

Appendix C. Best Management Practices

Best Management Practices¹ (BMPs) were developed to comply with Section 208 of the Clean Water Act. BMPs have been certified by the State Water Quality Resources Control Board and approved by the Environmental Protection Agency (EPA) as the most effective way of protecting water quality from impacts stemming from non-point sources of pollution. These practices have been applied to forest activities and have been found to be effective in protecting water quality within the Six Rivers National Forest.

Specifically, effective application of the R-5 USFS BMPs has been found to maintain water quality that is in conformance with the Water Quality Objectives in the North Coast Regional Water Quality Control Board's (NCRWQCB) Basin Plan (www.swrcb.ca.gov/agendas/2005/march/0302-06.doc).

Region 5 Forest Service BMPs have been monitored and modified since their original implementation in 1979 to make them more effective. Numerous on-site evaluations by the NCRWQCB have found the practices to be effective in maintaining water quality and protecting beneficial uses. The Forest monitors the implementation and effectiveness of BMPs on randomly selected projects each year. BMP effectiveness requirements were met on 90-98% of the sites sampled in 2000-2005. The success rate for effectiveness has been in the high 80s and 90s each year since 1993. Results of this monitoring can be found on the Six Rivers National Forest Web page (USDA-FS 2001-2007)

The following list of BMPs will be implemented in the Project. A description of the objective of each BMP is included, as well as how each practice will be specifically implemented within the Project. For additional information on the BMPs and their objectives, see *Water Quality Management for Forest System Lands in California*¹.

BMP 1.1 – Timber Sale Planning Process: This BMP requires the Interdisciplinary Team (IDT) to incorporate water quality and hydrologic considerations into the timber sale planning process.

- For determining Riparian Reserve (RR) buffer widths, one site potential tree height was designated as 160 for the Project.
- Stream shading will not be reduced below 60% to maintain water temperature.
- Tractor skidding equipment is generally limited to slopes < 35%.
- Existing skid trails will be reused whenever possible.
- Existing landings will be reused whenever possible.
- Tractor skidding will occur on designated skid trails. Tractors may leave skid trails to access isolated logs if ground conditions permit. Where slopes are greater than 35%, the TSA and/or project earth scientist will determine whether end lining or use of skidding equipment is preferable in order to maintain soil and water quality standards.

¹ USDA Forest Service. 2000. *Water quality Management for Forest System Lands in California*. Best Management Practices. September 2000.

- The temporary roads will be outsloped, covered with slash if needed and blocked after the harvest season (prior to the first winter after use). The temporary roads will be decommissioned (hydrologically restored) at project completion.
- Water drafting sites are existing sites and rocking of approaches will be used as necessary; all boards and plastic will be removed after use.
- Watershed personnel reviewed all proposed landings and new roads in the field to determine if unstable areas or other watershed issues were present and documented findings in project reports.
- Unstable areas will be reviewed by an earth scientist prior to actual landing construction and mitigated or avoided.
- Swing Boom Yarding (SBY) will be required within the timber sale contract to help alleviate the need to enlarge existing landings or construct additional landings.

BMP 1.2 – Timber Harvest Unit Design: The objective is to ensure that timber harvest unit design will secure favorable conditions of water quality and quantity while maintaining desirable stream channel characteristics and watershed conditions. The design should consider the size and distribution of natural structures (snag and down logs) as a means of preventing erosion and sedimentation.

- The IDT reviewed all units to select the appropriate vegetation and fuel treatment methods for the specific conditions within each unit.
- Tractor yarding equipment will be generally limited to slopes < 35%. This is incorporated into the unit layout.
- Equipment will be kept approximately 30 feet from the break in slope to the wetted channel or inner gorge of intermittent streams channels.

BMP 1.3 – Use of Erosion Hazard Rating for Unit Design: The objective is to identify high or very high erosion hazard areas in order to adjust treatment measures to prevent downstream water quality impacts.

- Based on field review and site data (% slope distribution, soil texture), the project Soils specialist determined the surface erosion hazard rating for each treatment unit. (Snively, 2008).
- Vegetation and fuel management activities within the project area were chosen based on the soil's maximum erosion hazard rating. Selected management activities were designed to achieve predominately post-project low erosion hazard ratings.

BMP 1.4 – Use of Sale Area Maps (SAM) and/or Project Maps for Designating Water Quality Protection Needs: The objective is to ensure recognition and protection of areas related to water quality protection by delineating them on a Sale Area Map.

