

# Record of Decision

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# Record of Decision

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## I. The Decision

This decision adopts an integrated strategy for vegetation management that is aggressive enough to reduce the risk of wildfire to communities in the urban-wildland interface while modifying fire behavior over the broader landscape. With the careful placement of thinning projects, we can make significant progress in reducing the threat of catastrophic fires to wildlife and watersheds.

My decision vitally improves the land and resource management plans (LRMPs) for the Sierra Nevada national forests based on Alternative S2, as described in the Final SEIS. This Record of Decision (ROD) replaces the January 2001 ROD for the Sierra Nevada Forest Plan Amendment (SNFPA 2001 ROD) in its entirety. All of the management direction for this decision is included in this document (Appendix A). The SEIS represents an analysis and planning document and does not provide management direction.

I am making this decision in the aftermath of the tragic southern California fire season where 26 people died, over 3,600 homes were destroyed, and peoples' lives were turned upside down. In addition, precious wildlife habitat was destroyed. These catastrophic events, which I personally witnessed for 11 days, could also occur in the Sierra Nevada. I will not let that happen on my watch. These events may happen again anyway, because our forests are unnaturally overstocked. But there are reasonable changes that can be made to the SNFPA to help prevent them. I am determined to make those improvements.

In my judgment, the changes are not large, but they are extremely important. This decision retains the overall goals of the SNFPA 2001 ROD and its land allocations. It retains the overall strategy for addressing the fire situation in the Sierra in combination with key components of the conservation strategy for old forest dependent species. The integrated strategy includes methods of thinning of trees and brush removal, known as "fuels treatments," that is, reducing the amount of burnable material. Fuels treatments will occur more effectively on roughly the same number of acres and cover only 25-30% of the landbase. However, I am changing the way management occurs in those treated areas and directing field personnel to develop projects that make sense from an ecological and financial perspective. I expect that they will make the right decisions in the design and implementation of projects consistent with the direction and intent of this decision.

Much more remains to be done to bring our forests back to more normal conditions. There is a huge job at hand to reduce a massive build up of biomass covering nearly 8 million acres of forestland in this region. Working steadily, we will need at least 20 years to begin to reverse this situation. Even still, each year the proposed thinning will remove less than .3% of the standing inventory and only 1/5 of the net annual growth. So, while the proposed treatments will make our communities and forests safer, the forests will continue to become denser. Over time, it is my belief that there will be better public understanding of the need to thin our forests and retain their open, big tree character. I am troubled that this need is not more widely understood by our publics today.

This decision is based on careful consideration of the scientific reviews and public comments on the Draft Supplemental Environmental Impact Statement (SEIS) prepared pursuant to the National Environmental Policy Act (NEPA). I have reviewed the Final SEIS, including the land allocation maps and the standards and guidelines for each alternative. I have also reviewed the comments of the Science Consistency Review prepared by the Pacific Southwest Research Station (October 2003) and included in the Final SEIS, Appendix E. I am satisfied that the available science has been used appropriately in the analysis of the environmental effects of the alternatives in the Final SEIS.

Although this decision is grounded in the best available scientific information, it is impossible to have perfect knowledge about how management actions will play out in complex ecosystems. I want to make steady progress in closing that gap. The Region will work in close partnership with the Pacific Southwest Research Station to address some of the management uncertainties we've been wrestling with for years. My decision embraces the concept of active adaptive management and I fully intend to expand upon opportunities to gather information and understanding as this decision is implemented.

This decision replaces the standards and guidelines of the SNFPA 2001 ROD to ensure that fuels treatments will effectively modify wildland fire behavior. In addition, the basic strategy is broadened to include other management objectives such as reducing stand density for forest health, restoring and maintaining ecosystem structure and composition, and restoring ecosystems after severe wildfires and other large catastrophic disturbance events.

This decision also addresses the need to retain industry infrastructure by allowing more wood by-products to be generated from fuels treatments and dead and dying trees to be harvested during salvage operations. It acknowledges that the Forest Service has a role to play in providing a wood supply for local manufacturers and sustaining a part of the employment base in rural communities. In some cases, these wood by-products will also help to offset the cost of fuels treatments.

This decision adopts standards and guidelines for willow flycatcher habitat, Yosemite toad habitat, great gray owl protected activity centers, and grazing utilization standards that better reflect the wide array of site conditions encountered in the field and the management opportunities they may provide.

This decision clarifies management intent for off-highway vehicles, limits the requirement for limited operating periods to vegetation management activities only, and clarifies how several of the riparian standards and guidelines apply to recreation activities, uses, and projects. These changes will give local managers the opportunity to develop mitigation measures for small and varied recreation projects on a project- and site-specific basis.

The management direction for sensitive species habitat is designed with the primary objective to conserve rare and likely important components of the landscape such as stands of mid- and late-seral forests with large trees, structural diversity and complexity, and moderate to high canopy cover. Thinning from below and uneven-age management are the principal silvicultural prescriptions to achieve immediate objectives. Thinning trees and removing underbrush in strategic locations, whether by mechanical means or wildfire, will be the primary processes that create forest openings to encourage regeneration of shade-intolerant species and maintain gene pools of these species.

The decision is described in detail under Alternative S2, chapter 2, in the Final SEIS. In summary, it:

- Adopts an approach for modifying wildland fire behavior across broad landscapes through the strategic placement of area treatments, including direction to avoid California spotted owl protected activity centers (PACs) and northern goshawk PACs wherever possible,
- Requires a landscape level assessment of opportunities and constraints to be completed as a first step in designing the pattern of fuels treatments needed to implement the fire and fuels strategy,
- Provides mechanisms for more efficiently using appropriated funds,
- Provides opportunities to reduce stand density and improve tree vigor and overall forest health,
- Provides for ecosystem restoration following catastrophic disturbance events,
- Allows for salvage of dead and dying trees for both economic value and fuels reduction purposes,
- Incorporates new fuels and vegetation management standards and guidelines,
- Re-establishes the Heger-Feinstein Quincy Library Group (HFQLG) Forest Recovery Act Pilot Project consistent with the HFQLG Forest Recovery Act, and
- Adopts an active and focused adaptive management and monitoring strategy.

## II. Rationale For Decision

I want to ensure a better future for the forests in the Sierra Nevada. The Sierra Nevada Forest Plan Amendment of 2001 is a good plan, except that its methods and standards cannot reverse the damage, and growing threat, of catastrophic fires quickly enough. Large, old trees, wildlife habitat, homes and local communities will be increasingly destroyed unless the Plan is improved.

“We have dropped the proposed thinning activity, since under the current standards, no project can achieve conscientious forest management objectives,” reported one District Ranger two years ago. Other Rangers concurred, they could not perform their duty.

The 2001 Plan prescribed technical solutions that do not produce needed results, or offered methods we often dare not attempt in the current Sierra Nevada. In particular, the directive of using fire itself to thin the forest is too risky to attempt in many cases. The thinning guidelines were too meager. Forest protection against devastating fires in the time frame needed would not and could not occur.

Old forests, wildlife and people living in and around these forests need results. Our District Rangers in the field need results. In forest time, good results or tragic consequences are measured in decades. We must take a first step now.

I recognize that there is a broad base of support within the Forest Service, among the public, scientific community, and among regulatory agencies for the vision and goals established by the SNFPA 2001 ROD. I believe that Alternative S2 will best achieve those goals. Alternative S2 also allows for full implementation of the HFQLG Forest Recovery Act and allows knowledge to be gained from moving forward with the pilot project, as it was originally envisioned.

A year-long management review, as well as the insight gained from nearly three years of implementing the ROD, including input from stakeholders, highlighted the need for refining the existing management direction for 1) old forest ecosystems; 2) aquatic, riparian, and meadow ecosystems; 3) and fire, fuels and forest health. The following sections describe my rationale for selecting Alternative S2 for each of these subject areas.

### Old Forest Ecosystems and Associated Species

One of the most difficult balancing tasks has been to find the best way to protect old forest dependent species and to increase and perpetuate old forest ecosystems, while we face a desperate need to intervene in the forest to reduce the fuel loads feeding catastrophic fires. Recent fire seasons illustrate the risks from inaction as the number and severity of acres burned in wildfires continues to increase, with tragic losses to communities, their people and resources, as well as to wildland firefighters.

My first emphasis is on reducing fuels in the wildland urban interface (WUI). I am adopting a regional goal that 50% of initial fuels treatments in the Sierra Nevada be located in the WUI until all treatments in the WUI have been completed. This will postpone some of the direct impacts in old forest emphasis areas except where the WUI crosses this land allocation. I expect that during that time we will gain experience from implementing treatments in the highest priority fuel reduction areas, monitor and learn from these actions, and change course where needed.

Where we actively manage forest vegetation, we will keep the largest trees in place. Trees 30 inches dbh and larger will be retained in all thinning projects. However, equally important is the standard for retaining 40 percent basal area in the largest trees in all treated areas. This effectively means that trees 25 inches dbh and above will be retained in most treated areas. Collectively, the standards and guidelines for mechanical treatments ensure that there will be a continuous supply of large trees in all managed areas to provide for future old forest stand structure. The management direction in this ROD is consistent with the

requirements for old growth stands and large tree retention in the Healthy Forests Restoration Act of 2003.

One thing that was overlooked in the original SNFPA decision was the influence of drought and climatic variances throughout the range of the Sierra Nevada. These conditions influence the resilience and sustainability of forests in the long-term, especially in forests that are overstocked with too many trees. Over the last 300 years, the climatic condition in California has been one of an extended period of moisture surplus, punctuated by drought periods. The moisture surplus combined with fire suppression and selective logging practices in the late 1800s and early 1900s increased forest density and changed species composition. Increasingly, the land cannot supply enough moisture during drought conditions to supply all of the trees growing on it. This makes forests more susceptible to drought, insects, diseases, air pollution and, of course, catastrophic wildfire. Mountain pine beetle outbreaks have increased five fold over the last five years. Mortality from bark beetles is increasing exponentially in the state. The current situation in Southern California shows the type of catastrophic impact that drought and bark beetles can have on forest vegetation. Sierra Nevada forests are unhealthy today and susceptible to the same widespread dieback that is occurring in Southern California.

This decision improves our ability to respond to deteriorating forest health by allowing more latitude in the amount and type of vegetation that can be removed within treated areas. This decision allows for consideration of stand density during the design of fuels treatment patterns. Vegetation treatments in old forest emphasis areas are no longer restricted to prescribed fire. Some trees larger than 12 inches dbh, but smaller than 30 inches dbh, may be removed mechanically. This flexibility will provide district rangers the opportunity to manage tree density on individual sites and to improve the forest's resilience to drought, and insect and disease conditions.

## Restoration

This decision also incorporates an element missing from the SNFPA 2001 ROD. It provides for ecosystem restoration following catastrophic events. These restoration activities are included in all land allocations and call for managing disturbed areas for long-term fuels profiles, restoring habitat, and recovering the value of some dead and dying trees. Restoration projects can include salvage of dead and dying trees for economic value as well as for fuels reductions. Well-thought-out restoration will keep us on the path of achieving old forest conditions and of re-establishing connectivity between patches of habitat in a proactive manner.

## California Spotted Owls

Over the past year, we have taken a hard look at the available science about the California spotted owl. I am still uncertain what to conclude from the relatively limited science available about this species. While a number of studies have been completed and we're still actively engaged in others, I find that there is still much more to learn and understand about the linkages between management activities, and their effects on owl habitat and population dynamics. Science alone, does not provide a solution to this long-standing management dilemma; it only provide hints at what the answers might be. Some of those hints are that canopy cover, big trees and stand structure are important to owls. This decision maintains or increases all of these things. However, given that valuable habitat is at high risk of being lost to wildfire, I cannot conclude that maintaining higher levels of canopy closure and stand density everywhere is the right thing to do.

These thoughts have led me to be willing to allow District Rangers to have more treatment options in order to provide habitat for owls and other old forest-dependent species in the long-term, and to gradually restore fire to the ecosystem in its more natural form. I note that management direction in this decision is consistent with the approach recommended by research scientists in the CASPO technical report.

However, subsequent suggestions made by these researchers were incorporated into the management direction in this decision to improve upon this earlier work. Additional components of the conservation strategy adopted in this decision include: 1) identifying home range core areas (HRCAs) and managing these areas to retain their value as suitable owl habitat; 2) providing direction to retain understory structure within treated areas; and 3) applying diameter limits and canopy closure considerations to a wider range of tree size classes.

Following are other key elements in my decision that will improve effectiveness and implementation of the fuels strategy, while protecting habitat components important to the California spotted owl:

#### PAC Treatment

- Mechanical treatments in PACs in the WUI threat zone will only be allowed when necessary to ensure the overall effectiveness of the landscape fire and fuels strategy. This evaluation will take into account the condition of the PAC and its use by spotted owls and its expected resiliency to treatment.
- My decision makes no changes to the type of treatment that may be used in PACs outside the WUI. Where PACs cannot be avoided outside the WUI, prescribed fire is still the only treatment option.

#### Home Range Areas

- Standards and guidelines for mechanical thinning are modified to reduce complexity of implementation rules and to improve the overall effectiveness of the fire and fuels strategy.
- Home Range Core Area (HRCA) Habitat Quality: My decision provides habitat quality goals for HRCAs. It requires the HRCA to be managed for canopy closures of at least 50-70 percent. This quantification of habitat quality reflects conditions presently mapped.

Other important direction for ensuring the viability of the California spotted owl is still in place. Overall, management activities in PACs will be minimized. Within the HFQLG Pilot Project Area, vegetation and fuels treatments will not be conducted within PACs during the life of the pilot project, with the exception of light underburning to enhance habitat suitability. SOHAs are also off limits for treatments. Outside of PACs, all trees greater than or equal to 30 inches dbh will be retained, changes to canopy cover are limited and basal area retention standards apply to all mechanical thinning. Following the completion of the pilot project, the same direction for the rest of the Sierra Nevada will apply to the HFQLG Pilot Project Area.

Finally, the FEIS for the SNFPA 2001 ROD, evaluated the viability of California spotted owls based solely on the availability of habitat on National Forest System lands. However, the California Forest Practices Act regulations also require private industrial timberlands to be managed in a sustainable manner. Currently, 17% of spotted owl PACs in the Sierra Nevada are on private lands. Although not a basis for my decision, I believe that private land could be an important contribution to California spotted owl habitat and that this should be further investigated in future planning efforts.

#### Pacific Fisher

The Pacific Fisher is another old forest dependent species. Many of the habitat attributes discussed above for the California spotted owl are important to the fisher as well. Thus, a lot of the protections for the owl will also benefit the fisher. An important change that I am making between the draft and final SEIS is to reinstitute the desired conditions for the Southern Sierra Fisher Conservation Area. These conditions along with management objectives will guide project level planning in the area and provide important habitat elements for the fisher. Old forest habitat fragmentation will be minimized. In addition, because there is some uncertainty about the habitat needs of the fisher, as part of my adaptive management proposal, I am recommending the continuation of existing status and change monitoring and the

completion of a number of research studies currently under way. There is concern about persistence of the species because of its limited and fragmented distribution. Therefore, I am initiating discussion with the California Department of Fish and Game to explore re-introduction opportunities.

## Fire and Fuels Management

The SNFPA goals for fire and fuels management are still valid. These goals are so important that issues that have impeded implementation during the past three years cannot be ignored. Doing little or nothing is not acceptable. Actions are needed to effectively treat vegetation in key areas to reduce the risk of future tragedies, like the 2003 fires in Southern California and elsewhere in the west. I am willing to take a more active approach to this problem because of the significant risks catastrophic fire poses to firefighter safety and communities. This approach still provides for the canopy cover, big trees and understory required by the California spotted owl and other species. I have considered input from Forest Supervisors, District Rangers, the SNFPA Management Review, and a Washington Office Review of the fuel management strategy. All have consistently made similar findings. We cannot do the job we need to do with the direction in the SNFPA 2001 ROD.

Nearly 8 million acres are in condition class 2 and 3. Condition class 3 represents those areas at greatest risk of ecological collapse because it has been so long since fire operated as a process in the ecosystem. Condition class 2 lands are those areas where fire regimes have been so altered from their historic range of fire return interval that they are at moderate risk of losing key ecosystem components as a result of wildfire. The situation is ripe for more firestorms, like we experienced in southern California in 2003 and throughout the west in recent years. We find ourselves needing more and more elite fire crews because of the complexity of fighting fire and the dangerous situations it puts fire fighting forces in. We have over 5,100 fire fighters in Region 5. These forces are being stretched thin across long fire seasons nationwide and by State budget crises that affect their ability to marshal forces. Despite the heroic efforts of our elite firefighters and the most advanced fire fighting technology in the world, we continue to suffer unacceptable loss of life, property and critical habitat. Under these circumstances we cannot expect our suppression forces to continue to be effective if vegetation conditions aren't altered.

Our ability to strategically place fuel treatments for optimum effectiveness has been compromised by the set of complicated rules in the SNFPA 2001 ROD. The standards and guidelines in that ROD are applied at the stand level, rather than by land allocations. An individual area treatment generally encompasses numerous individual stands, requiring each stand to be delineated so that the appropriate standards and guidelines could be applied. Some of the rules are so detailed that they prescribe down to one acre what is allowed, and require measuring change in canopy to ten percent increments, which is not consistently practical with existing measurement tools. This fine-scale approach limits our ability to make significant progress.

To allow more flexibility to strategically locate fuel treatments and implement effective treatments, this decision adopts standards and guidelines for mechanical thinning treatments in mature forest habitat (CWHR types 4M, 4D, 5M, 5D, and 6) outside defense zones. These standards and guidelines specify (1) minimum canopy cover levels, basal area of trees to retain following mechanical thinning treatments, and retention of all trees 30 inches or larger in diameter, (2) surface and ladder fuel post-treatment conditions in fuels treatment units, and (3) guidelines for post-fire restoration activities, general salvage, and snag and down woody material retention. Modified standards and guidelines are established for eastside pine vegetation types.

Depending on which timeframe is referenced (the past eight years, or past four years), 2.5 to 4.5 California spotted owl PACs are being lost to wildfire each year. Standards and guidelines in the SNFPA 2001 ROD were intended to provide protection for PACs. However, when these standards and guidelines are applied collectively, the threat to PACs from wildfire is increasing in both the short and long term. Once again, our ability to strategically place fuels treatments on the landscape has been compromised by



the complexity of rules. And, as more habitat is lost to wildfire, the opportunity to relocate PACs becomes more limited and results in more fragmentation of habitat. This decision is intended to reverse that trend. It allows mechanical treatments, where necessary in PACs in threat zones. Outside the wildland urban interface zone where necessary, PACs may be treated with prescribed fire.

PACs are still recognized as sensitive places on the landscape. We will continue to limit the total number of PAC acres treated annually and per decade. We will continue to avoid treatments in PACs to the greatest extent possible. Based on the landscape analyses done for the Middle Fork Consumnes River and two other watersheds, we can conclude that, although potentially 26% of the spotted owl PACs or 4% of PAC acreage could be affected by mechanical fuels and prescribed burn treatments in the next 20 years, in reality PAC locations can often be avoided. Further, if treated, only portions of PACs would be treated. A more accurate measure of monitoring the degree of habitat alteration appears to be acres treated rather than numbers of PACs entered.

Modifications to some of the diameter size limits imposed by the SNFPA 2001 ROD will improve the cost-effectiveness of projects. Despite these modifications, the net growth of our forests continues to far outpace harvest. This decision allows local managers to consider the removal of medium-sized trees (less than 30 inches diameter) at the site-specific project level, rather than to implement a uniform fuel hazard reduction prescription for the entire Sierra bioregion. We can make better choices by having the ability to consider crown positions and the numbers of trees within each diameter class and their contribution to ladder and crown fuels in the fuel profile at the project level. We can also factor in the frequency of entries to the site that will be needed to achieve desired reductions in condition class. Expanded use of mechanical treatments can be used to set the stage for prescribed fire as a follow-up treatment, or to deal with those specific situations when we are concerned about smoke or available burn days.

The emphasis in the SNFPA 2001 ROD to focus on removing small fuels, outside the threat and defense zones, effectively precludes most commercial options for removing fuels. The potential supply of raw material for biomass far exceeds regional market demand and is costly to get to market. We're losing the capacity to remove larger diameter fuels.

