

## **Project Design Criteria (PDC)**

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These practices are part of the proposed action. They were developed to minimize effects to resources but do not necessarily eliminate all impact.

### **A. General Criteria**

A1. Spill Prevention - An approved Spill Prevention Control and Containment Plan (SPCCP) would be created, as required by contract provisions G.3.4.1/BT6.341, which describe measures to prevent or reduce impacts from potential spills. The SPCCP would include a description of the hazardous materials that would be used; and a spill containment kit would be located on-site. All trucks used for refueling would carry a hazardous material recovery kit. All vehicles and machinery would be free of petroleum leaks. Any leaks that occur would be immediately repaired. Power equipment would be refueled at least 150 feet from water bodies to prevent direct delivery of contaminants into a water body. If local site conditions do not allow for a 150-foot setback, then refueling would be as far away as possible from the water body; defined in the NWFP as portions of a watershed directly coupled to streams and rivers, that is, the portions of a watershed required for maintaining hydrologic, geomorphic, and ecologic processes that directly affect standing and flowing waterbodies such as lakes and ponds, wetlands, streams, stream processes, and fish habitats. For all immobile equipment, absorbent pads would be used. All petroleum products being transported or stored would be in approved containers meeting Occupational Safety and Health Administration and Oregon Department of Transportation standards. The Contracting Officer would be notified of any spills. Any contaminated soil, vegetation or debris would be removed from National Forest System lands and disposed of in accordance with state laws.

A2. For instream actions, the General Aquatic Conservation Measures would be incorporated from the Routine Actions and Maintenance Biological Opinion (RAMBO). At this time, no instream actions are anticipated, however, unforeseen culvert replacement may be necessary. Felling trees into streams would not be considered instream work. The RAMBO design criteria include timing restrictions so that work would be completed during the Oregon Department of Fish and Wildlife (ODFW) instream work window. They also include measures to protect sites from erosion and contamination, to protect fish, and restore the sites.

A3. Erosion-control measures would be implemented to prevent off-site movement of disturbed soils from road use, equipment use, and other ground-disturbing actions. Where appropriate, erosion control treatment on bare soils may include silt fences, wattles, straw bales, matting, mulch, slash, water bars, ditch check dams, grass seed, or other products. Existing vegetation in road ditch lines hydrologically connected to streams (as defined in NWFP) would not be removed unless a biodegradable sediment control feature such as check dams constructed of bio-bags, straw bales, or other materials are installed. Sediment control features would be maintained in working order during the life of the project.

Effective ground cover would be installed on operational surfaces (i.e., landings, skid trails, etc.) prior to shutting down for an extended period (e.g., two weeks or more). When operations occur when it is likely to soon become too wet to operate, erosion-control work would stay current and ground cover would be installed as soon as practicable. The coverage of effective ground cover would be sufficient to prevent off-site movement of soils as guided by Forest Plan standard and guideline FW-025 and by Forest Service Handbook 2509 (R6 supplement).

A4. Projects would utilize the concept of adaptive management. Proposed actions are identified that are considered appropriate at the time but sometimes situations change that warrant adjustment of the action. For example, when additional trees die or become dangerous that were not apparent at the time of initial planning, adaptive management is appropriate to make sure the desired outcome is actually achieved. The exact treatment details may be adjusted at the time of implementation, or conceivably after implementation if it becomes clear that more work is needed. Revised actions would be tailored to changing site-specific conditions with the objective of achieving desired outcomes.

Before final actions are taken that may differ somewhat from the actions described or mapped, an interdisciplinary team would be assembled to review projects to ensure their effectiveness. The District Ranger would approve projects and determine whether the anticipated effects and benefits fall generally within the range of effects and benefits described in the relevant NEPA document.

A5. Where firewood-size material remains at landings after operations, firewood would be made available to the public where feasible. A mix of commercial and personal use removal may occur where feasible.

#### A6. Heritage

##### General:

- a) Project activities within or near (100-ft) known archaeological sites or unsurveyed areas identified as 'High Probability' for containing cultural resources would be monitored by an archaeologist meeting the Secretary of the Interior's professional qualification standards.
- b) All archaeological sites would be clearly flagged with a 100-foot buffer, where safety permits.
- c) All archaeological sites absent hazard/danger trees would be avoided during all project activities.
- d) All archaeological sites within the Area of Potential Effect would be monitored post implementation to assess potential impacts.
- e) If previously unidentified cultural resources are encountered during project activities, all work would cease immediately, and the Zone Archaeologist would be contacted to evaluate the inadvertent discovery. A mitigation plan, if necessary, would be developed in consultation with the

Oregon State Historic Preservation Office (SHPO) and the confederated Tribes or Warm Springs and/or the Confederated Tribes of Grand Ronde as appropriate.

Non-Cultural Hazard/Danger Trees identified within an archaeological site boundary:

- f) Implementation of these design criteria would require close coordination between Heritage and project implementers. Treatments would be considered on a case-by-case basis in consultation with Heritage Program.
- g) No mechanical equipment on the ground within the site boundaries. Feller bunchers and processors may reach into site were possible. Non-ground disturbing, full suspension is permitted.
- h) Hazard/Danger trees hand-felled within site boundaries would be left in place and bucked up (sectioned) and scattered to reduce near surface fuel load.
- i) Slash within site boundaries would be hand lopped and scattered.
- j) No piling or skidding within or near (100-ft) boundary.
- k) Over snow logging with mechanical equipment is permissible following the PDCs outlined in the Lithic Scatter PMOA (1988).