- All protected stream courses will be illustrated on the Sale Area Map.
- Helicopter landings will be designated on the Sale Area Map.

- Water drafting will be from existing drafting sites and will be identified on the Sale Area Map.
- Units that use tractor yarding will be designated on the Sale Area Map.

BMP 1.5 – Limiting the Operating Period of Timber Sale Activities: The objective is to ensure that the purchasers conduct their operations, including erosion control work, road maintenance, and so forth, in a timely manner, within the time specified in the Timber Sale Contract.

- The Project is proposed to take place during the normal operating season (NOS) that is defined as April 15 to October 15 and in dry periods outside the NOS with Line Officer approval. Activities will be restricted during periods of wet weather during the NOS.
- When stormy weather is predicted, the TSA will be on site to insure that winterization or erosion control procedures are implemented in a timely fashion and to initiate shutdown or resume operations. Operations will not resume until suitable weather, soil, and forecast conditions exist.
- Forecast periods will be of a suitable length to allow completion or winterization of the task undertaken before precipitation events occur.
- The Forest Wet Weather Operations (WVO) Guidelines will be used to guide operations, especially haul, during periods of wet weather. The TSA will examine field conditions to determine when the soil and/or road have dried out enough to enable operations to resume without risk of watershed impacts. The project earth scientist may be called on to make recommendations to the TSA who will provide direction to the Contractor as to when operations may resume to insure that BMPs will be met and adverse impacts will be avoided.

BMP 1.6 – Protection of Unstable Lands: The objective is to provide special treatment of unstable areas to avoid triggering mass slope failure with resultant erosion and sedimentation.

- Project watershed personnel conducted field reviews of all proposed harvest units, identified unstable areas, reviewed the marking prescription, and documented findings in project reports.
- Unstable lands will be identified on the Unit Information Cards, and equipment will be excluded from them.
- Project watershed personnel will be available for consultation during project implementation when activities occur in or adjacent to unstable areas.

BMP 1.8 – Streamside Management Zone (SMZ) Designation: The objective is to designate a zone along riparian areas, streams and wetlands that will minimize potential for adverse effects from adjacent management activities. Management activities within these zones are designed to improve riparian values.

- Riparian Reserves within the project area have been designated and are 160 feet from the feature (the IDT identified one site- potential tree height as 160 ft. for non-fish bearing riparian reserves and 320 feet (2 site potential tree heights) for fish bearing streams.
- Existing landings within 30 feet of the slope break to a stream channel or inner gorge will not be used.
- Sites for water drafting for dust abatement will be designated by the Forest Service and agreed to by the purchaser. Water drafting will meet the NOAA 2001 design standards when drafting from anadromous fish bearing stream reaches.
- There will be no yarding of trees or logs, through, in or across stream channels.
- Heavy equipment will not operate within riparian reserves.

BMP 1.9 – Determining Tractor Logging Ground: The objective is to minimize erosion and sedimentation resulting from ground disturbance by tractor logging systems.

- The project earth scientist field reviewed the tractor units to verify that they were reasonable to tractor log from a soil resource perspective based upon the combination of % slope distribution, soil properties and erosion hazard rating.
- Project design features, such as restricting skidding equipment to slopes generally <35% and using endlining on slopes >35% will minimize disturbance to the steeper slopes in tractor units. Exceptions will be reviewed by project earth scientists as necessary.

BMP 1.10 – Tractor Skidding Design: The objective is to minimize erosion and sedimentation by designing skid trail patterns to best fit the terrain as well as the volume, velocity, concentration, and direction of runoff water.

- Existing skid trails will be reused whenever possible.
- Skidding occurs generally on slopes less than 35%.
- No new constructed skid trails (full bench skid trails) will be made.
- Main skid trails will be spaced to minimize the number of trails in order to minimize the amount of ground affected.
- The location of operating slopes for ground based harvest systems will have a Forest Service representative design and approve areas for logging equipment to work and an earth scientist will provide recommendations if needed.
- Skid trails that intersect Forest Roads will be blocked or obliterated at the intersection.
- Limit equipment disturbance within 20 feet on either side of swales, minimize equipment crossings, and avoid running trails up the axes of swales.

BMP 1.11 – Suspended Log Yarding in Timber Harvesting: The objective is to protect the soil mantle from excessive disturbance, maintain the integrity of the streamside management zone and other sensitive watershed areas, and to control erosion on cable corridors.

- Cable yarding units will require one end suspension where deflection allows. If ground yarding by cable is necessary, slash will be used as ground cover in the resulting furrows. Full suspension will be required for any yarding across or over streams.
- Ground-based skidding will require front-end suspension of logs on skid trails.

