

and vandalism. Firearm-related property damage and garbage related to shooting is experienced infrequently. Natural and cultural resources are not damaged by firearm discharge or illegal activities. Firearm discharge and other recreational uses are managed concurrently to improve recreational opportunities and reduce user conflict.

Archaeology

Goal

Locate, protect, preserve, enhance, and interpret cultural resources in accordance with existing legal authorities.

Vision

Cultural resources and "At-Risk," significant archaeological resources are managed in a pro-active manner for their various use categories (as defined in BLM Manual 8100). Information about the archaeology of the planning area is current. Residents of, and visitors to, the area have an opportunity to learn about the local prehistory and history of the region. Interpretation, education, inventories, monitoring, and law enforcement enhances protection and preservation of "At-Risk", significant archaeological resources.

Management Direction

The management direction contained in this section includes new direction from the Upper Deschutes planning process, as well as existing direction from regulations, manuals and handbooks, and unrevised portions of the Brothers/La Pine RMP.

Ecosystem Health and Diversity

Vegetation

Ecosystem Maintenance and Restoration

Objective V – 1 applies to all plant communities. Objectives V – 1a through V – 1g apply only to the plant community specified.

All Plant Communities

Objective V - 1: Maintain and restore healthy, diverse and productive native plant communities appropriate to local site conditions. Manage vegetation structure, density, species composition, patch size, pattern, and distribution to reduce the occurrence of uncharacteristically large and severe disturbances. Maintain or mimic natural disturbance regimes so that plant communities are resilient following periodic outbreaks of insects, disease and wildland fire. Identify opportunities to actively re-pattern vegetation on the landscape to conditions more consistent with landform, climate, biological, and physical components of the ecosystem, and considering social expectations and changes to the landscape driven by human influences.

Rationale:

The Federal Land Policy and Management Act of October 21, 1976 ("FLPMA", 43 USC 1701) declares that the public land be managed in a manner that would: a) protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric,

water, and archaeological values; b) preserve and protect certain public lands in their natural condition; c) provide food and habitat for fish and wildlife and domestic animals; and d) provide for outdoor recreation and human occupancy and use.

Many plant communities throughout the interior west are in a condition, structure and composition that deviate from their "natural" state that existed prior to white European settlement. Human management activities and other influences have contributed to the current imbalance in ecosystems. Restoring conditions that approximate historic conditions would help prevent large-scale occurrences of insect, disease, and wildland fire and the resulting undesirable ecological, social, and economic effects of these large-scale disturbances. Restoration of landscape succession/disturbance regimes is the foundation of the strategy to manage long-term risk to terrestrial, aquatic, and riparian ecosystems. This risk management strategy will conserve scarce habitats in the short-term while expanding these habitats through restoration in the long-term.

Allocations/Allowable Uses:

1. Vegetative restoration treatments may be accomplished by a variety of methods including, but not limited to, mechanical, prescribed fire, and grazing. Specific project prescriptions will be appropriate to site conditions, plant community types, and resource objectives, and will be detailed in project-level plans and National Environmental Policy Act (NEPA) analyses.
2. Apply Best Management Practices (see Appendix F) where appropriate during vegetative treatments.

Guidelines:

Priorities

1. Where ecosystems are healthy and functioning, apply management to ensure the maintenance of good conditions and, where the condition of ecosystems is not as good, keep conditions from deteriorating further until they can be restored, either passively or actively.
2. Potential project areas will be evaluated for expected rehabilitation success given a reasonable level of treatment effort and investment. Areas that are so damaged or altered so as to have transitioned beyond the threshold of restoration success may be deferred in favor of areas that have greater opportunity for success.
3. Rehabilitation will be considered whenever there is damage caused by natural or human-caused events such as erosion, fire, trespass, mining, road construction, and other ground disturbing activities. Weed management will also be integral to most rehabilitation efforts.
4. Emphasize managing special status species habitats.
5. Consult with Redmond Airport officials in T15S R13E sections 1, 13, 24, 25, and 26 to ensure that restoration projects do not conflict with the safe operation or development of the airport.

Structure

6. Seed or plant grasses, forbs, shrubs and trees where appropriate to achieve a variety of objectives such as: stabilizing soils, restoring native communities, converting to targeted plant communities, improving wildlife habitat, and influencing potential fire behavior in the wildland urban interface.
7. Use native species for a majority of restoration/rehabilitation treatments. Examples of when use of non-natives may be appropriate include:
 - a. When advantageous for quick soil stabilization
 - b. When aggressive competition with invasive weeds is needed
 - c. When non-natives are significantly more cost-effective and result in a much greater area treated
 - d. When natives are not capable of achieving objectives
 - e. When non-natives can contribute to overall restoration success

8. Increase the potential for re-seeding success by utilizing stock adapted to or appropriate for local conditions. Use native seeds or seedlings obtained from local genetic stock whenever practicable.
9. Utilize wildland/urban interface fire zone treatments to maintain or contribute early seral (low shrub, perennial grass, forbs) structure and composition to targeted landscape vegetative communities.
10. Promote native herbaceous cover with restoration treatments to reduce the amount of bare, exposed soil for erosion control and displacement of weeds.
11. Restore the distribution and vigor of bitterbrush stands through vegetative treatments designed to reduce competing plants, create a variety of bitterbrush age classes, and create conditions conducive to bitterbrush natural regeneration.
12. Use a variety of measures to protect planted and naturally regenerated seedlings from the effects of trampling, browsing, and girdling by livestock and wildlife. Such measures may include: suspension of grazing, fencing, tubing, netting, and animal repellents.
13. Maintain/create snags and down logs at levels that consider historic conditions, wildlife habitat needs, and objectives for fuels treatments in wildland urban interface areas.
14. Restore riparian vegetation wherever it occurs within larger-scale upland vegetative treatments. Important hardwood riparian vegetative types occurring within the planning area requiring special attention include aspen, alder, willow, currant, chokecherry, oceanspray, and mock-orange. Due to the different plant communities and site conditions involved, site-specific prescriptions will be developed for riparian treatments. Additional protection from damage by domestic livestock, deer and elk should be considered.
15. Mimic natural processes with vegetation management efforts in the Badlands WSA so as not to impair the area's suitability for wilderness designation.

Fire

16. Guidelines for restoration/maintenance of ecosystems utilizing prescribed fire are discussed in more detail in the Fire/Fuels Guidelines.
17. Guidelines for rehabilitation of burned areas are discussed in more detail in Fire/Fuels Guidelines.

Soil

18. Incorporate measures to protect microbiotic crusts where practicable during vegetative treatments and other authorized activities. Promote conditions favorable for retention and development of biological crusts.
19. Retain non-commercial vegetative and woody residues from mechanical vegetative treatments scattered on-site wherever possible to:
 - a. Maintain soil nutrients and long-term site productivity
 - b. Maintain soil organic matter
 - c. Provide site protection from wind and water erosion
 - d. Facilitate native plant re-colonization by providing micro-site amelioration of extremes of heat and cold

Recreation

20. Vegetative and woody residues from mechanical treatments will be placed in a manner that does not block designated trails or create safety hazards.
21. Integrate vegetation management with recreation management whenever possible in areas with the following recreational characteristics:
 - a. High density of trail systems.
 - b. Trail systems important to regional trail demand.
 - c. Need for separation of different trail user groups.
 - d. Integration is defined as simultaneous site-specific vegetation and recreation planning or a single interdisciplinary analysis.

22. Integrate vegetation/fuels treatments and trail design within Special Recreation Management subunits including Millican Plateau, North Millican and Cline Buttes. Old-growth juniper, degraded ecosystem conditions, weeds, soil erosion, traveler and recreationist's safety, and increasing trail demand in these areas are factors that contribute to the high priority for integrated natural resource and recreation plans.
23. In North Millican concurrent vegetation and trail design planning will be required to ensure that habitat variables other than road densities such as vegetative structure and condition, protecting soils and vegetation from erosion and disturbance, and enhancing the recreation experience are considered.
24. For areas outside of North Millican, if final trail designs for high trail density or multi-user group areas cannot be done in conjunction with vegetation treatments, a conceptual trail layout will be done that provides input into vegetation management strategies.
25. Vegetation management will provide for the following design features/mitigation measures in areas with existing or planned trail systems:
 - a. Pile and burn, chip, or lop and spread slash (rather than pile without burning) along trail corridors, except where barriers or erosion control measures are specifically needed. Other methods may be used to accomplish goal of not having visual effect of piled woody debris.
 - b. Provide a clear area from trail edge to slash piles, logs, and other scattered woody debris sufficient to allow for the safety of trail users.
 - c. Orient cuts on stumps and logs left along the trail such that cut ends do not present a sharp hazard to riders and so as to be minimally intrusive visually.
 - d. Retain higher densities of trees in areas that have mixed uses on separate trails in order to screen different types of trail systems from each other.
 - e. Retain patches, buffer strips, or higher tree/shrub densities along trail sections in order to limit cross-country travel and screen views of roads, houses, fences, other developments, and other trail users.
 - f. Retain trees and/or promote the growth and spread of tall shrubs (such as basin big sagebrush and bitterbrush) to maintain the curvilinear nature of the trail and minimize the cutting of curves and straightening of trails by users.

