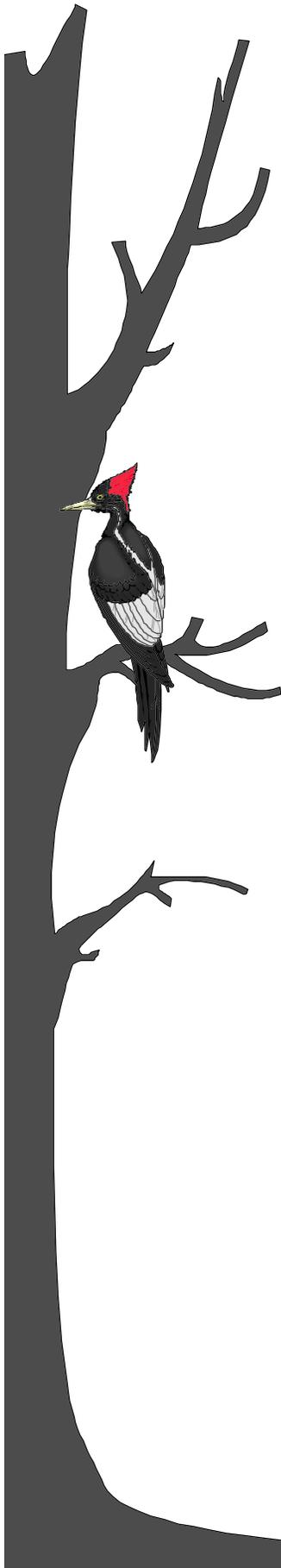


Appendix H

Guidelines

(Eastside Appendix 3-2)



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Implementing Ecosystem Management

Sub-basin Reviews: Guidelines For Objective EM-03

EM-G1. Guideline: Sub-basin analysis could assist in characterizing sub-basins within the context of the cluster and ERU, and set the context for first step in Ecosystem Analysis at the watershed scale.

EM-G2. Guideline: When conducting sub-basin reviews, consider using local information to verify strong population and sub-basin category designations. In addition, consider identifying and protecting or restoring at-risk fish population and habitats such as depressed populations in fringe distributions and watersheds that sustain wild and naturally reproducing fishes.

EM-G3. Guideline: The appropriate scales to be considered for this analysis are river basins (groups of 4th-field HUCs) or sub-basins (4th-field HUCs). Consider coordinating the analysis across Forest Service- or BLM-administrative boundaries.

Ecosystem Management at the Watershed Scale: Guidelines For Objective EM-04

EM-G4. Guideline: As part of the ecosystem analysis process, consider identifying areas where fuels pose a risk to life and property, or natural resources, and their treatment can be integrated into ecosystem restoration plans.

Physical Environment

Soil Productivity: Guidelines For Objectives PE-01 through PE-04

PE-G1. Guideline: When conducting soil-disturbing activities, consider methods that will maintain long-term soil and vegetation productivity.

PE-G2. Guideline: Consider developing biomass distribution recommendations for varying vegetation types and geoclimatic environments to provide nutrient supplies that are sustainable spatially and temporally.

PE-G3. Guideline: Consider having coarse woody debris in variable size classes with at least half of the tonnage in 15-inch and greater diameter class, uniformly distributed throughout the area.

PE-G4. Guideline: Consider evaluating and updating the standards and guidelines outlined in the handbooks; update, where needed, based on soil monitoring, recent research, and local biophysical conditions.

PE-G5. Guideline: Consider decreasing nitrogen volatilization losses by using low intensity prescribed burning. Allow decomposition to occur for a minimum of one to two years between burns in moist, warm habitat types.

PE-G6. Guideline: Consider developing recommendations for vegetation densities, composition, and structure, and quantities of standing and downed moderate and large wood within riparian areas to buffer streams from pollutants and regulate nutrient availability and sustainability.

Air Quality: Guidelines For Objective PE-05

PE-G7. Guideline: Environmental analysis performed for proposed prescribed fire activities can include the following key points: (1) Assess the need for burning compared to alternate fuel reduction methods such as scarification or piling and yarding unmerchantable material; (2) Quantify the amount and types of material and acreage to be burned; (3) Describe the type of burn proposed (for example, broadcast, pile, understory); (4) Quantify emissions of air pollutants; (5) Describe mitigation measures to reduce emissions; (6) Describe applicable regulatory, permit, and smoke management requirements; (7) Describe and quantify air quality impacts on downwind communities and discuss visibility impacts in Class 1 areas. This analysis could include modeling where appropriate models exist. (8) Describe the existing monitoring network. If needed, develop a plan to revise or expand monitoring to ensure that effects of prescribed burning on air quality are measured.

PE-G8. Guideline: Consider active participation with appropriate state agencies to develop visibility standards for Class 1 areas that consider the need to restore fire as a natural process in forest and range ecosystems.

Terrestrial Strategies

Fire Disturbance Processes: Guidelines For Objectives TS-O2 and TS-O3

TS-G1. Guideline: Management-ignited prescribed fire plans that restore the natural process of fire disturbance can be developed for Wilderness Areas where prescribed natural fire is not appropriate. Reasons prescribed fire may not be appropriate include: topographic features, physical size, orientation to the direction of fire spread, or a demonstrated risk of escape potential exceeding social-political considerations.

TS-G2. Guideline: (Applies to Alternative 7 only): Within reserves, consider using liberal prescribed natural fire prescriptions in order to allow nature to take its course, except where necessary to confine fire within reserve boundaries or where other resource objectives override.

TS-G3. Guideline: Outside reserves, fire prescriptions may be fairly conservative until vegetative mosaics, fuel loading, and continuity have been modified enough that a more liberal fire prescription is possible.

TS-G4. Guideline: Consider using scientific methods (such as computer or mathematical models) to compare and document relative risks among various management strategies aimed at reducing threats from catastrophic fire. Such tools may be used to compare the consequences of liberal versus conservative management actions.

TS-G5. Guideline: Consider prescribed natural fire as a means of managing extensive areas of insect- and/or disease-infested forests that have already lost their salvage value or are otherwise uneconomical to treat.

TS-G6. Guideline: To the extent that fuel amounts, arrangement, and management objectives allow, conduct management-ignited prescribed fire activities at frequencies and intensities similar to the natural fire regime appropriate to the site.

TS-G7. Guideline: As additional acres are restored to conditions that are more resilient to wildland fire, consider expanding those areas whose prescribed fire plans already include prescribed natural fire, and consider adding prescribed natural fire to other existing prescribed fire plans.

TS-G8. Guideline: Consider managing fuels around existing structures on Forest Service and BLM lands.

TS-G9. Guideline: When siting and constructing new federal facilities in wildland areas, give consideration to wildland fire; consider refurbishing old facilities with fire-resistant materials as maintenance is required.

TS-G10. Guideline: Consider conducting an inventory of public and privately owned structures on Forest Service- and BLM-administered lands and inholdings, and adjacent private lands in cooperation with owners, to determine which structures require protection from wildland fire. Agreements regarding appropriate levels of protection may be signed with property owners.

TS-G11. Guideline: Consider coordinating wildfire management planning with prescribed fire plans and activities to optimize the efforts of each fire management component.

TS-G12. Guideline: In dry forest types with a small potential shrub component, consider thinning of regeneration before the volume of thinning slash becomes a fire hazard. Additional treatment of thinning slash may be necessary.

TS-G13. Guideline: When restocking a forested site, consider the desired final stand density when determining planting densities.

TS-G14. Guideline: Consider landscape level treatments to create a network of areas with reduced crownfire potential.

TS-G15. Guideline: Consider removing ladder fuels and reducing stand density to a level at which a fire is unlikely to spread in the tree canopy.

TS-G16. Guideline: When managing vegetation to accommodate low intensity/high frequency fire regimes, consider establishing priorities for prescribed burning within three years. Place a high priority on areas of urban/wildland interfaces where issues of wildfire protection predominate.

TS-G17. Guideline: Consider identifying a combination of treatments that reduces risk of catastrophic wildfires while minimizing short- and long-term impacts to aquatic and riparian systems.

TS-G18. Guideline: Consider using thinning or other treatment methods rather than fire to increase structural diversity in mountain mahogany communities without changing overall distribution. This will create early and mid-seral stands and open shrub structure, which has declined.

TS-G19. Guideline: To control spread of wind erosion and annual exotics in areas of fine soils, consider minimizing the acres burned due to wildfire by using one or more of the following methods: (1) fuel breaks of less flammable vegetation; and (2) greenstripping, particularly near areas with a history of high levels of wildfire ignitions. During pre-suppression planning for fire suppression organization needs (that is, National Fire Management Analysis System (NFMAS)), consider these areas as high priority to minimize acreage burned and plan for suppression organizations to make this successful.

TS-G20. Guideline: Consider developing spring burning prescriptions to reduce exotic or annual species during their critical growth stage, and to help prepare sites for rehabilitation with native or desirable exotic plants.

TS-G21. Guideline: Consider developing pre-suppression fire plans to reduce the amount of cheatgrass dominated sites burned by wildfire.

TS-G22. Guideline: Consider conducting assessments of potential postfire resprouting, reseeding, and survival of native shrubs, grasses, and forbs in order to determine if postfire seeding is necessary.

TS-G23. Guideline: Consider leaving residual patches of untreated shrubs to provide a seed source for establishment of a young shrub stand.

TS-G24. Guideline: Consider the effects of prescribed burning on habitat patch size and fragmentation.

Noxious Weeds: Guidelines for Objectives TS-04 and TS-05

TS-G25. Guideline: Consider the effectiveness of control efforts (physical, biological, pesticides) to determine the best method for control of noxious weeds while maintaining ecosystem values. Where feasible and practicable, consider using non-chemical type control efforts such as hand pulling, biological control, and seeding.

TS-G26. Guideline: Consider implementing local weed control educational and coordination efforts with all interested regional, state, and local entities including private landowners, schools, road crews, public land users, and suppliers of sand, gravel, hay, seed, and nurseries.

TS-G27. Guideline: Consider quarantine or closure of some areas to control the spread of noxious weeds to adjacent areas.

TS-G28. Guideline: Where possible, consider prioritizing weed management as follows:

- ◆ Prevent invasion of new invaders by limiting weed seed dispersal, minimizing soil disturbance, and properly managing desirable vegetation.
- ◆ Detect and eradicate new invaders
- ◆ Target roadways, water courses, along trails and railways, and in campgrounds for a constant prevention and containment program.
- ◆ Emphasize control of large-scale infestations (limiting the spread of noxious weeds and reducing the infestation level): Focus initial efforts on small, manageable units with an understory of residual plants, and then focus on the remaining infestation. Start with the outside and work toward the center of the infestation.
- ◆ Consider using native, locally adapted species for rehabilitating weed infested lands and bare ground.

TS-G29. Guideline: (Applies to Alternative 6 only): Consider establishing experimental areas to test methods of weed control, such as biological, mechanical, and chemical means.

TS-G30. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Cluster 2, and noxious weeds that are relatively new invaders to the planning area and could be problematic in the future, including but not limited to the following: diffuse knapweed, whitetop, Scotch thistle, and yellow starthistle.

TS-G31. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Cluster 3, and noxious weeds that are relatively new invaders to the planning area and could be problematic in the future, including but not limited to the following: diffuse knapweed, orange and yellow hawkweeds, yellow starthistle, medusahead, whitetop, and Scotch thistle.