BMP 1.12 – Log Landing Location: The objective is to locate new landings or reuse existing landings in such a way as to avoid watershed impacts and associated water quality degradation.

- New and old landings would be selected for use that involves the least amount of excavation, and the least erosion potential.
- Landing design standards:
- Existing landings will be used to the extent possible.
- Do not use existing landings within 30 feet of the slope break to a stream channel or inner gorge.
- Landings will be graded and outsloped so that slopes are free draining.
- If necessary to protect water quality, landings that will not be used again will be contoured ripped (6-12 inches deep), seeded and mulched.

BMP 1.13 – Erosion Prevention and Control Measures during Timber Sale Operations: The objective is to ensure that purchaser's operations will be conducted reasonably to minimize soil erosion.

- Erosion control measures are discussed during the pre-operations meeting with the purchaser and the Forest Service. They are updated throughout the operations phase of the timber sale.
- During project implementation, final locations and design characteristics for landings and new roads will be reviewed by watershed personnel prior to construction as needed.
- The project earth scientist will make periodic inspections of the sale to insure that the erosion control measures are having the desired effect and are in compliance with BMP's. The earth scientist will make recommendations to the FSR as to any action needed to comply with BMP's.
- The Six Rivers National Forest WWOS will be followed.
- Storms may temporarily suspend operations to insure BMP compliance and to avoid adverse impacts to T & E species or species of concern (R5 sensitive).

- When stormy weather is predicted, the TSA will be on site to insure that winterization procedures are implemented in a timely fashion and to initiate shutdown or resume operations. Operations will not resume until suitable weather, soil, and forecast conditions exist.
- Also see BMP 1.5 and 1.11.

BMP 1.15 – Re-vegetation of Areas Disturbed by Harvest Activities: The objective is to establish a vegetative ground cover on disturbed sites to prevent erosion and sedimentation.

- To protect water quality, landings that will not be used again will be contoured ripped (6-12 inches deep), seeded with standard engineering seed mixture and mulched.

BMP 1.16 – Log Landing Erosion Control: The objective is to reduce the impacts of erosion and subsequent sedimentation associated with log landings by use of mitigating measures.

- Proposed landings were identified on the Project planning map and were evaluated by earth scientists.
- Landings are shaped to disperse drainage and direct runoff away from watercourses at the time of construction. Rock armoring and silt fences with straw bales may be used as necessary to direct water to areas of suitable drainage and to capture sediment. All new landing cut and fill slopes will be mulched and the mulch will be maintained throughout the life of the project.
- The Project will utilize existing landings whenever possible. Swing Boom Yarding (SBY) will be required within the timber sale contract to minimize the need to construct new landings.
- Landings may need to be constructed, due to variations in potential contractor equipment and skill. If other new landings need to be constructed, they will not be located within RRs and will be kept as small as feasible, while meeting safe working standards.

BMP 1.17 – Erosion Control on Skid Trails: The objective is to protect water quality by minimizing erosion and sedimentation derived from skid trails.

- Each skid trail will be water-barred before the sale is completed.
- Sections of skid trails having slopes exceeding 35% that may create erosion problems, will have slash or certified straw placed on them to achieve at least 90% soil cover as determined necessary by the SA/FOR.
- Skid trails that intersect Forest Roads will be blocked or obliterated at the intersection.
- Skid trails that cross dry swales (i.e. depressions in the landscape that do not meet definition for a designation as an RR) will be restored before any storm (with reasonable chance of causing offsite sediment movement), or after use is complete.

This generally consists of removing excess soil, reshaping and waterbarring former approaches, and spreading slash on the former crossing.

- If necessary, slash will be spread on cable corridors steeper than 60% slope to reduce erosion.
- If cable yarding creates a furrow that could result in erosion, the Timber Sale Contractor will spread slash on the furrow.

BMP 1.19 – Stream Course and Aquatic Protection: The objective is to conduct management actions within these areas in a manner that maintains or improves riparian and aquatic values; to provide unobstructed passage of storm flows; to control sediment and other pollutants entering stream courses; and to restore the natural course of any stream as soon as practicable, where diversion of the stream has resulted from timber management activities.

- Service landings are located outside of riparian reserves at least 200 feet from streams. Fuel containment systems will be used at service landings according to contract specifications.
- Purchaser shall furnish oil-absorbing mats for use under equipment being serviced to prevent petroleum-based products from contaminating soil and water resources.
- Straw bales, rock, and containment dikes may be used as needed at water drafting sites and service landings to capture any spilled water and prevent runoff to streams.
- There will be no yarding of trees or logs below the break in slope or in inner gorge areas of perennial streams.
- Heavy equipment will not operate within RRs.

