

FOREST MANAGEMENT PRACTICES

INTRODUCTION

Forest management practices are those methods used for the protection, production and harvesting of timber. Trees along a body of water provide shade which insulates the waters from detrimental temperature change and dissolved oxygen release. A stable water temperature and dissolved oxygen level provide a healthy environment for fish and other more delicate forms of aquatic life. Poor logging practices on shorelines alter this balance as well as result in slash and debris accumulation and may increase the suspended sediment load and the turbidity of the water. Enforcement of effective forest management practices is of high importance within Snohomish County because commercial forestry constitutes the greatest single use of County shoreline areas.

POLICIES

1. Require forest land owners to conduct harvesting practices, including road construction and debris disposal, so as to minimize visual impact on views and viewpoints in shoreline areas of the County.
2. Require that logging within all shoreline areas be conducted to ensure adequate protection to fish populations, water quality and stream banks.
3. Ensure that timber harvesting on shorelines of state-wide significance does not exceed the limitations established in RCW 90.58.150.
4. Require proper road, bridge and drainage design, location, construction and maintenance practices to prevent development which would adversely affect shoreline resources.
5. Require that all forest management practices in shorelines of the County be conducted to maintain the applicable State Water Quality Standards currently in effect.
6. Require that logging and thinning operations be so conducted to prevent the accumulation of slash and other debris in waterways of shorelines of the County.
7. Ensure that adequate measures are taken in the process of timber harvesting to prevent substantial sediment, runoff and erosion on sloped areas.
8. Require erosion control measures and replanting where necessary to provide stability on areas of steep slope which have been disturbed by road construction or logging.
9. Require reforestation.
10. In addition to the exceptions provided for under the Act, allow harvesting of timber within shorelines of state-wide significance when an act of nature has caused or will cause destruction of the timber in the immediate future.
11. Require, where applicable, that a detailed reclamation plan be submitted as a part of any permit required under the Shoreline Management Act.
12. Require all forest management practices in shorelines of the County be conducted to maintain Department of Ecology administered state water quality standards for streams, lakes and rivers.

13. Encourage the development of information, techniques and regional rules and regulations regarding forest management practices.
14. Policies relating to timber harvesting apply also to those directly related practices such as road construction and debris removal.

REGULATIONS

General

1. The following regulations on forest management practices shall constitute interim regulations to be superseded by the appropriate regulations developed under the Forest Practices Act of 1974 PROVIDED that where such regulations do not address a subject covered by these regulations, these regulations shall remain in force.
2. Applications for permits shall demonstrate compliance with these regulations and shall include, where applicable, a reclamation plan for the area of operations.

Road Systems

3. Roads shall be located on stable soils and constructed in such a manner as to minimize the risk of material entering waterways:
 - a. Roads shall be fitted to the topography so that a minimum alteration of natural features will be necessary;
 - b. Avoid steep, narrow canyons; slide areas; slumps; marshes; wet meadows; or natural drainage channels. Utilize all available topographic surveys, soils and geologic data to assist in selecting locations which avoid steep and/or unstable areas;
 - c. Where possible, locate roads far enough away from waterways to leave buffer zones;
 - d. Minimize the number of waterway crossings and avoid unnecessary duplication of road systems by making use of existing roads where practical. Where roads traverse land in another ownership, but still adequately serve the operation, attempt to negotiate with the owner for use before resorting to location of new roads;
 - e. Avoid side hill cuts and fills that endanger stream channels.
4. Roads shall be designed so as to:
 - a. Balance cuts and fills or provide waste and borrow areas which minimize damage to soil and water;
 - b. Roads and waterway crossings shall be no wider than necessary to accommodate the anticipated use;
 - c. Cut and fill slopes shall be designed at the normal angle of repose or less;
 - d. Design culvert installations to prevent erosion of the fill;
 - e. Specifications for bridges, culverts, and other waterway crossing devices shall take into account flood frequency and flood debris hazards. No such structure shall be constructed which encroaches on the stream channel or which would serve to back up flood waters;