TS-G32. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Clusters 1, 3, 4, 5, and 6, and noxious weeds that are relatively new invaders to the planning area

and could be problematic in the future, including but not limited to the following: diffuse knapweed, medusahead, yellow starthistle, rush skeletonweed, Mediterranean sage, orange and yellow hawkweed, whitetop, and Scotch thistle.

TS-G33. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Clusters 1, 4, and 6, and noxious weeds that are relatively new invaders to the planning area and could be problematic in the future, including but not limited to the following: diffuse knapweed, medusahead, yellow starthistle, rush skeletonweed, and Mediterranean sage.

TS-G34. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Cluster 5, and noxious weeds that are relatively new invaders to the planning area and could be problematic in the future, including but not limited to the following: diffuse knapweed, yellow starthistle, medusahead, and halogeton.

TS-G35. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Clusters 2 and 4, and noxious weeds that are relatively new invaders to the planning area and could be problematic in the future, including but not limited to the following: diffuse knapweed, whitetop, Scotch thistle, and yellow starthistle.

TS-G36. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Clusters 2, 3, and 5, and noxious weeds that are relatively new invaders to the planning area and could be problematic in the future, including but not limited to the following: diffuse knapweed, whitetop, Scotch thistle, yellow starthistle, medusahead, halogeton, and orange and yellow hawkweed.

TS-G37. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Clusters 1 and 6, and noxious weeds that are relatively new invaders to the planning area and could be problematic in the future, including but not limited to the following: diffuse knapweed, medusahead, yellow starthistle, rush skeletonweed, and Mediterranean sage.

TS-G38. Guideline: Consider targeting noxious weeds that are particularly problematic in Range Clusters 1 through 6, and noxious weeds that are relatively new invaders to the planning area and could be problematic in the future, including but not limited to the following: diffuse knapweed, whitetop, Scotch thistle, yellow starthistle, orange and yellow hawkweeds, medusahead, halogeton, rush skeletonweed, and Mediterranean sage.

TS-G39. Guideline: Consider preventing the spread of noxious weeds into areas that are susceptible to invasion. Areas that are susceptible to invasion include roadways, railways, waterways, and other high disturbance areas, and rangeland vegetation cover types that are of high or moderate susceptibility to invasion. See Appendix F for a table that portrays the rangeland cover types in the project area and their susceptibility to invasion by noxious weeds.

TS-G40. Guideline: Consider developing an inventory system for noxious weeds that will result in accumulation of information on the following items: (1) locations of infestations; (2) acreage infested; (3) number or density of plants; (4) general plant community infested; (5) environmental conditions, such as soil conditions and level of disturbance; and (6) current land use activities.

TS-G41. Guideline: Consider automated data bases for the storage and retrieval of information on noxious weeds. Ensure that these data bases are integrated with Geographic Information Systems.

TS-G42. Guideline: Consider developing education and awareness programs that permit visitors and users of federal lands to assist federal land managers in locating noxious weed invaders and preventing noxious weed invasions.

TS-G43. Guideline: Consider developing and enforcing policies designed to ensure seed and seed mixtures, hays, grains, and straws are free of noxious weed seed.

TS-G44. Guideline: Consider developing cooperative weed prevention programs with suppliers of sand, gravel, top soil, seed, hay, straw, ornamental plants, and any other materials that may transport seed and other reproductive plant parts of noxious weeds.

TS-G45. Guideline: Consider training federal agency employees at all levels. Training would be focused on the following topics: identification of noxious weeds currently present and potentially invasive to the area; noxious weed dispersal agents; vegetation communities in the area and their susceptibilities to various noxious weeds (see Appendix F for a table that shows rangeland vegetation types in the project area and their susceptibilities to invasion by selected noxious weeds); actions to take when new infestations are encountered; and actions that employees can take to prevent the spread of noxious weeds.

TS-G46. Guideline: Consider developing control strategies targeted and tailored to specific noxious weeds. Consider combining cultural, physical, biological, and chemical methods into a control strategy. See Appendix F for a more detailed list of cultural, physical, biological, and chemical control guidelines.

TS-G47. Guideline: Consider noxious weed management in planning documents.

TS-G48. Guideline: To prevent spread of weeds along roads, consider weed risk factors - such as presence of weeds, vegetation community type, aspect, and shading - in the planning associated with road location and design.

TS-G49. Guideline: To prevent spread of weeds along roads by vehicles, consider the following: (a) Before construction equipment moves into a relatively weed-free area at moderate or high susceptibility to invasion, mow, grade, or otherwise treat all seed-bearing noxious weed plants on the travelway of existing roads. Treated areas should then be reseeded. (b) Clean off-road equipment of all soil and plant parts, using power or high-pressure cleaning, before moving the equipment into relatively weed-free areas that are at moderate to high susceptibility to invasion.

TS-G50. Guideline: Because weeds are not adapted well to shade, consider retaining shade along roads by minimizing removal of trees and other roadside vegetation during construction, reconstruction, and maintenance, particularly on south aspects.

TS-G51. Guideline: To prevent spread of weeds along roads, consider reestablishing vegetation on all bare ground. For all construction, reconstruction, and maintenance activities, seed all disturbed soil (except the traveled portion) within seven days of work completion at each site, unless ongoing disturbance at the site will prevent weed establishment. In that case, seeding should be performed within seven days of final disturbance. Use a seed mix that includes fast, early growing species to provide quick, dense revegetation. Seed should be certified weed-free before purchase to ensure minimum weed content. Consider these options: (a) fertilizing at the same time as seed application and again later; (b) applying weed-free mulch with seeding; and (c) double-seeding, full rate at initial ground disturbance and full-rate again at the end of the project.

TS-G52. Guideline: To minimize weed spread caused by moving infested gravel and fill material to relatively weed-free locations, consider using gravel and fill that comes from weed-free sources, especially where this gravel and fill is to be placed in relatively weed-free areas that are at moderate to high susceptibility to invasion. Inspect gravel pits and fill sources to identify weed-free sources.

TS-G53. Guideline: To minimize sources of weed seed in areas not yet revegetated, consider closing active road construction sites to vehicles that are not involved with construction, where the construction sites are located in relatively weed-free areas that are at moderate to high susceptibility to invasion.

TS-G54. Guideline: To minimize roadside sources of weed seed that could be transported to other areas, consider monitoring for noxious weeds in road maintenance programs. Weed infestations

should be inventoried and scheduled for treatment. Where applicable, consider developing timber sale clauses and specifications to collect deposits for use in weed-control road maintenance.

TS-G55. Guideline: Consider weed risk and spread factors in road closure decision-making. The decisions made in regard to selection of roads for closure should include these factors: length of time it takes for native vegetation to reestablish, vicinity of seed source, the likelihood that the roads will spread weeds.

TS-G56. Guideline: To minimize transport of weed seed by pack and saddle stock: (a) require that all pack and saddle stock in designated areas use only certified weed-free feed and straw bedding. Where applicable in wilderness, this technique should be deferred to the Limits of Acceptable Change planning process. Encourage the use of weed-free feed in all areas. Visitors to National Forest lands are now required to use certified noxious-weed-free hay, straw, or mulch in Idaho and Montana]; (b) consider requiring pack and saddle stock to be quarantined and fed only weed-free feed for 24 hours before traveling off roads. Before quarantine, tail and mane should be brushed out to remove any weed seed.

TS-G57. Guideline: To encourage a weed-free trail user's ethic, consider placing signs at trailheads that include information on weed prevention techniques and weed awareness.

TS-G58. Guideline: Consider requesting hikers, campers, and other recreationists who are recreating in weed-infested areas to brush and clean themselves and their equipment before they move to weed-free areas.

TS-G59. Guideline: To ensure that all bare ground is covered by desirable vegetation that will help prevent weed establishment, consider seeding archeological site excavations.

TS-G60. Guideline: To incorporate weed prevention into design of wildlife habitat improvement projects, consider weed risks in environmental analysis for habitat improvement projects (such as prescribed fire).

TS-G61. Guideline: To minimize the creation of bare soil and other factors that enhance weeds, (a) consider management that prevents excessive soil disturbance at salt licks, watering sites, and at sites characterized by sensitive soil conditions; and (b) consider placing salt in containers and moving salt periodically.

TS-G62. Guideline: To minimize transport of weed seed to relatively weed-free areas that are at moderate to high susceptibility of invasion, consider controlling the timing of livestock movement from infested to noninfested areas, especially in range allotments that have both weed-infested and relatively weed-free areas that are at moderate to high susceptibility of invasion. Consider permitting livestock to graze weed-infested areas only when weeds are not flowering or producing seeds, or, if livestock are grazing weed-infested areas, consider moving them to a holding area for about 14 days before moving them to weed-free areas.

TS-G63. Guideline: To ensure that fire suppression and rehabilitation efforts minimize weed spread, consider reseeding all disturbed soil in relatively weed-free areas that are at moderate to high susceptibility of invasion.

TS-G64. Guideline: Consider contract clauses that ensure that only tested and certified noxious-weed-free mixtures are used to revegetate and reclaim disturbed sites.

TS-G65. Guideline: To ensure establishment and maintenance of vigorous, desirable vegetation that discourages weeds, consider monitoring all seeded sites. Fertilize and spot reseed as needed. Preference for seeding should be given to native, "pioneer" (early seral) species that are typically low in nutrient demands. This minimizes the need for fertilization. Road maintenance programs should include scheduled fertilization where needed (three-year period is suggested).

TS-G66. Guideline: To ensure success of revegetation efforts that will minimize weed spread, consider permitting livestock grazing of reseeded sites after vegetation is well established.

Forested Lands

Dry Forest (only): Guidelines For Objective TS-06

TS-G67. Guideline: Where possible, consider converting late-seral multi-layered forested ecosystems to single-layered systems dominated by shade-intolerant tree species to move toward desired single-layered and multi-layered late-seral structural conditions consistent with biophysical environments and disturbance regimes. It may be necessary to change existing standards for big game cover.

TS-G68. Guideline: To promote development of late-seral single layer ponderosa pine, consider using thinning, harvesting, and/or prescribed fire on existing mid-seral forest structural stages. Stand structural condition, composition, stand density, fuel loading and arrangement, and litter and duff depth may be matched to the desired fire regime. The success of sustaining shade-intolerant tree species will depend on recurring disturbance. Ecosystem Analysis can be used to determine structures appropriate for local predicted fire regimes.

Moist Forest (only): Guidelines For Objective TS-08

TS-G69. Guideline: Consider accelerating development of up to 20 percent canopy cover of residual large trees of western larch and ponderosa pine.

TS-G70. Guideline: For fire-adapted species such as western white pine, western larch, or lodgepole pine, consider using thinning, harvesting, and/or prescribed fire to maintain stand densities that mimic those following stand-replacing fire under desired future fire regimes and to maintain these species as the dominant overstory consistent with biophysical environments.

TS-G71. Guideline: To restore dominance of western white pine where fire regimes would have encouraged their dominance, or to increase the overall abundance, diversity, and distribution of western white pine, consider a variety of techniques such as:

- ◆ selecting and testing new candidate rust-resistant trees, and judiciously using lower levels of rust-resistance;
- ◆ reducing mortality of infected pine through intermediate treatments such as pruning and canker excision;
- ◆ minimizing selection pressure on the fungus by conservative use of highly rust-resistant pine stock;
- ◆ monitoring for new races of rust;
- ◆ reducing competition and promoting more open stands which are less conducive to rust and spread; and
- ◆ protecting existing stands.

TS-G72. Guideline: To restore diversity of size and age structures in lodgepole pine and reduce susceptibility to mountain pine beetle infestation, consider using thinning, harvesting, and/or prescribed fire to maintain appropriate stand densities.