As the timber industry has waned, there have been situations in the west where markets simply were not available to accept the vast quantities of fuel that needed to be removed from the forest to make them resistant to fires and insects. When the predictable flow of wood products is lost, the cost of doing business increases, and wood processing facilities close. The result is that cost-effective marketing options for fuel treatments are also lost. Southern California forests struggled to dispose of thousands of acres of bark beetle- and drought-killed timber prior to the most catastrophic fire event in California's history. Similar scenarios occurred in other communities in California, Colorado, and Arizona following large fires and insect outbreaks. This decision is intended to keep some market options alive and enhance the profitability of removing the small fuels.

The total sale volume of green volume for the 11 national forests is estimated to be approximately 330 million board feet (MMBF) for the first decade, which includes approximately 210 MMBF from the pilot project for the Herger-Feinstein Quincy Library Group. Volume from salvage harvest is estimated to potentially contribute an additional 90 MMBF per year. This decision does not change the capable, available, and suitable timber land determinations made in individual forest plans. This decision does not schedule any regulated timber harvest from these lands. Scheduling regulated timber harvest and the associated Allowable Sale Quantity (ASQ) is part of the land and resource management planning process and will be addressed in forest plan revisions. During these plan revisions, long range forest sustainability and forest health considerations can be addressed. This decision is focused on some immediate short-term actions to begin to create conditions to restore fire in the ecosystem. At a minimum, in five years we will evaluate this decision as information from adaptive management experiments becomes available.

## Aquatic, Riparian and Meadow Ecosystems

The SNFPA goal of protecting and restoring desired conditions of aquatic, riparian and meadow ecosystems and providing for the viability of species associated with those ecosystems remains unchanged. With this decision, I am retaining the Critical Aquatic Refuges, the Riparian Conservation Areas, and the goals of the Aquatic Management Strategy established in the SNFPA 2001 ROD.

We now have two years of field surveys to advance our conservation efforts for the Yosemite toad and willow flycatcher and have completed a conservation assessment for the willow flycatcher. Significant progress has been made toward the completion of conservation assessments for other riparian dependent species including the foothill and mountain yellow-legged frogs, cascades frog, Yosemite toad and northern leopard frog. Standards and guidelines for grazing utilization, streambank trampling, and willow browse remain essentially unchanged. These guidelines, coupled with our existing direction for grazing management, give assurances that meadow hydrology and important habitat attributes will be managed to support these sensitive species.

I am concerned about the degree to which the existing direction impacts small ranching operations. We now have specific information about the extent that Yosemite toad and willow flycatcher habitat overlap with active grazing allotments and packstock operations. This information was not available to be considered in the 2001 SNFPA ROD. Eleven percent of the active allotments are impacted by standards and guidelines for willow flycatcher, Yosemite toad, and great gray owl. Modifying standards and guidelines to allow for more site-specific considerations reduces negative impacts to grazing operations on 14 allotments. The overall result is that by developing site-specific strategies and relaxing restrictions where sensitive species are not present, economic losses can be reduced.

Again, there is much to learn about whether and how different grazing practices affect the Yosemite toad and willow flycatcher. My decision maintains the habitat components that have been identified as being important to these species, but I want to do more. For the willow flycatcher, as described in chapter 2 of the Final SEIS, I will initiate a conservation strategy to build upon the recently-completed conservation assessment. The conservation strategy will include specific management recommendations for such issues as meadow condition, monitoring, nest predation, habitat restoration, and cowbird parasitism. The conservation strategy will be an interagency product, incorporating input from the State of California, as well as the U.S. Fish and Wildlife Service. I am also allowing year-round grazing in meadows occupied by willow flycatchers where site-specific management plans can be developed to ensure adequate protection for the species and its habitat. I firmly believe that, in some cases, by working together, permittees and local managers can develop site-specific solutions that are superior to broad regional guidelines. My expectation is that some of these solutions will provide a cornerstone for testing, monitoring, and perhaps changing these broader guidelines over time.

For the Yosemite toad, I am directing the completion of on-going surveys of suitable habitat within the species' historic range to be completed within two years of this decision. Additionally, in collaboration with the Pacific Southwest Research Station, affected permittees, and local managers, the Region will initiate a study or series of studies of the effects of ongoing grazing practices on habitat attributes important to the species.

### Willow Flycatcher

This decision puts protective measures in place for the willow flycatcher and introduces a proactive approach to managing habitat while reducing impacts to grazing permittees. I am continuing the four-year survey cycle of all occupied and historically occupied willow flycatcher sites and requiring that meadows be assessed for potential restoration needs when they are no longer used as nesting locations.

My decision draws a distinction between occupied habitat and unoccupied habitat and applies different levels of management on the basis of occupancy. In part, I am doing this for clarity and to ensure that

newly discovered sites and long-term nest locations are managed similarly. Direction in the SNFPA 2001 ROD excluded grazing in most of these meadows. The underlying objective was to optimize protection of the resource elements that provide quality willow flycatcher habitat (i.e. hydrology, willows, grass and grass-like plants). I believe we can still provide for high quality habitat without total exclusion of livestock by controlling the season of use and by continuing to employ conservative utilization standards on willows, grass and grass-like plants. Therefore, my decision allows late-season grazing (after August 15) in meadows with occupied willow flycatcher habitat.

### Yosemite Toad

This decision excludes grazing from occupied Yosemite toad habitat except where an interdisciplinary team has developed a site-specific plan to successfully manage stock around these areas. In doing so, I am allowing field managers to capitalize on site conditions and characteristics that cannot be foreseen at a regional scale. These grazing restrictions do not apply to packstock or saddle stock. Given the relatively low concentration of these animals in the affected areas and the disparate characteristics and needs of this user group, I believe that this management direction is most appropriately developed as part of individual forest plan direction.

### Recreation

This decision reaffirms that providing recreation opportunities is one of the Forest Service's major missions in California, along with providing sustainable, healthy ecosystems. Many recreation experiences in the Sierra Nevada are provided under special use authorizations. Many facilities, some representing investments of hundreds of millions of dollars, have been constructed by permit holders. Authorized recreation businesses contribute significantly to the economic base of communities and counties that rely on national forest recreation for employment, wages, and taxes. Projected population growth in the United States and increasing tourism in this region, along with other factors, clearly contribute to increasing demand for recreation facilities and services throughout the Sierra Nevada national forests. My decision reverses unintended impacts to recreation.

Decisions for recreation activities will be made at the local level to reflect site-specific conditions. My decision clarifies that standardized limited operating periods for old forest dependent species apply only to vegetation management activities. Similarly, vegetation management standards and guidelines (e.g., canopy cover retention) only apply to mechanical thinning and not to recreation and special use projects. Clarification is made that a landscape analysis is not a pre-requisite for project analysis and implementation. Existing uses in CARs and RCAs will be evaluated at the time of permit re-issuance to correct problems and achieve consistency with the land management plan. These minor changes will reduce the unintended and adverse impacts on recreation users and permit holders.

### Implementation of the Herger-Feinstein Quincy Library Group (HFQLG) Forest Recovery Act Pilot Project

The HFQLG Pilot Project was designed and intended to provide information needed to reduce scientific uncertainty regarding the environmental outcomes of certain forest management activities. However, the changes overlaid by the SNFPA prevented full implementation of the Forest Recovery Act. This eliminated our ability to study and understand the consequences of certain forest management practices in the Pilot Project Area. The goal of commodity production, associated with this Act, was also affected by the SNFPA 2001 ROD.

This decision provides for implementation of the HFQLG Forest Recovery Act Pilot Project, consistent with the HFQLG Forest Recovery Act. Upon conclusion of the pilot project, management activities on the Plumas and Lassen National Forests and the Sierraville Ranger District of the Tahoe National Forest will

be guided by direction under Alternative S2 for the Sierra Nevada national forests, pending forest plan revisions. Thus, this pilot project is back on track and meets one of the cornerstone objectives of the SNFPA for adaptive management.

### Adaptive Management and Monitoring

Throughout the development of the Final SEIS and the formulation of this decision, I insisted that this amendment be scientifically credible. To help achieve that goal, I asked the Pacific Southwest Experiment Station to conduct a science consistency review (SCR, Final SEIS, Appendix E) of the draft SEIS. The report submitted to me in October, 2003 was used by the interdisciplinary team to improve the environmental analysis and to acknowledge scientific uncertainty and differing points of view. With these improvements, I believe the final SEIS is generally consistent with available science.

One key finding in the science consistency review was that there is a degree of uncertainty in a number of areas, especially related to the relationship between management activities and their effects on wildlife habitat and populations. A strong recommendation in that report was to use an adaptive management approach to move forward with some level of management coupled with experimentation and learning. I adopt that recommendation.

Another area of uncertainty that surfaced in the science consistency report and in other public comments relates to the long-term projections for vegetation conditions and events like wildfire. The forecast period of the first 20 years, used during the analysis is a fair projection of these conditions and events and are used to identify near term effects. Longer term forecast periods (eg. 120 years) have greater uncertainty and reliability. The longer term modeling is useful to identify general trends, and not quantifiable targets. Hence, I did not rely on these longer term projections in my decision.

I want to set realistic expectations about this decision and commitments that I am making for an adaptive management and monitoring program. It is a system that can help us learn, it provides us the opportunity to interact with stakeholders to share and interpret data, and it can lead to creative solutions that fit ecosystem processes within the context of law and cost-effective management. However, it may be easier to promise than it is to deliver. It sounds good to say that we can create a feedback loop that will inform us about when to stop or modify activities that are showing signs of adverse impact, or are taking us off the path of the stated goals for desired conditions, but, in reality, knowing when and how to respond to trigger points is difficult. Long-term consequences and impacts of cause and effect relationships beyond local areas will also be difficult to interpret and may be confounded by statistical error terms that are larger than the trends we are trying to measure.

The Forest Service has a long history of investing in monitoring data and research studies, such as the California spotted owl demography studies, which have been conducted for the past 15-20 years. The Kings River Project is an excellent example of a cooperative research study conducted by the Pacific Southwest Experiment Station and the Sierra National Forest that is evaluating response of forests to applied uneven-aged silviculture and prescribed fire activities. The Plumas and Lassen National Forests Case Study is another example. We have made very large investments in all types of data collection and databases. However, a weakness in all our systems has been that information is not readily available out of individual program databases, data isn't timely or published for managers to utilize, and the long-term commitment to funding isn't made.

Given that, it is my intent initially to focus on a few things with this program that institutionalize adaptive management and monitoring, rather than add a lot more to existing obligations.

- I will centralize activity reporting in the region in the FACTS database. Every forest will begin using this system in 2004. A backlog of historic data is being entered into the system to provide a baseline for evaluating what activities are occurring and where.

- I will establish an evaluation process, to be conducted annually, that informs management of 1) whether direction is being implemented as prescribed, 2) whether desired conditions are being met, and 3) if management practices are resulting in expected outcomes.
- I will provide for bioregion-wide tracking of key attributes of fuels reduction projects to 1) monitor achievement of the landscape-level desired conditions and 2) based on changes observed at the project-level, assess the need for modifications to the standards and guidelines at the forest and bioregion level. Organizational roles and responsibilities will be defined to institutionalize this.

In the Final SEIS, chapter 2, Description of Alternative S2, there is a lengthy, more detailed discussion of a proposed adaptive management program designed to address high priority, key questions that relate to the uncertainties associated with management activities and their effects on wildlife habitat and modified wildfire behavior. There is a description and status report for ongoing monitoring and research underway in the Sierra Nevada. I am directing the Sierra Nevada implementation team to complete an assessment of the cost of initiating the new work identified in chapter 2nd to develop recommendations on whether and/or how to adjust existing research and monitoring work to better integrate these new information needs. Additional analysis and staff work should be completed to include recommendations on the policy and technical arrangements to implement this adaptive management program in collaboration with others. These analyses and recommendations should be completed within 6 months of the date of this decision.

### III. Public Involvement and Public Comment

#### Public Involvement

During the public comment period from early June through August 2003, each forest supervisor strongly attempted to engage the local communities through a variety of comment opportunities. The majority of those contacted were interested in the proposals and clearly some groups expressed high interest in the proposed management actions.

Each national forest worked with the general public, elected officials, Resource Advisory Councils (RAC's), Native Americans, special interest groups, the media and other people in their local area.

Supervisor's and their staffs hosted field trips, attended and presented programs to special interest or local groups, submitted opinion editorials, provided written material or audio visual programs, talked with the media, and discussed with a wide variety of interests the proposals for future management. In addition, a web site was available for further information on management proposals. Citizen participation varied ranging from minimal at some public meetings, to greater participation at special interest group presentations, or at specific events.

USFS employees also were briefed or requested to monitor the development of the Draft SEIS to more adequately discuss the project with the public or participate in its development.

The intent of the public involvement program was to inform people of the opportunity to review the Draft SEIS and to comment on it. The activities focused on explaining the need for action to improve accomplishments of Framework goals, National Fire Plan, HFGLG Pilot Projects and means to reduce impacts of recreation and grazing activities. The public involvement activities explained the proposed changes and compared them to the current SNFPA rules, especially as they accomplished habitat protection and reduced wildfire losses.

A sample of the methods used by each national forest for public involvement includes the following:

- Elected officials – letters or meetings to federal, state, or county government leaders, field trips.
- Public meetings – open house, collaborative or formal meetings.

- Special interest groups – group meetings, field trips, presentations, individual leadership meetings.
- Fire Safe Councils – presentations to council or key leaders.
- Service Clubs – presentations.
- Media – Opinion editorial’s, electronic media interviews, reporter briefings, accompaniment on field trips, news releases.
- Native Americans – presentations to tribal leaders, letters of notification on public comment periods,
- Employees – letters or briefings.
- Federal/State/County/City Agency – letters or briefings.

## Public Comment

The Draft SEIS was available for public review and comment from June 13, 2003, to September 12, 2003. During the comment period, the Forest Service heard from nearly 56,000 people. The agency received approximately 1,300 individual letters, 3 resolutions, and approximately 600 different form letters. Organized response campaigns accounted for 97.5 percent of the total pieces of mail (53,866 form letters out of a total of 55,258) received during the public comment period. These response campaigns generally fell into one of two categories: forms or multi-signature letter (numerous signatures on one letter). Over 400 public concerns were identified from the comments.

Public concerns reflected a broad range of views relative to the proposed action and analysis of alternatives presented in the Draft SEIS. Numerous concerns were raised about the purpose and need for the proposed amendment and many questioned the agency’s decision to propose an amendment. The Forest Service received a wide variety of comments regarding the adequacy of the environmental analysis presented in the Draft SEIS. Generally, the public expressed a desire to see more information in the Final Supplemental Environmental Impact Statement, such as information regarding impacts to recreation, grazing, timber production, cultural resources, and socio-economics.

Many comments expressed concerns that the Draft SEIS did not adequately address impacts to at-risk Sierra Nevada wildlife species, including the California spotted owl, fisher, marten, willow flycatcher, and amphibians, such as the mountain yellow-legged frog and the Yosemite toad. Changes in grazing restrictions and projected increases in mechanical harvesting under the preferred alternative raised concerns about potential fragmentation of important habitats for these species and possible adverse impacts. Concerns were raised that the proposed amendment could undermine the Forest Service’s mandate under the National Forest Management Act to maintain viable populations of designated sensitive species. Others asserted that improving forest health should not be overridden by wildlife habitat objectives, and requested the Forest Service to craft an amendment that provides for maximum flexibility in carrying out fuels reduction and forest health projects.

The public expressed a broad range of concerns relative to fire and fuels management. Goals for protecting communities from wildfire and for preserving species and ecosystems were often viewed as conflicting. Public comments regarding fire and fuels management reflected this conflict with comments that were often polarized in a “protect people” versus a “protect the environment” stance. Broad themes in public concerns relative to fire and fuels management included: a need to harmonize planning efforts with national direction, a need to clarify and justify information presented in the SEIS, a need to ensure funding for fire and fuels management, and a need to better define where treatments will occur and what techniques will be used for fire and fuels treatments.

## IV. Application of Decision

### Application to Land and Resource Management Plans

This decision amends existing national forest land and resource management plans by establishing:

- Management direction and goals;
- Land Allocations
- Desired future conditions expected over the next 50 to 100 years;
- Standards and guidelines to be used in designing and implementing future management actions;
- A strategy for inventory, monitoring, and research to support adaptive management.

This management direction is described in the ROD, Appendix A, and is incorporated into the existing land and resource management plans for the Modoc, Lassen, Plumas, Lake Tahoe Basin Management Unit, Tahoe, Eldorado, Stanislaus, Sequoia, Sierra, and Inyo National Forests of California, and that portion of the Humboldt-Toiyabe National Forest that is in the Sierra Nevada. This ROD replaces, in its entirety, the SNFPA ROD of January 2001.

This decision does not change the capable, available and suitable (CAS) lands determination made in forest plans. This decision does not schedule any regulated timber harvest from these lands. Scheduling of regulated timber harvest and its associated Allowable Sale Quantity (ASQ) will be addressed as part of forest plan revisions. The schedule for forest plan revision is available on the web at <http://fsweb.wo.fs.fed.us/em/nfma/index2.htm>.

### Relationship of Standards and Guidelines to Existing Plans

The existing land and resource management plans contain many standards and guidelines that are not amended by this decision. All standards and guidelines from the 2001 SNFPA ROD are replaced by the standards and guidelines in Appendix A. This decision does not affect the direction in the following plans and projects:

- Upper Pit River Watershed Restoration Project
- Hackamore Ecosystem Restoration and Enhancement Project
- Warner Mountain Rangeland Management Planning
- Experimental Stewardship Project, Mood National Forest joint with Bureau of Land Management at Surprise Resource Area
- Big Valley Sustained Yield Unit
- Wetlands Development and Maintenance, primarily for Waterfowl and Birds of Prey – Modoc Plateau
- Juniper Sage Steppe Ecosystem area, Modoc National Forest
- Giant Sequoia National Monument Management Plan
- Lake Tahoe Basin Management Unit Presidential Commitments
- Experimental Forest and Ranges (Blacks Mountain, Teakettle, Challenge, Stanislaus, Kings River, San Joaquin, Goosenest, and Swain Mountain)
- Those portions of the Lassen and Modoc National Forests covered by the NWFP ROD

## V. Alternatives Considered

I have considered a broad range of alternatives, including those alternatives analyzed in the SNFPA FEIS and this Final SEIS. I have reviewed these alternatives and the effects analysis in light of the purpose and need for this supplement and in light of public comment.

### A. Alternatives Considered in Detail

Nine alternatives are considered in detail: the no action alternative (Alternative S1), the proposed action (Alternative S2), and seven action alternatives from the FEIS (Alternatives F2-F8). The no action alternative (Alternative S1) continues management in the 11 Sierra Nevada national forests consistent with the Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (ROD, January 2001). Alternative S2 proposes specific changes to the SNFPA ROD.

**Alternative S1: Theme - Continue management in existing national forest land and resource management plans; manage sensitive wildlife cautiously**

Alternative 1 is the no action alternative required by the National Environmental Policy Act. Management in the planning area would continue under existing decisions and management direction in the Records of Decision for existing land and resource management plans, as amended by the Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (ROD, January 2001).

Alternative S1's approach for conserving old forest ecosystems and associated species and managing fire and fuels responds to concerns that impacts from mechanical fuels treatments may pose greater risks to habitats, particularly in the short-term, than the risks posed by potential wildland fires and the mechanical treatments themselves. Alternative S1 applies a cautious approach for conducting activities in habitats for sensitive species, particularly species associated with old forest ecosystems. Alternative S1 retains canopy cover and limits the sizes of trees that can be removed during fuels treatments. Vegetation treatments are focused on fire hazard reduction, maintenance activities, and public health and safety. Implementation of S1 relies largely on appropriated funds to accomplish fuel hazard reduction.

The No Action Alternative also provides direction for limiting and, in some cases, eliminating grazing from habitat that is or has been occupied by the Yosemite toad and willow flycatcher. This alternative applies limited operating periods to vegetation management activities in the vicinity of California spotted owl and northern goshawk nest sites and forest carnivore den sites. Limited operating periods may apply where analysis of proposed projects or activities determines that such activities are likely to result in nest or den site disturbance.

