Chapter 2: Need for Change Summary

Forest Plan Revision Themes

The 1988 Forest Plan has served the LTBMU well, and much of the direction it contains is still valid today. The parts of the plan that are working well will be kept, and the revision will be limited to areas where new regulations and policy, science, and other information, and changing social, economic, and ecologic conditions and trends have created a need for updated guidance. The revision effort will focus on four major themes identified through internal and public scoping:

- Ecosystem restoration,
- Recreation management,
- Land use, and
- Planning and adaptive management.

For the purposes of this report, ecosystem restoration has been divided into two main topics, (1) restoring natural watershed processes to disturbed lands, and (2) reducing wildfire hazard and restoring a more natural forest structure. In reality, these are not separate, and the need for change includes more complete integration of work in these areas. Better integration will further efforts to restore Lake Tahoe's native natural history by reestablishing endangered, threatened, and sensitive plant and animal species populations.

Another important component of ecosystem restoration is improving water quality through the restoration and maintenance of the LTBMU infrastructure – roads, trails, and developed sites. The LTBMU has demonstrated significant progress since 1988. Based on the roads analysis and risk assessment, 80 miles of roads were decommissioned, 12 miles of roads were converted to trails, and 290 miles of road were upgraded to meet current Best Management Practice standards. Developed facilities and trails are now being similarly addressed. There is a strong positive trend, and little need for change.

Ecosystem Restoration: Restoring Degraded Watersheds

The need for a single Federal administrative voice and unified resource planning coordination was a principal reason why the LTBMU was established. The delicate watershed systems that resulted in the famed clarity of the lake were critically disturbed for more than a century, followed by rapid urban development in the 1960s and 1970s. Restoration also includes improving forest vegetation health and diversity, wildlife habitats, and fisheries, and the reintroduction of native species such as Lahontan cutthroat trout. Restoration usually improves the quality of recreational experiences.

Evolution of Watershed Restoration

In 1988, the LTBMU's primary ecosystem restoration goals were to reverse the downward trend in the quality of water flowing into Lake Tahoe from tributary streams on National Forest lands, enhance and protect natural riparian function, and maintain and protect soil productivity. Over a 12-year period (1988-2000), approximately 500 acres of Stream Environment Zone (SEZ) lands were treated. Many treatments were small in scale and most were site specific, e.g., stabilization of excessively eroding stream banks. This approach was a reflection of limited funding levels and of watershed resource management thinking at that time. Most treatments have exhibited some degree of success with respect to meeting program goals.

These goals and desired conditions were expanded and given more of an ecosystem context by the Sierra Nevada Forest Plan Amendment (SNFPA) (USDA Forest Service 2004a), which directs Forests throughout the Sierras to restore and maintain physical, chemical, and biological processes in riparian and meadow lands that lead to healthy, self-sustaining ecosystems. The SNFPA added a wealth of guidance for Riparian Conservation Areas (RCAs), which are similar in definition to SEZs, but usually include much broader buffer zones.

Riparian Conservation Area Guidance

Currently, LTBMU NEPA documents analyze effects on both RCAs and SEZs.

SEZs are similar in concept to RCAs, but are usually smaller. The RCA desired conditions and objectives were incorporated into the SEZ desired conditions in the Pathway 2007 process. In order to streamline future analysis, the Riparian Conservation Area (RCA) guidance needs to be consistent with SEZ guidance.

Unlike current SEZ regulations, RCA guidance does not prohibit any types of management activities in RCAs if analysis is conducted that shows that the project will meet the Riparian Conservation Objectives (RCOs) and the RCA standards and guidelines. The RCO analysis process is very sound and thorough. The LTBMU will propose to its Pathway 2007 partners that the Riparian Conservation Objective analysis process be used for identifying appropriate management activities in SEZs.

Current Restoration Trends

The 1988 Forest Plan goals have been accomplished and restoration projects now focus on the broader goal of restoring ecosystem function, which requires a more interdisciplinary approach not reflected in the current Forest Plan. Desired conditions, strategies and objectives in the revised plan need to reflect this approach. For example, recent completed landscape and watershed analyses have identified encroachment of conifers on meadow environments as a significant threat to meadow ecosystem function. Historic land use is an explanation for this condition.

