

**U.S. Department of Interior
Bureau of Land Management
Roseburg District, Oregon**

Environmental Assessment for the Swiftwater Field Office

**LITTLE WOLF QUARRY EXPANSION PROJECT
ENVIRONMENTAL ASSESSMENT
EA #OR – 104 – 07 – 05**

This environmental assessment analyzes the environmental impacts associated with the Swiftwater Field Office's proposal to expand the Little Wolf Quarry in the Coast Range. The proposed expansion would occur in the Upper Umpqua Fifth-Field Watershed (Section 1; T. 25 S; R. 08 W.; W.M.). This project is within the Late-Successional Reserve Land Use Allocation and is designed to help meet the Roseburg District's transportation management obligations in the Roseburg District *Record of Decision and Resource Management Plan* (ROD/RMP, pg. 8). This project is in conformance with management direction from the ROD/RMP.

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Date of Preparation: June 9, 2008

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Chapter 1. Purpose and Need for Action

A. Background

Quarry projects are generally categorically excluded by congress because they do not individually nor cumulatively have a significant effect on the human environment under the Department of the Interior Departmental Manual 516 DM 2 Appendix 17 as routine and continuing government business. To qualify for categorical exclusion the extent the quarry expansion could not exceed is 50,000 cubic yards of material or disturb more than five acres. Because the quarry expansion is expected to be greater than these maximum amounts this project was elevated to the environmental assessment level.

Because of the large quantity of high quality sandstone aggregate, the Little Wolf Quarry, located in the SE ¼ of Section 1; T. 25 S; R. 08 W.; W.M, has been identified as a potential long term regional quarry and community pit. It has been repeatedly utilized as a rock source since prior to 1968 and over the past 40 years, has been explored and expanded on numerous occasions. The current developed area will need to be expanded again in order to continue to use this source. Reclamation of previously disturbed ground within the quarry would be conducted concurrently with the expansion utilizing the overburden material, thus resulting in a minimal increase in unreclaimed surface disturbance during operational phases. At final reclamation, unreclaimed surface area would be less than what currently exists. The available quantity of remaining material exceeds other sources in the area. Its close proximity to major road systems makes the site a good potential community pit and a long term regional quarry for this area.

B. Proposed Action

The Little Wolf Quarry Expansion Project proposes to analyze the expansion of the main Little Wolf Quarry and to designate the site as a community rock pit. This quarry site is the only known source of high quality rock in this area of the coast range. The closest alternate source of suitable quality rock is approximately twelve miles away, four to five miles west of Sutherlin. Designation of the site as a Community Pit would reserve the mineral estate within the quarry limits to the federal government and would allow for multiple entries over the expected 25 year lifespan. This action is necessary to meet the current and future mineral material needs for the vicinity. The quarry site is in the Late-Successional Reserve land use area (LUA) found in Section 1, T. 25 S., R. 8 W., W. M. The proposal includes the excavation of three acres of material along the southern and western edges of the existing quarry, along with the removal of overburden in this area and harvest of 36 MBF of mid-seral timber. The overburden would be used for recontouring and reclaiming disturbed surfaces in the main quarry. Also, the overburden would be used in reclaiming the floor of the smaller quarry in the southwest corner of the site, while protecting existing wildlife habitat. Expansion, excavation and reclamation would occur concurrently throughout approximately five phases of operation (Please reference Page 7 for details of operational phases). The decision for expansion, excavation, reclamation, and harvest would tier to this document.

The expansion would extend the existing quarry floor southwest about 120 feet, past the existing main quarry headwall. The expansion would not cut back into the headwall or toward the old overburden to the north. The expansion would cover approximately 3 acres and would include approximately 2 acres of new surface disturbance and remove approximately 400,000 cubic yards of

rock. Blasting would occur multiple times (as needed) over the expected lifespan of the quarry. The project would have no measurable increase in non-productive land during each phase of development as reclamation of the existing quarry would be concurrent with the expansion of the new quarry. There would be a net increase of productive land at final reclamation over the no-action alternative, because of the extent existing quarry floor and headwall would be reclaimed.

Reclamation of the site would consist of a visual and sediment barrier consisting of undisturbed slope varying from 25 to 75 feet in length would be left overlooking the 24-8-36.0 road (also known as the Little Wolf road). Surfaces disturbed during quarry expansion and slopes re-contoured for reclamation would drain toward the quarry floor. The drainage would then be routed to a settling pond with a spillway exiting the quarry in the same approximate location as the existing drainage ditch. A shallow swale and stream with riparian characteristics would be created in place of the drainage ditch during the final phase. The entrance and aggregate stockpile sites would remain in the current locations when the project is completed, although the entrance may be narrowed.

C. Relevant Policies, Assessments, and Plans

This EA will consider the environmental consequences of the proposed action and no action alternatives in order to provide sufficient evidence for determining whether there would be impacts exceeding those considered in the Roseburg District PRMP/EIS which would require preparation of a Supplemental Environmental Impact Statement (SEIS). In addition to the PRMP/EIS, this analysis is tiered to assumptions and analysis of consequences provided by:

- The Final Supplemental Environmental Impact Statement (FSEIS) on Management of Habitat for Late-Successional and Old-Growth Related Species Within the Range of the Northern Spotted Owl (USDA, USDI 1994a);
- The FSEIS for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA, USDI 2001); and

Implementation of the proposed action would conform to management direction from the Roseburg District Record of Decision/Resource Management Plan (ROD/RMP) which incorporates as management direction the standards and guidelines of the Record of Decision for Amendments (ROD) to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA, USDI 1994b). The ROD/RMP is further amended by the Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA, USDI 2001).

- The Federal Land Policy and Management Act (FLPMA): Section 302 at 43 U.S.C. 1732(a), directs that “The Secretary shall manage the public lands . . .in accordance with the land use plans developed by him under section 202 of this Act when they are available . . .”

- Roseburg District Record of Decision/Resource Management Plan (ROD/RMP): The ROD/RMP (USDI, BLM 1995b), approved in accordance with the requirements of FLPMA, provides specific direction for timber management.

Roseburg District ROD/RMP Guidance

The ROD/RMP assumed that long-term regional quarry usage and sale of the quarried rock for construction and maintenance of timber sale access roads and other purposes. The RMP clearly states that quarry development, management, and reclamation would be addressed through implementation planning and that new quarry sites would not be developed unless no other reasonable alternative can be found. Once this decision was made, the primary unresolved issue was regarding the reasonable expansion of the existing quarry site and its extent (ROD/RMP, pg. 67).

The Proposed Action was developed in conformance with and within the scope of impacts anticipated/analyzed by the Final - Roseburg District Proposed Resource Management Plan / Environmental Impact Statement (PRMP/EIS) dated October 1994 and its associated Roseburg District Record of Decision and Resources Management Plan (ROD/RMP) dated June 2, 1995. These documents were written to be consistent with federal statute including the O&C Act, Endangered Species Act, and the Clean Water Act (PRMP/EIS, pgs. 1-3).

Watershed Level Guidance

The Upper Umpqua Fifth-Field Watershed Decision (USDI, 2003; pg. 9) identified approximately 52 miles of road in need of improvement in the watershed. In addition, the Upper Umpqua Fifth-Field Watershed Analysis indicated that rock would not only be used for haul road maintenance and road surfacing for both BLM and non-BLM activities, but also for stream enhancement with boulders (USDI, 2003; pgs. 5 and E-4).

D. Objectives

The objective of the proposed project is to provide a long term regional source of mineral materials (rock) for both BLM and non-BLM activities consistent with the objectives described in Appendix D of the Roseburg District ROD/RMP (pgs. 129-135).

The objectives of the proposed action are to implement the following management directions from the ROD/RMP, pertaining to the minerals program on BLM administered lands in the Late-Successional land use allocation:

- Address quarry development, management, and reclamation needs through implementation planning (pg. 67),
- Maintain exploration and development opportunities for leasable and locatable energy and mineral resources (pg. 66).
- Provide opportunities for extraction of salable minerals by other government entities, private industry, individuals, and non-profit organizations (pg. 66).

- Continue to make available mineral resources on the federal mineral estate (pg. 66)
- Continue to use rock from existing quarries for construction and maintenance of timber sale access roads and other purposes (pg. 67).
- Emphasize long term regional quarry use (pg. 67).

E. Decision Factors

Factors to be considered when selecting among alternatives will include:

- The degree to which the objectives previously described would be achieved including: quarry development, extraction of salable minerals, crushing sorting and processing salable minerals, reclamation of disturbed ground, as well as the season(s) of operations;
- The nature and intensity of environmental impacts that would result from implementation and the nature and effectiveness of measures to mitigate impacts to resources including, but not limited to wildlife and wildlife habitat, soil productivity, water quality, air quality, and the spread of noxious weeds;
- Compliance with: management direction from the ROD/RMP; terms of consultation on species listed and habitat designated under the Endangered Species Act; the Clean Water Act, Clean Air Act, Safe Drinking Water Act and O&C Act, National Historic Preservation Act; and other programs such as Special Status Species.

Chapter 2. Discussion of Alternatives

This section describes the No Action and Proposed Action alternative, and alternatives considered but eliminated from detailed analysis. These alternatives represent a range of reasonable potential actions that would meet the reasons for taking this action, and the objectives to be met through taking the action. This section also discusses specific project design features that would be implemented under the proposed action alternative.

