

APPENDIX C
Standard Management Requirements
And Monitoring

Wildlife and Fisheries

The Standard Management Requirements (SMRs) are contained in the *Biological Assessment/Biological Evaluation for the Moonlight Project*. This report is part of the Moonlight and Wheeler Fires Recovery and Restoration Project Record on file at the Mt. Hough Ranger District; a copy is available upon request.

Bald eagle:

1) A Limited Operating Period (LOP) would be implemented not allowing the cutting of any hazard/dead trees within Antelope III territory between January 1 and August 15 along road 28N03 and the first half mile of road 27N42.

2) No log haul is to occur on the northern portion of 27N42 to the intersection of 28N03 during this LOP. This affects essentially a ½ mile of road. This LOP forces haul south down 27N42 to Babcock Crossing.

3) No log haul is to occur on road 26N54 north through the Stream Fire to 28N03 during this LOP to protect the Antelope I nest site.

4) There is an existing well developed helicopter landing within the primary nesting zone for Antelope III nesting territory (located in Stream Fire and used for Boulder Fire rehab work). Helicopter use of this landing is problematic during the eagle nesting period as helicopter approach and take-off would be line of sight with both nest sites (Antelope I and III) and could provide a disturbance element that the birds are not used to. A LOP is required to eliminate and dissuade helicopter use of this landing during the nesting season (January 1 and August 15). Before the LOP could be lifted, both nest sites would have to be declared non-nesting, which could be determined by May 1.

California Spotted Owl: Based on spotted owl survey information, implementation of dead tree removal could be subject to a Limited Operating Period (LOP) that would restrict tree removal during the nesting season (March 1 to August 15).

Mountain Yellow Legged frog:

1). Slash Piles shall be ignited using a pattern that allows frogs to escape the fire. For example, light the pile at one end and or leave an area un-ignited that serves as an escape route.

2). Locate and manage water-drafting sites to minimize adverse effects on sedimentation and in stream flows required to maintain riparian resources, channel condition, and amphibian habitat. Forest personnel and contractors shall use the Forest Service approved suction strainer (FGM 5161) or other foot valves with screens having openings less than 2mm in size at the end of drafting hoses. Drafting sites shall be visually surveyed for frogs and their eggs before drafting begins. The suction strainer shall be inserted close to the substrate in the deepest water available; the suction strainer

shall be placed on a shovel, over plastic sheeting, or in a canvas bucket to avoid substrate and amphibian disturbance (reference Water Drafting Plan in Project Record).

3). Effectiveness monitoring of all applicable Best management Practices (BMP) shall occur for all prescribed burns or fuels management projects.

4). The Forest shall prevent underburns or broadcast burns from entering riparian vegetation within identified suitable habitat, as delineated by the presence of riparian vegetation. Methods include the timing of ignition, ignition pattern, wet line, use of natural barriers, line construction or other methods that prevent the burn from entering riparian vegetation. If fire lines are employed, they shall not be wider than 36 inches, unless they already exist.

Hydrology and Soils

The Standard Management Requirements (SMRs) are displayed in the Watershed Report for the Moonlight and Wheeler Fires Recovery and Restoration Project.” This report is part of the Moonlight and Wheeler Fires Recovery and Restoration Project Record on file at the Mount Hough Ranger District; a copy is available upon request.

Water quality will be protected through the use of Best Management Practices (BMPs) (USDA Forest Service 2000). BMPs are the primary method employed by the Forest Service and the State of California to prevent water quality degradation and to meet California State Water Quality objectives relating to nonpoint sources of pollution. BMPs were incorporated in the design of the action alternatives and are listed under the regulatory framework (table C-1).

Table C-1. Best management practices (BMPs).

