

## PLANNING PROCESS AND INTEGRATION

### ISSUE STATEMENT

The management issues facing national forests in the Sierra Nevada – which include protecting habitat for wide-ranging species, conserving water resources flowing through multiple watersheds, and restoring natural disturbance processes such as fire to the ecosystem – are complex and interrelated. Furthermore, many stressors that strongly influence this region as a whole, such as climate change and the disruption of fire as an ecological process, do not adhere to jurisdictional boundaries. Effective management of the Sierra Nevada ecosystem requires a holistic approach that informs and is informed by the management and needs of individual forest system units up and down the range. The conservation of ecosystems and their processes at the landscape level must be the goal. As noted by past Forest Service Chief, Jack Ward Thomas:

We must learn to prevent the creation of threatened species rather than performing heroic management feats to pull species back from the brink of extinction.<sup>1</sup>

This wisdom applies equally to issues of forest resilience, watershed health, and other resource concerns. Indeed, as Secretary Vilsack recently emphasized, the U.S. Fish and Wildlife Service is focused on “threats to wildlife habitat due to fragmentation and climate change,” and meeting these threats will require “landscape conservation action plans” that extend across ecoregions.<sup>2</sup>

Planning for a landscape as large as the Sierra Nevada requires considering issues at multiple

scales. Some issues are best dealt with on a regional level or national forest level, others at the watershed level, and still others at the site-specific level. Successful management will require integrating communication and planning among these scales and across jurisdictions and ownerships. Elements that are critical to effective coordination include:

- Communication and management frameworks that support integrated planning within and across jurisdictional boundaries;
- Open information transfer and exchange among the science community, resource specialists, managers, and other stakeholders that is timely, transparent and focused on resolving resource conflicts; and
- Management direction to ameliorate stressors, including climate change, and that coordinates with, complements and builds upon the actions of other agencies.

Effective management of the national forests in the Sierra Nevada depends on the implementation of practices supported by science and scientific principles. This view is reflected in the direction President Obama set early in his administration regarding the important role of science in guiding agency policy-making, in which he stated:

Science and the scientific process must inform and guide decisions of my Administration on a wide range of issues, including improvement of public health, protection of the environment, increased efficiency in the use of energy and other resources, mitigation of the threat of climate change, and protection of national security. The public must be able to trust the science and scientific process informing public policy decisions.<sup>3</sup>

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<sup>1</sup> Thomas, J. W. 1993. Forest management approaches on public lands. Albright lecturer speech. University of California, Berkeley.

<sup>2</sup> Letter from Secretary Tom Vilsack to Mr. Greg Costello, Western Environmental Law Center (Jan. 26, 2010).

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<sup>3</sup> Presidential Memorandum on Scientific Integrity for the Heads of Executive Departments and Agencies, March 9, 2009, [http://www.whitehouse.gov/the\\_press\\_office/Memorandum-](http://www.whitehouse.gov/the_press_office/Memorandum-)

The involvement of scientists early in any planning process, the development of a process for continuous review and application of the pertinent scientific research, and the integration of science consistency reviews at critical stages of the planning process are steps that can ensure the appropriate application of science to planning and management on national forests in the region.

Land management planning has become increasingly complicated in the face of climate change and the synergistic effects of other stressors. Researchers have noted shifts in animal migration, plant blooming dates (Bradley et al. 1999), as well as the intensity of fires and floods. Biotic communities are likely to be reassembled in new ways with novel predator, prey and competitive interactions (Stralberg et al. 2009). Thus, the objectives of maintaining and restoring ecosystem health are challenged in new ways.

Well-structured scientific input is necessary to address environmental challenges and critical issues affecting national forests, including climate change, ecosystem restoration, maintenance of ecological services, and wildlife viability. Key to the effective use of science will be the integration of science and scientists from a variety of disciplines and agencies early in the process to assist planning staff and collaboration partners in building strong regional direction. The integration of fire ecology, climate science, conservation biology, forest ecology and aquatic ecology, along with inclusion of third-party scientists will be critical to a well grounded approach to management.