A. The No Action Alternative

The No Action Alternative provides a baseline for the comparison of the alternatives. This alternative describes the existing condition and continuing trends anticipated in the absence of the proposal but with the implementation of other reasonably foreseeable federal and private projects. If the no action alternative were selected there would be no further quarry development, at this time. It is estimated that there is a minimum of 40,000 cubic feet of rock available in the existing pit. No reclamation of previously disturbed ground would occur and material would be removed from the quarry until removal would no longer be feasible without additional expansion into the hillside. Road surfacing rock would need to be hauled in from other sources- currently from existing commercial pits in Yoncalla or Sutherlin- or other new private sources would need to be developed. Developing new sources of rock would result in more un-reclaimed surface disturbance. Cost of road surfacing in proximity to the Little Wolf Quarry would increase because of increased hauling costs and the costs of new exploration, development work, and

permitting.

B. The Proposed Action Alternative

This alternative proposes the expansion and excavation of the Little Wolf Quarry in five phases over a period of 25 years. Concurrent with these phases would be reclamation of surface no longer needed for operations. The proposed action consists of the following activities.

1. Quarry Development and Activities

The Roseburg mining engineer technician would design a detailed plan of quarry expansion and reclamation before any operations begin. Mining of rock would be confined to the main quarry. The quarry expansion and reclamation plan would entail phase development and segmental reclamation (reclamation following depletion of rock in a sector of the quarry). The Best Management Practices for Reclaiming Surface Mines in Washington and Oregon, 1996, would be used as a guide. Before quarry expansion begins, all trees on the two acres of new disturbance would be harvested and sold.

During Phase 1, rock would be excavated from the western arm of the quarry floor (at the base of the headwall), creating a depression for a sediment settling pond. Drainage in subsequent operational phases would be directed to the pond. Phases 2 through 4 would expand onto previously forested surfaces, starting at the lowest elevation and expanding upward. The second phase would mine the southern part of the quarry. The third and fourth phases would mine the western part. During these two phases, the western arm of the quarry floor would expand to the southwest. . The final phase (Phase 5) would remove the remaining material and final reclamation would be completed.

Typical quarry operations include:

- a. Brush and timber clearing:* This would involve removing and controlling brush and harvesting timber from within the quarry boundaries.
- b. Soil and rock overburden removal and stockpiling for reclamation or direct application to area being reclaimed:* Phase one removes rock from the quarry floor where the proposed pond would be located. No soil would be removed during this phase. As Phase 2 begins, followed by successive phases, topsoil would be removed from each phase location in such a manner as to retain the integrity of the topsoil. It would be stockpiled onsite in a designated location within the quarry or placed directly to areas to be reclaimed from previous quarry operations. Stockpiled topsoil would be used in reclamation activities in future operations.
- c. Drilling and blasting:* Equipment for drilling would be moved in to create holes to blast free varying amounts of rock. Explosive charges would be set and triggered to fragment the underlying rock formations.

- d. **Rock crushing and sorting:** Rock fragments blasted from the native rock would be crushed and reduced to appropriate sizes and sorted.
- e. **Hauling and stockpiling:** Rock would be hauled to use on projects or stockpiled for future projects. This quarry would be designated a community pit and rock can be obtained by the general public as well as other non-BLM sources.
- f. **Reclamation of disturbed/depleted areas within the quarry concurrent or subsequent to mining operations:** A quarry reclamation plan would be developed and would be followed to reclaim the quarry and improve soil production.

2. Timber Hauling

Approximately 2.85 miles of existing rocked road and paved road would be used for hauling timber. No existing roads would be renovated (brought back to its original design).

3. Fuel Treatment

Prescribed burning of slash (burning under the direction of a written site specific prescription or “Burn Plan”) would occur at machine-piled temporary log decking areas. Remaining fine fuels generated during the thinning process would be scattered throughout the treatment unit.

4. Quarry Reclamation

The area to be reclaimed would be approximately 6.4 acres (3.3 acres of quarry expansion, 0.8 acres of quarry headwall where expansion would not occur, and 2.3 acres of present-day quarry floors). Excluded from these figures are the 1.9 acres in the eastern portion of the main quarry floor, that would continue to function as aggregate storage and the 1.8 acres comprising the overburden mound in the northern part of the quarry site.

During quarry expansion (Phases 2, 3 and 4), soil would be stripped and stockpiled. The topsoil would be stored in separate piles from the subsoil, where practical, and where room allows. The exposed soft rock overburden would then be stripped and used for recontouring parts of the quarry no longer needed for operations during a particular phase. Stockpiled soil would be spread over the re-contoured surfaces (subsoil first and then topsoil), then seeded or planted with native species. Supplemental sources of soil, if needed, would be taken from the existing overburden mound in the northern part of the quarry and any road waste that might be end-hauled to the quarry for disposal.

The rock overburden and soil generated by Phase 2 would reclaim the southern part of the quarry floor. Most of the Phase 3 rock overburden and soil would be used to reclaim the Phase 2 area. The overburden and soil not used to reclaim Phase 2 would be stockpiled for later reclamation of other portions of the quarry floor and narrow benches along cliff faces. Part of the Phase 4 rock overburden and soil would be used for reclamation of the small quarry floor. The remainder would be stockpiled for later reclamation of the Phase 4 area and the quarry floor. Phase 5 would reclaim the northern part of the quarry headwall and the remaining quarry floor that would not be used as an aggregate storage site. The quarry floor would probably need supplemental reclamation material. Material from the southern fringes of the large overburden mound to the north would supply this reclamation material, if needed.

The topography of the quarry after reclamation would look similar to the following description:

- The western arm of the large quarry floor would expand in a southwest direction and would be excavated to a depth of 20 to 30 feet. The depression created would be converted into a pond with wetland margins (about 1.2 acres). It would serve as a sediment trap and wildlife habitat. The pond would be designed for fire suppression use by helicopters.
- The west part of the large quarry would be the high ground consisting of a series of cliff faces and narrow benches wrapping around approximately 60 percent of the wetland/pond perimeter (about 1.3 acres). Scree and talus slopes would be created at intervals along the cliff faces to create habitat and give a more natural appearance.
- The large quarry floor outside of the pond and wetland would exhibit three distinct features. The northeastern half would remain an aggregate storage site (about 1.9 acres). The central part would be excavated into a narrow, shallow swale extending from the pond to the 24-8-36.0 road (about 0.7 acres). A drainage channel would run through it from the pond to Little Wolf Creek. Small pools of water, boulders and woody debris would be part of the design for enhanced riparian habitat and sediment catchment. The southwestern part of the large quarry floor would become part of the topography described in the following bullet statement.
- The southern part of the large quarry would become north-facing gentle to moderate terrain (2 to 50 percent slopes) sloping down to the narrow swale with the drainage channel (about 1.9 acres). It would share its northwestern boundary with the wetland and pond.
- The large mound of overburden in the northern part of the large quarry would remain as it is (primarily gentle to moderately sloping ground on about two acres). Its southern fringes would be re-contoured if material is moved from it for quarry floor reclamation.
- The cliff faces of the small quarry in the southwest corner (about 0.2 acres) would remain intact. Reclamation earth would be spread on the floor (about 0.3 acres) between the residual stones and boulders there for a growing medium.

C. Project Design Features as part of the Action Alternative

To protect riparian habitat:

- a. Riparian habitat is not present in the project area, therefore construction, renovation and improvement operation would not take place within any riparian habitat.

To minimize soil erosion as a source of sedimentation to streams and to minimize soil productivity loss from soil compaction, loss of slope stability or loss of soil duff layer:

- a. Measures to limit soil erosion and sedimentation from the quarry would consist of:

- (1) Maintaining the quarry entrance (see Appendix B) to fix drainage and erosion problems. This would consist of maintaining existing culverts and installing additional culverts (BMP II H; RMP, pg. 137).
- (2) Shaping the reclaimed quarry topography such that all drainage is directed to the quarry floor and then directed to Little Wolf Creek in a controlled manner.
- (3) Constructing a settling pond that captures most of the quarry drainage to ensure that sediment reaching Little Wolf Creek from the quarry is at or below background levels.