TS-G73. Guideline: Consider using non-surface-disturbing treatments (for example, minimize mechanical treatments) to minimize the incidence of root rot on sites where soils are highly disturbed.

TS-G74. Guideline: Consider removing ladder fuels and reducing stand density to a level at which a fire cannot spread in the tree canopy on sites dominated by ponderosa pine, Douglas-fir, and/or western larch, consistent with biophysical environments.

TS-G75. Guideline: In Forest Cluster 4, consider increasing the amount of secure habitat that is presently available by increasing the amount of small openings, canopy gaps, or open forests where possible. **Rationale:** *The extensive road access in Forest Cluster 4 has reduced the amount of secure habitat available. The homogenization of forest structures has negatively affected suitable habitat for species requiring small openings, canopy gaps, or open forests. Homogenization has also negatively affected the persistence of terrestrial vertebrates which rely heavily on late and early seral structures.*

TS-G76. Guideline: Consider improving levels of connectivity with habitats in Canada to allow emigration of large forest carnivores to habitats in the United States.

Cold Forest (only): Guidelines For Objective TS-O10

TS-G77. Guideline: Consider using low intensity prescribed fires every 25 to 50 years, or at an interval considered appropriate for local conditions, to reduce fuel accumulations and understory density.

TS-G78. Guideline: To reduce Douglas-fir susceptibility to dwarf mistletoe and western spruce budworm, consider minimizing canopy layers and reducing density through thinning, harvesting, and/or prescribed fire on existing stands in mid-seral forest structural stages. Maintain appropriate stand densities (for example, 80 to 120 square feet of basal area), and use low to moderate severity prescribed fires when needed to reduce fuel accumulations and understory density.

TS-G79. Guideline: To allow regeneration of early successional lodgepole pine and aspen, consider using thinning, harvesting, and/or prescribed fire to reduce Engelmann spruce and subalpine fir. Move these, as well as lodgepole pine and aspen types, toward desired ranges of future conditions consistent with biophysical environments. Increase the amount of aspen to levels that would have been maintained under the desired fire regimes. This may include the necessity to protect aspen regeneration from ungulate grazing.

TS-G80. Guideline: Consider restoring seral stages dominated by aspen on sites where aspen is currently being replaced by conifers, or where stem exclusion/closed canopy stages are declining in health.

TS-G81. Guideline: Consider the following techniques to re-establish whitebark pine and subalpine larch to desired ranges of abundance and distribution:

- ◆ collecting seed from blister rust-resistant stock, and either sowing seeds or planting seedlings;
- ◆ making grafts of resistant phenotypes and plants;
- ◆ cross-breeding several blister rust-resistant trees;
- ◆ artificially inoculating seedlings from rust-resistant or cross-bred stock;
- ◆ increasing effectiveness of pruning and excising cankers in areas with moderate hazard;
- ◆ monitoring for new races of blister rust;
- ◆ reducing competition;
- ◆ protecting existing stands.

TS-G82. Guideline: Consider allowing fire to remove shade-tolerant species and restore forest structure in higher elevations where there is low economic value or ecological risk.

Dry and Moist Forest: Guidelines For Objectives TS-06 And TS-08

TS-G83. Guideline: Consider reducing density of Douglas-fir and grand fir in mixed conifer stands, to reduce the susceptibility of the forest to spruce budworm and tussock moth. Ponderosa pine and western larch may be retained in the overstory.

TS-G84. Guideline: Use a combination of harvesting, mechanical treatments, and/or prescribed fire to modify forest composition to dominance by shade-intolerant species (such as ponderosa pine, western larch, Douglas-fir).

TS-G85. Guideline: To reduce density of overstocked, multi-story stands of shade-tolerant species, consider using thinning from below and overstory thinning, harvesting, and/or prescribed fire on existing stands in regeneration and young forest structural stages to reduce the amount of multi-story stands and approach the desired range of future conditions.

TS-G86. Guideline: Within Forest Cluster 3, consider conducting Ecosystem Analysis at the watershed scale to resolve potential conflicts between the conservation of terrestrial and aquatic species and habitats and the restoration of forest structure. **Rationale:** *Sub-basins in Forest Cluster 3 represent only a moderate opportunity for ecosystem restoration. There is potential conflict between forest and aquatic management because of fewer opportunities for simultaneous restorations with little risk to existing resources.*

Dry, Moist, and Cold Forest: Guidelines For Objectives TS-06, TS-08, and TS-010

Composition, Structure

TS-G87. Guideline: Consider using vegetation management to restore late-seral structure and reduce area in mid-seral structure, where these seral stages are outside the desired range of conditions.

TS-G88. Guideline: Consider fragmenting large patches of shade-tolerant species where they are found to be outside the desired range of future conditions. Break up their continuity and decrease horizontal landscape homogeneity, consistent with biophysical environments and natural disturbance regimes.

TS-G89. Guideline: Consider matching patch sizes to local predicted disturbance regimes.

TS-G90. Guideline: Consider a variety of conditions, seral stages, and distribution of large trees across the landscape. For example, maintain large trees in clumps or islands with intact litter and downed wood components, as well as scattered single trees.

TS-G91. Guideline: Consider using fire, cutting, or browsing to manage woody vegetation while maintaining the integrity of meadow soils and native vegetation.

TS-G92. Guideline: Consider maintaining or restoring late-seral structure in large blocks of habitat that are representative of the likely pattern that occurred with historical disturbance events.

TS-G93. Guideline: On actively managed forested sites, consider leaving a characteristic representation of all size classes of woody material through time. In addition, standing dead trees may be left as a future debris source, in order to maintain site productivity and wildlife habitat.

TS-G94. Guideline: Consider using watershed restoration needs and existing roads to determine restoration and production activity locations and frequencies. **Rationale:** *The greatest need for forest restoration is in watersheds with existing road networks.*

TS-G95. Guideline: Consider minimizing disturbance effects from multiple entries over a narrow period of time. Treatments may be complete enough in the first entry to allow future treatments to be accomplished from a reduced access system.

Prescribed Fire

TS-G96. Guideline: Fire behavior, fuel loading, duff composition, and tree mortality models can be used to determine where desired stand conditions can be attained with one or a series of prescribed fire treatments, or where stand conditions or other hazards require mechanical thinning prior to prescribed fire treatment.

TS-G97. Guideline: Prescribed fire may be a preferred restoration method. Where necessary, use thinning and/or mechanical fuel reduction in combination with prescribed fire.

TS-G98. Guideline: Consider both managed and natural prescribed fire as restoration tools. Prescribed natural fire can be a more important tool after the forests within a watershed have been restored to a fire-resistant condition, or are desired to be in a severe fire regime.

Snags and Downed Wood

TS-G99. Guideline: When conducting snag recruitment analysis, consider local disturbance regimes to account for replacement trees and associated species needs. Consider providing snag and downed log habitats by: slope, aspect, elevation, clumps, groups, decay class, and tree species.

TS-G100. Guideline: Consider providing a variety (clumps/groups, size classes, decay classes, tree species) and distribution of snags and downed logs across the landscape, taking into account the limits of biophysical environments.

TS-G101. Guideline: Select snags in areas with a high probability of retention success. Consider elevation, aspect, road density, distance to roads, landings, harvest or burn unit boundaries, drainage pattern, slope, distribution, and wind-throw hazard. Protect some green trees, to the extent possible, in prescribed burning units and other treatment areas for long-term recruitment of snags. Monitor snag attrition and adjust strategies to meet objectives.

TS-G102. Guideline: Consider retaining snags in clumps with their associated understory vegetation intact. Also retain scattered individual snags that are well-distributed across the landscape, to meet the needs of snag-dependent wildlife species and to reduce vulnerability to snag loss.

TS-G103. Guideline: Consider leaving extra trees on site for future snag recruitment.

TS-G104. Guideline: Where appropriate consider creating snags in areas currently or projected to be deficient in snag numbers.

TS-G105. Guideline: Consider developing firewood policies that are in concert with snag retention and recruitment objectives. Consider limiting firewood cutting to trees less than 15 inches in diameter at breast height (DBH) and within 200 feet of a road. Ensure that firewood sales are designed and implemented with snag retention objectives in mind.

TS-G106. Guideline: In areas where additional snags and downed logs are desired, consider protecting existing material during prescribed burning by igniting when moisture content of coarse woody debris and duff are high, or by preventing their ignition through choice of lighting techniques or use of fire retardants such as foam.

Terrestrial Species Habitats

TS-G107. Guideline: Consider using various methods (such as providing patches of denser second growth or closing roads) to replace big game security habitat that may be reduced in the process of returning some stands to single-layer structure.

TS-G108. Guideline: Consider maintaining woody riparian vegetation, consistent with desired fire regimes, where it is within desired ranges of future conditions, to provide linkage between habitat types and elevational zones. Woody riparian vegetation may be restored where needed.

TS-G109. Guideline: Consider restoring or maintaining vegetation on ridgetops to provide movement and linkage between habitat areas. Consider maintaining canopy closure at greater than or equal to 40 percent, or within the upper 66 percent of site capability. Consider reducing open road density and minimizing roads on ridgetops.

TS-G110. Guideline: Consider implementing seasonal and timing restrictions and closures of appropriate winter recreation activities to meet species requirements that would increase species viability and long-term persistence.

TS-G111. Guideline: Consider reducing fragmentation resulting from many small management activities. Restore patch sizes and distribution closer to those found under historical disturbance events.

TS-G112. Guideline: In Forest Clusters 1 and 2, consider using conservation measures to maintain or establish large blocks of important habitat that are at risk for aquatic or terrestrial species outside of wilderness or unroaded areas.

TS-G113. Guideline: In Forest Cluster 4, consider protecting raptor nest sites that are currently being used or have been used in the past five years, as well as important roost trees and associated habitat in the area surrounding the nest trees by at least 500 feet (750 feet for goshawks) unless it can be shown that local species needs or conditions differ.

TS-G114. Guideline: In Forest Cluster 4, consider managing an area up to a one-half mile radius around each active raptor nest site for feeding and fledgling activity. Habitat effectiveness for the specific raptor species can be retained within the area, and disturbances (such as from road construction, timber harvest, prescribed burning) can be avoided from March 1 through August 31 when nests are occupied, or as adapted to local conditions and species.

Insects and Disease

TS-G115. Guideline: Consider using thinning, harvesting, and/or prescribed fire to prevent beetle epidemics by controlling stand density.

TS-G116. Guideline: Consider using prevention techniques such as selective cutting, thinning dense 70- to 80-year-old stands, and minimizing soil compaction and disturbance during stand treatment, to reduce susceptibility of ponderosa pine to western pine beetle by maintaining vigorously growing trees.

TS-G117. Guideline: After harvest, consider using prescribed broadcast burns and/or thinning in stands that have been severely infected by dwarf mistletoe.

TS-G118. Guideline: Where true firs are infected, consider managing to reduce susceptibility of stands to annosus root disease by: lowering the number of entries into any given stand, shortening rotations, decrease wounding during harvesting, or manipulating species mixtures by changing to pine, larch, or Douglas-fir.

TS-G119. Guideline: Consider managing to reduce the susceptibility of stands to laminated root rot by: avoiding shelterwood cuts which favor regeneration of susceptible shade-tolerant species, or switching to species more resistant to root rot such as western red cedar, pines, and larch, where appropriate.

