for a limited duration, (per OAR 340-41) provided all practicable erosion control measures have been implemented as applicable, including, but not limited to:

- use of filter bags, sediment fences, silt curtains, leave strips or berms, or other measures sufficient to prevent offsite movement of soil;
- use of an impervious material to cover stockpiles when unattended or during a rain event;
- graveled construction accesses to prevent movement of material offsite via construction vehicles;
- sediment traps or catch basins to settle out solids prior to water entering ditches or waterways; and
- erosion control measures shall be maintained as necessary to ensure their continued effectiveness, until soils become stabilized.

16. Activities associated with projects within 0.25 miles of suitable murrelet habitat would not begin until 2 hours after sunrise and shall end 2 hours before sunset. This restriction would be in effect from July 1 through September 15.

## **MONITORING AND EVALUATION**

Prior to implementation of instream project work a photographic and descriptive record is made of existing habitats in project areas. Pre project inventories are generally conducted in proposed enhancement reaches by BLM, but have been completed by the ODFW (a cooperator). When possible, project locations are identified using Global Positioning System (GPS). Collected GPS data is then added to the District GIS data system. Pre-work sampling to estimate current juvenile salmonid and other fish species populations is conducted in selected habitats using seining/electrofishing and/or snorkeling. For project areas used by anadromous salmonids, spawning counts conducted for up to 14 years provide a baseline for pre- and post-project comparison. Post project photographs are taken to show completed work and adjacent habitat prior to exposure to stream flow extremes. Successive photos are taken to document changes in project stability and effects on adjoining riparian and stream habitats. Spawning ground counts are continued in established index areas. Juvenile sampling, using snorkeling and electrofishing, is used to document use of structures. Information is also collected on

non salmonid fish species both before and after project work. Reference macroinvertebrate samples may be collected at some project sites. Tree survival and growth are documented in riparian restoration areas during at least the first five years following planting. Disturbance areas are monitored for invasive non-native plant species.

### **CONSULTATION AND COORDINATION**

1. **Private Lands.** Under the Oregon Coastal Salmon Restoration Initiative and authority provided to BLM by the Wyden Amendment, BLM has agreed to cooperate with other land owners in development and implementation of aquatic habitat restoration. Potential stream projects on lands owned by Roseburg Resources Company (RRC) have been identified in T20S, R7W, Section 4. A Memorandum of Understanding among RRC, ODFW, and the Eugene District provides for cooperative restoration activities. In discussions among the Eugene District, RRC, and ODFW, it was agreed that BLM would identify potential restoration opportunities on lands owned by the corporation. This plan, with identified opportunities, will be discussed with the corporation in order to identify situations where coordinating work on both private and federal lands could be done more efficiently than having restoration work done as separate projects. Discussions have also been held with the ODFW, and with Lane County Roads on potential cooperative projects. Opportunities exist for cooperation with other private land owners or state agencies to participate in restoration activities. Discussions with other private landowners is expected to be mainly through the Siuslaw Watershed Council. The Wyden Amendment offers increased opportunities to develop cooperative restoration projects with other landowners in the project area.

2. **Sensitive/Threatened Species.** BLM has completed an inventory of resident and anadromous fish species on Federal lands within the project area that are classified as threatened or candidates for listing under the Endangered Species Act.

Project areas would be surveyed for Special Status and Survey and Manage species (categories A and C) using current protocols. These pre-disturbance surveys would be completed prior to the Decision Notice. In the event a Special Status or Survey and Manage species is present, the appropriate mitigation or project modifications would occur.

On February 14, 2001 the “individual tree” survey method was conducted for the presence of red tree voles. No nest structures were observed in the project area during this survey.

The Programmatic Biological Assessment addressing this proposal related to Federally listed or proposed terrestrial animals was submitted to U.S. Fish and Wildlife Service (USFWS) on December 15, 2000. Because of the potential for audio disturbance to marbled murrelets during the critical nesting period, this proposed action for marbled murrelets is a “May Affect, Likely to Adversely Affect” call. The USFWS response, in the form of a Biological Opinion, is expected prior to on ground work. This action would not take place prior to the issuance of this Opinion. Activities associated with projects within 0.25 miles of suitable murrelet habitat would not begin until 2 hours after sunrise and shall end 2 hours before sunset.