BMP 1.20 – Erosion Control Structure Maintenance: The objective is to ensure that constructed erosion control structures are stabilized and working.

- All waterbars will be maintained during the period of the TSC, but not for more than one year after their construction.
- A barrier to prevent vehicle traffic and use will be placed at all temporary road takeoffs at the end of the operating season.

BMP 1.21 – Acceptance of Erosion Control Measures before Timber Sale Closure: The objective is to ensure the adequacy of required erosion control work on timber sales.

- During the final contract inspection, Forest Service personnel will inspect erosion control measures and make sure they are working as intended before releasing the purchaser from the contract responsibility.

BMP 1.25 – Modification of the Timber Sale Contract: The objective is to modify the TSC if new circumstances or conditions indicate that the timber sale will damage soil, water, or watershed values.

- The contract will be modified as needed to insure maintenance of water quality in the event of unforeseen circumstances that could result in resource impacts.

BMP 2.1 – General Guidelines for the Location and Design of Roads: The objective is to locate and design roads with minimal resource damage.

- Road construction will be designed for minimal cut and fill slopes, will be located on or near ridges, on gently sloping ground, and outside RRs. Temporary roads will be constructed so that runoff will not concentrate runoff on the road. Water will be drained toward the downhill side of the road.
- Temporary roads were identified on the Project planning map and were evaluated by earth scientists.

BMP 2.2 - Erosion Control Plan: The objective is to limit and mitigate sedimentation through effective planning prior to the initiation of construction activities and through effective contract administration during construction.

- During the pre-operations meeting, the Forest Service and the purchaser will reach agreement on a Project erosion control plan. This plan is implemented during the operations phase of the Project.
- Project design features will be incorporated into contract specifications and provisions.
- TSAs are responsible for administering the Forest Service Timber Contract and road inspectors will periodically inspect the contractor's operations.
- The WWO Guidelines will be used to guide road construction operations, during periods of wet weather. The TSA will examine field conditions to determine when the soil and/or road have dried out enough to enable operations to resume without risk of watershed impacts.

BMP 2.3 - Timing of Construction Activities: The objective is to minimize erosion by conducting operations during minimal runoff periods.

- See BMP 1.5.
- All landing construction and road work will be conducted during appropriate periods of weather and soil moisture to insure BMP attainment and the avoidance of adverse effects to listed species. Forecast periods will also be of a suitable length to allow completion or winterization of the task undertaken before precipitation events occur.
- The WWO Guidelines will be used to guide operations, especially haul, during periods of wet weather. The TSA will examine field conditions to determine when the soil and/or road have dried out enough to enable operations to resume without risk of watershed impacts. The project earth scientist may be called on to make recommendations to the TSA who will provide direction to the Timber Sale Contractor as to when operations may resume to insure that BMPs will be met and adverse impacts will be avoided.

BMP 2.4 – Stabilization of Road Slope Surfaces and Spoil Disposal Areas: The objective is to minimize erosion from exposed cut slopes, fill slopes, and spoil disposal areas.

- Contract provisions will include standard measures to seed, fertilize, and mulch disturbed areas as necessary at the end of construction/reconstruction work.
- All landing cut and fill slopes will be straw mulched and the mulch is maintained throughout the life of the Project.

BMP 2.5 - Road Slope Stabilization Construction Practices: The objective is to reduce sedimentation by minimizing erosion from road slopes and slope failures along roads.

- Road design incorporates site, soil and geologic lithology information into the design parameters.
- Road drainage is handled by outsloping the road surface.
- Temporary roads used in the project would be opened and constructed with minimal clearing limits, and would be outsloped and surfaced as needed to minimize erosion.

BMP 2.11 – Control of Sidecast Material during Construction and Maintenance: The objective is to minimize sediment production originating from sidecast material during road construction or maintenance.

- Side-casting will not be allowed during road construction or reconstruction. End-hauling may be used as one technique to prevent sidecasting.
- Minor blading on temporary roads may result in some movement of soil; however, all sidecast soil will remain within the road prism.
- Sidecasting during road maintenance and clearing operations should not extend beyond the road prism of any road, or into any streamside management zone.
- During road blading, loose material should be incorporated back into the road prism and utilized in the road subgrade to the maximum extent possible, or deposited at designated disposal sites.
- Existing road berms should be removed and utilized in the road subgrade as part of outsloping, or placed at designated disposal sites unless required for safety or resource protection.
- During construction of helicopter landings, material will not be sidecast where it can enter a stream channel.