Culturally Modified Trees (CMT) also identified as Hazard/Danger Trees:

- l) The CMT would be high stumped through the most prominent scar face, above the lower cut marks. A metal datum tag would be fixed to the lower part of the stump with the site and CMT number to allow for subsequent data recovery.
- m) Where the IDT determines that high stumping may negatively impact scenery objectives listed in PDC sections J, K or L, a 3" to 4" high cross section may be retained instead. Cross sections would be maintained by the archaeological monitor. A metal datum tag would be fixed to the cross section with the site and CMT number to allow for subsequent data recovery.

**B. Tree Falling in Riparian**

**B1. Guidance for Listed Fish Habitat (LFH) and Riparian Reserves**

- a) In order to maintain stream shade and bank stability, limit the cutting of danger/hazard trees to only those trees necessary for safety, within 150 feet of streams with LFH, or of 150 feet of perennial streams within 1 mile of LFH. Danger/hazard trees in riparian areas may be felled toward the stream where appropriate.
- b) Do not remove cut trees within protection buffers defined as within 100 feet of streams with LFH or within 50 feet of perennial or intermittent streams within 1 mile of streams with LFH.
- c) Farther than these distances from LFH, do not remove cut trees within protection buffers defined within as 50 feet of other perennial or intermittent streams.
- d) Do not remove cut trees within protection buffers defined as within 50 feet of seeps, springs, or wetlands.
- e) Exceptions to a) through d) may be made in developed recreation areas where it is determined that felled trees need to be removed.
- f) Outside of the protection buffer distances listed above at b) through d) and within Riparian Reserves, cut trees may be removed when fisheries personnel determine aquatic resource management objectives are met. Leave logs or whole trees on-site where Large Woody Material

is deficient. Approximately 8 to 14 down logs/trees per acre that have 40 cubic feet is considered an appropriate level.

- g) Where it is safe and feasible in Riparian Reserves, cut trees may be placed off to the stream side of the road or used for instream restoration projects. Maximize the length of the bucked portion of logs that may then be placed into riparian areas or streams.
- h) Where it is safe and feasible in Riparian Reserves, take actions to deter theft of felled trees, such as moving tree portions away from the immediate road prism area in a manner that would make the felled tree less visible or accessible.
- i) The danger trees along road 5400 adjacent to Fish Creek (between the road and the stream), would only be felled where they are classified as “imminent or likely” according to the danger tree protocol. Trees may be felled into Fish Creek or moved into Fish Creek but only after a Section 7 review for compliance with Wild and Scenic River guidance is completed.

B2. Trees may be felled in protection buffers to allow for tail-hold tree (stump) anchor points for skyline, cable, or other similar logging systems. These trees would be left in place unless they need to be moved to facilitate safe operations.

B3. Trees identified for removal (harvest) would be felled away or parallel to the protection buffer. Trees that are inadvertently felled into the protection buffer would be left on-site.

B4. Avoid falling trees into culvert inlets, catch basins and roadway drainage structures. All slash and material resulting from trees cut near road travel way, drainage structures and culverts would be removed from road travel way, drainage structure as well as culvert inlets and outlets. Material would be scattered outside of road clearing limits or disposed of in an approved manner.

B5. Harvest (logging) in unstable or potentially unstable areas would not occur. These areas are identified by features such as crevices in soil, tipped trees at multiple angles, and slump formations. The unstable areas would be identified by a geologist or soil scientist through field surveys of harvest units. Danger/Hazard trees may be felled and left on-site where appropriate.

### **C. Yarding and Heavy Equipment Use**

C1. Skyline (cable) yarding that requires clearing a corridor of trees would not occur through the protection buffers on LFH streams.

C2. Full suspension would occur when cable yarding (including lateral yarding) over perennial stream channels, as well as intermittent channels within 1,000' of LFH. Full suspension over intermittent streams (more than 1,000' from LFH) would occur whenever feasible, however, bump logs within the channel would be utilized if full suspension cannot be achieved.

C3. Cable yarding operations would maintain a minimum of one-end suspension except at the landing and tail trees where it is not possible. During lateral yarding, use one-end suspension to the extent practicable.

C4. Limit the establishment of skyline yarding corridors that clear corridors of trees over all streams to no more than five corridors per 1,000 lineal feet of stream. Individual corridor widths would not exceed 12 feet. Corridors would be spaced at least 100 feet apart (along the stream).

C5. In Riparian Reserves, ground-based mechanical equipment would operate on continuous slash-covered path where feasible and where sufficient slash is available, to minimize soil compaction.

C6. Ground-based mechanical equipment would not be used within protection buffers except as allowed under PDC C7, or if on existing system roads.

