

Appendix G: Bureau of Land Management's Best Management Practices

Umpqua National Forest

The Layng Creek Municipal Watershed, located on the Cottage Grove Ranger District of the Umpqua National Forest, is a source of water intake for the downstream communities of Disston, Culp Creek, Dorena, and the city of Cottage Grove. Best Management Practices⁴⁸ are incorporated into the Layng Creek Municipal Watershed Management Plan. This plan can be found in the Umpqua RMP⁴⁹.

Roseburg BLM

Note: The following includes only those portions of Appendix D: Best Management Practices (Roseburg BLM Resource Management Plan) that pertain to fire management activities. Non-applicable sections have been excluded from this Fire Management Plan (FMP) appendix.

Best Management Practices (BMP's) are identified and required by the Clean Water Act as amended by the Water Quality Act of 1987. The BMP's are the primary mechanism to prevent and control to the "maximum extent practicable" non-point source pollution and achieve Oregon water quality standards.

Through the implementation of Best Management Practices, the Bureau of Land Management (BLM) fulfills the requirement that federal agencies comply with all State requirements and programs to control water pollution from non-point sources⁵⁰. The BLM, under a memorandum of agreement with the Oregon Department of Environmental Quality (DEQ), is a "Designated Management Agency charged with implementing and enforcing natural resource management programs for the protection of water quality on federal lands under its jurisdiction" through Best Management Practices.

Best Management Practices are defined as methods, measures or practices that are site specific and are designed to protect water quality and soils productivity. The BMP's include but are not limited to structural and nonstructural controls, operations and maintenance procedures. The BMP's are a compilation of existing policies, guidelines and commonly employed practices to protect water quality and soil productivity.

Best Management Practices are selected during the NEPA interdisciplinary process, on a site-specific basis, to meet overall ecosystem management goals. This document does not provide an exhaustive list of BMP's. Additional measures may be identified during watershed analyses or the NEPA process for a specific activity. The selection and implementation of Best Management Practices initiates an iterative process that includes

⁴⁸ U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. General Water Quality Best Management Practices. November 1988

⁴⁹ Land and Resource Management Plan, Umpqua National Forest, 1990, as amended by the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl, 1994. (NW Forest Plan)

⁵⁰ Clean Water Act Section 313 and Executive Order 12088

monitoring effectiveness, and modifying practices, when water or soil goals are not achieved.

BLM's Best Management Practices

Water Source Development Objectives

To supply water for road construction, dust abatement and fire protection while maintaining existing water quality and supply, consistent with the Aquatic Conservation Strategy. Practices include:

- Design and construct durable, long-term water sources.
- Avoid reduction of downstream flow that would detrimentally affect aquatic resources, fish passage or other uses.
- Direct overflow from water holding developments back into the stream.
- Locate road approaches to in-stream water source developments in a manner that minimizes potential impacts in riparian reserves. Surface these approaches with rock to reduce the effects of sediment washing into the stream.
- Avoid use of road fills for water impoundment dams unless specially designed for that purpose.
- Construct water sources during the dry season (generally May 15 to October 15).

Silviculture

Riparian Reserve Protection Objectives

To prevent damage to riparian ecosystems, disturbance to stream banks, deterioration of water quality and accumulation of slash in streams. Practices include:

- Directionally fell trees to protect Riparian Reserves when slashing within a tree length of a Riparian Reserve.

Mechanical Methods of Site Preparation Objectives

The primary objectives are to maintain soil productivity and water quality while meeting the silviculture objectives. Practices include:

- Limit the use of track mounted equipment that could cause unacceptable soil disturbance, or would compact areas of less than 30 percent slope.
- Do not compact sensitive soils.
- Till all compacted areas with a properly designed winged subsoiler. This could be waived if inspection reveals that less than two percent of the area is compacted. (Compaction of less than two percent is considered to equal less than one percent growth loss.)
- On sites that do not annually dry out enough to provide resistance to traditional tracked equipment, use low ground pressure track mounted excavators (including backhoe, grapple, loader, slasher).
- Restrict tractor operations to dry conditions with less than 25 percent soil moisture content in the upper six inches of soil.
- Avoid piling concentrations of large logs and stumps.

- Pile small material (predominantly three to eight inches in diameter).
- Burn piles when soil and duff moistures are high.

Broadcast Burning Objectives

To maintain long-term soil productivity, organic matter and duff, water quality, retain legacy stand characteristics and to meet hazard reduction objectives. Practices include:

1. Evaluate need for burning based on soils, plant communities and site preparation criteria. Burn under conditions when a light or moderate burn can be achieved (see guidelines below) on all units to protect soil productivity. The following standards should be followed.
 - a) Category 1 Soils (highly sensitive): Avoid burning.
 - b) Category 2 Soils (moderately sensitive): Reduce disturbance, fire intensity and duration by using the following methods:
 - Burn under conditions that result in low intensity fires.
 - Burn when soils and duff are moist.
 - Avoid burning sparsely vegetated areas on slopes greater than 65 percent.
 - Gross yard to break up heavy slash concentrations and reduce burn intensities.
 - Pull slash and woody debris adjacent to landings onto landings before burning.
 - c) Category 3 Soils (least sensitive): Write prescriptions to protect a large percentage of the nutrient capital and other beneficial properties in the soil and the forest floor. (i.e. low and moderate intensity burns)

2. Fire Trails

- a) Construct tractor fire trails with one pass construction during periods of dry soil moisture.
- b) Where the fire trail construction has resulted in compacted surfaces, rip and water bar the fire trail (using properly designed winged ripper).
- c) Avoid the placement of tractor-constructed fire trails on slopes in excess of 35 percent.
- d) Avoid the placement of any fire trails where water would be channeled into areas of instability or headwalls.
- e) Water bar all fire trails that may carry water to minimize surface erosion.

Wildfire Control

Objectives: To minimize water quality degradation and maintain soil productivity while achieving rapid and safe suppression of wildfire. Practices include:

- a) Limit use of heavy equipment near Riparian Reserves and on steep slopes when possible. Where fire trail entry into a Riparian Reserve is essential, angle the approach rather than have it perpendicular to the Riparian Reserve.
- b) Attempt to keep fire retardant out of streams and water sources.
- c) Utilize information from burned area surveys to determine if watershed emergency fire rehabilitation is needed.
- d) Develop a fire rehabilitation plan through an interdisciplinary process.
- e) Select treatments on the basis of on-site values, downstream values, probability of successful implementation, social and environmental considerations (including protection of native plant community), and cost as compared to benefits.
- f) Examples of emergency fire rehabilitation treatments include:
 - ✦ Seeding grasses or other vegetation as needed to provide a protective cover as quickly as possible;
 - ✦ Mulching with straw or other suitable material;
 - ✦ Fertilizing;
 - ✦ Channel stabilization structures;
 - ✦ Trash racks above road drainage structures; and
 - ✦ Water bars on fire lines.