

Appendix H: Comparison of Alternatives by Management Strategy

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D	Alt E
Physical Resources Program					
Air Quality					
Utilize smoke dispersion models for prescribed fire projects greater than 250 acres.	X	X	X	X	X
Wherever feasible, apply Emission Reduction Techniques (ERTs) to reduce emissions and control greenhouse gas emissions from burn activities on NFS lands. Consider non-burning alternatives in addition to ERTs wherever possible to reduce and prevent smoke intrusion into communities. Manage emissions from on-forest activities to avoid elevating ambient air concentrations to levels that result in non-attainment of standards for the Lake Tahoe Basin.	X	X	X	X	X
For Forest Service operated combustion engines, utilize alternative fuels when technically and fiscally feasible, for purposes of reducing greenhouse gas emissions and ozone precursor emissions.	X	X	X	X	X
Consider the Regional Haze State Implementation Plan targets for the Class 1 Airshed over Desolation Wilderness during project planning.	X	X	X	X	X
Water Quality and Soil Quality					
Implement PSW Region Best Management Practices to protect and conserve physical resources.	X	X	X	X	X
Manage activities within SEZs in a manner that is consistent with the protection of SEZ functions and values and protection of beneficial uses of water bodies.	X	X	X	X	X
Participate in achieving the program goals for the Integrated Water Quality Management Strategy for achievement of the Lake Tahoe TMDL.	X	X	X	X	X
Ensure that identified beneficial uses for water bodies are adequately protected. Identify the specific beneficial uses for the project area, and water quality goals from the Regional Basin Plan.	X	X	X	X	X
Disperse runoff to reduce velocity, and increase infiltration to enhance treatment of nutrients and contaminants. Stabilize soil to prevent accelerated (human-caused) erosion of topsoil and subsequent sedimentation and loss of soil productivity. Utilize NFS lands for treatment of urban runoff where appropriate.	X	X	X	X	X
Reduce the watershed impacts resulting from land coverage. Minimize the development of new hard and soft coverage from forest management activities. Seek out opportunities to reduce coverage through site design when retrofitting, improving, or rebuilding at existing developed sites.	X	X	X	X	X

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Protect natural functioning of soil resources and sustain or improve long-term soil productivity in areas dedicated to growing vegetation. Where past management activities have reduced soil productivity below Forest Service regional or national guidelines, improve soil productivity by respreading displaced topsoil, using tillage to increase porosity, increasing nutrient supplies through the addition of appropriate amendments, or increasing nutrients and water-holding capacity through the addition of organic matter.	X	X	X	X	X
Water Use and Development					
Where feasible, arrange for and secure water rights for existing and foreseeable future Forest Service consumptive uses, including administrative, recreation, erosion control, and evaporative losses.	X	X	X	X	X
Where feasible, obtain water availability assurances for existing and foreseeable future non-consumptive uses, including minimum instream flows and reservoir level maintenance for fish, wildlife, boating, swimming, and aesthetics.	X	X	X	X	X
Manage dams to ensure adequate flows for downstream uses, including supporting aquatic habitats. Consider opportunities for removal of dams.	X	X	X	X	X
If it is not possible to determine from existing data the magnitude of potential adverse effects on the groundwater table of a groundwater development project, a geologic and geotechnical analysis should be conducted.	X	X	X	X	X
Use plants which do not require long-term irrigation in re-vegetation and landscaping projects in order to conserve water.	X	X	X	X	X
Natural Hazards					
Evaluate natural hazards before developing or permitting new uses or facilities on NFS lands.	X	X	X	X	X
Watershed Restoration					
Implement restoration projects in high priority watersheds identified by LRWQCB's total maximum daily load (TMDL) Model for Lake Tahoe, to improve self-sustaining, dynamically stable stream systems, channel stability, and hydrologic function.	X	X	X	X	X
Implement currently planned projects. New watershed restoration projects would be limited to removal of stressors, and the rate of watershed recovery would be governed by natural processes.				X	
Implement projects identified through National USFS Watershed Condition Assessment Process.	X	X	X	X	
In general, where stream characteristics are outside the natural range of variability in the area of a proposed project/activity, implement mitigation measures and short-term restoration actions to prevent further declines or cause an upward trend in conditions.	X	X	X		X
Reconnect floodplains with stream channels to enhance treatment of nutrients and contaminants, and improve channel geomorphic function to reduce in-channel sediment sources and increase in-channel sediment storage.	X	X	X		X

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Design projects to maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows, wetlands, and other special aquatic features. Implement restoration projects to attenuate peak flows and promote water storage in SEZs.	X	X	X		X
Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; and (3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species.	X	X	X		X
Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.	X	X	X		X
Design projects to maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features. During project analysis, roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths should be identified and corrective actions planned and implemented where necessary to restore connectivity	X	X	X		X
Climate Change					
Collaborate on local and regional vulnerability assessments. Participate in a Regional vulnerability assessment for the Sierra Nevada.		X	X	X	X
Incorporate vulnerability assessments related to climate change into management on the LTBMU as information is synthesized. Consider and prioritize adaptation activities recommended for vulnerable resources based on funding.		X	X		X
Consider restoration of species and/or habitat identified as vulnerable to climate change during project planning.		X	X		X
Consider restoration of individual species during habitat restoration, especially for vulnerable resources.		X	X		X
Minimize management impacts to species that are vulnerable to climate change. Reduce stress (e.g. human activities, invasive species) related to management in order to reduce the additive effects of non-climate stress.		X	X	X	X
Incorporate adaptation actions into management to increase resiliency and adaptive capacity of vulnerable resources.		X	X		X
Forest Vegetation, Fuels and Fire Management Program					
Forest Vegetation and Fuels					
Emphasize prevention in the form of silvicultural (e.g. mechanical treatments, herbicides, etc.) or prescribed fire treatments, resulting in forest stands that are less susceptible to high levels of tree mortality caused by drought, wildfires and bark beetles.		X	X		X
Emphasize use of prescribed fire, managed wildfire and hand thinning to achieve forest stands that are less susceptible to high levels of tree mortality caused by drought, wildfires and bark beetles.				X	

