Appendix B – Management Objectives and Direction

This section identifies the management objectives and direction that would apply under all four action alternatives. This section begins by providing an overview of management objectives and direction common to all for major allocations, before providing objectives and direction common to all by resource. The following section describes the elements that are unique to each action alternative.

The BLM would permit activities that are not specifically mentioned in the management direction if they are consistent with management objectives.

Common to All by Major Allocation

Harvest Land Base

This allocation includes all lands not reserved from the Harvest Land Base.

Management Objectives

- Manage forests to achieve continual timber production that can be sustained through a balance of growth and harvest.
- Offer for sale the declared allowable sale quantity of timber.
- Recover economic value from timber harvested after a stand-replacement disturbance, such as a fire, windstorm, disease, or insect infestations.
- In harvested or disturbed areas, ensure the establishment and survival of desirable trees appropriate to the site and enhance their growth.
- Enhance the economic value of timber in forest stands.
- See also below under Fire, Fuels, and Wildfire Response; Forest Management; Northern Spotted Owl management.

Management Direction

- See below under Fire, Fuels, and Wildfire Response; Forest Management; Northern Spotted Owl management.

Late Successional Reserves

Management Objectives

- Protect stands of older, structurally-complex conifer forest.
- Maintain habitat for the northern spotted owl and marbled murrelet.
- Promote the development of habitat for the northern spotted owl in stands that do not currently meet suitable habitat criteria.
- Promote the development of nesting habitat for marbled murrelet in stands that do not currently meet nesting habitat criteria.
- See also below under Fire, Fuels, and Wildfire Response; Forest Management; Northern Spotted Owl management.

Management Direction

- See below under Fire, Fuels, and Wildfire Response; Forest Management; Northern Spotted Owl management.
- Within the LSR, the BLM may undertake activities such as individual tree removal, including the felling of hazard trees and stream logs, and the construction of linear and nonlinear rights-of-way or other facilities, including communication sites, as long as:
  - The forest stand continues to support the same northern spotted owl life history requirements.
  - Nesting-roosting habitat continues to support northern spotted owl nesting and roosting; dispersal habitat continues to support northern spotted owl movement and survival.

Riparian Reserves

Management Objectives in the Decision Area West of Highway 97

- Contribute to the conservation and recovery of listed fish species and their habitats and provide for conservation of special status fish and other special status riparian associated species.
- Maintain and restore the proper functioning condition of riparian areas, stream channels and wetlands by providing forest shade, sediment filtering, wood recruitment, stability of stream banks and channels, water storage and release, vegetation diversity, nutrient cycling and cool and moist microclimate.
- Maintain water quality and streamflows within the range of natural variability, to protect aquatic biodiversity, provide quality water for contact recreation and drinking water sources.
- Meet ODEQ water quality targets for 303(d) water bodies with approved Total Maximum Daily Loads (TMDLs).
- Maintain high quality water and contribute to the restoration of degraded water quality downstream of BLM-administered lands.
- Maintain high quality waters within ODEQ designated Source Water Protection watersheds.
- See also below under Fisheries.

Management Direction in the Decision Area West of Highway 97

- Maintain access to roads and facilities by removing danger trees and blowdown.
- Yarding corridors, skid trails, road construction, maintenance, and improvement would be allowed, where there is no practicable alternative to accomplish resource management objectives.
- Use site-specific BMPs (**Appendix I**) to maintain water quality during road construction and maintenance activities, including discretionary actions of others crossing BLM lands.
- Suspend winter haul when the ground is saturated and monitoring indicates sediment runoff to streams is predicted to occur from road degradation.
- Any substantive modifications of flood plains or wetlands must include off-site mitigation on Federal lands and maintain a “no net loss” of floodplains and wetlands value.
- Maintain equal value for floodplains and wetlands in terms of structure and function between the Selected and Offered lands in an exchange.
- Install sanitation systems that maintain water quality, (e.g. sealed vault or similar in new recreational developments).

- Mining operators with an accepted Notice or approved Plan of Operations will comply with performance standards (43 CFR 3809.420) including all applicable State and Federal water quality standards.
- Prevent slash burning within 30 feet of streams.
- Ground-based machinery for fuels reduction projects would not be operated within 50 feet of streams or on slopes >35 percent.
- Decommission streamside roads, where not needed for future management purpose.
- See also below under Fisheries.

Management Objectives for Forested Lands in the Decision Area East of Highway 97

- Provide for conservation of special status fish and other special status aquatic species.
- Provide for riparian and aquatic conditions that supply stream channels with shade, sediment filtering, leaf litter and large wood sources, and stream bank stability.
- Maintain and restore water quality and hydrologic functions.
- Maintain and restore access to stream channels for all life stages of fish species.

Management Directions for Forested Lands in the Decision Area East of Highway 97

Table B-1. Riparian Reserve distances by water feature.

Feature	Riparian Reserve Distance*
Perennial and fish-bearing streams	150 feet on each side of a stream channel as measured from the ordinary high water line.
Non-fish bearing intermittent streams, lakes, natural ponds, and wetlands >1 acre	100 feet on each side of a stream channel as measured from the ordinary high water line.
Constructed impoundments and ponds, and wetlands < 1 acre	Extent of riparian vegetation

* Reported distances are measured as slope distance

All water features

- Implement salvage harvest of timber after a stand-replacing disturbance as needed to reduce hazards to public health and safety in the Wildland Urban Interface.
- Fall and remove trees as needed for safety or operational reasons, including but not limited to: danger tree removal, creation of yarding corridors adjacent to nearby harvest units, and road construction, improvement, or maintenance.
- Implement instream and riparian restoration activities, such as placement of boulders and large wood in streams including tree lining from adjacent riparian areas for all streams. Place an emphasis on streams that have high intrinsic potential for fish, high priority fish populations (such as those defined in recovery plans), or high levels of chronic sediment inputs.
- Remove or modify constructed fish passage barriers to restore access to stream channels for all life stages of fish species.
- Apply fuels treatments and prescribed burns in the Riparian Reserve as needed to reduce the potential for uncharacteristic wildfires.

- Restrict livestock from the Riparian Reserve of streams with ESA-listed or anadromous fish species until 30 days following the emergence of salmonids from spawning beds.
- Manage livestock grazing in the Riparian Reserve at a level that allows maintenance or development of the proper functioning condition of riparian and wetland plant communities. Implement practices such as installing and maintaining livestock exclosures, managing season of use and intensity, developing off-stream watering facilities, and other appropriate techniques to attain this condition.

Perennial and fish-bearing streams

- Apply thinning and other silvicultural treatments to accelerate the development of potential natural forest stand conditions including late successional stand characteristics and native riparian shrub communities.
- Do not apply mechanical treatments within 60 feet (slope distance) on either side of the edge of the stream channel, as measured from the ordinary high water line.
- Retain snags and coarse woody debris in thinning operations, except for safety or operational reasons (e.g., maintaining access to roads and facilities).
- Do not apply mechanical treatments on slopes >35 percent, sensitive soils, or slide prone areas.
- Retain and promote long-term shade conditions.

Non-fish-bearing intermittent streams

- Apply thinning and other treatments to speed the development of large trees to provide an eventual source of large woody debris to stream channels.
- Do not apply mechanical treatments within 35 feet (slope distance) on either side of the edge of the stream channel, as measured from the ordinary high water line.
- Retain all snags and coarse woody debris in thinning operations except for safety or operational reasons (e.g., maintaining access to roads and facilities).

Lakes, natural ponds, and wetlands

- Apply thinning and other treatments to speed the development of potential natural vegetation communities. Do not apply mechanical treatments within 35 feet (slope distance) on either side of the edge of the water body, area of riparian vegetation, or seasonally saturated soils (whichever is greater).
- Retain all snags and coarse woody debris in thinning operations except for safety or operational reasons (e.g., maintaining access to roads and facilities).

Constructed impoundments and ponds

- Apply thinning and other treatments to speed the development of potential natural vegetation communities.

Management Objectives for non-forested lands in the decision area east of Highway 97

- Provide for conservation of Special Status fish and other Special Status aquatic species.
- Provide for the riparian and aquatic conditions that supply stream channels with shade, sediment filtering, leaf litter and large wood, and stream bank stabilization.
- Maintain and restore water quality.
- Maintain and restore access to stream channels for all life stages of fish species.

- Maintain and restore the proper functioning condition and ecological site potential of riparian and wetland areas.

Management Directions for non-forested lands in the decision area east of Highway 97

Table B-2. Riparian Reserve distances.

Feature	Riparian Reserve Distance[118]
Non-forested lands: all streams and wetlands	The extent of riparian vegetation as indicated by hydrophilic vegetation

- Manage livestock grazing in the Riparian Reserve at a level that allows maintenance or development of the proper functioning of riparian and wetland plant communities. Methods for attaining this condition will include, but are not be limited to, installing and maintaining livestock exclosures, managing season of use and intensity, developing off-stream watering facilities, and implementing other appropriate techniques.
- Remove conifer encroachment in the Riparian Reserve where conifers are interfering with the natural vegetation community type, or where excessive erosion may occur.
- Implement road improvement, storm proofing, maintenance, or decommissioning to reduce chronic sediment inputs along stream channels and water bodies.
- Apply prescribed burns and weed treatments in the Riparian Reserve as needed to reduce the potential for uncharacteristic wildfires.
- Implement instream and riparian restoration activities, such as placement of large wood and boulders in streams. Remove or modify constructed fish passage barriers to restore access to stream channels for all life stages of fish species.
- Apply BMPs for roads, stream and riparian restoration work, and vegetation management as needed to maintain or restore water quality (**Appendix I**).
- Manage livestock grazing where listed fish species occur to prevent direct impacts to spawning and incubation.

[118] Reported distances are measured as slope distance.

Common to All by Resource

Air Quality

Management Objectives

- Protect air quality related values in Federal mandatory Class I areas.
- Prevent exceedances of national, state, or local ambient air quality standards.

Management Direction

- For prescribed burning activities, comply with the Oregon Smoke Management Plan.
- Use BMPs to reduce dust from unpaved road surfaces during extended management operations, such as timber sales and wildfires. Example practices include reducing vehicle speed or applying dust suppressants.
- Follow State Implementation Plan requirements for activities that could negatively affect the status of air quality non-attainment or maintenance areas.

Areas of Critical Environmental Concern

Management Objective

- Maintain or restore important and relevant values in Areas of Critical Environmental Concern, including Research Natural Areas, and Outstanding Natural Areas.

Management Direction

- Implement activities as necessary to maintain or restore important and relevant values (**Appendix F**).
- Develop site-specific stipulations for leasable mineral development, as necessary, to maintain or restore relevant and important values. Examples might include no surface occupancy or conditional surface uses based on resource protection needs.
- Close Areas of Critical Environmental Concern with identified special management needs to salable mineral development.
- Petition for withdrawal from locatable mineral entry Areas of Critical Environmental Concern with identified special management needs associated with locatable mineral development.
- Manage all Areas of Critical Environmental Concern as Right-Of-Way Avoidance Areas.

Cultural/Paleontological Resources

Management Objectives for Cultural Resources

- Preserve and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations.
- Reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration or potential conflict with other resources by ensuring that all authorizations for land and resource use will comply with Section 106 of the National Historic Preservation Act.

Management Direction for Cultural Resources

- Evaluate all documented cultural resources for NRHP eligibility. Protect all NRHP eligible or listed sites through avoidance or other protection measures.
- Conduct public education and outreach activities and develop materials in order to educate and interpret for the public the cultural and historic resources within the planning area.
- Assign all cultural resources into one of the use allocations in **Table B-3**.

Table B-3. Cultural use allocations with desired outcomes and management actions.

Use Allocation	Desired Outcome	Management Action
Scientific Use	Preserved until research potential is realized	Permit appropriate research including data recovery
Conservation for future use	Preserved until conditions for use are met	Propose protection measures/designations
Traditional use	Long-term preservation	Consult with Tribes; determine limitations
Public use	Long-term preservation, on-site interpretation	Determine limitations, permitted uses
Experimental use	Protected until used	Determine nature of experiments
Discharged from management	No use after recordation, not preserved	Remove Protective measures

Management Objectives for Paleontological Resources

- Protect and preserve significant localities from natural or human-caused deterioration or potential conflict with other resources.
- Provide appropriate scientific, educational, and recreational use, such as research and interpretive opportunities for paleontological resources.

Management Direction for Paleontological Resources

- Do not conduct management activities in significant localities where such activities would harm paleontological resources.
- Conduct public education, outreach activities, and develop materials to educate the public on paleontological resources existing within the planning area.

Eastside Klamath Falls Management Area

This land use allocation applies to the Klamath Falls Field Office lands east of Highway 97. The non-forested land objectives and direction apply to all non-forested lands within the Klamath Falls Field Office east of Highway 97. If there is no management direction described below for a specific resource, default to the management direction for west of Highway 97.

Management Objectives for forested lands

- Manage the Eastside Forest Management Area on a sustainable basis for multiple uses including wildlife habitat, recreational needs, riparian habitat, cultural resources, community stability, and commodity production, including commercial timber and other forest products.

- Promote development of fire-resilient forests. Apply prescribed burns, mechanical or hand fuels treatments to reduce the potential for uncharacteristic wildfires. Apply maintenance treatments at appropriate intervals to retain fire resilient conditions.

Management Direction for forested lands

- Utilize uneven-aged management in managing forest stands. This will include use of a combination of harvesting methods including thinning, single tree selection harvest, and group selection harvest.
- Conduct uneven-aged management harvests for the removal and sale of timber and biomass. Harvests will be applied to stands of any age for any one or more of the following purposes: maintain growth and vigor of the stand; adjust stand composition or dominance; recover anticipated mortality; reduce stand susceptibility to natural disturbance such as fire, windstorm, disease, or insect infestation; improve merchantability and value; and promote multi-structural conditions in forest stands.
- Retain an overstory component of trees in uneven-aged management harvest units to provide shade, reduce wind speed, and promote overall fire resiliency in the stand. Maintain relative density (Curtis 1982) between 15 and 55, but allow relative density to vary outside of this range based on vegetative type, site productivity, and fire risk factors such as slope, aspect, and elevation.
- Incorporate group selection harvest of up to five acres in size individually, and an aggregate level of up to 25 percent of the area of the treated stand within uneven-aged management harvest units when needed to: maintain or develop desired species composition; achieve desired diameter distribution; or address natural disturbances.
- Implement timber salvage harvest after disturbances to recover economic value and to minimize commercial loss or deterioration of damaged trees. Retain overstory trees as needed within regeneration harvest areas to provide for shade, frost protection, seeding, or other silvicultural needs.
- Convert lands historically supporting conifer species (other than juniper) that are currently growing primarily brush or hardwoods to conifer species suitable to the site.
- Apply pre-commercial thinning to forest stands to achieve long-term management objectives.
- Apply pruning to enhance timber value and for fuels and disease management.
- Retain snags and coarse woody debris during harvest of stands, except for safety or operational reasons. When the existing level of snags, on the average per acre over the stand to be treated, is either: (1) less than two snags over 16” DBH, or (2) the existing coarse woody debris over 12” in diameter and 12 feet in length totals less than 40 feet, new snags and coarse woody debris will be created to meet these levels. Also:
  - Snag and coarse woody debris levels described above will be met by any combination of the creation of new snags and coarse woody debris from live conifer trees and the retention of existing levels of snags (Class I and Class II) and coarse woody debris (Class I and Class II). If existing levels of snags and coarse woody debris are insufficient to meet these levels in a thinning project, the desired levels can be satisfied by including in the project decision the creation of snags and coarse woody debris within five years to meet these levels after completion of the harvest or associated fuels treatment.
  - Snag and coarse woody debris retention or creation levels will be met at the scale of the harvest unit and are not intended to be attained on every acre. Snag and coarse woody debris retention will be variable per acre throughout the area being treated.
  - If the pre-harvest quadratic mean diameter of the stand is less than 16” then the snags to be created or retained will be 2 snags per acre with a diameter larger than the quadratic mean diameter of the stand.