Landscape and watershed analysis has also found that cessation of natural fire regimes in and adjacent to some Stream Environment Zones is a potential threat to ecosystem function. Similar to the vegetation management strategy in the rest of the forest, natural disturbance processes in SEZs need to be mimicked by including the tolls of vegetation manipulation and prescribed fire. The drought and subsequent bark beetle infestation in the late 1980s and early 1990s resulted in high rates of lodgepole pine mortality in riparian areas. Many of the affected riparian areas are within the wildland-urban interface and constitute a fire hazard. While limited handwork has been done to reduce fuel accumulations, local regulations substantially restrict the use of methods other than hand cutting and oversnow logging, so the vast majority of these areas remain untreated at present.

Cookhouse Meadow stream channel restoration

Moving Forward – Goals and Challenges

While it is now generally recognized that the need for SEZ restoration goes beyond water quality objectives to include vegetation manipulation for fuels reduction, wildlife habitat improvement, and fisheries enhancement, current regulations do not fully recognize or support these needs, often making these types of projects extremely difficult to implement. Since most of the major stream channel restoration work is now in progress on National Forest lands, many future projects will focus more on the terrestrial components of SEZs. Implementation of these projects would be facilitated by local regulations that support these kinds of projects.

In addition to regulatory changes, other interagency processes present challenges to the LTBMU's ability to work towards achieving desired conditions for SEZs. Efficient project planning and implementation requires (1) collaboration early in the planning process to ensure more streamlined project and permit review, and (2) consistent interpretation of regulatory guidelines by agency personnel.

Specific Need for Change

- Address the natural disturbance processes that create and perpetuate diversity (such as fire, avalanche, flooding) and consider how past, present, and future management activities may influence such processes.
- Provide guidance for mimicking disturbance processes in stream environment zones as well as in upland areas.
- Update desired conditions, strategies and objectives to reflect the broader goal of restoring ecosystem function as opposed to restoring lands for the sole purpose of improving water quality.
- Through the desired conditions and objectives, emphasize interdisciplinary, ecosystem-based restoration and management which will yield long-term improvement and sustainability of the natural function of riparian areas, including stream corridors and meadows.
- Establish conservation and management guidance for plant communities of concern with no current Forest Plan direction. Expand SNFPA direction to include subalpine communities.
- Propose use of the Riparian Conservation Objective analysis process for identifying appropriate management activities in SEZs. (Currently the LTBMU's partners do not recognize this analysis as necessary and sufficient.)
- Apply RCA guidance to SEZs in order to streamline NEPA. Currently both SEZs and RCAs are analyzed in NEPA documents.
- Provide specific guidance for SEZ management on all lands that LTBMU manages. The current Forest Plan needs clarification for LTBMU lands outside of TRPA jurisdiction.
- Remove language about the Watershed Improvement Needs (WIN) inventory; all work in this inventory has been completed.
- Revise special status species list to reflect current planning directives.

Ecosystem Restoration: Reducing Hazardous Fuels and Restoring Forest Health

Catastrophic wildfire is a significant threat to the natural, scenic and community values within the Lake Tahoe Basin, including lake water clarity. Reducing forest densities and heavy fuel loading is a necessary first step towards forest ecosystem restoration. Once fuel loads are under control, we can focus more on restoring forest stand structure and using prescribed fire to mimic natural disturbance. Forest health is also a significant factor in maintaining scenic values and quality habitat.

Evolution of Fuels Management

Our understanding of fuels management has changed considerably since 1988. The recognition that a century of fire suppression has created unnaturally dense conditions in forests of the western United States has come gradually. The 1995 Federal Wildland Fire Management Policy and the 2003 Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy provided guiding principles, policy statements, and implementation actions. These were followed by the Healthy Forests Restoration Act (HFRA) in December of 2003.

Fire Regime and Fuel Hazards

Several factors have combined to significantly change the fire regime and fuel hazards in the basin. Without sources of disturbance such as fire or timber harvesting, forest vegetation continued to grow. As a result, there were a large number of all size classes of trees in forest stands that create a ladder of flammable vegetation from the ground to the overstory canopy. Conifer trees invaded meadows and other openings, increasing fuel loadings. Since 1975, three periods of drought increased mortality in forest and riparian vegetation. The limbs from dying trees and dead trees fell to the ground and increased surface fuels. Small trees of shade-tolerant species, such as white fir, created ladder fuels in forest stands. As a result, fuel hazards may be the highest they have been in over 100 years.

Current and Future Actions

Public opinion is now in tune with National Forest management policies, and provided support for developing the Community Wildfire Protection Plans that are now in place. Current Forest Service efforts focus on reducing hazardous fuel loads in the Wildland Urban Interface (WUI). This work is expected to be substantially complete within the next 10-15 years. At that time, hazardous fuels reduction work will shift to a less aggressive maintenance mode and

Prescribed burning at Hidden Woods Project

the LTBMU will be able to focus more vegetation management resources on reducing stand densities outside the WUI and other forest management strategies such as increasing the range of stand development stages in the forest to provide a more natural mix of young and old trees.