C7. Skid trails should generally not cross streams, but when stream crossings are necessary the following would apply.

a) Skid trails would not cross any perennial streams, including LFH streams.

b) Skid trail stream crossings on intermittent streams would not occur within 1,000 feet of LFH.

c) Limit skid trail corridors through protection buffers to less than 15-foot width, and no more than one crossing per 1,000 feet of stream.

d) Bank protection would be designed at the crossing with the use of logs felled from the corridor, or other bank protection technique.

e) Stream crossings would be removed before the wet season (generally October 16 to May 31), with erosion control features incorporated.

f) Skid trails would be perpendicular to the stream channel and take the shortest corridor through the protection buffer.

C8. Skid trails would not be designated through wetlands or other wet areas. (Streams crossings are described in PDC C7.)

C9. Untethered mechanical equipment would generally operate on slopes less than 35%, but may operate on slopes from 35 to 40% if equipment stays on existing approved skid trails or moves straight up and down the slope without turning.

C10. Ground-based mechanized equipment, such as skidders, dozers, and feller-bunchers, operation would not be allowed outside the Normal Operating (Dry) Season (generally June 1 – October 15) within Riparian Reserves unless approved by the Ranger through the existing waiver process with input from soils, hydrology, and/or fisheries specialists.

C11. Adjacent to protection buffers there would be additional restrictions for certain off-road ground-based equipment (except as described at PDC C7). Only mechanical harvesting equipment used for tree falling would be allowed within 200 feet of listed fish habitat, or within 100 feet of other streams, seeps, springs, or wetlands. Distances are measured slope distance in the direction of the slope aspect. Exceptions may be made for the use of existing skid trails by the District Ranger based on recommendations from the unit fisheries biologist or hydrologist, and where there is low risk of sediment entering streams. Additional erosion control measures may be required.

C12. Ground-based skidding equipment such as tractors or rubber-tired skidders would be confined to pre-approved skid trails, roads or landings. Where new skid trails are needed skid trails would be spaced an average of 150 feet apart except where converging, and skid trails would be located to minimize the alteration of surface hydrology.

C13. Within Low-, Moderate-, or High-Risk Earthflows, limit landings that create new disturbance and skidtrails to 8% or less of each road's treatment corridor.

C14. Where forwarders are used, the forwarder paths would be spaced a minimum average of 60 feet apart except where converging. They would operate over continuous slash-covered paths where feasible. The layer of woody debris would be as thick as possible given the slash available from harvested trees and other available material.

C15. Where cut-to-length harvesters are used, they would be limited to a single pass on each pathway unless operating on continuous slash-covered paths where feasible. The layer of woody debris would be as thick as possible given the slash available from harvested trees and other available material. A slash layer is not required when equipment is moving on approved skid trails.

#### **D. Road and Landing Construction/Reuse**

D1. The construction of new landings would not occur within Riparian Reserves.

D2. Use of existing landings within Riparian Reserves would be allowed if there are no erosion potential or sedimentation concerns to area streams, or where those concerns can be mitigated, as determined by a soil scientist, hydrologist or fish biologist.

If a landing is approved for use in Riparian Reserves, erosion control measures would be installed prior to use, where appropriate, to prevent soil movement downslope from the landing. Erosion control measures may include, but are not limited to, straw bales around landing perimeter, wattles, rock surfacing, or avoidance during wet conditions. The portion of the landing outside a system road prism would be rehabilitated after use (compacted soils fractured, covered with slash or seeded and mulched).

D3. New construction of roads would not occur.

D4. Log landings on asphalt or bituminous surfaced roads would not occur unless no other options are available. The use of a paved surface may be permitted provided that the operator uses approved matting materials (such as wood chips, crushed rock, or materials such as Geoterra GTO construction mats) to protect the road surface and the pavement edge. The use of rubber-tracked or rubber-tired equipment is preferred over steel-tracked equipment. Any damage to paved surfaces would need to be repaired.

D5. All signing requirements on roads that are open for public use would meet applicable standards as set forth by the Manual of Uniform Traffic Control Devices (MUTCD). Some roads accessing State and County highways would require additional signing to warn traffic of trucks entering onto or across the highway.

### **E. Road Work (System Road Maintenance and Reconstruction)**

E1. Generally, road maintenance and reconstruction activities would occur during the dry season (generally June 1 to October 15) unless the road segment has no hydrologic connection to streams. The addition of gravel (including blading and compacting) may occur to allow for wet season haul.

E2. All waste material generated from road maintenance (ditch cleaning, blading, etc.) would be placed in a pre-designated area outside of Riparian Reserves.

E3. It is always preferred that ditch lines remain vegetated, but conditions occur where ditch lines eventually need to be deepened/cleaned. When removing vegetation from ditch lines where ditches are hydrologically connected to any stream, install an effective sediment trap to prevent ditch erosion from entering streams (e.g. wattles, mulching cleared ditches within 100 feet of stream-crossing culverts) until vegetation is re-established. Ditch lines should be deepened/cleaned the year prior to haul to allow for vegetation to reestablish prior to haul activities.

E4. All new replacement culverts would be designed to pass at least a 100-year flood streamflow, including associated bedload and debris.