Management Objectives for Non-Forested Lands

- Manage non-forest lands with the intent of maintaining or improving wildlife habitat and rangeland conditions based on ecological site parameters. Where conditions are currently late seral or potential natural community, maintain these conditions. Where conditions are early or mid seral, improve conditions towards late seral or potential natural community.
- Manage non-forest lands for multiple uses in addition to those listed above including: recreational needs, community stability, and commodity production. Commodities include firewood, logs, biomass, chips, and other products and byproducts from juniper woodlands and rangelands.
- Promote development of fire-resilient forest.
- Provide for the conservation of BLM Special Status Species.
- Meet Oregon Department of Fish and Wildlife management goals for wildlife on public domain lands.

Management Direction for Non-Forested Lands

- Vegetation communities encroached by invasive juniper would be treated using prescribed fire, mechanical, chemical, and manual treatments. Manage to conserve juniper on sites composed of woodland soils.
- Thin, pile and burn, or remove encroaching western juniper that hinders attainment of desired forage conditions to maintain and improve forage for big game.
- Retain old "legacy" juniper when it meets the following definition. Old Juniper refers to individual trees that likely originated in the "pre-settlement" period, before 1870. It is assumed that these trees are growing on sites that they are adapted to, since they began growing there under "natural conditions" when natural processes (including lightning fires) determined vegetation patterns. Older junipers are commonly found in rocky areas where vegetation is sparse and natural fire frequency is low. Characteristics of older juniper include some or all of the following:

    - Crown is flat, rounded, broad at top, or irregular (as opposed to the more pointed tops of younger trees)
    - Spike top
    - Numerous dead branches
    - Branches covered with coarse, bright yellow-green lichen (*Letharia*, or wolf lichen)
    - Large diameter lower branches
    - Large diameter trunk relative to height
    - Trunk has spirally-twisted bark, deep furrows
    - Hollow trunk

- Apply prescribed burns, mechanical or hand fuels treatments to reduce the potential for uncharacteristic wildfires. Apply maintenance treatments at appropriate intervals to retain fire resilient conditions.
- Treat emergent or new weed populations. Contain or reduce noxious weed infestations on BLM-administered land using an integrated pest management approach. Continue to survey BLM-administered land for noxious weed infestations and implement actions to reduce infestations.
- Plant native species when quantity and quality of forage is determined to be limiting factor in achieving management goals.
- Manage unoccupied or historic sage grouse habitat consistent with the Greater Sage Grouse Conservation Assessment and Strategy for Oregon.
- Maintain or enhance wildlife habitat on rangelands.
- Continue the existing road closures to motorized vehicles, except for administrative purposes, between November 1 and April 15 in the Klamath Deer Winter Range. This seasonal road closure

includes South Gerber, Willow Valley, Harpold Ridge, Bryant Mountain, North Bryant, Windy Ridge, and Lorella.
- Maintain visual barriers such as trees or other vegetation from 25 to 50 feet wide along roads within the designated deer winter range.
- Plant forage species along roadsides, skid trails, and on disturbed areas, or create forage plots when forage quality is determined to be a limiting factor in achieving the management goals of the Oregon Department of Fish and Wildlife. Include forage retention requirements for wildlife when implementing silvicultural treatments or habitat management activities.

Fire, Fuels, and Wildfire Response

Management Objectives

For all Allocations

- Respond to wildfires in a manner that provides for public and firefighter safety while meeting land management objectives by utilizing the full range of fire management options.
- Fire management strategies should be risk-based decisions that consider firefighter and public safety, values at risk, management objectives, and costs that are commensurate with the identified risk.
- Actively manage the land to restore and maintain resilience of ecosystems to wildfire and decrease the risk of uncharacteristic large high-intensity/severity wildfires.
- Manage fuels to reduce wildfire hazard, risk, and negative impacts to communities and infrastructure, landscapes, ecosystems, and highly valued resources.

For LSR-Dry

- Apply landscape-scale, science-based adaptive restoration treatments that will better enable forests to: 1) recover from past management measures, 2) respond positively to climate-driven stresses, wildfire and other disturbance with resilience, 3) ensure positive or neutral ecological impacts to wildfire, and 4) contribute to NSO recovery.
- Reduce the risk of loss of key late-successional structure through the development of vertical and horizontal heterogeneity.
- Increase diversity of stocking levels and size classes within the stand or landscape.

Management Direction

All Allocations

- Take immediate action to suppress all human-caused ignitions at the lowest cost and with the fewest negative consequences with respect to firefighter and public safety.
- Apply the full range of fire management options to natural ignitions or escaped prescribed fires.
  - These fires may be used to achieve management objectives when expected fire behavior and potential effects of a fire, or a part of a fire, are aligned with the management objectives and direction of the underlying land use allocation.
- Conduct wildfire rehabilitation and restoration efforts to protect and sustain ecosystems, ecosystem services, public health and safety, and infrastructure adversely affected by suppression actions (fire operations) or direct fire effects.
- Treat both activity and natural hazardous fuels to modify the fuel profile (i.e., raise canopy base heights or reduce surface and ladder fuels and crown bulk density) to reduce potential wildfire spread,

intensity, and severity and improve effective fire management opportunities within the wildland urban interface and in close proximity to other highly valued resources.
  - Treat fuels in a way that increase intervals between future maintenance treatments and provide maximum effectiveness over time.
- Create fuel beds or fuel breaks that reduce the potential for high-intensity fire spread within the wildland urban interface and in close proximity to other highly valued resources.
- When applying prescribed fire do not compromise habitat of Special Status Species plants that are limited in distribution.
- Work in partnership with local, State, and Federal stakeholders to build capacity within the communities bordering Federal lands to reduce the risks and threats from wildland fire.
- Conduct necessary vegetation maintenance treatments to ensure effective and efficient ground and aerial access and utilization of existing natural and man-made strategic infrastructure (i.e., pump chances and other fire suppression water sources, key road systems, containment lines, fuel breaks and helispots, etc.) that may be used during fire management operations.

Dry Forests in all Allocations

- Treat fuels to restore landscapes with the highest risk of uncharacteristic wildfires (i.e., high frequency fire regimes) and the greatest potential for hazard reduction consistent with underlying management objectives and directions.
  - Modify fuel beds to produce characteristic fire behavior and fire effects representative of the fire regime.
- Implement prescribed fire in low/mixed severity or high-frequency fire regimes to emulate historic fire function and processes in a manner consistent with land management objectives and directions.
  - Apply prescribed fire across the landscape to create a mosaic of spatial and temporal stand conditions and patterning (appropriate to the fire regime). Based on site-specific considerations, take measures to prevent and control fire regime altering species.
- Apply maintenance treatments (thinning, prescribed burning, etc.) at appropriate intervals to retain fire resilient conditions consistent with underlying management objectives and directions.
  - Apply treatments that maintain or restore community-level structural characteristics, promote desired species composition, and emulate ecological conditions produced by historic fire regimes on non-ASQ land allocations or TPCC withdrawn areas, such as oak woodlands, meadows, grasslands, and shrublands.

Dry LSR and UTA

- Protect trees established prior to 1850 by removing adjacent fuels to reduce risk of fire related mortality

Riparian Reserve

- Implement fuel treatment and fire management strategies, practices, and activities that meet Riparian Reserve management objectives.
- In the case of prescribed fire or wildfire, apply the following principles to meet resource and management objectives, unless they would impede public or fire personnel safety or protection of private property values. Fire management plans should address requirements for additional exemption situations:
  - Locate incident bases, camps, helibases, helispots, staging areas, and other centers for incident activities outside of the Riparian Reserve.

- Avoid application of chemical retardant, foam, or other chemicals to waterways unless the fire is deemed a threat to human safety or private property.
- Locate and manage water drafting sites to minimize adverse effects on riparian habitat and water quality.

Fisheries

Management Objectives

- Improve the distribution and quantity of high quality fish habitat across the landscape for all life stages of ESA-listed, BLM Special Status Species, and other fish species.
- Maintain and restore access to stream channels for all life stages of aquatic species.

Management Direction

Riparian Reserve

- Create spawning, rearing, and holding habitat for fish using a combination of accepted techniques including log and boulder placement in stream channels, tree tipping, and gravel enhancement to create habitat for fish species.
- Where appropriate for restoration purposes, fell trees into the stream channel from the Riparian Reserve to create habitat for aquatic species and to create gaps and openings near streams to promote early seral vegetation.
- Maintain or improve roads in the Riparian Reserve in a condition that will not contribute sediment to streams that will hinder spawning habitat for fish. This could include maintaining vegetated ditch lines, improving road surfaces and installing cross drains at appropriate spacing.
- Replace stream crossings that currently or potentially block or hinder fish passage with crossings that allow aquatic species to pass at each life stage and at a range of flows.

All Allocations

- When no longer needed for stand management and where adjacent landowner rights-of-way allow, decommission roads along streams in valley bottoms.

Forest Management

Management Objectives

All allocations

- Enhance the health, stability, growth, and vigor of forest stands.
- In harvested or disturbed areas, ensure the establishment and survival of desirable vegetation appropriate to the site.
- Allow necessary falling and removal of live or dead trees for safety or operational reasons.
- Allow road construction and maintenance, placement of yarding corridors, and construction of skid trails and landings based on operational needs as well as for those with valid and existing access rights.

All allocations in the Harvest Land Base

- Manage forests to achieve continual timber production that can be sustained through a balance of growth and harvest.
- Offer for sale an allowable sale quantity.
- Recover economic value from timber harvested after a stand-replacement disturbance, such as a fire, windstorm, disease, or insect infestations.
- In harvested or disturbed areas, ensure the establishment and survival of desirable trees appropriate to the site and enhance their growth.
- Enhance the economic value of forest stands.

UTA and the Dry Forest in LSR allocations

- Increase diversity of stocking levels and size classes within the stand or landscape.

Management Direction

HITA, MITA, LITA, UTA, OHTA, LSR, and RR

- Promote the establishment and survival of desirable vegetation through stand maintenance treatments.
- Apply pre-commercial thinning to forest stands to achieve appropriate stocking levels.
- Fall and remove live or dead trees as needed for safety or operational reasons, including but not limited to: hazard tree removal, creation of yarding corridors or skid trails adjacent to nearby harvest units, and road construction, improvement, or maintenance.
- Road construction, maintenance, improvement, and decommissioning; as well as construction of skid trails and yarding corridors would be allowed.

All allocations in the Harvest Land Base

- Silvicultural treatments would be applied to remove timber volume.
- Implement timber salvage harvest after disturbances to recover economic value and to minimize commercial loss or deterioration of damaged trees.
- Prepare newly harvested and inadequately stocked areas for the regeneration of desirable tree species.
- Site preparation methods include mechanical or manual procedures, and prescribed burns.
- Apply silvicultural treatments to enhance timber value and for fuels, insect, and disease management.

In all allocations with untreated skips or aggregated group retention

- Candidate areas and features for untreated skips and aggregate retention could include any of the following:
  - Areas containing concentrations of trees that are older and larger than the prevailing stand conditions
  - Areas containing trees with unique characteristics (e.g., deformed boles, cavities)
  - Areas containing concentrations of large down wood
  - Patches dominated by hardwood trees
  - Areas of structural complexity
  - Productive native shrub patches
  - Areas containing concentrations of snags
  - Representative patches of the pre-harvest stand
  - Patches of herbaceous understory vegetation

- Areas of "sensitive" soils (i.e., steep and unstable areas, shallow soils, and areas with a high potential for soil movement or excessive soil erosion;
- Areas containing unique habitats such as seeps, rock outcrops, and areas of unique diversity
- Areas with concentrated bird or rodent nest structures

Dry LSRs

- Utilize uneven-aged and integrated vegetation management in designing and implementing treatments. This will include use of a combination of silviculture treatments, fire and fuels management activities, and harvest methods. Activities include planting, prescribed fire, thinning, single tree selection harvest, and group selection harvest.
- Uneven-aged and integrated vegetation management would be applied for the following reasons:
  - promote the development of large, open grown trees and multi-cohort stands;
  - develop diverse understory plant communities;
  - To increase or maintain vegetative species diversity;
  - Promote or enhance the development of structural complexity and heterogeneity;
  - Allow for hardwood persistence;
  - To adjust stand composition or dominance;
  - To reduce stand susceptibility to disturbances such as a fire, windstorm, disease, or insect infestation.
- Uneven-aged and integrated vegetation management treatments would meet the following criteria, post-treatment:
  - Stand average relative percent max SDI targets would be between 35 percent and 45 percent.
  - For stands ≥ 10 acres:
    - Maximum group selection opening size, 4 acres
    - Maximum percentage of stand area in group selection openings, 25 percent
    - Minimum percentage of stand area in untreated skips 10 percent
    - At least ½ of the skips would be implemented as retention islands unattached to the exterior unit boundaries,
  - For stands < 10 acres:
    - Maximum group selection opening size, 2.5 acres,
    - No maximum percent of stand in openings, and no minimum percent of stand in skips.
- Following large scale disturbances and when regenerating group selection openings, develop heterogeneous vegetation patterns.
  - Regenerate a mixture of species appropriate to the site using variable spacing within 5 years of disturbance or harvest.
    - Natural regeneration, artificial regeneration, or a combination would be allowed.
    - 50-70 percent of full stocking is considered acceptable.
    - Regenerate a higher proportion of fire tolerant species at lower densities, in variable patterns, within a skip and gap framework in areas of higher relative fire probability (often southern slopes and ridge tops, and areas prone to heavy shrub/brush/hardwood regrowth) that present the highest risk of losing high density replanting.
    - Regenerate a higher proportion of fire intolerant species at higher densities in areas that coincide with low relative fire probability and provide a higher confidence of retaining these species.
- Following large scale disturbances;
  - Maintain at least 10 percent of the stand un-stocked with trees in gaps ≥ ¼ acre in size for at least two decades to accelerate development of heterogeneous fuel conditions.

UTA and Dry Forests in LSR and OHTA

- Retain dominant Douglas-fir (*Pseudotsuga menziesii*), Pine (*Pinus* spp.), incense-cedar (*Calocedrus decurrens*), madrone (*Arbutus menziessii*), bigleaf maple (*Acer macrophyllum*), and oak (*Quercus* spp.) trees established prior to 1850, except where removal is necessary for safety or operational reasons.
  - These trees will be identified based on bark, limb, and crown characteristics.
  - A reasonable effort shall be made to identify these trees and retain them, understanding there is no practicable way to ensure 100 percent retention.
- Protect and develop "legacy trees" on the landscape, by reducing competition.
  - Release "legacy trees" that originated prior to 1850 in order to improve vigor and resistance to fire, drought, disease and other disturbances.

UTA

- Utilize uneven-aged and integrated vegetation management in designing and implementing treatments. This will include use of a combination of silviculture treatments, fire and fuels management activities, and harvest methods. Activities include planting, prescribed fire, thinning, single tree selection harvest, and group selection harvest.
- Uneven-aged and integrated vegetation management would be applied to:
  - Produce timber to contribute to the attainment of the declared Annual Sale Quantity
  - Promote the development of large, open grown trees and multi-cohort stands
  - Develop diverse understory plant communities
  - Increase or maintain vegetative species diversity
  - Promote or enhance the development of structural complexity and heterogeneity
  - Allow for hardwood persistence
  - Adjust stand composition or dominance
  - Reduce stand susceptibility to disturbances such as a fire, windstorm, disease, or insect infestation
- Uneven-aged and integrated vegetation management treatments would meet the following criteria, post-treatment:
  - Post-thinning stand average relative percent max SDI targets will be between 20 percent and 45 percent.
  - For stands ≥ 10 acres:
    - Maximum group selection opening size, 4 acres
  - Maximum percentage of stand area in group selection openings, 30 percent
    - Minimum percentage of stand area in untreated skips 10 percent
    - At least ½ of the skips would be implemented as retention islands unattached to the exterior unit boundaries
  - For stands < 10 acres:
    - No maximum group selection opening size, no maximum percent of stand in openings, and no minimum percent of stand in skips
- Implement timber salvage harvest after disturbances to recover economic value and to minimize commercial loss or deterioration of damaged trees.
  - Remove all merchantable dead and down timber from disturbed areas where removal is economically viable.
- Following large scale disturbances and when regenerating group selection openings, develop heterogeneous vegetation patterns.
  - Regenerate a mixture of tree species appropriate to the site using variable spacing within 5 years of disturbance or harvest.
    - Natural regeneration, artificial regeneration, or a combination of the two would be allowed.