**Alternative S2: Theme - Proposed Action, the Selected Alternative**

Under the proposed action (Alternative S2), Forest Service managers would use thinning, salvage, and prescribed and natural fires to make forests less susceptible to the effects of uncharacteristically severe wildfires, as well as invasive pests and diseases. Goals established in the SNFPA ROD for conservation of old forest ecosystems and associated species would be retained. However, this alternative also provides for other important elements of old forest ecosystems, including the objectives of reducing stand density and regenerating shade intolerant species.



Alternative S2 would adopt an integrated vegetation management strategy with the primary objective of protecting communities and modifying landscape-scale fire behavior to reduce the size and severity of wildfires. This alternative would provide for the removal of some medium-sized trees to increase the likelihood of accomplishing program goals with limited funding. Alternative S2 acknowledges the role that the Forest Service plays in providing a wood supply for local manufacturers and sustaining a part of the employment base in rural communities. This alternative would address the need to retain industry infrastructure by allowing wood by-products to be generated from fuels treatments and for dead and dying trees to be salvaged after wildfires. This active approach to vegetation and fuels management accepts the risks of temporarily changing some habitat for California spotted owls and other species to reduce the future risk of wildfire to habitat and human communities.

Alternative S2 would include the SNFPA ROD's network of land allocations, with some modification and clarification of the associated desired conditions. Alternative S2 would replace many of the standards and guidelines in the SNFPA ROD pertaining to old forest ecosystems, associated species conservation, and fire and fuels management. Alternative S2's replacement standards and guidelines would give greater flexibility to local managers to design projects to respond to local conditions, while meeting desired future conditions unique to each land allocation.

Pending completion of the forest plan amendments/revisions required by the HFQLG Forest Recovery Act, vegetation management activities on the Plumas and Lassen National Forests and the Sierraville Ranger District of the Tahoe National Forest would be guided by the direction of Alternative S2. Alternative S2 provides for implementation of the HFQLG Forest Recovery Act Pilot Project and employs the land allocations specified in the Act for the life of the pilot project. As in Alternative S1, vegetation management in riparian areas within the HFQLG Pilot Project Area would be handled under the SAT guidelines for the life of the pilot project.

Alternative S2 also includes standards and guidelines for managing grazing within habitat that is or has been occupied by the Yosemite toad and willow flycatcher. This management direction is designed to allow local managers to develop site-specific approaches to meet overall program goals for species conservation. Some flexibility is provided to allow managers to take advantage of unique opportunities that can only be identified at the project-level. This alternative would invoke limited operating periods for vegetation treatments in the vicinity of nest sites for California spotted owl and northern goshawk and near furbearer den sites.

## Alternative F2: Theme - Establish large reserves where management activities are very limited

Alternative F2 establishes large reserves, where human management is very limited, to maintain and perpetuate old forest, aquatic, riparian, meadow, and hardwood ecosystems. Alternative F2 responds to views that ecosystems should be protected from all but minimal human-caused disturbances and conditions that "nature" delivers are desired.

## Alternative F3: Theme - Actively manage to restore ecosystems. Use local analysis and collaboration

Alternative F3 emphasizes restoration of desired ecosystem conditions and ecological processes through active management determined through landscape analysis, monitoring, and local collaboration. Management activities would promote ecosystem conditions and ecological processes expected within natural ranges of variability under prevailing climates.

#### Alternative F4: Theme - Develop ecosystems that are resilient to large-scale, severe disturbances

Alternative F4 emphasizes the development of forest ecosystem conditions that anticipate and are resilient to large-scale, severe disturbances, such as drought and high intensity wildfire, common to the Sierra Nevada. The alternative is consistent with the view that ecosystems should be actively managed to meet ecological goals and socioeconomic expectations. Alternative F4 would have the greatest number of acres available for active management including timber harvest.

#### Alternative F5: Theme - Preserve existing undisturbed areas and restore others to achieve ecological goals. Limit impacts from active management through range-wide management standards and guidelines

Alternative F5 preserves existing undisturbed areas and restores others to achieve ecological goals. Alternative F5 emphasizes reintroducing fire as a natural process and using fire to reduce fire and fuel accumulations.

Unroaded areas larger than 5,000 acres, ecologically significant unroaded areas between 1,000 and 5,000 acres, and inner zones of riparian areas would be preserved and left to develop under natural processes. Other areas, including old forest emphasis areas and general forest, would be restored under a limited active management approach to increase the amount of, and enhance processes associated with, old forest conditions. Alternative 5 limits impacts from management activities by specifying range-wide management standards and guidelines.

#### Alternative F6: Theme - Integrate desired conditions for old forest and hardwood ecosystems with fire and fuels management goals. Reintroduce fire into Sierra Nevada forest ecosystems

Alternative F6 integrates desired conditions for old forest and hardwood conservation with fire and fuels management. This alternative provides direction for implementing a landscape-scale strategic fuels treatment program in high-risk vegetation types across Sierra Nevada landscapes to: (a) reduce the potential for large severe wildfires, and (b) increase and perpetuate old forest and hardwood ecosystems, providing for the viability of species associated with these ecosystems.

Alternative F6 emphasizes re-introducing fire into Sierra Nevada ecosystems, particularly old forest ecosystems. It uses active management to protect and restore desired ecosystem conditions. Prescribed fire is emphasized in old forest emphasis areas, while a mix of prescribed fire and mechanical treatments may be used in general forest areas to move toward and maintain desired conditions.

#### Alternative F7: Theme - Actively manage entire landscapes to establish and maintain a mosaic of forest conditions approximating patterns expected under natural conditions.

Alternative F7 aims to establish and maintain a diversity of forest ages and structures over the landscape in a mosaic approximating patterns that would be expected under natural conditions, that is conditions characterized by current and expected future climates, biota, and natural processes. Ecosystems and ecological processes would be actively managed to maintain and restore them to desired conditions. Silvicultural treatments could produce timber and other forest products.

Alternative F7 relies on few land allocations, applying what is commonly termed a “whole forest approach.” Most lands are designated in the “general forest” land allocation where active management is used to move landscapes toward desired conditions. Management is linked to desired conditions for California Wildlife Habitat Relationships (CWHR) stages and old forest condition goals, specific to the major Sierra Nevada forest types.

Alternative F8: Theme - Manage sensitive wildlife habitat cautiously. Develop new information to reduce uncertainty about the effects of management on sensitive species.

Alternative F8 emphasizes a cautious approach to treating fuels in sensitive wildlife habitat. New information from research and administrative studies would be developed to reduce uncertainty about the effects of management on sensitive species. Until further guidelines were developed, treatments in suitable California spotted owl habitat would retain specific levels of large trees, canopy cover, canopy layers, snags, and down woody material.

## B. Alternatives Not Considered In Detail

Seven additional alternatives were considered, but eliminated from detailed study. Alternatives were considered that would stage implementation of the Proposed Action for the first five years; would set a smaller diameter limit on tree removal; would apply the standards and guidelines of the proposed action to the Herger-Feinstein Quincy Library Group Act Pilot Project Area; would limit group selection in the Pilot Project Area to the area planned for the administrative study; would apply the standards and guidelines in the proposed action only to the urban-wildland interface; would include forest products as a primary management objective; and would make minor changes to individual standards and guidelines. Alternatives were eliminated because they did not respond to the purpose and need for action, new information, and/or implementation concerns. Some of these alternatives were also embedded in the Alternatives considered in detail

## C. The Environmentally Preferable Alternative

The Council on Environmental Quality (CEQ) regulations for implementing the NEPA require that the ROD specify “the alternative or alternatives which were considered to be environmentally preferable” (40 CFR 1505.2(b)). This alternative has generally been interpreted to be the alternative that will promote the national environmental policy as expressed in NEPA's Section 101 (CEQ's “Forty Most-Asked Questions,” 46 Federal Register, 18026, March 23, 1981). Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources.

In the short term, Alternative 5 of the Final SEIS, could be considered the environmentally preferable alternative. This is defined as the alternative having the least adverse effects to the physical and biological (as opposed to the social and economic) environments. The impacts from vegetation and fuels management activities in this alternative would pose the least risk to habitat in the short term, but may result in greater impacts in the long term. Alternative S2, while having some short term effects, may result in fewer long term impacts (see Final SEIS Chapter 2, Comparison of Alternatives).

## VI. Means to Avoid Environmental Harm

Extensive measures to avoid or minimize environmental harm are being continued in this decision. These measures have been discussed previously, and include forest-wide standards and guidelines, which at a minimum meet all requirements of applicable laws, regulations, State standards, and additional standards and guidelines for each land allocation. Mitigation measures are an integral part of the standards and guidelines. Singularly and collectively, they avoid, rectify, reduce, or eliminate potential adverse environmental impacts of forest management activities.

## VII. Findings Related To Other Requirements

The Forest Service manages the Sierra Nevada national forest in conformance with many Federal laws. In this section some of the more important laws pertinent to this programmatic-level decision are discussed.

### A. National Environmental Policy Act (NEPA)

NEPA requires that Federal agencies prepare detailed statements on proposed actions that significantly affect the quality of the human environment to provide decision makers with a detailed accounting of the likely environmental effects of a proposed action prior to its adoption, and to inform the public of, and allow comment on, such efforts.

The Sierra Nevada Forest Plan Amendment Project has compiled and generated an enormous amount of information relevant to the effects of each of the alternatives considered in the Final SEIS. Such information builds on the data, analysis, and public involvement set forth in the documents prior to this Final SEIS, which include the 1995 Draft EIS for Conservation of California Spotted Owl Habitat, the 1996 Revised Draft EIS for Conservation of California Spotted Owl Habitat, the 1996 Sierra Nevada Ecosystem Project Reports, the 1997 Federal Advisory Committee Report, the 1998 PSW Sierra Nevada Science Review publication, the 1998

USDA Forest Service Summary of Existing Management Direction, the 1998 California Forest EIS Review Committee Report, the SNFPA FEIS, Washington Office Fuels Review Report, and the Sierra Nevada Forest Plan Amendment Management Review and Recommendations report.

All substantive comments, written and oral, made on the Draft SEIS have been summarized and responded to in Volume 2 of the Final SEIS.

I find that the environmental analysis and public involvement process complies with each of the major elements of the requirements set forth by the CEQ for implementing NEPA (40 CFR 1500-1508).

This ROD does not authorize timber sales or any other specific activity on the Sierra Nevada national forests. Site-specific decisions will be made on projects in compliance with NEPA, ESA, and other environmental laws following applicable public involvement and administrative appeal procedures.

### B. National Forest Management Act (NFMA)

My decision conforms with the 1982 planning regulations (36 CFR 219) that implement the National Forest Management Act. I have been delegated the authority from the Chief to make the decision for amending the Humboldt-Toiyabe National Forest Plan for the Regional Forester of the Intermountain Region. I have determined that this decision is a significant forest plan amendment.

## Diversity and Viability Provisions for Fish and Wildlife

The National Forest Management Act (NFMA) requires the Secretary of Agriculture to specify “guidelines for land management plans developed to achieve the goals of the [RPA] Program which provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives” (16 U.S.C. 1604(g)(3)(B)). In accord with this diversity provision, the Secretary promulgated a regulation that provides in part: “[f]ish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area” (36 CFR 219.19, 1982 edition).

The scientific community and judicial courts recognize that NFMA does not create a concrete, precise standard for diversity. The Committee of Scientists that provided scientific advice to the Forest Service on the drafting of the 1979 NFMA regulations stated that “it is impossible to write specific regulations to ‘provide for’ diversity” and “there remains a great deal of room for honest debate on the translation of policy into management planning requirements and into management programs” (44 Federal Register 26600-01 & 26608).

In this planning context, absolute certainty is not possible. This has led to a planning process that involves projections regarding the distribution and abundance of ecological conditions needed to maintain viable populations of species well distributed throughout their range, in the planning area, over the next 50 years. Numerous factors, which vary according to the characteristics of the species and ecosystems examined, are considered. Some common factors include the life history of the species, the current and projected amount, and distribution of habitat, the distribution of species' ranges within the planning area, and principal risk factors to the species. I am adopting conservation measures to address these risk factors to provide biological conditions for species viability and persistence. In as biologically diverse and expansive an area as the Sierra Nevada, much of this type of information is evolving. Moreover, even absent any human-induced effects, the likelihood that habitat will continue to support a species' persistence can vary among species. Some species are inherently rare, such as locally endemic plants, and despite substantial protection may remain at risk. Other species may be at risk primarily due to factors beyond the Forest Service's control such as: (1) the effects of dams and diversions on at risk aquatic species, (2) the effects of limited or intermingled National Forest System land ownership, and (3) species only peripherally occurring on National Forest System lands. Thus, compliance with the regulation is a matter of assessing risk, which is not subject to precise numerical interpretation and cannot be fixed at any one single threshold.

In determining compliance with the NFMA fish and wildlife resource regulations, I considered existing and reasonably foreseeable conservation measures and factors under Forest Service authority or control. In addition to these land allocations and standards and guidelines that are part of my decision, other measures will affect species' conservation, including activities undertaken pursuant to internal policy directives (like the Forest Service's sensitive species program) and steps taken during project planning. Moreover, interagency efforts may identify additional conservation measures that may be discovered to be necessary as a result of the Conservation Assessments, inventory and monitoring, or other new information relative to the conservation of at risk species.

Based on my review of the record, including the Final SEIS, Biological Assessment (BA), Biological Evaluation (BE) and Biological Opinion (BO), I believe that the management approach embodied in this ROD represents a balance of wildlife habitat conservation measures that considers the available science and the risks associated with wildfires. It will provide the fish and wildlife habitat and other ecological conditions necessary to maintain well-distributed viable populations of vertebrate species in the planning area, and maintain the diversity of plants and animals.

## C. Endangered Species Act (ESA)

Consultation requirements under Section 7 of the ESA, as amended have been completed with the Fish and Wildlife Service and the National Marine Fisheries Service (NMFS). Both the Fish and Wildlife Service and the NMFS reviewed the Biological Assessment for the proposed threatened and endangered species under their regulatory jurisdiction. Consistent with direction in “Memorandum of Agreement, Endangered Species Act Section 7 Programmatic Consultations and Coordination among Bureau of Land Management, Forest Service, National Marine Fisheries Service and Fish and Wildlife Service, August 30, 2000,” the Fish and Wildlife Service included candidate species in their Biological Opinion. The Fish and Wildlife Service concluded that this decision is “not likely to jeopardize the continued existence of threatened and endangered species” occurring on the Sierra Nevada national forests. The NMFS concluded that the decision is “not likely to adversely affect” listed species based on previous consultations with the Lassen National Forest. Neither agency authorized incidental take of listed species, which will be addressed in required future consultations on LRMPs and projects as appropriate. Copies of correspondence with each agency are included in the administrative record.

## D. Clean Water Act

Full implementation of this decision is expected to maintain and improve water quality and satisfy all State water quality requirements. This finding is based on the standards and guidelines contained in the decision, the application of State approved Best Management Practices specifically designed to protect water quality, and the discussion of water quality and beneficial uses contained in the Final SEIS. Examples include (1) stream-type flexible width riparian areas, (2) critical aquatic refuges, (3) comprehensive landscape level analysis including existing uses, (4) Conservation Assessments of threatened and endangered species, and (5) incorporation of established recovery plans. Additionally, project-level analyses for activities subsequent to the decision will be required to demonstrate compliance with Clean Water Act and State water quality standards.

## E. Clean Air Act

At the scale of a programmatic plan such as this, the overall level of activities proposed under this decision is not anticipated to violate ambient air quality standards. This finding is based on information presented in the Final SEIS. The Sierra, Sequoia, and Inyo National Forests are in non-attainment for PM<sub>10</sub> while the Sierra, Sequoia, Eldorado, and Tahoe National Forests are in non-attainment for Ozone. Conformity determinations will be made at subsequent levels of planning and analysis where emissions can be more accurately quantified and reasonably forecasted, and local impacts assessed.

## F. Flood Plains and Wetlands (Executive Orders 11988 and 11990)

These Executive Orders require Federal agencies to avoid, to the extent possible, short- and long-term effects resulting from the occupancy and modification of flood plains, and the modification or destruction of wetlands. Standards and guidelines are provided for soil, water, wetlands, and riparian areas to minimize effects to flood plains and wetlands. They incorporate the Best Management Practices of the Soil and Water Conservation Handbook. The standards and guidelines apply to all floodplains and wetlands where less restrictive management might otherwise occur.

## G. Environmental Justice (Executive Order 12898)

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires that Federal agencies make achieving environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of their programs, policies, and activities on minority populations and low-income populations. As concluded in the FSEIS, no disparate or adverse effects are identified to groups of people identified in Civil Rights statutes or Executive Order 12898 (Environmental Justice) from the Proposed Action.

## H. Civil Rights

Civil Rights are defined as “the legal rights of United States citizens to guaranteed equal protection under the law” (USDA Forest Service Manual 1730). Civil rights impact analysis for environmental or natural resource actions is a necessary part of the social impact analysis package in environmental impact statement and is not a separate report (USDA FSH 1709.11).

The Forest Service is committed to equal treatment of all individuals and social groups in its management programs in providing services, opportunities, and jobs. Because no actual or projected violation of legal rights to equal protection under the law is foreseen for any individual or category of people, no civil rights impacts are reported in the Final SEIS.

## I. Magnuson-Stevens Act

The Forest Service is complying with the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSA; 16 U.S.C. 1801 et seq.) that requires Federal action agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH). Consultation has occurred with the U.S. Department of Commerce, National Marine Fisheries Service (NMFS) regarding salmon species included in the Pacific Salmon Fishery Management Plan. The Forest Service will comply with the EFH Conservation Recommendations provided by NMFS.

## J. Healthy Forests Restoration Act

On December 3, 2003, the Healthy Forests Restoration Act of 2003 was signed into law. The legislation provides new tools and additional authorities to treat more acres more quickly. The Act is intended to help expedite projects aimed at restoring forest and rangeland health by providing streamlined administrative decisions and provide courts direction when reviewing fuel reduction or forest health projects. The National Fire Plan and the Comprehensive Strategy is consistent with this Act. The Final SEIS and this decision provide direction to design and implement hazardous fuels reduction projects consistent with this law.

# VIII. Implementation

I am providing the following transition direction to ensure the orderly implementation of the Forest Plan amendments that are made in this Record of Decision. My intention is to provide for ecological restoration of processes and enhance long-term ecological integrity, assure the most efficient and

appropriate use of government resources, minimize costs to holders of existing government contracts and permits, avoid disruptions to local communities, and reduce the likelihood of confusion. I have considered and balanced each of these concerns in making my decision to issue this direction.

The amended Sierra Nevada National Forest Land and Resource Management Plans will be effective 30 days from the date on which notice of this decision is published in a newspaper of record. The new direction will apply to all project decisions made on or after the effective date of this amendment. The new direction does not apply to any projects that have decisions made prior to the effective date of this amendment. Projects currently under contract, permit, or other authorizing instrument, are not affected by the Forest Plan amendments. However, projects may be modified to adopt all or part of this direction where Forest officers deem it appropriate. Reissuance of existing authorizations will be treated as new decisions, which must be consistent with the new direction of the plan amendments adopted by this decision.

## A. Transition to the Amended Plans

The amended Forest Plans provide a programmatic framework within which project-level decisions are designed and implemented. As noted above, all projects for which a decision has not been made prior to the effective date of these amendments must be consistent with the new direction of the plan amendments. The amended Forest Plans themselves do not provide final authorization for any activity, nor do they compel that any contracts or permits be advertised or awarded.

## B. Incorporation of Standards and Guidelines and Monitoring Requirements

Each Forest Supervisor will assess their existing standards and guidelines to identify those that are superceded by the provisions of this decision and those that will remain operational. It is my intention that the adaptive management strategy developed for this Forest Plan Amendment will provide the coordinated foundation upon which all Sierra-wide monitoring required of the Forest Service in this ecoregion will be executed.