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Invoke specific integrated pest management strategies as needed to respond to immediate native or exotic forest insect or disease threats to forest health, which may include removal or treatment of beetle-infested trees, when identified that threaten developed recreation and administrative sites, and private property, prior to beetle emergence, to reduce the likelihood of further infestation.	X	X	X	X	X
Establish measures to prevent the establishment and spread of invasive plants during project implementation and post-disturbance rehabilitation activities.	X	X	X	X	X
Consider all available technologies and management tools and practices to meet project objectives.		X	X		X
Consider all available technologies and management tools and practices to meet project objectives, but emphasize use of prescribed fire, managed wildfire, and hand thinning.				X	
Vegetation management activities adhere to ecologically-based management strategies and are integrated, ultimately to restore or maintain forest resiliency. For example, forest vegetation treatments around communities (thinning that alters density, structure, and species composition) to restore forest resilience to wildfire also meet the goals of reducing forest stand susceptibility to bark beetle-caused tree mortality.	X	X	X	X	X
Vegetation treatments in montane forests favor Jeffrey pine, sugar pine that is white pine blister rust-resistant, and aspen, species that have become much less common over the last century due to logging and fire exclusion.	X	X	X	X	X
Reforestation strategies incorporate species mix, stocking density, or use of genetically superior or pest resistant planting stock, to restore landscapes and improve adaptability under climate change.		X	X		X
Reforestation strategies incorporate species mix, stocking density, or use of genetically superior or pest resistant planting stock, to restore landscapes.	X				X
Revegetation following a disturbance event or management activity first considers hazard tree removal, then the potential for natural regeneration of early seral vegetation, and finally, the need for artificial regeneration and corresponding competing vegetation control measures.		X	X		
Revegetation following a disturbance event or management activity first considers hazard tree removal, then the potential for natural regeneration of early seral vegetation.				X	X
Forest vegetation treatments, including aspen stand enhancements and riparian area restorations, achieve High Minimum Scenic Stability (MSS) and enhance desired scenic attributes and are applied on a project-by-project basis.		X	X		
Forest vegetation treatments, achieve High Minimum Scenic Stability (MSS) and enhance desired scenic attributes and are applied on a project-by-project basis.				X	X
When restoring disturbance regimes such as fire, many forest stands are currently too dense to allow the re-establishment of a frequent-fire regime. In these cases, management techniques such as thinning and prescribed burning are used as surrogates for wildfire and other mortality agents.	X	X	X		
Planned and unplanned ignitions are used where possible to accomplish forest health, wildlife habitat, or other ecosystem restoration objectives.	X	X	X	X	X
The majority of fuels reduction treatment efforts are concentrated in WUIs until initial WUI treatments are completed WUI maintenance treatments occur as needed.	X	X	X	X	X

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Consistent with preserving the recreation resource, trees, tree limbs, or downed woody debris identified as hazardous at developed recreation sites are removed.	X	X	X	X	X
Projects should consider the creation of openings of varying sizes and shapes that retain reserve trees and clumps to produce spatial and structural heterogeneity in forest stands, and should give greater weight to openings from 2 to 7 acres. Forest structure should vary over the landscape in relation to topographic variables of slope, aspect, and slope position.	X	X	X	X	X
Where reforested areas (generally Pacific Southwest Region size classes 0x, 1x, 2x) are included within area treatments, consider designing treatments to also: (1) accelerate the development of key habitat and late seral characteristics, (2) increase stand heterogeneity, (3) promote hardwoods, and (4) reduce risk of loss to wildland fire.	X	X	X	X	X
Preference should be given to reducing stand density and modifying species composition through thinning treatments to prevent/reduce high levels of bark beetle-or other forest pest -caused tree mortality. Preventive measures such as thinning should be used for reducing opportunities for forest pests.	X	X	X		X
Vegetation treatments designed to restore aspen should focus on restoring dominance of aspen in the canopy; regenerating and expanding aspen stands; reducing the risk of loss of aspen stands from the landscape; and developing vigorous under-story deciduous tree, shrub, and herbaceous associations and habitats.	X	X	X	X	X
Perpetuate and promote existing late seral stages in each project area and throughout the broader landscape if feasible, with primary emphasis on protecting/enhancing late seral dependent wildlife habitat.		X	X		X
Perpetuate and promote existing late seral stages in Old Forest Emphasis Areas with primary emphasis on protecting/enhancing late seral dependent wildlife habitat.	X			X	X
Fire Management					
Maintain fire suppression capability and preparedness at a level that is appropriate to protect lives, communities, and resources. Protection of human life (firefighter and public safety) is the most important objective during a fire. Once firefighters have been assigned to a fire, their safety becomes the highest value to be protected.	X	X	X	X	X
Base fire management strategies and tactics on firefighter and public health and safety, fire cause, current and predicted weather, current and potential fire behavior, fire effects, values to be protected, post-fire tradeoffs, resource availability, cumulative effects of the fire, and cost effectiveness. Strategy and tactics may vary around a fire’s perimeter.	X	X	X	X	X
Support attainment of desired conditions for fuels reduction, wildlife habitat, forest health, and ecosystem restoration contained in this Forest Plan through appropriate response to unplanned ignitions. By taking into account the location of ignition, time of year, current and expected weather and burning conditions, fire managers apply the best strategy to mitigate risks to the public and firefighters, meet protection priorities, and meet cultural/natural resource management objectives defined in this Forest Plan.	X	X	X	X	X