Shrub Steppe Communities

Objective V – 1a: Maintain/restore large contiguous stands of healthy, productive and diverse native shrub/steppe plant communities throughout their historic range¹ where appropriate considering current conditions and potential for success.

Rationale:

Restoration and expansion of key plant communities will approximate historic stand structure and geographic range using conditions existing at pre-European settlement times as a reference condition. On most historic shrub-steppe sites, western juniper will be reduced to widely spaced old trees or small patches on ridge tops or other focused locations where trees would contribute to biodiversity at the landscape level. Social and economic factors will be considered in formulating project design, location, and priorities.

Guidelines:

1. Minimize disturbance to shrub-steppe communities by limiting motorized travel to designated roads and trails.

¹The term "historic range" as used in the context of this RMP refers to the distribution of the following major vegetative types mapped within the planning area: shrub-steppe, old-growth juniper, ponderosa pine, and riparian (see Map S-8: Vegetation Types). These are the vegetative types within the planning area that have declined the most in terms of condition/structure and in geographic extent from the historic to current time period. Their decline has created a current deficit representation as compared to their distribution during pre-European settlement times.

2. Restoring historic fire regimes wherever practicable outside the wildland-urban interface will be emphasized to improve/maintain the condition and expand the extent of shrub-steppe communities to historic ranges.
3. Composition, density, and distribution of young western juniper will be reduced to historic levels. Juniper older than 150 years or displaying old-growth characteristics may be removed in some circumstances if specific restoration needs for wildlife habitat or other natural values exceed the need to maintain the large or old tree component.
4. A primary criterion for prescribing treatment is when juniper occurs at a density and/or distribution that are determined to be outside its historic range of variability.
5. Where ecologically appropriate, restore or maintain stands of large contiguous sagebrush communities in patches of 400 acres and larger. Design of landscape patterns will include connectivity of large shrub-steppe patches.
6. Vegetative habitat needs of sagebrush-steppe obligate species will be emphasized in treatment design.
7. Vegetation treatments to maintain or restore shrub-steppe communities will be based on a landscape level restoration of broad vegetative types. Priorities for treatment will focus on areas that will show the biggest ecological gain for a given level of treatment intensity or investment. Cost-benefit ratios will help determine project priority and scale. Priorities will include restoration of sage grouse and other special status species habitat. Areas that have transitioned beyond the threshold of restoration success with reasonable treatment effort and expense will normally receive lower priority.

Old-Growth Juniper Woodlands

Objectives V – 1b: Maintain, promote, and restore the health and integrity of old-growth juniper woodlands/savanna throughout its historic range where practicable. Decisions authorizing social/economic land uses and activities within mapped old-growth woodlands (see Map S-8, available on CD) will be evaluated against land use criteria in Guidelines below. Where possible, provide reasonable mitigation for impacts to old growth juniper woodlands ecosystems when authorizing land uses or activities.

Rationale:

Old-growth western juniper woodlands in the pumice sands of Central Oregon are unique in their age, size and extent. Of the eight million acres of western juniper in the intermountain west, only an estimated three percent is considered to be old-growth. Ideal conditions of soil, climate and topography converge in Central Oregon to allow juniper to attain its maximum potential for size and age of individual trees and density and range for contiguous old-growth stands. The oldest (1,600 years) western juniper tree found to date is located within the planning area. Continued human population growth and associated increases in development and public land use in Central Oregon is causing fragmentation and degradation of this important habitat type. Large healthy contiguous stands of old woodlands provide scenic quality, education/interpretation opportunities, and habitat for late-seral dependent species.

Allocations/Allowable Uses:

1. Allow cutting/harvest of green trees up to 18 inches in diameter at breast height (DBH) east of State Route 27.
2. Allow harvest of juniper west of State Route 27 generally only in conjunction with restoration treatments, fuels reduction, or clearing for rights-of-way (ROWS) or other approved facilities or developments.
3. Generally limit cutting and harvest during restoration or fuels management treatments to trees less than 150 years old, based on physical characteristics. Individual trees showing characteristics of old-growth, regardless of size, will generally not be cut.

4. Generally do not allow cutting of old growth tree snags and large down logs except where they pose a risk to structures, facilities, or human health and safety.

Guidelines:

Maintenance/Restoration

1. Emphasize maintenance/restoration of historic condition/range of old-growth woodlands/savanna while considering social and economic factors such as:
2. Authorization and design of land uses and activities such as new or expanded rights-of-way, roads, special-use permits, and any ground-disturbing activities will consider the following factors:
 - a. Quality and importance of affected old-growth woodland values.
 - b. Relative importance of the proposed use or activity.
 - c. A full range of site location or route options, including non-BLM administered land.
 - d. Considering the above factors, incorporate reasonable mitigation measures and special requirements into land use authorizations to protect or enhance old-growth woodland values.
3. Treatments will be designed to both maintain the health and longevity of the old trees, snags and down logs and to increase the amount and diversity of understory shrubs, grasses, and forbs.
4. Prescriptions will allow for, or mimic, natural disturbances wherever practicable.
5. Prescriptions will maintain an uneven-age structure (consistent with natural old-growth woodland succession and structural development).
6. Field surveys and historical accounts will help estimate pre-settlement structure/composition of plant communities. This information will be used to develop restoration prescriptions and treatment priorities that would move plant communities toward historic range and conditions, where practicable. Old woodland structural and composition components will include large old trees, multiple age classes, dead standing trees, dead down trees, shrub, grass, and forb densities and proportions similar to historic levels and distribution.

Treatment Priorities

6. Selected old-growth stands with high ecological values will receive high priority for treatment. These areas would achieve relatively rapid response for a given level of rehabilitation effort/expense. Specific areas and boundaries of old-growth woodland priority treatment areas are subject to change based on updated inventory information.
7. Sites with substantial erosion or weed infestations will receive consideration for treatment. These sites will be evaluated for relative ecological values and potential for response given reasonable rehabilitation efforts/expense.
8. Other priority areas will be sites that have high densities of young juniper establishing in the interspace between the older trees.
9. In addition, treatment priorities will include selected areas where evidence indicates old-growth woodland/savanna existed during pre-European settlement times and where there is potential to re-establish old-growth characteristics in the future. These areas may include old homesteads cleared for farming, crested wheatgrass seedings, firewood harvest areas, or other juniper site conversion project areas.

Lodgepole and Ponderosa Pine Forests

Objective V – 1c: Maintain and promote healthy and diverse lodgepole and ponderosa pine forest ecosystems.² Manage stand structure, density, species composition, patch

²The term “forest ecosystem” in the context of this RMP encompasses all physical and biological components of the landscape. The tree component in the forests located within the planning area is dominated by lodgepole pine or ponderosa pine. Management of the small amounts of shrub-dominated openings and riparian and wetland vegetative types will also be considered within management guidelines for lodgepole and ponderosa pine forest types.

size, pattern, and distribution to provide an environment in which fire intensity can be managed for human safety and fire effects are compatible with other management objectives. Maintain or mimic natural disturbance regimes so that stands are resilient following periodic outbreaks of insect infestation, disease, or wildland fire. Manage ponderosa pine health and dominance status throughout its historic range. Provide for a balance of biological, social and economic needs in an urban/wildland setting.

Rationale:

See Rationale for Objective V-1. Ponderosa pine is important from an ecological perspective because of its relative scarcity in the planning area and its inherent resiliency to disease and fire. Large isolated pine trees are particularly valuable as nesting, perching, and roosting habitat for raptors.

Allocations/Allowable Uses:

Manage lodgepole and ponderosa pine stands using thinning, harvesting, prescribed fire, and other techniques.