The integration of collaboration in land management decision making also will be critical to successful management. Effective collaboration requires training, clarity of purpose and roles, and transparency. This approach to planning should also be supported through performance measures that reward collaboration. The agencies should continue

to emphasize the importance of collaboration and provide the training to do it effectively (Vosick et al. 2007). The science-based collaboration efforts guided by the Center for Collaborative Policy, currently ongoing in Region 5, are examples of professionally structured collaborative efforts that set high standards for both social and scientific interaction within collaborative groups.

The actions below are designed to increase effective communication, coordination, and planning within the Forest Service and between the Forest Service and other jurisdictions and stakeholders for the benefit of both national forest lands and the Sierra Nevada landscape as a whole. The actions also address the importance of integrating science and scientists into the planning process.

#### **POLICY ACTIONS NEEDED**

##### ***Proposal for Revision to Forest Plan Direction***

**A. Desired Condition** *The following statements represent the desired future condition of the administrative setting and may not reflect the current conditions.*

Desired Condition PLAN-1. Communication and management frameworks support integration of management across national forests, among ranger districts, and between forests and surrounding land users, managing agencies, scientists, and governments.

Desired Condition PLAN-2. Information and research plans flow smoothly among project planners, specialists, and decision makers and are used to design projects and support management decisions.

Desired Condition PLAN-3. Resource planning is completed at a scale appropriate to the issue at hand. Clear direction results in analyses that are completed in an efficient manner, focused on the relevant issues, and integrated across multiple planning scales.

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for-the-Heads-of-Executive-Departments-and-Agencies-3-9-09.

Desired Condition PLAN-4. Regional and watershed scales of planning require cooperation across national forest boundaries. Cooperative planning efforts between national forests improve the efficiency of the planning process and more effectively address restoration goals. For many issues, cooperative planning among the national forests is the only course capable of achieving the restoration goals established by the Regional Office.

Desired Condition PLAN-5. Variations in management practices across the Sierra Nevada are based on the fundamental differences in the ecosystem characteristics for specific planning areas and are not a result of differing interpretations of the planning direction issued by the Regional Office or contained in forest plans.

## B. Objectives

Objective PLAN-1. A Forest Integration Team is established within one year of adoption of the forest plan. This team is charged with providing an annual evaluation of the ecological integration of projects undertaken on the national forest relative to projects undertaken on adjacent forests and other adjacent land owners (e.g., other federal, state or private land owners). The evaluation would include recommendations to improve the integration of future projects on the national forest to other actions being undertaken.

Objective PLAN-2. Landscape analysis provides a basis for the cumulative analyses required of site-specific projects.

## C. Standards

Standard PLAN-1. Landscape analysis (>30,000 acre area; typically defined by a watershed boundary) is completed by an interdisciplinary team prior to project development and approval. Such landscape analysis:

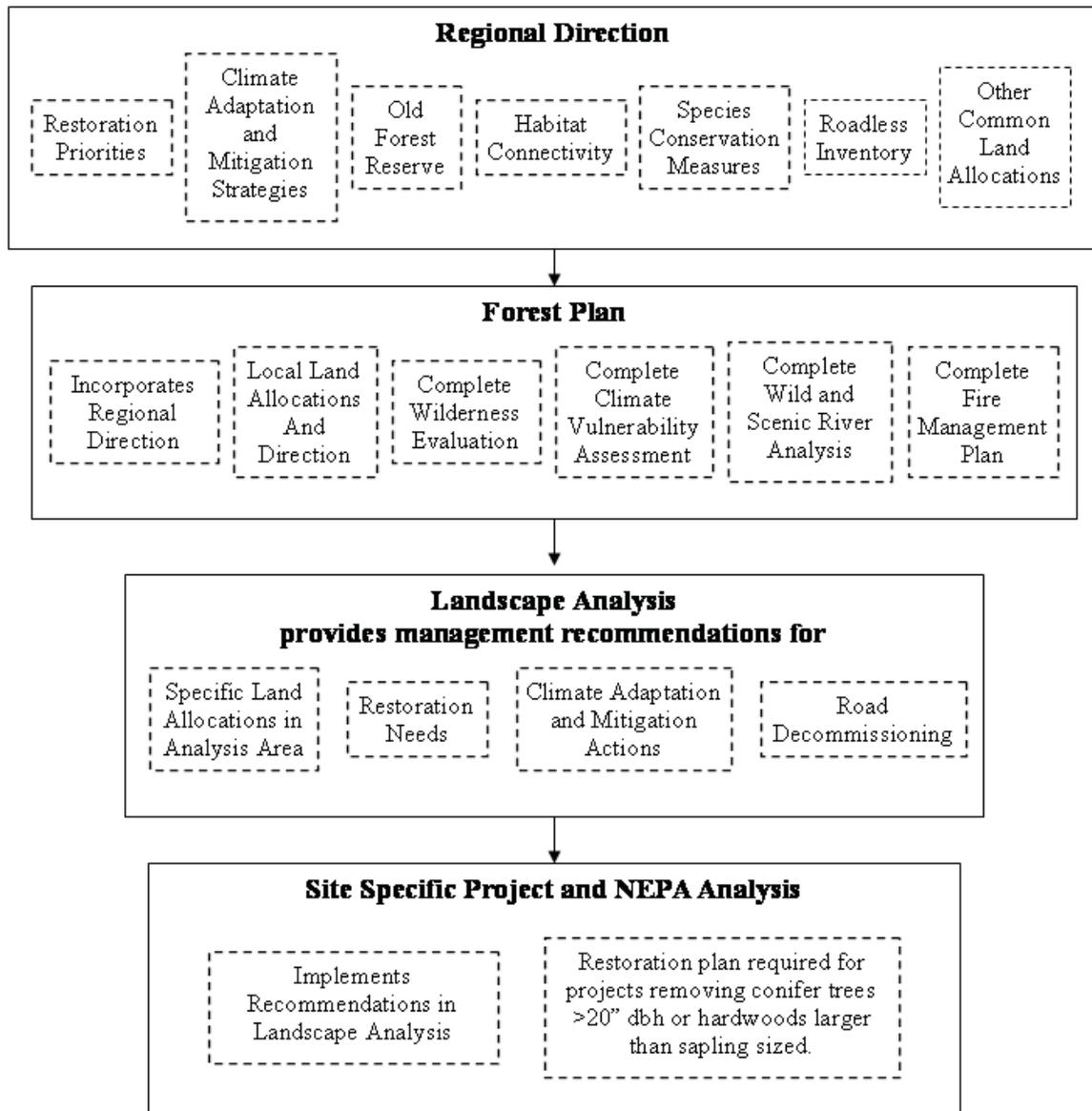
- Tiers to the information in the forest plan
- Evaluates local trends and conditions, including a consideration of other ownerships
- Evaluates pertinent science and consults with scientists as needed
- Establishes landscape specific desired conditions
- Identifies and prioritizes local restoration needs
- Identifies opportunities to address local and regionwide restoration priorities

Standard PLAN-2. Planning at the landscape and site-specific scales tiers to regional direction on a variety of issues, including but not limited to:

- Old forests and associated species
- Riparian and aquatic conservation allocations
- Roadless inventory and wilderness evaluation and recommendations
- Wild and Scenic River evaluation
- Climate adaptation strategies to address habitat connectivity and habitat integrity
- Benefits of fire as a disturbance process
- Restoration priorities
- Habitat connectivity
- Species conservation measures
- Protection of soil resources

Standard PLAN-3. Land management activities must be designed to address the restoration needs and priorities identified in the landscape analysis. (See Figure III.A-1)

Figure III.A-1. Planning Hierarchy



Standard PLAN-4. Projects proposing the removal of conifer species greater than 20 inches DBH or hardwoods larger than seedlings and saplings must include a science-based restoration plan. The restoration plan must clearly demonstrate that the proposed removals will not reduce in the short or long term habitat conditions for at risk species and will support the reintroduction of a range of disturbance processes at the space and scale reflected in the desired conditions established for the project in the landscape analysis. Projects

removing conifer species with diameters less than 20 inches DBH must still meet other forest plan standards, but are not required to develop restoration plans.

Standard PLAN-5. Vegetation management projects, i.e., those projects proposing to manage vegetation to meet restoration objectives or reduce fire risk, must follow the guidelines presented in Table III.A-2 in the following section.