  - Regenerate a higher proportion of fire tolerant species at lower densities, in variable patterns, within a skip and gap framework in areas of higher relative fire probability (often southern slopes and ridge tops, and areas prone to heavy shrub/brush/hardwood regrowth) that present the highest risk of losing high density replanting.
  - Regenerate a higher proportion of fire intolerant species at higher densities in areas that coincide with low relative fire probability and provide a higher confidence of retaining these species.
- Following large scale disturbances, maintain at least 10 percent of the stand un-stocked with trees in gaps ≥ ¼-acre in size for at least two decades to accelerate development of heterogeneous fuel conditions.

Management Objectives for Density Management Study Sites

- Maintain the integrity of the study sites.

Management Direction for Density Management Study Sites

- Prohibit management activities in study sites that would adversely alter study data until the Phase 2, 10-year follow-up data collection is complete, and then return the land to underlying land use allocation.

Hydrology

Management Objective

- Maintain water quality within the range of natural variability that meets ODEQ water quality standards for drinking water, contact recreation, and aquatic biodiversity.

Management Direction

- Select and implement site-level BMPs to maintain water quality, for BLM activities and discretionary actions of others crossing BLM lands.

Invasive Species

Management Objective

- Prevent the introduction of invasive species and the spread of existing invasive species infestations on BLM-administered lands.

Management Direction

- Implement measures to prevent, detect, and rapidly control new invasive species infestations.
- Use manual, mechanical, cultural, chemical, and biological treatments to manage invasive species infestations.
- Treat invasive plants and host species for invasive forest pathogens in accordance with the Records of Decision (RODs) for the Northwest Area Noxious Weed Control Program Environmental Impact

Statement and the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in Oregon Environmental Impact Statement (July 2010).

Lands Managed for their Wilderness Characteristics

Note: These objectives and direction apply to areas outside of designated Wilderness Areas and Wilderness Study Areas that the BLM has identified as having wilderness characteristics and for which the BLM is analyzing a plan decision to manage for the protection of those wilderness characteristics.

Management Objectives

- Provide appropriate levels of protection to preserve inventoried wilderness characteristics of areas determined to possess wilderness characteristics (e.g., appearance of naturalness, outstanding opportunities for primitive unconfined recreation or solitude) outside of existing Wilderness Study Areas, while considering competing resource demands and manageability.

Management Direction

- Petition for withdrawal from locatable mineral entry
- Establish *closed* OHV area designation
- Require no surface occupancy for leasable mineral development.
- Close to salable mineral development
- Designate as Right-Of-Way Exclusion Areas
- Designate as Visual Resource Management (VRM) Class II
- Restrict construction of new structures and facilities unrelated to the preservation or enhancement of wilderness characteristics or necessary for the management of uses allowed under the land use plan.
- Retain public lands in Federal ownership

Lands, Realty, and Roads

Management Objectives

- Make land tenure adjustments to facilitate the management of resources and enhance public resource values.
- Provide legal access to BLM-administered lands and facilities to support resource management programs.
- Provide needed right-of-ways, permits, leases, and easements over BLM-administered lands in a manner that is consistent with State and Federal laws.
- Protect lands that have important resource values or substantial levels of investment by withdrawing them, where necessary, from the implementation of nondiscretionary public land and mineral laws.
- Provide a road transportation system that serves resource management needs (administrative/commercial) and casual use needs (recreational/domestic) for both BLM-administered lands and adjacent privately owned lands.

Management Direction

- Lands in Zone 1 are retained under BLM administration. Lands in Zone 1 include:
  - National Landscape Conservation System designated lands
  - Areas of Critical Environmental Concern

  - Research Natural Areas
  - Outstanding Natural Areas
  - Lands acquired with Land and Water Conservation Funds
- Lands in Zone 2 are available for exchange to enhance public resource values, improve management capabilities, or reduce the potential for land use conflict. Zone 2 lands consist of all lands not listed in the descriptions of either Zone 1 lands or Zone 3 lands (**Appendix J***)*.
- Lands in Zone 3 are available for disposal using appropriate disposal mechanisms. These lands include:
  - Lands that are either not practical to manage, or are uneconomical to manage (because of their intermingled location and non-suitability for management by another Federal agency)
  - Survey hiatuses
  - Unintentional encroachments
- Survey hiatuses and unintentional encroachments discovered in the future will be assigned to Zone 3.
- Land boundary adjustments due to river movement discovered in the future, which meets the disposal criteria defined in **Appendix J** will be assigned to Zone 3.
- Reversionary interests reserved by the United States in patented lands located within the planning area may be considered for conveyance out of Federal ownership.
- The BLM may dispose of lands designated in Zones 2 and 3 that provide habitat for listed species, including critical habitat, only following consultation with the Fish and Wildlife Service or National Marine Fisheries Service and upon a determination that such action is consistent with relevant law and maximizes public resource values.
- As required by the Oregon Public Lands Transfer and Protection Act (Public Law 105-321), the acres of O&C lands of all classifications, and the acres of O&C and public domain lands that are available for harvesting, would not be reduced through disposal, exchange, or sale. The total net change in land tenure in the planning area would be evaluated at 10-year intervals.
- Lands would be acquired or disposed of to facilitate resource management objectives as opportunities occur. See the Land Tenure Adjustment Criteria section in **Appendix J**.
- The public domain lands in Zones 2 and 3 have been classified under Section 7 of the Taylor Grazing Act and would be available for disposal.
- Newly acquired lands would be managed for the purpose for which they were acquired or in a manner that is consistent with management objectives for adjacent BLM-administered lands or other BLM-administered lands having similar resource values (**Appendix J**).
- Temporary-use permits, as identified under the Federal Land Policy and Management Act (Section 302), would be issued for a variety of uses, such as, but not limited to, stockpile and storage sites and as tools to authorize unintentional trespass situations pending final resolution.
- No leases or permits would be issued for landfills or other waste disposal facilities.
- Land-use authorizations would be used to resolve agricultural or occupancy trespasses, where appropriate.
- Existing rights-of-way, permits, leases, and easements would be recognized as valid uses.
- Withdrawals would be limited to the area needed and would restrict only those activities needed to accomplish the purposes of the withdrawal.
- Formal land withdrawals being relinquished by the Bureau of Land Management or other Federal agency shall be processed according to the procedures stated under 43 CFR 2372. If the lands are found suitable for return to the public domain, the revocation order will recommend the management prescriptions developed in the environmental review. The lands shall be managed according to management prescriptions for those lands having the same or similar resource values in the same general area of the land withdrawal.
- Designated wilderness, Wild and Scenic Rivers classified as wild rivers, lands managed for wilderness characteristics, and VRM Class I areas would be Right-Of-Way Exclusion Areas where future right-of-ways would not be granted except when mandated by law.

- Recreation Management Areas, Study Areas, Areas of Critical Environmental Concern, Research Natural Areas, Wild and Scenic Rivers classified as scenic and recreational rivers, and VRM Class II areas would be Right-Of-Way Avoidance Areas. Future right-of-ways may be granted in avoidance areas if the BLM determines that the right-of-way proposals are compatible with the protection of the values for which the land use was designated, or when no feasible alternative route or designated right-of-way corridor is available as applicable with BLM laws and policy.
- Utility corridors would be the preferred location for energy transmission or distribution facilities. Corridors would generally be 1,000 feet on each side of the centerline. The rights-of-way granted would be the minimum necessary to accommodate a specific request. No development or management activities would be permitted that would conflict with construction, operation, or maintenance of facilities corresponding to the purpose of the utility corridor.
- Communication facilities would be allowed on existing developed communication sites where they do not conflict with other management objectives. Applications for communication facilities on undeveloped communication sites would require a site plan (**Appendix J**).
- Expansion of existing communication sites and the development of new sites would be allowed. The priority for accommodating the need for additional capacity would be the use of existing sites and facilities.
- Construct new permanent/temporary roads where needed to meet resource management objectives, including major culverts and bridges as necessary, to established BLM engineering design standards. Apply as needed road location, design, and construction BMPs (**Appendix I**).
- Maintain existing roads, including major culverts and bridges, to provide access for both resource management and casual use activities while protecting water quality and facility investments and providing user safety, to established BLM maintenance standards. Apply as needed road maintenance and wet weather road use BMP's. Remove hazard trees and downed trees along roads for safety or operational reasons.
- Fully decommission or obliterate (permanent closure) roads with no future resource management need. Decommission (long-term closure) roads not currently needed for resource management but that will be operated and maintained again in the future. Apply as needed road closure BMPs. Close roads only with the approval of affected reciprocal right-of-way permittees.

Minerals

Management Objectives

- Mange the development of leasable (including traditional and non-traditional hydrocarbon resources), locatable, and salable resources in an orderly and efficient manner.
- Maintain availability of mineral material sites needed for development and maintenance of access roads for forest management, timber harvest, local communities, rights-of-way for energy production and transmission, and for other uses.

Management Direction

- Notice-level locatable mining proposals in areas known to contain Federally-proposed or listed threatened or endangered species, or their proposed or designated critical habitat, will proceed as a Notice if the BLM determines that the proposal would have no effect on listed species or their proposed or designated critical habitat. If the BLM determines that there will be an effect on listed species or critical habitat, the notice must be resubmitted as a plan of operations.
- Energy and mineral development can occur concurrently or sequentially with other resource uses.

Leasable: Oil, Gas, or Coalbed Natural Gas Resources[119]

- Maintain all lands as open to leasable mineral development except where closed by legislation.
- Maintain Recreation Management Areas, designated (where not already closed by legislation) and suitable Wild and Scenic River segments, protected lands with wilderness characteristics, and Areas of Critical Environmental Concern as open to leasable mineral development with site-specific stipulations, such as no surface occupancy or conditional surface uses based on resource protection needs.
- Apply site-specific stipulations as needed to protect Federally-listed threatened and endangered species and their critical habitats.

Locatable

- Petition for withdrawal from locatable mineral entry protected lands with wilderness characteristics and suitable Wild and Scenic River segments.
- Petition for withdrawal from locatable mineral entry Recreation Management Areas when mineral entry is not compatible with meeting recreation objectives or maintaining Recreation Setting Characteristics (RSCs).
- Petition for withdrawal from locatable mineral entry Areas of Critical Environmental Concern with identified special management needs associated with locatable mineral development.
- Retain all other areas not congressionally or secretarially withdrawn as open for locatable mineral entry.

Salable

- Close protected lands with wilderness characteristics and designated (where not already closed by legislation) and suitable Wild and Scenic River segments to salable mineral development.
- Close Recreation Management Areas to salable mineral development when not compatible with meeting recreation objectives or maintaining RSCs.
- Close Areas of Critical Environmental Concern with identified special management needs to salable mineral development.
- Maintain all other areas not closed through legislation as open to salable mineral entry.
- **Appendix L** provides a reasonably foreseeable development scenario and the stipulations that will be applied to developments.

National Landscape Conservation System (NLCS)

Management Objectives for all NLCS

- Conserve, protect, and restore the identified outstanding cultural, ecological, and scientific values of the National Landscape Conservation System and other congressionally designated lands.

Management Objectives for Wild and Scenic Rivers

- See common to all NLCS objectives

[119] The Sustainable Energy section addresses Geothermal Resources.

Management Direction for Wild and Scenic Rivers

- Protect outstandingly remarkable values of designated Wild and Scenic River corridors (including those classified as wild, scenic, or recreational).
- Provide interim protection to Wild and Scenic River corridors (including those classified as wild, scenic, or recreational) that are suitable for inclusion as components of the National Wild and Scenic Rivers system until Congress makes a decision to designate them.
- Provide interim protection to Wild and Scenic River corridors (including those classified as wild, scenic, or recreational) that are eligible but have not yet been studied for suitability as components of the National Wild and Scenic Rivers system pending suitability evaluations.
- Designate as Right-Of-Way Avoidance Areas.
- Require controlled surface use limitations.
- Require timing limitations.
- Require no surface occupancy for leasable mineral development.
- Petition for withdrawal from locatable mineral entry.
- Close to salable mineral development.
- Retain public lands in Federal ownership.

Management Objectives for Wilderness Areas

- See all common to all NLCS units
- Preserve the wilderness character of designated Wilderness Areas.

Management Direction for Wilderness Areas

- Exclude all prohibited uses of Wilderness (as defined in the Wilderness Act of 1964 and the BLM Wilderness Management Manual) unless they have been demonstrated using the minimum requirements decision guide to be the minimum necessary to administer the area for the purposes of the Wilderness Act.

Management Objectives for Wilderness Study Areas

- See all common to all NLCS units.
- Preserve wilderness characteristics in WSAs in accordance with non-impairment standards as defined under the management policy for Wilderness Study Areas (USDI BLM Manual 6330), until Congress either designates these lands as wilderness or releases them for other purposes.

Management Direction for Wilderness Study Areas

- Close all WSAs to motorized and mechanized travel. Travel required for valid existing rights would be allowed.
- Prohibit the approval of new rights-of-way that do not satisfy the non-impairment standard.
- Designate as Class I.

Management Objectives for National Trails System

- See all common to all NLCS units.

Management Direction for National Trails System

- Provide for the enjoyment and appreciation of the resources, qualities, values, and associated settings and primary uses within National Trail right-of-ways and for which National Trails are designated.
- Enhance, promote, and protect the scenic, natural, and cultural resource values associated with current and future designated National scenic and historic trails.
- For National trail management corridors:
    - Designate a Special Recreation Management Area.
    - Designate as VRM Class II.
    - Allow timber harvest activity only to protect or maintain RSCs or to achieve recreation objectives.
    - Require a controlled surface use stipulation on surface occupancy and surface disturbing activities.
    - Petition for withdrawal from locatable mineral entry.
    - Close to salable mineral development.
    - Require no surface occupancy for leasable mineral development.

Rare Plants and Fungi

Management Objectives

- Provide for conservation and contribute toward the recovery of plant and fungi species that are listed, or are candidates for listing, under the Endangered Species act.
- Support the persistence and resilience of natural communities, including those associated with non-Harvest Land Base forests, oak woodlands, shrublands, grasslands, cliffs, rock outcrops, talus slopes, meadows, and wetlands. Support ecological processes and disturbance mechanisms to allow for a range of seral conditions.

Management Direction

- Manage Federally-listed species consistent with recovery plans and designated critical habitat, including the protection and restoration of habitat; altering the type, timing, and intensity of actions; and other strategies designed to recover populations of species.
- Conduct surveys for Federally-listed and candidate species on BLM land with suitable habitat.
- Maintain or restore natural processes, native species composition, and vegetation structure in natural communities outside of the Harvest Land Base through prescribed fire, thinning, removal of encroaching vegetation, retention of legacy components (e.g., large trees, snags, and down logs), and planting or seeding native species.
- Use only species native to the plant community when re-vegetating degraded or disturbed areas.
- Retain or reconnect the hydrologic flows to wetlands.

