

Appendix C

Best Management Practices

The Clean Water Act of 1972 (Public Law 92-500), as amended in 1977 (Public Law 95-217) and 1987 (Public Law 100-4), has the objective to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The Act provides a means to protect and improve the quality of the water resources and maintain their beneficial uses. Sections 208 and 319 of The Clean Water Act recognize the need for control strategies for nonpoint source pollution.

To provide environmental protection and improvement emphasis for water and soil resources and water-related beneficial uses, the National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), and the USDA Nonpoint Source Water Quality Policy (December 5, 1986) were developed. Best Management Practices (BMP's) were recognized as the primary control mechanisms for nonpoint sources of pollution on National Forest System lands.

In order to comply with State water quality standards, the Forest Service applies BMP's that are "consistent" with the Alaska Forest Resources and Practices Act (1990) and other applicable State water quality regulations. In recognition of the importance of BMP's, they are identified as one portion of the "Forest Service Alaska Region Water Quality Management Plan," as described in the USDA Forest Service/Alaska Department of Environmental Conservation Memorandum Of Agreement (1992).

Best Management Practices may be defined as: land management methods, measures or practices intended to minimize or reduce water pollution including, but not limited to, structural and nonstructural controls, operation and maintenance procedures, other requirements, and scheduling and distribution of activities. The site-specific application of the BMP's is designed with the consideration of geology, land type, hydrology, soil type, erosion hazard, climate, cumulative effects, and other factors in order to fully protect and maintain soil, water, and water-related beneficial uses, and to prevent or reduce nonpoint source pollution.

Direction for the use of BMP's on National Forest System lands in Alaska is included in Chapter 10 of FSH 2509.22, The Soil and Water Conservation Handbook. The handbook describes the application, monitoring, evaluation, and refinement of these BMP's. The following list is a summary of the BMP's, and includes the practice number (from the Soil and Water Conservation Handbook), name, and objective of the Best Management Practices used in the Alaska Region. This summary represents the most recent update to the BMP's (October 31, 1996); the BMP's will likely continue to be updated throughout the planning period.

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No.	PRACTICE	OBJECTIVE
12.1	Cumulative Watershed Effects Analysis	To determine the Cumulative Watershed Effects (CWE) on the beneficial uses of water caused by multiple land management activities, distributed over both time and space.
12.2	Rehabilitation After Mass Wasting	To identify actions to be taken where mass wasting threatens water quality.
12.3	Watershed Rehabilitation Planning, and Implementation	To identify degraded watershed conditions, to plan and prioritize watershed rehabilitation projects, and to minimize soil erosion and improve water quality.
12.4	Floodplain Identification, Evaluation, and Protection	To identify floodplain values and, where practicable, avoid the adverse impacts to soil and water resources associated with the occupancy and modification of floodplains.
12.5	Wetland Identification, Evaluation, and Protection	To identify wetland functions and value, and provide appropriate protection measures designed to avoid adverse hydrologic impacts.
12.6	Riparian Area Designation and Protection	To identify riparian areas and their associated management activities.
12.6a	Buffer Design and Layout	To design streamside buffers to meet objectives defined during the implementation of BMP 12.6.
12.8	Oil Pollution Prevention and Servicing/Refueling Operations	To prevent contamination of surface and subsurface soil and water resources from spills of petroleum products.
12.9	Oil and Hazardous Substances Pollution Contingency Planning	To prevent the contamination of waters from accidental spills of oil and hazardous substances (including pesticides) at sites where a Spill Prevention Control and Countermeasure (SPCC) plan or hazardous substances contingency plan is required.
12.10	Control of Activities Under Special Use Permit	To ensure water resource protection measures are incorporated within special-use permits.
12.13	Administrative Site Planning and Management	To consider water pollution and other adverse environmental and health impacts in the location, design, and management of administrative sites.
12.14	Planning, Design, and Management of Utility Corridors	To ensure water resource protection measures are incorporated into the construction and maintenance of utility corridors.
12.15	Management of Sanitary Facilities and Sanitary Guidelines for Temporary Camps and Primitive Developments	To comply with regulations for the disposal of sewage at administrative sites, facilities under special-use permit, temporary camps, and primitive developments of all types.
12.16	Control of Solid Waste Disposal	To protect surface and subsurface soil and water resources from harmful nutrients, bacteria, and chemicals through proper disposal of solid waste and use of alternative construction materials.
12.17	Revegetation of Disturbed Areas	To provide ground cover to minimize soil erosion.
13.1	Timber Sale Planning	To incorporate soil and water resource considerations into Timber Sale Planning.
13.2	Timber Harvest Unit Design	To incorporate site-specific soil and water resource considerations into integrated timber harvest unit design criteria.
13.3	Designating Water Quality Protection Needs on Sale Area/Unit Release Maps	To delineate the location of protection areas and to ensure their recognition, proper consideration, and protection on the ground.