The proposed actions are consistent with the description and terms and conditions under the

*Programmatic Biological Assessment and Biological Opinion for Ongoing USDA Forest Service and USDI Bureau of Land Management Activities Affecting Oregon Coast Range Province, Oregon* for the Oregon Coast coho salmon issued by the National Marine Fisheries Service (NMFS) - September 1998 and extended on July 5, 2000.

3. Cultural Resources. No cultural resources have been identified to date in the actual project locations. All required cultural resource reviews have been completed. The Oxbow project is within the Oregon Coast Range physiographic province and the terms of Protocol D as defined in the National Programmatic Agreement in Oregon (USDI, 1998).

4. Wild and Scenic Rivers. In the 1995 Eugene District Resource Management Plan (RMP) a portion of the Siuslaw River in the proposed project area was found as eligible for designation under the Wild and Scenic Rivers Act. The primary outstanding resource values were anadromous fisheries, wildlife and recreation. The proposed action would benefit those outstanding resource values.

5. Navigability. The portion of the Siuslaw River within the project area is not recognized by BLM as navigable (RMP). Oxbow Creek and its tributaries are not recognized by BLM as navigable. Portions of the river in the project area are occasionally used by recreational boaters using canoes, kayaks or rubber rafts. Because of the limited access points, only a few sections are accessible for boating activity. Low flow patterns and frequent obstacles of boulders and logs also serve to limit use.

6. State and County Land Use. Aquatic and riparian habitat restoration was found in the District RMP to be compatible with existing State and County land use laws. The proposed actions are compatible with the Coastal Zone Management plans and goals.

7. Permits. All required permits will be obtained prior to the beginning of project work. The majority of restoration activities will require only ODFW and State Lands waiver permits. Some of the structures may exceed 50 cubic yards of fill and will require permitting through the State Lands-Corps of Engineers excavation and fill permitting process. A part of the proposed project work is already covered by an existing State Lands permit, FP-13963. This project work, referred to as the Siuslaw Oxbow project, was submitted as a separate project in 1997. Because of delays with permitting and funding approval, the work was not completed in 1997. The Siuslaw Oxbow project is now incorporated into the Upper Siuslaw project. A request for permit modification has been completed for projects and is currently covered under FP-13963 (renewed through October 16, 2001).

8. Aquatic Conservation Strategy. The proposed action is in compliance with the Aquatic Conservation Strategy as described in the Eugene District RMP and Record of Decision, the Record of Decision for the Supplemental EIS for the Northern Spotted Owl, and the Biological Opinion issued by the National Marine Fisheries Service on March 18, 1997.

## **CRITICAL HABITAT**

Oxbow Creek is critical habitat for the Oregon Coast coho salmon. Determination of effects for critical habitat are the same as the determination of effects for restoration activities under the Programmatic

Biological Assessment and Biological Opinion, and are covered by the same biological assessment and biological opinion as extended in the NMFS letter of July 5, 2000.