**D. Regionwide Land Allocations**

Additional allocations may be appropriate for an individual forest.

The following table proposes land allocations to be adopted throughout the Sierra Nevada region.

Table III.A-1. Land Allocations.

<b>Land Allocation</b>	<b>General Description</b>	<b>Management Objective</b>
Wilderness Area (WA)	Congressionally designated areas.	Defined by congressional designation.
Wild and Scenic Rivers (WSR)	Congressionally designated areas.	Defined by congressional designation.
Special areas (special interest areas (SIA), etc.)	Designated by the individual forest.	Defined by the designation.
Research Natural Areas (RNAs)	Designated by agreement among the national forest and research station.	Maintain biological diversity Provide baseline ecological information Support non-manipulative research Encourage research and university natural-history education.
Recommended Wilderness (RW)	Area that is recommended for inclusion in the NWPS by the USFS.	Preserve the wilderness character of these lands until Congress accepts or rejects the recommendations in whole or in part.
Backcountry Management Area (BMA)	An inventoried roadless area (IRA) or citizen's inventoried roadless areas (CIRA) that do not contain any national forest system roads or motorized trails.	Preserve the roadless and backcountry character of these lands. Manage them under the Roadless Area Conservation Rule with exception, prohibiting motorized over-snow vehicle use and the construction of new motorized trails.
Protected Activity Center (PACs)	Designation around known nesting sites for California spotted owl (300 acres) and great gray owl (>50 acres). Inclusion in PAC of area within 300 feet of structures is avoided.	Provide habitat conditions to support successful reproduction. Manage for very low risk of loss of occupancy
Home Range Core Area (HRCA)	Area around California spotted owl nest site and including the PAC. Size ranges from 600 acres to 2,400 acres depending on location in the Sierra Nevada.	Provide for high quality foraging habitat near to nest stands. Manage for low risk of loss of occupancy
Post Fledgling Area (PFA)	Area (420 acres) around northern goshawk nest stand. Delineated around all birds known to be nesting.	Manage for breeding and nesting; area intended to support fledglings. Mature forest, large tree structures (live and dead), open understories. See Appendix A for additional details on desired habitat conditions.

<b>Land Allocation</b>	<b>General Description</b>	<b>Management Objective</b>
Forest Carnivore Den Sites	Den site buffer (700 acres for fisher; 100 acres for marten) designated around known maternal or natal dens.	Limit disturbance during denning (limited operating period). Retain habitat conditions that support denning. Limit vegetation management to reducing surface and ladder fuels to reduce fire risk until new science suggests otherwise. Restoration treatments do not remove larger white fir or incense cedar in these areas.
Old Forest and Connectivity (OFC)	Area in which old forest qualities are emphasized Area critical to the movement and flow of species associated with all habitat types across the landscape. Designed as an adaptation to climate change and other stressors.	Restore ecological process where doing so does not threaten critical values. Maintain movement opportunities across the landscape. Manage to achieve high representation (greater than 60 to 80 percent) of old forest condition.
Community Zone (CZ)	The area at risk from wildfire directly adjacent to houses or communities and generally not exceeding 0.25 miles from a community; may include access roads and other infrastructure to support community.	Create defensible and resilient conditions to protect human life and property. Reduce fuel hazards within 300 feet of structures to significantly limit wildfire effects within this zone. Reduce fuel hazards adjacent to roads providing egress from structures. Suppression would be fire management response.