Specific Need for Change

- Develop integrated desired conditions and objectives that incorporate fire protection, hazardous fuels management, vegetation management, wildlife habitat conservation, and fire ecology, emphasizing the role of fire as a necessary disturbance agent.
- Update guidance for smoke management. Although the current plan provides guidelines and mitigations for reducing smoke emissions and impacts, some of the options for slash disposal now conflict with scientific knowledge and current management practices. The revised Forest Plan needs to consider potential smoke emissions from these sources.

Recreation Management

The Lake Tahoe Basin is socially and economically dependent on recreation and tourism. The LTBMU, the primary land management agency, provides a wide variety of high quality outdoor recreation opportunities in a beautiful alpine setting. Maintaining recreation quality in the face of an expanding population of residents and visitors presents a number of management challenges. These challenges include protecting the scenic qualities of the landscape setting, improving the infrastructure necessary to support increasing visitor use, and protecting natural and cultural resources.

Current Condition and Trends: Recreation Capacity

Recreation capacity has emerged as a significant management challenge for plan revision. While the 1988 Forest Plan estimated that recreation demand would increase 1% per year, the current projection from the National Visitor Use Monitoring (NVUM) analysis is an increase of 1.6% per year, or 50,000 additional visitors each year for the next 20 years. With 19.7 visits per acre, the LTBMU already has the highest concentration of use of any National Forest. Some recreation sites, such as near Emerald Bay and at lakeshore campgrounds and beaches, are commonly at capacity not only during peak holiday periods, but also throughout much of the busy summer season. Traffic congestion, insufficient parking, and alternative transportation solutions, are the most common issues raised in public workshops.

Although the 1988 Forest Plan prescribed increased visitor use in most developed sites, and reserved capacity for future development in some areas, few increases have been implemented. In fact, the emphasis has not been on expanding site capacity, but on repairing worn out facilities, improving visitor service and implementing water quality best management practices. Most new capital investment is directed at meeting current codes and standards, such as universal accessibility requirements. The LTBMU focus has remained on improving quality and not on increasing quantity.

Defining Capacity

Recreation capacity can be defined as having physical, social, and institutional components. The physical components include the underlying infrastructure such as number of parking spaces, miles of roads and trails and their impacts on other environmental resources. Landscape settings such as public lakes, beaches and undeveloped backcountry enable people to have the experience they are seeking. A key component of the setting is the visitor's perception of whether it is too crowded and noisy, and whether the degree and kind of site development meets their needs and is aesthetically pleasing. Experiences are also dependent on elements such as perceived reasonableness of pricing, cleanliness, sense of security, and convenience, along with how well a site or area is managed. Institutional capacity speaks to the ability to effectively manage the people, facilities and settings.

Sustainability

Sustainability is an emerging concept relating to the continuity of economic, social, and ecological systems. The contribution of recreation to the regional social and economic systems is

well known. One measure of ecological and social sustainability is related to the capacity issue. The capacity of each type of recreation activity needs to be quantified to determine sustainability. This will help us determine which component of the capacity equation is the limiting factor for a given area. Tools like "Limits of Acceptable Change" (LAC) analysis and the Visitor Experience and Protection Framework (VERP), an adaptation of LAC, are available to do this, and can help us answer questions about how many people, how much parking, and what kinds of uses are appropriate for a given area.

Institutional Capacity

Recreation funding limits the LTBMU's capacity to manage use and maintain recreation facilities and programs. This is a common problem for National Forests across the country as demand for recreation is increasing, but recreation budgets are not keeping pace with the increased management and maintenance needs. Currently, while the LTBMU receives Southern Nevada Public Lands Management Act (SNPLMA) funds for many aspects of natural resource management, SNPLMA funding has not been available for most recreation management needs. The present recreation program is not sustainable given these trends.

South Lake Tahoe students at Winter Trek

Emphasis of Place in Recreation Management

The Forest Service has identified the following national role in providing recreation: Nature-based, dispersed recreation, including undeveloped settings, built environments reinforcing natural character, and wildland settings that complement enjoyment of special places. Each National Forest is in the process of describing its special places and unique niche within the national system. The underlying concept is to align facilities and programs to the specific forest niche. Some recreation activities are not compatible with the resiliency of the ecosystem or are inappropriate with the desired social setting. Each place cannot provide for every recreation activity. The place-based approach attempts to address sustainability and capacity.