(4) Restricting portions of quarry work and hauling on naturally surfaced roads to the dry season (normally May 15th to October 15th). Operations during the dry season would be suspended during periods of heavy rains. Seasonal operations could be adjusted if unseasonable conditions occur (e.g. an extended dry season beyond October 15 or wet season beyond May 15). The portions of quarry work restricted to August 6th (Please reference Page 11 for further detail on SSP seasonal restrictions) through the end of the dry season (normally around October 15th) would include removal of soil overburden, re-contouring of quarry topography and spreading of soil on re-contoured surfaces. However, soft rock overburden could be removed beyond the end of the dry season as long as the settling pond is not close to reaching the overflow level (once overflowing, the pond is less effective at capturing sediment). Rock crushing activities could occur during the wet season so long as visual turbidity levels in the outflow from the settling pond are not detectable immediately downstream of the confluence with Little Wolf Creek. Additional mitigating measures would be used during the wet season, if sedimentation to the drainage channel was occurring, such as performing crushing activities on top of a gravel pad and using straw bales.

b. Measures to protect soil quality and site productivity by reclaiming quarry surfaces no longer than needed for operations (RMP, pg. 142) would consist of:

- (1) Developing a detailed quarry expansion and reclamation plan using The Best Management Practices for Reclaiming Surface Mines in Washington and Oregon, 1996, as a guide.
- (2) Stripping soil and soft rock overburden during each phase of quarry expansion and using these materials for reclamation. The soil would be kept separate from the rock overburden material and stockpiled until needed for reclamation. Where practical and safe, the contract administrator would have the topsoil kept separate from the subsoil.
- (3) Depending on the particular phase being executed, directly moving stripped rock overburden to sites to be reclaimed and re-contouring these sites with this material or storing it in stockpiles for future reclamation.
- (4) Seeding with native plants and mulching all soil and rock overburden stockpiles that will not be needed for reclamation during the same dry season as being stripped. The soil stockpiles would be kept less than five feet high where room allows, maximizing the volume of soil that maintains a healthy soil ecology. The seeding mix for soil stockpiles would include inoculated legume seed to enhance the soils nitrogen content and perennial grasses. Weed-free mulches would be used.
- (5) Spreading soil over most re-contoured surfaces to depths of at least 20 inches.
- (6) Subsoiling reclaimed surfaces that are detrimentally compacted on slopes less than 35 percent before seeding and mulching. Detrimental compaction is defined as an increase in bulk density of 15 percent or more and an alteration of soil structure to platy or massive to a depth of at least four inches.
- (7) Seeding and planting all reclaimed surfaces with native vegetation as determined

by staff input at time of reclamation.

To protect air quality:

- a. All slash pile burning would have an approved “Burn Plan” and be conducted under the requirements of the Oregon Smoke Management Plan and done in a manner consistent with the requirements of the Clean Air Act (ODEQ, 1992).

To prevent and/or control the spread of noxious weeds:

- a. Equipment would be required to be clean and free of weed seed prior to entry on to BLM lands (BLM Manual 9015-Integrated Weed Management).

To protect cultural resources:

- a. If any objects of cultural value (e.g. historic or prehistoric ruins, graves, fossils or artifacts) are found during the implementation of the proposed action that were not found during pre-project surveys, operations would be suspended until the site has been evaluated for implementation of appropriate mitigation.

To protect Special Status, and SEIS Special Attention Plants and Animals:

- a. Special Status (Threatened or Endangered, proposed Threatened or Endangered, Candidate Threatened or Endangered, State listed, Bureau Sensitive, Bureau Strategic, or Special Provision) and Special Attention plant and animal sites would be protected where needed to avoid listing of species and conserve candidate species, according to established management recommendations (RMP, pg. 40).
- b. If during implementation of the proposed action, any Special Status Species are found that were not discovered during pre-disturbance surveys; operations would be suspended and appropriate protective measures would be implemented before operations would be resumed.
- c. The proposed project is located within 0.25 miles of unsurveyed suitable habitat in Marbled Murrelet Inland Management Zone 1. Therefore, seasonal restrictions from April 1st thru September 15th, both days inclusive, are necessary for blasting. The proposed project is located within 100 yards of unsurveyed suitable habitat, and therefore, seasonal restrictions from April 1st thru August 5th and daily operating restrictions from August 6th thru September 15th, both days inclusive, are necessary for all other quarry expansion and rock extraction activities such as removing of trees, rock crushing, as well as use of heavy equipment, rock drill, jackhammer, and chainsaws.
- d. There are currently no known sites, activity centers, or unsurveyed suitable habitat within a quarter of a mile of the Little Wolf Quarry. Therefore, quarry activities are not seasonally restricted due to northern spotted owl concerns, unless future surveys locate a nest site within a quarter of a mile of the proposed project area.

To prevent and report accidental spills of petroleum products or other hazardous material and provide for work site cleanup:

- a. The operator would be required to comply with all applicable State and Federal laws and regulations concerning the storage, use and disposal of industrial chemicals and other hazardous materials. All equipment planned for instream work (stream culvert

replacement) would be inspected beforehand for leaks. Accidental spills or discovery of the dumping of any hazardous materials would be reported to the Authorized Officer (Sale Administrator) and the procedures outlined in the “Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan” would be followed. Hazardous materials (particularly petroleum products) would be stored in durable containers and located so that any accidental spill would be contained and would not drain into watercourses. All landing trash and logging and construction materials would be removed from the project area.

D. Monitoring

The RMP (pg. 85) specifies that management activities would be monitored and the results reported on an annual basis. Monitoring would be done in accordance with the RMP guidelines outlined in Appendix I.

When monitoring identifies previously unanticipated impacts, the information gained from that monitoring would be used in subsequent development of mitigating measures, including Best Management Practices, and considered in future watershed analyses (RMP, pg. 81).

E. Resources that Would be Unaffected by Either Alternative

1. Resources Not in Project Area

The following resources or concerns are not present and would not be affected by either of the alternatives:

- Special areas (Areas of Critical Environmental Concern, Research Natural Areas, etc...)
- Minority populations or low income populations
- Farm Lands (prime or unique)
- Floodplains/ Wetlands
- Hazardous Waste
- Wild and Scenic Rivers
- Wilderness

2. Cultural and Paleontological Resources

An inventory was completed for the nearby Mining Days Timber Sale, one unit of which was adjacent to the quarry. No resources were found. SHPO concurred with a finding of "No Effect".

The Little Wolf Creek Quarry is a known fossil site. It was recorded by Ted Weasma in 1996. It contains paleobotanical and marine invertebrate specimens. The paleobotanical specimens are carbonized stem fragments. The marine invertebrates consist of both pelecypod (bivalve) and gastropod (univalve) shells. The material noted by Weasma is fairly common. The site is unlikely to produce vertebrate fossils or noteworthy occurrences of invertebrates or plant fossils. Further paleontological consideration is unnecessary.

3. Native American Religious Concerns

No Native American religious concerns were identified by the interdisciplinary team or through correspondence with local tribal governments.

4. Indian Trust Resources

Secretarial Order No. 3175 (November 8, 1993) requires that any significant impact to Indian trust resources be identified and addressed in NEPA documents. There are no known Indian trust resources on the Roseburg District. Therefore, this project is expected to have no impacts to Indian Trust resources and will not be discussed further.

5. Environmental Justice

The proposed action is consistent with Executive Order 12898 which addresses Environmental Justice in minority and low-income populations. The BLM has not identified any potential impacts to low-income or minority populations, either internally or through the public involvement process, arising from this type of activity.

6. National Energy Policy

Executive Order 13212 provides that all decisions made by the BLM will take into consideration adverse impacts on the President's National Energy Policy. This project would not have a direct or indirect adverse impact on energy development, production, supply, and/or distribution and therefore would not adversely affect the President's National Energy Policy. Therefore, the President's National Energy Policy will not be discussed further in this EA.

7. Healthy Lands Initiative

This project would be consistent with the Healthy Lands Initiative. This project would be in compliance with the Roseburg District ROD/RMP which has been determined to be consistent with the standards and guidelines for healthy lands (43 CFR 4180.1) at the land use plan scale and associated time lines. Therefore, the Healthy Lands Initiative will not be discussed further in this EA.

8. Recreation

There are no known recreational sites within the Little Wolf Quarry Expansion Project area. However, there has been evidence of recreational target shooting within the project area.

9. Visual Resources

The Little Wolf Quarry Expansion Project is located on lands classified in the Roseburg District ROD/RMP as Visual Resource Management (VRM) Classes IV, which, "... allows for major modification of the landscape" (ROD/RMP pg. 52). This project is consistent with VRM requirements and will not be discussed further in this EA.

10. Repairs Critical Elements of the Human Environment

"Critical Elements of the Human Environment" is a list of elements specified in BLM Handbook H-1790-1 that must be considered in all EA's. These are elements of the human environment subject to requirements specified in statute, regulation, or Executive Order. Consideration of "Critical Elements of the Human Environment" is given in Appendix C of this EA.

Chapter 3. Affected Environment & Consequences by Resource

This chapter discusses specific resource values that may be affected, the nature of the short-term and long-term effects, including those that are direct, indirect and cumulative, that may result from implementation of the alternatives. The discussion is organized by individual resources. It addresses the interaction between the effects of the proposed thinning and density management with the current environment, describing effects that might be expected, how they might occur, and the incremental effects that could result.

The Council on Environmental Quality (CEQ) provided guidance on June 24, 2005, as to the extent to which agencies of the Federal government are required to analyze the environmental effects of past actions when describing the cumulative environmental effect of a proposed action in accordance with Section 102 of the National Environmental Policy Act (NEPA). CEQ noted the “[e]nvironmental analysis required under NEPA is forward-looking,” and “[r]eview of past actions is only required to the extent that this review informs agency decision making regarding the proposed action.” This is because a description of the current affected environment inherently includes effects of past actions. Guidance further states that “[g]enerally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historic details of individual past actions.”