## C. Map Errata

The land allocations in the Final SEIS and this decision were developed using small-scale Sierra Nevada wide maps similar to those included in the map packets of the Final EIS. The level of inaccuracy of a line on a map at such a scale is approximately plus or minus 500 feet. Enlargements of this map were also sometimes used in land allocation development, but these maps contained no additional detail or accuracy; they were just larger scale. This approach was appropriate for the development of the maps, which is a permissive, zoning map. It is the role of subsequent project planning to resolve, within the overall intent of the mapped land allocations, the actual location of activities on the ground.

When utilizing these maps during the development of project plans, some variation in the boundaries of the land allocations may be identified. In some situations, there is a lack of precise map correlation or registration of a land allocation boundary between two GIS maps. Most of these variations are minor and are due to the combining of map covers of varying resolutions. This situation results in remnants, or “slivers” of small acreages of land appearing on the maps between mapped polygons.

In other situations during project planning land allocation boundaries may be indefinite or illogical if located literally on the ground as depicted on the Forest Plan Amendment map. In some instances



boundaries may appear to bisect an existing or mapped harvest unit; or, while paralleling an existing or mapped road, boundaries may appear to cross and recross the road randomly.

Dealing with these types of map inconsistencies is not considered to be a “change” in the Forest Plan. These are considered to be the correction or errata on an as-needed basis when it occurs during project planning or other analyses. These situations will be fully discussed and described in the project-level environmental analysis documentation.

Resolution of the occurrences discussed above will be guided by (1) following physical and other identifiable on-the-ground features, (2) considering assigning the land allocation that comes nearer to maintaining the natural setting of the area, or (3) using professional management judgement regarding the resource situation, in consultation with other agencies, with documented rationale.

## D. Collaboration

As part of implementation of this Forest Plan Amendment, the Forest Supervisors and District Rangers will increase their collaborative efforts within the communities of the Sierra Nevada. Much of this effort will focus around implementing the Healthy Forest Restoration Act and the National Fire Plan. With less of the “how to do” prescribed and more emphasis on choosing the right tool to achieve the desired condition, there is more opportunity for interaction among interested people that can lead to mutually acceptable resolution of resource issues. I am hopeful that such interaction and participation will lead to better acceptance of national forest management activities and improve relations among competing interests.

## E. Native American Relations

The relationship of the Forest Service with American Indians is important in the management and restoration of ecosystems in the Sierra Nevada and Modoc Plateau. To meet our trust responsibilities and to encourage the participation of American Indians in national forest management, I am making the following commitments on behalf of the Forest Service:

- We will work with tribal governments and tribal communities to develop mutually acceptable protocols for government-to-government and tribal community consultations. These protocols will emphasize line officers' and tribal officials' roles and responsibilities.
- We will consult with appropriate tribal governments and tribal communities regarding fire protection and fuels management activities that potentially affect rancherias, reservations, and other occupied areas. We will develop fire protection plans for such areas in consultation with appropriate tribal or intertribal organizations. We will coordinate with tribes and appropriate tribal organizations regarding training, outreach, and other items of mutual interest in order to support tribal and national forest fire programs.
- Traditional American Indian land use practices, tribal watershed and other ecosystem restoration practices and priorities will be considered early in national forest planning, analyses, decision making, and adaptive management processes. During landscape analyses and similar activities, we will assess vegetation community conditions where a specific area has an identified importance to an affected tribe or tribal community. We will consult with affected tribes, and, or tribal communities to consider traditional and contemporary uses and needs.
- We will consider traditional American Indian vegetation management strategies and methods, and integrate them, where appropriate, into ecosystem restoration activities. We will cooperate with tribes, tribal communities, and intertribal organizations to develop ecosystem stewardship projects.

- We will consider the relationship between fire management and plants culturally important to American Indians. Where fuels treatments may affect tribes or tribal communities, or plants culturally important to them, we will consult on the development of burn plans, and consider approaches that accommodate traditional scheduling and techniques of fire and vegetation management.
- When implementing noxious weed management programs we intend to maintain or, if appropriate, increase the availability of plants traditionally used by American Indians. We will consult with appropriate tribes, tribal communities, or tribal organizations to identify areas of new or worsening weed infestations and develop plans for appropriate weed control.
- We will, where appropriate, include culturally significant species in monitoring protocols related to management activities.
- We will maintain appropriate access to sacred and ceremonial sites and to tribal traditional use areas. We will consult with affected tribes and tribal communities to address access to culturally important resources and culturally important areas when proposing management that may alter existing access. After appropriate assessment and consultation, we will consider proposing mineral withdrawals and other protection of inventoried sacred sites.
- We will protect all sensitive and proprietary information to the greatest extent permitted by law. We will secure permission to release information from the tribe, tribal community, or individual who provided it prior to release to others.

## IX. Appeal Rights

This decision is subject to appeal in accordance with the provisions of 36 CFR 217 by filing a written notice of appeal within 90 days of the date specified in the published legal notice of this decision, as provided in 36 CFR 217.5(b) and 36 CFR 217.8(a)(3). The appeal must be filed with the Reviewing Officer:

Chief  
USDA Forest Service  
Attn: Appeals – Barbara Timberlake (Mail Stop 1104)  
1400 Independence Avenue, SW  
Washington, D.C. 20250-1104

**Email:** [appeals-chief@fs.fed.us](mailto:appeals-chief@fs.fed.us)

**FAX:** 202-205-1012

Office hours are 8 am to 4:30 pm Monday through Friday.

Acceptable formats for appeals filed electronically are .doc and .rtf.

A copy must simultaneously be sent to:

Regional Forester  
USDA Forest Service  
Pacific Southwest Region  
1323 Club Drive  
Vallejo, Ca. 94592

**Email:** appeals.pacificsouthwest-regional-office@fs.fed.us

**FAX:** 707-562-9091

Office hours are 8 am to 4:30 pm Monday through Friday.

The notice of appeal must include sufficient narrative evidence and argument to show why this decision should be changed or reversed (36 CFR 217.9). Requests to stay approval of the Forest Plans will not be granted (36 CFR 217.10(b)). For a period not to exceed 20 days following the filing of a Notice of Appeal, the Reviewing Officer shall accept requests to intervene in the appeal from any interested or potentially affected person or organization (36 CFR 217.14(a)).

Decisions on site-specific projects are not made in this document. Decisions on proposed projects will not be made until completion of environmental analyses and documentation for the specific project, in compliance with the NEPA.

## X. Contact Persons

If you would like more information on the Forest Plan Amendments or the Final SEIS, please contact the following officials:

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Project Team Leader  
1323 Club Drive  
Vallejo, CA 94592

**Phone:** 707-562-8822

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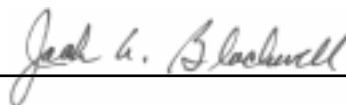
Katherine Clement  
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**Email:** kclement@fs.fed.us

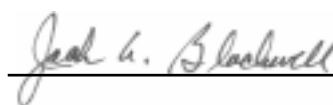
**FAX:** 707-562-9211

### Signatures

 January 21, 2004

JACK BLACKWELL  
Regional Forester,  
Pacific Southwest Region

Date

 January 21, 2004

for JACK D. TROYER  
Regional Forester,  
Intermountain Region

Date



# Appendix A: Management Direction

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# Appendix A: Management Direction

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## Introduction

This appendix provides management direction for the Record of Decision. It is attached to and part of the Record of Decision for the Final Supplemental Environmental Impact Statement (SEIS) for the Sierra Nevada Forest Plan Amendment (SNFPA), 2004.

This appendix has six parts. **Part A** presents broad management goals and strategies for addressing the five problem areas: old forest ecosystems and associated species; aquatic, riparian, and meadow ecosystems and associated species; fire and fuels management; noxious weeds; and lower westside hardwood ecosystems. **Part B** describes desired conditions for land allocations across Sierra Nevada national forests. **Part C** describes management intents and objectives. Management standards and guidelines in **Part D** provide direction for specific aspects of project planning and analysis. **Part E** sets forth management direction for the Herger-Feinstein Quincy Library Group Pilot Project Area during the life of the pilot project. **Part F** describes the monitoring plan for this Decision.

## A. Management Goals and Strategies

The Record of Decision lays out broad management goals and strategies for addressing the five problem areas: old forest ecosystems and associated species; aquatic, riparian, and meadow ecosystems and associated species; fire and fuels management; noxious weeds; and lower westside hardwood ecosystems.

### Old Forest Ecosystems and Associated Species

#### Goals

The broad goals of the old forest and associated species conservation strategy are to:

- protect, increase, and perpetuate desired conditions of old forest ecosystems and conserve species associated with these ecosystems while meeting people's needs for commodities and outdoor recreation activities;
- increase the frequency of large trees, increase structural diversity of vegetation, and improve the continuity and distribution of old forests across the landscape; and
- restore forest species composition and structure following large scale, stand-replacing disturbance events.

#### Strategy

The old forest ecosystem strategy has the following key elements:

- a network of land allocations, including California spotted owl and northern goshawk protected activity centers (PACs), California spotted owl home range core areas, forest carnivore den sites, and the southern Sierra fisher conservation area, with management direction specifically aimed at sustaining viable populations of at-risk species associated with old forest ecosystems well-distributed across Sierra Nevada national forests;

- a network of old forest emphasis areas managed to maintain or develop old forest habitat in areas containing the best remaining large blocks or landscape concentrations of old forest and areas that provide old forest functions (such as connectivity of habitat over a range of elevations to allow migration of wide-ranging old-forest-associated species);
- direction for restoring ecosystems across all land allocations following large-scale catastrophic disturbance events; and
- a proactive approach for improving forest health with management objectives to reduce susceptibility of forest stands to insect and drought-related tree mortality by managing stand density levels.

## Aquatic, Riparian, and Meadow Ecosystems and Associated Species

### Goals

The strategy for aquatic management provides broad goals (listed below), which are endpoints toward which management moves watershed processes and functions, habitats, attributes, and populations. The goals provide a comprehensive framework for establishing desired conditions at larger scales, including river basin, watershed, and landscape scales. Moving ecosystem conditions toward these goals will restore and maintain the physical, chemical and biological integrity of the region's waters as mandated by the Clean Water Act, and will support the Forest Service's mission to provide habitat for riparian - and aquatic-dependent species under the National Forest Management Act, Organic Act, Safe Drinking Water Act, Endangered Species Act, and Electric Consumers Protection Act. The following goals are part of the Aquatic Management Strategy:

- **Water Quality:** Maintain and restore water quality to meet goals of the Clean Water Act and Safe Drinking Water Act, providing water that is fishable, swimmable, and suitable for drinking after normal treatment.
- **Species Viability:** Maintain and restore habitat to support viable populations of native and desired non-native plant, invertebrate, and vertebrate riparian-dependent species. Prevent new introductions of invasive species. Where invasive species are adversely affecting the viability of native species, work cooperatively with appropriate State and Federal wildlife agencies to reduce impacts to native populations.
- **Plant and Animal Community Diversity:** Maintain and restore the species composition and structural diversity of plant and animal communities in riparian areas, wetlands, and meadows to provide desired habitats and ecological functions.
- **Special Habitats:** Maintain and restore the distribution and health of biotic communities in special aquatic habitats (such as springs, seeps, vernal pools, fens, bogs, and marshes) to perpetuate their unique functions and biological diversity.
- **Watershed Connectivity:** Maintain and restore spatial and temporal connectivity for aquatic and riparian species within and between watersheds to provide physically, chemically and biologically unobstructed movement for their survival, migration and reproduction.
- **Floodplains and Water Tables:** Maintain and restore the connections of floodplains, channels, and water tables to distribute flood flows and sustain diverse habitats.
- **Watershed Condition:** Maintain and restore soils with favorable infiltration characteristics and diverse vegetative cover to absorb and filter precipitation and to sustain favorable conditions of stream flows.



- **Streamflow Patterns and Sediment Regimes:** Maintain and restore in-stream flows sufficient to sustain desired conditions of riparian, aquatic, wetland, and meadow habitats and keep sediment regimes as close as possible to those with which aquatic and riparian biota evolved.
- **Stream Banks and Shorelines:** Maintain and restore the physical structure and condition of stream banks and shorelines to minimize erosion and sustain desired habitat diversity.

## Strategy

The aquatic, riparian, and meadow ecosystem strategy has the following key elements:

- a description of desired conditions for aquatic, riparian, and meadow habitats developed from the AMS goals (see Part B of this appendix);
- a set of land allocations, specifically riparian conservation areas and critical aquatic refuges, that delineate aquatic, riparian, and meadow habitats, which are to be managed consistent with the following riparian conservation objectives (RCOs) and associated standards and guidelines (see Part D of this appendix);
- a long-term strategy for anadromous fish-producing watersheds for the Lassen National Forest, as presented in Appendix I of the Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement;
- an adaptive management program that includes monitoring and research activities specifically aimed at assessing effects of management activities on the willow flycatcher and Yosemite toad (see Part E of this appendix); and
- the use of landscape analysis as a tool for assessing existing uses and identifying restoration and enhancement projects.

**Riparian Conservation Objective #1:** Ensure that identified beneficial uses for the water body are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses. (RCO #1 is linked to the following AMS goals: #1: Water Quality; #2: Species Viability; #7: Watershed Condition)

**Riparian Conservation Objective #2:** 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. (RCO #2 is linked to the following AMS Goals: #2: Species Viability; #3: Plant and Animal Community Diversity; #4: Special Habitats; #5: Watershed Connectivity; #6: Floodplains and Water Tables; #8: Streamflow Patterns and Sediment Regimes; #9: Streambanks and Shorelines)

**Riparian Conservation Objective #3:** Ensure a renewable supply of large down logs that: (1) can reach the stream channel and (2) provide suitable habitat within and adjacent to the RCA. (RCO #3 is linked to the following AMS goals: #2: Species Viability; #3: Plant and Animal Community Diversity)

**Riparian Conservation Objective #4:** Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species. (RCO #4 is linked to the following AMS Goals: #2: Species Viability, #7: Watershed Condition)

**Riparian Conservation Objective #5:** 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. (RCO #5 is linked to the

following AMS goals: #1: Water Quality, #2 Species Viability, #3 Plant and Animal Community Diversity, #4 Special Habitats; #7: Watershed Condition; #9: Stream Banks and Shorelines)

**Riparian Conservation Objective #6:** Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species. (RCO # 6 is linked to all AMS goals)

## Fire and Fuels Management

### Goals

Goals for fire and fuels management include reducing threats to communities and wildlife habitat from large, severe wildfires and re-introducing fire into fire-adapted ecosystems. Broad-scale goals include:

- treating fuels in a manner that significantly reduces wildland fire intensity and rate of spread, thereby contributing to more effective fire suppression and fewer acres burned;
- treating hazardous fuels in a cost-efficient manner to maximize program effectiveness; and
- actively restoring fire-adapted ecosystems by making demonstrated progress in moving acres out of unnaturally dense conditions (in other words, moving acres from condition class 2 or 3 to condition class 1).

This Decision includes managing hazardous fuels in and around communities combined with strategic placement of fuels treatments across broad landscapes to modify wildland fire behavior. Goals for fuels treatments include:

- strategically placing treatment areas across landscapes to interrupt potential fire spread,
- removing sufficient material in treatment areas to cause a fire to burn at lower intensities and slower rates of spread compared to untreated areas, and
- considering cost-efficiency in designing treatments to maximize the number of acres that can be treated under a limited budget.

### Strategy

The fire and fuels management strategy is integrated with the strategy for conserving old forest ecosystems. In wildland urban intermix (WUI) defense zones, management activities are focused on protecting life and property. Outside of WUI defense zones, strategic placement of area treatments occurs across all land allocations. Desired conditions, management intents, management objectives, and standards and guidelines guide managers in placing and designing effective area treatments while incorporating needs for retaining key habitat elements for sensitive species.

The landscape-scale fire modification strategy adopted in this Decision is based on the premise that disconnected fuel treatment areas overlapping across the general direction of fire spread are theoretically effective in changing fire spread. Research conducted by Dr. Mark Finney (1999) suggests that fire spread rates can be reduced, even outside of treated areas, if a fire is forced to flank areas where fuels have been reduced or otherwise modified. Hence, the treated areas would function as “speed bumps,” slowing the spread and reducing the intensity of oncoming fires and thereby reducing damage to both treated and untreated areas and the impacts of large, uncharacteristically severe wildfires. Maintenance treatments are important to minimize grass and shrub colonization that could increase fire spread rates again.

Dr. Finney’s research findings indicate that, given an effective treatment area shape and pattern, only a fraction of the landscape needs to be treated and maintained to produce the desired modifications in

wildfire behavior over the entire landscape. This hypothesis underpins the Decision's fire and fuels strategy. As such, the Decision explicitly recognizes two criteria that must be met for the strategy to be effective: the *pattern* of area treatments across the landscape must interrupt fire spread, and treatment *prescriptions* must be designed to significantly modify fire behavior within the treated area. The Decision directs strategic placement of area treatments, ranging in size from 50 to over 1,000 acres (generally averaging between 100 to 300 acres), across landscapes to interrupt fire spread and thereby reduce the size and severity of wildfires.

Outside the HFQLG Pilot Project Area, 50 percent of initial fuels treatments will be located in the WUI. This percentage applies at the bioregional scale until all treatments in the WUI have been completed.

Direction for locating area treatments is included in the standards and guidelines in Part D of this appendix. Treatment patterns are to be developed using a collaborative, multi-stakeholder approach. Resource considerations factored into the strategic placement of fuels treatments include objectives for locating treatments to overlap areas of condition class 2 and 3, high density stands, and pockets of insect and disease. Treatment areas are located to avoid PACs to the greatest extent possible.

Site-specific fuels treatment prescriptions are designed to modify fire intensity and spread in treated areas. Managers consider topographic position; slope steepness; predominant wind direction; and the amount and arrangement of surface, ladder, and crown fuels in developing fuels treatment prescriptions for each treatment area. Fuels treatments are intended to reduce surface, ladder, and crown fuels. Crown fuels are modified to reduce the potential for spread of crown fire.

Fuels objectives have first priority in developing treatment area prescriptions. However, prescriptions for treatment areas may also address identified needs for increasing stand resistance to mortality from insects and disease. Thinning densely stocked stands may be used to reduce competition and improve tree vigor thereby reducing levels of insect- and disease-caused mortality.

Revenues from the sale of commercial forest products may be obtained from some fuels treatments. This increases the likelihood of accomplishing the projected acres of treatment, an essential first step in achieving the desired reductions in acres burned. Where consistent with desired conditions, area treatments are designed to be economically efficient and meet multiple objectives.

Lightning-caused fires may be used to reduce fuel loads or to provide other resource benefits, such as conserving populations of fire-dependent species. Before wildland fires can be used, national forest managers must prepare a fire management plan that describes how prescribed fires and naturally caused wildland fires will achieve resource management objectives.

## Lower Westside Hardwood Ecosystems

For purposes of this decision, vegetation communities dominated by California black oak, canyon live oak (tree form), Pacific madrone, or tanoak, are collectively referred to as montane hardwood forests. Ecosystems dominated by blue oak, valley oak, interior live oak (tree form), or Oregon white oak are referred to as blue oak woodlands. Collectively, these are referred to as hardwood ecosystems.

Goals for lower westside hardwood forest ecosystems include establishing and maintaining:

- a diversity of structural and seral conditions in landscapes in proportions that are ecologically sustainable at the watershed scale;
- sufficient regeneration and recruitment of young hardwood trees over time to replace mortality of older trees; and
- sufficient quality and quantity of hardwood ecosystems to provide important habitat elements for wildlife and native plant species.

This Decision relies on a set of forest-wide standards and guidelines for managing lower Westside hardwood forest ecosystems in concert with the above goals.

## Noxious Weed Management

Goals for noxious weed management are to manage weeds using an integrated weed management approach according to the priority set forth in FSM 2081.2:

- **Priority 1.** Prevent the introduction of new invaders.
- **Priority 2.** Conduct early treatment of new infestations.
- **Priority 3.** Contain and control established infestations.

Provisions for implementing these goals are embodied in the noxious weeds management standards and guidelines of this Decision.

## B. Land Allocations and Desired Conditions

The Decision relies on a network of land allocations and has an associated set of desired conditions, management intents, and management objectives. These three elements provide direction to land managers for designing and developing fuels and vegetation management projects. In designing the strategic layout of treatments, managers ensure that treatment area patterns and prescriptions are consistent with desired conditions, management intents, and management objectives for the relevant land allocations. This part describes how the different land allocations are designated and the desired conditions for each allocation. Relevant management intents and objectives for land allocations are described in Part C.