Recreation and Visitor Services

Management Objectives

- Provide a diversity of quality recreational opportunities.
- Meet legal requirements for visitor health and safety and mitigate resource user conflicts.
- Mitigate recreational impacts on natural and cultural resources; in allocations where other resources are dominant, provide recreational opportunities where they can be managed consistent with the management of these other resources.

- Develop new recreation opportunities (e.g., trails, trailheads, restrooms) to address recreation activity demand created by growing communities, activity groups, or recreation-tourism if:
  - Recreation development is consistent with interdisciplinary land use plan objectives; and
  - The BLM has secured commitments from partners in the form of a cooperative management agreement, adopt a trail agreement, memorandum of understanding, etc.

Management Direction

- Manage Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs) in accordance with their planning frameworks.
- Protect RSCs within SRMAs to prohibit activities that would degrade identified characteristics.
- Pursue and prioritize public access to BLM-administered lands that have high recreational potential or historic recreation use.
- Petition for withdrawal RMAs from locatable mineral entry as identified in specific RMA frameworks.
- Allow the discharge of firearms for recreational target shooting on BLM lands, outside areas with fire arm use restrictions (see RMA frameworks), provided that the firearm is discharged toward a proper backstop sufficient to stop the projectile's forward progress beyond the intended target.
- Issue Special Recreation Permits as a discretionary action for a variety of uses that are consistent with resource and program objectives.
- Prohibit vending permits outside special events on BLM administered lands.
- Monitor activity participation and RSCs annually during the primary use season of June through October.
- If future monitoring indicates that social RSCs are not being protected, resource damage is occurring, or user conflicts need to be addressed, management action will be created to establish an allocation system or apply group size limits for private and commercial recreation use.
- Develop and maintain partnerships with recreation-based organizations and service providers. These partnerships should engage partners in the planning, implementation and monitoring of recreation opportunities and facilities on BLM-administered public lands.

Management Objective

- Manage significant caves to allow for appropriate access while protecting pristine and fragile resources, wildlife values, scientific and research values, and visitor safety.

Management Direction

- Manage significant caves to maintain the current level of remoteness from motorized and mechanized vehicles and to preserve the natural appearance of the cave. Prohibit construction of new facilities, roads, or trails to access the caves. Allow for only minor modifications (e.g., tape, signage, and rescue caches) for scientific purposes and to accommodate safe use. Maintain low evidence of use and other people.
- Manage visitor frequency, visitor numbers, and season of use through monitoring and subsequent implementation decisions described through cave management plans for each significant cave, group of caves, or complex of caves.
- Focus all management actions on specific activity outcomes for caving and research. Outcomes will be for participants to enjoy and learn about cave and karst resources. Specific benefit outcomes will be for environmental benefits, such as increased environmental stewardship, and the preservation and protection of unique biological, paleontological, archaeological, and mineralogical aspects. Social benefits will be to provide environmental learning and appreciation of cave and karst systems.

- Continue to allow appropriate access while addressing issues and concerns relating to visitor safety and preservation of the caves' values. If issues or concerns arise, apply necessary managerial controls, such as closures, permits, trip requirements, and gating. Administer and authorize research, inventory, work projects, and digging trips. Provide information and education materials to authorized visitors. Do not market or promote cave and karst resources.

Management Objective

- Ensure public health and safety from hazards associated with formerly used defense sites (FUDS).

Management Direction

- Manage the portion of the Modoc Aerial Gunnery and Bombing Range located within the Klamath Falls Field Office to avoid or limit exposure to areas that may contain hazards associated with munitions and explosives of concern. Munitions and explosives of concern may include unexploded ordnance, discarded military munitions, and munitions constituents when munitions constituents are present in high enough concentrations to pose an explosive hazard. The site may also be contaminated with munitions constituents that are not present in high enough concentrations to represent an explosive hazard, but in high enough concentrations to be a toxicity hazard in soil, groundwater, surface water, or air.
- Coordinate uses on BLM-administered lands within FUDS with State and Federal military agencies to ensure public safety. Develop, as needed, cooperative agreements or Memorandums of Understanding to ensure communication, coordination, and safe use of public lands within FUDS.

Soil Resources

Management Objectives

- Maintain or enhance the inherent soil functions (e.g., ability of soil to take on water, store water, regulate outputs for vegetative growth and stream flow, and resistance to erosion or compaction) of managed ecosystems so that the overall soil properties (e.g., bulk density, infiltration rate, soil texture, or organic matter levels) do not decline beyond acceptable levels that would impede said functions across the plan area.
- Provide landscapes that stay within natural soil stability failure rates during and after management activities.

Management Direction

- Apply BMPs (**Appendix I**) as needed to maintain or restore soil functions and quality.
- Allow management actions or activities that retain at least 80 percent of the inherent soil functions in proper working order. No detrimental soil disturbances of the immediately harvested or treated unit area shall exceed 20 percent of the unit area; this is a combined total of all detrimental impacts (e.g. timber harvesting, biomass removal, or fuel risk reduction treatments in various environments), including roads and landings. Detrimental soil disturbance occurs when soil properties change in a negative manner and the inherent capacity to sustain growth of vegetation is reduced (Powers *et al*. 1998, USDA 1998). Detrimental soil disturbance can occur from one or a combination of all of these processes: erosion, loss of organic matter, severe heating to seeds or microbes, soil displacement, or compaction.

- Failing to meet the following condition on areas treated constitutes an area (percentage based) with detrimental soil disturbance: The cumulative level of all soil-disturbing activities, existing or new, for each activity area is at or below the 20 percent detrimental level.
- Use the Natural Resources Conservation Service Erosion Hazard Rating System to identify areas of erosion from disturbed soil treatment sites. Maintain the percent of effective ground cover needed to control surface erosion, such as medium to large gravels, cobbles, intact duff, and slash, in addition to vegetation or biological crusts (Robichaud *et al*. 2013) for each listed hazard level outlined in the table below. In the second year these standards rise to at least 30, 40, 60, and 75 percent depending on hazard level to ensure erosion protection is established or improving.

Table B-4. Soil erosion ratings.

NRCS Erosion Hazard Rating*	Percent Cover
Very Severe	60%
Severe	45%
Moderate	30%
Slight	20%

* Rating obtained from County Soil Survey information by map unit.

- In order to avoid reaching detrimental soil conditions, no more than 49 percent of top soil and organic matter can be mechanically removed within any given area that is equal to or greater than 4.5 feet wide and 100 square feet in total area. If 50 percent or more of the topsoil or organic matter is mechanically removed, the entire disturbed area counts toward the allowable 20 percent of the project area in detrimental soil conditions.
- Do not allow land disturbing activities to cause soils to exceed the critical bulk densities outlined in **Table B-5**. Compaction is noted when a change in soil structure from crumb or granular structure to massive or platy structure takes place anywhere from the surface to depths of 36 inches. The platy structure is generally continuous, not spotty. Exceeding these conditions constitutes a detrimental soil condition that counts toward the allowable 20 percent of the detrimental soil total.

Table B-5. Critical limiting bulk densities for each soil texture class (Pierce *et al*. 1983)

Soil Texture Class	Critical Bulk Density (g/cm^3)
Sandy	1.69
Coarse-loamy	1.63
Fine-loamy	1.67
Coarse-silty	1.67
Fine-silty	1.54
Clayey (35-45%)	1.49
Clayey (45-100%)	1.39

Timber Harvest and Fuels Reduction

- Use designated skid trails and where practicable existing skid trails, prior to developing or designating new trails when harvesting or conducting fuel treatments with tracked or wheeled machinery to reduce amount of compacted area.

- When operations conclude in regeneration units, remove all compacted equipment trails with acceptable tillage methods. Such trails shall increase water routing and storage functions, limit access, improve root and microbial population growth, and improve planting access.
- When operations conclude within thinning or uneven harvest units, remove compacted equipment trails not necessary for future use with acceptable tillage methods such that residual stands do not incur root or bole damage impacts. Tilled trails shall return soil functions to the extent practical to increase water routing and storage functions, limit access, improve root and microbial population growth and improve planting access.
- Operate all ground based machinery during a seasonal period of low soil moisture content (based on soil texture; this is generally from June 1 to October 15) to provide the greatest level of resistance to the forces of compaction.
- Operate all ground-based machinery on slopes equal to or less than 35 percent except on sensitive or fragile soils in the southern part of the planning area. For those soils, operate on slopes equal to or less than 20 percent except when the percentage of clay in the top six inches averages greater than 15 percent, in which case equal, to or less than 35 percent is acceptable. Fragile soils are skeletal or shallow soils (less than 20 inches deep), soils with less than 4 inches of Horizon A, or soils from granite and schist parent materials. Mechanical harvesting equipment with tracks (e.g. excavators, loaders, forwarders, and harvesters) may be used on short pitch slopes of greater than 35 percent but less than 45 percent when necessary to access benches of lower gradient (length determined on a site-specific basis, generally less than 50 feet).
- In unit areas where less than 20 percent detrimental soil conditions exist from prior activities; do not exceed 20 percent following project implementation or restoration activities. In unit areas where more than 20 percent detrimental soil conditions exist from prior activities, at a minimum; do not exceed the prior existing conditions during implementation activities. In either case, remove unneeded or unused portions of existing conditions as well as any created conditions to meet or be below the 20 percent limit with acceptable tillage methods.
- To limit detrimental soil compaction from tracked or wheeled equipment, allow only equipment tracks that are Class 0 or 1 (ruts no more than 2 inches deep with compaction of soil no more than 4 inches below the surface) as defined in Forest Soil Disturbance Monitoring Protocol Field Guide (USDA 2009). Class 2 and 3 equipment tracks (ruts greater than 2 inches with soil compacted in platy nature up to 12 inches below surface) will constitute detrimental soil conditions and will be counted towards the allowable 20 percent any time tracked or wheeled equipment is employed.

Prescribed Fire

- Detrimental soil conditions exist when levels of heat related from burning material (broadcast or pile burning) reach the top layer of mineral soil and change the soil structure. Therefore, consume only the organic materials and prevent less than 15 percent of the mineral soil surface from changing in color. Usually to reddish color with a layer of blackened soil from charring of organic matter by heat conducted through top layer of mineral soil into a one-half inch layer below the reddish color. Soils exceeding these conditions are to be included as a portion of the 20 percent detrimental soil limit meant to preserve soil resources.
- Limit all ground-based machine use to the same conditions for compaction area of extent and determination, slope and seasonal conditions and removal of detrimental soil conditions. Till all compacted areas with an acceptable tillage method such that residual stands do not incur root or bole damage if present. Tilled trails would return soil functions to the extent practical to increase water routing and storage functions, limit access, improve root and microbial population growth, and improve planting access.
- Ensure that slope is assessed by qualified specialists (Geologist, Geomorphologist, Engineer, or Soil Scientist), to identify unstable landforms for any potential of landslides.

- If there are structures or public roads downslope from a proposed timber operation that may be effected by a rapidly moving landslide, i.e. slope gradients exceed 80 percent (except in the Tyee Core Area where it is 75 percent) or the headwall and draw slopes exceed 70 percent (except in the Tyee Core Area where it is 65 percent), follow the ODF (Technical Note Number 6) protocol or use the Timber Production Capability Classification to identify the unstable conditions and restrict forest management actions.

Sustainable Energy

Management Objectives for all Sustainable Energy

- Develop sustainable energy resources to the maximum extent possible without precluding other land uses.

Management Direction for all Sustainable Energy

- Exclude from sustainable energy development areas that are part of the National Landscape Conservation System (e.g., Wilderness Areas, Wilderness Study Areas, National Monuments, NCAs, Wild and Scenic Rivers, and National Historic and Scenic Trails), Areas of Critical Environmental Concern (ACECs), and lands managed for the protection of wilderness characteristics.
- Development of sites will apply BMPs as needed to reduce or avoid impacts to other resource uses. Appropriate BMPs will be applied based on site-specific conditions and include, but are not limited to:
  - Outdoor light will be controlled with motion or heat sensors to the maximum extent practicable
  - Outdoor lighting will be hooded and directed downward to minimize horizontal and skyward illumination to the maximum extent practicable
  - The use of high-intensity lighting will be minimized
  - Non-disturbance buffer zones will be established to protect sensitive habitats or areas of high risk for species of concern
  - Any pets of operations staff kept on-site will be controlled to avoid harassment and disturbance of wildlife
  - Existing roads and utility corridors will be used to the maximum extent feasible; the number and length and size of new roads, lay-down areas, and borrow areas will be minimized
  - Traffic volumes will be minimized to the maximum extent practicable and roads will be maintained adequately to minimize associated impacts
  - Permanent fencing will be installed and maintained around electrical substations, emergency generators and other areas potentially hazardous to human health
  - Necessary infrastructure requirements will be consolidated wherever possible, including electric power transmission lines, pipelines and market access corridors and support utility infrastructure
  - Energy conversion sites will be kept clean of debris, garbage, fugitive trash or waste, and graffiti; the accumulation of scrap heaps, dumps and storage yards will be kept to a minimum
  - Facilities used for sustainable energy harvesting, conversion and transmission will be designed to discourage the perching or nesting by birds
  - Facilities used for sustainable energy harvesting, conversion and transmission will be integrated with the surrounding landscape including minimizing the profile of ancillary structures, burial of cables, prohibition of commercial symbols, and lighting
  - Secondary containment will be provided for all on-site hazardous materials and waste storage, including fuel.

Management Direction for Biomass Energy Development

- Timber harvest slash could be offered for sale as biomass energy conversion feedstock as an alternative to being burned on-site.
- Timber harvest slash could be offered for sale as biomass energy conversion feedstock as an alternative to being left in place for soil stabilization.

Management Direction for Wind Energy Development

- Development of sites will apply BMPs as needed to reduce or avoid impacts to other resource uses. Appropriate BMPs will be applied based on site-specific conditions and include, but are not limited to:
  - Turbine tower access doors will be locked to limit public access
  - Turbines will not be on or proximate to landscape features known to attract raptors
  - Turbines will not be on or proximate to bat hibernation, breeding, and maternity/nursery colonies, in known bat migration corridors or in known bat flight paths between colonies and feeding areas
  - Turbine arrays and turbine design will encompass design elements including visual uniformity, use of tubular towers, proportion and color of turbines, non-reflective paints, and prohibition of commercial messages on turbines
  - Inoperative turbines will be repaired, replaced, or removed in a timely manner
  - When fencing is necessary, construction will incorporate wildlife-compatible design standards
  - The use of guy wires on communication towers and meteorological towers at wind energy project sites will be avoided
  - The installation of meteorological towers on a project site will be kept to a minimum and will not be located in sensitive habitats or in areas where ecological resources known to be sensitive to human are present
  - Only a portion of the turbines within the wind project will be lighted and all pilot warning lights will fire synchronously
  - No wildlife habitat enhancements or improvements such as ponds, guzzlers, rock piles, brush piles, bird nest boxes, nesting platforms, wildlife food plots, etc. that would attract small mammals will be added to wind energy facilities
  - Only shielded, separated or insulated electrical conductors that minimize electrocution risk to avian wildlife will be used

Management Direction for Geothermal Energy Development

- Development of sites will apply BMPs as needed to reduce or avoid impacts to other resource uses. Appropriate BMPs will be applied based on site-specific conditions and include, but are not limited to:
  - Geothermal energy drilling and development will minimize impacts to livestock operations
  - Reclamation of the land disturbed during the development of geothermal resources will incorporate certified weed-free mulch
  - Above-ground piping on site will be raised for sufficient wildlife passage
  - Any liquid that is at elevated temperatures or contains contaminants that are toxic or harmful to fur or feathers will be isolated from wildlife access with fencing, netting or complete enclosure
  - Management Objectives for Sustainable Energy Transmission Corridors
  - Provide land corridors that allow overhead or underground cables or pipelines necessary to connect sustainable energy conversion sites with transmission or sales networks that do not preclude other land uses.