A. Forest Vegetation

1. Affected Environment

The dominant conifer species is Douglas-fir. Other conifer species includes incense-cedar, western hemlock, western red cedar, grand fir, and Pacific yew. The following hardwoods and vegetation are common when there is sufficient light available: Pacific madrone, red alder, Oregon-myrtle, big leaf maple, salal, Oregon grape, vine maple, and sword fern.

The forest operation inventory does not have any information of past management in the stand. It is classified as a 67 year old stand.

2. No Action Alternative

Under the no action alternative, the forest vegetation would remain in its existing condition and would continue to develop through natural succession. Future density management would be a possibility.

3. Proposed Action Alternative

Trees would be felled to allow for the pit expansion. There are approximately 200 trees less than 20 inches dbh and 33 trees 20 inches to 32 inches dbh that would be sold. Logs would be hauled on rock and paved surface roads

4. Cumulative Effects

While the proposed pit expansion area would move from mid-seral to non-forested, reclamation of other portions of the quarry would be concurrent with the expansion, resulting in no net increase of non-forested areas.

B. Wildlife

1. Federally Threatened & Endangered Wildlife Species

a) *Marbled Murrelet*

(1) Affected Environment

The proposed project area is located within the nesting range of the marbled murrelet and is located within Marbled Murrelet Inland Management Zone 1 (0-35 miles from the Oregon coast). There are no known occupied murrelet sites within one mile of the proposed project area. The closest known occupied site is located approximately 2.5 miles (4,340 yards) to the northeast. The proposed action would occur immediately adjacent to unsurveyed suitable marbled murrelet habitat. Intensive ground surveys for murrelets were completed in suitable habitat adjacent to the quarry site in 1998 and 1999 and no murrelets were observed during the survey effort. However, the results of those surveys expired in 2004. There is no suitable habitat or potential nesting structure within the 2.0 acres of early to mid seral forest proposed for removal during the quarry expansion.

The proposed project area is located within designated Critical Habitat Unit OR-04-*e* for the marbled murrelet. The 2.0 acres contains recruitment habitat (habitat currently unsuitable but has the potential to become suitable habitat in 50 years) for the marbled murrelet. Concerns for marbled murrelet Critical Habitat are discussed in the Proposed Action Alternative.

(2) No Action Alternative

Under the no action alternative, the forest habitat above the current quarry would remain in its existing condition. Barring a natural disturbance, such as wildfire or wind storm, the 2.0 acres of mid seral forest would continue to develop through natural succession into suitable habitat for the marbled murrelet within 50-100 years. Noise disturbance within 100 yards of nesting murrelets within suitable habitat would continue at their current levels.

There would be no removal of primary constituent elements or loss of recruitment habitat in designated Critical Habitat for the marbled murrelet.

(3) Proposed Action Alternative

The proposed action alternative would remove 2.0 acres of mid seral forest and remove these acres from habitat production, thus reducing an unknown number of future nesting opportunities for the marbled murrelet within Zone 1.

To mitigate disturbance to murrelets during the breeding season, seasonal and daily operating restrictions would be implemented from April 1st through September 15th

(detailed on pg. 11). Therefore by implementing disturbance restrictions, quarry expansion activities will “*may affect, not likely to adversely affect*” the marbled murrelet.

Approximately 2.0 acres of recruitment habitat would be removed, thus removing a primary constituent element and precluding these acres from forest habitat production within designated Critical Habitat for the marbled murrelet. Thus, the removal of 2.0 acres will “*may affect, likely to adversely affect*” marbled murrelet Critical Habitat.

b) Northern Spotted Owl

(1) Affected Environment

Known Owl Activity Centers (KOAC) have been designated to minimize impacts and protect nest sites found before 1994 (USDI, 2005b). There is one spotted owl activity center (Wolf Forks- IDNO 02870) located approximately 690 yards (0.4 miles) west of the quarry site; however, there is no designated KOAC for this site. All suitable habitat is current on surveys within the vicinity of the quarry site (PNW 2007). There is no suitable habitat within the proposed quarry expansion site. However, the 2.0 acres does contain dispersal-only habitat for the northern spotted owl.

The proposed project area is located within designated Critical Habitat Unit OR-58 for the northern spotted owl. The 2.0 acres contains spotted owl dispersal habitat aged at approximately 68 years old (birth date =1940). Concerns for northern spotted owl Critical Habitat are discussed in the Proposed Action Alternative.

(2) No Action Alternative

Under the no action alternative, the forest habitat above the current quarry would remain in its existing condition. Barring a natural disturbance, such as wildfire or wind storm, the 2.0 acres of mid seral forest would continue to develop through natural succession into suitable habitat for the northern spotted owl within 50-100 years. The habitat would continue to function as dispersal habitat for the spotted owl.

(3) Proposed Action Alternative

The proposed action would not modify or remove suitable nesting, roosting, or foraging habitat for the spotted owl. However, there would be a loss of 2.0 acres of dispersal habitat, thus reducing habitat available for foraging and resting during dispersal activities through the area. Thus, the removal of 2.0 acres of dispersal-only habitat will “*may affect, likely to adversely affect*” the northern spotted owl.

Since there is no unsurveyed suitable habitat or known activity centers within 0.25 miles of the proposed action area, no disturbance restrictions are necessary during quarry expansion activities. The appropriate seasonal restrictions would be implemented if future surveys determine an activity center was located within 0.25 miles of the proposed action area. Therefore, disturbance due to quarry expansion activities will “*may affect, not likely to adversely affect*” the northern spotted owl.

Approximately 2.0 acres of dispersal habitat would be removed, thus removing a primary constituent element and precluding these acres from forest habitat production within designated Critical Habitat for the northern spotted owl. The removal of 2.0 acres will “*may affect, likely to adversely affect*” northern spotted owl Critical Habitat.

2. Wildlife Bureau Sensitive, Assessment, & Tracking Species

There is no known Bureau Sensitive or Bureau Strategic Species (e.g. nest site) that would be impacted by the proposed action. Those Bureau Sensitive and Bureau Strategic species that are suspected to occur within the project area and may be affected by the proposed action are discussed briefly in Appendices D and E.

3. Wildlife Cumulative Effects

The proposed project would contribute up to 3.3 acres of potential aggregate available within the Upper Umpqua Fifth-Field Watershed. The loss of 2.0 acres of forested habitat would not cause a significant loss (approximately 0.02 percent of 11,900 acres) of mid-seral habitat within the watershed.

C. Fire and Fuels Management

1. Affected Environment

The project is outside the wildland urban interface as described in the Roseburg Fire Management plan and area Community Wildfire Protection Plans. Current fuels in this area pose no threat or hazard to any homes.

2. No Action Alternative

Under the no action, fuels such as fir needles and small branches would naturally accumulate and degrade over time. The fire risk would not substantially increase if no expansion occurred.

3. Proposed Action Alternative

All vegetation in the area would be removed during the expansion, removing any threat of fire from the quarry or other activities.

4. Cumulative Effects

Fuel levels and fire hazard would not be increased by this project since all fuels are being removed. As reclamation occurs, fire risk would slowly begin to increase again over time. The eventual fire risk, once the area is reclaimed, should not be greater than current fuel load.

D. Soils

1. Soil Productivity Affected Environment

The geology of the affected area is comprised of the sandstones, siltstones and mudstones of the Tye Formation. The rock at the quarry is strata of sandstone and mudstone that are weakly cemented and soft to very hard and strongly cemented. Four main topographic/soil features of the affected environment are described in Table 1.

Table 1

Feature	Acres	Description
Quarry walls	2.1	Vertical rock faces and benches with very little or no soil remaining
Quarry floors	4.3	Primarily a thin clayey, silty material over bedrock. It is very hard and puddled and lacks vegetation. Also present are small areas of boulders, stones, and piles of very gravelly/cobbly earth that supports some vegetation.
Overburden mound	1.8	Earth that is a mixture of soil, waste rock and soft waste rock pulverized into finer material that is soil-like. The material is at least 12 feet thick where it is deepest. There is little or no topsoil development. Grasses and forbs cover most of the mound.
Rosehaven, Atring and similar soils in quarry expansion area	1.0	Productive, well drained soils that have moderately deep to very deep depths (20 inches to greater than 60 inches) to soft and somewhat hard, brittle sandstones and mudstones. The topsoil is a loam about eight inches deep. Subsoils are loams and clay loams. These textures have moderate erodibility ratings under bare soil conditions. Some profiles are gravelly and very gravelly. Slopes are mostly 35 to 60 percent.
Larmine and similar soils in quarry expansion area	0.9	Well drained soils that have very shallow and shallow depths (5 to 20 inches) to hard sandstone bedrock. Topsoils and subsoils are gravelly and very gravelly loams. These textures have low to moderate erodibility ratings under bare soil conditions. Slopes are mostly 50 to 80 percent. Some exceed 100 percent. Minor inclusions of rock outcrop are present.
Total Affected Area	10.1	

Presently, an inconsequential amount of erosion is occurring in the proposed quarry expansion area where there is undisturbed forest floor and in the small western quarry floor. Light erosion that is of no consequence to soil productivity is occurring in the 0.17 mile of compacted, natural-surfaced roadbeds there and at the entrance to the small quarry. About one third of the forested quarry expansion area has soil that is susceptible to shallow debris avalanches. Near the top of the quarry expansion area, 0.2 acre of deep soil is creeping down a 60 percent slope, evidenced by S curves in the boles of some trees and leaning upslope of others. The movement is probably the result of a road cut that removed the support of the soil column above the road.