E5. Culvert replacements occurring on fish-bearing streams would adhere to the design criteria in the Aquatic Restoration Biological Opinion II (ARBOII). Projects would follow all provisions in the following sections:

- a) Section 1.3.2: General Aquatic Conservation Measures
- b) Section 1.3.2 #20: Work Area Isolation & Fish Capture and Release
- c) Section 1.3.3 #21. Project Design Criteria for Aquatic Restoration Activity Categories: Fish Passage Restoration.

E6. A dewatering plan would be developed and approved for all perennial stream crossing culvert replacements that maintains downstream flow, if stream flow is sufficient for de-watering to be possible. Continuous stream flow would be maintained on fish-bearing streams.

E7. Complete excavation of fill material over the culvert at each replacement site would occur prior to extracting the existing culvert.

E8. Fresh concrete (cured less than 72 hours), concrete contaminated wastewater, welding slag and grindings, concrete saw cutting by-products, and sandblasting abrasives would be contained and not come in contact with waterbodies or wetlands. Prepare concrete at least 150 feet from water bodies.

E9. Dust abatement is limited to the application of water or lignosulfonate only. If lignosulfonate is used for dust abatement, one application would occur during the dry season (generally June 1 to October 15) at a dilution rate of 50 percent lignosulfonate and 50 percent water. Lignosulfonate would remain on the road surface and not go over road edge. During blading, small berms may be created or wattles used at stream crossings to assist with keeping palliatives on the road surface. A 1-foot no-application buffer on the edge of gravel would be used if road width allows. Lignosulfonate would not be applied when raining, or when rain is forecast within 3 days.

E10. Surface water may be diverted to meet dust abatement, maintenance, or construction needs, but only if developed sources are unavailable or inadequate. In LFH, diversions may not exceed 10% of the available flow and fish screen(s) would be installed, operated, and maintained according to NMFS's fish screen criteria (NMFS 2011e stating that pipe intakes would be screened with woven wire screens having a maximum 1.75 mm gap, and perforated plate screens would have a maximum opening of 3/32nd inch). No more than a 50% reduction in flow may occur in non-ESA streams and fish screens would be used in all streams.

#### **F. Timber and Rock Transport (Haul)**

F1. System roads used for haul would meet minimum design standards to ensure safe haul without road failure. Timber haul on roads that are failing, or likely to fail, would not occur if failure would cause direct sediment impacts to streams.

F2. Haul operations would be stopped immediately, even in the dry season, if road use is causing deep rutting of the road surface, there is ponding of water on the road, there is failure of any drainage structure, or other situation occurs which may result in sediment delivery to a stream. The road would be repaired before haul can continue.

F3. There are no timing restrictions on haul over paved roads.

F4. Log and rock haul on aggregate or native (system and temporary) roads would not occur at any time there is 1.0 inch of precipitation within any given 24-hour period as measured at the lowest elevation along the haul route. To measure precipitation, the purchaser/operator may install a temporary rain gauge on National Forest System land near or adjacent to the lowest elevation along the haul route; otherwise, precipitation would be measured according to a running average of the data measured from the Remote Automated Weather Station at Red Box.<sup>1</sup>

F5. Hauling on aggregate roads is allowed during the dry season. Haul is only allowed during the wet season (generally October 16 to May 31) on aggregate surfaced roads and landings if all the following criteria are met:

- a) Roads would meet design standards for being able to support wet weather haul (e.g. competent subgrade, minimum 6-inch depth of compacted aggregate) as determined by engineering during project planning.
- b) Haul routes would be inspected weekly, or more frequently if weather conditions warrant. Inspections would focus on road surface condition, drainage maintenance, and sources of sediment delivery to streams. If sediment traps are used, they would be inspected weekly during wet conditions and entrained soil would be removed when the traps have filled to ½ capacity. Removed materials would be deposited in a stable site that is not hydrologically connected to a stream.

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<sup>1</sup> <http://www.wrh.noaa.gov/mesowest/getobext.php?sid=RXFO3&table=1&banner=off>



- c) In subwatersheds with listed fish habitat adequate cross drainage has been installed near streams so that there is less than 200 feet of ditch line (on each side of crossing) draining directly to any stream.
- d) On road segments that have the potential to deliver sediment to any stream channel, implement erosion control measures to prevent offsite movement of soil. This work would occur in the dry season (generally June 1 to October 15), and may include methods such as placing water bars to redirect road drainage to vegetated areas rather than allowing direct run-off to stream channels. (Reference PDC A3)
- e) Haul may occur if the approach and crossing of each LFH stream is paved or has a high quality, well drained, and recently maintained aggregate surface.
- f) Haul would be stopped by the contract administrator when road sediment can be observed moving into ditches, perennial, or intermittent streams.

F6. Haul on native surfaced roads and landings is only allowed during the dry season (generally June 1 to October 15). No waivers would be granted outside of this season if there are any hydrologic connection of native surface haul routes to streams.