Guidelines:

1. Promote long-term sustainability by managing for a representative mix of stands of early, mid, and late seral ponderosa pine.
2. Create stands with stocking levels and fuel loads that are more resilient after insect and disease outbreaks and stand-replacement wildland fires, and that meet wildlife habitat management objectives.
3. Place priority on treating sites that are at high risk of uncharacteristically severe disturbance events and have a relatively high potential for response to treatments to alleviate those risks.
4. Restore deficient habitats to approximate historic landscape patterns and proportions on a relatively large scale.
5. Use habitat patch size and larger-scale treatments to achieve stand structure, condition, composition, density, down log/snag levels, fuel loading, fuel arrangement, and litter and duff depth that match the desired fire regime.
6. Apply a series of periodic, non-commercial thinning, commercial thinning, and prescribed fire treatments to achieve and maintain the desired species composition and stand structure.
7. Aggressively thin lodgepole pine and juniper where they are encroaching into and competing with ponderosa pine stands. Leave most old-growth juniper and some old lodgepole pine trees found in these mixed stands for diversity. On ponderosa/lodgepole pine mixed sites, thin lodgepole pine more intensively with wider spacing, more acres treated, and/or more frequent treatment entries. Generally leave trees in the density range of 48-134 trees per acre, as appropriate to treatment/restoration objectives.
8. Target isolated groups and individual ponderosa pine trees, particularly in the La Pine and Cline Buttes areas, for protection and enhancement to maintain biodiversity and aesthetic values associated with these trees. Thin around each tree to reduce competition from lodgepole pine and western juniper, to a radius of generally 50 feet, unless a larger radius is necessary to reduce competition and accomplish the objective.
9. Leave the healthiest available ponderosa pine trees as seed trees and in shelter wood and fire salvage treatments. Favor retention of large trees.
10. Favor ponderosa over other tree species in prescriptions involving planting or natural regeneration on sites that can support ponderosa pine.

Objective V – 1d: Maintain, promote, and restore the health and integrity of old forest structure and conditions in key habitat areas and in conjunction with WUI management objectives. Reduce potential for physical and biological threats to late seral and old growth forests, including uncharacteristic or severe natural disturbances.

Promote the restoration of old ponderosa pine forests throughout most of its historic range. Develop and maintain stand structures that are relatively complex with variable tree, snag and down log densities, and healthy and diverse understory composition.

Rationale:

Due to past logging practices, human developments, livestock grazing, and wildland fire exclusion, old ponderosa pine forest structure within the planning area has been degraded, both in extent and condition, from historical to current periods. Similarly, in the lodgepole pine, the mountain pine beetle epidemic and subsequent aggressive salvage logging has greatly reduced the proportion of mature lodgepole pine habitat. These influences have created an imbalance in ecosystem composition and structure.

Restoring conditions that approximate historic conditions will help prevent large-scale occurrences of insect, disease, and wildland fire, and the resulting undesirable ecological, social, and economic effects of these large-scale disturbances. Mature forest structure supports a variety of wildlife and understory plant species that depend on old forest conditions for all or portions of their life cycle. Old forest also contributes to foreground scenic quality and provides opportunities for education and research.

Allocations/Allowable Uses:

Maintain and promote mature and old structure lodgepole and ponderosa pine stands using thinning, harvesting, prescribed fire, and other techniques.

Guidelines:

1. Maintain and restore old and mature ponderosa pine forest structure and expand its range toward historic levels, including areas affected by past logging and species transition, to re-establish ponderosa pine dominance and mature structure over time. In selected juniper or lodgepole dominated sites, individual remnant old and/or large ponderosa pine trees will be targeted for maintenance.
2. Approximately ninety percent (12,800 acres) of the currently remaining mature lodgepole pine stands in the La Pine area will be maintained in mature/old structure in key habitat areas during the life of this plan.
3. Field surveys and historical accounts will help estimate pre-settlement range, structure, and composition of old and mature ponderosa pine forest stands. Old and mature forest structure components include size, age, and density of trees, down logs, canopy structure, and understory composition.

Riparian and Aquatic

Objective V – 1e: Maintain, conserve (protect), and restore aquatic and riparian dependent resources, including riparian vegetation and habitat diversity, to achieve healthy and productive riparian areas and wetlands. Maintain or improve current good to excellent stream bank stability and riparian vegetative condition. Manage for riparian habitats that support populations of well-distributed native and desired nonnative plant, vertebrate, and invertebrate populations similar to historic conditions.

Rationale:

The intent of this objective is to ensure that adequate amounts of functioning riparian and wetland vegetation are sustained or increased in the long term. Adequate amounts of healthy riparian and wetland vegetation are critical to fully functioning aquatic, riparian, and wetland systems, which are necessary for riparian and wetland-dependent species. Past alterations to vegetation on BLM administered lands have resulted in riparian habitat conditions that are less than optimal for aquatic and riparian-dependent species (USDA-FS and USDI-BLM, 1996 and 1997). Riparian ecosystem function, as determined by the amount and type of vegetation cover, has decreased since historic times. Therefore,

restoration of riparian habitat of sufficient quality, patch size, and distribution is necessary to support healthy populations of native fish and riparian-dependent species.

Riparian Conservation Areas (see guidelines, below, for further explanation of RCAs) are intended to: maintain and restore riparian structures and functions; benefit fish and riparian-dependent resources; enhance conservation of organisms that depend on the transition zone between upslope and the stream; and improve connectivity of travel and dispersal corridors for terrestrial animals and plants, and aquatic organisms. The application of RCAs, including first and second tier analysis, is described in detail on pp. 54-55 of the Interior Columbia Basin Final EIS/Proposed Decision (USDA-FS and USDI-BLM, 2000b).

FLPMA directs and requires BLM to comply with State water quality standards and manage public land in a manner that will preserve and protect certain land in its natural condition. In addition to FLPMA, numerous laws, regulations, policies, executive orders, memorandums of understandings (MOUs) and agreements direct BLM to manage its riparian/wetland areas for biological diversity, and the productivity, and sustainability for the benefit of the Nation and its economy. The Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington (USDI-BLM, 1997) meet the requirements and intent of 43 Code of Federal Regulations, Subpart 4180 (Rangeland Health).

Allocations/Allowable Uses:

1. Within designated Riparian Conservation Areas, consider the degree to which that activity will:
 - a. Maintain and restore riparian structures and functions;
 - b. Benefit fish and riparian-dependent resources;
 - c. Enhance conservation of organisms that depend on the transition zone between upslope and stream, and
 - d. Improve the connectivity of travel and dispersal corridors for terrestrial animals and plants and aquatic organisms.
2. Activities within Riparian Conservation Areas may be adjusted or excluded from the area if the activity does not support maintenance or measurable progress toward achieving Properly Functioning Condition (PFC, see glossary) streams within the watershed, or attainment of water quality standards.

Guidelines:

1. Riparian Conservation Areas:
 - a. Designate RCAs using interim criteria consisting of the stream channel and the area on each side of the stream extending from the edges of the active channel to the extent of the flood prone width (Rosgen, 1996). This interim designation of RCAs is called "first tier" analysis. Where proposed activities may adversely affect riparian processes and functions, the BLM will develop more site-specific RCAs using second tier criteria (e.g., identify the dominant physical and biological features that influence the riparian network, and address important biophysical functions and processes).
 - b. Management options will focus on uses and activities that allow for the protection, maintenance, and restoration of RCAs and upland watersheds and measurable progress toward the attainment of water quality standards and PFC, within the stream and/or RCAs. Interim RCA widths will be applied for planning purposes where activities will not adversely affect riparian processes and functions.
 - c. Possible activities that may require second tier delineation of RCAs include, but are not limited to, juniper retention (where more trees are proposed to be left within the RCA than historic conditions indicate), livestock grazing, roads, trails, new rights-of-way (ROWs), and rockhounding. Activities that promote

- watershed function such as the removal of excessive juniper will generally not require second tier.
- d. Areas not in PFC will be managed to attain an upward trend in the composition and structure of key riparian/wetland vegetation and desired physical characteristics of the stream channel. Managed uses and activities in RCAs may not affect progress toward attainment of state water quality standards, PFC, and Riparian Management Objectives (RMOs, see glossary). Uses and activities in these riparian/wetland areas will be adjusted or excluded from the RCA if current management does not allow for the maintenance or measurable progress toward the attainment of PFC. Exclusion will be in the form of buffered exclusion areas or the use of temporary and/or permanent fencing. Management options for uses and activities will allow for measurable progress toward the attainment of water quality, PFC, and RMOs within RCAs at a positive annual rate.
2. Livestock grazing will be modified where the standard for riparian-wetland function is not being achieved, or where measurable progress is not made toward achieving the standard.
 3. Riparian habitat needs will be considered in developing livestock grazing systems and pasture designs and will be evaluated according to the Fundamentals of Rangeland Health.
 4. Focus management on entire watersheds using an ecosystem approach and involving all interested landowners and affected parties.
 5. Achieve riparian/wetland area improvement and maintenance objectives through the management of existing and future uses.
 6. Prescribe riparian/wetland management based on site-specific physical, biological, and chemical condition and potential.
 7. Use interdisciplinary teams to inventory, monitor, and evaluate management of riparian/wetland areas and to revise management where objectives are not being met.
 8. Restoration
 - a. Emphasize diversity in plant species and structure, such as shrubs and large trees, which occurred in the area historically.
 - b. Restore the extent and diversity of wet and moist meadow and riparian plant communities using techniques such as burning, cutting encroaching conifers, planting native hardwoods, grazing management, fencing, and managing uplands for improved hydrologic function.
 - c. Promote late successional riparian vegetation in amounts and distribution similar to historic conditions.
 - d. Promote complex in stream structure formed from woody debris, aquatic plants, roots, undercut banks, or boulders that serve as cover for all life cycle stages.