Specific Need for Change

- Define the specific recreation niche or role that the LTBMU will play within the national framework.
- Align the Recreation Facilities Master Plan with the Forest Plan.
- Adopt a capacity and sustainability model using available tools including, but not limited to ROS and LAC.
- Strengthen and develop additional partnerships as a possible tool to add value to existing program limitations.
- Determine priorities for potential changes in site developments based on guidance in the Recreation Site Facility Master Plan.
- Remove the language that prohibits special events that exceed the PAOT capacity of a recreation site. Make these decisions in the special use permits authorizing the events.
- Remove language about evaluating the need to set an upper limit on the number of outfitter guides in wilderness. That was done in the 1998 Desolation Wilderness Management Guidelines & EIS, along with identifying ongoing efforts to monitor of air quality related values.
- Remove prohibitive language from the Forest Plan to allow for events such as cross country ski events and orienteering club events in which a portion of the use takes place off designated roads and trails.

Land Use – Suitability of Areas

Determining the suitable uses for each part of the forest is a major part of land management planning. The suitable uses on the landscape can and do change over time. Land uses are influenced by recreation trends, social values, capacity, and the economics of communities. Suitable use designations must provide for a diversity of healthy ecosystems, protection of threatened and endangered plant and animal species, designated wilderness and special interest areas, resorts, ski areas, and other recreation opportunities, and permitted special uses such as utility corridors.

Management Areas

All the current management areas on the LTBMU are suitable for a number of different kinds of uses except specially designated areas such as Wilderness, Roadless, and Research Natural Areas. The SNFPA land use types have been overlain onto the existing management areas delineated in the 1988 Forest Plan. Proposed changes regarding RCAs and SEZs are discussed in the Restoration section. Some of the guidelines for Old Forest Emphasis Areas will need revision in order to meet the stand structure goals proposed by Pathway 2007.

During the Pathway 2007 place-based planning phase, the original management areas will be analyzed to determine whether they still meet the LTBMU's management needs. Current prescriptive and prohibitive language will be removed from management area guidance as needed to comply with Washington Office guidance for writing Forest Plans under the new planning regulations. It will be determined where management area boundaries need to change, and they will be adjusted accordingly. Then suitable uses and place-based desired conditions will be developed for each management area, incorporating public and staff input as well as site specific ecosystem assessments and restoration planning. The suitability of range for LTBMU lands, considering findings from NEPA analysis now underway, will be examined.

The need for a mineral withdrawal which would prevent future mining activities will be assessed. Although TRPA prohibits mining within its jurisdiction, there have been no court cases testing whether TRPA regulations supercede the 1872 Mining Act. The analysis needed for a mineral withdrawal would be done as funding and staff are available; a withdrawal for only part of the unit will be considered if funding and staff are not adequate.

Land Use Systems

The multi-layered system will probably be retained, with critical biological habitat, SEZ, and other land use types superimposed on top of management areas. The guidance from the Bailey land capability system in the Forest Plan will be replaced with the guidance from new system to be developed by Pathway 2007 and/or other guidance based on the soil survey and the Terrestrial Ecologic Unit Inventory.

Specially Designated Areas

Several possibilities for additional Special Interest Areas were identified in the 1988 .Forest Plan, but were never analyzed. During this Plan revision, a determination will be made about whether that analysis will be conducted. In addition, the Cave Rock Traditional Cultural Property is an important historic resource that has been identified, evaluated and will present management challenges. It will be considered for designation as a Special Interest Area.

Roadless designation for new land acquisitions may be considered based on location, existing conditions and suitability with adjacent management. At the time of this document's release, a legal decision was issued that returned roadless policy to the original 2000 rule, and the implications of this decision were still being evaluated by the agency

In proposing new special area designations, the impact of this designation on the existing use and management must be considered. The benefits derived from the designation must be weighed against any limits that the designation would impose on use and management.