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Respond to mutual threat incidents when requested under a cooperative agreement. Forest Service employees limit fire suppression actions to exterior structure protection measures as described in FSM 5137.	X	X	X	X	X
Consider use of all types of firefighting equipment in fire emergencies when there is threat to human life and property, or where resource value saved is clearly greater than the damage done through the use of such equipment. In other than these conditions, disturbance to soils, stream environment zones, and visual quality are given increased priority. Cost effectiveness of equipment used is also considered during tactical decision-making.	X	X	X	X	X
Strive to keep fire suppression costs near national historic averages for fires with similar characteristics in comparable areas.	X	X	X	X	X
Continue a Fire Prevention Program that reduces the number of human-caused fires through an aggressive program of public contact, education, outreach, and enforcement.	X	X	X	X	X
Work in cooperation with public agencies, local fire-safe councils, and private citizens to exchange information and assistance throughout all local jurisdictions.	X	X	X	X	X
Use fire retardant according to national and regional policy.	X	X	X	X	X

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Biological Resources Program					
<i>Conservation of Habitat and Species Diversity</i>					
Develop a LTBMU biological (aquatic, botanical, and terrestrial) resources conservation strategy, including a five year action plan.	X	X	X	X	X
Provide for Lake Tahoe Basin-wide and Region-wide recovery actions for threatened and endangered species, and local species of interest. Develop, in partnership with other Lake Tahoe Basin entities, a basin-wide management strategy that utilizes well-supported indicators and reference conditions to assess the biological integrity and status and trend of a number of threatened and endangered species, Region 5 sensitive species, TRPA special interest species, local species of interest and priority invasive species.	X	X	X	X	X
Identify and map areas of high biological diversity, where multiple biological resources occur in the same habitat (e.g. a sensitive fish, TRPA special interest plant, and target wildlife species occur all within 200 meters of each other).	X	X	X	X	X
Collaborate with partners to establish priority locations for maintaining and restoring habitat connectivity and to expand habitat of native species.	X	X	X	X	X
Management activities should consider all levels of food web (trophic level) biodiversity (example predator/prey) during project planning and design. Maintenance of this diversity will help mitigate climate change exposure to individual species and communities (e.g. from changes in phenology and habitat shifts).		X	X		X
Management activities should consider habitat connectivity for species that may be impacted due to climate change by removing or modifying physical impediments to movements		X	X		X
<i>Aquatic Habitats and Species</i>					
Maintain, enhance, or restore the physical and biological characteristics of aquatic ecosystems.	X	X	X	X	X
Minimize human disturbance that would degrade wetland function and processes.		X	X		X
Provide for hydrologic and geomorphic processes, such as allowing flood events and associated bedload to pass downstream while providing for maintenance of stream pattern, profile and dimension.		X	X		X
Allow stream channels to adjust to reigning climate and natural processes.				X	
Provide a renewable supply of large downed logs that: (1) can reach the stream channel and (2) provide suitable habitat within and adjacent to the SEZs.		X	X		
Downed logs are recruited through natural processes.				X	
Ensure that management activities, including fuels reduction actions, within SEZs and SRAs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species.	X	X	X	X	X

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Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas.		X	X		X
Preserve special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas.				X	
Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.		X	X		
Protect rare aquatic ecological habitats such as Osgood Swamp, Hell Hole, and Pope Marsh. Enhance these habitats through restoration activities such as the removal of upland vegetation (i.e. conifers, xeric species) and restoring hydrologic function.		X	X		X
Protect rare aquatic ecological habitats such as Osgood Swamp, Hell Hole, and Pope Marsh.					X
Maintain and restore connectivity of aquatic habitats where barriers to aquatic organism passage have been identified or where natural surface and subsurface water flows are intercepted, diverted, or disrupted in highest priority watersheds that were identified in the 2010 and 2011 aquatic organism passage report (LTBMU) within the life of the Forest Plan.		X	X		X
Maintain and restore connectivity of aquatic habitats for TES species where barriers to aquatic organism passage have been identified or where natural surface and subsurface water flows are intercepted, diverted, or disrupted in highest priority watersheds that were identified in the 2010 and 2011 aquatic organism passage report (LTBMU) within the life of the Forest Plan.				X	
Employ natural channel design methods/techniques to restore aquatic habitat, and facilitate upstream or downstream passage for aquatic-dependent species.	X	X	X		X
Restore aquatic habitat for native non-game fishes in streams that have been identified in the LTB five year restoration plan by removing stressors including but not limited to removal of invasive species such as warm water fish.		X	X		X
Manage stream reaches and associated habitat to support all life stages of native assemblages by providing aquatic organism passage for all life stages, stream conditions that provide spawning and rearing habitat such as appropriate pool/riffle ratio, substrate and large woody debris, except where not appropriate (e.g. some Urban Forest Parcels).	X	X	X		X
Manage stream reaches and associated habitat to support TES species by providing aquatic organism passage for all life stages, stream conditions that provide spawning and rearing habitat such as appropriate pool/riffle ratio, substrate and large woody debris, except where not appropriate (e.g. some Urban Forest Parcels).				X	
Participate with partner agencies to ensure native nongame fish status is current and accurate. Target to resurvey fish community sampling reaches at a minimum of every 10 years.	X	X	X	X	
Work collaboratively with partners to assess native non-game fish populations and implement habitat restoration strategies, such as warm-water fish removal.	X	X	X	X	X