Desired condition is a statement describing a common vision for a specific land area. These statements are made in the present tense indicating a condition that management will be designed to maintain or move toward in each land allocation. Statements of desired condition take into account the natural range of variability typical for the Sierra Nevada landscape, the uncertainty of natural disturbances, effects of past management, unique features or opportunities that the Sierra Nevada national forests can contribute, and human desires and uses of the land.

## Wilderness Areas and Wild and Scenic Rivers

### Designation

Wilderness Areas and Wild and Scenic River Areas exist as designated by Congress. (See the Modified Alternative 8 map for the FEIS.)

### Desired Condition

Wilderness is a unique and vital resource. It is an area where the earth and its community of life are untrammelled by humans, where humanity itself is a visitor who does not remain. It retains its primeval character and influence, without permanent improvements or human habitation. Natural conditions are protected and preserved. Consistent with the National Fire Plan's goal for restoring fire-adapted ecosystems, fire is restored as a natural process through wildland fire use. The area generally appears to have been affected primarily by the forces of nature, with the imprint of humanity's work substantially

unnoticeable. It offers outstanding opportunities for solitude, or a primitive and unconfined type of recreation. Human influence does not impede or interfere with natural succession in the ecosystems.

The outstandingly remarkable values for which wild and scenic rivers have been established, are candidates for designation, or are under study, are protected and preserved for the benefit and enjoyment of present and future generations. Free-flowing conditions of wild and scenic rivers, candidate or study rivers, are preserved. Human influence may be evident, but does not interfere with, or impede the natural succession of river ecosystems.

## California Spotted Owl Protected Activity Centers (PACs)

### Designation

California spotted owl protected activity centers (PACs) are delineated surrounding each territorial owl activity center detected on National Forest System lands since 1986. Owl activity centers are designated for all territorial owls based on: (1) the most recent documented nest site, (2) the most recent known roost site when a nest location remains unknown, and (3) a central point based on repeated daytime detections when neither nest or roost locations are known.

PACs are delineated to: (1) include known and suspected nest stands and (2) encompass the best available 300 acres of habitat in as compact a unit as possible. The best available habitat is selected for California spotted owl PACs to include: (1) two or more tree canopy layers; (2) trees in the dominant and co-dominant crown classes averaging 24 inches dbh or greater; (3) at least 70 percent tree canopy cover (including hardwoods); and (4) in descending order of priority, CWHR classes 6, 5D, 5M, 4D, and 4M and other stands with at least 50 percent canopy cover (including hardwoods). Aerial photography interpretation and field verification are used as needed to delineate PACs.

As additional nest location and habitat data become available, boundaries of PACs are reviewed and adjusted as necessary to better include known and suspected nest stands and encompass the best available 300 acres of habitat.

When activities are planned adjacent to non-national forest lands, available databases are checked for the presence of nearby California spotted owl activity centers on non-national forest lands. A 300-acre circular area, centered on the activity center, is delineated. Any part of the circular 300-acre area that lies on national forest lands is designated and managed as a California spotted owl PAC.

PACs are maintained regardless of California spotted owl occupancy status. However, after a stand-replacing event, evaluate habitat conditions within a 1.5-mile radius around the activity center to identify opportunities for re-mapping the PAC. If there is insufficient suitable habitat for designating a PAC within the 1.5-mile radius, the PAC may be removed from the network.

### Desired Conditions

Stands in each PAC have: (1) at least two tree canopy layers; (2) dominant and co-dominant trees with average diameters of at least 24 inches dbh; (3) at least 60 to 70 percent canopy cover; (4) some very large snags (greater than 45 inches dbh); and (5) snag and down woody material levels that are higher than average.

## Northern Goshawk Protected Activity Centers (PACs)

### Designation

Northern goshawk protected activity centers (PACs) are delineated surrounding all known and newly discovered breeding territories detected on National Forest System lands. Northern goshawk PACs are designated based upon the latest documented nest site and location(s) of alternate nests. If the actual nest site is not located, the PAC is designated based on the location of territorial adult birds or recently fledged juvenile goshawks during the fledgling dependency period.

PACs are delineated to: (1) include known and suspected nest stands and (2) encompass the best available 200 acres of forested habitat in the largest contiguous patches possible, based on aerial photography. Where suitable nesting habitat occurs in small patches, PACs are defined as multiple blocks in the largest best available patches within 0.5 miles of one another. Best available forested stands for PACs have the following characteristics: (1) trees in the dominant and co-dominant crown classes average 24 inches dbh or greater; (2) in westside conifer and eastside mixed conifer forest types, stands have at least 70 percent tree canopy cover; and (3) in eastside pine forest types, stands have at least 60 percent tree canopy cover. Non-forest vegetation (such as brush and meadows) should not be counted as part of the 200 acres.

As additional nest location and habitat data become available, PAC boundaries are reviewed and adjusted as necessary to better include known and suspected nest stands and to encompass the best available 200 acres of forested habitat.

When activities are planned adjacent to non-national forest lands, available databases are checked for the presence of nearby northern goshawk activity centers on non-national forest lands. A 200-acre circular area, centered on the activity center, is delineated. Any part of the circular 200-acre area that lies on national forest lands is designated and managed as a northern goshawk PAC.

PACs are maintained regardless of northern goshawk occupancy status. PACs may be removed from the network after a stand-replacing event if the habitat has been rendered unsuitable as a northern goshawk PAC and there are no opportunities for re-mapping the PAC in proximity to the affected PAC.

### Desired Conditions

Stands in each PAC have: (1) at least two tree canopy layers; (2) dominant and co-dominant trees with average diameters of at least 24 inches dbh; (3) at least 60 to 70 percent canopy cover; (4) some very large snags (greater than 45 inches dbh); and (5) snag and down woody material levels that are higher than average.

## Great Gray Owl Protected Activity Centers (PACs)

### Designation

Protected activity centers (PACs) are established and maintained to include the forested area and adjacent meadow around all known great gray owl nest stands. The PAC encompasses at least 50 acres of the highest quality nesting habitat (CWHR types 6, 5D, and 5M) available in the forested area surrounding the nest. The PAC also includes the meadow or meadow complex that supports the prey base for nesting owls.

## Desired Conditions

Meadow vegetation in great gray owl PACs supports a sufficiently large meadow vole population to provide a food source for great gray owls through the reproductive period.

## Forest Carnivore Den Site Buffers

### Designation

Fisher den sites are 700-acre buffers consisting of the highest quality habitat (CWHR size class 4 or greater and canopy cover greater than 60 percent) in a compact arrangement surrounding verified fisher birthing and kit rearing dens in the largest, most contiguous blocks available.

Marten den sites are 100-acre buffers consisting of the highest quality habitat in a compact arrangement surrounding the den site. CWHR types 6, 5D, 5M, 4D, and 4M in descending order of priority, based on availability, provide highest quality habitat for the marten.

### Desired Conditions

Areas surrounding fisher den sites include at least two large (greater than 40 inches dbh) conifers per acre, and one or more oaks (greater than 20 inches dbh) per acre with suitable denning cavities. Canopy closure exceeds 80 percent.

Areas surrounding marten den sites have (1) at least two conifers per acre greater than 24 inches dbh with suitable denning cavities, (2) canopy closures exceeding 60 percent, (3) more than 10 tons per acre of coarse woody debris in decay classes 1 and 2, and (4) an average of 6 snags per acre on the westside and 3 per acre on the eastside.

## California Spotted Owl Home Range Core Areas (HRCAs)

### Designation

A home range core area is established surrounding each territorial spotted owl activity center detected after 1986. The core area amounts to 20 percent of the area described by the sum of the average breeding pair home range plus one standard error. Home range core area sizes are as follows: 2,400 acres on the Hat Creek and Eagle Lake Ranger Districts of the Lassen National Forest, 1,000 acres on the Modoc, Inyo, Humboldt-Toiyabe, Plumas, Tahoe, Eldorado, Lake Tahoe Basin Management Unit and Stanislaus National Forests and on the Almanor Ranger District of Lassen National Forest, and 600 acres of the Sequoia and Sierra National Forests.

Aerial photography is used to delineate the core area. Acreage for the entire core area is identified on national forest lands. Core areas encompass the best available California spotted owl habitat in the closest proximity to the owl activity center. The best available contiguous habitat is selected to incorporate, in descending order of priority, CWHR classes 6, 5D, 5M, 4D and 4M and other stands with at least 50 percent tree canopy cover (including hardwoods). The acreage in the 300-acre PAC counts toward the total home range core area. Core areas are delineated within 1.5 miles of the activity center.

When activities are planned adjacent to non-national forest lands, circular core areas are delineated around California spotted owl activity centers on non-national forest lands. Using the best available habitat as described above, any part of the circular core area that lies on national forest lands is designated and managed as a California spotted owl home range core area.

## Desired Conditions

HRCAs consist of large habitat blocks that have: (1) at least two tree canopy layers; (2) at least 24 inches dbh in dominant and co-dominant trees; (3) a number of very large (greater than 45 inches dbh) old trees; (4) at least 50 to 70 percent canopy cover; and (5) higher than average levels of snags and down woody material.

## Wildland Urban Intermix: Defense Zones

### Designation

The wildland urban intermix zone (WUI) is an area where human habitation is mixed with areas of flammable wildland vegetation. It extends out from the edge of developed private land into Federal, private, and State jurisdictions. The WUI is comprised of two zones: the defense zone and the threat zone.

The WUI defense zone is the buffer in closest proximity to communities, areas with higher densities of residences, commercial buildings, and/or administrative sites with facilities. Defense zones generally extend roughly ¼ mile out from these areas; however, actual defense zone boundaries are determined at the project level following national, regional and forest policy. In particular, the Healthy Forest Restoration Act of 2003 identifies areas to be included in the WUI. Local fire management specialists determine the extent, treatment orientation, and prescriptions for the WUI based on historical fire spread and intensity, historical weather patterns, topography, access. Defense zones should be of sufficient extent that fuel treatments within them will reduce wildland fire spread and intensity sufficiently for suppression forces to succeed in protecting human life and property.

### Desired Conditions

- Stands in defense zones are fairly open and dominated primarily by larger, fire tolerant trees.
- Surface and ladder fuel conditions are such that crown fire ignition is highly unlikely.
- The openness and discontinuity of crown fuels, both horizontally and vertically, result in very low probability of sustained crown fire.

## Wildland Urban Intermix Threat Zones

### Designation

The WUI threat zone typically buffers the defense zone; however, a threat zone may be delineated in the absence of a defense zone under certain conditions, including situations where the structure density and location do not provide a reasonable opportunity for direct suppression on public land, but suppression on the private land would be enhanced by fire behavior modification on the adjacent public land.

Threat zone boundaries are determined at the project level following national, regional and forest policy. Threat zones generally extend approximately 1¼ miles out from the defense zone boundary; however, actual extents of threat zones are based on fire history, local fuel conditions, weather, topography, existing and proposed fuel treatments, and natural barriers to fire. Fuels treatments in these zones are designed to reduce wildfire spread and intensity. Strategic landscape features, such as roads, changes in fuels types, and topography may be used in delineating the physical boundary of the threat zone.



## Desired Conditions

Under high fire weather conditions, wildland fire behavior in treated areas within the threat zone is characterized as follows: (1) flame lengths at the head of the fire are less than 4 feet; (2) the rate of spread at the head of the fire is reduced to at least 50 percent of pre-treatment levels; (3) hazards to firefighters are reduced by managing snag levels in locations likely to be used for control of prescribed fire and fire suppression consistent with safe practices guidelines; (4) production rates for fire line construction are doubled from pre-treatment levels; and (5) tree density has been reduced to a level consistent with the site's ability to sustain forest health during drought conditions.

## Southern Sierra Fisher Conservation Area

### Designation

The southern Sierra fisher conservation area encompasses the known occupied range of the Pacific fisher in the Sierra Nevada. The southern Sierra fisher conservation area is shown on the Modified Alternative 8 map included in the FEIS. This Decision allows for minor adjustments to correct the boundaries of the southern Sierra fisher conservation area.

### Desired Conditions

Within known or estimated female fisher home ranges outside the WUI, a minimum of 50 percent of the forested area has at least 60 percent canopy cover. Where home range information is lacking, use HUC 6 watershed as the analysis area for this desired condition.

## Old Forest Emphasis Areas

### Designation

Old forest emphasis areas are shown on the Modified Alternative 8 map included in the FEIS. This Decision allows for minor adjustments to correct the boundaries of old forest emphasis areas.

### Desired Conditions

Forest structure and function across old forest emphasis areas generally resemble pre-settlement conditions. High levels of horizontal and vertical diversity exist at the landscape-scale (roughly 10,000 acres).

Stands are composed of roughly even-aged vegetation groups, varying in size, species composition, and structure. Individual vegetation groups range from less than 0.5 to more than 5 acres in size. Tree sizes range from seedlings to very large diameter trees. Species composition varies by elevation, site productivity, and related environmental factors. Multi-tiered canopies, particularly in older forests, provide vertical heterogeneity. Dead trees, both standing and fallen, meet habitat needs of old-forest-associated species.

Where possible, areas treated to reduce fuel levels also provide for the successful establishment of early seral stage vegetation.

## General Forest

### Designation

The general forest is a mapped land allocation shown on the Modified Alternative 8 map included in the FEIS. This Decision includes allows for minor adjustments to correct the boundaries of the general forest allocation.

### Desired Conditions

Desired conditions for the general forest allocation are identical to those described above for old forest emphasis areas.

## Riparian Conservation Areas

### Designation

Riparian conservation area (RCA) widths are described below. RCA widths shown below may be adjusted at the project level if a landscape analysis has been completed and a site-specific RCO analysis demonstrates a need for different widths.

**Perennial Streams:** 300 feet on each side of the stream, measured from the bank full edge of the stream

**Seasonally Flowing Streams (includes intermittent and ephemeral streams):** 150 feet on each side of the stream, measured from the bank full edge of the stream

**Streams in Inner Gorge<sup>1</sup>:** top of inner gorge

**Special Aquatic Features<sup>2</sup> or Perennial Streams with Riparian Conditions extending more than 150 feet from edge of streambank or Seasonally Flowing streams with riparian conditions extending more than 50 feet from edge of streambank:** 300 feet from edge of feature or riparian vegetation, whichever width is greater

**Other hydrological or topographic depressions without a defined channel:** RCA width and protection measures determined through project level analysis.

### Desired Conditions

Water quality meets the goals of the Clean Water Act and Safe Drinking Water Act; it is fishable, swimmable, and suitable for drinking after normal treatment.

Habitat supports viable populations of native and desired non-native plant, invertebrate, and vertebrate riparian and aquatic-dependent species. New introductions of invasive species are prevented. Where invasive species are adversely affecting the viability of native species, the appropriate State and Federal wildlife agencies have reduced impacts to native populations.

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<sup>1</sup> Inner gorge is defined by stream adjacent slopes greater than 70 percent gradient

<sup>2</sup> Special Aquatic Features include: lakes, wet meadows, bogs, fens, wetlands, vernal pools, and springs

Species composition and structural diversity of plant and animal communities in riparian areas, wetlands, and meadows provide desired habitat conditions and ecological functions.

The distribution and health of biotic communities in special aquatic habitats (such as springs, seeps, vernal pools, fens, bogs, and marshes) perpetuates their unique functions and biological diversity.

Spatial and temporal connectivity for riparian and aquatic-dependent species within and between watersheds provides physically, chemically and biologically unobstructed movement for their survival, migration and reproduction.

The connections of floodplains, channels, and water tables distribute flood flows and sustain diverse habitats.

Soils with favorable infiltration characteristics and diverse vegetative cover absorb and filter precipitation and sustain favorable conditions of stream flows.

In-stream flows are sufficient to sustain desired conditions of riparian, aquatic, wetland, and meadow habitats and keep sediment regimes as close as possible to those with which aquatic and riparian biota evolved.

The physical structure and condition of stream banks and shorelines minimizes erosion and sustains desired habitat diversity.

The ecological status of meadow vegetation is late seral (50 percent or more of the relative cover of the herbaceous layer is late seral with high similarity to the potential natural community). A diversity of age classes of hardwood shrubs is present and regeneration is occurring.

Meadows are hydrologically functional. Sites of accelerated erosion, such as gullies and headcuts are stabilized or recovering. Vegetation roots occur throughout the available soil profile. Meadows with perennial and intermittent streams have the following characteristics: (1) stream energy from high flows is dissipated, reducing erosion and improving water quality, (2) streams filter sediment and capture bedload, aiding floodplain development, (3) meadow conditions enhance floodwater retention and groundwater recharge, and (4) root masses stabilize stream banks against cutting action.

## Critical Aquatic Refuges

### Designation

Critical aquatic refuges (CARs) are subwatersheds, generally ranging between 10,000 to 40,000 acres, with some as small 500 acres and some as large as 100,000 acres, that contain either:

- known locations of threatened, endangered, or sensitive species,
- highly vulnerable populations of native plant or animal species, or
- localized populations of rare native aquatic- or riparian-dependent plant or animal species.

Critical aquatic refuges are shown on maps in Volume 4, Appendix I of the SNFPA FEIS (January 2001), beginning on page I-53. The boundaries of CARs may be refined during landscape analysis based on the findings from conservation assessments or verification of the presence and condition of habitat for threatened, endangered, and sensitive species. Additional CARs may be added by individual national forests.

## Desired Conditions

Critical aquatic refuges provide habitat for native fish, amphibian and aquatic invertebrate populations. Remnant plant and animal populations in aquatic communities are maintained and restored.

Streams in meadows, lower elevation grasslands, and hardwood ecosystems have vegetation and channel bank conditions that approach historic potential.

Water quality meets State stream standards.

## C. Management Intents and Objectives

Each land allocation has a set of desired conditions, management intents, and vegetation and fuels management objectives. These three elements provide direction for designing and developing fuels and vegetation management projects that are consistent with the Decision's goals and strategies for the active management of fire and fuels, old forest ecosystems, and California spotted owl habitat.

Table 1 displays desired conditions, management intents, and management objectives for fuels and vegetation management activities within each land allocation.