Objective V – 1f: Secure existing habitats that support the strongest populations of wide-ranging aquatic species. Securing can mean either reducing threats within the subwatershed or reducing threats in adjacent subwatersheds that could prevent achievement of subwatershed objectives.

Rationale:

Subwatersheds identified on DEIS Map S-14 (available on CD) represent areas that support the strongest fish populations and highest native diversity and integrity (Aquatic Strongholds). These subwatersheds serve as the foundation of a conservation strategy and a starting point for a restoration strategy. Securing these subwatersheds from internal or adjacent threats to watershed function and structure will enhance the short-term persistence of aquatic species and diversity. This action is necessary to ensure a source of aquatic species to colonize available habitats following natural recovery or restoration.

Guidelines:

1. Validate and, as necessary, refine the subwatershed locations using existing finer scale information.

Table 1: General Guidelines* for Seasonal Restriction and Distance Buffers

Species	Habitat	Spatial Buffer	Restriction Dates
Bald eagle	Nest	¼ mile non-line of sight ½ mi line of sight 1.0 mile blasting	January 1 – August 31
	Winter Roosts	½ mile	December 1 – April 1
Golden eagle	Nest	¼ to ½ mile	February 1 – August 31
Northern goshawk	Nest	¼ mile	March 1 – August 31
Cooper's hawk	Nest	¼ mile	March 1 – August 31
Sharp-shinned hawk	Nest	¼ mile	March 1 – August 31
Ferruginous hawk	Nest	½ mi direct line of sight ¼ mi with visual buffer	March 1 – August 1
Red-tailed hawk	Nest	¼ mile	March 1 – August 31
Swainson's hawk	Nest	¼ - ½ mile	April 1 – August 31
Peregrine falcon	Nest	1.0 mile	January 1 – August 15
Prairie falcon	Nest	¼ - ½ mile	March 15 – August 15
Osprey	Nest	¼ mile	March 1 – August 31
Burrowing owl	Nest	¼ mile	March 1 – August 31
Flammulated owl	Nest	¼ mile	April 1 – September 30
Great gray owl	Nest	¼ mile	March 1 – July 31
Sage grouse	Lekking	0.6 mile	March 1 st – May 15 ** February 15– May 1
	Nesting, Brooding and Rearing	Not applicable (N/A)	April 1 – July 31 *March 15– July 31
	Winter Habitat	N/A	November 15 – March 15 **November 1– March 31
Great blue heron	Nest	660 ft – ¼ mile	15 March – 15 July
Mule deer	Winter Range	N/A	01 December – 30 April **01 November – 01 May
Rocky Mountain elk	Winter Range	N/A	01 December – 30 April **01 December – 01 May
	Calving	N/A	May 15 – Jun 30
Pronghorn	Winter Range	N/A	01 December – 30 April **01 November – 01 April
Townsend's big-eared bat	Hibernaculum	N/A	November 1 – April 15
	Nursery	N/A	April 15 – October 31

*These general guidelines are typical restrictions that could be applied. Specific dates and distances may vary depending on the type of action proposed and the local breeding chronology of species or the local weather patterns.

** Millican Dates

- managed wildland fire, planting, livestock grazing, and commercial and non-commercial tree cutting.
9. Balance the need for restorative actions to address long-term threats to special status species with the short-term need to protect special status species and their habitats.
 10. Management activities in the habitat of federally listed, candidate threatened, or endangered and sensitive species will maintain or improve habitat conditions and/or not prevent or retard attainment of future desirable habitat conditions.
 11. Develop a species response matrix that includes documented (from literature searches) responses of the species to management activities or natural phenomena. This information will be used to determine management activities for which mitigation measures should be recommended or are needed.
 12. Identify needs to protect special status species and their habitats when authorizing activities by conducting an appropriate assessment of the wildlife resources depending upon the level of anticipated impacts. Include consideration of:
 - a. The Wildlife Observations Database and conduct field surveys during appropriate seasons to identify existing habitat conditions and species occurrences and habitat associations.
 - b. Impacts and develop mitigation measures to be applied to project implementation requirements.
 - c. Opportunities for habitat enhancement as part of project design.
 - d. Contract stipulations to allow work to be stopped if special status species are discovered to be present in or adjacent to a project area.
 - e. Adjustment of clearance and mitigation activities to accommodate additions or deletions in official listings of special status species.
 13. Evaluate effects of Bureau actions on federally listed, proposed, candidate, state listed, Bureau sensitive or assessment species in accordance with management direction. Impacts to these species will be evaluated through the NEPA process (Instruction Memorandum No. OR-91-57).
 14. Seek opportunities to conserve and improve habitats for special status species and native animals in BLM authorized activities.
 15. Design and implement relevant management activities to be consistent with BLM adopted recovery plans, conservation strategies, and other appropriate reports.
 16. In situations where data are insufficient to make an assessment of proposed actions, surveys of potential habitats will be made before a decision is made to take any action that could affect special status species.
 17. Maintain existing shrub-steppe habitats in the existing sage grouse range in order to sustain sage grouse populations and protect options for the future (Information Bulletin No. OR-200-334).
 18. Where possible, design or redesign travel routes to contribute to the conservation of special status species, and relocate roads and trails away from important habitats.
 19. Conduct periodic surveys of potential raptor habitats and monitor active and historic sites to determine occupancy and management consistency.

Objective W - 2: Protect and restore special habitat features that contribute to the productivity of species. These special habitat features include, but are not limited to caves, cliffs, playas, riparian areas and wetlands, foraging areas, and snags and down wood. Maintain and/or recruit adequate numbers, species and sizes of snags and levels of downed wood to contribute meaningfully to the needs of wildlife, invertebrates, fungi, bryophytes, saprophytes, lichens, other organisms, long-term soil productivity, nutrient cycling, carbon cycles and other ecosystem processes (See also Vegetation).

Rationale:

Under the Federal Land Policy and Management Act of 1976, public lands are to be managed in a manner that protects ecological values, maintains their natural condition

and provides food and habitat for wildlife. Special habitat features are often limited across the landscape, and thus are more important to those species that depend upon those features for some portion of their lifecycle than more abundant features of the landscape.

Snags and downed logs are important components of forest and woodland ecosystems. They provide essential habitat for wildlife and other organisms, long-term soil productivity and several ecosystem processes. They store carbon and nutrients and provide site improvement following extreme disturbance. Large diameter snags are especially valuable to a wide array of species because they offer greater surface area, more opportunity for cavities, and greater longevity. Hann et al. (1997) found that snag and coarse woody debris levels have declined in roaded and harvested areas. Providing for the appropriate species, numbers and sizes of snags maintains the value of the stand for wildlife.

The special habitat features described here were identified as critical to the long-term conservation of a variety of species in Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin (USDA & USDI, 2000a) and in Assessment of Ecosystem Components (USDA & USDI, 1997, p. 64, modified). The Federal Cave Resources Protection Act (FCRPA) of 1988 directs the agency to: Prohibit any person who, without prior authorization from the Secretary knowingly destroys, disturbs, defaces, mars, alters, removes or harms any significant cave or alters the free movement of any animal or plant life into or out of any significant cave located on Federal lands.

The Interim Cave Management Policy (Instruction Memorandum No. OR-95-021) provides for the following:

- Where known or potential adverse impacts from human use to threatened, endangered, and/or sensitive plants or animals, cultural resources, biological deposits (i.e. middens, skeletal remains, etc.), or geologic/paleontologic/mineral features are present, then the responsible authorized officer shall act to protect these resources. Such actions could include information/education, closures (seasonally or yearlong), written authorization for activities, or other appropriate measures.
- On public lands administered by the BLM, no new surface disturbing activities will be authorized within a 350 foot radius of a cave opening or any known cave passages which may adversely impact any significant or potentially significant cave resource value.