TS-G120. Guideline: Consider managing to reduce the susceptibility to Armillaria root disease by: using thinning, harvesting, and/or prescribed fire to increase vigor; pre-commercial thinning sites of moderately low productivity that are infected; or planting tolerant species such as larch, hemlock, pine, and hardwoods in existing infected areas. Minimize subsequent stand entry in moist forest PVGs.

TS-G121. Guideline: Consider removing root-disease-infected stumps after thinning or harvest to prevent the infection of future stands on highly productive sites. Minimize soil damage and reforest with early-successional species most likely to tolerate the pathogen and soil damage.

Post-fire, Post-harvest

TS-G122. Guideline: During fire salvage, consider leaving unharvested areas within each of the community types present.

TS-G123. Guideline: Consider retaining standing hollow, or otherwise damaged, trees when they don't pose a safety hazard.

TS-G124. Guideline: Whole tree harvesting is not recommended in areas that need additional coarse downed wood for wildlife or soil productivity concerns.

TS-G125. Guideline: Whenever possible, avoid tractor piling slash, and select burning techniques that burn woody material in place.

Aquatic, Riparian Considerations

TS-G126. Guideline: Consider treatment of uplands to mitigate risks to aquatic/riparian ecosystems in conjunction with considerations of treatments to riparian areas.

TS-G127. Guideline: Consider the spatial and temporal role of natural disturbances within uplands and riparian areas in creating and maintaining high integrity aquatic habitat. Consider conducting prescribed burns to shield aquatic habitat from severe disturbance.

TS-G128. Guideline: Consider vegetation management practices that restore and are compatible with the spatial and temporal disturbance processes and patterns that encourage attainment of riparian management objectives, and in a manner that benefits native aquatic species.

Roads

TS-G129. Guideline: Consider using thinning, harvesting, and/or prescribed fire to manage fuels in unroaded areas where there is a high risk to ecosystem values, without construction of new roads.

TS-G130. Guideline: Consider developing road management and access management plans with other agencies when necessary to assist meeting wildlife management agencies' objectives.

Rangelands

(For Alternative 7, guidelines apply **outside reserves** unless otherwise indicated)

Rangeland Health: Guidelines For Objectives TS-O12 through TS-O16

TS-G131. Guideline: Consider locating water developments, salts, and supplements to improve distribution of livestock away from wetlands, riparian areas, and other sensitive areas such as steep slopes or highly erosive soils.

TS-G132. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): Consider developing livestock waters, seedings, and other projects that concentrate livestock use, in areas (1) that do not conflict with wintering wildlife, and (2) that will not be opening up new ground for livestock grazing that has not been used by livestock in the past.

TS-G133. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): Prior to making adjustments to livestock use as a result of conflicts with big game species, consider determining whether:

- ◆ There is dietary overlap.
- ◆ They are using the same areas.
- ◆ The area is in good or degraded range condition.
- ◆ The use is seasonally different.
- ◆ The livestock use is conditioning the forage for big game.
- ◆ The big game population is decreasing.
- ◆ The area is winter range.
- ◆ The area provides important fawning, calving, or lambing areas.

TS-G134. Guideline: Consider the effects of vegetation management strategies on habitat patch size and fragmentation.

TS-G135. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): Consider establishing experimental areas for the purpose of studying the role of microbiotic crust in ecosystem process and function and to develop new management techniques and test traditional management techniques for their ability to maintain or enhance microbiotic crusts.

TS-G136. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): On sites where microbiotic crusts have been determined to have a positive role in either soil stability, infiltration and soil water content, nutrient cycling, or vascular plant diversity and seedling recruitment, consider incorporating site-specific management activities to either maintain or improve microbiotic crust cover.

TS-G137. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): Consider restricting the locations of water developments and salt blocks to protect from grazing highly erodible soils or relict areas that provide value as rangeland reference areas.

TS-G138. Guideline: Consider the season and intensity of grazing use in maintaining soil and plant conditions that promote or restore infiltration rates and soil permeability (prevention of compaction). Consider short duration, low to moderate utilization with emphasis on grazing during dormant seasons.

TS-G139. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): On dry shrublands, consider adjusting livestock stocking rates so that during 8 out of 10 years foraging does not degrade soil or vegetative productivity during drought periods.

TS-G140. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): Consider developing flexible criteria with livestock grazing operators to ensure that during drought years, adjustments to grazing use can be accomplished before damage is done to soil and vegetative productivity on dry shrublands.

TS-G141. Guideline: Consider grazing strategies that promote vegetative cover, soil organic matter, high water infiltration rates, subsurface flow, and plant physiological health.

TS-G142. Guideline: Consider designing management flexibility into grazing strategies in order to provide for seedling establishment of perennial vegetation during years with above-normal precipitation.

TS-G143. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): Where practical, consider consolidating allotments or livestock herds to maximize management flexibility and grazing treatment effectiveness.

TS-G144. Guideline: Wherever possible and practical, consider using time control grazing principles.

TS-G145. Guideline: Consider designing grazing rotation patterns according to localized perennial bunchgrass physiological requirements.

TS-G146. Guideline: As allotments in good ecological condition become vacant, consider establishing some of them as alternate forage sources. They may be used by permittees who must be temporarily restricted from use of areas burned by fires, or who are facing major reductions in grazing use due to conflicts with riparian, wildlife, and other values.

Altered Sagebrush Steppe: Guidelines For Objective TS-O13

TS-G147. Guideline: On rangelands dominated by annual plants, consider livestock grazing strategies that provide sufficient residue to maintain hydrologic function following grazing.

TS-G148. Guideline: Consider developing strategies that are based on the weakest point of the life cycle of exotic plants. Focus research efforts on those species that lack detailed information regarding life cycles. Explore the possibilities of grazing strategies that may affect seedling establishment of annual grasses.

TS-G149. Guideline: Consider investigating new techniques of biological control for exotics and annuals. Consider the use of smut and fungus to control cheatgrass populations.

TS-G150. Guideline: Consider using green stripping or other types of fire breaks, along roads and transition zones between altered sagebrush steppe and the native rangeland plant community, to protect adjacent native rangeland areas and altered sagebrush steppe from wildfire.

TS-G151. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): The following techniques may be used to help control or rehabilitate cheatgrass-dominated ranges: (1) intensive early spring grazing in cases where soils, remnant native perennial plants, and microbiotic crusts will not be adversely affected; (2) herbicides, especially in combination with burning or plowing.

TS-G152. Guideline: (Applies to Alternative 6 only): Consider developing new techniques for managing altered sagebrush steppe through experimentation and through coordination with the

scientific community. Consider establishing studies and experiments on various altered sagebrush steppe sites throughout the project area.

TS-G153. Guideline: (Applies to Alternative 7 only, inside reserves): Livestock grazing strategies may be used on rangelands dominated by annual plants for controlling wildfire on altered sagebrush steppe.

TS-G154. Guideline: Especially in Range Clusters 5 and 6, consider areas within the current range of species such as sage grouse, sharp-tailed grouse, and mountain quail as a high priority for conversion of exotic monocultures to native shrublands.

TS-G155. Guideline: Consider the following when seeding altered sagebrush steppe and other areas:

- ◆ soils and precipitation;
- ◆ availability of local native seed;
- ◆ ability of seeded species to compete with exotic annuals;
- ◆ long-term success of seeded species meeting objectives;
- ◆ risk of failure;
- ◆ meeting biodiversity and wildlife needs;
- ◆ not creating monocultures;
- ◆ fragmentation and patch-size issues;
- ◆ planting and regeneration of shrub species.

TS-G156. Guideline: Consider creating “islands” of diverse seedings by sowing or planting following expansive wildfire to provide seed source for future recruitment.

Woody Species Reduction: Guidelines For Objective TS-O14

TS-G157. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): Where appropriate, consider avoiding intentional reduction in distribution or extent of native grasslands and shrublands. Management can occur that changes age classes of shrubs or amount of shrubs. Short-term, local adverse consequences to terrestrial resources may be permitted to achieve higher priority ecological objectives. Give priority to areas that have declining or special status species.

TS-G158. Guideline: Consider using prescribed fire for reducing woody species such as ponderosa pine, juniper, Douglas-fir, and mountain big sagebrush, on sites where they are displacing the native understory vegetation and where perennial grasses are still present in adequate amounts to permit fire.

TS-G159. Guideline: Consider removing livestock grazing early enough in the year to allow regrowth of fine fuels to carry fire.

TS-G160. Guideline: Consider laying out vegetation manipulation projects over a large enough area so that livestock and wildlife use will not be concentrated in the project area.

TS-G161. Guideline: Consider cover requirements for wildlife when laying out vegetation manipulation projects.

TS-G162. Guideline: Consider the following when developing juniper treatment plans: watershed

function, water quality, energy flow and nutrient cycling, wildlife habitat, social needs, economic use and potential, biodiversity and patchiness, and whether juniper is encroaching or is on a site where juniper used to occur under a natural disturbance regime.

TS-G163. Guideline: Consider identification and delineation for management of juniper (1) where it is encroaching but where native understory decline has not yet resulted; (2) where it has encroached and increased in density to where native understory has declined; and (3) where its density has increased to where all native understory vegetation has been displaced.

TS-G164. Guideline: To reduce juniper seedlings and trees, consider implementing prescribed fire on sites where adequate fuels remain present to carry fire and create flame lengths sufficient to kill juniper. The presence of juniper seedlings in the understory of dry shrub, dry grass, or cool shrub plant communities, or the presence of more than one large tree per acre capable of producing seed, may make an area a candidate for prescribed fire treatment.

TS-G165. Guideline: On sites where juniper has increased in density to the point where understory native vegetation is declining or nearly all understory vegetation has been lost, consider a harvest (cutting or chaining) strategy that leaves slash on site, to improve surface soil conditions and permit easier establishment and recovery of native or desired exotic understory vegetation, and to prevent excessive nutrient removal from these sites. Consider saving large older trees.

TS-G166. Guideline: Consider giving high priority to areas where shrub and grass cover is adequate to carry fire, rather than areas where cutting of trees is necessary, for treatment of juniper encroachment into shrub/grass or grass communities.

TS-G167. Guideline: (Applies to Alternatives 4, 5 [outside livestock priority areas], and 6 only): On sites where juniper is already in the system and is not dense to the point of reducing understory vegetation, consider enhancing plant and animal diversity by producing a mosaic on the landscape that includes western juniper in mixture with shrub and grassland types. Consider management that promotes western juniper stands characterized by a full complement of understory vascular and non-vascular vegetation.

TS-G168. Guideline: (Applies to Alternative 6 only): Experimental areas for the purpose of studying various juniper control methods such as mechanical, grazing, chemical, and burning may be established in areas where other species are not at risk.

TS-G169. Guideline: When attempting to reduce juniper density, consider using methods that maintain or improve the areas long term capability to (1) resist wind erosion, (2) support water infiltration and permeability rates, and (3) permit moisture storage, while increasing abundance, occurrence, and vigor of the herbaceous and shrub components.

TS-G170. Guideline: In Range Cluster 1, consider using an adaptive management approach to validate the effects of juniper woodland density on hydrologic processes and aquatic integrity. Possible framework could include a paired watershed approach to evaluate streamflows and water quality parameter changes with manipulation of juniper density.