**Table 1.** Desired Conditions, Management Intent, and Management Objectives by Land Allocation.

<b>Land Allocation</b>	<b>Desired Conditions</b>	<b>Management Intent</b>	<b>Management Objectives</b>
<b>California spotted owl and northern goshawk PACs</b>	<p>At least two tree canopy layers are present.</p> <p>Dominant and co-dominant trees average at least 24 inches dbh.</p> <p>Area within PAC has at least 60 to 70 percent canopy cover.</p> <p>Some very large snags are present (greater than 45 inches dbh).</p> <p>Levels of snags and down woody material are higher than average.</p>	<p>Maintain PACs so that they continue to provide habitat conditions that support successful reproduction of California spotted owls and northern goshawks.</p>	<p>Avoid vegetation and fuels management activities within PACs to the greatest extent feasible.</p> <p>Reduce hazardous fuels in PACs in defense zones when they create an unacceptable fire threat to communities.</p> <p>Where PACs cannot be avoided in the strategic placement of treatments, ensure effective treatment of surface, ladder, and crown fuels within treated areas. If nesting or foraging habitat in PACs is mechanically treated, mitigate by adding acreage to the PAC equivalent to the treated acreage wherever possible. Add adjacent acres of comparable quality wherever possible.</p>
<b>WUI Defense Zones</b>	<p>Stands are fairly open and dominated primarily by larger, fire tolerant trees.</p> <p>Surface and ladder fuel conditions are such that crown fire ignition is highly unlikely.</p> <p>The openness and discontinuity of crown fuels, both horizontally and vertically, result in very low probability of sustained crown fire.</p>	<p>Protect communities from wildfire and prevent the loss of life and property.</p> <p>WUI defense zones have highest priority for treatment (along with threat zones).</p> <p>The highest density and intensity of treatments are located within the WUI.</p>	<p>Create defensible space near communities, and provide a safe and effective area for suppressing fire.</p> <p>Design economically efficient treatments to reduce hazardous fuels.</p>

<b>Land Allocation</b>	<b>Desired Conditions</b>	<b>Management Intent</b>	<b>Management Objectives</b>
<b>HRCAs</b>	<p>Within home ranges, HRCAs consist of large habitat blocks having:</p> <ul style="list-style-type: none"> <li>▪ at least two tree canopy layers.</li> <li>▪ at least 24 inches dbh in dominant and co-dominant trees.</li> <li>▪ a number of very large (&gt;45 inches dbh) old trees.</li> <li>▪ at least 50-70% canopy cover.</li> <li>▪ higher than average levels of snags and down woody material.</li> </ul>	<p>Treat fuels using a landscape approach for strategically placing area treatments to modify fire behavior.</p> <p>Retain existing suitable habitat, recognizing that habitat within treated areas may be modified to meet fuels objectives.</p> <p>Accelerate development of currently unsuitable habitat (in non-habitat inclusions, such as plantations) into suitable condition.</p> <p>Arrange treatment patterns and design treatment prescriptions to avoid the highest quality habitat (CWHR types 5M, 5D, and 6) wherever possible</p>	<p>Establish and maintain a pattern of fuels treatments that is effective in modifying wildfire behavior.</p> <p>Design treatments in HRCAs to be economically efficient and to promote forest health where consistent with habitat objectives.</p>
<b>WUI Threat Zones</b>	<p>Under high fire weather conditions, wildland fire behavior in treated areas is characterized as follows:</p> <ul style="list-style-type: none"> <li>▪ Flame lengths at the head of the fire are less than 4 feet.</li> <li>▪ The rate of spread at the head of the fire is reduced to at least 50% of pre-treatment levels.</li> <li>▪ Hazards to firefighters are reduced by managing snag levels in locations likely to be used for control in prescribed fire and fire suppression, consistent with safe practices guidelines.</li> <li>▪ Production rates for fire line construction are doubled from pre-treatment levels.</li> </ul>	<p>Threat zones are priority area for fuels treatments.</p> <ul style="list-style-type: none"> <li>▪ Fuels treatments in the threat zone provide a buffer between developed areas and wildlands.</li> <li>▪ Fuels treatments protect human communities from wildland fires as well as minimize the spread of fires that might originate in urban areas.</li> <li>▪ The highest density and intensity of treatments are located within the WUI.</li> </ul>	<p>Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior.</p> <p>Design economically efficient treatments to reduce hazardous fuels.</p>

<b>Land Allocation</b>	<b>Desired Conditions</b>	<b>Management Intent</b>	<b>Management Objectives</b>
<p><b>Southern Sierra Fisher Conservation Area</b></p>	<p>Within known or estimated female fisher home ranges outside the WUI, a minimum of 50 percent of the forested area has greater than or equal to 60 percent canopy cover.</p> <p>Where home range information is lacking, use HUC 6 watershed as the analysis area for this desired condition.</p>	<p>Maintain high quality fisher habitat in the SSFCA to support successful reintroduction of fisher and a source population for recolonization of unoccupied, suitable habitat throughout the Sierra Nevada.</p> <p>Retain existing suitable habitat to the extent possible (CWHR 4D, 5D and 6), recognizing that habitat within treated areas may be modified to meet fuels objectives.</p> <p>Provide for heterogenous landscapes that may allow torching and small stand-replacing fire events but will be resilient and retain large tree elements to provide for future habitat and seed trees.</p>	<p>When high quality fisher habitat in defense zones is treated, ensure effective treatment of surface, ladder, and crown fuels to create defensible space around communities.</p> <p>Within treated areas outside the defense zone, use irregular or clumpy treatments to maintain well dispersed or potential den sites.</p> <p>Moderate effects of fuels treatments on fisher wherever possible. Consider lighter treatments with a higher return interval to retain important habitat elements (e.g. retention of higher volume of down logs or shrub components) followed by treatments at 5 year intervals to reduce surface fuels as needed to achieve desired fuel conditions.</p> <p>Where high quality fisher habitat cannot be avoided during the strategic placement of treatments, consider scheduling the pace of treatments to spread impacts over a longer period of time.</p>

<b>Land Allocation</b>	<b>Desired Conditions</b>	<b>Management Intent</b>	<b>Management Objectives</b>
<b>Old Forest Emphasis Areas</b>	<p>Forest structure and function generally resemble pre-settlement conditions.</p> <p>High levels of horizontal and vertical diversity exist within 10,000 acre landscapes.</p> <p>Stands are composed of roughly even-aged vegetation groups, varying in size, species composition, and structure. Individual vegetation groups range from less than 0.5 to more than 5 acres in size.</p> <p>Tree sizes range from seedlings to very large diameter trees.</p> <p>Species composition varies by elevation, site productivity, and related environmental factors.</p> <p>Multi-tiered canopies, particularly in older forests, provide vertical heterogeneity.</p> <p>Dead trees, both standing and fallen, meet habitat needs of old-forest-associated species.</p> <p>Where possible, areas treated for fuels also provide for the successful establishment of early seral stage vegetation.</p>	<p>Maintain or develop old forest habitat in:</p> <ul style="list-style-type: none"> <li>▪ areas containing the best remaining large blocks or landscape concentrations of old forest and/or</li> <li>▪ areas that provide old forest functions (such as connectivity of habitat over a range of elevations to allow migration of wide-ranging old-forest-associated species).</li> </ul> <p>Establish and maintain a pattern of area treatments that is effective in:</p> <ul style="list-style-type: none"> <li>▪ modifying fire behavior.</li> <li>▪ culturing stand structure and composition to generally resemble pre-settlement conditions.</li> <li>▪ reducing susceptibility to insect/pathogen drought-related tree mortality.</li> </ul> <p>Focus management activities on the short-term goal of reducing the adverse effects of wildfire.</p> <p>Acknowledge the need for a longer-term strategy to restore both the structure and processes of these ecosystems.</p>	<p>Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior.</p> <p>Maintain and/or establish appropriate species composition and size classes.</p> <p>Reduce the risk of insect/pathogen drought-related mortality by managing stand density levels.</p> <p>Design economically efficient treatments to reduce hazardous fuels.</p>
<b>General Forest</b>	<p>Same as above</p>	<p>Actively manage general forest areas to maintain, and enhance a variety of vegetative conditions.</p> <p>Strategically place fuels treatments to modify wildfire behavior.</p> <p>Reduce hazardous fuels in key areas to lessen the threat of high severity fire.</p>	<p>Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior.</p> <p>Reduce the risk of insect/pathogen drought-related mortality by managing stand density levels.</p> <p>Design economically efficient treatments to reduce hazardous fuels.</p>



## D. Management Standards and Guidelines

Management direction for carrying out this Decision includes standards and guidelines for project design and implementation. Note that some standards and guidelines apply to specific land allocations while others apply forest-wide (across all land allocations). The vegetation and fuels treatment standards and guidelines are intended to (1) act as sideboards for local managers as they design projects to meet fuels and vegetation management objectives and respond to site-specific conditions, and (2) retain important components of habitat that are believed to be important to species associated with old forests, including large trees, structural diversity and complexity, and moderate to high canopy cover. At the project level, these standards and guidelines are used in conjunction with desired conditions, management intents, and management objectives for the relevant land allocation to determine appropriate treatment prescriptions.

### Forest-wide Standards and Guidelines

Standards and guidelines described in this section apply to all land allocations (other than wilderness areas and wild and scenic river areas) unless stated otherwise.

#### Fire and Fuels Management

1. Strategically place area fuels treatments across the landscape to interrupt fire spread and achieve conditions that: (1) reduce the size and severity of wildfire and (2) result in stand densities necessary for healthy forests during drought conditions. Complete a landscape-level design of area treatment patterns prior to project-level analysis. Develop treatment patterns using a collaborative, multi-stakeholder approach. Determine the size, location, and orientation of area fuels treatments at a landscape-scale, using information about fire history, existing vegetation and fuels condition, prevailing wind direction, topography, suppression resources, attack times, and accessibility to design an effective treatment pattern. The spatial pattern of the treatments is designed to reduce rate of fire spread and fire intensity at the head of the fire.

Strategic placement of fuels treatments should also consider objectives for locating treatment areas to overlap with areas of condition class 2 and 3, high density stands, and pockets of insect and disease. Avoid PACs to the greatest extent possible when locating area treatments. Incorporate areas that already contribute to wildfire behavior modification, including timber sales, burned areas, bodies of water, and barren ground, into the landscape treatment area pattern. Identify gaps in the landscape pattern where fire could spread at some undesired rate or direction and use treatments (including maintenance treatments and new fuels treatments) to fill identified gaps.

2. Vegetation within treatment areas should be modified to meet desired surface ladder, and crown fuel conditions as well as stand densities necessary for healthy forests during drought conditions. Site specific prescriptions should be designed to reduce fire intensity, rate of fire spread, crown fire potential, mortality in dominant and co-dominant trees, and tree density. Managers should consider such variables as the topographic location of the treatment area, slope steepness, predominant wind direction, and the amount and arrangement of surface, ladder, and crown fuels in developing fuels treatment prescriptions.
3. Where young plantations (generally Pacific Southwest Region size classes 0x, 1x, 2x) are included within area treatments, apply the necessary silvicultural and fuels reduction treatments to: (1) accelerate the development of key habitat and old forest characteristics, (2) increase stand heterogeneity, (3) promote hardwoods, and (4) reduce risk of loss to wildland fire. In size class 2x

plantations, treatments should be designed to reduce fire intensity, rate of fire spread and tree mortality. Design a sequence of fuel reduction projects to achieve the standards below.

**Plantations (0x-2x):**

- 3 inches and smaller surface fuel load: less than 5 tons per acre,
  - less than 0.5 foot fuel bed depth,
  - stocking levels that provide well-spaced tree crowns (for example, approximately 200 trees per acre in 4 inch dbh trees),
  - less than 50 percent surface area with live fuels (brush), and
  - tree mortality less than 50 percent of the existing stocking under 90th percentile fire weather conditions (2x type only)
4. Design mechanical treatments in brush and shrub patches to remove the material necessary to achieve the following outcomes from wildland fire under 90th percentile fire weather conditions: (1) wildland fires would burn with an average flame length of 4 feet or less and (2) fire line production rates would be doubled. Treatments should be effective for more than 5 to 10 years.
  5. Design a sequence of fuel reduction treatments in conifer forest types (including 3x plantation types) to achieve the following standards within the treatment area:
    - an average of 4-foot flame length under 90<sup>th</sup> percentile fire weather conditions.
    - surface and ladder fuels removed as needed to meet design criteria of less than 20 percent mortality in dominant and co-dominant trees under 90<sup>th</sup> percentile weather and fire behavior conditions.
    - tree crowns thinned to meet design criteria of less than 20 percent probability of initiation of crown fire under 90<sup>th</sup> percentile weather conditions.

## Mechanical Thinning Treatments

6. For all mechanical thinning treatments, design projects to retain all live conifers 30 inches dbh or larger. Exceptions are allowed to meet needs for equipment operability.
7. For mechanical thinning treatments in mature forest habitat (CWHR types 4M, 4D, 5M, 5D, and 6) **outside WUI defense zones:**
  - Design projects to retain at least 40 percent of the existing basal area. The retained basal area should generally be comprised of the largest trees.
  - Where available, design projects to retain 5 percent or more of the total treatment area in lower layers composed of trees 6 to 24 inches dbh within the treatment unit.
  - Design projects to avoid reducing pre-existing canopy cover by more than 30 percent within the treatment unit. Percent is measured in absolute terms (for example, canopy cover at 80 percent should not be reduced below 50 percent.)
  - Within treatment units, at a minimum, the intent is to provide for an effective fuels treatment. Where existing vegetative conditions are at or near 40 percent canopy cover, projects are to be designed remove the material necessary to meet fire and fuels objectives.
  - **Within California spotted owl Home Range Core Areas:** Where existing vegetative conditions permit, design projects to retain at least 50 percent canopy cover averaged within the treatment unit. Exceptions are allowed in limited situations where additional trees must be

removed to adequately reduce ladder fuels, provide sufficient spacing for equipment operations, or minimize re-entry. Where 50 percent canopy cover retention cannot be met for reasons described above, retain at least 40 percent canopy cover averaged within the treatment unit.

- **Outside of California spotted owl Home Range Core Areas:** Where existing vegetative conditions permit, design projects to retain at least 50 percent canopy cover within the treatment unit. Exceptions are allowed where project objectives require additional canopy modification (such as the need to adequately reduce ladder fuels, provide for safe and efficient equipment operations, minimize re-entry, design cost efficient treatments, and/or significantly reduce stand density.) Where canopy cover must be reduced below 50 percent, retain at least 40 percent canopy cover averaged within the treatment unit.
- **Within California spotted owl PACs,** where treatment is necessary, remove only material needed to meet project fuels objectives. Focus on removal of surface and ladder fuels.

The standards in the bulleted list above *do not apply* to the eastside pine type.

8. For mechanical thinning treatments **outside defense zones in the eastside pine type:** in mature forest habitat (CWHR types 4M, 4D, 5M, 5D, and 6), design projects to retain 30 percent of the existing basal area. The retained basal area should be generally comprised of the largest trees. Projects in the eastside pine type have no canopy cover retention standards and guidelines.
9. Standards and guidelines # 6, 7, and 8 above apply only to mechanical thinning harvests specifically designed to meet objectives for treating fuels and/or controlling stand densities.

## Snags and Down Woody Material

10. Determine down woody material retention levels on an individual project basis, based on desired conditions. Emphasize retention of wood in the largest size classes and in decay classes 1, 2, and 3. Consider the effects of follow-up prescribed fire in achieving desired down woody material retention levels.
11. Determine snag retention levels on an individual project basis for vegetation treatments. Design projects to implement and sustain a generally continuous supply of snags and live decadent trees suitable for cavity nesting wildlife across a landscape. Retain some mid- and large diameter live trees that are currently in decline, have substantial wood defect, or that have desirable characteristics (teakettle branches, large diameter broken top, large cavities in the bole) to serve as future replacement snags and to provide nesting structure. When determining snag retention levels and locations, consider land allocation, desired condition, landscape position, potential prescribed burning and fire suppression line locations, and site conditions (such as riparian areas and ridge tops), avoiding uniformity across large areas.

General guidelines for large-snag retention are as follows:

- **westside mixed conifer and ponderosa pine types** - four of the largest snags per acre
- **red fir forest type** - six of the largest snags per acre
- **eastside pine and eastside mixed conifer forest types** - three of the largest snags per acre
- **westside hardwood ecosystems** - four of the largest snags (hardwood or conifer) per acre
  - **where standing live hardwood trees lack dead branches** - six of the largest snags per acre (where they exist to supplement wildlife needs for dead material).

Use snags larger than 15 inches dbh to meet this guideline. Snags should be clumped and distributed irregularly across the treatment units. Consider leaving fewer snags strategically located in treatment areas within the WUI. When some snags are expected to be lost due to hazard removal or the effects of prescribed fire, consider these potential losses during project planning to achieve desired snag retention levels.

## Tree Species Composition

12. Promote shade intolerant pines (sugar and Ponderosa) and hardwoods.

## Salvage

13. Determine the need for ecosystem restoration projects following large, catastrophic disturbance events (wildfire, drought, insect and disease infestation, windstorm, and other unforeseen events). Objectives for restoration projects may include limiting fuel loads over the long term, restoring habitat, and recovering economic value from dead and dying trees. In accomplishing restoration goals, long-term objectives are balanced with the objective of reducing hazardous fuel loads in the short-term.

Salvage harvest of dead and dying trees may be conducted to recover the economic value of this material and to support objectives for reducing hazardous fuels, improving forest health, re-introducing fire, and/or re-establishing forested conditions.

- Design projects to reduce potential soil erosion and the loss of soil productivity caused by loss of vegetation and ground cover. Examples are activities that would: (1) provide for adequate soil cover in the short term; (2) accelerate the dispersal of coarse woody debris; (3) reduce the potential impacts of the fire on water quality; and (4) carefully plan restoration/salvage activities to minimize additional short-term effects.
  - Design projects to protect and maintain critical wildlife habitat. Examples are activities that would: (1) avoid areas where forest vegetation is still largely intact; (2) provide for sufficient quantities of large snags; (3) maintain existing large woody material as needed; (4) provide for additional large woody material and ground cover as needed; (5) accelerate development of mature forest habitat through reforestation and other cultural means; and (6) provide for a mix of seral stages over time.
  - Design projects to manage the development of fuel profiles over time. Examples are activities that would: (1) remove sufficient standing and activity generated material to balance short-term and long-term surface fuel loading; and (2) protect remnant old forest structure (surviving large trees, snags, and large logs) from high severity re-burns or other severe disturbance events in the future.
  - Design projects to recover the value of timber killed or severely injured by the disturbance. Examples are activities that would: (1) conduct timber salvage harvest in a timely manner to minimize value loss; (2) minimize harvest costs within site-specific resource constraints; and (3) remove material that local managers determine is not needed for long-term resource recovery needs.
14. In post fire restoration projects for large catastrophic fires (contiguous blocks of moderate to high fire lethality of 1,000 acres or more), generally do not conduct salvage harvest in at least 10 percent of the total area affected by fire.
  15. Use the best available information for identifying dead and dying trees for salvage purposes as developed by the Pacific Southwest Region Forest Health Protection Staff.

16. Outside of WUI defense zones, salvage harvests are prohibited in PACs and known den sites unless a biological evaluation determines that the areas proposed for harvest are rendered unsuitable for the purpose they were intended by a catastrophic stand-replacing event.
17. Consider ecological benefits of retaining small patches of mortality in old forest emphasis areas.

### Hardwood Management

18. Where possible, create openings around existing California black oak and canyon live oak to stimulate natural regeneration.
19. Manage hardwood ecosystems for a diversity of hardwood tree size classes within a stand such that seedlings, saplings, and pole-sized trees are sufficiently abundant to replace large trees that die.
20. Retain the mix of mast-producing species where they exist within a stand.
21. Retain all blue oak and valley oak trees except: (1) stand restoration strategies call for tree removal; (2) trees are lost to fire; or (3) where tree removal is needed for public health and safety.
22. When planning prescribed fire or mechanical treatments in hardwood ecosystems: (1) consider the risk of noxious weed spread and (2) minimize impacts to hardwood ecosystem structure and biodiversity.
23. During mechanical vegetation treatments, prescribed fire, and salvage operations, retain all large hardwoods on the westside except where: (1) large trees pose an immediate threat to human life or property or (2) losses of large trees are incurred due to prescribed or wildland fire. Large montane hardwoods are trees with a dbh of 12 inches or greater. Large blue oak woodland hardwoods are trees with a dbh of 8 inches or greater. Allow removal of larger hardwood trees (up to 20 inches dbh) if research supports the need to remove larger trees to maintain and enhance the hardwood stand.
24. Prior to commercial and noncommercial hardwood and fuelwood removal in hardwood ecosystems, pre-mark or pre-cut hardwood trees to ensure that stand goals are met. Retain a diverse distribution of stand cover classes.
25. During or prior to landscape analysis, spatially determine distributions of existing and potential natural hardwood ecosystems (Forest Service Handbook (FSH) 2090.11). Assume pre-1850 disturbance levels for potential natural community distribution. Work with province ecologists or other qualified personnel to map and/or model hardwood ecosystems at a landscape scale (approximately 30,000 to 50,000 acres). Include the following steps in the analysis: (1) compare distributions of potential natural hardwood ecosystems with existing hardwood ecosystems; (2) identify locations where existing hardwood ecosystems are outside the natural range of variability for potential natural hardwood ecosystem distribution; and (3) identify hardwood restoration and enhancement projects.
26. Include hardwoods in stand examinations. Encourage hardwoods in plantations. Promote hardwoods after stand-replacing events. Retain buffers around existing hardwood trees by not planting conifers within 20 feet of the edge of hardwood tree crowns.

### Habitat Connectivity for Old Forest Associated Species

27. Minimize old forest habitat fragmentation. Assess potential impacts of fragmentation on old forest associated species (particularly fisher and marten) in biological evaluations.