F7. To prevent road damage, haul would not occur when the roadbed is under freeze-thaw conditions. To determine if freeze-thaw conditions exist, measurements of the road surface temperature should be taken at the highest and lowest elevations along the haul route on National Forest System Roads to ensure that haul roads are either completely frozen or completely thawed. Temperature readings at these locations should both be at or below 28° F., or both be at or above 38° F. Roads that have been under standing snow for at least 3 days with no evidence of snow melt may be assumed to be completely frozen. The Contracting Officer may allow haul to proceed if other methods are used to determine that the haul roads are either completely frozen or completely thawed. The Contracting Officer would suspend haul if it is determined that road damage is occurring based on observation of field conditions.

F8. If snowplowing occurs, snow would be removed in a manner which protects the transportation resource and all other adjacent or connected resources. Upon completion of snowplowing, windrows and snow berms would be removed or breached to avoid accumulation or channelization of snow melt on the road. Breaching would avoid the discharge of water from the road into streams or onto erosive slopes. Any loss of roadway surfacing materials as a result of snowplowing operations would be replaced in kind by the operator. The operator would repair or replace any roadway structures that are damaged as a result of snowplowing operations.

## **G. Fuels Treatment**

G1. Fuels treatment of any kind would not occur within protection buffers.

G2. Piling of fuels intended for burning would not occur closer than 20 feet from the protection buffer. Where piling occurs within riparian reserves, piles would also not be placed on or in ditch lines or the bottom of ephemeral channels.

G3. Mechanical fuels treatment, or the construction of mechanical fire control line would not occur within the protection buffers.

G4. Mechanical fuels treatments are subject to the same slope standards as ground-based yarding equipment.

G5. Water used for fuels treatment may be drawn from sources near the units treated. In LFH, diversions may not exceed 10% of the available flow and fish screen(s) would be installed, operated, and maintained according to NMFS's fish screen criteria (NMFS 2011e stating that pipe intakes would be screened with woven wire screens having a maximum 1.75 mm gap, and perforated plate screens would have a maximum opening of 3/32nd inch). No more than a 50% reduction in flow may occur in non-ESA streams, and fish screens would be used in all streams. The fish biologist or hydrologist would be consulted prior to utilizing any water sources.

G6. Do not pump directly from a water source if chemical products are going to be injected into the pump or pumping system. If chemicals are needed, use a fold-a-tank from which to pump water. Do not use surfactant and foam near waterbodies or in Riparian Reserves.

G7. Where slash is piled for later burning, machine or hand piles would be no less than 6 feet high by 6 feet in diameter and would be no greater than 12 feet high by 20 feet in diameter. Landing piles may be larger. Piles would be constructed 20 feet or farther from live trees where leave-tree spacing allows. Where leave-tree spacing does not allow a 20-foot gap between a live tree and a pile, piles would be constructed closer to the minimum size of 6 feet high by 6 feet in diameter to minimize tree scorch. Where piles are created away from landings, pieces between 1 and 4 inches in diameter at the large end and longer than 24 inches in length in would be piled. Piles would not be constructed in roadside ditches or in areas where burning may damage infrastructure. Fuels would not be treated, or piles created within the riparian-protection buffers. Piles would be covered with 6 mil black polyethylene plastic over at least 50% of the pile. Piles would be constructed to minimize soil movement to protect soil productivity and provide for efficient burning.

G8. Fuels would be treated within some units.

- a) Operational slash would be piled at landings and outside landings where slash accumulation exceeds 7 tons per acre.
- b) Tonnage would be assessed by the Forest Service using USDA Forest Service General Technical Report PNW-105, May 1980. Pieces between 1 and 4 inches in diameter at the large end and longer than 24 inches in length may be placed in landing piles, machine piles, hand piles, or chipped. Any operational slash remaining unpiled would be lopped down to no more than 18 inches from mineral soil.
- c) Where pile burning is prescribed, burning would be accomplished at the appropriate time of year to consume a sufficient quantity of slash while protecting soil and leave trees. Fire creeping between piles is allowed as long as flame intensity is low enough to not cause soil damage or substantial harm to leave trees. Where creep occurs, the area would be regularly monitored to ensure that the operation remains consistent with burn prescriptions.

G9. Prescribed fire burn plans would follow the Interagency Prescribed Fire Planning and Implementation Procedures Guide 2017 as well as the Best Smoke Management Practices to minimize smoke effects. The Oregon Smoke Management Plan, which is administered by the Oregon State Forester, regulates the amount of forestry related burning that can be done at any one time.

G10. If the operator processes chips at the landing, the waste product called flail, would be spread out across the landings and skid trails to a maximum depth of 6 inches, keeping at least a 10-foot buffer of bare ground between the flail and the edges of slash piles. The total size of the flail spread would not exceed 2,500 square feet at each site. Any material that cannot be spread in this manner would be piled and covered with 6 mil black polyethylene plastic for later burning.

G11. If chips are created along roads, they would be dispersed to less than 3 inches depth.

#### **H. Wildlife** (See wildlife report for maps)

H1. **Snags:** Leave snags in place where possible (for example where they are not within striking distance or lean away from the infrastructure).

H2. **Down Wood:** Within nesting, roosting, and green foraging owl habitat and within Late-Successional Reserves that burned with moderate-to-severe fire intensity, leave at least 14 big down logs (greater than about 9 feet in length and 20 inches in diameter) per acre.