Land Allocation	General Description	Management Objective
Riparian Conservation Area (RCA)	<p>Defined by stream type and condition</p> <p>Ranges from 150 feet to 300 feet from the midpoint of the stream.</p> <p>Riparian conservation area (RCA) widths shown below may be adjusted at the project level if a landscape analysis has been completed and a site-specific assessment of the riparian conservation objectives (RCOs) demonstrates a need for different widths.</p> <p><u>Perennial Streams</u>: 300 feet on each side of the stream, measured from the bank full edge of the stream.</p> <p><u>Seasonally Flowing Streams (includes intermittent and ephemeral streams)</u>: 150 feet on each side of the stream, measured from the bank full edge of the stream</p> <p><u>Streams in Inner Gorge</u>: top of inner gorge (Inner gorge is defined by stream adjacent slopes greater than 70 percent gradient)</p> <p><u>Special Aquatic Features 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</u>: 300 feet from edge of feature or riparian vegetation, whichever width is greater. Special Aquatic Features include: lakes, wet meadows, bogs, fens, wetlands, vernal pools, and springs.</p> <p><u>Other hydrological or topographic depressions without a defined channel</u>: RCA width and protection measures determined through project level analysis. Inner gorge is defined by stream adjacent slopes greater than 70 percent gradient. Special Aquatic Features include: lakes, wet meadows, bogs, fens, wetlands, vernal pools, and springs.</p>	<p>Restore ecological process where doing so does not threaten critical values.</p> <p>Maintain, restore, enhance, and protect.</p> <p>Limited levels of ground and vegetation disturbance allowed.</p> <p>Avoid actions that retard or prevent attainment of aquatic conservation objectives.</p>
Aquatic Diversity Emphasis (ADE)	<p>Watershed in which protecting or maintaining aquatic diversity is the priority.</p>	<p>Restore ecological process where doing so does not threaten critical values.</p> <p>Avoid actions that retard or prevent attainment of aquatic conservation objectives.</p> <p>Promote low road density, generally &lt;1.5 mi/mi<sup>2</sup> in the matrix, less in sensitive habitats.</p>
Yosemite Toad (YT)	<p>Habitat around sites with YT including wet meadows with standing water and saturated soils, streams, springs, important upland habitat, and habitat identified as “essential habitat” in the conservation assessment for the Yosemite toad.</p>	<p>Provide habitat conditions to support successful reproduction and persistence.</p> <p>Maintain hydrologic function of meadow system.</p> <p>Limit human uses in areas not currently in excellent condition.</p>

Land Allocation	General Description	Management Objective
Willow Flycatcher: Occupied and Emphasis (WF)	<p><b>Occupied habitats</b> are meadows or riparian sites with documented willow flycatcher.</p> <p><b>Emphasis habitat</b> are defined as meadows larger than 15 acres that have standing water on June 1 and a deciduous shrub component.</p>	<p>Provide habitat conditions to support successful reproduction and persistence. Limit human uses in areas not currently in excellent condition.</p> <p>Maintain hydrologic function of meadow system.</p>
Ecological Restoration (ER)	Area outside of all other allocations.	<p>Restore ecological process.</p> <p>Use planned and unplanned ignitions where safety concerns can be addressed.</p> <p>Area managed to achieve desired conditions established regionally and refined at the landscape level.</p>

Table III.A-2. Vegetation management standards by land allocation.

Land Allocation	Management Standards
Spotted owl PACs	Limit treatment to prescribed burning or mechanical removal of small diameter material to reduce fire risk.
Forest Carnivore Den Sites (fisher and marten)	Limit treatment to reduce surface and ladder fuels to meet the following fuel objectives: 1) < 4-foot flame length; 2) < 20% mortality of trees >15" dbh.
Northern goshawk PFAs, great grey owl PACs, HRCA, OFC, RCA, ADE, ER	<p><b>1) Diameter limit:</b> 20" dbh limit with emphasis on retaining all pine (not only dominant/co-dominant) &gt;12". Exceptions to the above that are clearly based on ecological need for the site may include:</p> <ul style="list-style-type: none"> <li>▪ Within conifer stands, removal of white fir or incense cedar 20-29" dbh within 30 feet of large pine (&gt;24" dbh) with the goal of increasing light and resources available to large pine. Logged trees &gt;20" (limbed to reduce fuel loading) should be left on site to provide down wood, if levels currently are less than ecologically desirable.</li> <li>▪ Removal of white fir or incense cedar 20-29" dbh within drip line of oak hardwood with the goal of increasing light and other resources available to hardwood.</li> <li>▪ Removal of conifer species around oak and other hardwoods to improve tree health; action must be balanced with need to provide for decadence and understory cover around oaks.</li> </ul> <p><b>2) Canopy cover:</b> Retain at least these levels of canopy for the California Wildlife Habitat Relationship (CWHR) types:</p> <ul style="list-style-type: none"> <li>▪ At least 60% in CWHR 5D/6 (higher levels desirable)</li> <li>▪ At least 50% in CWHR 5M except where pretreatment canopy cover is less than 50%, then mechanical thinning should retain at least 40% canopy cover</li> <li>▪ At least 60% canopy cover in CWHR 4D</li> <li>▪ At least 40% canopy cover in CWHR 4M</li> </ul> <p>Vary canopy cover to avoid uniform average on each acre. Exceptions to this standard allowed are to achieve adequate reduction of ladder fuels to meet fuel objectives.</p> <p><b>3) Retention areas:</b> Retain 10-25% of each treatment area unlogged or lightly modified varying by land allocation to provide for heterogeneity:</p> <ul style="list-style-type: none"> <li>▪ 10% in Community Zones</li> <li>▪ 15-25% in all other allocations</li> </ul>