Aquatic/Riparian Strategies

Guidelines Related to Objectives AQ-01, AQ-02, AQ-03, AQ-05, AQ-06, and AQ-010

AQ-G1. Guideline: Consider the following criteria when delineating riparian conservation areas for stream channels based on information from site-specific NEPA analysis or Ecosystem Analysis at the watershed scale (EAWS):

- ◆ Flood-prone area as defined by Rosgen (1994) or the 100-year floodplain;
- ◆ Area of active channel migration;
- ◆ Extent of riparian vegetation and potential riparian vegetation;
- ◆ Area of vegetation that would provide shade, large woody debris, nutrients, microclimate, root strength, habitat for riparian-dependent species, and a buffer to water quality and non-channelized sediment movement and deposition;
- ◆ Edge of valley bottom;
- ◆ Soil type;
- ◆ Adjacent sideslope sensitivity.

AQ-G2. Guideline: Consider the following criteria when delineating riparian conservation areas for lakes and wetlands based on information from site-specific NEPA analysis or EAWS::

- ◆ The area inundated by normal high water;
- ◆ The area annually influenced by a high-water table and saturated soils consistent with mean annual precipitation regimes;
- ◆ The extent of riparian vegetation;
- ◆ Area of vegetation that would provide shade, large woody debris, nutrients, microclimate, root strength, habitat for riparian-dependent species, and a buffer to water quality and non-channelized sediment movement and deposition;
- ◆ Soil type.
- ◆ Adjacent sideslope sensitivity.

AQ-G3. Guideline: Consider the following criteria when delineating riparian emphasis areas for lands prone to landslides: Lands identified through existing Forest Service/BLM classifications, inventories, or slope stability modeling (for example, Level I Stability Analysis, Hammond 1992).

AQ-G4. Guideline: Within watersheds, consider completing vegetation treatments within a short period of time (less than five years). Avoid reentry for a duration that approximates the time interval between natural disturbance events.

AQ-G5. Guideline: Consider planning vegetation treatment actions in a manner to reflect the spatial and temporal distribution of natural disturbances.

AQ-G6. Guideline: Consider strategies that allow sufficient residual vegetation after grazing to protect stream banks, dissipate energy, and trap sediment during periods of high flow.

AQ-G7. Guideline: Consider controlling the timing and intensity of grazing to prevent damage to stream banks when they are most vulnerable to trampling.

AQ-G8. Guideline: On rangelands, consider locating water development, fencing, salt, and supplements on upland areas to keep domestic livestock from congregating in riparian areas.

AQ-G9. Guideline: Consider changing livestock type from cows to sheep, to reduce impacts to riparian areas, except in historical, current, or proposed bighorn sheep sites.

AQ-G10. Guideline Consider using regional or state office riparian evaluation guides and procedures when assessing Proper Functioning Condition.

AQ-G11. Guideline: Consider assessing Proper Functioning Condition when conducting Ecosystem Analysis.

AQ-G12. Guideline: Consider monitoring those attributes rated as non-functional.

AQ-G13. Guideline: Consider developing Riparian Management Objectives in cooperation with interested parties including federal, state, and local governments; private landowners; livestock operators; and tribal governments.

AQ-G14. Guideline: NEPA and planning documents for projects within riparian conservation areas should specify best management practices (BMPs) required to achieve the Riparian Management Objectives, and should include a discussion of the anticipated effectiveness of the BMPs.

AQ-G15. Guideline: If new information becomes available that indicates that established Riparian Management Objectives do not meet the management intent for the riparian conservation areas, consider revising Riparian Management Objectives to incorporate the new information.

AQ-G16. Guideline: Consider establishing qualitative and quantitative watershed disturbance (natural and management) levels or parameters for upland and riparian area zones to provide early indication of potential watershed cumulative effects and causal mechanisms for aquatic and riparian conditions.

AQ-G17. Guideline: When prioritizing watershed restoration activities, consider life history patterns and requirements of riparian-dependent species, especially threatened, endangered, proposed, and candidate species and associated designated critical habitat and designated habitat within recovery zones. Concurrently consider state water quality agencies' priorities for restoring water quality.

AQ-G18. Guideline: When determining restoration location priorities, consider areas that will improve degraded stream reaches typically adjacent to or downstream of high quality habitat, thereby improving connectivity.

AQ-G19. Guideline: Consider reducing road-related effects on watershed and aquatic resources as a high priority for watershed restoration actions. Priority forest and rangeland clusters and suggested approaches are discussed in the *Scientific Assessment*.

AQ-G20. Guideline: Consider designing watershed restoration actions to influence key aspects of ecosystem structure and function such as the following:

- ◆ Channel morphology and hydrologic and sediment regimes;
- ◆ Riparian vegetation condition and complexity;
- ◆ Stream habitat complexity;
- ◆ Channel structure (that is, wood and bank stability).

AQ-G21. Guideline: Diagnose causal mechanisms and processes of degraded watershed and aquatic conditions and evaluate various treatment techniques.

AQ-G22. Guideline: Consider watershed restoration actions when a change has occurred in the management regime responsible for degraded conditions .

AQ-G23. Guideline: Consider directing restoration at the processes that affect the temporal and spatial diversity of natural aquatic systems.

AQ-G24. Guideline: Consider focusing watershed restoration where a minimal investment can improve or secure the largest amount of high quality habitat and diverse riparian-dependent species communities.

AQ-G25. Guideline: Consider cooperative watershed restoration actions with adjacent landowners, particularly in low-elevation floodplain river systems.

AQ-G26. Guideline: When conducting Ecosystem Analysis, consider using the information to provide a context for setting watershed restoration priorities.

AQ-G27. Guideline: When conducting watershed restoration actions, consider addressing watershed-scale processes and focusing actions in parts of the watershed that play crucial ecological roles in watershed and aquatic habitat condition and in the health of riparian-dependent species populations.

AQ-G28. Guideline: Consider land acquisition, exchange, and conservation easements to meet Riparian Management Objectives and facilitate restoration of fish stocks and other species at risk of extinction.

AQ-G29. Guideline: Consider cooperating with federal, tribal, state and local governments to secure instream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.

AQ-G30. Guideline: Consider cooperating with federal, tribal, state, and local agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans (CRMPs) or other cooperative agreements to meet RMOs.

AQ-G31. Guideline: Consider cooperating with federal, tribal, and state wildlife agencies to identify and eliminate ungulate impacts that prevent attainment of RMOs or adversely affect aquatic resources.

AQ-G32. Guideline: Consider cooperating with federal, tribal and state fish management agencies to identify and eliminate adverse effects on aquatic resources associated with fish stocking, fish harvest, habitat manipulation, and poaching.

AQ-G33. Guideline: Trees may be felled in riparian conservation areas when they pose a safety risk. Consider keeping felled trees on site when needed to meet woody debris objectives.

Category 1 Sub-basins: Guidelines Related to Objective AQ-O4

AQ-G34. Guideline: Consider designing watershed restoration activities to secure fish strongholds and other important riparian-dependent species communities and to improve watershed and aquatic conditions in adjacent watersheds or downstream reaches to improve connectivity.

AQ-G35. Guideline: Activities designed to prevent large natural disturbances should not be considered a priority for Category 1 subbasins.

AQ-G36. Guideline: Activities for non-watershed/aquatic resources can be permitted if compatible with the Category 1 sub-basin objective. These activities should generally take place outside of fish strongholds and other important riparian-dependent species communities and should pose minimal risk to watershed and aquatic resources. Existing transportation networks should be used for these activities.

AQ-G37. Guideline: Category 1 sub-basins should not be considered as sites for large-scale experimental land management activities.

AQ-G38. Guideline: Consider coordinating with federal, tribal, state, and local governments and resource users to reduce the spread and introduction of non-native fishes.

Category 2 Sub-basins: Guidelines Related to Objective AQ-07

AQ-G39. Guideline: To improve connectivity, consider designing watershed restoration activities to secure fish strongholds and other important riparian-dependent species communities and improve watershed and aquatic conditions in adjacent watersheds or downstream reaches.

AQ-G40. Guideline: Within fish strongholds and other important riparian-dependent species communities, consider activities that pose minimal risk and contribute to restoration of watershed, riparian, and aquatic resources. Consider existing transportation networks for these activities.

AQ-G41. Guideline: Outside fish strongholds and other important riparian-dependent species communities, consider activities that are designed to restore watershed, riparian, and aquatic resources. Restoration activities that address multiple ecological objectives but that pose high short-term risks to aquatic resources may be appropriate if there is an expected long-term benefit to watershed, riparian, and aquatic resources.

AQ-G42. Guideline: Consider coordinating and possibly financing watershed, aquatic, and riparian restoration through forest and rangeland restoration and production activities. For example, when treating forest health problems in dry and moist forests concurrently, conduct watershed, aquatic, and riparian restoration activities such as road obliteration, closure, and improvements.

AQ-G43. Guideline: Activities that reduce threats from natural disturbances outside natural ranges of variability may be implemented to protect sensitive and fragmented riparian-dependent species populations.

AQ-G44. Guideline: Category 2 sub-basins outside fish strongholds and other important riparian dependent species communities may be appropriate locations for broad-scale experimental treatments such as large-scale forest health treatments or livestock grazing strategies.

AQ-G45. Guideline: Consider coordinating with federal, tribal, state, and local governments and resource users to reduce the spread and introduction of non-native fishes.

Category 3 Sub-basins: Guidelines Related to Objective AQ-09

AQ-G46. Guideline: Consider planning and implementing watershed restoration activities to conserve fish strongholds and habitats occupied by species of concern or federally listed threatened, endangered, and candidate species.

AQ-G47. Guideline: Within fish strongholds and other important riparian-dependent species communities, consider management activities that use the existing road network.

AQ-G48. Guideline: Consider coordinating and possibly financing watershed, aquatic, and riparian restoration through forest and rangeland restoration and production activities. For example, when treating forest health problems in dry and moist forests, concurrently conduct watershed, aquatic, and riparian restoration activities such as road obliteration, closure, and improvements.

AQ-G49. Guideline: Activities that reduce threats from natural disturbances outside natural ranges of variability may be implemented to protect sensitive and fragmented riparian-dependent species populations.

AQ-G50. Guideline: Category 3 sub-basins outside fish strongholds and other important riparian-dependent species communities may be appropriate locations for broad-scale experimental treatments such as large-scale forest health treatments or livestock grazing strategies.

AQ-G51. Guideline: Consider coordinating with federal, tribal, state, and local governments and resource users to reduce the spread and introduction of non-native fishes.

Water Quality: Guidelines Related to Objective AQ-O13

AQ-G52. Guideline: Consider cooperating with state water quality agencies in their monitoring, review, and determination of existing conditions in comparison to state Water Quality Standards, for which the state agencies will identify the status of water quality and the risk to beneficial uses of water.

Terrestrial and Aquatic Species and Habitats

Habitats for Federal Trust Responsibilities: Guidelines For Objective HA-O1

HA-G1. Guideline: Through the consultation process, consider developing cooperative efforts with tribes to understand and identify their socially and traditionally important habitat types (ethno-habitats).

HA-G2. Guideline: Consider using tribal cultural expertise to both identify and evaluate socially and traditionally important ethno-habitats. (See also TI-O2.)

HA-G3. Guideline: Through the consultation process, consider developing mitigation measures to protect and restore habitat conditions to provide opportunities for cultural/traditional use.

HA-G4. Guideline: During project implementation and monitoring phases, consider allowing for new information and requests from affected tribes or traditional users for changes in ethno-habitat conditions to be incorporated into project effects and management decisions. (See also HU-O2)

HA-G5. Guideline: In the process of developing land tenure plans, consider both American Indian cultural uses and tribes' treaty and social well-being rights and interests. (For example: through

consultation with tribes, identify land exchanges that would benefit/protect tribal fishing, gathering, hunting rights and interests. Consider ways to avoid loss of cultural places culturally significant to tribal traditional practices.) (See also HU-O2, TI-O1.)