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Support active restoration for native fishes should occur where field data and other State, Federal, and other local agencies have determined that such species are at high risk of local extirpation.		X	X		X
Seek opportunities to remove physical impediments to the movement of aquatic species, or modify physical impediments to allow migration.	X	X	X		X
Seek opportunities to remove physical impediments to the movement of aquatic TES species, or modify physical impediments to allow migration.				X	
Maintain, restore, and/or enhance the ecological function and condition of shorelines, streams, lakes, wetlands (e.g., marshes, fens, springs, seeps, and lagoons), and/or meadows (wet and dry) in unstable or poorly functioning watersheds identified in the Lake Tahoe’s Environmental Improvement Program or otherwise specified in species recovery plans within the life of the Forest Plan.	X	X	X	X	X
Allow aquatic ecosystems to adjust to natural processes.				X	
Promote actions that increase meadow wetness and diversity of native wetland species (i.e. obligate, facultative-wet).	X	X	X		X
In certain places in meadows, prescribed fire may be used to favor increased growth of certain species important to cultural practices, such as basket weaving.	X	X	X		X
Use historical sedimentation regimes as a guide for ecosystem resiliency and/or vulnerability.	X	X	X	X	X
Project activities should maintain or enhance groundwater connectivity in marshes and lagoons to maintain linkage with fluctuations in lake levels.	X	X	X	X	X
Management actions should consider retaining barrier beach and lagoon formations and processes.	X	X	X	X	X
Utilize prescribed fire in aquatic ecosystems where the use of fire is needed to improve habitat or the long-term function of these ecosystems. Ensure that fire intensity and severity (i.e. residence time) are consistent with the natural fire regime for the ecotype.	X	X	X	X	X
Consider the potential for changed flow regimes as a result of climate change during the development of the aquatic organism passage management and monitoring plan.	X	X	X	X	X
<i>Terrestrial Habitats and Species</i>					
Maintain, enhance, and/or restore terrestrial habitats to increase the diversity, abundance, and distribution of species and biological communities.	X	X	X		X
Natural processes are utilized to maintain and enhance the diversity, abundance, and distribution of species and biological communities.				X	
Where compatible with other resource objectives for the area, increase total Salix (willow) cover during project implementation where habitat conditions will support Salix communities.	X	X	X		X
Design management activities to maintain suitable habitat structure and function following implementation.	X	X	X	X	X

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Manage snags and coarse woody debris for wildlife habitat as part of forest health or fuels reduction treatments as well as post-disturbance restoration.	X	X	X	X	X
Seek opportunities to develop and restore corridors for terrestrial species.		X	X		X
Seek opportunities to develop and restore corridors for terrestrial TES species.				X	
Maintain or restore habitat connectivity where appropriate to improve adaptive capacity. Collaborate with partners to establish priority locations for maintaining and restoring habitat connectivity.		X	X		X
Maintain or restore habitat connectivity for TES species where appropriate to improve adaptive capacity. Collaborate with partners to establish priority locations for maintaining and restoring habitat connectivity.				X	
Maintain, enhance, or restore the physical and biological attributes of habitats where rare plants occur.	X	X	X	X	X
Protect rare terrestrial ecological sites: including but not limited to Freel Peak, through restoration activities including, trail maintenance and signage.		X	X		X
Protect rare terrestrial ecological sites: including but not limited to Freel Peak, through trail maintenance and signage.				X	
Maintain or restore habitat connectivity where appropriate to improve adaptive capacity. Collaborate with partners to establish priority locations for maintaining and restoring habitat connectivity.		X	X		X
Maintain or restore habitat connectivity for TES species where appropriate to improve adaptive capacity. Collaborate with partners to establish priority locations for maintaining and restoring habitat connectivity.				X	X
Management activities should maintain, enhance, or restore the physical and biological attributes of habitats where rare plants occur.	X	X	X	X	X
Develop a conservation assessment for Draba (asterophora var. asterophora and Draba asterophora var. macrocarpa) within five years of Plan adoption.	X	X	X	X	X
Identify and, as needed, protect refuge areas for rare plants with habitat that is likely to reduce or change due to climate change (e.g. subalpine & alpine habitat).	X	X	X	X	X
Promote the use of native plant materials for the revegetation, rehabilitation, and restoration of ecosystems. Give primary consideration to genetically appropriate native plant materials.	X	X	X		X
Anticipate plant material needs for emergency and planned revegetation. Develop plant lists, planting guidelines, plant material sources, seed caches, and seed storage facilities.	X	X	X		X
Consider the enhancement of aquatic and terrestrial wildlife habitat (e.g. creation of snags, mosaic of habitat types) in forest management and prescribed fire projects.	X	X	X	X	X

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Invasive Species (Aquatic and Terrestrial)					
Clean vehicles and equipment to prevent the accidental spread of aquatic and terrestrial invasive species	X	X	X	X	X
Use an Early Detection Rapid Response (EDRR) approach to survey susceptible aquatic and terrestrial areas, quickly detect invasive species infestations, and subsequently implement immediate and specific actions to control those infestations before they become established and/or spread.	X	X	X	X	X
Monitor management activities for potential spread or establishment of invasive species in aquatic and terrestrial areas of NFS lands.	X	X	X	X	X
Coordinate invasive species management actions (such as prevention, education, EDRR, up to date inventories, treatment) with tribes and other federal, state, local and private groups.	X	X	X	X	X
Support invasive species research. Adopt an integrated invasive species management approach that evaluates all available control methods, including biological, cultural, mechanical/physical, and chemical techniques, as well as addresses potential adverse effects to native species, human health, ecosystem processes, or other resources on NFS lands.	X	X	X	X	X
Aquatic Invasive Species					
Implement aquatic invasive species control and/or eradication measures where there is high potential for adverse effects to native species, human health, ecosystem processes, or resources on NFS lands.	X	X	X	X	X
Use prevention measures, such as screening, boat inspection, decontamination, and weed washing stations to reduce the spread or establishment of invasive species.	X	X	X	X	X
Cooperate with the multi-agency Lake Tahoe Region Aquatic Invasive Species Program.	X	X	X	X	X
Provide the public information about local Aquatic Invasive Species policies, where watercraft can be inspected and decontaminated prior to entering water bodies of the Lake Tahoe basin, and education regarding principles of cleaning, draining and drying for all watercraft at developed recreation facilities.	X	X	X	X	X
Reinforce consistent AIS prevention and outreach message at appropriate Forest Service recreation facilities.	X	X	X	X	X
Control existing or new populations of Eurasian milfoil, curly leaf pondweed, invasive warm-water fish, bullfrogs, Asian clam or other newly discovered populations of aquatic invasive species.	X	X	X	X	X
Work with current partners (CDFG, USFWS, UC Berkeley, and Sierra Nevada Aquatic Research Laboratory) and others to document Bd fungus occurrence levels in both existing populations and historic habitats of Sierra Nevada yellow-legged frog.	X	X	X	X	X