### **ESSENTIAL FISH HABITAT**

Coho salmon use Oxbow Creek for migration, spawning and rearing. The proposed project is in the ESU for the federally-listed threatened Coastal coho salmon. Coho salmon use here has declined recently due to a reduction in available spawning and rearing habitat and habitat disconnection caused by undersized barrier culverts. Chinook adults have been seen in the first reaches of Oxbow Creek and may spawn in suitable gravels in the first 200 feet of stream and in the Siuslaw River near the confluence. Generally, this tributary is too small for use by chinook salmon. Construction of instream structures involves placement of materials in the channel (logs, boulders and gravels) to raise channel elevations, increase deposition of spawning gravels and to increase the availability of complex rearing habitat. Proposed culvert replacement involves excavating around and removal of the existing culverts followed by work in the channel to create the replacement. Appropriate measures would be taken to limit potential impacts, but some downstream coho may experience disturbance from sediment production and operation of equipment in the stream channel. The disruption would be short term, and would occur during periods when no eggs or fry are present and low flows would limit impacts. Because of the potential short-term disturbance, the project would be considered likely to adversely affect Essential Fish Habitat for the coho salmon, but is not likely to adversely affect Essential Fish Habitat for chinook salmon. No direct effect would occur to chinook salmon which would not be present in the Siuslaw River near Oxbow Creek at the time project work is undertaken. The proposed restoration activities are in accordance with the description and terms and conditions in the NMFS Oregon Coastal Coho Programmatic Biological Opinion. The overall impact of the proposed activity would be to increase the habitat available for use by coho salmon.

#### Preparers:

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Molly Widmer, Botanist

Graham Armstrong, Hydrologist  
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Chuck Vostal, Fisheries Biologist

Peter O'Toole, Forester  
Chris Melotti, Wildlife Biologist

## **REFERENCE**

Armantrout, Neil B. March 1998. Upper Siuslaw River Aquatic Habitat Restoration Plan. USDI, Bureau of Land Management, Eugene District Office, Eugene, Oregon. 55pp.

Oregon Department of Fish and Wildlife July 1998. Aquatic inventory project report - Oxbow Creek (contracted by and prepared for the Eugene District BLM). 25pp.

Oregon Department of State Lands and US Army Corps of Engineers. September 2000. Joint fill/removal authorization. Permit number FP-13963 Renewal. 3pp.

USDI, Bureau of Land Management. [1968]. Report on the August 1966 Oxbow Fire. Eugene District Office, Eugene, Oregon. 5pp.

USDI, Bureau of Land Management. June 1995. Eugene District Record of Decision and Resource Management Plan. Eugene District Office, Eugene, Oregon.

USDI, Bureau of Land Management. February 1996. Siuslaw Watershed Analysis. Eugene District Office, Eugene, Oregon.

USDI, Bureau of Land Management. August 1998. Protocol for managing cultural resources on lands administered by the BLM in Oregon. Oregon State Office, Portland, Oregon. 20pp.

USDA, Forest Service and USDI, Bureau of Land Management. April 1994. 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 (Northwest Forest Plan).

USDA Forest Service and USDI Bureau of Land Management. January 2001. Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines.