a. No Action Alternative

The main quarry floor would remain unproductive. Topsoil development of the overburden mound would proceed very slowly. Compaction in the roadbeds in the quarry expansion area would very slowly loosen and in the long-term regain some of the productivity lost. Since there was substantial soil displacement when they were constructed, there would be an irretrievable loss over pre-disturbance levels. In the absence of a stand-replacing wildfire, erosion in the quarry expansion area would remain low to very low and based on mid-seral stand studies from the Oregon Department of Forestry the potential for landslides would be low. Debris avalanches could occur during high intensity storms with long periods between events in one third of the quarry expansion area. Their likely size would be small (less than 0.1 acres).

b. Proposed Action Alternative

An estimated 8,000 to 9,000 cubic yards of soil and soft rock overburden pulverized into soil-like material (collectively called here as earth) would be saved for reclamation over the life of the project (based on an average depth of 15 inches for Larmino soils and 48 inches for Rosehaven and Atring soils). When this earth is spread evenly over 5.3 acres of surface to be reclaimed (3.0 acres of the quarry expansion area and 2.3 acres of the current quarry floors), its average depth would be approximately 11 to 13 inches. Material taken from the existing overburden and off-site road waste would be used to increase the average soil depth.

The specific reclamation design would require irregular earth spreading so that soil depths would vary from less than six inches to greater than twenty inches. This would allow approximately half of the 5.3 acres to support trees. Deeper soil depths would be concentrated in the created stream riparian area and gentle to moderate slopes draining to it. A few small, very shallow soil-stone-rock outcrop niches would be included on the gentle and moderate slopes for habitat diversity. Very shallow soils and stony/bouldery debris, in the form of scree/talus slopes, would dominate the cliff/narrow bench area.

The project design features would generally keep erosion levels low during quarry operations and reclamation phases. Any soil/earth moving operations performed during unseasonably wet weather could produce higher levels of erosion. The re-contoured slopes would be predominantly gentle to moderate (near level to 50 percent). Post-reclamation erosion would be reduced to low levels over one growing season as vegetation reclaims the re-contoured areas. The predominance of gentle to moderate slopes (near level to 50 percent) would aid in keeping post reclamation erosion low.

The long-term effect to soil productivity after all reclamation is completed would be a net decrease on 1.0 acres where the Rosehaven-Atring soils presently occur and no net increase on 0.9 acres where Larmino soils presently occur. In the remaining 3.4 acres, where reclamation would occur, soil productivity would increase. The amount of productive land inside the affected area (including the overburden mound) would increase from 3.7 acres under the no action alternative to about seven (7) acres after all reclamation is completed. Part of this productive land would be in wetlands.

2. Cumulative Effects

There would not be a net decrease in soil productivity for the project area. Consequently, there would be no negative cumulative effects at any watershed scale.

E. Hydrology

1. Water Quality, Beneficial Uses, & In-Stream Flows

a. Affected Environment

The Little Wolf Quarry Expansion project is located in the Little Wolf Creek Drainage (seventh-field HUC) within the Upper Umpqua River Fifth-field Watershed. There are no streams located within the proposed project area. One third order stream and one fifth-order stream are near the

project area (within 50 to 80 feet) with approximately 1.5 acres of the existing quarry and 1.75 acres of the proposed expansion within 200 feet of the streams. The primary beneficial uses of water near the project site are resident fish and aquatic life, and salmonid fish spawning and rearing. Although very distant from the water intake (approximately 50 stream miles), the project site is located within the city of Elkton's Drinking Water Protection Area. Little Wolf Creek is currently listed on the Oregon Department of Environmental Quality's 2006 303(d) List of Water Quality Limited Waterbodies (ODEQ, 2007) for water temperature. Currently there exists a man-made drainage channel that starts from inside the rock quarry and channels shallow groundwater and surface water drainage from the quarry into Little Wolf Creek. Additional surface drainage not captured by the channel flows overland to the road ditchline where it confluences with the man-made channel. Mitigation measures such as lining the channel with cobbles have been put in place. Additionally, placing straw bales where the ditchline drainage enters the channel is generally part of the contract when rock is being quarried during wet periods.

b. No Action Alternative

Under the No Action Alternative, stream shading would not be affected and sediment delivery to the streams would not increase at the drainage level and therefore there would be no discernable change to the drinking water in the city of Elkton's Drinking Water Protection Area. Additionally, there would be no discernable change to water quality or the Beneficial Uses of Water in Little Wolf Creek. Existing mitigating measures would need to be continued in order to reduce fine sediment load into Little Wolf Creek. At the drainage scale, the amount of sediment contributed to Little Wolf Creek from the rock quarry would continue to be within the natural range of sediment contribution for the drainage.

c. Proposed Action Alternative

With the quarry expansion, a buffer of undisturbed land would be left between the road and quarry. This strip would serve to prevent overland flow in the quarry from draining toward the road ditchline and directly into the stream. While new land would be disturbed, reclamation of other portions of the quarry would be concurrent with the expansion, resulting in no net increase of unreclaimed surface area during the lifespan of the quarry. The extent of the reclaimed surface area would be less than under the no-action alternative, after final reclamation. Therefore, there would be no increase in surface runoff in the drainage. In addition to the mitigation measures mentioned in the Affected Environment section, there would be a settling pond constructed in the quarry floor during the first phase of expansion and the quarry would be contoured to route runoff through the pond before being routed to Little Wolf Creek. These mitigation features, along with additional project design features (pgs. 10-11), would effectively reduce the amount of fine sediment from the quarry that is reaching the stream during expansion and reclamation operations to levels that would be within the natural range of sediment contribution for the drainage. Under the Proposed Action Alternative, stream shading would not be measurably impacted (no expansion would occur within Little Wolf Creek's primary shade zone) and sediment delivery to the streams would not increase at the drainage level. Therefore there would be no discernable change to the drinking water in the city of Elkton's Drinking Water Protection Area and no discernable change to water quality or the Beneficial Uses of Water in Little Wolf Creek.

2. Cumulative Effects

Reasonably foreseeable future actions within the Upper Umpqua Watershed (fifth-field HUC) include continued private and Federal forest management. The Mining Days density management is currently occurring in the Little Wolf Creek drainage near (within a half-mile) the rock quarry. Variable width no-cut stream buffers were applied to the streams within the management area and will prevent measurable hydrologic impacts from occurring. At both the drainage and fifth-field watershed scales, the scope of the proposed project is too small to substantively alter current watershed functions. Because the proposed action would not alter water quality or beneficial uses of water at the project level, it would not incrementally add to the cumulative effects beyond the project area or at any watershed scale beyond.

F. Fish Populations & Habitat

1. Affected Environment

A. Fish Populations Salmonid species found in the Upper Umpqua Fifth-Field Watershed include Oregon Coast coho salmon (*Oncorhynchus kisutch*), Oregon Coast steelhead (*Oncorhynchus mykiss ssp.*), coastal cutthroat trout (*Oncorhynchus clarki clarki*), and Oregon Coast chinook salmon (*Oncorhynchus tshawytscha*). Pacific lamprey (*Lampetra tridentata*), and Umpqua chub (*Oregonichthys kalawatseti*) are also important species present in the Upper Umpqua Watershed.

(1) Proposed Federally Threatened Species

On February 11, 2008 NOAA Fisheries announced it is listing the Oregon coast coho salmon evolutionary significant unit (ESU) as Federally Threatened under the Endangered Species Act. This includes the designation of Critical Habitat. The BLM is required to consult with NOAA Fisheries on any action that the BLM determines “may affect” the Oregon coast coho salmon.

(2) Bureau Sensitive & Strategic Species

Bureau Sensitive fish species and their habitats are managed by the BLM so as not to contribute to the need to list under the Endangered Species Act, and to recover the species (ROD/RMP, pg. 41). Bureau Sensitive fish species in the Upper Umpqua Watershed include the Oregon Coast coho salmon (discussed above), Chum salmon (*Oncorhynchus keta*), Oregon Coast steelhead (*Oncorhynchus mykiss*), and the Umpqua chub (*Oregonichthys kalawatseti*). Oregon Coast steelhead is present in the project area. The Umpqua chub has been documented in the watershed but not in the project area. Chum salmon are occasionally documented crossing over Winchester dam in small numbers. These fish are thought to be strays; there are no independent populations of Chum salmon in the Upper Umpqua Watershed.

B. Essential Fish Habitat

Essential Fish Habitat is designated for fish species of commercial importance by the Magnuson-Stevens Fishery Conservation and Management Act of 1996 (Federal Register 2002). Streams and habitat that are currently or were historically accessible to chinook and coho salmon are considered Essential Fish Habitat. This includes parts of the Upper Umpqua Watershed and adjacent to the proposed project area.