BMP 2.12 - Servicing and Refueling of Equipment: The objective is to prevent pollutants such as fuels, lubricants, bitumen, and other harmful materials from being discharged into or near rivers, streams and impoundments, or into natural or man-made channels.

- Fuel containment systems will be in place on landings as necessary.

- Oil-absorbing mats will be used under equipment being serviced to prevent petroleum-based products from contaminating soil and water resources.
- Refueling and maintenance of Project motorized equipment will occur at least 200 feet away from any channel.

BMP 2.21 - Water Source Development Consistent with Water Quality Protection: The objective is to supply water for roads and fire protection while maintaining existing water quality.

- Drafting sites are existing sites and rocking of approaches will be used as necessary. All boards and plastic will be removed after use. Straw bales, rock surfacing and containment dikes will be used at all locations where the possibility of water spill or overflow will result in sediment being moved toward the creek.
- Drafting sites and methods will follow NOAA-Fisheries 2001 direction including screen size and the amount of flow withdrawal guidelines when drafting from anadromous fish bearing stream reaches.

BMP 2.22 – Maintenance of Roads: The objective is to maintain roads in a manner which provides for water quality protection by minimizing rutting, failures, sidecasting, and blockage of drainage facilities all of which can cause erosion and sedimentation, and deteriorating watershed conditions.

- The Six Rivers WWOS guidelines will be followed.
- TSAs are responsible for administering the Forest Service Timber Sale Contract and with the help of road inspectors will periodically inspect the contractor's operations.
- Road surfaces will be treated as needed to abate dust and maintain road fines on site.
- Spot rocking will used as necessary if small and isolated portions of the road system do not adequately dry to allow haul when most of the road is capable of haul, provided haul over the newly rocked areas will not create adverse impacts, such as sediment moving offsite towards channels.
- Road drainage (ditches, culverts, dips) facilities will be kept functioning during the life of the contract.

BMP 2.23 – Road Surface Treatment to Prevent Loss of Materials: The objective is to minimize the erosion of road surface materials and consequently reduce the likelihood of sediment production from those areas.

- The Six Rivers WWOS will be used for all Project activities (harvest, hauling, road and landing construction, etc.). The public uses many roads within the analysis area throughout the year and control of this use is outside the scope of the Project or the Six Rivers National Forest jurisdiction.
- Spot rocking will used as necessary if small and isolated portions of the road system do not adequately dry to allow haul when most of the road is capable of haul,

provided haul over the newly rocked areas will not create adverse impacts, such as sediment moving offsite towards channels.

- TSAs will be in daily contact with contractors so that when unexpected conditions are encountered, appropriate procedures can be implemented in a timely fashion. Operations will not resume until suitable weather, soil and forecast conditions exist.
- A Dust Abatement Plan is required under the Timber Sale Contract, Specification CT5.4, under road maintenance. Roads to be dust abated with water will be specified in the contract by project engineer.

BMP 2.24 – Traffic Control during Wet Periods: The objective is to reduce road surface damage and rutting of roads and to minimize sediment washing from disturbed road surfaces.

- The Six Rivers National Forest WWOS Guidelines will be used to control road access outside of the normal operating season.

BMP 2.26 – Obliteration or Decommissioning of Roads: The objective is to reduce sediment generated from temporary roads, unneeded system (classified) and non-system (unclassified) roads by obliterating or decommissioning them at the completion of the intended use.

- This BMP applies to all temporary roads
- Roads are to be drained by measures such as re-contouring or outsloping to return the road prism to near natural hydrologic function.
- Road prisms requiring more sediment reduction would be stabilized through appropriate treatment such as tillage, ripping, fertilization, and/or re-vegetation.
- Road take-offs would be obliterated or effectively blocked to vehicle access.
- Temporary roads will be water-barred after use and then will be decommissioned at the end of the project.

BMP 5.2 – Slope Limitations for Mechanized Equipment Operations: The objective is to reduce gully and sheet erosion and associated sediment production by limiting tractor use.

- Skidding equipment (track or rubber tired) and tractor bunching would be generally restricted to slopes <35%.
- Where slopes are greater than 35%, the TSA and/or KNF earth scientist will determine whether end lining or use of skidding equipment is preferable in order to maintain soil and water quality standards.
- Low ground-pressure track mounted grapple piling machines can operate on slopes up to 45%.