Leave down wood that existed prior to the fires unless it needs to be removed for safety or to reduced excessive fuel loads.

#### **H3. Northern Spotted Owl:**

- a) If northern spotted owls are observed during implementation, immediately stop, and contact a Forest wildlife biologist for next steps.
- b) Treatments would be limited to fall and leave in the following known viable nest patches; 3846T90, 3967P92, and 3970P94. The danger trees in these areas would only be felled where they are classified as "imminent or likely" according to the danger tree protocol. A nest patch is a 300-meter radius around a known or potential owl site, where a spotted owl would be most likely to select a nest tree.
- c) Treatments would be limited to fall and leave in all nesting, roosting, and green foraging habitat. The danger trees in these areas would only be felled where they are classified as "imminent or likely" according to the danger tree protocol. This restriction may be waived if the project biologist reviews the site on the ground and determines that tree removal would not impair the functionality of a known or potential nest site.
- d) No known spotted owl nesting trees would be removed. If a known nesting tree is identified as a danger tree and needs to be removed, contact a Forest wildlife biologist.
- e) Operations that generate noise (such as heavy equipment or chainsaws) would not occur within 65 yards of a viable nest patch between March 1 and July 15.
- f) No burning activities would take place within 0.25 mile of a viable nest patch between March 1 and July 15.

- g) Other actions such as blasting or helicopter use are also restricted. See Forest wildlife biologist if these actions occur.

H4. **Raptors:** If a raptor nesting area is found, it would be protected by minimizing activities within the defined protection zones during the nesting season of March 1 – May 30. If found, contact Forest wildlife biologist for additional guidance.

H5. **Amphibians:** For activities in or near aquatic habitats, see PDCs in Section B: Tree falling in Riparian.

H6. **Bald Eagles:** Road use and other access may be restricted between January 1 and August 15 within the A13 management areas depending upon bald eagle presence. If bald eagles are present in a proposed project area, contact Forest wildlife biologist. Within the A13 management areas, large, tall trees with large limbs near the top of the tree crown would be retained unless identified as a danger tree.

H7. **Deer/Elk:** Within the B11 management area, timber felling, yarding and hauling would not occur between April 1 and July 30. Firewood cutting would only occur in designated areas between August 1 and March 31 (outside of fawning, calving and rearing seasons).

H8. **Waterfowl:** If harlequin ducks are observed in the area contact a Forest wildlife biologist for potential seasonal restrictions on activities during the nesting period (April 15 to June 20).

## I. Botany

I1. All off-road equipment would be free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds prior to coming onto National Forest lands. This would include equipment or vehicles that need to stage off pavement on vegetated road shoulders. Contracts include provisions (e.g., cleaning of equipment thoroughly with pressurized water before entering National Forest lands and inspection before or after entry) to minimize the introduction and spread of invasive plants. These provisions contain specific requirements for the cleaning of off-road equipment.

I2. Gravel or rock used for roads and landings would come from sources approved by the local botanist to meet weed-free standards.

I3. Road blading, brushing and ditch cleaning in areas with high concentrations of invasive plants would be conducted in consultation with a botanist. Equipment cleaning would occur prior to leaving roads that have an existing presence of high priority invasive weeds. Equipment can be washed on-site with a water truck and high-powered hose, or similar pressure washer. (See Table of roads in I4)

I4. Coordinate with botanist to implement danger tree removal and associated activities from infestation-free areas into infested areas to avoid spreading high priority invasive weeds. Maps of known priority infestations to avoid would be provided. Equipment cleaning would occur prior to leaving roads that have an existing presence of high priority invasive weeds in order to prevent spread of high-risk species to new systems. Equipment to be washed would include any equipment that was staged off the road surface in the vegetated road shoulders. Equipment can be washed on-site with a water truck and high-powered hose, or similar pressure washer.

Road System (including all tributary roads)	Recommendation	Weeds Present
Hwy 224 and Road 4600 System within Riverside Fire Perimeter	Wash once after completing road system before moving to new system	false brome, shining geranium, Robert's geranium, orange hawkweed, common hawkweed, sulphur cinquefoil, English holly, knotweed, knapweed, Scotch broom, tansy ragwort, Armenian blackberry
Road 4500 System	Wash once after completing road system before moving to new system	houndstongue, meadow hawkweed, common hawkweed, New England hawkweed, European mountain ash, knapweed species, Scotch broom, reed canarygrass, black locust, Armenian blackberry, Canada thistle
Roads 5400, 5410, 5411 and 5412 Systems	Wash once after completing these combined road systems before moving to new system	false brome, Robert geranium
Road 4610 System	Two sites to avoid, wash before leaving road system	false brome, Robert geranium
Roads 4620 and 4621 Systems	Wash once after completing these combined road systems before moving to new system	shining geranium, Robert geranium, Scotch broom, knapweed
Road 4600200 (Three Lynx)	Wash after completing Three Lynx area	false brome, Robert geranium, perennial pea, Scotch broom, blackberry, English holly, tansy, teasel, Canada thistle, bull thistle, reed canarygrass
Roads 4630 and 4631 Systems	Wash once after completing these combined road systems before moving to new system.	bishop's goutweed, Robert geranium, knotweed, reed canarygrass, Scotch broom, English ivy, blackberry, tansy, Canada thistle, bull thistle
All roads within Lionshead Fire Perimeter	Wash once after completing road system before moving to new system	knapweeds, common hawkweed

I5. Coordination for landing location and skid trails would occur with botanical staff to avoid areas that have high concentrations of invasive species.