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Terrestrial Invasive Species					
Cooperate with the multi-agency Lake Tahoe Basin Weed Coordinating Group Program. Prioritize invasive plant species and infestations, placing highest priority on new species and new, small infestations; include risk to NFS resources and feasibility of control among prioritization factors. Reassess priorities based on new information.	X	X	X	X	X
Focus treatment efforts on high priority species and infestations, while developing management goals for lower priority species and infestations.	X	X	X	X	X
Screen newly discovered terrestrial invasive plants species for management prioritization within two years of confirmed introduction on LTBMU.	X	X	X	X	X
Monitor invasive plant management projects to determine success and to evaluate the need for follow-up treatments or different control methods. Monitor known infestations, as appropriate, to determine changes in density and rate of spread.	X	X	X	X	X
Use prevention measures, such as materials inspection, equipment cleaning, and avoidance of known infested areas, to reduce the introduction and spread on invasive plants.	X	X	X	X	X
Assess the amount of ground and vegetation disturbance in habitats that are highly vulnerable to invasive plant invasion and pursue active revegetation as needed.	X	X	X	X	X
In partnership with the Pacific Southwest Research Station’s Institute of Forest Genetics Blister Rust Project, identify and collect seed from 5-needle pine trees that exhibit rust resistance to white pine blister rust (target species are sugar pine, western white pine, and whitebark pine).	X	X	X	X	X
Identify and assess terrestrial wildlife invasive species during project planning. During planned restoration activities, consider terrestrial invasive wildlife.	X	X	X	X	X
Protected Activity Centers (PACs) and Home Range Core Areas (HRCAs)					
Collaborate with partners to establish priority locations for maintaining and restoring spotted owl habitat connectivity.	X	X	X	X	X
Species Refuge Areas					
Work collaboratively with the Tahoe Basin Recovery Implementation Team for LCT to implement the short-term recovery action plan.	X	X	X	X	X
Work collaboratively with partners to identify and implement additional habitat restoration efforts that expand the range of SNYLF in historic habitat throughout the Basin.	X	X	X	X	X
Work collaboratively with partners to implement a public-private Tahoe yellow cress adaptive framework, including (but not limited to): continued participation in the TYC Executive Committee and Adaptive Management Working Group; continued monitoring of TYC occurrences; encouragement of TYC stewardship on private lands; and site-specific conservation and restoration actions.	X	X	X	X	X
Continue TYC public outreach and education efforts.	X	X	X	X	X
Balance conservation of known TYC occurrences and high quality habitat with development and use of recreational facilities and access.	X	X	X	X	X

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Revise site-specific TYC management plans to allow for adaptive management of known occurrences and high quality habitat that addresses both the annual shifts in habitat and threat level associated with lake level changes, and the provision of adequate beach access for recreational users.	X	X	X	X	X
Work collaboratively with partners to identify and implement efforts to conserve and, as necessary, restore whitebark pine stands.	X	X	X	X	X
Assess management activities for the risk of establishment or spread of white pine blister rust (WPBR) among whitebark pine stands.	X	X	X	X	X
Conserve whitebark pine genetic diversity by collecting and archiving seeds and growing and planting genetically diverse seedlings. Identify and collect seed from trees that exhibit some level of WPBR resistance. Where possible, protect valuable rust-resistant, seed-producing trees from future mortality caused by disturbance, climate change, and competition.	X	X	X	X	X
Proactively manage whitebark pine stands of high conservation or restoration priority to improve resilience after disturbance and resistance to pathogens. Actions may include: precautions to limit the spread of blister rust; use of fire or silvicultural treatments; or reforestation with WPBR-resistant seedlings.	X	X	X	X	X
Develop a unit-wide whitebark pine conservation strategy.	X	X	X	X	X
Identify whitebark pine stands of conservation and, as necessary, restoration priority. Develop spatially explicit species refuge areas.	X	X	X	X	X
Develop and maintain spatial data of known whitebark pine stands and potential habitat.	X	X	X	X	X

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Recreation Program					
Partnership and Volunteers					
Provide for stewardship opportunities by partnering with schools, profit, and non-profit organizations, public, and other agencies.	X	X	X	X	X
Through joint participation, cooperative agreements, volunteer agreements, and grant funding, encourage partners and volunteer stewards to achieve mutual resource management and stewardship goals.	X	X	X	X	X
Using an all-lands approach, collaborate with neighboring communities, partner organizations, state and local agencies, tribes, and adjacent Forest Service units to achieve ecological, economic, and social sustainability within the lake Tahoe Basin and in surrounding areas.	X	X	X	X	X
Recreation Expansion					
Consider changing user demands, trends, and preferences, including modifying existing sites and infrastructure to improve natural resource conditions and recreation settings.	X	X	X	X	X
Review and evaluate existing design capacity and reduce site development when financially feasible.				X	
Undertake recreation expansion to address socioeconomic challenges, improve management of existing developed sites, and mitigate adverse effects to natural resources resulting from recreation activities.	X	X	X		X
Recreation Opportunities					
As recreation trends and users change, recreation facilities and opportunities are adapted to provide intended user experience while being compatible with management goals.	X	X	X	X	X
Use planning inventory and monitoring tools to identify changing desired recreation activities, settings, and opportunities.	X	X	X	X	X
Provide opportunities for general forest undeveloped camping where applicable and where it meets management goals. Periodically review and update the forest camping order based on public health and safety, fire prevention goals, and resource protection and management capabilities.	X	X	X	X	X
Provide opportunities for dispersed camping where applicable and where it meets management goals. Periodically review and update the forest camping order based on public health and safety, fire prevention and resource protection goals, and management capabilities.	X	X	X	X	X
Recognizing and accepting that some conflict between user groups is natural, the LTBMU will manage user interactions by using a variety of methods, including educating visitors on shared and multiple use concepts (e.g., signage, information kiosk, interpretive programs), managing visitor expectations, and recreation setting design.	X	X	X	X	X
Address hazards at recreation sites to provide for public safety.	X	X	X	X	X