C. Aquatic Habitat

Little Wolf Creek is a fifth-order stream that flows adjacent to the project area (within 200 feet). Stream habitat adjacent to the project is in fair to good condition. At the downstream end of the project there is a large wood debris jam that creates good habitat around it. Upstream of the debris jam is a culvert that allows fish passage at all times of the year for both juvenile and adult salmonids. The stream reach upstream of the culvert is bedrock dominated and highly constrained by the 25-8-1.1 road. The stream habitat at the upper end of the project area is simplified due to high stream energy in this high gradient, constrained reach. Little Wolf Creek is fish-bearing, containing cutthroat trout, steelhead trout, and coho salmon

There are no streams within the area of expansion. There is a third-order unnamed tributary to Little Wolf Creek that flows adjacent to the west side of the project area. This tributary is likely only fish-bearing during the wet season when stream flow increases. Streamflows are too low to support fish during the summer low-flow months.

2. No Action Alternative

Fish species and populations would remain unaffected. Stream shading would not be affected and sediment delivery to streams would not increase at the drainage level (Hydrology, pgs. 19-20). Stream temperatures and sediment delivery would continue current trends, and there would be little change to the current stream habitat conditions. Occasional pulses of increased sediment and woody material would enter the aquatic system as a result of periodic storm events (e.g. large wind and/or rain events).

3. Proposed Action Alternative

The Little Wolf Quarry Expansion project would result in no net increase in unreclaimed land. Reclamation of the existing quarry would be concurrent with expansion of the new quarry. A visual barrier would be created between the new quarry and the existing road which would help control drainage from the quarry. Project Design Features (PDF) (pgs. 9-11) associated with this project would control and contain sediment input from the quarry to Little Wolf Creek. As a result of these PDF, sediment delivery to the streams would not increase at the drainage level (Hydrology, pgs. 19-20). The quarry expansion would not occur within the primary shade zone of either stream within the project area, and thus stream temperatures would not increase.

Approximately a quarter acre in the Riparian Reserve would be cleared of trees that could have potential to enter the stream in the future. The loss of these trees would not affect fish habitat within Little Wolf Creek in the future, due to their age and vicinity to the stream.

Without any discernable changes in sediment delivery, stream temperature, stream flow, or large woody debris (LWD) delivery, there would be no direct or indirect effects to fish populations or aquatic habitat as a result of this project.

4. Cumulative Effects

Future actions in the watershed include continued private and Federal forest management and instream habitat restoration projects. The Mining Days density management is currently occurring in the Little Wolf Creek drainage near the rock quarry (within a half-mile). Variable width no-harvest buffers applied to timber management on Bureau of Land Management lands would prevent harmful effects to fish habitat. Instream habitat restoration projects are planned for the Little Wolf Creek in 2008 and 2009. Over 200 logs and some boulders will be placed in fish bearing stream channels in the Little Wolf Creek Seventh-Field Watershed. These projects will improve fish habitat within the watershed by creating high quality spawning and rearing habitat.

5. Essential Fish Habitat

Essential Fish Habitat (EFH) is designated by the Magnuson-Stevens Fishery Conservation and Management Act of 1996 as habitat that is currently or was historically available to Oregon Coast coho and Chinook salmon (Federal Register 2002 Vol. 67, No. 12).

The following components were analyzed to assess the effects of the proposed project on EFH and the appropriate page(s) of this document are referenced:

- *Water quality/Water quantity* – There would be no affect to water quality and/or quantity as a result of the proposed project (Hydrology, pgs. 19-20).
- *Substrate characteristics* – There would no discernable increase in stream sediment or flow as a result of this project, (Hydrology, pgs. 19-20)
- *Large woody debris (LWD) within the channel and LWD source areas* – As previously noted, there would be a small decrease in a LWD source area, but there is very little chance that this wood would reach the stream channel and the trees are a young age (Fish Populations and Habitat, pgs. 21-23).
- *Fish passage* – There would be no effect on fish passage. There is no new road construction and no streams within the quarry expansion area.
- *Forage species (aquatic and terrestrial invertebrates)* – Prey species for fish would be unaffected as riparian vegetation would continue to provide organic material and terrestrial invertebrates on which aquatic invertebrates feed. Aquatic invertebrate populations would be unaffected by discountable and negligible sediment increases.

It is the conclusion that the proposed action alternative “*will not adversely effect*” Essential Fish Habitat for coho or Chinook salmon located the Upper Umpqua fifth-field watershed

Without any mechanisms for an adverse affect on EFH, there are no mitigation measures proposed.

G. Botany

1. Botanical Special Status Species

a. Affected Environment

The following analysis considers Special Status Plants whose known range is within the project area, are documented or suspected to occur in the project area, and whose habitat is documented or suspected to occur within the project area. The project area is within the known range of Kincaid's Lupine (*Lupinus sulphureus* ssp. *kincaidii*), a Federally Threatened plant. Field surveys were conducted in the Project Area in the summer of 2006 (as part of the Mining Days Commercial Thinning project). There were no Special Status Plants detected in the Commercial Thinning project area that intersects with the Little Wolf Quarry Expansion Project Area.

2. Noxious Weeds

a. Affected Environment

There are infestations of noxious weeds (Scotch Broom *Cytisus scoparius*, Himalayan blackberry *Rubus discolor*) scattered throughout the project area. Infestations range from low to high, and are mostly located within the quarry boundaries and adjacent road right-of-ways. The project area was treated manually and chemically in 2005 and 2007.

The project area would receive future treatment under the Roseburg District Integrated Weed Control Plan (USDI, 1995a). Treatments have been and would continue to be performed by manual removal and/or application of an approved herbicide.

b. No Action Alternative

Noxious weeds currently located in the project area are being controlled with either the application of approved herbicides, or by manual removal (USDI Roseburg District Integrated Weed Control Plan, as amended. 1995; EA #OR-100-94-11). Over time, the distribution and abundance of noxious weeds in the project area would decline due to continued and repeated treatments in accordance to the Weed Control Plan.

c. Proposed Action Alternative

There would be a short term increase in the distribution and abundance of noxious weeds expected in the project area following soil disturbance related to the Proposed Action (i.e. expansion of the quarry). New infestations on exposed mineral soils would be expected. Native species that would be planted in reclamation efforts would eventually overtop and out-compete weeds for sunlight, soil moisture, and soil nutrients. Due to the amount of noxious weeds present in the project area prior to treatment the seed bank remaining in the overburden is extensive; therefore follow up treatment is imperative.

In addition, as stated in the PDFs (pg. 9-11), construction equipment would be required to be clean and free of weed seed prior to entry onto BLM lands to help control or prevent the spread of noxious weeds in the project area. The project area would be monitored following implementation of the Proposed Action, and new weed infestations would be treated in accordance with the Roseburg District Integrated Weed Control Plan.

Chapter 4. Contacts, Consultations, and Preparers

A. Agencies, Organizations, and Persons Consulted

The Agency is required by law to consult with certain federal and state agencies (40 CFR 1502.25).

1. **Threatened and Endangered (T&E) Species Section 7 Consultation** - The Endangered Species Act of 1973 (ESA) requires consultation to ensure that any action that an Agency authorizes, funds or carries out is not likely to jeopardize the existence of any listed species or destroy or adversely modify critical habitat.

a. A Biological Analysis for the Little Wolf Quarry Expansion project is expected to be submitted to the Fish and Wildlife Service in May 2008. It has been determined the proposed action will “*may affect, likely to adversely affect*” the northern spotted owl due to the removal of 2.0 acres of dispersal-only habitat and will “*may affect, not likely to adversely affect*” the marbled murrelet due to disturbance to murrelets during the breeding season. In addition, because primary constituent elements will be removed, the proposed action “*may affect, likely to adversely affect*” Critical Habitat for each the northern spotted owl and marbled murrelet (pgs. 23-25, 14-15).

b. The Swiftwater fisheries staff has determined that this project would have no mechanism for an effect to Oregon Coast coho. The proposed action and its interrelated and interdependent actions would have no direct effects on the Oregon Coast coho and will not destroy or adversely modify designated critical habitat. In addition, project design features would ensure that no indirect effects to coho or their habitat would occur. Therefore it has been determined that the proposed action will have “*No effect*” on proposed species. There are currently, no further consultation obligations with the National Marine Fisheries Service. This project also “*will not adversely affect*” Essential Fish Habitat for coho or Chinook salmon in Little Wolf Creek or its tributaries (pgs. 22-23).

2. **Cultural Resources Section 106 Compliance** – Compliance with Section 106 of the National Historic Preservation Act under the guidance of the 1997 National Programmatic Agreement and the 1998 Oregon Protocol has been documented with a Project Tracking Form dated January 16, 2008 A “No Effect” determination was made.

B. Public Notification

1. Notification was provided (August 27, 2007) to affected **Tribal Governments** (Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz, and the Cow Creek Band of Umpqua Tribe of Indians). No comments were received.

2. Two **adjacent landowners** were notified at the annual right away meeting (April 11, 2007). No comments were received. No commenters requested to be added to the mailing list for future documents regarding this project and another expressed general support of the proposed project.

3. The **general public** was notified via the *Roseburg District Planning Update* (Fall 2007) which was sent to approximately 150 addressees. These addressees consist of members of the public that have expressed interest in Roseburg District BLM projects.

4. This EA, and its associated documents, would be provided to certain **State, County and local government** offices including: USFWS, NMFS, Oregon Department of Environmental Quality, and the Oregon Department of Fish and Wildlife. If the decision is made to implement this project, it will be sent to the aforementioned State, County, and local government offices.