Allocations/Allowable Uses

1. Special habitats and features may be maintained or improved using a variety of techniques, such as mowing shrubs, prescribed burning, livestock grazing, commercial and non-commercial tree cutting, spatial buffers and seasonal closures.
2. Mineral material mining may be allowed on cliffs or talus slopes not occupied by special status species provided that special habitat features are provided in appropriate amounts and arrangements across the landscape to support general species needs.
3. Also see specific management direction for caves in the section on Special Management Areas.

Guidelines:

1. Consider presence and abundance of wildlife values when evaluating proposed mining reclamation/rehabilitation plans.
2. Whenever practical, avoid special habitat features when authorizing activities.
3. Provide reasonable mitigation, by reducing, avoiding, restoring or compensating for important special habitats that are altered by management actions such as mineral material mining, road construction, et cetera.
4. Consider the natural variability in number and size of snags and downed logs

- across landscapes, through time, and in context of biomass levels under which soils and species evolved.
5. Except where public safety is a concern, forest and woodland management activities will retain an adequate number of snags and large coarse woody debris in treatment areas at levels sufficient to support species of cavity-nesting birds at 100 percent of potential population levels. Except for safety concerns and fire hazards management actions will:
 - a. Retain all soft snags
 - b. Retain scattered hard snags and large live trees, both to provide the current needs of hard snag dependent species and to serve as a source of future hard and soft snags.
 - c. Retain approximately 8 large live trees per acre in regeneration harvest units to provide a legacy, bridging past and future forests. These trees are not to be counted toward future snag recruitment as described above.
 - d. Where snag densities are below the established, desired range, initiate management activities to increase snag levels (USDA-BLM and USDI-BLM, 2000a, p. 48).
 - e. Retain and consider increasing snag numbers and coarse woody debris levels in areas that have been burned.
 - f. Trees retained for current and future snags and as “legacy trees” will be chosen from the largest trees available.
 6. The potential population levels for snags described above will be determined using one the following three methods:
 - a. Use the amounts described in Wildlife-Habitat Relationships in Oregon and Washington (Johnson and O’Neil, 2001, Chapter 24, p. 596, Tables 1, 2 and 3), or;
 - b. Use the interim standard densities described in the Interior Columbia Basin Supplemental Draft EIS (USDA & USDI, 2000c, Vol. 2, Appendix 12, pp. 12-13, Tables 1, 2 and 3) for snags and downed wood to be used in designing field projects, or;
 - c. Determine site specific natural variability of snag and down log amounts for the planning area using the snag analysis and coarse woody debris process described in the Interior Columbia Basin Supplemental Draft EIS (USDA & USDI, 2000c, Vol. 2, Appendix 12, pp. 12-13, Tables 1, 2 and 3), or use or develop a similar process appropriate for local conditions. If using or developing a new process, it must have a scientific basis, using information from the literature and/or studies on historical conditions to determine snag sizes and average numbers.
 7. Dead and down woody material will be retained in amounts that are within the range of natural variability for the plant community, to the extent compatible with reforestation objectives, fire hazard reduction standards, and public safety/trail use.
 8. Coarse woody debris will be left in place across treatment areas rather than piled and burned (unless precluded for safety reasons, see Fire/Fuels Management section).
 9. Salvage dead and down material only where an adequate amount of such material will be retained to provide sufficient habitat to maintain populations of dependent wildlife.
 10. When approving habitat modification activities, determine the importance of special habitat features to special status species, and maintain the integrity of the site.
 11. Where possible, avoid or minimize changes to special habitat features.

Disturbance actions

12. Minimize activities that could adversely influence wildlife use of special habitat features by using one or more techniques appropriate to the species’ needs and status. These techniques may include:
 - a. Seasonal restrictions
 - b. Distance buffers

- c. Signs
 - d. Closures
 - e. Relocating disturbance (i.e. moving trails, etc.)
13. Identify, and, where appropriate, maintain, restore or enhance wetland habitats such as playas, springs, and other riparian habitats.

Objective W - 3: Determine the distributions, abundance, reasons for current status, habitat, and management needs of Species of Focus (which include special status species and species of local interest) occurring on BLM administered lands, and evaluate the significance of these lands and BLM actions for the conservation of these species.

Rationale:

Inventory and conservation of habitats for Bureau designated special status species, and other state or federally protected species, is directed by FLPMA, NEPA, and Bureau policy in BLM Manual 6840 and BLM Fish and Wildlife 2000. This manual also directs the agency to provide habitat for species listed or proposed to be listed as threatened or endangered. Meeting these responsibilities requires maintenance of high quality habitat and restoration of degraded habitats necessary for species recovery.

Guidelines:

1. Map the habitat of all Species of Focus (see Table 2). Periodically update the maps as new information becomes available and as habitats change relative to land management actions and natural events.
2. Map the locations of active and historic important wildlife habitats (i.e. raptor nests, deer, elk and pronghorn winter range, sage grouse leks, etc.). Periodically monitor these habitats and survey potential habitats for additional activity. Map the land use activities that may cause negative impacts to these habitats.
3. Record observations of and minimize impacts to BLM assessment and tracking species.
4. Prior to initiating ground disturbing projects within potential habitat of Species of Focus, review habitat and management relationships for these species to assess key wildlife issues concerning these species and identify conservation measures and management opportunities to address these issues.
5. Conduct literature searches and identify potential disturbance or habitat altering actions that may have a negative impact on important wildlife resources and develop mitigating measures to lessen the negative affects.
6. Conduct and record systematic inventories of populations and distributions of Species of Focus.
7. Conduct monitoring and evaluation studies on Species of Focus on a regular periodic basis.
8. Evaluate potential effects of management actions (i.e., grazing, recreation and timber management plans, right-of-way applications, etc) on fish and wildlife habitat on a case-by-case basis as part of project-level planning. Consider the significance of the proposed projects and the sensitivity of fish and wildlife habitats in the affected areas. Stipulations will be attached as appropriate to assure compatibility of projects with management objectives for fish and wildlife habitat.

Objective W - 4: Maintain or improve habitats to support healthy, productive and diverse populations and communities of native plants and animals (including species of local importance) appropriate to soil, climate and landform. Where consistent with habitat capabilities, meet ODFW management objective numbers for deer, elk, and pronghorn.

Rationale:

As directed under the Federal Land Policy and Management Act of 1976 public lands will be managed in a manner that protects ecological values, maintains their natural

Table 2: Species of Focus

	Common Name	Scientific Name	Source Habitat
Federally Listed Species (Threatened)			
Birds	Northern bald eagle	<i>Haliaeetus leucocephalus</i>	Old growth ponderosa pine, riparian
Federal Candidate Species			
Amphibians & reptiles	Columbia spotted frog	<i>Rana luteiventris</i>	Riparian
	Oregon spotted frog	<i>Rana pretiosa</i>	Riparian
Bureau Sensitive Species			
Birds	American peregrine falcon	<i>Falco peregrinus anatum</i>	Riparian
	Black-backed woodpecker	<i>Picoides arcticus</i>	Ponderosa pine/lodgepole pine forest
	Burrowing owl	<i>Athene cucularia</i>	Shrub-steppe
	Ferruginous hawk	<i>Buteo regalis</i>	Shrub-steppe
	Flammulated owl	<i>Otus Flammeolus</i>	Ponderosa pine/lodgepole pine forest
	Lewis's woodpecker	<i>Melanerpes lewis</i>	Ponderosa pine/lodgepole pine forest
	Northern goshawk	<i>Accipiter gentilis</i>	Ponderosa pine/lodgepole pine forest
	Northern pygmy owl	<i>Glaucidium gnoma</i>	Ponderosa pine/lodgepole pine forest
	Northern three-toed woodpecker	<i>Picoides tridactylus</i>	Ponderosa pine/lodgepole pine forest
	Pygmy nuthatch (BM)	<i>Sitta pygmaea</i>	Ponderosa pine/lodgepole pine forest
	Sage grouse	<i>Centrocercus urophasianus</i>	Shrub-steppe
	Upland sandpiper	<i>Bartramia longicauda</i>	Riparian, grassland
White-headed woodpecker	<i>Picoides albolarvatus</i>	Ponderosa pine/lodgepole pine forest	
Fisher	<i>Martes pennanti</i>	Riparian	
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Generally associated with all; close association with riparian	
Bureau Assessment Species			
Birds	Black-throated sparrow	<i>Amphispiza bilineata</i>	Shrub-steppe
	Northern water thrush	<i>Seiurus noveboracensis</i>	Riparian
	Tricolored blackbird	<i>Agelaius tricolor</i>	Riparian
Mammals	Pygmy rabbit	<i>Caprolagus idahoensis</i>	Shrub-steppe
	Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	Generally associated with all
	Spotted bat	<i>Euderma maculatum</i>	Generally associated with shrub-steppe, forest, woodland, riparian
Bureau Tracking Species			
Amphibians & reptiles	Cascade frog	<i>Rana cascadae</i>	Riparian
	Northern sagebrush lizard	<i>Sceloporus graciosus</i>	Shrub-steppe
	Western toad	<i>Bufo boreas</i>	Generally associated with all