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D	Alt E
NFS lands on the LTBMU will provide a setting for local communities and visitors to pursue healthy lifestyle objectives and a range of outdoor pursuits year-round.	X	X	X	X	X
Perform Title VI reviews of permit holders and review NVUM survey results regularly to ensure recreation needs of a diverse visitor base are being addressed.	X	X	X	X	X
Maintain an interconnected, seamless approach to recreation planning in the Lake Tahoe Basin by applying an all-lands approach and collaborating with neighboring communities, partner organizations, state and local agencies, and adjacent Forest Service units.	X	X	X	X	X
Public Access					
Manage recreation activities to avoid or mitigate environmental degradation in sensitive environments to ensure continued access.	X	X	X	X	X
Maintain public access opportunities to Lake Tahoe shorelines and NFS lands.	X	X	X	X	X
Coordinate management activities to minimize impacts to public access and recreational experience.	X	X	X	X	X
Consider developed site design capacity and management capabilities when evaluating access.	X	X	X	X	X
Improve circulation and reduce congestion through capital investments.	X	X	X	X	X
Provide programs and facilities that meet universal accessibility standards.	X	X	X	X	X
Recreation Development					
Reduce deferred maintenance at developed recreation sites.	X	X	X	X	X
Management of developed recreation sites will consider deferred maintenance and modification and/or conversion of existing facilities to achieve ecological, social, and economic sustainability of the recreation setting prior to constructing new facilities.	X	X	X	X	X
Adjust recreation sites or permit boundaries to meet user needs and sustainability goals.	X	X	X	X	X
Recreation infrastructure will incorporate innovative and sustainable design concepts.	X	X	X	X	X
Modify or relocate federally-owned facilities and public access sites that are impeding groundwater connectivity, lagoon function, or barrier beach formation while maintaining public access and recreation opportunity.	X	X	X	X	X
Developed recreation sites are made more sustainable through design and construction principles in order to increase a site's ability to withstand use without facility or natural resource deterioration.	X	X	X	X	X
Coordinate with partner agencies, permit holders, and other appropriate organizations to educate visitors and residents on bear conflict issues in the LTBMU, and reduce the number of human-bear conflicts.	X	X	X	X	X

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D	Alt E
Recreation Special Uses Program					
Permitted activities increase opportunities for recreation use while protecting the natural setting and resources. Recreation special use permits effectively leverage LTBMU's ability to provide recreation services.	X	X	X	X	X
Evaluate existing recreation special use permits for deficiencies before considering new proposals.	X	X	X	X	X
Administer special use permits to Forest Service standards by: <ul style="list-style-type: none"> • Eliminating the backlog of expired authorizations; • Increasing monitoring and oversight of current authorizations; and • Completing appropriate level of environmental documentation. 	X	X	X	X	X
Issue new recreation special use permits that expand opportunities in response to identified needs and management goals.	X	X	X		X
Consider long-term plans when expanding or modifying ski facilities and activities.	X	X	X		X
Consider summer uses at existing ski resorts consistent with national policy.	X	X	X		X
Interpretive Services Program					
Periodically review Interpretation and Education programs and information for consistency with national objectives and regional and local issues.	X	X	X	X	X
Communicate range of recreation opportunities and settings while emphasizing shared and multiple use objectives to the public. Encourage public responsibility for natural and cultural resource protection and recreation etiquette.	X	X	X	X	X
Chapter 1 Provide visitor information services at major entry points and areas of concentrated use.	X	X	X	X	X
Provide and update interpretive signage, wayside exhibits, publications, and programs using a variety of media and methods.	X	X	X	X	X
Educate the local community about the importance of ecosystem services and stewardship principles using teacher trainings, school programs, and community events.	X	X	X	X	X
Educate the local community about principles and methods for sustaining forests in a changing climate.	X	X	X	X	X
Inform the public about Forest Service projects and management actions.	X	X	X	X	X
Scenic Quality Program					
Manage scenery to perpetuate the overall natural-appearing setting, protect significant scenic features, and ensure that development is appropriate for the area in which it is located in terms of size, mass, architectural style, and density.	X	X	X	X	X
Consider the type, intensity, location, and visual characteristics of land use, visual dominance competition between the natural and built environments, and resource management actions, particularly in sensitive, undeveloped areas.	X	X	X	X	X
Manage for scenic stability through actions that will enhance and protect desired scenic attributes through vegetation treatments to achieve High Minimum Scenic Stability (MSS), on a project-by-project basis over the Plan Period. Examples include aspen stand enhancements and riparian area restorations.	X	X	X	X	X
Restore damaged landscape scenes (currently meeting Low or No Scenic Integrity Levels), to achieve the established scenery objectives shown in the Minimum Scenic Integrity (MSI) map.	X	X	X	X	X
Mitigate the establishment of visible lines in landscape areas where vegetation is removed for management objectives; cleared areas will include edges that reflect the visual character of naturally occurring vegetation openings.	X	X	X	X	X