HA-G6. Guideline: Through the tribal consultation process, consider modifying livestock grazing patterns (especially during spring months) to avoid conflicts with plant gathering practices (for example at root and berry patches) and to avoid affecting growth cycles of culturally significant plants. (See also TS-O4)

HA-G7. Guideline: Through consultation and/or cooperation with tribes, consider identifying ways to enhance habitat conditions for American Indian-tribal interests and rights in fishing, hunting, gathering and livestock grazing.

Viable Populations, and Listed Species Habitats and Recovery: Guidelines For Objectives HA-O2 through HA-O7

HA-G8. Guideline: Where it is determined that conflicts exist, consider excluding cross country skiing and/or snowmobiling, and the like, to prevent disturbance of known or suspected late winter caribou habitat.

HA-G9. Guideline: Consider managing winter recreation activities to minimize conflicts with the conservation of forest carnivores and wintering areas such as dens and ungulate winter ranges.

HA-G11. Guideline: Consider avoiding roading and harvest that results in fragmentation and/or reduction of early winter caribou habitat.

HA-G12. Guideline: Consider the foraging, nesting, and hiding requirements of terrestrial riparian-dependent species as a high priority in management decisions in riparian areas.

HA-G13. Guideline: Activities that reduce threats from natural disturbances outside natural ranges of variability may be implemented to protect sensitive and fragmented populations of riparian-dependent species.

HA-G14. Guideline: Consider developing rangeland management strategies including prescribed fire and livestock grazing schemes that provide for restoration of mountain mahogany, bitterbrush and quaking aspen.

HA-G15. Guideline: Consider maintaining productivity of current wild ungulate winter range. Apply appropriate livestock grazing measures if areas are within an allotment.

HA-G16. Guideline: Consider developing integrated management strategies addressing long-term ecological integrity of sites and ecosystems to provide for associated species viability or conservation.

HA-G17. Guideline: Consider conducting inventories to locate local and rare endemics and disjunct populations of vertebrates.

HA-G18. Guideline: In the decision-making process, consider using existing information sources such as state Natural Heritage Data Bases.

HA-G19. Guideline: The geographic distribution of threatened and endangered plant species and population sizes may be determined through acceptable inventory methods. Consider documenting distribution in a corporate GIS database, keeping the layer accurate and current.

HA-G20. Guideline: Consider developing an interim species response matrix that includes documented (from literature searches) responses of the species to management activities or natural phenomena. Consider using this information to determine management activities for which mitigation measures should be recommended or are needed.

HA-G21. Guideline: Consider developing the conservation strategy guide in a format that can be incorporated into land management planning documents as an amendment.

HA-G22. Guideline: Consider working with state wildlife agencies to eliminate hunting or trapping of species with viability concerns.

HA-G23. Guideline: Consider using information from multiple ecological scales, applied in the appropriate ecological context in tiered planning processes. For example, at the scale of this EIS it is appropriate to use information at the level of ecological reporting units (ERUs); at the scale of Forest Service and BLM land-use plans, it is appropriate to use information that considers the interactions and locations of specific ecosystems and groups of species.

HA-G24. Guideline: During ecosystem analysis consider conducting an analysis of connectivity. Specific conditions and particular locations (including those identified in the *Scientific Assessment*) could be evaluated as to (1) their ability to link large blocks of habitat, (2) the likelihood that existing bottlenecks may prevent connecting important areas, and (3) the opportunities to obtain more secure areas of connectivity that have mixed ownerships.

HA-G25. Guideline: Consider working with state highway departments to secure travel routes where interstate highways, such as Snoqualmie Pass, Monida Pass, Santiam and Lost Trail Pass, are currently acting as barriers for terrestrial species, particularly large, wide-ranging carnivores.

HA-G26. Guideline: Contingent on human safety concerns, consider managing human access and minimizing potential disturbances to protect caves, old mines, old buildings, bridges and other sites being used by bats.

HA-G27. Guideline: Consider evaluating the potential habitat value of talus for reptile and other species prior to any proposal to disturb or remove.

HA-G28. Guideline: Consider habitat features such as wetlands, bogs, wet meadows, seeps and springs where management activities could cause unacceptable impacts to amphibians.

HA-G29. Guideline: Consider inventorying sites of amphibian populations within wetlands, and other sites expected to be important to amphibians to aid in characterization of local species and populations.

Livestock/Wildlife Conflicts: Guidelines For Objective HA-O7

HA-G30. Guideline: Consider inoculating domestic sheep against lung worm and other viruses known to be problems for bighorn sheep prior to entry on public lands within or adjacent to bighorn sheep habitat. Keep inoculations current. Coordinate with federal and state animal health agencies (APHIS, State Agriculture Department, etc.)

HA-G31. Guideline: Consider using livestock handling techniques that avoid key habitat areas for carnivores. Minimize conflicts that lead to animal damage control measures. Control only known offending animals and as a last resort.

HA-G32. Guideline: In historical unoccupied bighorn sheep ranges or recent reintroduction sites and proposed bighorn sheep reintroduction sites, consider changing the class of livestock from domestic sheep to cattle if the opportunity presents itself. This should reduce the potential of disease transmission between domestic and wild sheep in the future.

Human Uses and Values

Collaboration: Guidelines Related to Objective HU-01

HU-G1. Guideline: Consider creating small groups such as local advisory groups or task forces that meet face-to-face over time and contain a balance of interests in public land management. This may help diverse stakeholders to better understand different points of views and acquire what others have learned through interaction with natural resources. This is not a substitute for efforts to encourage participation from the general public, but it could help to ensure that diverse interests are acknowledged and carefully considered.

HU-G2. Guideline: Consider the requirements of the Federal Advisory Committee Act (FACA) when establishing advisory groups.

HU-G3. Guideline: Consider holding business-like annual stakeholder meetings in a reasonable number of communities within the unit's geographic area. These meetings could include presentation of the previous year's activities and planned projects and priorities for the upcoming year, including sufficient background information. Stakeholders could then have time to provide comments, and the appropriate line officer would document specifically how the comments were used.

HU-G4. Guideline: Consider focus groups, regular polls or surveys of local and regional residents and interest groups, or regular public forums designed to seek input and comment on projects and programs.

HU-G5. Guideline: Consider ways for the public to nominate areas they find important for restoration or for other projects. The line officer would share the final list of projects with the public. This could help to align scientific priorities with public ones, as well as alert local businesses and residents (such as contractors, suppliers, or employees) about potential opportunities.

HU-G6. Guideline: Consider establishing cooperative agreements between agencies and other landowners to help meet ecosystem objectives and manage access across administrative boundaries. Agreements with private landowners would be voluntary, based on positive incentives. Recognize the sensitivity and volatility of private lands in ecosystem management.

HU-G7. Guideline: (Applies to Alternative 4 only): Consider organizing public participation efforts based on Ecological Reporting Units or other meaningful ecological units such as river basins or watersheds.

HU-G8. Guideline: To better understand and incorporate how the public defines and values places in the landscape, consider conducting a place assessment for use in land-use planning, implementation, and monitoring efforts.

HU-G9. Guideline: (Applies to Alternative 5 only): Consider organizing regional-level planning groups, jointly chartered by the Forest Service and BLM under the Federal Advisory Committee Act. Membership could be designed to represent a full range of stakeholder interests and could be expected to meet at least two to four times per year, to make recommendations on ecosystem management and other land-use planning, implementation, and monitoring efforts. The groups could establish subgroups to address issues at a more local level and make recommendations to the regional group.

Minimizing Shifts in Commercial Activity: Guidelines Related to Objective HU-05

HU-G10. Guideline: The local manager may seek advice and recommendations of local, state, and tribal officials, in determining the annual rate of change in outputs during the adjustment period until the objective is met.

Economic Diversity: Guidelines Related to Objective HU-07

HU-G11. Guideline: Consider exploring possible actions with the appropriate economic development agency(ies), elected officials, and the public.

HU-G12. Guideline: Consider designating federal or cooperative sustained yield units.

HU-G13. Guideline: Consider locating and constructing new federal facilities in wildland areas with consideration for wildland fire; refurbish old facilities with fire resistant materials as maintenance is required.

HU-G14. Guideline: Consider giving high priority for prescribed burning to areas covered by agreements with local fire protection agencies and landowners.

HU-G15. Guideline: Consider the trade-offs between reducing the risk of wildfire and maintaining wildlife cover when conducting prescribed burns. Techniques can include varying canopy closure; retaining logs to maintain wildlife cover and soil productivity; and retaining patches of unthinned habitat where it is not hazardous to private property.

HU-G16. Guideline: Consider maintaining and keeping open the access routes for emergency equipment near wildland/urban interface areas.

HU-G17. Guideline: Consider working with interested county and local governments to develop building codes, access requirements, and fire-fighting water sources in areas of new rural construction; and to develop guidelines for existing property owners to reduce the potential for loss from wildland fires.

HU-G18. Guideline: Consider supporting state and local government programs that encourage rural property owners to manage fuels and otherwise mitigate fire hazard on their property.

HU-G19. Guideline: Consider using the following approaches to monitor the effectiveness of efforts to increase community resiliency: First, survey participants in the process to gain an understanding of how they perceived the process, outcome, and the federal agencies' roles and contributions. Second, help communities track the economic and social indicators developed. Third, track changes in resiliency across the interior Columbia River Basin using the Community Resiliency Index (or similar measure) to assess whether improvement is being made from a basin-wide perspective.

HU-G20. Guideline: Consider the following methods to assess and address the needs of community leaders and residents: cosponsoring workshops to assist community leaders and residents prepare for economic and social changes expected to affect local areas; strategic planning and marketing; promotion of desirable industries; and enhancing awareness of grants and other possible funding sources.

HU-G21. Guideline: Consider using advisory groups to provide a forum for identifying the locally important aspects of community resiliency and how the Forest Service and BLM could assist with efforts to improve them.

HU-G22. Guideline: To help increase resiliency in interested communities in the forested parts of the project area, consider starting with communities located in the “isolated timber-dependent areas in counties with slower population growth” identified in the *Economic Chapter of the Scientific Assessment*.

HU-G23. Guideline: Consider generating a list of economic and social indicators judged to be of importance to local communities. These could then be tracked over time to measure progress toward increasing resiliency. Machlis and Force (1995) can be used as a reference.

HU-G24. Guideline: (Applies to Alternative 7 only): Consider focusing efforts to increase resiliency on communities that are least resilient and expected to be most affected by changes in outputs resulting from creation of reserves.

HU-G25. Guideline: (Applies to Alternative 6 only): Possible variables to study include the role of civic leadership, social cohesion, economic diversity, amenity resource base, and public land management policies and outputs. Possible strategies include survey research, focus groups, and secondary research. Longitudinal studies of selected communities and how they change over time may be helpful; the case studies and economic information collected at the community level as part of the *Social Chapter of the Scientific Assessment* may provide a useful starting point.

HU-G26. Guideline: (Applies to Alternative 6 only): Consider community and regional input in designing and conducting research, to verify that it is responsive to a wide range of issues facing rural communities in the planning area. Communicate the findings in a diversity of formats and styles to reach community leaders and residents.

HU-G27. Guideline: (Applies to Alternative 6 only): Consider the following ways to monitor the effectiveness of programs or activities: (1) conduct surveys of participants to gain understanding of how they perceived the outcome and the federal agencies’ roles, and (2) track economic and social indicators. Machlis (1995) can be used as a reference.