Resource Concern	Standard Management Requirements		Responsible Person(s)	Timeframe
Implement Best Management Practices (BMPs):				
Timber Management Practices				
Soils/Fish/ Hydrology / Wildlife	1.1	Planning Process	Prep Officer and Timber Sale Administrator (TSA)	Prior and During Treatment
	1.2	Timber Harvest Area Design		
	1.3	Use of Erosion Hazard Rating (EHR) for Timber Harvest Area		
	1.4	Use of Sale Area Maps for Designating Water Quality Protection Needs		
	1.5	Limiting the Operating Period of Timber Sale Activities		
	1.6	Protection of Unstable Lands		
	1.8	Streamside Management Zone Designation		
	1.9	Determining Tractor Loggable Ground		
	1.10	Tractor Skidding Design		

Resource Concern	Standard Management Requirements	Responsible Person(s)	Timeframe
1.11	Suspended Log Yarding in Timber Harvesting	Prep Officer and Timber Sale Administrator (TSA)	Prior and During Treatment
1.12	Log Landing Location		
1.13	Erosion Prevention and Control Measures During Timber Sale Operations		
1.14	Special Erosion Prevention Measures On disturbed Land		
1.15	Re-vegetation of Areas Disturbed by Harvest		
1.16	Log Landing Erosion Prevention and Control		
1.17	Erosion Control on Skid Trails		
1.18	Meadow Protection During Timber Harvesting		
1.19	Streamcourse Protection		
1.20	Erosion Control Structure Maintenance		
1.21	Acceptance of Timber Sale Erosion Control Measures Before Sale Closure		
1.22	Slash Treatment in Sensitive Areas		
1.23	Five-Year Reforestation Requirement		
1.25	Modification of the Timber Sale Contract		

Road and Building Site Construction Practices			
2.1	General Guidelines for the Location And Design Of Roads	Prep Officer and Timber Sale Administrator (TSA)	
2.2	Erosion Control Plan		
2.3	Timing of Construction Activities		
2.4	Stabilization of Road Slope Surfaces and Spoil Disposal Areas		
2.5	Road Slope Stabilization		
2.6	Dispersion of Subsurface Drainage from Cut and Fill Slopes		
2.7	Control of Road Drainage		
2.9	Timely Erosion Control Measures on Incomplete Roads and Streamcourses		
2.11	Control of Sidecast Material		
2.12	Servicing and Refueling of Equipment (similar to BMP 7.4 – Oil and Hazardous Substance Spill Contingency Plan and Spill Prevention Control and Countermeasure [SPCC] Plan)		
2.13	Control of Construction in Streamside Management Zones (the Riparian Habitat Conservation Areas [RHCAs])		
2.14	Controlling In-channel Excavation		
2.15	Diversion of Flows Around Construction Sites		

Resource Concern	Standard Management Requirements		Responsible Person(s)	Timeframe
	2.16	Streamcourses on Temporary Roads		
	2.22	Maintenance of Roads		
	2.23	Road Surface Treatment to Prevent Loss of Materials		
	2.24	Traffic Control During Wet Periods		
	2.26	Obliteration or Decommissioning of Roads		
Vegetation Manipulation Practices				
	5.2	Slope Limitations for Mechanical Equipment Operations		
	5.3	Tractor Operation Limitation in Wetlands and Meadows		
	5.6	Soil Moisture for Mechanical Equipment Operations		
Watershed Management Practices				
	7.3	Protection of Wetlands		
	7.4	Oil and Hazardous Substance Spill Contingency Plan and Spill Prevention Control and Countermeasure (SPCC) Plan		
	7.8	Cumulative Off-site Watershed Effects		

Site-specific measures that relate directly to these BMPs would be used on the Moonlight and Wheeler Fires Recovery and Restoration Project to minimize erosion and resultant sedimentation. The BMPs would also be used to minimize negative changes in other water quality parameters such as dissolved oxygen, water temperature, and turbidity. These measures follow the Scientific Analysis Team guidelines for areas adjacent to stream courses, lakes and wetland areas, and streamside guidelines presented in the *Plumas National Forest Land and Resource Management Plan*. Protection and improvement measures would include minimizing disturbance of riparian zones, retention of snags for wildlife, stream shading, recruitment of large organic debris in stream channels, maintenance of side slope and stream channel stability, and prevention of an over accumulation of activity-generated organic debris in stream channels. Timber sale contracts contain many standard provisions that help ensure protection of soil and water resources. These include provisions for an erosion control plan, road maintenance, and skid trail spacing. The following measures, which were incorporated in the design of the action alternatives, would further reduce the risk of cumulative and local impacts on water quality and channel stability.