28. Assess the potential impact of projects on the connectivity of habitat for old forest associated species.
29. Consider retaining forested linkages (with canopy cover greater than 40 percent) that are interconnected via riparian areas and ridgetop saddles during project-level analysis.
30. If fishers are detected outside the southern Sierra fisher conservation area, evaluate habitat conditions and implement appropriate mitigation measures to retain suitable habitat within the estimated home range. Institute project-level surveys over the appropriate area, as determined by an interdisciplinary team.
31. Identify areas for acquisition, exchange, or conservation easements to enhance connectivity of habitat for old forest associated species.

### Wolverine and Sierra Nevada Red Fox Detections

32. Detection of a wolverine or Sierra Nevada red fox will be validated by a forest carnivore specialist. When verified sightings occur, conduct an analysis to determine if activities within 5 miles of the detection have a potential to affect the species. If necessary, apply a limited operating period from January 1 to June 30 to avoid adverse impacts to potential breeding. Evaluate activities for a 2-year period for detections not associated with a den site.

### California Spotted Owl Surveys

33. Conduct surveys in compliance with the Pacific Southwest Region's survey protocols during the planning process when proposed vegetation treatments are likely to reduce habitat quality in suitable California spotted owl habitat with unknown occupancy. Designate California spotted owl protected activity centers (PACs) where appropriate based on survey results.

### Northern Goshawk Surveys

34. Conduct surveys in compliance with the Pacific Southwest Region's survey protocols during the planning process when vegetation treatments are likely to reduce habitat quality are proposed in suitable northern goshawk nesting habitat that is not within an existing California spotted owl or northern goshawk PAC. Suitable northern goshawk nesting habitat is defined based on the survey protocol.

### Great Gray Owl Surveys

35. Conduct additional surveys to established protocols to follow up reliable sightings of great gray owls.

### Noxious Weeds Management

36. Inform forest users, local agencies, special use permittees, groups, and organizations in communities near national forests about noxious weed prevention and management.
37. Work cooperatively with California and Nevada State agencies and individual counties (for example, Cooperative Weed Management Areas) to: (1) prevent the introduction and establishment of noxious weed infestations and (2) control existing infestations.

38. As part of project planning, conduct a noxious weed risk assessment to determine risks for weed spread (high, moderate, or low) associated with different types of proposed management activities. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy to develop mitigation measures for high and moderate risk activities.
39. When recommended in project-level noxious weed risk assessments, consider requiring off-road equipment and vehicles (both Forest Service and contracted) used for project implementation to be weed free. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy.
40. Minimize weed spread by incorporating weed prevention and control measures into ongoing management or maintenance activities that involve ground disturbance or the possibility of spreading weeds. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy.
41. Conduct follow-up inspections of ground disturbing activities to ensure adherence to the Regional Noxious Weed Management Strategy.
42. Encourage use of certified weed free hay and straw. Cooperate with other agencies and the public in developing a certification program for weed free hay and straw. Phase in the program as certified weed free hay and straw becomes available. This standard and guideline applies to pack and saddle stock used by the public, livestock permittees, outfitter guide permittees, and local, State, and Federal agencies.
43. Include weed prevention measures, as necessary, when amending or re-issuing permits (including, but not limited to, livestock grazing, special uses, and pack stock operator permits).
44. Include weed prevention measures and weed control treatments in mining plans of operation and reclamation plans. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy. Monitor for weeds, as appropriate, for 2 years after project implementation (assuming no weed introductions have occurred).
45. Conduct a risk analysis for weed spread associated with burned area emergency rehabilitation (BAER) treatments. The BAER team is responsible for conducting this analysis. Monitor and treat weed infestations for 3 years after the fire.
46. Consult with American Indians to determine priority areas for weed prevention and control where traditional gathering areas are threatened by weed infestations.
47. Complete noxious weed inventories, based on regional protocol. Review and update these inventories on an annual basis.
48. As outlined in the Regional Noxious Weed Management Strategy, when new, small weed infestations are detected, emphasize eradication of these infestations while providing for the safety of field personnel.
49. Routinely monitor noxious weed control projects to determine success and to evaluate the need for follow-up treatments or different control methods. Monitor known weed infestations, as appropriate, to determine changes in weed population density and rate of spread.

## Grazing

50. To protect hardwood regeneration in grazing allotments, allow livestock browse on no more than 20 percent of annual growth of hardwood seedlings and advanced regeneration. Modify grazing plans if hardwood regeneration and recruitment needs are not being met.

51. Grazing utilization in annual grasslands will maintain a minimum of 60 percent cover. Where grasslands are in satisfactory condition and annual precipitation is greater than 10 inches, manage for 700 pounds residual dry matter (RDM) per acre. Where grasslands are in satisfactory condition and annual precipitation is less than 10 inches, manage for 400 pounds RDM per acre. Where grasslands are in unsatisfactory condition and annual precipitation is greater than 10 inches, manage for 1,000 pounds RDM per acre; manage for 700 pounds RDM per acre where grasslands are in unsatisfactory condition and precipitation is less than 10 inches. Adjust these standards, as needed, based on grassland condition. This standard and guideline only applies to grazing utilization.
52. Where professional judgment and quantifiable measurements find that current practices are maintaining range in good to excellent condition, the grazing utilization standards above may be modified to allow for the Forest Service, in partnership with individual permittees, to rigorously test and evaluate alternative standards.

### Yosemite Toad

53. Exclude livestock from standing water and saturated soils in wet meadows and associated streams and springs occupied by Yosemite toads or identified as “essential habitat” in the conservation assessment for the Yosemite toad during the breeding and rearing season (through metamorphosis). Wet meadow habitat for Yosemite toads is defined as relatively open meadows with low to moderate amounts of woody vegetation that have standing water on June 1 or for more than 2 weeks following snow melt. Specific breeding and rearing season dates will be determined locally. If physical exclusion of livestock is impractical, then exclude grazing from the entire meadow. This standard does not apply to pack and saddle stock.
54. Exclusions in standard and guideline #53 above may be waived if an interdisciplinary team has developed a site-specific management plan to minimize impacts to the Yosemite toad and its habitat by managing the movement of stock around wet areas. Such plans are to include a requirement for systematically monitoring a sample of occupied Yosemite toad sites within the meadow to: (1) assess habitat conditions and (2) assess Yosemite toad occupancy and population dynamics. Every 3 years from the date of the plan, evaluate monitoring data. Modify or suspend grazing if Yosemite toad conservation is not being accomplished. Plans must be approved by the authorized officer and incorporated into all allotment plans and/or special use permits governing use within the occupied habitat.
55. Complete one survey cycle in suitable habitat for the Yosemite toad within this species’ historic range to determine presence of Yosemite toads.

### Willow Flycatcher

The following definitions are needed to apply the standards and guidelines for willow flycatcher conservation. See Appendix D of the Final SEIS for a complete listing of existing willow flycatcher sites.

#### Definitions of Willow Flycatcher Site Occupancy

**Occupied Willow Flycatcher Site:** a site where willow flycatcher(s) have been observed sometime during the breeding season since 1982. For a site to be designated as an occupied site, it must meet the following criteria:

- Observation date(s) between 1982 and 2000:
  1. Willow flycatcher observed between 15 June and 1 August;



OR

2. Willow flycatcher observed between June 1 - June 14 or August 2 –August 15, unless the willow flycatcher was:
  - Absent during surveys conducted between June 15 and July 15 in the same year
  - Absent during June 15 –July 15 surveys in multiple subsequent years; or
  - Detected at a site that is clearly outside of known habitat requirements.
- For inclusion as an occupied willow flycatcher site, willow flycatcher(s) must be identified by the *Fitz-bew* song or in-hand examination. Museum skins that are identified as willow flycatchers may also be used if the collection date falls within the range of dates listed above.
- Nests and egg sets in museum collections infer site occupancy, regardless of collection month and day.
- All sites where willow flycatchers were identified using these criteria are included in the dataset, unless the site is known to have undergone an extreme site conversion rendering it incapable of supporting willow flycatchers currently and in the future (e.g., wetland conversions or inundation by reservoir).
- Observation date(s) in 2001 or later:
  - Willow flycatcher site occupancy will be determined based upon the criteria defined in the standardized protocol.

**Historically Occupied Willow Flycatcher Site:** a site where occupancy is only known from pre-1982 or one that has been surveyed for at least six years over a 10-year period and consistently found to contain no willow flycatchers during the breeding season. For a site to be designated as historically occupied, it must meet the following criteria:

- Sighting meets the criteria of an occupied willow flycatcher site but the most recent date of detection is prior to 1982

OR

- Surveys across a minimum of six separate years during a 10-year period must have been performed (alternatively, surveys may be conducted annually for six years within a six- to 10-year period).
  - Surveys conducted since June 2000 must be in compliance with the current standardized willow flycatcher survey protocol guidelines.
  - If a historically occupied site is determined as occupied, the site is upgraded to occupied status until or unless the site meets the definition of historically occupied again.

**Conditionally Occupied Willow Flycatcher Site:** a site documented in the willow flycatcher database at the time of the Record of Decision that does not meet the criteria for an occupied site or a historically occupied site. For these sites, either the month and date of detection are not known or the month and date occur outside of the breeding season as defined in the survey protocol.

There are five sites in the existing database where survey documentation necessary to determine if the observation meets the criteria for an occupied site is missing or incomplete. These sites are assigned to a temporary category of conditionally occupied until either they receive one survey cycle or the missing information is discovered and documented, at which time they will either be found to be occupied or they will be dropped from the database. Once these sites are resolved, this category is no longer used.

## Standards and Guidelines

56. **For occupied and historically occupied willow flycatcher sites:** Initiate a 4-year cycle for willow flycatcher surveys. Conduct surveys to established protocols in all sites the first year. Second year surveys will be conducted in those sites where willow flycatchers were not found. Surveys will not be conducted in the third and fourth years. The survey cycle will then be repeated. **For conditionally occupied sites:** Surveys will be conducted in the first year. If willow flycatchers are found, these sites will be managed as occupied sites. If not found, these sites will be surveyed in the second year. If birds are not found in the second year, these sites will be dropped from the willow flycatcher site database.
57. In meadows with **occupied willow flycatcher sites**, allow only late-season grazing (after August 15) in the entire meadow.
58. Standard and guideline #57 above may be waived if an interdisciplinary team has developed a site-specific meadow management strategy. This strategy is to be developed and implemented in partnership with the affected grazing permittee. The strategy objectives must focus on protecting the nest site and associated habitat during the breeding season and the long-term sustainability of suitable habitat at breeding sites. It may use a mix of management tools, including grazing systems, structural improvements, and other exclusion by management techniques to protect willow flycatcher habitat.
59. In willow flycatcher sites receiving late-season grazing, monitor utilization annually using regional range analysis and planning guide. Monitor willow flycatcher habitat every 3 years using the following criteria: rooting depth cores for meadow condition, point intercepts for shrub foliar density, and strip transects for shrub recruitment and cover. Meadow condition assessments will be included in a GIS meadow coverage. If habitat conditions are not supporting the willow flycatcher or trend downward, modify or suspend grazing.
60. For **historically occupied willow flycatcher sites**, assess willow flycatcher habitat suitability within the meadow. If habitat is degraded, develop restoration objectives and take appropriate actions (such as physical restoration of hydrological components, limiting or re-directing grazing activity, and so forth) to move the meadow toward desired conditions.
61. Evaluate site condition of **historically occupied willow flycatcher sites**. Those sites that no longer contain standing water on June 1 and a deciduous shrub component and cannot be reasonably restored may be removed from the willow flycatcher site database.
62. As part of the project planning process, survey **emphasis habitat** within 5 miles of occupied willow flycatcher sites to determine willow flycatcher occupancy. Emphasis habitat is defined as meadows larger than 15 acres that have standing water on June 1 and a deciduous shrub component. Use established protocols to conduct these surveys. If these surveys determine willow flycatcher occupancy, add these to the database of occupied willow flycatcher sites and include them in the 4-year survey cycle of willow flycatcher sites described above.
63. Evaluate proposals for new concentrated stock areas (for example, livestock handling and management facilities, pack stations, equestrian stations, and corrals) located within 5 miles of occupied willow flycatcher sites.

## Mining

64. Ensure that plans of operation, reclamation plans, and reclamation bonds address the costs of: (1) removing facilities, equipment, and materials; (2) isolating and neutralizing or removing toxic or

potentially toxic materials; (3) salvaging and replacing topsoil; and (4) preparing the seed bed and revegetating to meet the objectives of the land allocation in which the operation is located.

65. Ensure that mine owners and operators limit new road construction, decommission unnecessary roads, and maintain needed roads consistent with Forest Service roads policy and management direction for the land allocation.
66. Require mine reclamation to be conducted in a timely manner.
67. Inspect and monitor mining-related activities on a regular basis to ensure compliance with laws, regulations, and operating plans. Base the frequency of inspections and monitoring on the potential severity of mining activity-related impacts.
68. During mining-related activities, limit the clearing of trees and other vegetation to the minimum necessary. Clearing of vegetation should be pertinent to the approved phase of mineral exploration and development.

### Wheeled Vehicles

69. Prohibit wheeled vehicle travel off of designated routes, trails, and limited off highway vehicle (OHV) use areas. Unless otherwise restricted by current forest plans or other specific area standards and guidelines, cross-country travel by over-snow vehicles would continue.

### Road Construction, Reconstruction, and Relocation

70. To protect watershed resources, meet the following standards for road construction, road reconstruction, and road relocation: (1) design new stream crossings and replacement stream crossings for at least the 100-year flood, including bedload and debris; (2) design stream crossings to minimize the diversion of streamflow out of the channel and down the road in the event of a crossing failure; (3) design stream crossings to minimize disruption of natural hydrologic flow paths, including minimizing diversion of streamflow and interception of surface and subsurface water; (4) avoid wetlands or minimize effects to natural flow patterns in wetlands; and (5) avoid road construction in meadows.

### Standards and Guidelines for California Spotted Owl and Northern Goshawk Protected Activity Centers

71. Within the assessment area or watershed, locate fuels treatments to minimize impacts to PACs. PACs may be re-mapped during project planning to avoid intersections with treatment areas, provided that the re-mapped PACs contain habitat of equal quality and include known nest sites and important roost sites. Document PAC adjustments in biological evaluations.

When treatment areas must intersect PACs and choices can be made about which PACs to enter, use the following criteria to preferentially avoid PACs that have the highest likely contribution to owl productivity.

- **lowest contribution to productivity:** PACs presently unoccupied and historically occupied by territorial singles only.
- PACs presently unoccupied and historically occupied by pairs,
- PACs presently occupied by territorial singles,

- PACs presently occupied by pairs,
- **highest contribution to productivity:** PACs currently or historically reproductive.

Historical occupancy is considered occupancy since 1990. Current occupancy is based on surveys consistent with survey protocol (March 1992) in the last 2-3 years prior to project planning. These dates were chosen to encompass the majority of survey efforts and to include breeding pulses in the early 1990s when many sites were found to be productive. When designing treatment unit intersections with PACs, limit treatment acres to those necessary to achieve strategic placement objectives and avoid treatments adjacent to nest stands whenever possible.

If nesting or foraging habitat in PACs is mechanically treated, mitigate by adding acreage to the PAC equivalent to the treated acres using adjacent acres of comparable quality wherever possible.

72. Mechanical treatments may be conducted to meet fuels objectives in protected activity centers (PACs) located in WUI defense zones. In PACs located in WUI threat zones, mechanical treatments are allowed where prescribed fire is not feasible and where avoiding PACs would significantly compromise the overall effectiveness of the landscape fire and fuels strategy. Mechanical treatments should be designed to maintain habitat structure and function of the PAC.
73. While mechanical treatments may be conducted in protected activity centers (PACs) located in WUI defense zones and, in some cases, threat zones, they are prohibited within a 500-foot radius buffer around a spotted owl activity center within the designated PAC. Prescribed burning is allowed within the 500-foot radius buffer. Hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), may be conducted prior to burning as needed to protect important elements of owl habitat. Treatments in the remainder of the PAC use the forest-wide standards and guidelines for mechanical thinning.
74. In PACs located outside the WUI, limit stand-altering activities to reducing surface and ladder fuels through prescribed fire treatments. In forested stands with overstory trees 11 inches dbh and greater, design prescribed fire treatments to have an average flame length of 4 feet or less. Hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), may be conducted prior to burning as needed to protect important elements of owl habitat.
75. **For California spotted owl PACs:** Maintain a limited operating period (LOP), prohibiting vegetation treatments within approximately ¼ mile of the activity center during the breeding season (March 1 through August 31), unless surveys confirm that California spotted owls are not nesting. Prior to implementing activities within or adjacent to a California spotted owl PAC and the location of the nest site or activity center is uncertain, conduct surveys to establish or confirm the location of the nest or activity center.
76. **For northern goshawk PACs:** Maintain a limited operating period (LOP), prohibiting vegetation treatments within approximately ¼ mile of the nest site during the breeding season (February 15 through September 15) unless surveys confirm that northern goshawks are not nesting. If the nest stand within a protected activity center (PAC) is unknown, either apply the LOP to a ¼-mile area surrounding the PAC, or survey to determine the nest stand location.
77. The LOP may be waived for vegetation treatments of limited scope and duration, when a biological evaluation determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. Where a biological evaluation concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the LOP buffer distance may be modified.

78. Breeding season limited operating period restrictions may be waived, where necessary, to allow for use of early season prescribed fire in up to 5 percent of **California spotted owl PACs** per year on a forest.
79. Breeding season limited operating period restrictions may be waived, where necessary, to allow for use of early season prescribed fire in up to 5 percent of **northern goshawk PACs** per year on a forest.
80. **For California spotted owl PACs:** Conduct vegetation treatments in no more than 5 percent per year and 10 percent per decade of the acres in California spotted owl PACs in the 11 Sierra Nevada national forests. Monitor the number of PACs treated at a bioregional scale.
81. **For northern goshawk PACs:** Conduct mechanical treatments in no more than 5 percent per year and 10 percent per decade of the acres in northern goshawk PACs in the 11 Sierra Nevada national forests.
82. Mitigate impacts where there is documented evidence of disturbance to the nest site from existing recreation, off highway vehicle route, trail, and road uses (including road maintenance). Evaluate proposals for new roads, trails, off highway vehicle routes, and recreational and other developments for their potential to disturb nest sites.

## Standards and Guidelines for Great Gray Owl

### Protected Activity Centers

83. Apply a limited operating period, prohibiting vegetation treatments and road construction within  $\frac{1}{4}$  mile of an active great gray owl nest stand, during the nesting period (typically March 1 to August 15). The LOP may be waived for vegetation treatments of limited scope and duration, when a biological evaluation determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. Where a biological evaluation concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the LOP buffer distance may be reduced.
84. In meadow areas of great gray owl PACs, maintain herbaceous vegetation at a height commensurate with site capability and habitat needs of prey species. Follow regional guidance to determine potential prey species and associated habitat requirements at the project level.

## Standards and Guidelines for Fisher Den Sites

85. Protect fisher den site buffers from disturbance with a limited operating period (LOP) from March 1 through June 30 for vegetation treatments as long as habitat remains suitable or until another Regionally-approved management strategy is implemented. The LOP may be waived for individual projects of limited scope and duration, when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location.
86. Avoid fuel treatments in fisher den site buffers to the extent possible. If areas within den site buffers must be treated to achieve fuels objectives for the urban wildland intermix zone, limit treatments to mechanical clearing of fuels. Treat ladder and surface fuels to achieve fuels objectives. Use piling or mastication to treat surface fuels during initial treatment. Burning of piled debris is allowed. Prescribed fire may be used to treat fuels if no other reasonable alternative exists.

87. Mitigate impacts where there is documented evidence of disturbance to the den site from existing recreation, off highway vehicle route, trail, and road uses (including road maintenance). Evaluate proposals for new roads, trails, off highway vehicle routes, and recreational and other developments for their potential to disturb den sites.

### Standards and Guidelines for Marten Den Sites

88. Protect marten den site buffers from disturbance from vegetation treatments with a limited operating period (LOP) from May 1 through July 31 as long as habitat remains suitable or until another Regionally-approved management strategy is implemented. The LOP may be waived for individual projects of limited scope and duration, when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location.
89. Mitigate impacts where there is documented evidence of disturbance to the den site from existing recreation, off highway vehicle route, trail, and road uses (including road maintenance). Evaluate proposals for new roads, trails, off highway vehicle routes, and recreational and other developments for their potential to disturb den sites.