Birds	Bank swallow	<i>Riparia riparia</i>	Riparian, shrub-steppe
	Great gray owl	<i>Strix nebulosa</i>	Ponderosa pine/lodgepole pine forest
	Greater sandhill crane	<i>Grus Canadensis tabida</i>	Riparian
	Loggerhead shrike	<i>Lanius ludocicianus</i>	Shrub-steppe, juniper woodland
	Long-billed curlew	<i>Numenius americanus</i>	Shrub-steppe, Riparian
	Mountain quail	<i>Oreortyx pictus</i>	Ponderosa pine, juniper woodland
	Olive-sided flycatcher	<i>Contopus borealis</i>	Ponderosa pine/lodgepole pine forest
	Pileated woodpecker	<i>Cryocopus pileatus</i>	Ponderosa pine/lodgepole pine forest
	Pine grosbeak	<i>Pinicola enucleator</i>	Ponderosa pine/lodgepole pine forest
	Pygmy nuthatch (EC, HP)	<i>Sitta pygmaea</i>	Ponderosa pine/lodgepole pine forest
	Sage sparrow	<i>Amphispiza billi</i>	Shrub-steppe
	Williamson's sapsucker	<i>Sphyrapicus throideus</i>	Ponderosa pine/lodgepole pine forest
	Willow flycatcher	<i>Empidonax trailii brewsteri</i>	Riparian/woodland
	American marten	<i>Martes Americana</i>	Ponderosa pine/lodgepole pine forest
	Bighorn sheep	<i>Ovis canadensis</i>	Shrub-steppe and woodlands near steep, rugged terrain
	Long-eared myotis	<i>Myotis evotis</i>	Forest, shrub-steppe, woodland, riparian
	Long-legged myotis	<i>Myotis volans</i>	Forest, shrub-steppe, woodland, riparian
Pallid bat	<i>Antozous pallidus</i>	Shrub-steppe, riparian, ponderosa pine, juniper woodland	
Preble's shrew	<i>Sorex Preblei</i>	Shrub-steppe, riparian	
Silver-haired bat	<i>Euderma maculatum</i>	Ponderosa pine/lodgepole pine forest	
Spotted bat	<i>Lasiorycteris noctivagans</i>	Shrub-steppe, woodland	
Western gray squirrel	<i>Sciurus griseus</i>	Ponderosa Pine Forest	
Western small-footed myotis	<i>Myotis ciliolabrum</i>	Shrub-steppe, ponderosa pine, juniper, riparian	
White-tailed jackrabbit	<i>Lepus townsendii</i>	Shrub-steppe, ponderosa pine, juniper	
Yuma myotis	<i>Myotis yumanensis</i>	Generally associated with all; closely associated with riparian	
Species of Local Interest			
Birds	Golden eagle	<i>Aquila chrysaetos</i>	Shrub-steppe
	Mule deer	<i>Odocoileus hemionus</i>	Generally associated with all
Mammals	Pronghorn	<i>Antilocapra Americana</i>	Shrub-steppe
	Rocky Mountain elk	<i>Cervus elaphus nelsoni</i>	Generally associated with all

condition and provides food and habitat for wildlife. As directed in BLM Manual 6840 - Special Status Species Management, the BLM will take actions that progress towards the conditions indicating attainment of the Fundamentals of Rangeland Health (described in 43 CFR 4180.1) and associated Standards (43 CFR 4180.2).

As noted by Johnson and O'Neil (2001), the conservation of wildlife and of biological diversity at large has taken various approaches in the U.S. Sometimes the focus is on the provisions of life requisites for a single species, sometimes for a suite of species (i.e.: guild or biological community such as cavity-dependent or wetland and riparian dependent species), and sometimes the focus is on ecosystems (i.e.: integrated systems of land, water, and biota in contiguous areas such as watersheds, landscapes, or regions).

In this plan, management considerations are directed at some individual species such as sage grouse, deer, elk, and pronghorn by designating wildlife management emphasis levels described here; at groups of species represented by the emphasis on management of source habitats such as shrub-steppe, juniper woodlands, or riparian in the vegetation section; and on ecosystem function represented by the emphasis on restoration of the historic structure and extent of vegetation conditions and hydrologic function in high priority watersheds.

For individual and groups of species, habitat factors that most influence wildlife use in an area include habitat patch size, quality, connection to habitats that provide for all life requisites, and disturbance – most often from human activities and most prominently from open motorized travel routes. Objectives and guidelines focus on providing effective wildlife habitat at various emphasis levels based on those factors. Habitat effectiveness⁵ is one model that provides guidance for evaluating the influences of disturbances caused by open motorized travel routes. Use of the model in this planning process was described in detail on pages 357-358 of the Draft Upper Deschutes RMP/EIS (USDI-BLM, 2003).

Allocations/Allowable Uses:

1. Avoid or minimize actions that may cause disturbance to important or seasonally important wildlife habitats.
2. Designate areas for primary, secondary, or general wildlife management emphases in winter range, breeding and rearing habitats, connectivity areas, and source habitats.

Guidelines:

General

1. Consider partnering with ODFW, OMD, USFWS and others in developing a multi-species habitat conservation strategy for the Bend/Redmond, Horse Ridge, Mayfield Pond, Millican Plateau, North Millican and Prineville Reservoir geographic areas. Focal species for this strategy are to include, but not be limited to sage grouse, deer, elk, pronghorn and golden eagles.

Habitat Modification

2. Maintain or improve habitats using a variety of techniques, such as, mowing vegetation, prescribed burning, livestock grazing, commercial timber harvest, non-commercial tree cutting and planting and seeding.
3. In order to restore native plants, areas disturbed during project construction will be seeded with a mix of native grasses, forbs, and shrubs to meet site-specific needs or habitat requirements.

⁵Habitat effectiveness is used as an index to measure the percentage of available habitat that is usable by elk and is used as a guideline for some alternatives. The Habitat Effectiveness Index for Elk on Blue Mountain Winter Ranges developed by Thomas and others (USDA-FS, 1988) was used (with modifications) in developing this RMP, and may be used with other research (e.g., Roloff et al., 2001, and Rowland et al., 2000) to assess impacts caused by motorized travel. Note that because of fragmented ownership and differing road jurisdictions, this guideline may not be achievable in some geographic areas.

4. Non-native species may be used when they will contribute to the recovery of the site, contribute to soil conservation, help manage against weeds, and/or prepare the site for eventual occupation by native plant species and will not impede the growth of native plants.
5. Activities authorized by permit (with interdisciplinary team review) will be restricted in all areas where vegetation manipulation (human or naturally caused) occurs and results in sensitive soil and plant conditions, or the site already has sensitive soils and/or plant conditions. These permitted activities include, but are not limited to, livestock grazing, off-road vehicle travel, recreational events, construction of new roads and trails, and timber harvests.
6. Range developments will be designed to achieve both wildlife and livestock grazing management objectives.
7. Where natural springs exist and are developed, the development will provide a more dependable water source for wildlife as well as livestock. Water troughs will accommodate use by wildlife and livestock, and will be constructed with wildlife escape devices. The spring area and the overflow will be fenced to exclude livestock trampling.
8. Where pipelines are developed to deliver water more than two miles from an existing water source, the water system will be designed to provide water for wildlife between July and October.

Structural Developments

9. Guzzlers (artificial structures that collect rain water and then regulate the flow to a drinking basin) will be installed only where they facilitate distribution of target wildlife species. Maintenance of existing guzzlers will receive priority funding over the development of new guzzlers, except when managing for special status species.
10. To the maximum extent feasible, new guzzlers will be located away from existing designated trails to avoid the potential for seasonal trail closures or rerouting of trails.
11. In suitable habitats, where important nesting structures are absent, consider installing nesting platforms, nest boxes, and other structures to improve habitat conditions for snag dependent species.
12. New fences will be built to standard Bureau wildlife specifications to allow wildlife passage, with the exception of fences built specifically to keep wild ungulates out of an area or fences built to meet specific public safety or other administrative purposes. Existing fences not meeting standard Bureau wildlife specification will be modified to meet the standard when major reconstruction is done or as funding allows.