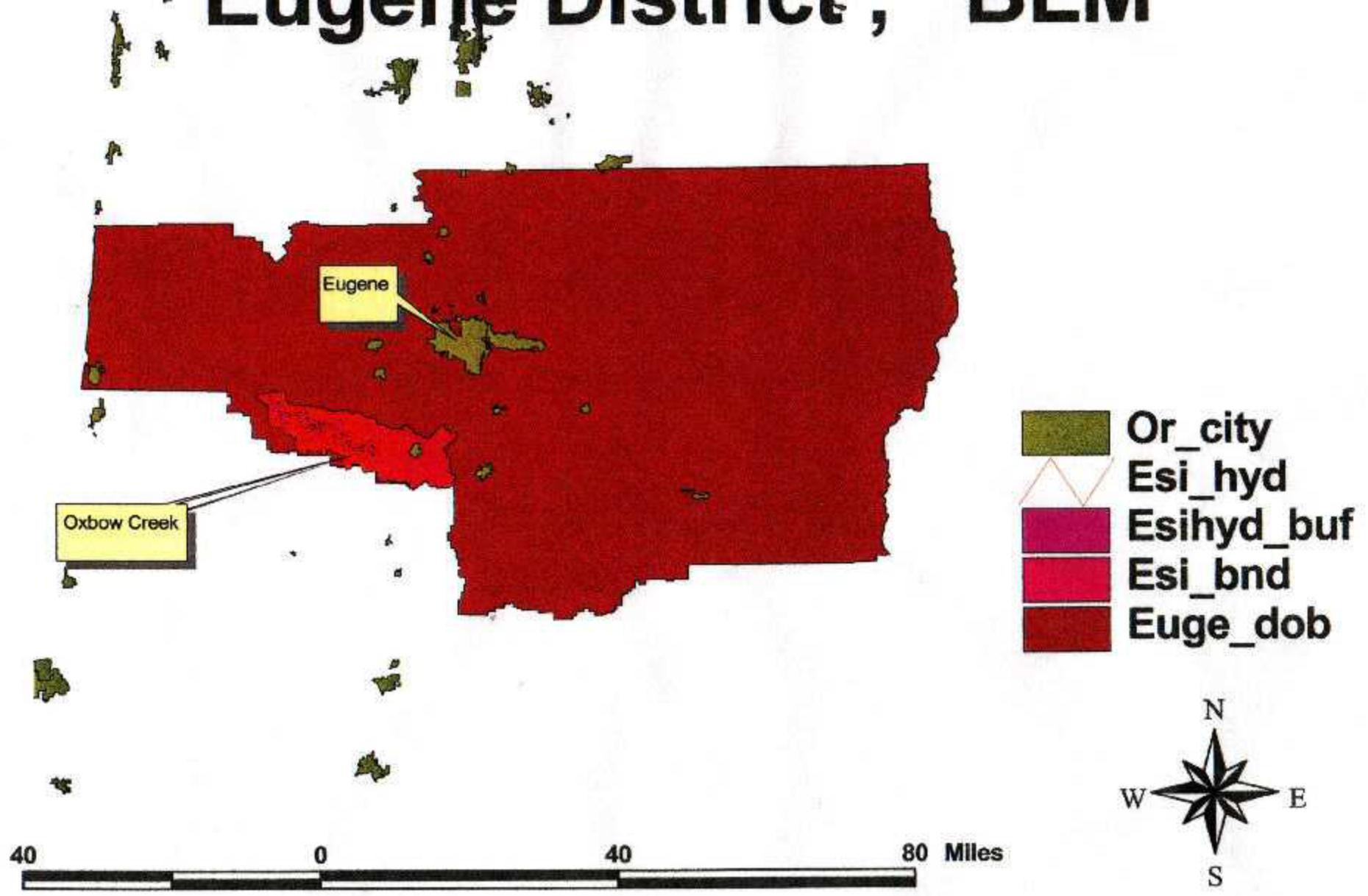
**UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
EUGENE DISTRICT OFFICE  
Preliminary  
Finding of No Significant Impact  
for  
MIDDLE SIUSLAW - OXBOW CREEK AQUATIC AND RIPARIAN  
HABITAT RESTORATION PLAN  
ENVIRONMENTAL ASSESSMENT No. OR090-EA-01-12**

Determination:

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

# Oxbow Creek Culvert Projects

## Eugene District, BLM





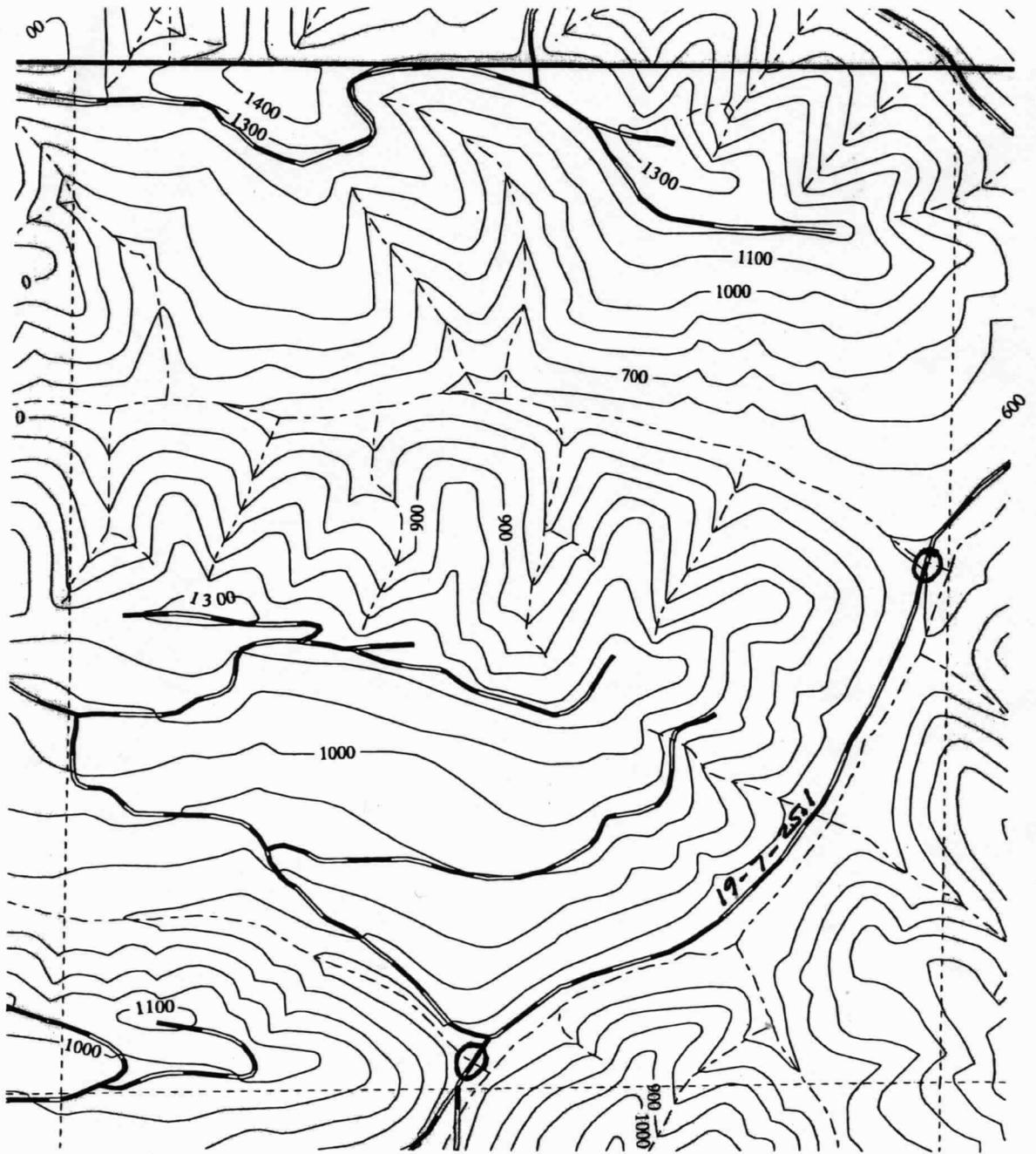
- Oxbow Creek Jam
- Stream Feet: ~300'
- Blast Pool/Large log placement Site with accumulation of naturally recruited debris
- Photo 1



- Oxbow Creek Tributary
- Migration Barrier Culvert
- T20S R7W Section 4 NE
- Road 19-7-25.1
- Culvert 1



- Oxbow Creek Tributary
- Migration Barrier Culvert
- T20S R7W Section 4 SW
- Road 19-7-25.1
- Culvert 2



*BOTH CULVERTS UNDER ASPHALT. BOTH  
 TRIBUTARIES FISH BEARING. FULL UNDERSIZED  
 UNITS AND REPLACE WITH LARGER CULVERT*