Land Allocation	Management Standards
	The goal is to create stands with vertical diversity in adjacent patches. The creation of stands that are completely cleared from the ground to the codominant and dominant canopy is to be avoided.
Yosemite Toad (YT)	Treatment limited to surface and ladder fuels when it can be demonstrated that the risk of wildfire is greater than risk of losing individuals from management activities (e.g., felling trees, skidding, equipment movement)
Community Zone (CZ)	30" DBH limit

Table III.A-3. Additional discussion of these land allocations is located in the following sections for the conservation strategy.

Land Allocation	Sections in Conservation Strategy
WA	IV. I. Protecting Roadless Areas and Recommending New Wilderness Areas
WSR	IV. J. Wild and Scenic Rivers: Evaluation and Recommendation Appendix C: Wild and Scenic Rivers: Status of Evaluations and Comprehensive River Management Plans
SIA	IV. K. Special Interest Areas and Research Natural Areas Appendix D Status of Special Interest Areas and Research Natural Areas
RNAs	IV. K. Special Interest Areas and Research Natural Areas Appendix D Status of Special Interest Areas and Research Natural Areas
BMA	IV. I. Protecting Roadless Areas and Recommending New Wilderness Areas
PACs, HRCAS, PFAs, Forest Carnivore Den Sites	IV.C. Maintain and Restore Old Forest Habitats and Associated Species Appendix A. Species Assessments and Conservation Measures
OFC	IV.C. Maintain and Restore Old Forest Habitats and Associated Species
YT, WF	IV. D. Restore and Maintain Aquatic Ecosystems Appendix A. Species Assessments and Conservation Measures
RCA, ADE	IV. D. Restore and Maintain Aquatic Ecosystems
ER	IV.A. Restoring Fire as an Ecological Process IV.B. Structural Diversity of Forests and Adjacent Habitats
CZ	IV.A. Restoring Fire as an Ecological Process

Additional information about specific land allocations is contained in the sections of the conservation strategy as noted in Table IIIA-3.

***Recommended Actions at the National Forest Level Not Directly Addressed in the Forest Plan***

- Establish a Forest Plan Revision Team to oversee the revision process on the forest and coordinate this effort with adjacent national

forests and the Regional Office. Include managers and specialists in this team.

- The work plan for the Forest Plan Revision Team specifically addresses the process that will be used to ensure that the planning documents are integrated across subject or issues areas. This integration is to occur throughout the planning process and not only at the final step of plan development or adoption.