HU-G28. Guideline: (Applies to Alternative 6 only): Consider the experience and ingenuity of resource managers, community residents, and public land management stakeholders to determine appropriate procedures.

HU-G29. Guideline: (Applies to Alternative 6 only): Consider conducting an annual conference of advisory group members to share ideas and information.

HU-G30. Guideline: (Applies to Alternative 6 only): Some administrative units may seek the ability to pay public participants, particularly for tasks such as actively participating in monitoring all types of resource management activities.

HU-G31. Guideline: (Applies to Alternative 6 only): Consider monitoring the effectiveness of advisory groups through surveys of participants and regional and national populations, as well as by measuring progress toward the groups’ stated objectives.

HU-G32. Guideline: (Applies to Alternative 6 only): Consider requesting that the Federal Advisory Committee Act (FACA) be clarified or adapted to allow more flexibility in creating or working with established public/private groups to assist with public land management planning, implementation, and monitoring.

HU-G33. Guideline: (Applies to Alternative 7 only): Consider tailoring requested programs to the type and level of impacts identified. For example, ecosystem enhancement programs could include

jobs-in-the-woods projects to hire dislocated forest workers and businesses in affected communities to work on ecosystem restoration projects at family wage levels.

Risks from Wildfire: Guidelines Related to Objective HU-09

HU-G34. Guideline: Consider developing contracts for private sector participation in fuels management using salvage rights to materials removed when reducing risk of fire.

HU-G35. Guideline: Consider identifying possible sites where forage for livestock, fuelwood, or commercial forest products could be made available as a by-product of fuels reduction actions. If possible make such products available and at favorable terms for use in recognition of intermittent availability and additional management constraints.

Recreation Guidelines: Related to Objectives HU-010 through HU-012

Recreation Opportunities: Guidelines Related to Objective HU-010

Planning

HU-G36. Guideline: To maintain primitive or semi-primitive recreation opportunities, consider designing projects with road cost efficiency in mind and in a way that facilitates road closure or obliteration.

HU-G37. Guideline: Consider maintaining existing primitive and semi-primitive settings that provide opportunities for solitude and other benefits where these settings currently exist. If new roads or other actions in these areas are expected to change the long-term nature of the experience, manage the roads and/or access to maintain the setting's primitive qualities in a manner compatible with other objectives for the area. For Alternative 7, this applies to areas outside of reserves.

HU-G38. Guideline: Consider implementing a planning process such as Limits of Acceptable Change for all wildernesses and areas where visitor use has reached or could reach in the foreseeable future, a level that could adversely impact significant resource values and/or the quality of the visitor's experience. This process should define the types and levels of recreational impacts that are acceptable given the objectives of each area.

HU-G39. Guideline: (Applies to Alternative 7 only): Consider implementing a planning process such as Limits of Acceptable Change for all areas included within reserves to define the types and levels of recreational impacts that are acceptable given the objectives of each reserve. Existing recreational uses could be allowed provided that limits are not exceeded or at risk of being exceeded.

HU-G40. Guideline: Consider adopting a benefits-based approach to recreation and tourism planning.

HU-G41. Guideline: Seek to develop or maintain recreation opportunities that are socially, environmentally, and financially sustainable, considering the following principles:

- ◆ The tourism opportunity fits well into the ecosystem and the natural environment is the central attraction;

- ◆ Any needed development is sensitive to the natural environment and minimizes impacts to native species and the natural landscape;
- ◆ People have an opportunity to learn interesting aspects of the natural and cultural environment through outdoor recreation and active participation;
- ◆ The tourism opportunity is developed in concert with and supported by local and regional residents;
- ◆ The tourism opportunity is designed to become financially self-supporting (people are willing and able to pay);
- ◆ Construction, management, and visitation take place with the goal of minimizing energy usage and encouraging people involved with the tourism opportunity to be environmentally sensitive.

HU-G42. Guideline: Consider opportunities to enhance and create corridor recreation opportunities by promoting linear recreation spaces (trails, bikeways, waterways and roads), and where appropriate, promote their use as connectors of attractions.

HU-G43. Guideline: Consider maintaining, creating, expanding, or diversifying trail systems in and adjacent to urban and rural areas, to link public and private recreation and tourism opportunities and to enhance compatibility among visitors by dispersing use.

HU-G44. Guideline: In cooperation with federal, tribal, state agencies, and local communities, consider participating in corridor management planning and plan implementation efforts for current and future Scenic, Historic, or Back Country Byways.

HU-G45. Guideline: Consider identifying and promoting the use of abandoned transportation corridors, such as rail routes.

HU-G46. Guideline: Consider providing for a variety of public recreation opportunities and experiences through visitor awareness, information on BLM- or Forest Service-administered recreation resources, interpretation, environmental education, protection, and adequately identifying these lands with an emphasis on field presence where appropriate.

HU-G47. Guideline: Consider increasing emphasis on resource protection, environmental education, interpretation, and information in the design of new facilities. Consider reducing maintenance costs and enhancing the visitors' experiences.

HU-G48. Guideline: Consider developing environmental education, interpretive, and information plans for all major recreation areas.

HU-G49. Guideline: Consider fish and wildlife management practices that provide a variety of wildlife-related recreation opportunities.

HU-G50. Guideline: (Applies to Alternative 7 only): Consider cooperating with other public and private recreation and tourism providers in the region to develop strategies for capitalizing on the reserve system.

HU-G51. Guideline: Consider input from interested cave groups when developing cave management plans.

Marketing

HU-G52. Guideline: Consider promoting the project area's historical and cultural resource sites as destination opportunities for recreation and tourism, where appropriate. For Alternative 7, direction applies to areas outside of reserves.

HU-G53. Guideline: Consider ecotourism opportunities to provide visitors with hands-on experience in accomplishing restoration activities.

HU-G54. Guideline: Consider encouraging the redistribution of visitors away from overused BLM- or Forest Service-administered lands to enhance the quality of the recreation experience and protect environmental quality.

HU-G55. Guideline: Consider developing a network of education and information centers to better market recreation and tourism products and services to residents and visitors.

Management

HU-G56. Guideline: When appropriate, consider managing visitor use on BLM- or Forest Service-administered lands through the permitting process to protect resource values, reduce use conflicts, and provide increased opportunities for safe and enjoyable recreation experiences.

HU-G57. Guideline: When appropriate, consider managing caves to provide primitive, undeveloped recreation opportunities. Consider taking special action to protect resource values if recreation use of a given cave has known or potential adverse impacts to threatened, endangered, and/or sensitive plants or animals; to cultural resources; or to geologic, paleontologic, or mineral features.

HU-G58. Guideline: Consider improved corridor signing, particularly trail signing.

HU-G59. Guideline: Consider maintaining the opportunity for spontaneous, non-regulated recreation through information, education, and maintenance efforts.

Construction/Maintenance

HU-G60. Guideline: Consider providing needed facility improvements in a fiscally responsible manner consistent with the Recreation Opportunity Spectrum (ROS) setting; existing and projected demand; protection of resources; local, state, and federal health and safety requirements; and physical development capabilities.

HU-G61. Guideline: Consider developing a priority-based maintenance management approach that ensures facilities and resources are cared for and exhibit the highest level of quality.

HU-G62. Guideline: Consider operating and maintaining existing recreation facilities, including recreation sites, roads, and trails in a manner that protects the public investment, provides for public health and safety, and fosters pride of public ownership.

HU-G63. Guideline: Consider developing environmental education materials for all ages that explain how natural systems work and the role and importance of fish, wildlife and other resources in these natural ecosystems.

Access for Recreation: Guidelines Related to Objective HU-O11

HU-G64. Guideline: Consider maintaining or providing access to existing recreational opportunities, including activities and facilities, unless it can be demonstrated that the social, physical, or biological effects of those uses preclude achieving more critical objectives.

HU-G65. Guideline: Consider using corridors to maintain public access to recreation and tourism opportunities.

HU-G66. Guideline: Consider providing additional access to water-based recreation opportunities where social and ecological conflicts would not be increased.

HU-G67. Guideline: Consider providing recreation access to BLM- or Forest Service-administered lands whenever possible through efforts, such as partnership relationships, exchange, ownership adjustment, or easement acquisition.

Efficiency in Recreation Management: Guidelines Related to Objective HU-O12

Partnerships

HU-G68. Guideline: Consider providing recreation opportunities by coordinating with private and other public recreation and tourism providers to make service delivery as efficient as possible and to promote cooperation rather than competition for market share. Coordinate marketing and public information efforts to make the public aware of opportunities.

HU-G69. Guideline: In coordination with other recreation providers, consider expanding efforts to provide increased awareness, understanding of, and appreciation for BLM- or Forest Service-administered resources and accompanying recreational opportunities through development of suitable information about these resources, including signs, brochures, and maps; through other print, visual, and electronic media; and through quality, on-the-ground public contact.

HU-G70. Guideline: Administrative units may wish to consider establishing or joining tourism cooperatives made up of other recreation providers to coordinate service delivery at a more local level.

HU-G71. Guideline: Consider creating or joining regional tourism councils to coordinate at the broad regional level. The purpose of the regional council could be to collect and distribute information on regional, national, and international trends affecting demand for and supply of recreation and tourism opportunities. It could also identify and foster opportunities for local units to work together to capitalize on trends and conditions identified.

HU-G72. Guideline: (Applies to Alternative 7 only): Consider working with local governments and residents to identify existing recreation opportunities that are now restricted or prohibited within reserves and to provide these opportunities on other public or private land.

HU-G73. Guideline: Consider participating with private, nonprofit and public sectors in developing and implementing a dynamic regional planning process that expands the Statewide Comprehensive Outdoor Recreation Plan (SCORP) for ongoing recreation and tourism planning, using a long-term approach.

HU-G74. Guideline: Consider supporting and enhancing interagency watershed planning efforts (such as state river basin planning), by pooling funds and expertise.

HU-G75. Guideline: Consider revenue sources of all agencies and potentially private sector funding to maximize the benefits of limited funds available for recreation and tourism.

HU-G76. Guideline: Consider creating and maintaining a database that may be used by all partners involved in providing outdoor recreation and tourism in the project area and that includes current tourism enterprises and outdoor recreation facilities, access, services, attractions, and programs that make up the project area's outdoor recreation and tourism industry.

Visitor Services

HU-G77. Guideline: Consider working with other agencies and private businesses, including recreation service partners, to develop and distribute coordinated information that will benefit both users and business interests on BLM- or Forest Service-administered lands.

HU-G78. Guideline: Consider increasing use of trained seasonal workers, volunteers, and private recreation providers to manage and maintain public facilities.

Environmental Education/Interpretation

HU-G79. Guideline: Consider public-private partnerships to manage, staff, and deliver quality outreach programs at education and information centers and to deliver off-site environmental education to groups, such as school children, clubs and organizations, and tourism service employees.

HU-G80. Guideline: Consider seeking to establish demonstration areas for recovery of operation and maintenance costs.

HU-G81. Guideline: Consider instituting a program similar to the Army Corps of Engineers' Recreation Partnership Initiative, which was designed to add recreation facilities to public lands at little or no cost to the federal government.

Revenues

HU-G82. Guideline: Consider evaluating the market for new types of profit-generating opportunities that could help pay for needed recreation opportunities that are not able to be self-supporting.