I6. For restoration, revegetation, or erosion control on disturbed ground, use of locally adapted native plant materials i.e., seed, cuttings, divisions, corms, bulbs, and/or transplants that have been collected from the Mt. Hood National Forest or nearby, genetically appropriate areas is preferred. If native plant materials are not available non-native, sterile seed use would be reviewed and approved by a botanist. The following would not be appropriate to use: materials from outside this sub-region, invasive plants,

orchard grass (*Dactylis glomerata*), annual ryegrass (*Lolium multiflorum*; also known as *L. perenne* ssp. *multiflorum*) or the cultivar Madsen sterile wheat (*Triticum aestivum*).

I7. Seed used for erosion control or other reasons would preferably be grown under government-supervised contracts or certified by the state of Oregon to assure noxious weed-free status.

I8. When straw and mulch are utilized for erosion control, it would be annual ryegrass straw or spring wheat straw certified as weed-free by the State of Oregon, preferably originating from Willamette Valley Oregon fields. In place of straw, wood fiber mulch (also called "wood straw") may be used.

I9. No equipment would be allowed in the identified sensitive botanical sites. Equipment reach-in from the road and hand-felling are allowed. Fall trees away from sensitive botanical sites when possible. During instances of moving felled trees within identified botanical sites, minimize dragging where possible.

## **J. Wilderness and Potential Wilderness**

J1. In these areas, danger trees would be felled where appropriate and left on-site or moved to a safe location. Commercial harvest would not occur. Techniques would be used similar to those used during fire suppression in wilderness as documented in the Minimum Impact Suppression Tactics Guidelines. Some of the techniques particularly relevant include the following.

- a) Align saw cuts to minimize visual impacts from more heavily traveled corridors. Slope cut away from line of sight when possible.
- b) Pick up and remove all flagging, garbage, litter, and equipment. Dispose of trash appropriately.
- c) Discourage use of newly established trails created during operations by covering with brush, limbs, small diameter poles, and rotten logs in a naturally appearing arrangement.
- d) Where soil has been exposed and compacted, scarify the top 2-4 inches and scatter with needles, twigs, rocks, and dead branches.
- e) Where trees are cut or limbed, cut stumps flush with ground, scatter limbs and boles. Camouflage stumps and tree boles using rocks, dead woody material, limbs, soil and fallen or broken green branches. Scattered sawdust and shavings will assist in decomposition and be less noticeable. Use native materials from adjacent, unimpacted areas if necessary.
- f) Remove newly cut tree boles that are visible from trails or meadows. Drag other highly visible woody debris created during operations into timbered areas and disburse. Tree boles that are too large to move should be slant cut so a minimal amount of the cut surface is exposed to view. Chopping up the surface with an axe or pulaski, to make it jagged and rough, will speed natural decomposition.
- g) Leave tops of felled trees attached. This will appear more natural than scattering the debris.
- h) Walk through adjacent undisturbed area and take a look at your rehab efforts to determine your success at returning the area to as natural a state as possible.

## **K. Recreation**

K1. The following apply at developed recreation sites and where recreational trails intersect roads. These practices would be implemented where feasible.

- a) Skidding or use of heavy equipment along any recreational trail tread would be avoided.
- b) Skid trail crossings of recreational trails would be kept to a minimum.
- c) Skid trail crossings of recreational trails would be perpendicular, rather than at oblique angles, and would include “doglegs” on either side of recreational trail to reduce line of sight along skid trail, as viewed from recreational trail.
- d) Trees would be directionally felled away from recreational trails.
- e) Log decks and slash piles would not be located within the boundaries of recreational trailheads, parking areas, or developed recreation sites; where these areas are impacted by logging operations, they would be cleaned up and restored.
- f) When log decks and slash piles occur within recreation sites, protect road surfaces, parking spurs, and campsites to prevent damage from machinery. Avoid piling slash, decking logs, or locating burn piles on road surfaces, parking spurs, or within campsites.
- g) Take measures to protect living trees within recreation sites. Avoid operating equipment or skidding logs within the drip lines of living trees.
- h) Skid trails and landings would be screened by remaining vegetation to be less visible from recreational trails, trailheads, parking areas, and developed recreation sites.
- i) Any recreational trails or developed recreation sites that are damaged by tree removal operations would be repaired and rehabilitated as soon as practical. This may include replacing damaged trail markers or signage, as well as repairing any incidental damage to developed recreation facilities caused by tree removal.
- j) Where treatment activities are visible in the immediate foreground of trailheads, parking areas, campgrounds, and other developed recreation sites, the scenery project design criteria would be the same as in the immediate foreground of roads, as described in PDC section L. This includes the following sites.
  - 1. All developed recreation sites and trailheads with primary access from Hwy. 224
  - 2. Fish Creek Campground and Fish Creek Trailhead/Boat Launch
  - 3. Indian Henry Campground and Clackamas River Trailhead
  - 4. Rainbow Campground and Riverside Trailhead
  - 5. Riverside Campground and Riverside Trailhead
  - 6. Ripplebrook Campground
  - 7. All developed recreation sites and trailheads surrounding Olallie Lake
  - 8. Lower Lake Campground and Fish Lake Trailhead
  - 9. Horseshoe Lake Campground and Horseshoe Saddle Trailhead
  - 10. PCT Trailhead at Breitenbush Lake
- k) Where treatment activities occur within developed campgrounds and Fish Creek Trailhead/Boat Launch, there is an increased emphasis to retain trees that may have a chance of surviving. This determination would be based on the percent of scorched crown by volume or the percent of charred bole using the table found in the Project Information Sheet. The assessment of hazard trees would occur annually to deal with trees that die.