Management Direction for Sustainable Energy Transmission Corridors

- Development of sites will apply BMPs as needed to reduce or avoid impacts to other resource uses. Appropriate BMPs will be applied based on site-specific conditions and include, but are not limited to:
  - Overhead lines will be sited away from areas where bird crossing are frequent
  - Overhead lines will be marked in accordance with Avian Power Line Interaction Committee (APLIC) collision guidelines
  - Overhead lines will be installed such that the conductors parallel tree lines, employ bird flight diverters or are otherwise screened so that bat and bird collision risk is reduced
  - Pipeline ROW clearings will be of sufficient width so as to double as fire breaks in wildland locations
  - Pipelines constructed above ground will be raised higher to allow wildlife passage where needed to avoid potential alterations to predator-prey dynamics.

Trails and Travel Management

Management Objectives

- Maintain a comprehensive travel network that best meets the full range of public, resource management, and administrative access needs.
- Protect fragile and unique resource values from damage by OHV use and provide OHV use opportunities where appropriate.

Management Direction

- Permit motorized vehicle travel anywhere within an area designated as open to off-highway vehicle use.
- Prohibit motor vehicle travel in areas closed to off-highway vehicle use. Access by means other than motorized vehicle, such as mechanized or non-motorized use, is permitted.
- Restrict motor vehicle travel in areas limited to off-highway vehicle use. Limited area designations are established where number or type of vehicles; time or season of use; permitted or licensed use only; use limited to designated roads and trails; or other limitations or necessary to meet resource management objectives.
- Manage OHV Recreation Management Areas (SRMA/ERMA) according to interim management guidelines until subsequent comprehensive travel management plans are completed (**Appendix N**).
- Develop closed or abandoned roads, where feasible, to provide additional motorized and non-motorized trail opportunities
- Develop motorized and non-motorized trail design guidelines that are activity specific and tied to trail based experience objectives.
- Prohibit motor vehicle use within designated deer and elk winter range between November 1 and April 15.
- Develop motorized travel management areas and trails in a manner designed to minimize conflicts between OHV use and other existing, or proposed, recreational uses of the same, or neighboring, public lands; and in a manner designed to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

Visual Resource Management

Management Objectives (VRM General)

- Protect the quality of the scenic values on public lands where VRM is an issue or where high-value visual resources exist, and protect areas having high scenic quality, visual sensitivity, and public visibility.

Management Direction (VRM General)

- Only allow activities that are determined to meet visual management objectives using the Visual Resource Contrast Rating system.
- Manage visual resources on BLM-administered lands according to the objectives for each VRM class.

Management Objectives (VRM Class I)

- Prohibit activities that would disrupt the existing character of the landscape in VRM Class I areas.

Management Direction (VRM Class I)

- Designated, suitable, and eligible Wild and Scenic Rivers that are classified as wild, Wilderness Areas, Wilderness Study Areas, and Wilderness Instant Study Areas will be managed as VRM Class I areas.
- Manage VRM Class I areas in accordance with natural ecological changes. Prohibit activities that would lower the inventory class of VRM I areas. The level of change to the characteristic landscape will be very low and will not attract attention. Changes will repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.
- Establish VRM Class I areas as Right-Of-Way Exclusion Areas.

Management Objectives (VRM Class II)

- Retain the existing character of the landscape in VRM Class II areas.

Management Direction (VRM Class II)

- Designated, suitable, and eligible Wild and Scenic Rivers that are classified as scenic will be managed as VRM Class II areas.
- Special Recreation Management Areas that fall within the Primitive and Backcountry category of the Recreation Opportunity Spectrum (ROS) will be managed as VRM Class II areas.
- Manage VRM Class II areas for low levels of change to the characteristic landscape. Management activities will be seen but will not attract the attention of the casual observer. Changes will repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.

Management Objective (VRM Class III)

- Partially retain the existing character of the landscape in VRM Class III areas.

Management Direction (VRM Class III)

- Designated, suitable, and eligible Wild and Scenic Rivers that are classified as recreational will be managed as VRM Class III areas.
- Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs) that fall within the Middle country category of the Recreation Opportunity Spectrum will be managed as VRM Class III areas.
- Manage VRM Class III areas for moderate levels of change to the characteristic landscape. Management activities will attract attention but will not dominate the view of the casual observer. Changes will repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.

Management Objective (VRM Class IV)

- Allow for major modification of the existing character of the landscape in VRM Class IV areas.

Management Direction (VRM Class IV)

- All lands that are not designated as Class I, II, or III, will be managed as VRM Class IV areas.
- Manage VRM Class IV areas for high levels of change to the characteristic landscape. Management activities will dominate the view and will be the major focus of viewer attention.

Wild Horses

Management Objective

- Manage and maintain a healthy population of wild and free-roaming horses in the Pokegama Herd Management Area of the Klamath Falls Field Office.

Management Direction

- Gather horses to maintain the appropriate management level of 30-50 head. During gathers, the number of horses will normally be reduced to the low end of the appropriate management level, and then allowed to increase to the top end of the appropriate management level before another gather occurs. Horses may also be removed from private land per private landowner request. Horses straying outside the herd management area will be removed or returned to the herd management area.
- Periodically introduce horses from other herd areas to the Pokegama herd to maintain viable herd genetic diversity.
- Maintain existing water developments that provide season-long water for wild horses within the herd management area. Consider new developments that would assist in meeting the herd management objectives.
- Provide periodic repair and maintenance of fences that protect riparian areas from concentrated use by wild horses.
- Adjust the appropriate management level if monitoring data identifies a change in long-term forage availability or rangeland health assessments and evaluations determine that wild horse numbers, or patterns of grazing use is a contributing factor toward not meeting one or more of the Oregon Standards for Rangeland Health.

Wildlife

Management Objectives

- Conserve and recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for those species.
- Implement proactive conservation measures that reduce or eliminate threats to Bureau Sensitive species to minimize the likelihood of and need for listing of these species under the ESA.
- Conserve or create habitat for species addressed by the Migratory Bird Treaty Act and the ecosystems on which they depend.

Management Direction

- Implement conservation measures to mitigate specific threats to Bureau Sensitive species during the planning of activities and projects. Conservation measures include altering the type, timing, location, and intensity of actions.
- Manage naturally occurring special habitats to maintain their ecological function including: seeps, springs, wetlands, natural ponds, vernal pools/ponds, natural meadows, rock outcrops, caves, cliffs, talus slopes, mineral licks, oak savannah/woodlands, sand dunes, and marine habitats.
- Manage human-made special habitats as wildlife habitat when compatible with their engineered function including bridges, buildings, quarries, pump chances/heliponds, abandoned mines, and reservoirs.
- [Klamath Falls; Medford] Maintain or enhance Special Status Species wildlife habitat on rangelands.
- [Roseburg] For the Columbia white-tailed deer, continue to implement the record of decision for the North Bank Habitat Management Area.

Bald and Golden Eagles

- Protect known bald eagle or golden eagle nest sites and bald eagle winter roosting areas. Prohibit activities that will disrupt nesting where bald eagles or golden eagles are currently nesting.
- Routine use and maintenance of existing roads and other facilities where such use pre-dates the eagles' successful nesting activity can continue.
- Do not remove overstory trees within 330 feet of bald eagle or golden eagle nests.
- Do not conduct timber harvest operations (including road construction, tree felling, and yarding) during the breeding season within 660 feet of bald eagle or golden eagle nests. Decrease the distance to 330 feet around alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, or after eggs laid in another nest within the territory have hatched.
- Prohibit operation of off-road vehicles within 330 feet of bald eagle or golden eagle nests during the breeding season. In areas without forest cover or topographic relief to provide visual and auditory screening, prohibit operation of off-road vehicles within 660 feet of bald eagle or golden eagle nests during the breeding season.

Bats

- Protect bat maternity colonies and bat hibernacula with a 250-foot buffer. Within this 250-foot buffer, protect the site from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change temperatures or drainage patterns at the site and maintain existing habitat conditions. Restoration necessary to protect this habitat would be allowed.

- Prohibit human access into caves and abandoned structures (unless for education, monitoring, or research) where white-nose syndrome (fungal disease that infects bats) is found in the bats residing within. Prohibition of human access into such caves or abandoned structures would include signing and physical closure in such a way that air flow patterns are maintained, people are excluded, and bats can freely enter and exit. Where physical closure of the cave or mining structure is not feasible, then the roads or trails that provide human access would be closed to public access.

Deer or Elk Management Areas (Klamath Falls, Medford, and Salem)

- Restrict motor vehicle use within designated deer or elk management areas between November 1 and April 15. Techniques such as gating or signing will be used to impose the restrictions. Administrative use of all roads will occur, as needed, on a year-round basis.
- Maintain visual barriers of vegetation (e.g., brush, shrubs, small trees) 25 feet wide along roads within designated deer or elk management areas. These visual barriers may discontinuous where needed to facilitate operations.
- Plant forage species along roadsides, skid trails, and on disturbed areas, or create forage plots where forage for deer or elk is limited within designated deer or elk management areas.
- [Klamath Falls; Medford specific] Thin, pile and burn, or remove encroaching western juniper that hinders attainment of desired forage conditions to maintain and improve forage for deer or elk. Retain old juniper during these treatments.

Fisher

- Retain structures used as known fisher natal and maternal den sites.
- Within the Applegate, Chetco, Illinois, Middle Rogue, Upper Klamath, Upper Klamath Lake, and Upper Rogue sub-basins, retain conifers and hardwoods that have structures that are typically used as denning or resting sites (e.g., cavities, mistletoe, rust brooms) by fisher:
    - Live or dead conifers ≥ 36 inches DBH that have cavities, mistletoe, or rust brooms;
    - Live or dead hardwoods ≥ 24 inches DBH that have cavities, mistletoe, or rust brooms;
- Restrict activities that create noise or visual disturbance(s) above ambient conditions within 0.5 miles of known fisher natal and maternal den sites from February 1 to June 30.

Gray Wolf

- Restrict activities that create noise or visual disturbance(s) above ambient conditions within one mile of active gray wolf dens from April 15 to August 31.

Siskiyou Mountains Salamander -

- Maintain habitat conditions for the Siskiyou Mountains salamander at those high-priority sites that do not have the risk of high intensity fire by restricting activities that would have adverse effects on substrate, ground cover, forest condition (e.g. canopy cover) or microclimate.
- Reduce fuel loading at those high-priority sites that do have a risk of high-intensity fire within desired conditions to improve Siskiyou Mountains salamander habitat.

Western Snowy Plover (Coos Bay)

- The BLM's contribution to the recovery of the western snowy plover consists of the following actions:

- Prohibit disrupting activities during the breeding season where western snowy plover are currently nesting.
- Restrict public use of breeding areas during the breeding season.
- Employ predator management to reduce loss of western snowy plovers.
- Implement habitat restoration measures to maintain open sand conditions for nesting.

Northern Spotted Owl

Northern Spotted Owl Management Direction

All allocations

- Manage habitat conditions for northern spotted owl movement and survival between and through large blocks of northern spotted owl nesting-roosting habitat.

LSR

- Protect[120] stands of older, structurally-complex conifer forest.

LSR and OHTA

- Manage for large blocks of nesting-roosting habitat that support clusters of reproducing owls, such blocks are distributed across the variety of ecological conditions, and are spaced to facilitate movement of dispersing owls between and through the blocks.
- Promote the development of habitat for the northern spotted owl in stands that do not currently meet suitable habitat criteria.
- Maintain[121] habitat for the northern spotted owl.

[120] **Protect northern spotted owl habitat** means to prohibit harvesting activities in a conifer forest stand except as provided in this definition. Harvesting activities are limited to the following: felling of live or dead hazard trees and stream logs, the construction of linear and nonlinear rights-of-way, spur roads, yarding corridors or other facilities, as long as the forest stand continues to support the same northern spotted owl life history requirements; nesting-roosting habitat continues to support northern spotted owl nesting-roosting; dispersal habitat continues to support northern spotted owl movement and survival. Other Silvicultural activities, such as fire suppression, fuels reduction, insect and disease control, and other activities needed to protect the overall health of the stand or adjacent stands may occur, even if they maintain, downgrade, or remove northern spotted owl habitat.

[121] **Maintain northern spotted owl habitat** refers to a silvicultural activity that changes a conifer forest stand but maintains structural characteristics such that the stand continues to support the same northern spotted owl life history requirements; nesting-roosting habitat continues to support northern spotted owl nesting-roosting; dispersal habitat continues to support northern spotted owl movement and survival. Scientific findings support the idea that conifer forest stands can be altered in a manner that does not necessarily change their use by northern spotted owls (see the summary in the *Revised Recovery Plan for the Northern Spotted Owl*, USDI FWS 2011, p. III-15). Although structural characteristics vary across the northern spotted owl's range, northern spotted owl *nesting-roosting habitat* generally is characterized by conifer stands with a multi-layered, multispecies canopy dominated by large (> 30 inches diameter at breast height) conifer overstory trees, and an understory of shade-tolerant conifers or hardwoods, ≥ 60 percent canopy cover, substantial decadence in the form of large, live conifer trees with deformities (such as cavities, broken tops, and dwarf mistletoe infections; numerous large snags), ground cover characterized by large accumulations of logs and other woody debris, and a canopy that is open enough to allow northern spotted owls to fly within and beneath it. Northern Spotted owl *dispersal habitat* generally is characterized by conifer forest stands with an average diameter of ≥ 11 inches at breast height and ≥ 40 percent canopy cover.

Northern Spotted Owl Management Direction

LSR

- Such stands are a subset of, and represent the highest value, northern spotted owl nesting-roosting habitat. Although specific stand characteristics vary across the northern spotted owl range due to climatic gradients and abiotic factors (e.g., aspect), they generally have large-diameter conifer trees (≥ 30 inches at breast height), a multi-layered, multispecies canopy, high canopy cover (≥ 60 percent), an understory of shade-tolerant conifers or hardwoods, decadence components such as large live trees with broken-tops, cavities and mistletoe infections, large snags, fallen trees, and a canopy that is open enough for northern spotted owls to fly through and beneath it.

LSR and OHTA

- In conifer forest stands that are not older and more structurally-complex, apply silvicultural treatments to promote the development of structurally-complex forest.
- In stands that are currently nesting-roosting habitat, maintain nesting-roosting habitat function regardless of northern spotted owl occupancy.

Alternative A

Forest Management

Management Objectives for HITA

- See common to all Harvest Land Base lands

Management Direction for HITA

- See common to all Harvest Land Base lands
- Offer for timber for sale from regeneration harvest units with area totaling not less than 8 percent and not more than 17 percent of the area in this land use allocation in each Field Office per decade.
  - Regeneration harvest would be applied in stands ≥ 60 years old for any of the following reasons:
    - To produce timber to contribute to the attainment of the declared Annual Sale Quantity.
    - To develop a balanced age class distribution: Equal number of acres in each 10-year age class throughout this LUA in each Field Office.
    - Conduct post-disturbance salvage or manage dead or dying stands due to insects or disease.
    - Insect and disease management.
    - Convert stands with a composition of commercially undesirable tree species or an inadequate stocking of commercially desirable tree species to stands that are fully stocked by commercially desirable tree species.
  - Regeneration harvest would be applied in stands < 60 years old for any one of the above reasons, or for the following reason:
    - In order to reset stand development in stands that are overly dense that would not respond well to commercial thinning. Overly dense stands are generally characterized as having average crown ratios in trees over 8" DBH of ≤ 20 percent or average height to diameter ratios of trees over 8" DBH ≥ 80.
  - Remove all merchantable material from regeneration harvest units, except when overstory trees must be left to provide protection to the regenerating understory. Harvest these trees after such protection is no longer needed.
    - Regeneration harvest units will be adequately reforested with species mix appropriate to the site within five years of project completion.
- Offer timber for sale from commercial thinning harvest units.
  - Apply commercial thinning for one or more of the following reasons:
    - To produce timber to contribute to the attainment of the declared Annual Sale Quantity.
    - To recover current or anticipated mortality,
    - To adjust stand composition or dominance,
    - To reduce stand susceptibility to disturbances such as a fire, windstorm, disease, or insect infestation;
    - To improve merchantability and value.
  - Maintain stand densities through commercial thinning at levels above that needed to occupy the site, but below densities that will result in loss of stand vigor and health.
    - Post-thinning stand average relative percent max SDI targets will be between 35 percent and 45 percent.
- Implement timber salvage harvest after disturbances to recover economic value and to minimize commercial loss or deterioration of damaged trees.
  - Remove all merchantable dead and down timber from disturbed area, where removal is economically viable.