5. A 30-day **public comment period** would be established for review of this EA. A Notice of Availability would be published in *The News-Review*. The public comment period will begin with publication of the notice published in *The News-Review* on September 9, 2008 and end close of business October 9, 2008. Comments must be received during this period to be considered for the subsequent decision. This EA and its associated documents will be sent to all parties who request them. If the decision is made to implement this project, a notice will be published in *The News-Review* and notification sent to all parties who request them.

C. List of Preparers

Core Team

Eric Heenan	Project Lead/Minerals
Jeff Wall	Writer/Editor
Allison C. Clough III	Management Representative
Bruce Baumann	Layout/Presale Forestry
Jeffrey McEnroe	Fisheries
Daniel Cressy	Soils
Brooke Shakespeare	Hydrology
Elizabeth Gayner	Wildlife
Trixy Moser	Silviculture
Ron Wickline	Botany
Randy Lopez	Engineering
Krisann Kosel	Fuels Management
Jeremy Bochart	Timber Cruising

Other team members as needed:

Erik Taylor	Recreation
Isaac Barner	Cultural Resources

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Acronyms

ACS	-	Aquatic Conservation Strategy
BLM	-	Bureau of Land Management
BMP	-	Best Management Practice
CWD	-	Coarse Woody Debris
cy	-	Cubic Yard
cu ft	-	Cubic Foot
DBH	-	Diameter at Breast Height
EA	-	Environmental Assessment
EIS or FSEIS	-	Environmental Impact Statement / Final Supplemental EIS
FEMAT	-	Forest Ecosystem Management Assessment Team
GFMA	-	General Forest Management Area
HUC	-	Hydrologic Unit Code
LWD	-	Large Woody Debris
NEPA	-	National Environmental Policy Act
NFP or NWFP	-	Northwest Forest Plan
PDF	-	Project Design Features
RMP	-	Resources Management Plan
ROD	-	Record of Decision
S&G	-	Standards & Guidelines (NFP)
T&E	-	Threatened or Endangered

Definitions

Coarse Woody Debris: Those portions of trees that has fallen to the ground at least 20" in diameter.

Early-Seral (Successional) Forest: Stage in forest development from disturbance to crown closure, usually 0-15 years. Grass, herbs, and brush are plentiful.

Entrenched: A deepened road bed excavated below the natural slope on both sides. This creates in effect a trench enclosed by two raised fill slopes.

Intermittent Stream: Any nonpermanent flowing feature having a definable channel and evidence of scour and deposition. Normally streams with seasonal flow.

Large Woody Debris (LWD): Large woody debris is fallen trees within the riparian areas that are at least 2 feet (0.6m) in diameter and 33 feet (10m) in length (ODFW, Methods for Stream Habitat Surveys).

Late-Seral (Successional) Forest: Stage in forest development that includes mature and old-growth forest, generally 80 years and greater (FEMAT, pg. IX-18).

Peak Flow: The highest of stream or river flow occurring in a year or from a single storm event (FEMAT, pg. IX-25).

Perennial Stream: A stream that typically has running water on a year-round basis (FEMAT, pg. IX-26).

Primary shade zone: The zone consisting of trees that shade the stream from direct sunlight between the hours of 10:00 AM and 2:00 PM.

Regeneration harvest: Harvest of timber to allow the re-establishment of a new forest stand (RMP, pg. 110).

Relative Density Index: Compares the current density of a stand with the theoretical maximum density. In general terms it means that for a given average diameter, a stand can support a maximum number of trees per acre. Conversely, for a given number of trees per acre, there is a maximum average diameter possible. Relative density indicates whether the stand is growing well, is in need of thinning, can support an understory, or is experiencing suppression mortality.

Road Construction: Work done that builds a new road or moves an old road to a new location.

Road Improvement: Work done to an existing road which improves it beyond its original design; adding new or additional culverts, turnouts, etc. (Standard Timber Sale Contract Stipulations, Section 102).

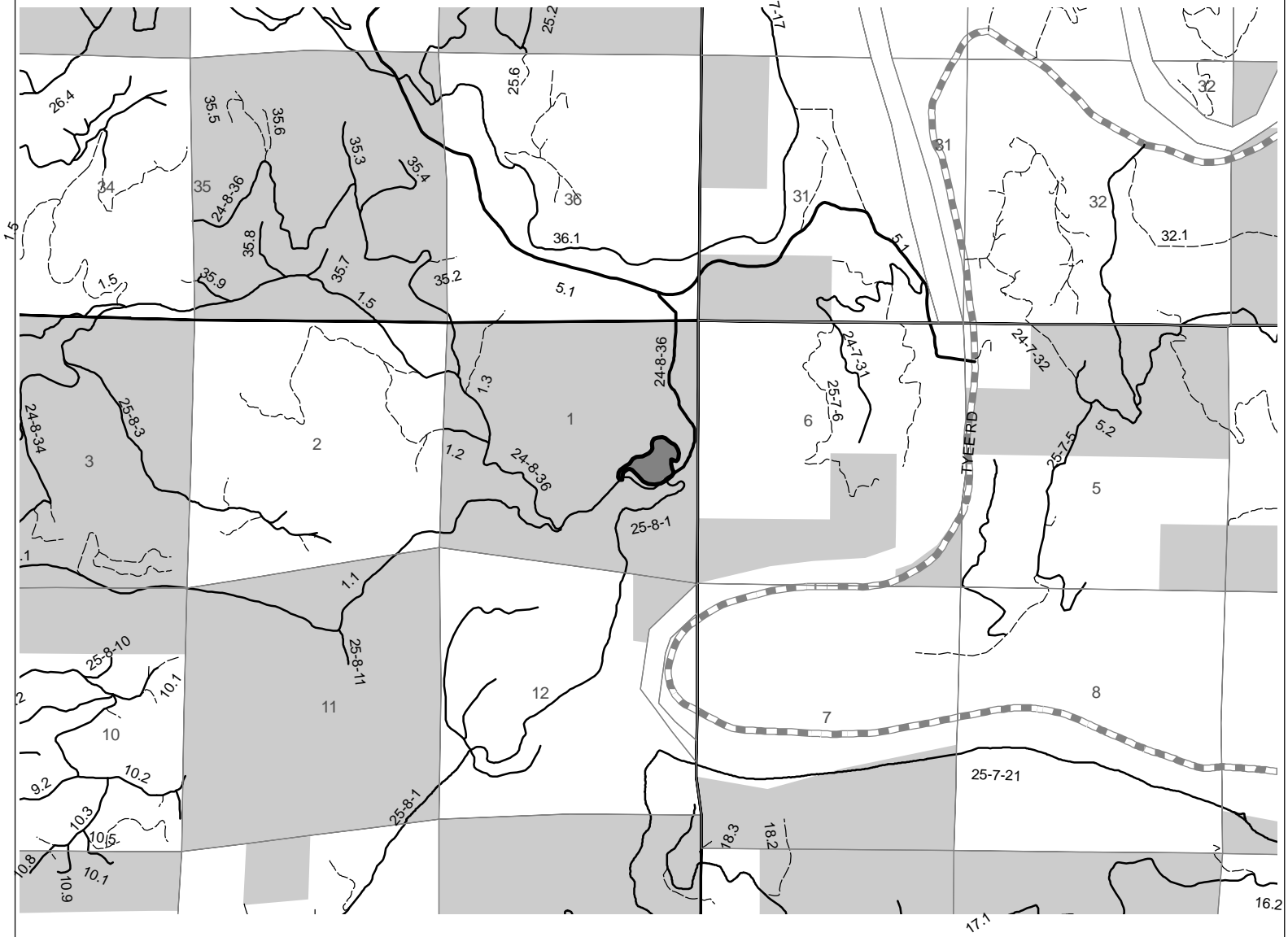
Road Renovation: Work done to an existing road which restores it to its original design; i.e. replacing culverts, grading the road, adding new rock to the existing rock road (Standard Timber Sale Contract Stipulations, Section 102).

Snag: Standing dead or partially dead trees at least 10 inches in diameter at breast height, and at least six feet tall (FEMAT, pg. IX-33).

Subsoiling: The practice that shatters soil compaction, thereby reducing the effects to soil productivity and improving water infiltration. This is accomplished by a device known as a winged subsoiler which is a pulled by or attached to a crawler tractor, or mounted to the arm of an excavator.