- f. Drain roads by out sloping, crowning, water-bars, and through grade changes wherever possible;
 - g. Road drainage (whether from culverts, cross drainage or ditches) shall be directed onto the forest floor, preferably on benches so that sediment can settle out before drainage water reaches any waterway;
 - h. All roads, bridges, culverts and other related development shall be designed in accordance with State Department of Fisheries and Game regulations and requirements.
5. Roads shall be constructed in such a manner as to prevent the entry of construction or waste material to waterways:
- a. Excess material shall be deposited in stable locations outside the hydraulic floodway;
 - b. Drainage ways shall be cleared of all debris generated during road construction and/or maintenance which potentially interferes with drainage or water quality;
 - c. Where roadside material is potentially unstable or erodible, it shall be stabilized by seeding, compacting, riprapping, benching, or other suitable means;
 - d. In the construction of road fills, properly compact the material to reduce the entry of water and to minimize the settling of fill material;
 - e. Waterway crossings either temporary or permanent shall be constructed to result in minimum disturbance to banks and existing channels. Remove temporary crossings and abutment fills promptly after use, where applicable. Abandoned road ends shall be water barred;
 - f. Activity in waterways shall only be permitted in compliance with state hydraulics permits (normally restricted to summer seasons);
 - g. Drainage structures shall be installed as soon as feasible during the pioneer stage of road construction. Uncompleted road grades subject to washing before grading shall be adequately cross-drained;
 - h. Road and bridge construction shall be carried out in that time of year which will prevent serious soil erosion or, when this is not practical, measures to prevent erosion shall be taken;
 - i. Quarry drainage shall provide for adequate protection against sediment entering into the waterways;
 - j. Road rock and gravel shall be obtained from dry quarries wherever possible. Use of gravels from waterways shall be discouraged.
6. Road maintenance shall be sufficient to insure the proper function system through the lifetime of the road:
- a. Culvert inlets, outlets, ditches and trash racks shall be cleaned before and during the runoff periods to diminish danger of clogging and the possibility of washouts and overflows;

- b. When it is the intention of the landowner to discontinue active use of the road, the road shall be left in such a state as to provide for adequate drainage and soil stability without continuous active maintenance;
- c. Winterize roads by water barring, surface crowning, or out sloping prior to the runoff periods;
- d. Mechanical equipment shall be preferred over herbicides for roadside brush control; if herbicides are used, they shall be applied so that chemicals do not enter streams.

Timber Harvesting

- 7. The size, shape and location of logging areas shall be based on an analysis of such things as topography, timber type, forest regeneration, logging economics, fire control, wildlife production, soil protection, property lines; aesthetic appeal and water quality maintenance
 - a. Landings within designated wetlands shall be avoided whenever possible. When necessary within these wetlands, landings shall be located on firm ground above the high water level of any waterway; unstable areas or excessive excavation shall be avoided;
 - b. Land areas permanently unsuited for the production of wood fiber, such as lakes, bogs, springs or swamps shall be maintained in their natural state;
 - c. The operator must provide for soil stabilization and water quality maintenance by vegetation along waterways by one or more of the following:
 - i. Leave non-merchantable or low-value trees, shrubs, grasses, rocks, wherever they afford shade over a waterway or maintain the integrity of the soil near such a waterway;