Soil protection measures are described below. Incorporate the following practices into the project design:

Unless otherwise agreed to by the physical scientist and sale administrator, landings, skid trail approaches to landings (to a distance of 200 feet), and new temporary roads would be subsoiled

through the full depth of compaction to restore soil porosity. The subsoiler would be lifted where substantial root and bole damage to larger trees would occur from subsoiling. Skids with slopes greater than 20 percent will not be subsoiled but would be frequently waterbarred. Subsoiling would not occur on shallow soils where the displacement of rocks disrupts soil horizons or where there are concerns about the spread of root disease, or damage to tree roots. Block vehicle access to temporary roads and install water-bars prior to subsoiling operations.

Ground-based equipment would be restricted to slopes less than 35 percent except on decomposed granitic soils where equipment would be restricted to slopes less than 25 percent.

Subsoiling to 18 inches minimum depth of temporary roads and landings within same year as harvest.

Space trails in average of 100 feet. Though larger spacing is typically recommended, the 100 foot spacing may actually reduce off trail harvest traffic.

Implement the following winter or unseasonably wet weather standards in all units:

- Operations may occur when soil is dry; that is, soil moisture in the upper 8 inches is not sufficient to allow a soil sample to be squeezed and hold its shape, or will crumble when the hand is tapped.
- Winter operations may occur only when the ground is frozen to a depth of 12 inches or over 20 inches of well packed snow.

Riparian Habitat Conservation Areas (RHCA)

1. Management activities in RHCAs must contribute to improving or maintaining watershed and aquatic habitat conditions described in the Riparian Management Objectives (RMOs).
2. Implement equipment restriction zones in RHCAs, according to the following table:

Table C-2. Equipment restriction zones in RHCAs.

Stream Type	Equipment Restrictions by Slope Class		
	0–15%	15–25%	>25%
Perennial, fish bearing	100 feet ^a	150 feet	300 feet
Perennial, no fish	50 feet	100 feet	150 feet
Intermittent	25 feet	50 feet	100 feet
Ephemeral	25 feet	50 feet	100 feet

a. Distances shown would apply to each side of the stream channel and are based on stream type and slope steepness.

Botanical Resources and Noxious Weeds

The following SMRs were developed in accordance with the direction provided in table 2.4 of the Herger-Feinstein Quincy Library Group (HFQLG) final environmental impact statement (EIS) to reduce the introduction and spread of noxious weeds on National Forest System lands and to comply with the Interim Management Prescriptions for TES and Special Interest plants dated 2/20/2007 (USDA Forest Service 2007a).

These SMRs, including site-specific maps, are also displayed in the *Moonlight and Wheeler Fires Recovery and Restoration Project Biological Evaluation, Noxious Weed Risk Assessment for the Moonlight and Wheeler Fires Recovery and Restoration Project* and the *Plant Protection Plan for the Moonlight and Wheeler Fires Recovery and Restoration Plan*. These reports are part of the Moonlight and Wheeler Project Record on file at the Mt. Hough Ranger District—a copy is available upon request.

Cleaning off-road equipment. Require all off-road equipment and vehicles (Forest Service and contracted) used for project implementation to be free of weeds. Clean all equipment and vehicles of all mud, dirt, and plant parts. This will be done at a vehicle washing station or steam-cleaning facility before the equipment and vehicles enter the project area. Cleaning is not required for vehicles that will stay on the roadway. In addition, all off-road equipment must be cleaned prior to leaving areas infested with noxious weeds.

Any new populations of noxious weeds would be analyzed for incorporation into the District noxious weed program for treatment.

Table C-3. Proposed treatment units with known weed infestations.