Management Objectives for UTA

- See common to all alternatives

Management Direction for UTA

- See common to all alternatives

Grazing

Management Objectives

- Provide for livestock grazing consistent with other resource objectives while maintaining or improving the health of the public rangelands.
- Prevent livestock from causing trampling disturbance to spawning beds where Federally-listed salmonid fish species occur.

Management Direction (all Districts)

- For streams with salmonid species listed under the Endangered Species Act, livestock will not be released into riparian areas until 30 days following emergence of salmonids from spawning beds.

Management Direction (Medford, Klamath Falls)

- Manage livestock grazing in accordance with the "Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington." **Figure 3-122** shows lands available for livestock grazing. **Appendix K** contains the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Oregon/Washington.
- Maintain current grazing levels and management practices for the allotments shown in **Appendix K**. Make adjustments when rangeland health assessments and evaluations of monitoring data identify that livestock grazing is a contributing factor toward not meeting one or more of the Standards for Rangeland Health for Oregon and Washington.
- Develop range improvements when needed to achieve the Standards for Rangeland Health for Oregon and Washington, RMP objectives, or other allotment specific objectives.
- Rest from livestock grazing those areas disturbed by natural and human-induced events including but not limited to wildland fire, prescribed burns, timber management treatments, juniper cuts, and rehabilitation. Resume livestock grazing after determination that soil and vegetation have recovered from the initial disturbance to support livestock grazing. Exceptions would be for cases where such grazing would not impede either site recovery, or where livestock are used as a tool to aid in achieving certain recovery objectives.
- Authorize livestock grazing through management agreements, temporary nonrenewable grazing permits or leases, or special use permits on lands not available for livestock grazing through the issuance of a grazing lease or permit to control invasive plants, reduce fire danger, or accomplish other management objectives.

Management Direction (Coos Bay)

- Lands within the grazing allotments identified on **Table B-6** will not be available for livestock grazing through the issuance of a grazing lease or permit. Grazing will not continue to be authorized under Section 15 of the Taylor Grazing Act. Grazing may be authorized through management agreements, temporary nonrenewable grazing permits or leases, or special use permits consistent with the grazing regulations.

Table B-6. Allotments not available for livestock grazing, Coos Bay District.

Allotment Name	Allotment Number	Public Land (Acres)	Forage Allocation (AUMs)
Bullock	20006	8	12
Kellogg	20007	3	6
Middle Creek	20001	-	5
New River	30001	530	97
	Totals	**541**	**120**

Management Direction (Klamath Falls)

- Lands within the grazing allotments identified on **Table B-7** will not be available for livestock grazing through the issuance of a grazing lease or permit. Grazing will not continue to be authorized under Section 15 of the Taylor Grazing Act. Grazing may be authorized through management agreements, temporary nonrenewable grazing permits, or leases, or special use permits consistent with the grazing regulations.

Table B-7. Allotments not available for livestock grazing, Klamath Falls Field Office.

Allotment Name	Allotment Number	Public Land (Acres)	Forage Allocation (AUMs)
Edge Creek*	00102	5,950	-
Plum Hills	00813	160	20
	Totals	**6,110**	**20**

* The portion of the Upper Klamath Scenic River within the Edge Creek Allotment will be closed to grazing. This portion of the allotment is not allocated any AUMs. The remainder of the allotment will be available for grazing.

- Close exclosures and other areas identified on **Table B-8** to grazing.

Table B-8. Exclosures or other areas closed to grazing, Klamath Falls Field Office.

Allotment Name	Allotment Number	Area Closed (Typically Entire Area Inside the Exclosure Fencing)
Edge Creek	00102	Hayden Creek Exclosures (2) Fox Lake Exclosure
Buck Lake	00104	Tunnel Creek Exclosure Surveyor Campground Exclosure
Dixie	00107	Dixie (Long Prairie Creek) Exclosure
Jeld-Wen	00822	Aspen Exclosure
Rodgers	00852	Van Meter Flat Reservoir Exclosure
Yainax	00861	Bull Spring Exclosure Timothy Spring Exclosure
Bear Valley	00876	Holbrook Spring Exclosure
Bumpheads	00877	Bumpheads Reservoir Outlet Exclosure Antelope Creek Exclosure
Horsefly	00882	Long Branch Exclosure Caseview Spring Exclosure

Allotment Name	Allotment Number	Area Closed (Typically Entire Area Inside the Exclosure Fencing)
		Norcross Spring Exclosure/Area within the spring exclosure fence Boundary Spring Exclosure Barnes Valley Riparian Pasture (except as scheduled)
Pankey Basin	00884	Pankey Creek Riparian Exclosure
Dry Prairie	00885	Ben Hall Creek Riparian Pasture (except as scheduled)
Horse Camp Rim	00886	21 Reservoir Exclosure
Pitchlog	00887	Pitchlog Creek Exclosure Willow Spring Exclosure CCC Spring Exclosure
Willow Valley	00890	East Fork Lost River Exclosure Duncan Spring/Antelope Creek Exclosures (2) Antelope Riparian Pasture (except as scheduled)
Wood River	30855	Entire area excluded from regular grazing use via the 1996 *Upper Klamath Basin and Wood River Wetland ROD/RMP*

Management Direction (Medford)

- Lands with grazing allotments identified on **Table B-9** below will not be available for livestock grazing through the issuance of a grazing lease. Grazing will not continue to be authorized under Section 15 of the Taylor Grazing Act. Grazing may be authorized through management agreements, temporary nonrenewable grazing permits or leases, or special use permits consistent with the grazing regulations.

Table B-9. Allotments not available for livestock grazing, Medford District.

Allotment Name	Allotment Number	Public Land (Acres)	Forage Allocation (AUMs)
Trail Creek	10003	12,868	113
Longbranch*	10004	10,844	71
Antioch Road	10005	40	4
Roundtop Evans	10006	27,086	110
West Perry Road	10010	75	10
East Perry Road	10011	40	7
Obenchain Mountain	10014	120	12
Nichols Gap	10018	280	18
Eagle Point Canal	10020	465	55
Shady Branch	10025	320	32
Derby Station	10030	540	36
West Derby	10034	1,120	89
Emigrant Creek	10111	40	7
Baldy	10120	798	87
Lost Creek	10123	80	6
Cartwright	10127	40	4
Bybee Peak	10144	321	36

Allotment Name	Allotment Number	Public Land (Acres)	Forage Allocation (AUMs)
Stiehl	10210	175	18
Fielder Creek	10211	40	5
Del Rio	10216	40	5
Sugarloaf/Greensprings	20158	2,926	210
Applegate	20201	25,518	294
Tunnel Ridge	20202	2,183	14
Timber Mountain	20204	1,720	70
Sardine and Galls Creek	20205	3,765	158
Sterling Creek	20207	29,209	190
Spencer Gulch	20208	1,935	150
Quartz Gulch	20209	680	9
Burton Butte	20212	5	2
Chapman Creek	20213	3,309	81
Ecker	20217	40	6
Stage Road	20218	40	4
Lomas Road	20222	635	50
Star	20223	118	24
Pickett Mountain	20302	820	30
Jump Off Joe	20303	80	8
Deer Creek*	20308	1,247	0
Reeves Creek	20309	1,672	95
Q Bar X	20310	15	3
Esterly Creek	20312	4,457	152
Glade Creek	20315	560	17
Cherry Gulch	20316	40	6
	Totals	**136,306**	**2,298**

* These portions of the Longbranch and Deer Creek Allotments will be closed to grazing. The remainder of the allotments will be available for grazing.

All areas that are currently without allotments will remain closed to grazing through the issuance of a grazing lease or permit.

Invasive Species

Management Objectives

- See common to all alternatives.

Management Direction

- See common to all alternatives.

Sudden Oak Death

- Do not apply sudden oak death treatments.

Late Successional Reserves

Management Objectives

- See common to all alternatives.

Management Direction

- See common to all alternatives.
- When treating conifer forest stands that are not nesting-roosting habitat, limit silvicultural treatments to those that:
  - Speed the development of, or improve the quality of northern spotted owl habitat in the stand, or in the adjacent stand, or both.
  - Do not preclude or delay by 10 years or more the development of northern spotted owl nesting-roosting habitat in the stand and in adjacent stands.

Moist Forests

- Retain cut trees.

Dry Forests

- See common to all Dry LSRs
- Timber salvage is prohibited, except when necessary to protect public health and safety, or to keep roads and other infrastructure clear of debris.

Rare Plants and Fungi

Management Objectives

- See common to all alternatives
- Provide for the conservation of Bureau Special Status plant and fungi species.

Management Direction

- See also common to all alternatives
- Manage Federal candidate and Bureau Sensitive plant and fungi species consistent with any existing conservation agreements or strategies including the protection and restoration of habitat; altering the type, timing, and intensity of actions; and other strategies designed to conserve populations of the species.
- Create new and augment existing populations of ESA and Bureau Special Status plant and fungi species to meet recovery plan or conservation strategy objectives.

Riparian Reserve

Management Direction in the decision area west of Highway 97

- See common to all alternatives

Management Direction in the decision area west of Highway 97

- See common to all alternatives

Table B-10. Riparian Reserve distance by water feature.

Feature	Riparian Reserve Distance*
All streams	One site-potential tree height distance from the edge of its active stream channel on each side of a stream
Unstable areas that are above or adjacent to stream channels and are likely to deliver material such as sediment and logs to the stream if the unstable area fails	The extent of the unstable area. Where there is a stable area between such an unstable area and the unstable area has the potential to deliver material such as sediment and logs to the stream, extend the Riparian Reserve from the stream to include the intervening stable area as well as the unstable area.
Lakes, natural ponds, and wetlands >1 acre	One-hundred feet extending from the edge of the water feature
Ponds and wetlands <1 acre and constructed impoundments of any size	The extent of riparian vegetation
Non-forest ecosystem streams and wetlands	Edge of the water body to the limit of the water influence area, as indicated by hydrophilic vegetation
Unstable areas that are above or adjacent to stream channels and are likely to deliver material such as sediment and logs to the stream if the unstable area fails	The extent of the unstable area. Where there is a stable area between such an unstable area and the unstable area has the potential to deliver material such as sediment and logs to the stream, extend the Riparian Reserve from the stream to include the intervening stable area as well as the unstable area.

* Reported distances are measured as slope distance.

Table B-11. Zone-specific management direction.

All Streams
Inner Zone All fish-bearing streams and perennial non-fish-bearing streams: 0 to 120 feet Non-fish-bearing intermittent streams: 0 to 50 feet
Do not thin stands, except as described below under “all zones” for fuels treatments.
Outer Zone All fish-bearing and perennial non-fish-bearing streams: 120 feet to one site-potential tree height Non-fish-bearing intermittent streams: 50 feet to one site-potential tree height
Thin stands as needed to ensure that stands are able to provide stable wood to the stream. Maintain at least 30 percent canopy cover and 60 trees per acre expressed as an average across the riparian reserve portion of the stand. **Moist Forests:** Remove trees only as needed for safety or operational reasons. **Dry forests:** Apply fuels reduction and thinning treatments and remove cut trees as needed to reduce the risk of large, high severity or high intensity fire. Retain at least 30 percent canopy cover and 60 trees per acre, expressed as an average across the riparian reserve portion of the stand. Merchantable timber from thinning and other silvicultural treatments may be made available for sale. Otherwise, remove trees only as needed for safety or operational reasons.
All Zones (Edge of active stream channel to one site-potential tree height)
See common to all alternatives

Fell trees as needed for stream restoration and towards the stream as feasible, if key pieces, size and volume are inadequate, based on ODFW benchmarks or NMFS habitat analytical procedure. **Moist Forest:** Retain cut or blown down trees within the Riparian Reserve. Remove trees only as needed for safety or operational reasons. **Dry Forests:** Apply low or moderate-severity burns where needed to invigorate native deciduous tree species. Moderate severity burns will be limited to no more than 20 percent of area of the Riparian Reserve subwatershed (HUC 12) each year. Apply non-commercial tree thinning as necessary to adjust fuel loads prior to a moderate-severity burn.
Lakes, Ponds and Wetlands > 1 acre (Edge of the water body to 100 feet)
See common to all **Moist Forest:** Retain cut or blow down trees within the Riparian Reserve. **Dry Forests:** Apply low or moderate-severity burns where needed to invigorate native tree deciduous species. Moderate severity burns will be limited to no more than 20 percent of area of the Riparian Reserve subwatershed (HUC 12) each year. Apply non-commercial tree thinning as necessary to adjust fuel loads prior to a moderate-severity burn.
Ponds and Wetlands < 1 acre and Constructed Water Impoundments of any size[122]
Edge of the water body to the limit of the water influence area, as indicated by hydrophilic vegetation. See management direction for all riparian zones for Alternative A.
Non-forest ecosystems streams and wetlands
Edge of the water body to the limit of the water influence area, as indicated by hydrophilic vegetation. See management direction for all riparian zones for Alternative A.
Unstable areas that are above or adjacent to stream channels and are likely to deliver material such as sediment and logs to the stream if the unstable area fails.
The extent of the unstable area. Where there is a stable area between such an unstable area and the unstable area has the potential to deliver material such as sediment and logs to the stream, extend the Riparian Reserve from the stream to include the intervening stable area as well as the unstable area. See management direction for all riparian zones for Alternative A.

Wildlife

Management Objectives

- See common to all alternatives.

122 Typically, small ponds in forest environments used for fire suppression activities.

Management Direction

- See common to all alternatives.

Marbled Murrelet

- Protect existing, occupied marbled murrelet sites as of [*ROD Date*] as they are currently mapped (*refer to map in the 2015 FEIS/ROD that depicts these sites*).
- Restrict activities that disrupt marbled murrelet nesting during the nesting period where marbled murrelets are currently nesting.
- ***Note**: There is no management direction to conduct intensive surveys for the marbled murrelet (or subsequent direction for managing future, occupied sites) under Alternative A.*

Alternative B

Forest Management

Management Objectives for LITA

- See common to all alternatives.
- Manage habitat conditions around northern spotted owl sites to promote species recovery (high vs. low).
- Provide complex early-successional ecosystems.
- Develop diverse late successional ecosystems for a portion of the rotation.
- Provide a variety of forest structural stages distributed both spatially and temporally.

Management Direction for LITA

- See common to all alternatives.

- Protect conifer forest stands (high vs. low):
  - Within the nest patch of a northern spotted owl known or historic site. The nest patch is delineated as a 200-meter radius circle around a known or historic site

- Maintain or protect all NSO nesting-roosting habitat (high vs. low):
  - Within the 500-acre core use area circle around a known or historic nest site when < 250 post-treatment acres would support nesting-roosting habitat, regardless of pre-treatment conditions or cause.
  - Within the mean provincial home range circle around a known or historic nest site when < 40 percent of the post-treatment circle would support nesting-roosting habitat, regardless of pre-treatment conditions or cause.