## **L. Scenery**

L1. The following scenery project design criteria would be incorporated at the locations (viewer positions) listed below, but may also be incorporated at other locations to enhance scenic quality where appropriate. For the purposes of this document, the “immediate foreground” distance zone is

equivalent to the “area of consideration,” and the “foreground” distance zone is equivalent to ½ mi. from the specified viewer position.

Viewer positions where scenery PDCs apply:

- a) Road 46 (Upper Clackamas Designated Viewshed)
- b) Road 54
- c) Road 57
- d) Road 4220 (inside the Olallie Lake Scenic Area)
- e) Where the following recreational trails intersect and/or have trailheads located on roads within the area of consideration, the immediate foreground practices described at L2, L3, L4, and L5d would apply.
  - 1. Trail 515 – Memaloose Lake Trail
  - 2. Trail 516 – Hillockburn Trail
  - 3. Trail 541 – Fish Creek Mountain Trail
  - 4. Trail 564 – Rhododendron Ridge Trail
  - 5. Trail 703 – Cripple Creek Trail
  - 6. Trail 706 – Lodgepole Trail
  - 7. Trail 712 – Horseshoe Saddle
  - 8. Trail 715 – Clackamas River Trail
  - 9. Trail 717 – Fish Lake Trail
  - 10. Trail 719 – Red Lake Trail
  - 11. Trail 723 – Riverside Trail
  - 12. Trail 729 – Monon Lake Trail
  - 13. Trail 731 – Olallie Lake Trail
  - 14. Trail 2000 – Pacific Crest Trail
  - 15. Trail 3360 – Rapidan Trail

L2. Where tree removal is visible in the immediate foreground of the viewer position, the following actions would be taken, whenever feasible.

- a) Ground disturbance and the removal of living trees and vegetation would be minimized.
- b) Damage to residual trees and vegetation would be minimized when felling and yarding, especially to live large diameter trees.
- c) The impacts from mechanized and hand treatments would be minimized to promote a naturally appearing setting.
- d) If paint is used, mark cut trees rather than leave trees.
- e) If flagging or signs are used, they would be removed following completion of treatment activities.
- f) Skid trails and landings would be screened by remaining vegetation to be less visible from the viewer position.

L3. Where stumps are visible in the immediate foreground of the viewer position, the following actions would be taken, whenever safe and feasible.

- a) The maximum stump height would be 7 in. on the uphill side.



- b) On level ground, stumps would be flush cut horizontally.
- c) On slopes, stumps may be angle cut if facing away from the viewer position.
- d) Stumps would be covered with duff, dirt, or debris to hide or stain the newly exposed stumps.

L4. Where activity slash is visible in the immediate foreground of the viewer position, the following actions would be taken, whenever feasible. See also the PDCs in section G.

- a) The preference is to remove slash for disposal elsewhere.
- b) Where slash piling occurs, piles would be placed where they can be burned without damaging live trees.
- c) Slash piles would be screened by remaining vegetation to be less visible from the viewer position.
- d) If slash is ground or chipped on-site, the wood chips would be scattered downhill away from the viewer position to a depth of 3 inches or less.

L5. Where felled trees or portions of felled trees remain on-site and are visible in the foreground of the viewer position, the following actions would be taken, whenever feasible.

- a) Felled trees would be generally left on contour and/or gently sloping downhill to prevent soil erosion.
- b) Felled trees would be scattered in a manner that provides visual variety vs. uniformity.
- c) On slopes greater than 20%, felled trees would be felled in different random patterns to promote a more natural-appearing setting.
- d) Down woody debris requirements for the retention of logs or debris for wildlife, soils, or diversity do not apply in the near-foreground as described at Forest Plan standards FW-582 and B2-064.

L6. Where visible in the foreground of the viewer position, dead trees leaning away from the road would be retained, whenever feasible.

L7. Where areas of disturbance are visible in the foreground of the viewer position, the following actions would be taken, whenever feasible.

- a) Evidence of equipment tracks would be repaired.
- b) All disturbed areas would be revegetated to a natural appearance incorporating a site-appropriate mix of native trees, shrubs, groundcover and/or grasses.
- c) Hydro-mulch seeding, where utilized, would feature dark brownish-green colorant to reduce color contrasts.