### Standards and Guidelines for the Southern Sierra Fisher Conservation Area

90. Prior to vegetation treatments, design measures to protect important habitat structures as identified by the wildlife biologist, such as large diameter snags and oaks, patches of dense large trees typically  $\frac{1}{4}$  to 2 acres, large trees with cavities for nesting, clumps of small understory trees, and coarse woody material. For example, use firing patterns, place fire lines around snags and large logs, and implement other prescribed burning techniques to minimize effects to these attributes.  
  
Use mechanical treatments when appropriate to minimize effects on preferred fisher habitat elements.

### Standards and Guidelines for Riparian Conservation Areas and Critical Aquatic Refuges

91. Designate riparian conservation area (RCA) widths as described in Part B of this appendix. The RCA widths displayed in Part B may be adjusted at the project level if a landscape analysis has been completed and a site-specific RCO analysis demonstrates a need for different widths.
92. Evaluate new proposed management activities within CARs and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the AMS goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.
93. Identify existing uses and activities in CARs and RCAs during landscape analysis. At the time of permit reissuance, evaluate and consider actions needed for consistency with RCOs.
94. As part of project-level analysis, conduct peer reviews for projects that propose ground-disturbing activities in more than 25 percent of the RCA or more than 15 percent of a CAR.

## Standards and Guidelines Associated with RCO #1

95. For waters designated as “Water Quality Limited” (Clean Water Act Section 303(d)), participate in the development of Total Maximum Daily Loads (TMDLs) and TMDL Implementation Plans. Execute applicable elements of completed TMDL Implementation Plans.
96. Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.
97. Limit pesticide applications to cases where project level analysis indicates that pesticide applications are consistent with riparian conservation objectives.
98. Within 500 feet of known occupied sites for the California red-legged frog, Cascades frog, Yosemite toad, foothill yellow-legged frog, mountain yellow-legged frog, and northern leopard frog, design pesticide applications to avoid adverse effects to individuals and their habitats.
99. Prohibit storage of fuels and other toxic materials within RCAs and CARs except at designated administrative sites and sites covered by a Special Use Authorization. Prohibit refueling within RCAs and CARs unless there are no other alternatives. Ensure that spill plans are reviewed and up-to-date.

## Standards and Guidelines Associated with RCO #2

100. Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity.
101. Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species. Locate water drafting sites to avoid adverse effects to in stream flows and depletion of pool habitat. Where possible, maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows, wetlands, and other special aquatic features.
102. Prior to activities that could adversely affect streams, determine if relevant stream characteristics are within the range of natural variability. If characteristics are outside the range of natural variability, implement mitigation measures and short-term restoration actions needed to prevent further declines or cause an upward trend in conditions. Evaluate required long-term restoration actions and implement them according to their status among other restoration needs.
103. Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities (for example, livestock, off-highway vehicles, and dispersed recreation) from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites, sites authorized under Special Use Permits and designated off-highway vehicle routes.
104. In stream reaches occupied by, or identified as “essential habitat” in the conservation assessment for, the Lahonton and Paiute cutthroat trout and the Little Kern golden trout, limit streambank disturbance from livestock to 10 percent of the occupied or “essential habitat” stream reach. (Conservation assessments are described in the record of decision.) Cooperate with State and Federal agencies to develop streambank disturbance standards for threatened, endangered, and sensitive species. Use the regional streambank assessment protocol. Implement corrective action where disturbance limits have been exceeded.

105. At either the landscape or project-scale, determine if the age class, structural diversity, composition, and cover of riparian vegetation are within the range of natural variability for the vegetative community. If conditions are outside the range of natural variability, consider implementing mitigation and/or restoration actions that will result in an upward trend. Actions could include restoration of aspen or other riparian vegetation where conifer encroachment is identified as a problem.
106. Cooperate with Federal, Tribal, State and local governments to secure in stream flows needed to maintain, recover, and restore riparian resources, channel conditions, and aquatic habitat. Maintain in stream flows to protect aquatic systems to which species are uniquely adapted. Minimize the effects of stream diversions or other flow modifications from hydroelectric projects on threatened, endangered, and sensitive species.
107. For exempt hydroelectric facilities on national forest lands, ensure that special use permit language provides adequate in stream flow requirements to maintain, restore, or recover favorable ecological conditions for local riparian- and aquatic-dependent species.

### Standard and Guideline Associated with RCO #3

108. Determine if the level of coarse large woody debris (CWD) is within the range of natural variability in terms of frequency and distribution and is sufficient to sustain stream channel physical complexity and stability. Ensure proposed management activities move conditions toward the range of natural variability.

### Standards and Guidelines Associated with RCO #4

109. Within CARs, in occupied habitat or “essential habitat” as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.
110. Use screening devices for water drafting pumps. (Fire suppression activities are exempt during initial attack.) Use pumps with low entry velocity to minimize removal of aquatic species, including juvenile fish, amphibian egg masses and tadpoles, from aquatic habitats.
111. Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. In burn plans for project areas that include, or are adjacent to RCAs, identify mitigation measures to minimize the spread of fire into riparian vegetation. In determining which mitigation measures to adopt, weigh the potential harm of mitigation measures, for example fire lines, against the risks and benefits of prescribed fire entering riparian vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management actions could be damaging to habitat or long-term function of the riparian community.
112. Post-wildfire management activities in RCAs and CARs should emphasize enhancing native vegetation cover, stabilizing channels by non-structural means, minimizing adverse effects from the existing road network, and carrying out activities identified in landscape analyses. Post-wildfire operations shall minimize the exposure of bare soil.
113. Allow hazard tree removal within RCAs or CARs. Allow mechanical ground disturbing fuels treatments, salvage harvest, or commercial fuelwood cutting within RCAs or CARs when the activity is consistent with RCOs. Utilize low ground pressure equipment, helicopters, over the



snow logging, or other non-ground disturbing actions to operate off of existing roads when needed to achieve RCOs. Ensure that existing roads, landings, and skid trails meet Best Management Practices. Minimize the construction of new skid trails or roads for access into RCAs for fuel treatments, salvage harvest, commercial fuelwood cutting, or hazard tree removal.

114. As appropriate, assess and document aquatic conditions following the Regional Stream Condition Inventory protocol prior to implementing ground disturbing activities within suitable habitat for California red-legged frog, Cascades frog, Yosemite toad, foothill and mountain yellow-legged frogs, and northern leopard frog.
115. During fire suppression activities, consider impacts to aquatic- and riparian-dependent resources. Where possible, locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of RCAs or CARs. During pre-suppression planning, determine guidelines for suppression activities, including avoidance of potential adverse effects to aquatic- and riparian-dependent species as a goal.
116. Identify roads, trails, OHV trails and staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic and riparian-dependent species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines or desired conditions.

## Standards and Guidelines Associated with RCO #5

117. Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are, at a minimum, at Proper Functioning Condition, as defined in the appropriate Technical Reports (or their successor publications): (1) “Process for Assessing PFC” TR 1737-9 (1993), “PFC for Lotic Areas” USDI TR 1737-15 (1998) or (2) “PFC for Lentic Riparian-Wetland Areas” USDI TR 1737-11 (1994).
118. Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining bogs and fens include, but are not limited to, presence of: (1) sphagnum moss (*Spagnum spp.*), (2) mosses belonging to the genus *Meessia*, and (3) sundew (*Drosera spp.*) Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits.
119. Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas. During project-level planning, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in riparian conservation areas with riparian conservation objectives.
120. Under season-long grazing:
  - For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height).
  - For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height).Determine ecological status on all key areas monitored for grazing utilization prior to establishing utilization levels. Use Regional ecological scorecards and range plant list in

regional range handbooks to determine ecological status. Analyze meadow ecological status every 3 to 5 years. If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Include ecological status data in a spatially explicit Geographical Information System database.

Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status.

121. Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation.

#### Standard and Guideline Associated with RCO #6

122. Recommend restoration practices in: (1) areas with compaction in excess of soil quality standards, (2) areas with lowered water tables, or (3) areas that are either actively down cutting or that have historic gullies. Identify other management practices, for example, road building, recreational use, grazing, and timber harvests, that may be contributing to the observed degradation.

#### Standards and Guidelines for Critical Aquatic Refuges

123. Determine which critical aquatic refuges or areas within critical aquatic refuges are suitable for mineral withdrawal. Propose these areas for withdrawal from location and entry under U.S. mining laws, subject to valid existing rights, for a term of 20 years.
124. Approve mining-related plans of operation if measures are implemented that contribute toward the attainment or maintenance of aquatic management strategy goals.

## E. Management Direction for the Herger-Feinstein Quincy Library Group Pilot Project Area

The Lassen and Plumas National Forests and the Sierraville Ranger District of the Tahoe National Forest will implement the HFQLG Forest Recovery Act Pilot Project, consistent with the HFQLG Forest Recovery Act and Alternative 2 of the HFQLG EIS.

The HFQLG Forest Recovery Act pilot project is designed to test and demonstrate the effectiveness of certain fuels and vegetation management activities in meeting ecologic, economic, and fuel reduction objectives. Fuels and vegetation management activities include constructing a strategic system of defensible fuels profile zones (DFPZs), group selection, and individual tree selection. A management program for riparian areas is also included in the pilot project.

This Decision includes the following direction for the HFQLG Forest Recovery Act Pilot Project activities<sup>3</sup>, and non-pilot project activities, where specifically noted:

- Apply land allocations to the Lassen and Plumas National forests, and the Sierraville Ranger District of the Tahoe National Forest, which are described in the HFQLG Forest Recovery Act ROD and FEIS, with the exception that the land allocation for goshawk territories and marten and fisher habitat management areas do not apply. Apply the standards and guidelines displayed in Table 2 below to the applicable land allocations. The direction in Table 2 applies when a conflict arises between existing forest plan standards and guidelines and the management direction in Table 2.
- Apply the standards and guidelines detailed in this appendix for management of goshawk PACs and forest carnivore den sites. Standards and guidelines for management of goshawk PACs apply with the caveat that DFPZs may be constructed within goshawk PACs, subject to the following limitations. In goshawk PACs, prohibit mechanical treatments within a 500-foot radius buffer around nest trees. Allow prescribed burning within the 500-foot radius buffer. Prior to burning, conduct hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), as needed to protect important elements of goshawk habitat. The remaining area of the PAC may be mechanically treated to achieve the fuels reduction strategy for the DFPZ. Conduct mechanical treatments in no more than 5 percent per year and 10 percent per decade of the total acres in goshawk PACs within the 11 Sierra Nevada national forests.
- Implement the resource management activities mandated by the HFQLG Forest Recovery Act.
- Apply SAT Guidelines, as set forth in the HFQLG EIS and ROD to vegetation management actions that are proposed for fuels reduction, timber management, area thinning, prescribed fire and salvage harvest within the Pilot Project Area for the life of the pilot project. Continue the long-term strategy for anadromous fish-producing watersheds for the Lassen National Forest, as set forth in Appendix I of the Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement.

For forest management activities on the Lassen and Plumas National Forests and the Sierraville Ranger District of the Tahoe National Forest that are not part of the HFQLG Pilot Project or addressed in Table 1, follow the land allocations and standards and guidelines set forth in Parts B and C of this appendix, as for other regions of the Sierra Nevada.

Standards and guidelines for fuels and vegetation management for the pilot project are shown in Table 2. This table includes direction for designing and implementing fuels and vegetation management activities within the various land allocations of the HFQLG Pilot Project Area for the life of the pilot project. After completion of the pilot project, vegetation and fuels management activities on the Plumas and Lassen National Forests and the Sierraville Ranger District of the Tahoe National Forest will be guided by the direction described for the other Sierra Nevada national forests. The future forest plan amendment or revisions required by the HFQLG Act may, however, eventually modify this direction.

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<sup>3</sup> “HFQLG Forest Recovery Act Pilot Project activities” are those activities set forth in the HFQLG Forest Recovery Act and Alternative 2 of the HFQLG EIS, such as DFPZ construction, group selection, individual tree selection, and riparian restoration.

**Table 2.** Standards and guidelines applicable to the HFQLG Pilot Project Area for the life of the pilot project.

<b>HFQLG Land Allocation</b>	<b>Standards and Guidelines</b>
Offbase and deferred areas	The following HFQLG resource management activities are prohibited: DFPZ construction, group selection, individual tree selection, all road building, all timber harvesting activities, and any riparian management that involves road construction or timber harvesting.
Late successional old growth (LSOG) rank 4 and 5	Group selection and individual tree selection are not allowed in LSOG 4 and 5 stands. DFPZ construction is allowed in LSOG 4 and 5 stands. Design DFPZs to avoid old forest stands (CWHR classes 5M, 5D, 6) within this allocation.
California spotted owl PACs	The following resource management activities - DFPZs, group selection, individual tree selection, and riparian restoration projects and other timber harvesting - are not allowed within spotted owl PACs.
California spotted owl habitat areas (SOHAs)	The following resource management activities - DFPZs, group selection, individual tree selection, and riparian restoration projects and other timber harvesting - are not allowed within spotted owl SOHAs.
National forest lands outside of the above allocations and available for vegetation and fuels management activities specified in the HFQLG Act	<b>DFPZs</b>
	<u>Eastside pine types and all other CWHR 4M and 4D classes:</u> <ul style="list-style-type: none"> <li>▪ Design projects to retain at least 30% of existing basal area, generally comprised of the largest trees.</li> <li>▪ Design projects to retain all live trees ≥30 inches dbh; exceptions allowed for operability. Minimize impacts to ≥30-inch trees as much as practicable.</li> <li>▪ For CHWR 4M and 4D classes that are not eastside pine types, retain, where available, 5% of total post-treatment canopy cover in lower layers comprised of trees 6 - 24-inches dbh.</li> <li>▪ No other canopy cover requirements apply.</li> </ul>
	<u>CWHR 5M, 5D, and 6 classes except those referenced above:</u> <ul style="list-style-type: none"> <li>▪ Design projects to retain a minimum of 40% canopy cover.</li> <li>▪ Design projects to avoid reducing pre-treatment canopy cover by more than 30%.</li> <li>▪ Design projects to retain at least 40% of existing basal area, generally comprised of the largest trees.</li> <li>▪ Design projects to retain, where available, 5% of total post-treatment canopy cover in lower layers comprised of trees 6-24 inches dbh.</li> <li>▪ Design projects to retain all live trees ≥30 inches dbh; exceptions allowed for operability. Minimize impacts to ≥30-inch trees as much as practicable.</li> </ul>
	<u>All other CWHR class stands:</u> <ul style="list-style-type: none"> <li>▪ Retain all live trees ≥30 inches dbh, except to allow for operations. Minimize operations impacts to ≥30-inch trees as much as practicable.</li> </ul>
	<b>Group selection</b>
National forest lands outside of the above allocations and available for vegetation and fuels management activities specified in the HFQLG Act	Design projects to retain all live trees ≥30 inches dbh, except allowed for operability. Minimize impacts to ≥30-inch trees as much as practicable.
	<b>Area thinning (individual tree selection)</b>
	<u>All eastside pine types:</u> <ul style="list-style-type: none"> <li>▪ Design projects to retain at least 30% of existing basal area, generally comprised of the largest trees</li> <li>▪ Design projects to retain all live trees ≥30 inches dbh; exceptions allowed for operability. Minimize impacts to ≥30-inch trees as much as practicable.</li> <li>▪ Canopy cover change is not restricted.</li> </ul>

<p><b>HFQLG Land Allocation</b></p>	<p><b>Standards and Guidelines</b></p> <p><u>CWHR classes 4D, 4M, 5D, 5M and 6 (except eastside pine type):</u></p> <ul style="list-style-type: none"> <li>▪ Where vegetative conditions permit, design projects to retain ≥50% canopy cover after treatment averaged within the treatment unit, except where site-specific project objectives cannot be met. Where 50 percent canopy cover retention cannot be met as described above, design projects to retain a minimum of 40% canopy cover averaged within the treatment unit.</li> <li>▪ Design projects to avoid reducing canopy cover by more than 30% from pre-treatment levels.</li> <li>▪ Design projects to retain at least 40% of the existing basal area, generally comprised of the largest trees.</li> <li>▪ Design projects to retain, where available, 5% of total post-treatment canopy cover in lower layers comprised of trees 6-24 inches dbh.</li> <li>▪ Design projects to retain all live trees ≥30 inches dbh; exceptions allowed for operability. Minimize impacts to ≥30-inch trees as much as practicable.</li> </ul>
<p><b>HFQLG Land Allocation</b></p> <p>National forest lands outside of the above allocations and available for vegetation and fuels management activities specified in the HFQLG Act</p>	<p><b>Standards and Guidelines</b></p> <p><b>Down wood and snags</b></p> <ul style="list-style-type: none"> <li>▪ Determine retention levels of down woody material on an individual project basis. Within westside vegetation types, generally retain an average over the treatment unit of 10-15 tons of large down wood per acre. Within eastside vegetation types, generally retain an average of three large down logs per acre. Emphasize retention of wood that is in the earliest stages of decay. Consider the effects of follow-up prescribed fire in achieving desired retention levels of down wood.</li> <li>▪ Determine snag retention levels on an individual project basis. Design projects to sustain across a landscape a generally continuous supply of snags and live decadent trees suitable for cavity nesting wildlife. Retain some mid and large diameter live trees that are currently in decline, have substantial wood defect, or have desirable characteristics (teakettle branches, large diameter broken top, large cavities in the bole) to serve as future replacement snags and to provide nesting structure. When determining snag retention levels, consider land allocation, desired condition, landscape position, and site conditions (such as riparian areas and ridge tops), avoiding uniform distribution across large areas. During project-level planning, consider the following guidelines for large-snag retention:             <ul style="list-style-type: none"> <li>▪ In westside mixed conifer and ponderosa pine types, four of the largest snags per acre.</li> <li>▪ In the red fir forest type, six of the largest snags per acre.</li> <li>▪ In eastside pine and eastside mixed conifer forest types, three of the largest snags per acre.</li> <li>▪ In westside hardwood ecosystems, four of the largest snags per acre (hardwood or conifer).</li> <li>▪ Where standing live hardwood trees lack dead branches, six of the largest snags per acre to supplement wildlife needs for dead material.</li> <li>▪ Use snags larger than 15 inches dbh to meet this guideline. Snags should be clumped and distributed irregularly across the treatment units. Consider leaving fewer snags strategically located in treatment areas within the WUI and DFPZs. While some snags will be lost due to hazard removal or use of prescribed fire, consider these potential losses during project planning to achieve desired snag retention levels.</li> </ul> </li> </ul> <p><b>Spotted owl surveys</b></p> <ul style="list-style-type: none"> <li>▪ Prior to undertaking vegetation treatments in spotted owl habitat having unknown occupancy, conduct surveys in compliance with the Pacific Southwest Region survey direction and protocols, and designate PACs where appropriate according to survey results.</li> </ul>

## F. Monitoring Plan

This Decision adopts the Monitoring Plan presented in Appendix E of the SNFPA FEIS. See Chapter 2 of the Final SEIS for the focus of and priorities for monitoring under the selected alternative (Alternative S2).

## Appendix B: Glossary

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This glossary replaces both the Glossary in the FEIS and the January 2001 SNFPA ROD in their entirety.

**canopy cover:** Also referred to as canopy closure. The ground area covered by tree crowns. Canopy cover is expressed as a percent of the area. Values for percent canopy cover can be derived in many ways.

**ground disturbing activities:** Activities that result in detrimental soil compaction or loss of organic matter beyond the thresholds identified by soil quality standards.

**hand treatments:** Hand treatments can include the use of chainsaws or other hand operated mechanical tools.

**limited operating period:** A specified period of time during which identified activities are restricted or prohibited.

**mechanical treatments:** Examples of mechanical treatments include: pre-commercial thinning, biomass thinning, commercial thinning, salvage harvesting, group selection, piling, crushing, and mastication.

**prescribed burning treatments:** Includes all of the steps necessary to prepare and implement a prescribed burn. Examples include line construction, ignition, and mop-up of prescribed burns.

**vegetation treatments:** Includes both mechanical treatments and prescribed burning treatments.