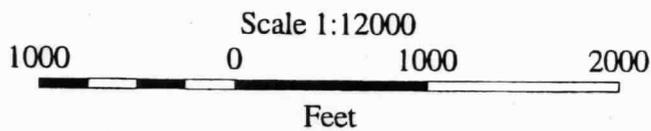
## Oxbow Area Culvert Removal

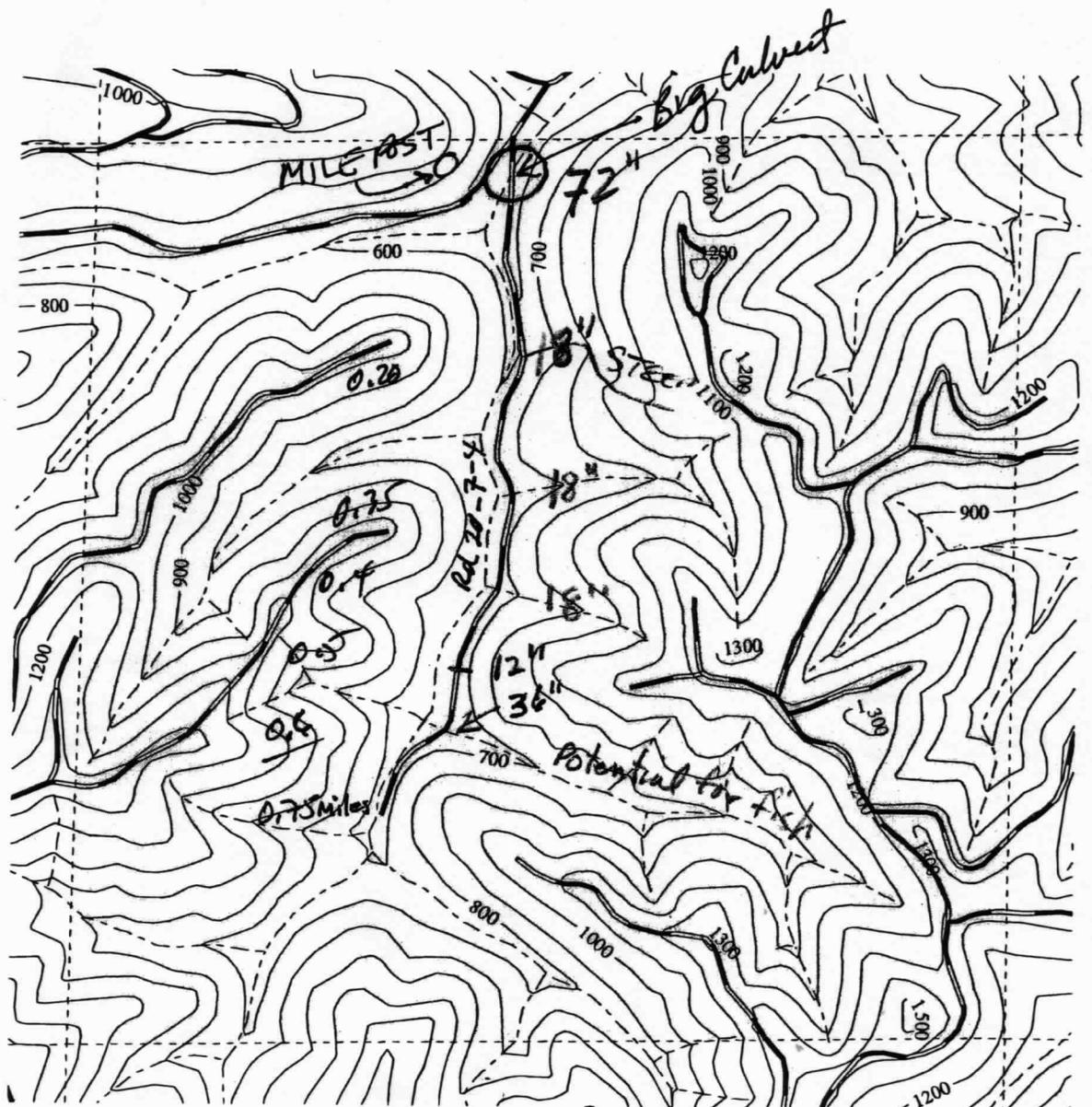
MAP # 1

T.20S, R.07W. Sec. 4

Contour Interval: 100 Ft

- BLM Streams
- Roads





PROPOSED ROAD CLOSURE. PULL ALL CULVERTS.

- BLM Streams
- Roads

# Oxbow Area Culvert Removal

MAP # 2

T.20S, R.07W. Sec. 9

Contour Interval: 100 Ft