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No.	PRACTICE	OBJECTIVE
13.4	Timber Sale Operating Schedule	To ensure that erosion control and timing responsibilities are incorporated into the Operating Schedule.
13.5	Identification and Avoidance of Unstable Areas	To avoid triggering mass movements and resultant erosion and sedimentation by excluding unstable areas from timber harvest.
13.9	Determining Guidelines for Yarding Operations	To select appropriate yarding systems and guidelines for protecting soil and water resources.
13.10	Log Landing Location and Design	To design and construct landings to minimize soil erosion and water quality degradation.
13.11	Scheduling and Enforcement of Erosion Control Measures During Timber Sale Operations	To ensure that the Purchaser's operations are conducted according to the Timber Sale Contract with respect to soil and water resource protection.
13.12	Site Preparation	To maintain sufficient ground cover to minimize soil erosion.
13.14	Completion of Erosion Control for Unit Acceptance and Sale Closure	To assure that the required erosion control work is completed before unit acceptance.
13.16	Stream Channel Protection (Implementation and Enforcement)	To provide site-specific stream protection prescriptions consistent with objectives identified under BMP's 12.6 and 12.6a. Objectives may include the following: (1) maintain the natural flow regime; (2) provide for unobstructed passage of stormflows; (3) maintain integrity of the riparian buffer to filter sediment and other pollutants; (4) restore the natural course of any stream that has been diverted as soon as practicable; (5) maintain natural channel integrity to protect aquatic habitat and other beneficial use, and (6) prevent adverse changes to the natural stream temperature regime.
13.17	Nonrecurring "C" Provisions For Soil and Water Quality Protection	To insert nonrecurring (Special) "C" provisions into the Timber Sale Contract to protect soil and water resources, where standard "B" or "C" provisions do not apply or are inadequate to protect watershed values.
13.18	Modification of the Timber Sale Contract	To seek an Environmental Modification of the Timber Sale Contract if new circumstances or conditions indicate that the timber sale will cause irreparable damage to soil, water, or watershed values.
14.1	Transportation Planning	To assure soil and water resources are considered in transportation planning activities.
14.2	Location of Transportation Facilities	To ensure soil and water resources protection measures are considered when locating roads and trails.
14.3	Design of Transportation Facilities	To incorporate site-specific soil and water resource protection measures into the design of roads and trails.
14.4	Location, Permitting, and Design of Log Transfer Facilities (LTFs)	Locate and design log transfer facilities (LTFs) to minimize impacts on soil and water quality.
14.5	Road and Trail Erosion Control Plan	Develop Erosion Control plans for road or trail projects to minimize or mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction and maintenance activities. Ensure compliance through effective contract administration and timely implementation of erosion control measures.
14.6	Timing Restrictions for Construction Activities	Minimize erosion potential by restricting the operating schedule and conducting operations during lower risk periods.
14.7	Measures to Minimize Mass Failures	To minimize the chance and extent of road-related mass failures, including landslides and embankment slumps.

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14.8	Measures to Minimize Surface Erosion	To minimize the erosion from cutslopes, fillslopes, and the road surface and consequently reduce risk of sediment production.
14.9	Drainage Control to Minimize Erosion and Sedimentation	To minimize the erosive effects of concentrated water flows from transportation facilities and the resulting degradation of water quality through proper design, and construction of drainage control systems.
14.10	Pioneer Road Construction	To minimize sediment production associated with the pioneer road construction.
14.11	Timely Erosion Control Measures for Incomplete Projects	To minimize erosion of and sedimentation from disturbed ground on incomplete projects by completing erosion control work prior to seasonal or extended shutdowns.
14.12	Control of Excavation and Sidecast Material	To reduce sedimentation from unconsolidated excavated and sidecast material caused by road construction, reconstruction, or maintenance activities.
14.14	Control of In-Channel Operations	To minimize stream channel disturbances and related sediment production.
14.15	Diversion of Flows Around Construction Sites	To identify and implement diversion and de-watering requirements at construction sites to protect water quality and downstream uses.
14.17	Bridge and Culvert Design and Installation	To minimize the impact on water quality, streamcourses, and fisheries resources from the installation of bridges, culverts, and other stream crossings.
14.18	Development and Rehabilitation of Gravel Sources and Quarries	To minimize sediment from borrow pits, gravel sources, and quarries, and to limit channel disturbance from gravel sources permitted for development within floodplains.
14.19	Disposal of Construction Slash and Stumps	To ensure that debris generated during construction is prevented from obstructing channels or encroaching on stream, and sensitive karst features.
14.20	Road Maintenance	To maintain all roads in a manner which provides for soil and water resource protection by minimizing rutting, road prism failures, sidecasting, and blockage of drainage facilities.
14.22	Access and Travel Management	To control access and manage road use to reduce the risk of erosion and sedimentation from road surface disturbance especially during the higher risk periods associated with high runoff and spring thaw conditions.
14.23	Snow Removal Operations	To minimize impacts of snow removal operations on road surfaces and embankments and to reduce the probability of sediment production.
14.24	Road Obliteration	To reduce sediment generated from temporary or short-term roads and return the land to production by obliterating roads at the completion of their intended use.
14.25	Surface Erosion Control at Facilities	To minimize the amount of erosion and sedimentation at non-silvicultural facilities through implementation of a pollution prevention plan.
14.26	Daily LTF Cleanup	Assure cleanup of bark, debris, or other solid materials daily when accumulations are present. Dispose of the materials in an acceptable manner, to prevent water quality degradation.
14.27	Log Storage/Sort Yard Erosion Control	To avoid generation of fine particles, and control the overland flow of particles carrying hazardous materials into waterways.
15.1	Pesticide-Use Planning	To incorporate water quality and hydrologic considerations into the pesticide-use planning process.