- Offer for timber for sale from regeneration harvest units with area totaling not less than 6 percent and not more than 10 percent of the area in this land use allocation in each field office per decade.
  - Regeneration harvest would be applied in stands ≥ 100 years old for one or more of the following reasons:
    - To produce timber to contribute to the attainment of the declared Annual Sale Quantity.
    - To develop a balanced age class distribution: Equal number of acres in each 10-year age class throughout this LUA in each field office.
    - Post-disturbance salvage or manage dead or dying stands due to insects or disease.
    - Insect and disease management.
    - Convert stands capable of supporting conifer species that are currently growing primarily hardwoods or shrubs to a mix of conifer and hardwood species suitable to the site, unless the hardwoods or shrubs would produce a higher net monetary return.
    - To produce complex early-successional ecosystems.
  - Regeneration harvest would be applied in stands < 100 years old for any one of the above reasons, or for the following reason:
    - In order to reset stand development in stands that are overly dense that would not respond well to commercial thinning. Overly dense stands are generally characterized as having average crown ratios in trees over 8" DBH of ≤ 20 percent or average height to diameter ratios of trees over 8" DBH ≥ 80.
  - Regeneration harvest units shall meet the following criteria:

  - Retain 15-30 percent of pre-harvest stand basal area in individual regeneration harvest units. If the Riparian Reserve makes up ≥ 10 percent of the stand area, retain basal area towards the low end of the range; if the Riparian Reserve makes up <10 percent of the stand area, retain basal area towards the higher end of the range.
  - Create snags sufficient to meet snag targets in **Table B-18**.
  - Retention shall be left in a variety of spatial patterns, including clumps, aggregated groups, stringers, and individual trees.
  - Retention levels can be met with trees from any species or diameter class, and retention trees should represent the range of diameters and species present in the pre-harvest stand.
  - Use natural regeneration to establish desired stocking of tree species appropriate to the site.
    - At least 30 percent of the stand would be maintained below 30 percent canopy cover in regenerated trees for at least 30 years to allow the early-successional ecosystem to develop and mature.

- Offer timber for sale from commercial thinning harvest units.
  - Apply commercial thinning for one or more of the following reasons:
    - To produce timber to contribute to the attainment of the declared Annual Sale Quantity.
    - To recover current or anticipated mortality,
    - To adjust stand composition or dominance,
    - To reduce stand susceptibility to disturbances such as a fire, windstorm, disease, or insect infestation;
    - To improve merchantability and value;
    - To increase or maintain vegetative species diversity;
    - To promote or enhance the development of structural complexity.
  - Maintain stand densities through commercial thinning at levels above that needed to occupy the site, but below densities that will result in loss of stand vigor and health.
    - Post-thinning stand average relative percent max SDI targets will be between 25 percent and 35 percent.
    - Implement unthinned skips and group selection openings to provide increased structural complexity in the post-treatment stand.
      - The total area in group selection openings shall not exceed 10 percent of the thinned portion of the stand.
      - at least ½ of the skips would be implemented as retention islands unattached to the exterior harvest unit boundaries
    - Create snags sufficient to meet snag targets in **Table B-18**.

- Implement timber salvage harvest after disturbances to recover economic value and to minimize commercial loss or deterioration of damaged trees.
  - For disturbance events causing mortality of ≥ 60 percent of overstory trees on contiguous areas ≥ 10 acres in size:
    - Follow management direction for regeneration harvest units. Areas salvaged in this way also count towards regeneration harvest percent targets.
  - For all other disturbance events:
    - Remove all merchantable dead and down timber from disturbed area in excess of snag targets set forth in table X, where removal is economically viable.

Management Objectives for MITA

- See common to all alternatives.

- Manage habitat conditions around northern spotted owl sites to promote species recovery (high vs. low).
- Provide complex early-successional ecosystems.
- Develop late-successional ecosystems for a portion of the rotation.
- Provide a variety of forest structural stages distributed both temporally and spatially.

Management Direction for MITA

- See common to all ASQ lands.
- Protect conifer forest stands (high vs. low):
  - Within the nest patch of a northern spotted owl known or historic. The nest patch is delineated as a 200-meter radius circle around a known or historic site.

- Maintain or protect all NSO nesting-roosting habitat (high vs. low):
  - Within the 500-acre core use area circle around a known or historic nest site when < 250 post-treatment acres would support nesting-roosting habitat, regardless of pre-treatment conditions or cause.
  - Within the mean provincial home range circle around a known or historic nest site when < 40 percent of the post-treatment circle would support nesting-roosting habitat, regardless of pre-treatment conditions or cause.

- Offer for timber for sale from regeneration harvest units with area totaling not less than 8 percent and not more than 10 percent of the area in this Land Use Allocation in each field office per decade.
  - Regeneration harvest would be applied in stands ≥ 60 years old for one or more of the following reasons:
    - To produce timber to contribute to the attainment of the declared Annual Sale Quantity.
    - To develop a balanced age class distribution: Equal number of acres in each 10-year age class throughout this LUA in each field office.
    - Post-disturbance salvage or manage dead or dying stands due to insects or disease.
    - Insect and disease management.
    - To convert stands capable of supporting conifer species that are currently growing primarily hardwoods or shrubs to a mix of conifer and hardwood species suitable to the site, unless the hardwoods or shrubs would produce a higher net monetary return.
    - To produce complex early-successional ecosystems.
  - Regeneration harvest would be applied in stands < 60 years old for any one of the above reasons, or for the following reason:
    - In order to reset stand development in stands that are overly dense that would not respond well to commercial thinning. Overly dense stands are generally characterized as having average crown ratios in trees over 8" DBH of ≤ 20 percent or average height to diameter ratios of trees over 8" DBH ≥ 80.
  - Regeneration harvest units shall meet the following criteria:
    - Retain 5-15 percent of pre-harvest stand basal area in individual regeneration harvest units. If Riparian Reserves make up ≥ 10 percent of the stand area, retain basal area towards the low end of the range; if Riparian Reserves make up <10 percent of the stand area, retain basal area towards the higher end of the range.
    - Create snags sufficient to meet snag targets in **Table B-18**.
    - Retention shall be left in a variety of spatial patterns, including clumps, aggregated groups, stringers, and individual trees.
      - Retention levels can be met with trees from any species or diameter class, and retention trees should represent the range of diameters and species present in the pre-harvest stand.

        - Use natural regeneration, artificial regeneration, or a combination of the two to establish target stocking of tree species appropriate to the site within 5 years following regeneration harvest.
            - Up to 10 percent of the stockable stand area may be left un-stocked with trees in order to enhance the diversity of the early-successional ecosystem.
            - 50-70 percent of full stocking is considered acceptable.
            - At least 30 percent of the stand would be maintained below 30 percent canopy cover in regenerated trees for at least 30 years to allow the early-successional ecosystem to develop and mature.

- Offer timber for sale from commercial thinning harvest units.
    - Apply commercial thinning for any the following reasons:
        - To produce timber to contribute to the attainment of the declared Annual Sale Quantity.
        - To recover current or anticipated mortality,
        - To adjust stand composition or dominance,
        - To reduce stand susceptibility to disturbances such as a fire, windstorm, disease, or insect infestation;
        - To improve merchantability and value.
        - To increase or maintain vegetative species diversity.
        - To promote or enhance the development of structural complexity.
    - Maintain stand densities through commercial thinning at levels above that needed to occupy the site, but below densities that will result in loss of stand vigor and health.
        - Post-thinning stand average relative percent max SDI targets will be between 25 percent and 35 percent.
        - Implement unthinned skips and group selection openings to provide increased structural complexity in the post-treatment stand.
            - The total area in group selection openings shall not exceed 10 percent of the thinned portion of the stand.
            - at least ½ of the skips would be implemented as retention islands unattached to the exterior harvest unit boundaries
        - Create snags sufficient to meet snag targets in **Table B-18**.

- Implement timber salvage harvest after disturbances to recover economic value and to minimize commercial loss or deterioration of damaged trees.
    - For disturbance events causing mortality of ≥ 60 percent of overstory trees on contiguous areas ≥ 10 acres in size:
        - Follow management direction for regeneration harvest units. Areas salvaged in this way also count towards regeneration harvest percent targets.
    - For all other disturbance events:
        - Remove all merchantable dead and down timber from disturbed area in excess of snag targets set forth in **Table B-18**, where removal is economically viable.

Management Objectives for UTA

- See common to all alternatives.

Management Direction for UTA

- See common to all alternatives.

- Snags (not downed wood) will be created in sufficient numbers to meet targets established in **Table B-18**

Grazing

Management Objectives

- Provide for livestock grazing consistent with other resource objectives while maintaining or improving the health of the public rangelands.
- Prevent livestock from causing trampling disturbance to spawning beds where Federally-listed salmonid fish species occur.

Management Direction (all Districts)

- For streams with salmonid species listed under the Endangered Species Act, livestock will not be released into riparian areas until 30 days following emergence of salmonids from spawning beds.

Management Direction (Medford, Klamath Falls)

- Manage livestock grazing in accordance with the "Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington." **Figure 3-122** shows lands available for livestock grazing. **Appendix K** contains the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Oregon/Washington.
- Maintain current grazing levels and management practices for the allotments shown in **Appendix K**. Make adjustments when rangeland health assessments and evaluations of monitoring data identify that livestock grazing is a contributing factor toward not meeting one or more of the Standards for Rangeland Health for Oregon and Washington.
- Develop range improvements when needed to achieve the Standards for Rangeland Health for Oregon and Washington, RMP objectives, or other allotment specific objectives.
- Rest from livestock grazing those areas disturbed by natural and human-induced events including but not limited to wildland fire, prescribed burns, timber management treatments, juniper cuts, and rehabilitation. Resume livestock grazing after determination that soil and vegetation have recovered from the initial disturbance to support livestock grazing. Exceptions would be for cases where such grazing would not impede site recovery, or where livestock are used as a tool to aid in achieving certain recovery objectives.
- Authorize livestock grazing through management agreements, temporary nonrenewable grazing permits or leases, or special use permits on lands not available for livestock grazing through the issuance of a grazing lease or permit to control invasive plants, reduce fire danger, or accomplish other management objectives.

Management Direction (Coos Bay)

- Lands within the grazing allotments identified on **Table B-12** will be closed to livestock grazing through the issuance of a grazing lease or permit. Grazing will not be authorized under Section 15 of the Taylor Grazing Act. Grazing may be authorized through management agreements, temporary nonrenewable grazing permits or leases, or special use permits consistent with the grazing regulations.

Table B-12. Allotments closed to grazing, Coos Bay District.

Allotment Name	Allotment Number	Public Land (Acres)	Forage Allocation (AUMs)
Middle Creek	20001	-	5
Bullock	20006	8	12
Kellogg	20007	3	6
New River	30001	530	97
	Totals	**541**	**120**

Management Direction (Klamath Falls)

- Lands within the grazing allotments identified on **Table B-13** will be closed livestock grazing through the issuance of a grazing lease or permit. Grazing will not be authorized under Section 15 of the Taylor Grazing Act. Grazing may be authorized through management agreements, temporary nonrenewable grazing permits or leases, or special use permits consistent with the grazing regulations.

Table B-13. Allotments closed to grazing, Klamath Falls Field Office

Allotment Name	Allotment Number	Public Land (Acres)	Forage Allocation (AUMs)
Edge Creek*	00102	5,950	-
Plum Hills	00813	160	20
	Totals	**6,110**	**20**

* The portion of the Upper Klamath Scenic River within the Edge Creek Allotment will be closed to grazing. This portion of the allotment is not allocated any AUMs. The remainder of the allotment will be available for grazing as described.

- Exclosures and other areas identified on **Table B-14** are closed to grazing

Table B-14. Allotments closed to grazing, Klamath Falls Field Office.

Allotment	Allotment Number	Area Closed (Typically Entire Area Inside the Exclosure Fencing)
Edge Creek	00102	Hayden Creek Exclosures (2) Fox Lake Exclosure
Buck Lake	00104	Tunnel Creek Exclosure Surveyor Campground Exclosure
Dixie	00107	Dixie (Long Prairie Creek) Exclosure
Jeld-Wen	00822	Aspen Exclosure
Rodgers	00852	Van Meter Flat Reservoir Exclosure
Yainax	00861	Bull Spring Exclosure Timothy Spring Exclosure
Bear Valley	00876	Holbrook Spring Exclosure
Bumpheads	00877	Bumpheads Reservoir Outlet Exclosure Antelope Creek Exclosure
Horsefly	00882	Long Branch Exclosure Caseview Spring Exclosure Norcross Spring Exclosure/area within the spring exclosure fence Boundary Spring Exclosure Barnes Valley Riparian Pasture (except as scheduled)

Allotment	Allotment Number	Area Closed (Typically Entire Area Inside the Exclosure Fencing)
Pankey Basin	00884	Pankey Creek Riparian Exclosure
Dry Prairie	00885	Ben Hall Creek Riparian Pasture (except as scheduled)
Horse Camp Rim	00886	21 Reservoir Exclosure
Pitchlog	00887	Pitchlog Creek Exclosure Willow Spring Exclosure CCC Spring Exclosure
Willow Valley	00890	East Fork Lost River Exclosure Duncan Spring/Antelope Creek Exclosures (2) Antelope Riparian Pasture (except as scheduled)
Wood River	30855	Entire area excluded from regular grazing use via the 1996 *Upper Klamath Basin and Wood River Wetland ROD/RMP*

Management Direction (Medford)

- Lands with grazing allotments identified on **Table B-15** below will be closed to livestock grazing through the issuance of a grazing lease. Grazing will not be authorized under Section 15 of the Taylor Grazing Act. Grazing may be authorized through management agreements, temporary nonrenewable grazing permits or leases, or special use permits consistent with the grazing regulations.

Table B-15. Allotments closed for livestock grazing, Medford District.

Allotment Name	Allotment Number	Public Land (Acres)	Forage Allocation (AUMs)
Trail Creek	10003	12,868	113
Longbranch*	10004	10,844	71
Antioch Road	10005	40	4
Roundtop Evans	10006	27,086	110
West Perry Road	10010	75	10
East Perry Road	10011	40	7
Obenchain Mountain	10014	120	12
Nichols Gap	10018	280	18
Eagle Point Canal	10020	465	55
Shady Branch	10025	320	32
Derby Station	10030	540	36
West Derby	10034	1,120	89
Emigrant Creek	10111	40	7
Baldy	10120	798	87
Lost Creek	10123	80	6
Cartwright	10127	40	4
Bybee Peak	10144	321	36
Stiehl	10210	175	18
Fielder Creek	10211	40	5
Del Rio	10216	40	5

Allotment Name	Allotment Number	Public Land (Acres)	Forage Allocation (AUMs)
Sugarloaf/Greensprings	20158	2,926	210
Applegate	20201	25,518	294
Tunnel Ridge	20202	2,183	14
Timber Mountain	20204	1,720	70
Sardine and Galls Creek	20205	3,765	158
Sterling Creek	20207	29,209	190
Spencer Gulch	20208	1,935	150
Quartz Gulch	20209	680	9
Burton Butte	20212	5	2
Chapman Creek	20213	3,309	81
Ecker	20217	40	6
Stage Road	20218	40	4
Lomas Road	20222	635	50
Star	20223	118	24
Pickett Mountain	20302	820	30
Jump Off Joe	20303	80	8
Deer Creek*	20308	1,247	0
Reeves Creek	20309	1,672	95
Q Bar X	20310	15	3
Esterly Creek	20312	4,457	152
Glade Creek	20315	560	17
Cherry Gulch	20316	40	6
	Totals	**136,306**	**2,298**

* These portions of the Longbranch and Deer Creek Allotments will be closed to grazing. The remainder of the allotments will be available for grazing.

All areas that are currently without allotments will remain closed to grazing through the issuance of a grazing lease or permit.

Invasive Species

Management Objectives

- See common to all alternatives

Sudden Oak Death

- Prevent the introduction and the spread of sudden oak death (*Phytophthora ramorum*) infections on BLM-administered lands.