Disturbance Actions

13. Manage important wildlife habitats to minimize human disturbance by maintaining seasonal closures throughout the sensitive period (See Table 1 for a list of species that may require seasonal restrictions, the restriction dates, and distance buffers).
14. In seasonally important wildlife habitats (winter range, nest sites, roosts, etc.), major construction and maintenance work will be scheduled to avoid or minimize disturbance to wildlife.
15. Timber sales will be designed to provide sufficient cover to maintain the existing deer migration corridor through the La Pine area.

Objective W – 4a – Primary Wildlife Emphasis: Provide habitat that benefits wildlife and retains high wildlife use. Wildlife habitat is a primary management consideration in these areas.

Guidelines:

1. Habitat effectiveness should advance toward 70 percent or greater.
2. Where possible, maintain large un-fragmented patches (1,000 to 2,000 acres).

3. Where possible, manage for low densities of open motorized travel routes (approximately 1.5 mi/mi^2).
4. Rate as a high priority for habitat restoration treatments.
5. Group use restrictions may be applied in some areas or during some seasons.
6. Seasonal closures.

Objective W-4b – Secondary Wildlife Emphasis: Provide habitats that support wildlife and maintain a moderate level of wildlife use. Wildlife habitats may receive a secondary management emphasis in these areas.

Guidelines:

1. Habitat effectiveness should advance toward 50 percent or greater.
2. Maintain moderate size un-fragmented habitat patches (400 to 800 acres).
3. Target low to moderate densities of open motorized travel routes (approximately $\leq 2.5 \text{ mi/mi}^2$).

Objective W-4c – General Wildlife Emphasis: Provide habitat that contributes to species occurrence and distribution. Wildlife habitats typically are not the focus of management in these areas.

Guidelines:

1. Consider focused management effort to maintain or improve the condition of important habitat areas (i.e., nest sites of special status species or connectivity corridors of species of local importance)
2. When opportunities arise, employ management actions that will maintain or improve wildlife habitat conditions.

Objective W-4d – Jurisdictional Limitations: Provide habitat conditions that move toward primary or secondary wildlife management emphasis to the extent practicable within jurisdictional limitations.

Rationale:

Northwest, Tumalo, La Pine (Northern Area and Southern Area), Prineville Reservoir (Chimney Rock, Eagle Rock, West Eagle Rock, Taylor Butte and Reservoir North) and Prineville Geographic Areas are examples of geographic areas where guidelines for primary or secondary emphasis may not be achievable because of conditions (such as fragmented land ownership or occurrence of county/state roadways) outside of BLM jurisdiction. In those or other areas with similar conditions the guidance is to manage toward those objectives.

Guidelines:

1. During the development of management facilities (mineral sites, access roads, etc.) or infrastructure (trails) emphasize maintenance of relatively large un-fragmented habitat patches. The term “relatively large un-fragmented habitat patches” means the size of the patch is related to the size of the BLM parcel(s) in the area and the goal is to minimize the amount of human disturbance of wildlife and human influence on the physical condition of the habitat.
2. Non-motorized trail systems will be developed in a manner that leaves some un-fragmented areas across the geographic area.
3. Motorized travel routes will be kept to a minimum. Roads and driveways that access private land and are not needed for general public access may be gated to limit use only to land owners. Consider building roads and driveways to the minimum standard necessary that allows reasonable access and has the least impact on wildlife resources possible.

6. **Livestock Grazing:** Livestock grazing will be managed according to the non-impairment standards of the IMP.
7. **Recreation:** Motorized vehicle use will not be allowed. The use of paintball guns is not allowed (also see Recreation section).
8. **Firearm Discharge:** Firearm discharge will not be allowed unless legally hunting. Within ¼ mile of Badlands Rock, there is a seasonal closure to all firearm discharge.
9. **Rights-of-Way:**
 - a. New rights-of-ways (ROWs) will be granted only if no other reasonable route is available. Where new ROW cannot be reasonably accommodated outside of the WSA, consider first along existing utility corridors, county roads, or BLM system roads.
 - b. Vacated ROWs will be considered for conversion to compatible trails prior to obliteration.
10. **Land Ownership:** Recreation and Public Purposes Act (R&PP) leases will not be issued for lands within the WSA unless such leases are non-patent leases that will not impair the values of this WSA.
11. All Wilderness Study Areas recommended to Congress maintain that designation unless Congress decides otherwise.
12. Additional management direction for the Steelhead Falls WSA is provided in the Middle Deschutes/Lower Crooked River Management Plan (USDI-BLM and USDA-FS, 1992).

Guidelines:

1. Survey and locate boundaries of each WSA on the ground.
2. Use signs, fences and other appropriate techniques to define and mark the boundaries of each WSA.
3. Vegetation management efforts will be designed to mimic natural processes and avoid impairment of the area's suitability for wilderness designation.
4. Geocaching will be managed in the Badlands and Steelhead Falls WSAs so as to not impair each area's suitability for wilderness designation by Congress. Within these WSAs, geocaches will not be allowed in areas that are closed year-round or seasonally for wildlife management reasons.
 - a. The BLM may request removal of geocaches located in sensitive locations or impairing wilderness characteristics. The BLM may remove caches as needed to maintain wilderness suitability or protect resources. These may include locations within or adjacent to sensitive wildlife habitat, wildlife water guzzlers, sensitive or special status plant communities, or archeological sites.
 - b. Caches in locations where the use creates obvious surface disturbance of the soil or vegetation, including vegetative trampling, that will necessitate reclamation will be relocated or removed. Geocaches must be concealed in a way that does not disturb an area, and will not require damage to vegetation to reveal the cache. Concealment of geocaches by burial in the ground is prohibited.
 - c. To prevent degradation to wilderness characteristics, the total number of caches allowed at any one time in the WSAs will be limited to no more than the number known to exist on the date that this provision was crafted (i.e., 17 in the Badlands WSA and 3 in the Steelhead Falls WSA). Given the larger area and more dispersed, open setting, the threshold of geocache sites in the Badlands is greater than the much smaller river canyon setting of Steelhead Falls WSA.
 - d. A record of repeated violations of the above provisions, of instances where BLM must relocate or remove caches, or of increasing disturbance to wilderness characteristics and other special wilderness features from geocaching activities will result in either closure of the entire WSA to physical geocaching or in development of an alternative restriction on geocaching activities designed to remedy the problem, and to be determined by the authorized officer.
 - e. If either WSA becomes designated as Wilderness, the geocaching provisions described above will be reviewed during the development of the required

Wilderness Management Plan. The geocaching provisions described above for the WSA could be revised, if necessary, at that time.

Caves

The guidance provided under Objective SMA - 5 applies to all nominated/significant caves. Objectives SMA – 5a and SMA – 5b apply only to the caves specified.

Objective SMA - 5: Manage caves nominated for significance or determined significant with an emphasis on education, research, and protection of cave resources while providing for public use opportunities.

Rationale:

A number of caves within the planning area have been nominated as “significant” under the Federal Cave Resources Protection Act of 1988 (FCRPA, 1988). The act directs the agency to a) Secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people; and b) foster increased cooperation and exchange of information between governmental authorities and those who use caves located on Federal lands for scientific, education, or recreational purposes. BLM Washington/Oregon Policy directs the BLM to manage significant caves or nominated caves in accordance with the provisions of the FCRPA and interim Cave Management Policy. The following caves within the planning area have been determined “significant” under FCRPA, (year of determination in parentheses):

- Horse Butte Indian Cave (1995)
- Pictograph (Stout) Cave (1995)
- Redmond Cave (1995)

Allocations/Allowable Uses:

1. Recreational or other human activities are allowed in caves consistent with protecting other cave resource values.
2. Where known or potential adverse impacts from human use to threatened, endangered, and/or sensitive plants or animals, cultural resources, biological deposits (i.e., middens, skeletal remains, etc.), or geologic/paleontologic/mineral features are present, then the responsible authorized officer will act to protect these resources.
3. On public lands administered by the BLM, no new surface disturbing activities will be authorized within a 350 foot radius of a cave opening or any known cave passages which may adversely impact any significant or potentially significant cave resource value.
4. Acts that are not allowed in significant/nominated caves:
 - a. Willfully defacing, removing, or destroying plants or their parts, soils, rocks, minerals, or other cave resources.
 - b. Smoking.
 - c. Possessing, discharging, or using any kind of fireworks or other pyrotechnic devices.
 - d. Possessing a domestic animal.
 - e. Depositing or disposing of human waste.
 - f. Digging, excavation, or displacement of natural and/or cultural features.
 - g. Entering without written authorization, if required.
5. **Vegetative Treatments:**
 - a. Trees will not be harvested in a 150-200 ft radius around cave entrances and feeder drainages with slopes greater than 30 degrees.
 - b. Clearing of vegetation, except for noxious weeds, will not be allowed within 250 feet of the entrance to caves with significant populations of bats.
 - c. Similar buffers will be maintained around direct drainages into caves, including sinkholes, cave collapse areas known to open into a cave’s drainage system, and perennial, intermittent, or ephemeral streams flowing into caves.