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15.2	Follow Pesticide Label and EPA Registration Directions	To prevent water contamination and risk to humans from pesticide application, cleaning of equipment, and disposal of pesticide containers.
15.4	Pesticide Spill Contingency Planning	To provide a response strategy for mitigating contamination of water from accidental pesticide spills.
15.5	Protection of Water Quality, Wetlands, and Riparian Areas During Pesticide Application	To minimize the risk of pesticide contamination of surface or sub-surface waters, by identifying and protecting riparian areas, wetlands, and non-target areas. To determine and document that pesticides have been applied safely.
16.1	Recreation Facilities Planning and Location	To protect soil and water resources through appropriate planning, design and location of recreational facilities.
16.4	Trail Construction and Maintenance	To minimize soil erosion and water quality problems originating from trails and their drainage structures.
16.5	Management of Off-Highway Vehicle Use	To control Off-Road Vehicle (OHV) use which is causing soil erosion and adverse effects on water quality and to identify corrective measures.
17.1	Mining Site Conditions, Planning, and Design	To incorporate soil and water resource considerations into the Plan of Operations for exploration and extraction of locatable and salable minerals.
17.2	Placer Mining (NPDES) Permits	To incorporate soil and water resource considerations into NPDES Permits for placer mining plans of operation for placer mining.
17.3	Hard Rock Mining	To incorporate soil and water resource considerations into the planning process for mining plans of operation for lode mining operations.
17.4	Permits and Administration of Geophysical Operations	To protect the quality of surface and ground water from degradation resulting from geophysical activities on National Forest System lands.
17.5	Site Closure and Rehabilitation	To incorporate soil and water resource considerations into the planning process for mining Plan of Operation.
17.6	Abandoned Mine Land Reclamation	To reduce erosion and water quality degradation by sediment and toxic substances from abandoned mined lands and mining facilities through reclamation of these lands.
18.1	Fish and Wildlife Habitat Improvement Planning	To incorporate soil and water resource considerations into planning for fish and wildlife improvement projects.
18.2	Development of Ground water-fed Spawning and Rearing Habitat from Gravel Extraction and Other Sites	To minimize sediment production from gravel extraction and/or ground reshaping during and following construction of groundwater-fed spawning and rearing streams and ponds.
18.3	In-Channel Excavation or Disturbance During Fish and Wildlife Habitat Improvement Projects	To minimize stream channel disturbances and related sediment production from fish and wildlife habitat improvement projects through identification of, and compliance with project specifications.
18.4	Ground Fertilization for Wildlife Habitat Improvement	To minimize impacts to water quality in stream systems and lakes within and adjacent to areas being fertilized.
18.5	Lake Fertilization for Fish Habitat Improvement	To limit eutrophication in Forest lakes.
19.1	Fire and Fuel Management Activities and Prescriptions	To reduce flooding and erosion by controlling the frequency, intensity, and destructiveness of wildfire.
19.2	Protection of Water Quality Through Prescribed Burning Prescriptions	To maintain soil productivity, minimize erosion, and the introduction of ash, sediment, nutrients, and debris into surface waters, through the formulation of the burning prescription.

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19.3	Minimizing Watershed Impacts from Fire Suppression Efforts	To minimize watershed impacts caused by fire-related suppression activities.
19.4	Stabilization of Fire Suppression Related Watershed Damage	To stabilize all areas that have had their erosion potential significantly increased, or their drainage pattern altered by suppression related activities.
19.5	Emergency Watershed Rehabilitation	To minimize the loss of soil and, the deterioration of water quality, both on and off site.