Management Direction

- See common to all alternatives

Sudden Oak Death

- Apply state-of-the art, integrated pest management prescriptions for treatment at all sudden oak death (*Phytophthora ramorum*) infection sites outside of the Riparian Reserve.

Late Successional Reserves

These are older stands as defined by district layers and includes all stands inside of large block development areas (new BLM-designed).

Management Objectives

- See common to all alternatives.

Management Direction

- See common to all alternatives.
- When treating conifer forest stands that are not nesting-roosting habitat, limit silvicultural treatments to those that:
  - Speed the development of, or improve the quality of northern spotted owl habitat in the stand, or in the adjacent stand, or both.
  - Do not preclude or delay by 20 years or more the development of northern spotted owl nesting-roosting habitat in the stand and in adjacent stands.
- After any commercial harvest entry, create snags sufficient to meet snag targets in **Table B-18**.
- Dry Forests (defined by Potential Vegetation Type): see common to all alternatives
- Timber salvage is prohibited, except when necessary to protect public health and safety, or to keep roads and other infrastructure clear of debris.

Rare Plants and Fungi

Management Objectives

- See common to all alternatives
- Provide for the conservation of Bureau Special Status plant and fungi species
- Support the persistence and resilience of oak species within oak woodlands and within mixed hardwood/conifer communities outside of the Harvest Land Base.

Management Direction

- See common to all alternatives
- Manage Federal candidate and Bureau Sensitive species consistent with any existing conservation agreements or strategies including the protection and restoration of habitat; altering the type, timing, and intensity of actions; and other strategies designed to conserve populations of the species.
- Outside of the Harvest Land Base, manage mixed hardwood/conifer communities to maintain and enhance oak persistence and structure by removing competing conifers, thinning, and prescribed fire.

Riparian Reserve

Management Objectives (applicable throughout planning area except eastside Klamath Falls)

- See common to all alternatives

Management Direction (applicable throughout planning area except eastside Klamath Falls)

Table B-16. Riparian Reserve distance by water feature.

Feature	Riparian Reserve Distance*
All fish-bearing streams and perennial non-fish bearing streams	One site-potential tree height Riparian Reserve from the edge of its active stream channel on each side of a stream
Intermittent non-fish-bearing headwaters streams with high debris flow potential[123]	One-hundred foot Riparian Reserve from the edge of its active stream channel on each side of a stream
Intermittent non-fish-bearing streams without high debris flow potential	Fifty foot Riparian Reserve from the edge of its active stream channel on each side of a stream
Lakes, ponds, and wetlands > 1 acre	One site-potential tree height Riparian Reserve extending from the edge of its water feature
Ponds and wetlands <1 acre and constructed impoundments of any size	Fifty foot Riparian Reserve from the edge of its water body
Non-forest ecosystems: streams and wetlands	Edge of the water body to the limit of the water influence area, as indicated by hydrophilic vegetation.
Unstable areas that are above or adjacent to stream channels and are likely to deliver material such as sediment and logs to the stream if the unstable area fails.	The extent of the unstable area. Where there is a stable area between such an unstable area and the unstable area has the potential to deliver material such as sediment and logs to the stream, extend the Riparian Reserve from the stream to include the intervening stable area as well as the unstable area.

* Reported distances are measured as slope distance.

Table B-17. Zone-specific management direction.

All Fish-Bearing Streams and Non-Fish-Bearing Perennial Streams Lakes, Ponds and Wetlands > 1 Acre
Inner Zone (0 to 60 feet)
Do not fall or remove trees except for safety or operational reasons or as described in all zones for in stream restoration, disease treatments, alder, and brushfield conversion.
Outer Zone (60 feet to one site-potential tree height)
Apply thinning to promote the development of large, open grown trees, develop layered canopies and multi-cohort stands, develop diverse understory plant communities, and allow for hardwood vigor and persistence. Apply silvicultural treatments to increase diversity of riparian species and develop structurally complex stands.

[123] High debris flow potential determined from geospatial modeling (Miller *et al*. 2006) with a calibration dataset for extreme storms to generate a relative landslide density mapping. A classification of the relative landslide density mapping is performed to isolate the most susceptible areas; generally, the upper tier (25%) based on a geometric mean or breaks in the data.

Retain at least 50 percent canopy cover and 80 trees per acre expressed as an average across the riparian reserve portion of the stand. Created canopy openings may not exceed ½ acre, and may not exceed 10 percent of the riparian reserve area in the stand.

Fall and remove trees as needed for riparian restoration projects or stand maintenance.

Tree tipping requirements: 15 percent of tree basal area marked for removal will be directionally felled towards the stream channel and left on site.

Retain snags and coarse woody debris in thinning operations, except for safety or operational reasons (e.g. maintaining access to roads and facilities)

Merchantable timber from thinning and other silvicultural treatments may be made available for sale.

All Zones (Edge of active stream channel to one site-potential tree height)

Fell trees as needed to supply wood for in-stream restoration.

Apply treatments, including commercial treatments, as needed for treatment of diseases including but not limited to: Port-Orford-cedar root rot disease.

Apply commercial treatments as needed for red alder (*Alnus rubra*) or brush field conversions where the desired forest community type is being constrained. Projects must maintain water quality targets along 303(d) listed streams with an approved TMDL.

Dry Forests:
Apply fuels reduction and silvicultural treatments as needed to increase stand resistance and resilience to insects, disease, and fire.

Intermittent Non-Fish-Bearing Streams with High Debris Flow Potential

Inner Zone (0 to 50 feet)

Do not fall or remove trees except for safety or operational reasons or for dry forest resiliency treatments. New permanent road crossings would not be allowed.

Outer Zone (50 to 100 feet)

Apply thinning to promote the development of large, open grown trees, develop layered canopies and multi-cohort stands, develop diverse understory plant communities, and allow for hardwood vigor and persistence.

Apply silvicultural treatments to increase diversity of riparian species and develop structurally complex stands for the benefit of riparian and aquatic species including early seral species.

Retain at least 50 percent canopy cover and 80 trees per acre expressed as an average across the riparian reserve portion of the stand. Created canopy openings may not exceed ½ acre, and may not exceed 10 percent of the riparian reserve area in the stand.

Fall and remove trees as needed for riparian restoration projects or stand maintenance, including but not limited to alder or brush field conversions, or for treatment of diseases including but not limited to Port-Orford-cedar root rot disease outbreaks.

Tree tipping requirements: 15 percent of tree basal area marked for removal will be directionally felled towards the stream channel and left on site.

Retain snags and coarse woody debris in thinning operations, except for safety or operational reasons (e.g., maintaining access to roads and facilities). Merchantable timber from thinning and other silvicultural treatments may be made available for sale, where it is economically viable to do so.
All Zones (Edge of active stream channel to 100 feet)
Dry Forests: Apply fuels reduction and silvicultural treatments as needed to increase stand resistance and resilience to insects, disease, and fire.
Intermittent Non-Fish Bearing Streams with No High Debris Flow Potential (0 to 50 feet)
Do not fall or remove trees except for safety, operational reasons, or dry forest resiliency treatments. Apply commercial treatments as needed for treatment of diseases including but not limited to Port-Orford-cedar root rot disease outbreaks. **Dry Forests:** Apply fuels reduction and silvicultural treatments as needed to increase stand resistance and resilience to insects, disease, and fire.
Ponds And Wetlands <1 acre and Constructed Impoundments of Any Size (0 to 50 feet)
Do not fall or remove trees except for safety, operational reasons, or dry forest resiliency treatments. **Dry Forests:** Apply fuels reduction and silvicultural treatments as needed to increase stand resistance and resilience to insects, disease, and fire.
Non-forest Ecosystems, Streams and Wetlands
Edge of the water body to the limit of the water influence area, as indicated by hydrophilic vegetation. See management direction for all riparian zones for Alternative B.
Unstable Areas that are above or adjacent to stream channels and are likely to deliver material such as sediment and logs to the stream if the unstable area fails
The extent of the unstable area. Where there is a stable area between such an unstable area and the unstable area has the potential to deliver material such as sediment and logs to the stream, extend the Riparian Reserve from the stream to include the intervening stable area as well as the unstable area. See management direction for all riparian zones for Alternative B.

Wildlife

Management Objectives

- See common to all alternatives.

Management Direction

- See common to all alternatives.

Marbled Murrelet

- Conduct intensive surveys for the marbled murrelet prior to implementation of projects that could degrade or remove potential habitat within 0-35 miles from the coast. Potential habitat for the marbled murrelet is defined as: (1) mature (with or without a structurally-complex component) or structurally-complex coniferous forests and (2) coniferous forests < 80 years old that have platform

trees[124]. Platforms can be created by a wide bare branch, moss, or lichen covering a branch, mistletoe, witches brooms, other deformities, or structures such as squirrel nests.

- If surveys indicate that habitat is occupied by marbled murrelets, then protect all potential habitat within a 300 foot of the occupied stand.
- Protect existing, occupied marbled murrelet sites as of [*ROD Date*] as they are currently mapped (*refer to map in the 2015 FEIS/ROD that depicts these sites*).
- In lieu of intensive surveys for marbled murrelets, the following options are available when conducting projects in stands < 80 years old:
  - Prohibit the removal or damage of platform trees. This includes the removal or damage of trees with platforms and the removal or damage of adjacent trees with branches that interlock the branches of any platform tree.
  - Prohibit timber harvest and associated ground disturbances during the marbled murrelet nesting period unless otherwise allowed by a biological opinion or letter of concurrence.
  - Maintain[125] marbled murrelet habitat within a ½ site-potential tree height buffer around all platform trees.
  - Restrict activities that disrupt marbled murrelet nesting during the nesting period where marbled murrelets are currently nesting.

North Oregon Coast Distinct Population Segment of the Red Tree Vole

- Survey proposed projects within the range of the North Oregon Coast Distinct Population Segment of the red tree vole that could degrade or remove habitat. Habitat that requires surveys prior to modification includes either (a) or (b) from each of the following two bullets:
  - (a) stands with a QMD ≥ 16 inches in the in the Northern Mesic Zone or (b) stands with QMD ≥ 18 inches in the Mesic Zone; *and*
  - (a) conifer-dominated stands that are mature or structurally complex or (b) conifer-dominated stands that have ≥ 60 percent canopy closure and have ≥ 2 superdominant conifer trees[126] per acre.
- The following types of projects are exempt from the above direction to survey for red tree voles prior to implementation:
  - Projects in stands < 80 years old;

[124] **Platform Trees** are trees that provide opportunities for marbled murrelet nesting. A platform tree has the following characteristics:
• It occurs within 35 miles (56 km) of the coast;
• It is a conifer;
• It has a DBH ≥ 19.1 inches (49 cm), height > 107 feet (33 m), has at least one **platform** ≥ 4 inches (10 cm) in diameter, nesting substrate (e.g. moss, epiphytes, duff) on that platform, and an access route through the canopy that a murrelet could use to approach and land on the platform;
• It has potential structure ≥ 33 feet (10 m) above the ground;
• And it has a tree branch or foliage, either on the tree with potential structure or on a surrounding tree, which provides protective cover over the platform.

[125] **Maintain marbled murrelet habitat** refers to a silvicultural activity that changes a conifer forest stand but maintains structural characteristics such that the stand continues to support marbled murrelet nesting opportunities.

[126] **Superdominant conifer trees** typically have crowns that extend above the general stand canopy and have large branches in the upper canopy of the dominant trees in the stand. Superdominant trees may be remnant trees from an earlier cohort, or they may be trees from the dominant cohort that were more open grown and have become much larger than the rest of the trees in the stand.

  - Culvert replacements on roads that are in use and part of the road system or culvert removals if the road is temporary or to be decommissioned;
  - Riparian and stream improvement projects where the work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement of large wood, channel and flood plain reconstruction, or removal of channel diversions; or
  - Portions of hazardous fuel treatments where prescribed fire is applied. Any portion of a hazardous fuels treatment project involving commercial logging will remain subject to survey requirements except for projects in stands < 80 years old.
- If surveys indicate that habitat is occupied by red tree voles from the North Oregon Coast Distinct Population Segment, then a "habitat area" will be established for each cluster of nests that are not isolated from one another by more than 330 feet and includes at least one active nest.
  - Habitat areas will be at least 10 acres in size and will include 1.0 acre per nest if there are more than 10 red tree vole nests (e.g., 15 red tree vole nests would result in a habitat area 15 acres in size).
  - Within habitat areas, do not remove or modify nest trees, the canopy structure of the stand, or remove the dominant, co-dominant, or intermediate crowns.
  - Habitat areas for the North Coast Distinct Population Segment of the red tree vole may be designated as non-high priority and released for other management objectives if they occur south of Highway 20.
  - Habitat areas north of Highway 20 will not be designated as non-high priority as they are considered a high priority for the conservation of the species.

Snags and Down Woody Material

- Retain existing snags and existing down woody material during silvicultural treatments of stands, except for safety or operational reasons. Retain snags felled for safety or operational reasons as down woody material.
- Create new snags in the amounts and sizes specified in **Table B-18** and **Table B-19** at the time of silvicultural treatment. If insufficient trees are available in the size class specified, use trees from the largest size class available. Snags and coarse woody debris retention standards would be met as an average at the scale of the harvest unit, and is not intended to be attained on every acre.

Table B-18. Snag creation levels within the Harvest Land Base (MITA, LITA OHTA, UTA), in Alternative B.

District/Field Office	Province	Create This Number of Snags/Acre at Time of Treatment in the Harvest Land Base		
		> 20 Inches DBH	> 10 Inches DBH	Total Trees to Snag
Coos Bay	All	1	-	1
Eugene	OR Coast Range	1	-	1
Eugene	Western Cascades	1	-	1
Klamath Falls	All	1	-	1
Medford	All	-	-	-
Roseburg	OR Coast Range	3	-	3
Roseburg	Western Cascades	3	3	6
Roseburg	Klamath	-	-	-
Salem	OR Coast Range	1	-	1
Salem	Western Cascades	1	-	1

Table B-19. Snag creation levels within the Reserves (LSR120, LSR no age limit, RR) in Alternative B.

District/Field Office	Province	Create This Number of Snags/Acre at Time of Treatment in the Reserve		
		> 20 Inches DBH	> 10 Inches DBH	Total Trees to Snag
Coos Bay	All	5	5	10
Eugene	OR Coast Range	5	5	10
Eugene	Western Cascades	5	20	25
Klamath Falls	All	2	5	7
Medford	All	1	1	2
Roseburg	OR Coast Range	6	7	13
Roseburg	Western Cascades	6	25	31
Roseburg	Klamath	1	1	2
Salem	OR Coast Range	5	5	10
Salem	Western Cascades	5	20	25

- Retain snags and down woody material at levels described in **Table B-20** following a stand-replacing event. Snags and coarse woody debris retention standards would be met as an average at the scale of the salvage harvest unit, and is not intended to be attained on every acre. Quantities in excess of the levels described in **Table B-20** could be salvaged to reduce fuel loading.

Table B-20. When implementing fuels treatments/prescription fire snag and down woody material retention levels within the Reserves (LSR120, LSR no age limit, RR) under Alternative B.

District/Field Office	Province	Target Number of Snags and Down Wood Cover to Have at the Time of Treatment in the Reserve		
		> 20 Inches DBH	> 10 Inches DBH	Percent Cover
Coos Bay	All	8	19	6%
Eugene	OR Coast Range	8	19	6%
Eugene	Western Cascades	8	19	10%
Klamath Falls	All	4	13	3%
Medford	All	3	7	2%
Roseburg	OR Coast Range	8	19	6%
Roseburg	Western Cascades	8	19	10%
Roseburg	Klamath	3	7	2%
Salem	OR Coast Range	8	19	6%
Salem	Western Cascades	8	19	10%