Specific Need for Change

- Develop management area desired conditions, using current prescriptions as a starting point for review, and incorporating public and staff input.
- Review current management areas boundaries in the context of public input, TRPA Plan Areas, and SNFPA allocations. Determine scope of need for change in management area boundaries.
- Remove prescriptions and prohibitions from plan language to comply with Washington Office guidance.
- Revise the SNFPA Old Forest Emphasis Area guidance as needed to meet proposed Pathway 2007 forest stand structure goals.
- Incorporate the Washoe Tribe agreements listed in the heritage section (Chapter 3) into the Forest Plan by reference.
- Review status of Meiss, Cold Creek, Trout Creek, and Baldwin grazing allotments that are no longer in use or where use has been questioned, and make determinations about whether to initiate full or partial closures.
- Replace the guidance from the Bailey land capability system in the Forest Plan with the guidance from new system to be developed by Pathway 2007 and/or other guidance based on the soil survey and the Terrestrial Ecologic Unit Inventory.
- Determine whether areas identified in the 1988 plan as possible Special Interest Areas should be analyzed for designation:
    - Osgood Swamp (paleobotanical resources)
    - Freel Peak Cushion Plant Community (botanical resources)
    - Taylor Creek Wetlands (botanical and zoological resources)
- Consider the Cave Rock Traditional Cultural Property for designation as a Special Interest Area.

Planning and Adaptive Management

Change is Constant

New science, new monitoring strategies, adaptive management and environmental management systems have all developed since the original 1988 Forest Plan. In order to take advantage of future changes, the revised LTBMU Forest Plan will be a dynamic document. Planning will no longer be revisited every 15 years, but continuously. In order to keep pace with scientific and social change, active public-private collaborative planning will be necessary to identify changing issues and trends. This collaborative planning will include other key partner agencies, local governments, organizations and the general public both inside and outside the Lake Tahoe Basin.

National Forest management must adapt to constant change from multiple sources, including, but not limited to new science, new funding sources, and public opinion. Adapting management strategies to new science is a constant challenge, because significant new research findings are frequent and often result in changes in management direction. New funding sources have reshaped the program of work and the LTBMU workforce – the staff numbers have been increased and new skill sets acquired. New laws and policy such as the Healthy Forest Restoration Act, have redirected the programs of work. Public opinion often shapes National Forest management. When the 1988 Forest Plan was written, mountain biking was a very new activity. As it gained in popularity, recreation management has kept pace by providing additional opportunities to enjoy this sport.

Measuring Progress

The two key means of measuring progress will be the set of Forest Plan monitoring and evaluation questions, which will be keyed to the Desired Conditions, and the Environmental Management System (EMS). Forest Plan monitoring questions will build on and be part of the Pathway 2007 work. The EMS is a new Forest Service requirement that was established to ensure progress towards environmental goals, document improvement through a system which is transparent to the public, and provide a formal adaptive management process.

A basin-wide adaptive management system is now under development. This system will coordinate basin-wide monitoring and reporting for the standards developed through Pathway 2007, ensure that the Pathway 2007 agency plans remain synchronized through the years as plans are updated, and promote information sharing and consistent goals among the many groups working to further the social, economic, and ecologic health of the Lake Tahoe Basin.

Specific Need for Change

- Develop a long-term monitoring and evaluation program that measures progress toward desired conditions and contributes to basin-wide monitoring and evaluation goals.
- Develop an Environmental Management System (EMS) that conforms to ISO 14001 as part of the Plan Set of Documents.
- Incorporate Forest Orders in the Forest Plan by reference
- Plan for additional community noise level (CNEL) monitoring around the basin on National Forest lands in cooperation with the TRPA.
- Include language clarifying Forest Service authority to enforce noise levels.
- Develop an adaptively managed long-term monitoring and evaluation program for plant communities of concern, focusing on community types deemed to be the highest conservation priorities.

Northern saw-whet owl (*Aegolius acadicus*)

Other Topics

Some proposed changes are overarching subjects that apply to more than one theme. These changes are delineated below.

Air Quality: Incorporate Pathway 2007 desired conditions for air quality related to human health, visibility, and water quality and forest health.

Heritage Resources: Incorporate the direction provided by new laws such as Executive Order 13084 Consultation and Coordination with Indian Tribal Governments and the Native American Graves Protection and Repatriation Act.

Scenic Resources:

- Involve the public to better identify and perpetuate the socially-valued scenery within the many diverse places of the Lake Tahoe Basin.
- Apply ecosystem opportunities (physical - biological - social / structures - processes - functions) to ensure that the valued scenery can be sustained through time.
- Provide approved, effective, state-of-the-art methods, terminology and data (to inventory, measure, communicate and integrate the scenic resource considerations into the Tahoe Basin's overall Desired Conditions, and implement and monitor its scenic resource accomplishments through time).

Special Uses: Provide guidelines for approving additional communication sites.

Transportation: Given that transportation has emerged as an issue that is very important to the public, LTBMU will bring forward the existing Forest Plan goals with increased emphasis and attention.

Workforce Housing: Change Forest Plan goal to: "Develop options for workforce housing in cooperation with local entities."

Indian paintbrush (*Castilleja linariaefolia*)