- The Forest Plan Revision Team identifies early in their work planning how scientific review and feedback will be completed during the revision process. Engagement of scientists should not be limited to those internal to the agency. Individual review of specific sections (e.g., review by an amphibian specialist of a section on Yosemite toad) and comprehensive reviews of the entire draft and final plans need to be completed and recommendations incorporated into the plan.
- The science consistency review process established by Forest Service Research is followed for the forest plan revision. Scientists internal and external to the Forest Service should be involved in these reviews and sufficient time allocated to address each issue area individually and integrated across issues in the forest plan. The planning documents and the science consistency review should clearly document how the best available science was identified and used in designing the forest plans.
- Complete a forest-wide assessment of the vulnerability of key attributes to the influences of climate change (Aplet et al. 2010). Use this assessment as a basis for identifying in the forest plan adaptation strategies to address the potential effects of changing climate and to increase the resiliency of national forest ecosystems.
- The Science Integration Team and other specialists should develop a regionwide trends and conditions report that identifies rangewide priorities to be addressed in each forest plan. This report needs to be completed prior to the revisions on each forest being initiated. A public review and comment process should be built into the process for creating the regionwide trends and conditions report.
- Develop a database of specialists (non-Forest Service and Forest Service) who are able to provide consultation as needed to the forest plan revision teams during the revision process. Specialists included in the database should cover the range of expertise needed to develop a forest plan, including natural resources, policy development, and social/economic.
- The region should provide direction to each forest on how to address rangewide issues and priorities in the forest plan revision. This regional direction achieves consistency in land use planning among land allocations common to all forests.
- The region should provide a rangewide approach to climate adaptation and mitigation for each national forest to incorporate into the forest plan revision. The rangewide approach developed by the region would be designed to complement climate strategies adopted by other agencies (e.g., the State of California's "California Climate Adaptation Strategy," National Park Service, US Fish and Wildlife Service).

#### ***Recommendations for New Regional Direction or Policy***

- Create a Science Integration Team at the regional level to provide science support on region wide issues for each forest plan revision. The team should include agency and non-agency scientists, specialists, and managers.
- Establish ecologically sustainable and science-based priorities for restoration regionwide and direct national forests to work collaboratively to accomplish restoration priorities.
- Develop a regional manual and training program on conducting the required landscape

analyses to ensure these are completed in a consistent and efficient manner.

- Create a Science Review Coordinator at the regional level to organize timely science consistency reviews for each forest plan revision.
- Require from each national forest written responses to the comments received in the science consistency reviews.
- Create a forum for Forest Integration Teams to come together every 2-3 years to assess forest activities and identify opportunities for integrating future work.
- Include collaboration among forests in accomplishing restoration goals as a criterion when evaluating the job performance of a Forest Supervisor.
- Provide financial incentive for national forests to collaborate with each other on restoration priorities by preferentially funding collaborative projects.
- Provide financial incentive for national forests to undertake projects that accomplish multiple priorities such as watershed health, habitat protection and restoration, and road decommissioning.
- Use the Science Integration Team to host forums on issues that affect the entire region, such as responding to climate change, conserving rangewide species and developing desired condition statements.
- Create a common archive of presentations from the science forums, research results, and references that address the management issues to be addressed throughout the region. Structure the archive so that it can be easily shared among Forest Service staff throughout

the region, other agencies, and interested stakeholders.

- Create systems and opportunities for shared learning among specialists and other stakeholders involved in the forest plan revision at the regional and national forest levels. The webinars on responding to climate change that have been hosted by the USFWS ([http://training.fws.gov/CSP/Resources/climate\\_change\\_webinars/safeguarding\\_wildlife\\_cc\\_archives.html](http://training.fws.gov/CSP/Resources/climate_change_webinars/safeguarding_wildlife_cc_archives.html)) could serve as an example of both the technology/system to use to deliver the program and a topic area of interest. Coordinating training opportunities among state or federal agencies should be explored. (Note: This action also appears in the issue area “ensure complete scientific review of planning documents.”)
- Develop tools and processes to engage the public in the planning process. The recent use of roundtables and archived presentations by the Washington Office in the development of a national rule provides an example of an approach.
- Provide training to resource staff and decision makers on the function and operation of teams, including roles and responsibilities, values, cohesion, and collaboration.
- Provide forest and district level training in designing and marking to advance heterogeneity and the retention of key ecological values in project and landscape planning. Offer this annual training to other jurisdictions, agency partners and private landowners to establish ecological restoration in an “all lands” context.

#### *Additional Recommendations*

- Identify key scientists and experts and encourage/support their involvement in the planning process.

- Identify scientists and experts in other agencies and encourage/support their involvement in the planning process.
- Maintain strong professional interactions with Pacific Southwest Research Station and encourage/support their involvement in the forest plan revision process.
- Engage the California Department of Fish and Game on actions to implement the California State Wildlife Action Plan.
- Engage the US Fish and Wildlife Service on actions to support recovery of listed species.

## REFERENCES

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