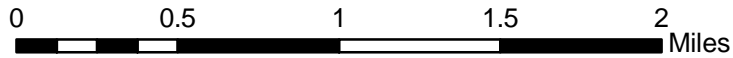
Little Wolf Vicinity Map

Township	Range	Section	Meridian
25S	8W	1	WILLAMETTE

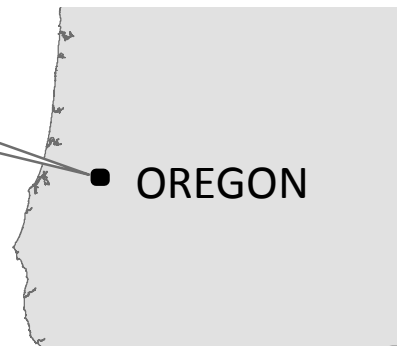


Legend

- Interstate Highway
- State Highway
- County Road
- Paved Road
- Rocked Road
- Native Material or Unknown
- Little Wolf Quarry
- Bureau of Land Management
- Other



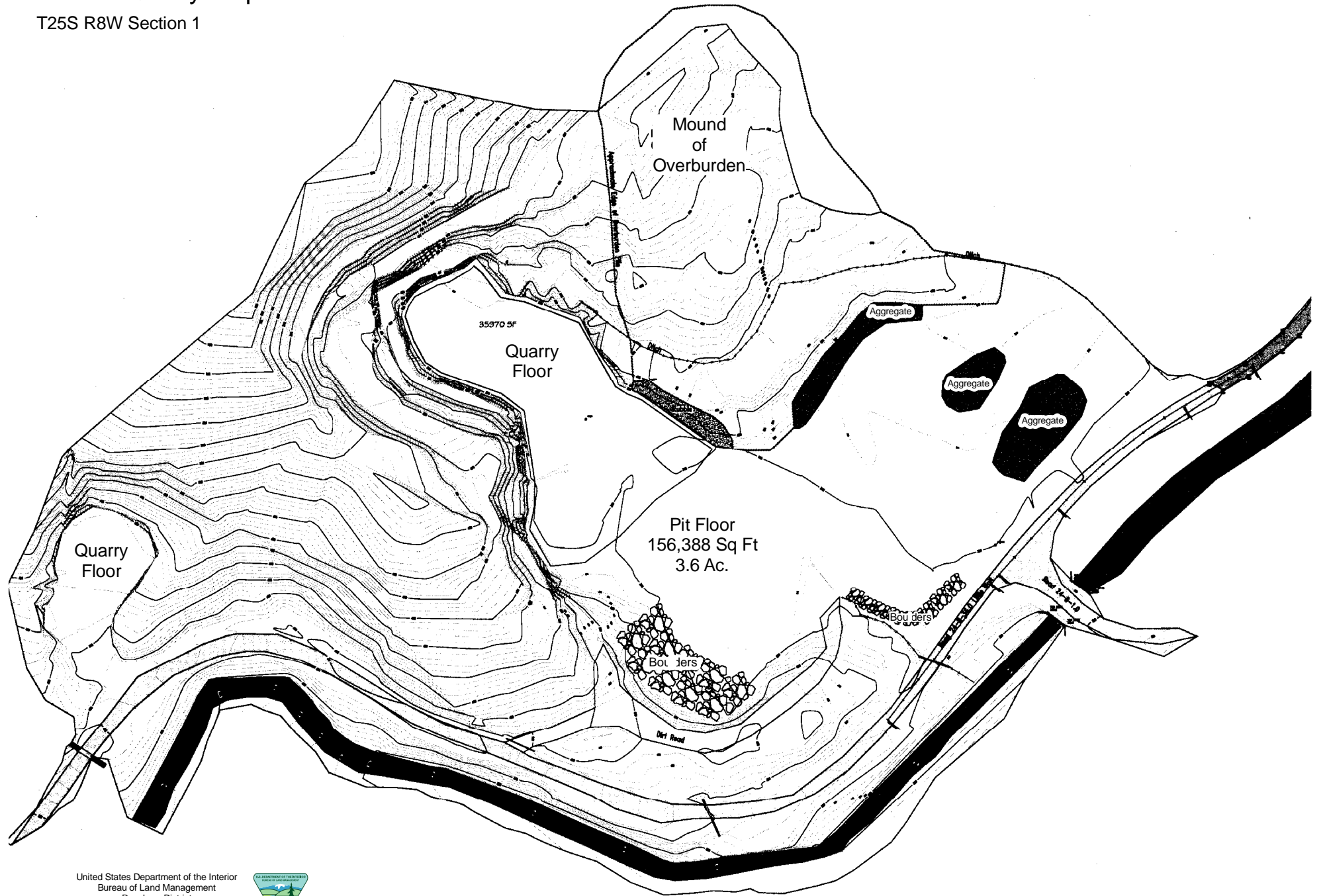
Project Area



OREGON

Little Wolf Quarry Map

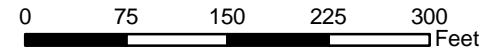
T25S R8W Section 1



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Little Wolf Quarry Map

T25S R8W Section 1



Legend

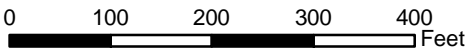
-  Future Quarry Boundary
 -  Existing Quarry Boundary
 -  Road
 -  Stream
- Contour**
-  20 ft
 -  100 ft



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









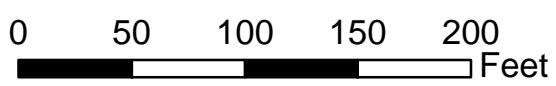
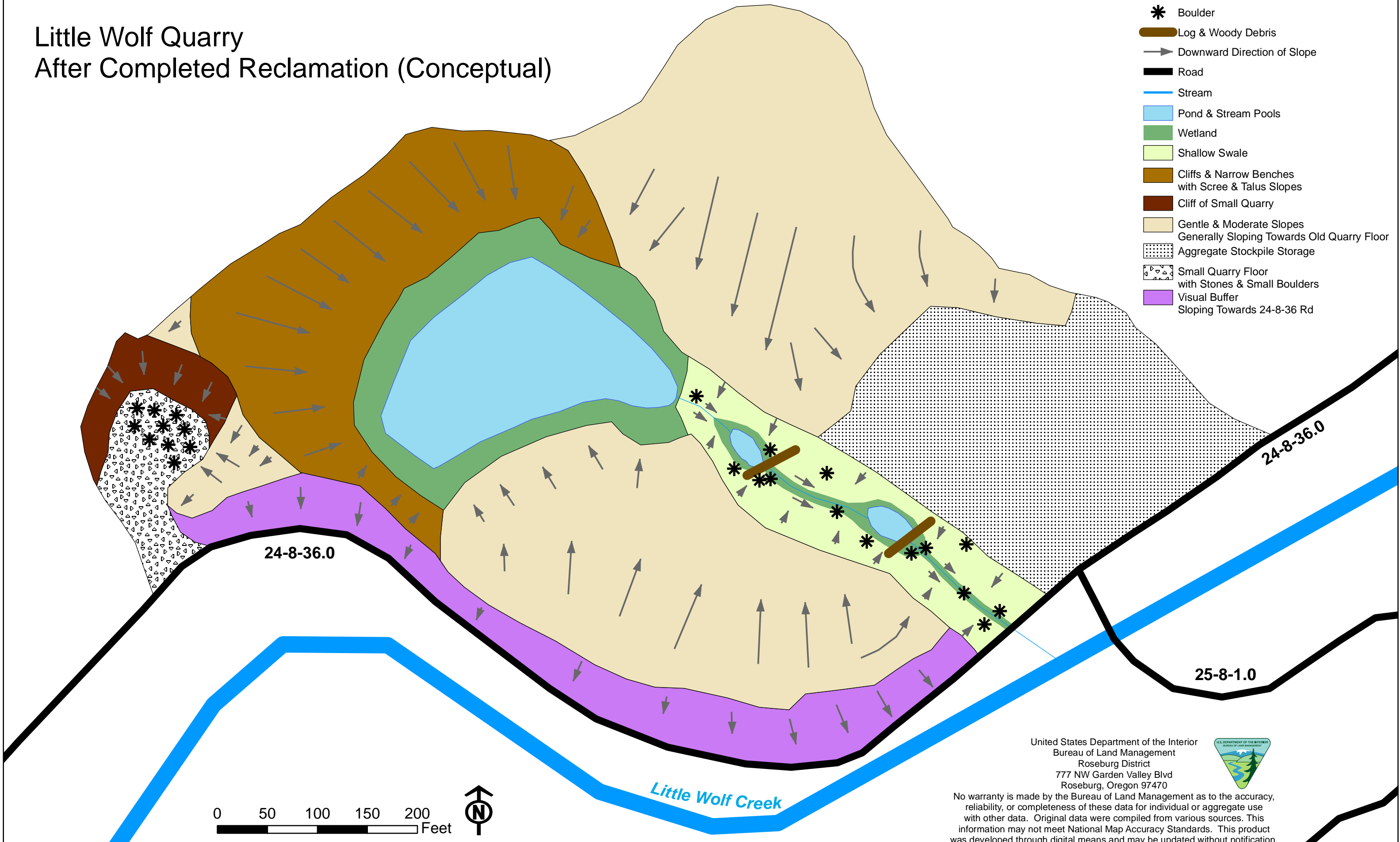
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Little Wolf Quarry After Completed Reclamation (Conceptual)

Legend

-  Boulder
-  Log & Woody Debris
-  Downward Direction of Slope
-  Road
-  Stream
-  Pond & Stream Pools
-  Wetland
-  Shallow Swale
-  Cliffs & Narrow Benches with Scree & Talus Slopes
-  Cliff of Small Quarry
-  Gentle & Moderate Slopes Generally Sloping Towards Old Quarry Floor
-  Aggregate Stockpile Storage
-  Small Quarry Floor with Stones & Small Boulders
-  Visual Buffer Sloping Towards 24-8-36 Rd



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