BMP 5.4 – Re-vegetation of Surface Disturbed Areas: The objective is to protect water quality by minimizing soil erosion through the stabilizing influence of vegetation foliage and root network.

- Temporary roads that are decommissioned will be mulched and seeded in areas that have high erosion potential.
- Steep (>35%) portions of skid trails will be covered with slash as needed.

BMP 5.5 – Disposal of Organic Debris: The objective is to prevent gully and surface erosion with associated reduction in sediment production and turbidity during and after treatment.

- Hand pile and pile burning, and underburning would be used to reduce excessive fuels. Specified soil cover recommendations would be used to maintain sufficient soil cover for erosion prevention.
- Machine bunching with pile burning are mechanical treatments that reduce slash. Slope limitations for mechanical equipment as well as specified soil cover recommendations would be used to maintain sufficient soil cover for erosion prevention. See BMPs 1.1 and 1.9 for slope limitations.

BMP 5.6 – Soil Moisture Limitations for Mechanical Equipment Operations: The objective is to prevent soil compaction, rutting, and gulling with resultant sediment production and turbidity.

- Ground-based equipment operation will only be permitted when soil moisture is determined to be dry enough to avoid negative soil and watershed impacts. Site-specific direction will be given by the TSA in conjunction with an earth scientist using the Wet Weather Operating Standards as guidance (Skidding will only be permitted when soil moisture is dry within the top 4 inches of the soil surface on skid trails. Skidding equipment can operate off skid trails when soil is dry down to 10 inches.). Refer to BMP 1.17.
- Low ground-pressure equipment (feller bunchers) may operate off skid trails when the soil is dry 4 inches down at the discretion of the TSA with advice from an earth scientist.
- Tractor bunching and/or mechanized grapple piling will occur when the soil is dry down to 10 inches.

BMP 6.1 – Fire and Fuel Management Activities: The objective is to reduce public and private losses and environmental impacts which result from wildfires and/or subsequent flooding and erosion by reducing or managing the frequency, intensity and extent of wildfire.

- The District Fuel/Fire department helped determined acceptable levels of slash to retain on the site following harvest activities and also to identify areas and methods to remove standing slash of a sub-merchantable size, that otherwise would create an unacceptable fire risk.

- On-going fire management work maintains fire access plans and restricts public activities, such as woodcutting, on days when fire weather predictions indicate significant risk from such activities in the Project Area.

BMP 6.2 – Consideration of Water Quality in Formulating Fire Prescriptions: The objective is to provide for water quality while achieving management objectives through the use of prescribed fire.

- The different fuel reduction treatments are being used because of soil and water quality considerations.
- All burning will be done under an approved Burn Plan that specifies a burn prescription for each area. These prescriptions will account for fuel loading, fuel moisture, soil moisture, slope, aspect, etc., and will result in the desired quantity of fuel consumed for each prescribed burn. A fuel management specialist, who may utilize recommendations from a soil or earth scientist, will prepare prescriptions.
- Hand and tractor bunching piles will burn under controlled settings to contain fire spread.
- Underburning will occur under prescription, occurring in conditions that allow safe burning. Fire crews, equipped to control fire spread, will monitor underburning.
- Fire prescriptions will be reviewed by the IDT and will be approved by the line officer.

BMP 6.3 – Protection of Water Quality from Prescribed Burning Effects: The objective is to maintain soil productivity, minimize erosion, and minimize ash, sediment, nutrients, and debris from entering water bodies.

- Retain recommended ground cover amounts to meet LRMP and Soil Quality Standard guidelines for soil cover (USDA-FS 1995b).
- Maintain the functionality of the riparian vegetation.
- In riparian reserves, prescribed fire effects will mimic a low intensity backing fire, except for burning hand piles where higher intensity may occur when piled slash is consumed. Hand piling and pile burning may not occur within 50 feet of any stream, and may only occur within a RR if the hand piles are 6 feet or less in diameter, and less than 6' high.
- Ignition may occur within RRs only when necessary to minimize underburn intensity and/or the potential for burning material to roll down into a RR.

BMP 7.8 – Cumulative Off-Site Watershed Effects: The objective is to protect the identified beneficial uses of water from the combined effects of multiple management activities which individually may not create unacceptable effects but collectively may result in degraded water quality conditions.

- A cumulative watershed effects analysis was completed for the Project. Project design standards including Resource Protection Measures have been incorporated into the proposed action to minimize cumulative off-site watershed effects.