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D	Alt E
Cultural Resources Program					
Through the Plan period, efficiently manage cultural resource databases to support resource management and research, in cooperation with the appropriate California and Nevada state agencies.	X	X	X	X	X
Employ education and enforcement to deter vandalism.	X	X	X	X	X
Implement restrictions, using permits and/or visitation controls, when necessary, to protect sites from physical damage and excessive wear and tear.	X	X	X	X	X
Implement a policy of site avoidance to prevent physical damage to heritage resources during forest management activities.	X	X	X	X	X
The cultural resources program will involve collaboration with site stewards; volunteers; State and other Federal agencies; local and tribal governments; schools and universities; and non-profit groups. Cooperative partnerships with organizations will provide site protection and facilitate development of research, educational, and interpretive opportunities. Public participation and partnerships in cultural resources management for these purposes will be increased.	X	X	X	X	X
Address natural physical deterioration of cultural resources based on resource priorities and availability of funding.	X	X	X	X	X
Tribal Relations Program					
Tribal input is solicited during all stages of planning processes. Existing agreements that allow the Tribe to manage vegetation resources in traditional use areas are maintained or enhanced, and tribal interests are integrated into LTBMU program areas where possible.	X	X	X	X	X
Coordinate management where National Forest lands are adjacent to tribal lands.	X	X	X	X	X
Continue support of the Washoe Tribe in pursuit of establishing a Washoe Cultural Center and a Washoe Tending and Gathering Garden.	X	X	X	X	X
Continue to implement the agreement regarding use of traditional management techniques for Meeks Meadow.	X	X	X	X	X
Work closely with tribes to ensure that cultural practices and traditional knowledge is preserved and made available to future generations through preservation of important resources and supporting traditional uses at Lake Tahoe.	X	X	X	X	X
Support the Washoe Tribe’s goal of ensuring and increasing Tribal access to Lake Tahoe.	X	X	X	X	X
Work cooperatively with the Washoe Tribe to maintain access to and protect the physical integrity of Cave Rock and other culturally important areas.	X	X	X	X	X
Participate in additional LTBMU programs to enhance economic development opportunities for the Washoe Tribe (e.g. contracting, permits, employment). EO 13084- Consultation with Indian Tribal Governments. EO 13175-Consultation with Indian Tribal Governments.	X	X	X	X	X
Identify opportunities to incorporate tribal traditional management practices into projects to restore, enhance, and promote ecosystem health, in collaboration with the Washoe Tribe and native traditional practitioners.	X	X	X	X	X
Access and Travel Management Program					
Designate road and trail systems. Utilize the ATM planning process to identify sustainable route systems and identify authorized uses of routes (Motor Vehicle Use Map, MVUM). Update ATMs to respond to changing conditions.	X	X	X	X	X
Designate NFS lands open to use by over-snow vehicles.	X	X	X	X	X
Manage designated road and trail systems so that they are socio-economically as well as environmentally sustainable. Management techniques include: <ul style="list-style-type: none"> a. implement water quality protection BMPs, b. manage road gate openings and closures, c. provide managed parking opportunities, d. provide route information and regulations, e. reroute and restore alignments, f. provide for a variety of user types, g. design to reduce use conflicts, 	X	X	X	X	X

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D	Alt E
<ul style="list-style-type: none"> h. provide multi-modal and loop trail opportunities, i. provide accessible opportunities, j. provide for Aquatic Organism Passage (AOP), k. anticipate higher and earlier peak run off water flows and more rain-on-snow events, 					
Collaborate with agencies and partner organizations in road and trail transportation planning efforts aimed at connecting communities and public lands across jurisdictional boundaries.	X	X	X	X	X
Reduce roadside parking in areas of high density use and provide for managed parking. Prioritize transit or alternatives to the private automobile where parking capacity is reduced.		X	X	X	X
Increase dispersed winter parking opportunities.	X	X	X		X
National Trails System Program					
National Recreation Trails					
Utilize partnerships to achieve management goals for National Recreation Trails.	X	X	X	X	X
National trails meet the maintenance standards for the trail class and managed use, described in the Designated Special Area section of this Forest Plan (Section 2.4).	X	X	X	X	X
Limited recreation facilities, such as interpretive signs, viewing platforms, and benches may be present along the trail. Trailheads may offer amenities such as picnic facilities or interpretive information that enhances the experience of using the trail.	X	X	X	X	X
Trailheads may offer amenities such as picnic facilities or interpretive information that enhances the experience of using the trail.	X	X	X	X	X
Where the trail leads to an outstanding destination feature, the qualities of that feature are protected.	X	X	X	X	X
Reconstruct or relocate existing portions of the trail as needed to enhance the recreation experience and protect resources.	X	X	X	X	X
Trailheads are designed with sensitivity to scale and character of the setting.	X	X	X	X	X
Implement measures to protect areas of high ecologic value, such as rare plant sites or unique geologic features within the corridor, as needed.	X	X	X	X	X
Preserve the scenic quality and character of the National Recreation Trails.	X	X	X	X	X
National Scenic Trails					
Manage the PCT as a non-motorized and non-mechanized trail (i.e. hiking, pack and saddle, ski and snowshoe uses).	X	X	X	X	X
Emphasize preservation of the backcountry setting and rustic character of the trail and amenities along the trail.	X	X	X	X	X
The PCT meets the maintenance standard for the trail class and managed uses of hiker/pedestrian and pack and saddle.	X	X	X	X	X
Utilize partnerships to achieve management goals for the Pacific Crest Trail.	X	X	X	X	X
Require mitigation measures including screening, feathering, and other visual management techniques to mitigate visual and other impacts of new or upgraded utility rights-of-way. Mitigation measures apply to facilities as well as vegetation.	X	X	X	X	X
Where the trail leads to an outstanding destination feature, the qualities of that feature are protected.	X	X	X	X	X
Reconstruct or relocate existing portions of the PCT as needed to enhance the recreation experience and protect resources.	X	X	X	X	X
Trailheads are designed with sensitivity to scale and character of the setting.	X	X	X	X	X
Where possible, locate trailhead parking facilities in locations not visible from the trail.	X	X	X	X	X
Consider provision of campsites where there is a demonstrated need for overnight use and facilities are needed to protect natural resources.	X	X	X	X	X
Trailheads may offer amenities such as sanitation and picnic facilities and interpretive information that enhances the experience of the trail. Recreation facilities along the trail, such as interpretive signs, are installed primarily for resource protection.	X	X	X	X	X