HU-G83. Guideline: (Applies to Alternatives 3 to 6 only): Consider recovering the fair market value from commercial recreation permittees, concessionaires, and sponsors of events for use of BLM- or Forest Service-administered lands.

HU-G84. Guideline: (Applies to Alternative 7 only): Consider discouraging commercially-sponsored recreation events in reserves.

HU-G85. Guideline: Consider implementing user fees at developed sites subject to criteria found in the Land and Water Conservation Fund Act, as amended, and consistent with fees being charged by other land management agencies and the private sector.

Visual Quality: Guidelines Related to Objective HU-O13

HU-G86. Guideline: Consider seeking opportunities to improve scenic integrity while meeting other objectives. Priority for improvement could be areas where scenic quality is relatively more important, such as recreation sites and areas that are adjacent or within the viewshed of growing urban areas.

HU-G87. Guideline: Consider designing vegetation management to increase visual variety where it is appropriate and currently lacking, increase species and size class variety, create or open up vistas from recreational routes and sites, and reduce risk of potential loss of scenic integrity from fire, insects or disease.

HU-G88. Guideline: Consider mitigating visual impacts and/or rehabilitating an equivalent amount of lower scenic integrity land to result in no net loss and reduce risk of potential loss of scenic integrity from fire, insects or disease.

HU-G89. Guideline: (Applies to Alternative 7 only): Consider applying existing visual quality objectives only in areas outside reserves; biological objectives could take precedence in reserves. In cases where other objectives have a higher priority than scenic integrity, and where meeting those objectives would lower scenic integrity, consider mitigating visual impacts.

Federal Trust Responsibility and Tribal Rights and Interests

Government-to-Government Cooperation and Relations: Guidelines Related to Objectives TI-O1

TI-G1. Guideline: (Applies to Alternatives 1, 2, 3, 6, and 7): For species or resources that are currently not meeting tribal needs, or are declining, or are expected to not meet future needs, consider assessing the potential for cooperative efforts to rehabilitate habitat or increase production of resources. (See also HA-O1)

TI-G2. Guideline: Consider working cooperatively with tribes to restore, manage, and rehabilitate resources that are not currently meeting tribal needs or are expected to decline in the future. (See also HA-O1)

TI-G3. Guideline: Consider allocating areas for habitats needed to maintain or restore harvestable populations within each area of tribal ceded lands. (See also HA-O1)

TI-G4. Guideline: Consider pursuing partnerships and cooperative funding for projects to enhance resources needed by tribes. (See also HA-O1)

TI-G5. Guideline: Consider working with the tribes and other agencies to establish a monitoring and tracking system, as needed, for tribal harvest, population trends of harvest species, effectiveness of treatments, and conflicts with other users, management, or resources demands. (See also HU-O2)

TI-G6. Guideline: Consider tribal reservation management plans and defer to tribal plans especially regarding “in common” rights and privileges. (See also HU-O2)

TI-G7. Guideline: Where species conservation needs exist, tribal harvest can be monitored by Forest Service and BLM/states/tribes to ensure that harvest and gathering does not adversely affect habitat or reduce populations of species to the point where federal listing may become necessary, or where federally listed, proposed, or candidate species are adversely affected. (See also HU-O2, HA-O1)

TI-G8. Guideline: Consider identifying opportunities to attain shared goals in cultural, social and natural resource arenas at all agency levels. Develop a program approach to cooperative activities; address barriers at the government-to-government level. (See also HU-S4,5,6)

TI-G9. Guideline: Consider developing a programmatic approach in addressing the agency/tribe consultation process. In so doing, liaison positions or functions with access to decision-makers

can be used along with policy processes, to help focus dialogue with affected tribes, solve issues, and enhance understandings between agencies and tribes.

TI-G10. Guideline: Where conflict occurs between statutory directions and tribal treaty rights or federal trust responsibilities, consider giving priority to the latter in relationship to the regulations. Where appropriate, seek opportunities to use tribal technical expertise in agency actions (planning and monitoring project phases), and share agency technical expertise and information with tribal governments.

Sense of Place: Guidelines For Objective TI-O2

TI-G11. Guideline: Consider using National Historic Preservation Act (Bulletin 38) direction as the context for identifying and understanding traditional cultural properties.

TI-G12. Guideline: Consider completing an assessment of places as a part of Ecosystem Analysis at the watershed scale within the consultation process with both affected tribes and American Indian communities and existing anthropological literature and research methods. (This may require specific studies and following confidentiality rules to provide assessment direction.)

TI-G13. Guideline: Consider conducting broad and intermediate scale efforts to involve multiple tribes/Indian communities to identify and provide direction to the federal agencies' American Indian place assessment process. (This would be best accomplished with agency facilitation of inter-tribal suggested directives.)

TI-G14. Guideline: Tribes, states, and federal agencies may participate in implementation oversight. (See also HU-O2.)

Road Management

Roads: Guidelines For Objectives RM-O2 through RM-O4

RM-G1. Guideline: Consider incorporating channel condition, sensitivity, and inherent capability when assessing road-related effects to ecosystems.

RM-G2. Guideline: The road risk/condition inventory could help identify risks to and potential effects on aquatic, riparian, and terrestrial resources, and assist in prioritizing areas for restoration or improvement.

RM-G3. Guideline: Consider developing and implementing methods for road management that weigh the benefits of the road, the environmental risks, and the potential environmental damage resulting from removing the road. Use this information to identify and prioritize roads for rehabilitation, closure, or obliteration to reduce road-related effects on watershed, soil, terrestrial, and aquatic resources.

RM-G4. Guideline: Incorporating wetlands and slope stability analyses into road design plans could help avoid wetlands and unstable slopes when locating roads.

RM-G5. Guideline: As part of each transportation plan, consider including a storm inspection and emergency maintenance process to prevent damage to watershed, soil, and aquatic resources.

RM-G6. Guideline: Consider relocating roads currently in riparian areas where they have failed or are at risk of failure, or otherwise are not contributing to attainment of ICBEMP objectives, to areas where risk of failure is low and relocation will contribute to attainment of objectives. Preference for road relocation is outside riparian areas.

RM-G7. Guideline: When obliterating or closing roads, consider implementing the most feasible method (for example, re-contouring, culvert removal, waterbar construction, seeding) to reduce road-related sediment and streamflow effects on aquatic resources.

RM-G8. Guideline: When conducting road risk/condition inventories, consider culverts, bridges, and other stream crossings, and evaluate the potential risk posed by each stream crossing during major storm events. Priority for upgrading could be based on the risk potential to watershed and aquatic resources and the ecological values of these resources.

RM-G9. Guideline: Consider controlling road access, where appropriate, with the intent to limit introductions of exotic aquatic species.

RM-G10. Guideline: When transporting toxic chemicals within riparian conservation areas, consider minimizing risk of spill by using alternative routes where feasible.

RM-G11. Guideline: To minimize impacts, consider using existing road systems for access. If new roads must be built, design them with the intent that they will be for short-term use and will be closed and rehabilitated.

RM-G12. Guideline: In lieu of road closures, consider alternative solutions such as improved maintenance or road redesign for reducing or preventing resource damage to provide continued access for recreation and other management opportunities.

RM-G13. Guideline: When analyzing access management strategies, consider the effects on all modes of recreational transportation such as automobiles, 4-wheel drive vehicles, all-terrain vehicles, motorcycles, bicycles, horseback, and foot traffic.

Adaptive Management and Monitoring

Adaptive Management: Guidelines Related to Objective AM-O1

AM-G1. Guideline: Consider agency or other researchers in study design, sampling methods, data collection, management and analysis, and evaluation of management applications for activities aimed at enriching knowledge of management techniques or ecological knowledge.

AM-G2. Guideline: Consider cooperating with other federal, tribal, state, and county governments and private landowners involved with the management of non-public lands. This cooperation might include (1) initiating statewide level interagency coordination meetings, (2) developing standard procedures for interagency and intergroup data storage, management, and exchange, (3) organizing and participating in state, regional, and national workshops attended by personnel from other agencies and organizations involved with noxious weed management, (4) participating in the Western Weed Coordinating Committee, (5) assisting in developing procedures for interagency and intergroup participation in cooperative studies of prevention of noxious weed spread, introduction of noxious weeds into new areas, treatments for the control of noxious weeds, and restoration of the native plant communities that have been infested by noxious weeds, and (6) developing interagency training courses focused on the 7 steps of the Integrated Weed Management strategy.

AM-G3. Guideline: Consider coordinating with county and city planning staff and zoning committees to include consideration for noxious weed management when developing or approving subdivision plans, special use permits, or leases.

AM-G4. Guideline: Consider outreach plans at all administrative levels to improve public understanding of the need to prevent the spread of noxious weeds and the need to manage the populations of noxious weeds.

AM-G5. Guideline: Consider coordinating herbicide treatment plans with American Indian tribes-communities and the interested public, and incorporating information into these treatment plans concerning habitats of social or traditional importance, in order to minimize risks to human health.

AM-G6. Guideline: Consider research that is geared toward assessing the effects of exotic species invasion on habitats of social or traditional importance to American Indians and how the native plant cultural places might be restored and conserved.

AM-G7. Guideline: (Applies to Alternative 6 only): Consider developing and using monitoring plans to assess the effects of fire and fire suppression activities on vegetation, soil, watershed, wildlife, and cultural resources.

Monitoring: Guidelines Related to Objective AM-O2

AM-G8. Guideline: Forest Service Regional and BLM State Offices should consider identifying pristine or near natural areas that can serve as reference for evaluation of long-term effects of land management actions. Consider selecting watersheds to represent the diverse conditions and environments found among forest and rangeland clusters and subbasin categories.

AM-G9. Guideline: If pristine or near natural watersheds are restricted in number and variation, consider using watersheds that have a limited minimal management history as part of the reference network to provide an indication of variability and rates of recovery.

AM-G10. Guideline: The effectiveness of recreation and tourism strategies can be measured and monitored in a variety of ways, including the following:

- ◆ Surveys of recreation visitors at select sites can assess satisfaction with the experience as well as demand for other opportunities.
- ◆ Data on visitor expenditures and estimation of net economic value (consumer surplus) can provide estimates of economic benefits.
- ◆ Household surveys can measure latent demand for recreation, while regional or national surveys can help to identify potential market segments, niches, and strategies for attracting new visitors.

AM-G11. Guideline: Consider monitoring recreationist and tourist use patterns, perceptions, impacts on the resource, and assessment of experience quality by geographic level (such as river reach, counties, regions, or other government entities). Consider defining minimum recreation and tourism data needs (such as quality of experience, activity by duration, important setting attributes, socioeconomic and resource impacts, and customer-desired management options), and adopt a set of standard measures and data base parameters needed for decision-making.

AM-G12. Guideline: Consider assessing the status and condition of existing recreation access roads and trails every five years and developing a strategy for their repair and maintenance commensurate with public use and resource protection.

AM-G13. Guideline: Consider the status and condition of existing recreation sites to determine which sites should continue to be managed, which should be redesigned and reconstructed or expanded, and which should be transferred to new ownership, closed, or removed.

AM-G14. Guideline: Consider monitoring the Special Recreation Permit and Concession Programs in order to strengthen them and assure appropriate user fees are charged.

AM-G15. Guideline: Consider an on-the-ground monitoring program that begins with the highest priority areas to assure that the basic natural, cultural, and scenic resources are properly protected as directed in land-use planning documents and legislative mandates.

AM-G16. Guideline: Consider monitoring planning area-wide progress toward recreation objectives using the scenic integrity model developed as part of the *Scientific Assessment*.