Common Name	Harvest System	Unit #	Alt. A	Alt. C	Alt. D	Alt. E	# of Locations	Acres
Canada thistle	Helicopter	1a	X				5	0.54
Canada thistle	Tractor	3b	X	X			2	<0.1
Canada thistle	Tractor	5a	X	X			2	<0.1
Canada thistle	Helicopter	5b	X				3	0.12
Canada thistle	Tractor	5g	X	X	X		1	<0.1
Canada thistle	Helicopter	6a	X				2	<0.1
Canada thistle	Skyline	15	X				2	<0.1
Canada thistle	Tractor	16	X	X	X		1	<0.1
Canada thistle	Skyline	23	X				6	0.49
Canada	Tractor	26c	X	X			2	<0.1

thistle								
Canada thistle	Helicopter	29	X				1	<0.1
Canada thistle	Skyline	32a	X				4	<0.1
Canada thistle	Skyline	32sb	X				9	0.17
Canada thistle	Helicopter	41	X				3	<0.1
Canada thistle	Helicopter	71	X				1	<0.1
Canada thistle	Tractor	76a	X	X	X		4	0.43
Canada thistle	Tractor	76c	X	X			1	<0.1
Canada thistle	Tractor	80	X	X	X		1	<0.1
Canada thistle	Tractor	84a	X	X			1	<0.1
Canada thistle	Tractor	87A	X	X	X		3	1.03
Canada thistle	Tractor	87B	X	X	X		1	0.33
Canada thistle	Tractor	90	X	X	X		1	0.17
Canada thistle	Tractor	90	X	X			2	5.62
Canada thistle	Tractor	97	X	X			7	0.79
Canada thistle	Tractor	Roadside Hazard	X	X	X	X	115	21.07
Spotted knapweed	Tractor	Roadside Hazard	X	X	X	X	4	<0.1
Yellow starthistle	Tractor	Roadside Hazard	X	X	X	X	4	<0.1
Medusahead	Tractor	Roadside Hazard	X	X	X	X	2	<0.1
Canada thistle	Snag Retention		X				14	0.84
Canada thistle	Snag Retention		X	X	X		1	<0.1
Canada thistle	Snag Retention		X	X			7	0.92
Canada thistle	Snag Retention		X		X		1	0.41
Canada	Plantation		X	X	X		3	<0.1

thistle								
						Total	216	34.83

Road construction, reconstruction, and maintenance. All earth-moving equipment, gravel, fill, or other materials need to be weed free. Use onsite sand, gravel, rock, or organic matter where possible.

Soil stabilization & revegetation. If skid trails, landings, or stream crossings require soil stabilization, Use weed-free equipment, mulches and seed sources. Chip on-site material to use as mulch to the extent possible. If mulch is imported to the site use weed free rice straw (preferred) or certified weed free straw. Avoid seeding in areas where revegetation will occur naturally, unless noxious weeds or erosion are a concern. Save topsoil from disturbance and put it back to use in onsite revegetation, unless contaminated with noxious weeds. All activities that require seeding or planting will need to use locally collected native seed sources or those identified by the Botanist. A seed mix will be developed when specific site locations and conditions (dry, moist, wet, etc) are determined. Revegetation success will be determined as seed germination and growth, covering approximately 50% of the bare ground within the first year and approximately 80% within three years and the lack of invasive non-natives such as bull thistle and woolly mullein.

Staging areas. Do not stage equipment, materials, or crews in noxious weed-infested areas where there is a risk of spread to areas of low infestation.

Control Areas. Sensitive and special interest plants and high priority noxious weeds other than Canada thistle will be area designated as Control Areas, where equipment and project activities would be excluded. These areas will be identified on project maps and delineated in the field. Noxious weed control areas would be designated with day-glow orange noxious weed flagging and red and black striped flagging. Sensitive and special interest plant control areas would be designated with red and black striped flagging and red CA tags.

- Flag and avoid Baker cypress along road 27N34. Hazard trees may be felled in these areas, but they will not be used for landings, nor will skidders or other heavy equipment be allowed in these sites. Baker cypress shall not be removed to provide a potential seed source for regeneration. All other trees felled inside the control areas will not be dragged through the control area. Do not remove Baker cypress trees from along the 27N34 road. If Baker cypress hazard trees are identified drop and leave the trees. Do not fell trees within the Mud Lake RNA.
- Flag and avoid *Penstemon sudans*, *Carex inops*, and *Carex sheldoni*. Hazard trees may be felled in these areas, but they will not be used for landings, nor will skidders or other heavy equipment be allowed in these sites. Trees dropped inside the control areas will not be dragged through the control area.
- Flag and avoid the weeds *Centaurea maculosa* (spotted knapweed); *Cytisus scoparius* (Scotch broom), *Centaurea solstitialis* (yellow starthistle), and sites of *Taeniatherum caput-medusae* (medushead). Hazard trees may be felled in these areas, but they will not be used for landings, nor will skidders or other heavy equipment be allowed in these

sites. Trees dropped inside the control areas will not be dragged through the control area.