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D	Alt E
Allow wildlife and fish habitat improvements which enhance trail desired conditions and setting. Allow expansion of existing forest openings and/or creation of new openings when compatible with desired conditions.	X	X	X	X	X
Allow timber harvest, prescribed burning, and wildland fire to manage vegetation consistent with desired conditions and setting for the PCT.	X	X	X	X	X
Wildfire suppression strategies will strive to minimize impacts on PCT values.	X	X	X	X	X
Restore degraded destinations, areas, or trail sections to provide for public use while improving the immediate foreground view from the trail and area focal points such as lakeshores.	X	X	X	X	X
Built Environment Program					
Use the Recreation Facility Analysis (RFA) and Facilities Master Plan to reduce deferred maintenance backlogs consistent with national direction.	X	X	X	X	X
Buildings and facilities are prioritized for construction, reconstruction or decommissioning based upon public benefit and ability to reduce deferred maintenance.	X	X	X	X	X
Provide and operate reliable, adequately sized facilities that support administrative needs and recreation opportunities.	X	X	X	X	X
Seek opportunities to reduce impervious coverage and soil compaction on low capability soils.	X	X	X	X	X
Implement water and energy conservation measures at developed recreation and administrative sites.	X	X	X	X	X
Reduce energy consumption associated with facilities operations and maintenance.	X	X	X	X	X
Retrofit Forest Service owned facilities with water quality protection BMPs throughout the Plan period.	X	X	X	X	X
Incorporate opportunities for use of public transit, or other alternative modes of transportation into new facilities or those undergoing remodel, reconstruction, or retrofit.	X	X	X	X	X
Incorporate energy efficiency, conservation, sustainable design principles, and “green” technologies into administrative and recreation facilities whenever possible during renovations, remodels, reconstruction, retrofit, or new construction to minimize operation and maintenance costs.	X	X	X	X	X
The quality of the built environment should benefit from sound site planning as well as from low-energy and environmental design principles such as those embodied in the LEED program.	X	X	X	X	X
Construct facilities that are economically feasible to maintain.	X	X	X	X	X
Recreational facilities and trails are rehabilitated and/or maintained to improve the environment, the user experience, protect natural settings, restore cultural and historical areas, and enhance economic sustainability.	X	X	X	X	X
The architectural character of administrative and recreation buildings, landscape structures, site furnishings, wayside structures, and signs installed or operated on NFS lands are planned and designed with aesthetic characteristics that respect the cultural and natural scenic quality of the Lake Tahoe Basin. The built environment is economically, environmentally, and socially sustainable.	X	X	X	X	X
Prioritize buildings and facilities for construction, reconstruction or decommissioning based upon Agency or public benefit and ability to eliminate deferred maintenance.	X	X	X	X	X
Lands Program					
Resolve trespass and encroachments with the highest priority assigned to the following: 1) where public safety is threatened; 2) where damage to resources and/or resource values is occurring, or encroachment is interfering with resource management activities; and 3) where public access is interfered with.	X	X	X	X	X
Continue to purchase small urban lots, subdivision lots less than 1 acre, in Placer County only, where lots with an IPES score of 725 or less are still unbuildable and qualify for acquisition under the Santini-Burton program.	X	X	X	X	X

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D	Alt E
Direct all other land purchases to parcels larger than one acre that include important resource or recreational values, improve access to National Forest System lands, protect environmentally sensitive land from development or consolidate or improve NFS land boundaries, eliminate inholdings and provide for more efficient and effective resource management.	X	X	X	X	X
In El Dorado and Douglas Counties, consider accepting donations of small urban lots that are unbuildable due to their location in Stream Environmental Zones when they improve the ownership pattern and management efficiency.	X	X	X	X	X
Retain National Forest System lands in the Lake Tahoe Basin in public ownership to fulfill the specific objectives for which they were acquired	X	X	X	X	X
Seek opportunities for land adjustments with State and Local governments that consolidate ownership and improve management of urban lots.	X	X	X	X	X
When approving erosion control grant projects, consider transfer of ownership to grantees when the proposed improvements encumber twenty-five percent or more of the lot.	X	X	X	X	X
Consider authorizing small scale renewable energy projects, such a site specific solar, when they are compatible with other resource objectives and meet scenic resource standards.	X	X	X	X	X
There are no major utility transmission corridors currently designated in the Lake Tahoe Basin. Such corridors should not be designated at Lake Tahoe due to their incompatibility with the scenic, recreational and other resource values at Lake Tahoe.	X	X	X	X	X
Research and Monitoring Projects					
Actively seek and encourage research activities that may be beneficial in informing management of NFS lands. Routinely evaluate research findings to inform adaptive management.	X	X	X	X	X
Continue to prioritize science needs based on monitoring results, science findings, and national guidance.	X	X	X	X	X
Santini-Burton Acquired Lands/Urban Forest Parcels					
Manage urban forest as undeveloped parcels that provide open space and dispersed recreation opportunity.	X	X	X	X	X
Manage stand densities on urban forest parcels to achieve and maintain healthy forest characteristics.	X	X	X	X	X
Manage the continuity and arrangement of live and dead fuels to reduce risk of catastrophic fire, and to complement defensible space efforts on adjoining private lands. Urban Forest parcels are located within the urban zone of the wildland urban interface (WUI).	X	X	X	X	X
Retain, protect, and restore aspen and riparian plant communities to enhance wetland function and provide habitat for disturbance tolerant species that utilize urban forests.	X	X	X	X	X
Restore areas of existing human-caused disturbance, generally related to residential development, to control erosion and support natural watershed function.	X	X	X	X	X
Prevent the introduction of non-native, invasive species and noxious weeds and contain existing populations.	X	X	X	X	X
Mitigate all identified hazard trees as quickly as possible.	X	X	X	X	X
Abate all identified hazard trees as quickly as possible.	X	X	X	X	X