6. **Forest and Range Products:** Follow Allocations/Allowable Uses listed above for Vegetative Treatments.
7. **Minerals:** An area ½ mile from the entrance and ½ mile on each side of the centerline along the length of any significant/nominated cave will be closed to mining for mineral materials and surface occupancy for fluid mineral leasing.
8. **Livestock Grazing:** Not applicable.
9. **Recreation:**
 - a. Access to all Significant/nominated Caves will be restricted to foot access only.
 - b. Group and commercial use:
 - i. Group and commercial use of caves will be allowed only under Special Recreation Permit authorizations, and must comply with seasonal restrictions and provisions of the FCRPA.
 - ii. In Pictograph Cave, limit group size to no less than six and no more than eight people at one time (group leader(s) included), and no more than one tour per cave per day (group and commercial use combined).
 - c. The following acts are not allowed in nominated/significant caves:
 - i. Building, maintaining, attending, or using any fire, campfire, or stove.
 - ii. Camping or overnight use.
 - iii. Mountain bike, horse, or motor vehicle use.
 - iv. Use and possession of chalk or hand drying agents for climbing which are not natural appearing.
 - v. Geocaching.
 - vi. Possession and use of paintball guns.
 - vii. Possession and use of alcoholic beverages as defined by state law.
 - viii. Use of glass containers.
10. **Firearm Discharge:** Discharging a firearm, air rifle, or gas gun will not be allowed.
11. **Rights-of-way:** New rights-of-way will not be granted within ½ mile of entrance(s) to any significant/nominated cave unless no reasonable alternative routes are available. Where new ROW cannot be reasonably accommodated outside of the ½-mile buffer, consider first along existing utility corridors, county roads, or BLM system roads.

Guidelines:

1. Determine significance for nominated caves according to the following FCRPA criteria (43 CFR Part 37.11(c)):
 - a. **Biota:** The cave provides seasonal or yearlong habitat for organisms or animals or contains species or subspecies of flora or fauna native to caves, or are sensitive to disruption, or are found on State or Federal sensitive, threatened, or endangered species lists.
 - b. **Cultural:** The cave contains historic properties or archeological resources or other features that are included in or eligible for inclusion in the National Register of Historic Places because of its research importance for history or prehistory, its historical associations, or other historical or traditional significance.
 - c. **Geologic/Mineralogic/Paleontologic:** The cave possesses one or more of the following features: (1) Geologic or mineral features that are fragile, or that exhibit interesting formation processes, or that are otherwise useful for study; (2) Deposits of sediments or features useful for evaluating past events; (3) Paleontological resources with potential to contribute useful educational and scientific information.
 - d. **Hydrologic:** The cave is part of a hydrologic system or contains water that is important to humans, biota, or development of cave resources.
 - e. **Recreational:** The cave provides or could provide recreational opportunities or scenic values.
 - f. **Educational or Scientific:** The cave offers opportunities for educational or scientific use; or, the cave is virtually in a pristine state, lacking evidence or

- contemporary human disturbance or impact; or, the length, volume, total depth, pit depth, height, or similar measurements are notable.
2. Survey nominated and potentially significant caves under BLM jurisdiction to determine significance. Periodically update list of significant caves based on results.
 3. As funding permits, develop a management plan for each significant cave, including an inventory and mapping of cave resources, research and monitoring programs, and if necessary, a clean-up or rehabilitation program.
 4. For caves with designated parking areas, consider providing a visitor register to collect information on the visitors name, purpose, number in party, comments and use patterns. Caves with high resource concerns and those with active volunteer/stewardship programs will be considered as priorities for visitor registers.
 5. For caves with designated parking areas, provide signs with cave information, cave etiquette and leave no trace information.
 6. Where appropriate, locate sign to minimize advertisement of the cave location, and to provide information to those who already know the cave's location.
 7. Maintain current native plant populations or rehabilitate denuded areas at cave entrances by encouraging foot traffic in designated areas only (mark entry trails).
 8. Provide multi-agency consistency with seasonal closure periods. Hibernacula closure dates will be approximately October 15 to May 1, and maternity closure dates will be April 15 to September 30.

Objective SMA – 5a: Manage the Redmond Caves parcel to protect and maintain the resources found there, including biologic, cultural, and geologic features. Provide for recreational use that is consistent with management of these cave resources.

Allocations/Allowable Uses:

1. **Vegetative Treatments:** Emphasize restoration/enhancement projects to improve native plant and animal communities. Where feasible, vegetation maintenance will be designed to emulate natural processes.
2. **Recreation:** The following activities that are not allowed within significant/nominated caves will also not be allowed in all of the 40-acre Redmond Caves Parcel:
 - a. Motorized and mechanized vehicles.
 - b. Campfires.
 - c. Overnight use, except under permit.
 - d. Geocaching.
 - e. Paintball use.
 - f. All firearm discharge.
3. **Minerals:** Rockhounding and the collection of decorative stone will not be allowed within the 40-acre Redmond Caves Parcel.

Guidelines:

1. In partnership with the City of Redmond, continue to pursue the development of the 40 acre parcel into a “natural” community park.
2. Fence the area and designate a parking area.
3. Provide for marked and signed foot trails.
4. Work with the City of Redmond, local Tribes, and interested parties to develop the interpretive component of the future community park.
5. If portions of the Redmond Caves lava tube system are found to be suitable habitat for Townsend’s big-eared bat, consider excluding human uses from some portion of caves.

Objective SMA – 5b: Manage Pictograph (Stout) Cave to protect scientific values and cave resources (including habitat for bats), and to meet the requirements of the FCRPA. Recreation management will be oriented toward interpretive and educational opportunities.

Allocations/Allowable Uses:

1. Recreation:
 - a. Bolted climbing routes will not be allowed.
 - b. Pictograph Cave will be closed seasonally (October 15 – May 1) for bat hibernacula.

Guidelines:

1. Manage cave access for hike-in visitation only. No developed or designated roads or trails will be built to provide access to the cave site. No designated parking area will be provided.
2. Place signs at the cave informing visitors of cave management policy.
3. Remove all existing bolts and climbing hardware and manage the cave under Leave No Trace principles.

Land Uses

Livestock Grazing

Objective LG - 1: Promote healthy sustainable rangelands, provide for continued livestock grazing, and limit conflicts between livestock grazing and other uses and values of public land and adjacent private land.

Rationale:

BLM planning manuals direct BLM to reduce threats to public health, safety, and property as well as provide guidance for grazing management.

FLPMA, Public Rangeland Improvement Act (PRIA), Taylor Grazing Act, and other acts, direct the management of public land for multiple use and sustained yield; and, among other things, to provide for improved forage conditions to benefit wildlife, watershed protection and livestock production. Desired outcomes may take social and economic values into consideration (p. III-5, BLM H-1601-1 Land Use Planning Handbook). FLPMA directs the BLM to improve forage conditions, with resulting benefits to wildlife, watershed protection, and livestock production.

Prineville District BLM policy, based on the Emergency Fire Rehabilitation Handbook (BLM Manual Handbook H-1742-1), typically calls for exclusion of livestock grazing through the second full growing season after fire.

In 1997 the Oregon/Washington BLM adopted The Standards for Rangeland Health and Guidelines for Grazing Management (“The Standards”, USDI 1997), and incorporated the Standards into existing land use plans. The Standards meet the intent of 43 CFR 4180 (the rangeland health regulations). The Standards direct the BLM to modify livestock grazing prior to the start of the next grazing year if livestock are found to be a significant contributing factor to failure to attain a Standard. The Standards address watershed function (upland and riparian), ecological processes, water quality, and habitat for native, T&E and locally important species.

During the planning process, public comments urged the BLM to modify or discontinue grazing in sensitive areas, critical plant/animal habitats, and areas not grazed in many years. Livestock grazing permittees who rely on public lands also expressed continued concerns about the difficulty of managing allotments in areas adjacent to resorts and residential areas, and in areas of high recreation uses. BLM management direction is to reduce threats to public health, safety, and property as well as to provide guidance for grazing management.