- Protect any sensitive, and special interest species that may be found in the project area prior to or during implementation in accordance with current interim management prescriptions.
- Flag and avoid priority noxious weed locations found in the project area during implementation.
- Post project monitoring would evaluate effectiveness of Standard Management Requirements in preventing the introduction and spread of noxious weeds and invasive plants.

Cultural Resources

These SMRs are displayed in the “Cultural Resource Report for the Moonlight and Wheeler Fires Recovery and Restoration Project.” This report is part of the Moonlight and Wheeler Fires Recovery and Restoration Project Record on file at the Mt. Hough Ranger District—a copy is available upon request.

- A. All proposed activities, facilities, improvements, and disturbances shall avoid cultural resource sites. “Avoidance” means that no activities associated with the project that may affect cultural resource sites shall occur within a site’s boundaries, including any defined buffer zones. Portions of the project may need to be modified, redesigned, or eliminated to properly avoid cultural resource sites.
- B. All cultural resource sites within the area of potential effect shall be clearly delineated prior to implementing any associated activities that have the potential to affect cultural resource sites.
- C. Buffer zones may be established to ensure added protection where the forest or district archaeologist determines that they are necessary. The use of buffer zones in conjunction with other avoidance measures are particularly applicable where setting contributes to the property's eligibility under 36 CFR 60.4, or where it may be an important attribute of some types of cultural resource sites (e.g., historic buildings or structures; historic or cultural properties important to Native Americans). The size of buffer zones needs to be determined by the forest or district archaeologist on a case-by-case basis.
- D. When any changes in proposed activities are necessary to avoid cultural resource sites (e.g., project modifications), these changes shall be completed prior to initiating any activities.
- E. Monitoring during project implementation, in conjunction with other measures, may be used to enhance the effectiveness of protection measures.
- F. If cultural resources are inadvertently discovered during project implementation, the Mount Hough Ranger District archaeologist will be contacted immediately. The cultural resources will be recorded, clearly delineated, and protected.

Treatment Implementation

Pre-existing skid trails and landings will be used whenever available, feasible, and in a desirable location. In order to avoid loss of land base productivity, no more than 15 percent of timber stands shall be dedicated to landings and permanent skid trails (*Plumas National Forest Land and Resource Management Plan* [“Forest Plan”]). In areas where pre-existing skid trails and landings are not present, construction of such facilities will occur as agreed upon by the Forest Service and purchaser. All landings and skid trails utilized shall conform to the standards and guidelines set forth in the Timber Sale Administration Handbook (FSH 2409.15) and the Forest Plan.

Monitoring

Soils: The Forest Plan sets out objectives and protocol for monitoring of plan standards and guidelines, BMP compliance and effectiveness, and soil productivity parameters. Monitoring is to be completed by forest staff on a per annum basis, either project by project, or a sampling of projects. Sampling should include at least five units each on granite and metasedimentary rock soils for a total of ten units for implementation monitoring. Specific methods would be defined by district watershed personnel. In addition, effectiveness and forensic monitoring would occur on watersheds that exceed the threshold of concern, as required by California Central Valley Regional Water Quality Control Board Resolution R5-2005-0052, “Conditional Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities”.

Cultural Resources: Monitoring during project implementation, in conjunction with other measures, may be used to enhance the effectiveness of protection measures.

Aquatic Wildlife: Stream Condition Inventory, including rapid bioassessment: Stream habitat features are measured according to the Stream Condition Inventory (SCI) manual. The following streams are monitored within the Moonlight Wheeler Project Boundary; Little Antelope Creek, Clark’s Creek, Bolder Creek (just outside), Lone Rock Creek, Upper Moonlight Creek, Light’s Creek, Hungry Creek and Cold Stream. Upper Moonlight, Light’s and Lone Rock Creeks have been monitored post fire in 2008 and will be completed the first year after the proposed project implementation and monitored every five years thereafter.