- ii. Where insufficient non-merchantable tree species exist to maintain an effective buffer zone, a fringe of undisturbed merchantable trees may be required. This requirement may be waived if an acceptable harvest plan, such as staggered cuttings, or other means is developed which will not result in a significant decrease of water quality or remove a substantial amount of cover necessary for wildlife;
 - iii. Plan the removal of timber from the buffer strip in such a way that shading and filtering effects are not destroyed;
 - iv. Where it is impractical to leave buffer strips of timber to shade a waterway, a plan to reestablish cover must be submitted and approved.
8. Falling and bucking of logs shall be conducted so as to prevent soil disturbance and other water quality hazards along skid trails on landings, and over the watershed in general:
 - a. Trees shall be felled, bucked and limbed so that the tree or any part thereof, will not fall into or across any waterway;
 - b. If debris should enter the waterway(s) as a result of this project, such debris shall be removed concurrently with the yarding operation and before removal of equipment from the project site. Removal of debris shall be accomplished in such a manner that natural stream bed conditions and stream bank vegetation are disturbed as little as possible.
9. Yarding of logs shall be conducted so as to prevent soil disturbances and other water pollution hazards along skid trails, on landings, and over the watershed in general;
 - a. Tractor skid trails shall be located carefully and drained adequately so that muddy and turbid waters will be kept out of waterways. Keep all tractor skid trails out of waterways and off banks. Use temporary log or metal culverts wherever such trails must cross a waterway, and keep the number of such crossings to as few as possible;
 - b. Avoid tractor yarding on wet ground, unstable slopes and on all slopes steeper than thirty percent (30%); there shall be no yarding through waterways;
 - c. There shall be no cable yarding through waterways. When yarding across waterways is unavoidable, do it by lifting the logs over such waterways rather than dragging them through the waterways.
10. Cleanup measures at the logging site shall be conducted as an integral part of the logging operation;
 - a. Waste resulting from logging operations, such as crankcase oil, filters, grease and oil containers, machine parts, old wire rope and used tractor tracks, shall be disposed of off-site immediately following termination of harvesting operations. At no time shall such materials be placed in waterways.
 - b. Drainage on landings, tractor skid trails and fire trails, shall be reestablished after use to minimize soil instability and erosion. Cross drains, dips, water bars or other water diversions shall be utilized where appropriate.

- c. Potentially unstable or erodible exposed soils shall be stabilized by seeding with grass species or other suitable means. Consideration shall be given to game forage plants suitable to the area.
- d. All potentially waterborne woody logging debris four inches (4") or more in diameter and eight feet (8') or more in length resulting from this project shall be relocated outside the hydraulic floodway.

Slash Disposal

11. In those areas where slash treatment is necessary for protection or regeneration, methods including, but not limited to the following, shall be used:
 - a. Scattering of slash accumulations;
 - b. Piling or windrowing of slash;
 - c. Mechanized chopping or compaction of slashing;
 - d. Controlled burning.
12. Unstable slash accumulations shall be treated to prevent their entry into waterways.
13. Streamside buffer strips shall be protected from fire damage where slash is disposed of by burning.

Reforestation

14. All clear-cut areas shall be planted or seeded within eighteen months of logging to produce at least 300 well distributed seedlings per acre.
15. If necessary and practical, additional planting or seeding shall be performed annually until at least 300 well distributed seedlings per acre have been established.
16. Reforestation shall be of a commercial tree species genetically suited to the site.

Natural Environment

1. Harvesting of timber shall be permitted in the Natural Environment only where it is necessary to:
 - a. Control a fire or prevent an epidemic of insect or disease infestations throughout the designated areas and to adjoining areas when no other means of control will work;
 - b. Clean up and restore an area devastated by disaster, such as epidemic wind throw, fire, insect attack or disease.
2. No road construction shall be permitted, except that which is absolutely necessary to cope with emergency situations described in 1.a. and 1. b. above.
3. Reforestation or restoration of devastated areas shall be accomplished as soon after the salvage or clean up as is possible.

Conservancy Environment

1. Forest Management Practices shall be permitted in the Conservancy Environment subject to the General Regulations.

Rural Environment

1. Forest Management Practices shall be permitted in the Rural Environment subject to the General Regulations.

Suburban Environment

1. Forest Management Practices are permitted in the Suburban Environment only upon the issuance of a conditional use permit.

Urban Environment

1. Forest Management Practices are permitted in the Urban Environment only upon the issuance of a conditional use permit.