Klamath Tribes—Managing their Homeland Forests in Partnership with the USDA Forest Service

Will Hatcher, Steven Rondeau, Debora L. Johnson, K. Norman Johnson, and Jerry F. Franklin

The Klamath Tribes were “terminated” during the Eisenhower administration in the 1950s as part of a national program to force assimilation of tribes into the larger culture of the United States. Most of their Reservation went into federal ownership and became the Winema National Forest. In 1986, the Klamath Tribes regained federal recognition. By the late 1990s, Klamath Tribal natural resource professionals, guided by a Memorandum of Agreement with the Forest Service, increased their participation in interdisciplinary planning on projects within the Reservation. The Klamath Tribes also continued to seek return of their homeland. In the early 2000s, they developed a Restoration Strategy for their Reservation and commissioned development of a forest plan that guides their recommendations to the Fremont-Winema National Forest on management of their Reservation. Through a Master Stewardship Agreement with the Forest Service, the Klamath Tribes now share implementation responsibilities, including prescription writing, sale layout, tree marking, and forest inventory.

The Klamath Tribes (Klamath, Modoc, and Yahooskin) ceded 15 million acres of their homeland in 1864 while reserving 2.8 million acres for their exclusive use as the Klamath Reservation. Because of differences in interpretation by the Klamath Tribes and the US Government of the treaty’s boundary description and errors made by government surveyors, the Reservation was reduced to 1.2 million acres in 1901. Two months after the 1864 treaty was signed, the US Congress authorized transfer of public land along the route of a proposed road from Eugene, Oregon, to Silver City, Idaho, which ran through the Reservation. Over the objections of Tribal leaders and after litigation, 87,000 acres within the Reservation boundary were removed from Tribal ownership and conveyed to a private company in 1906 [Stern 1965. Klamath and Modoc Tribes et al. v. United States 296 U.S. 244 (56 S.Ct.212, 80 L.Ed. 202)] (Figure 1). After the transfer of 248,000 acres to Tribal members under the Dawes Allotment Act, which was completed in 1910, the Klamath Tribes retained title to about 865,000 acres (Stern 1965, Kickingbird and Ducheneaux 1973). Of these remaining lands, 683,000 forested acres, with extensive areas of old-growth ponderosa pine (Pinus ponderosa), became the basis of a harvest plan prepared by the US Indian Service (which became the Bureau of Indian Affairs [BIA]) for their management of the Klamath Reservation forests (Muck 1926). This plan guided management from the early 1920s until the 1950s as the BIA navigated western pine bark beetle (Dendroctonus brevicornis) outbreaks, Tribal members’ income needs, and the demands of the local forest industry. BIA foresters used seed tree silviculture in the pine and mixed conifer stands, which evolved into a selection system that retained the forests uneven-aged character (Mezger 2013).

In 1953, during the Eisenhower administration, the US Congress adopted an official policy of “terminating” Indian tribes, ending the Trust relationship between those tribes and the US Government, which had existed when their reservations were formed, under the guise of speeding assimilation of tribes into the broader American society (Burt 1982). The Klamath Tribes lost their federal recognition on Aug. 13, 1954, when Public Law 83-587 (68 Stat. 718) was signed. The act was amended 4 years later (72 Stat. 816) to authorize sale of most of the Klamath Reservation to private purchasers in large blocks subject to management under the principles of sustained yield, whereas the remainder would be managed by a private trustee for Tribal members who wished to retain common ownership. One private timber company purchased a block of 92,000 acres, and 84 miscellaneous “fringe units” that totaled 84,000 acres were sold to private buyers (Bilka 2008). When

Received March 1, 2016; accepted July 26, 2016; published online December 15, 2016.

Affiliations: Will Hatcher (will.hatcher@klamathtribes.com), The Klamath Tribes. Steven Rondeau (steve.rondeau@klamathtribes.com), The Klamath Tribes. Debora L. Johnson (debbie@applegateforestry.com), Applegate Forestry LLC, Corvallis, OR. K. Norman Johnson (norm.johnson@oregonstate.edu), Oregon State University, College of Forestry. Jerry F. Franklin (jff@uw.edu), University of Washington, College of the Environment.
other private buyers did not materialize, 525,000 forested acres were purchased by the US Government in 1959 (Hood 1972), of which 419,000 acres, together with the Klamath Ranger District of the Rogue River National Forest and small areas from the Deschutes and Fremont National Forests, became the Winema National Forest, and the other 106,000 acres were added to the Fremont National Forest. Approximately a decade later, the remaining Klamath Reservation was sold to the US Government, with 16,400 wetland acres going into the Klamath Marsh National Wildlife Refuge and 134,000 forested acres passing into federal (Winema National Forest) ownership (Mezger 2013, Cotton 2016).

By the late 1960s, forest management in the Klamath Basin began a shift from single tree selection under an extensive management regime reliant on natural regeneration to intensive management with clearcutting and planting. Weyerhaeuser Corporation led the way and the US Department of Agriculture (USDA) Forest Service soon followed.

By the 1980s, increasing amounts of clearcutting followed by creation of ponderosa pine plantations on the Reservation became controversial with the Klamath Tribes, which resulted in Tribal opposition to many projects. In 1994, the adoption of the “eastside screens” (USDA Forest Service 1994), which strictly limited logging live trees greater than 21 in. dbh, shifted management goals for the forests of eastern Oregon from timber production to maintaining large trees and protecting biodiversity.

Development of a Sustainability Strategy and a Tribal Forest Plan

Federal recognition of the Klamath Tribes was restored in 1986 and, although their Reservation was not returned, the Klamath Indian Tribe Restoration Act (Public Law 99-398) called for the development of an economic self-sufficiency plan under which trust lands could be returned. Approximately half of the 5,000 members enrolled in the Klamath Tribes live near the Reservation, and economic development has long been a Tribal priority. In 1999, the Klamath Tribes commissioned Interforest LLC to suggest a sustainability strategy to guide management of reestablished trust lands. Toward that end, Interforest helped Tribal members construct a guiding vision through Tribal surveys and focus groups with input from the community (Table 1).

A part of the resulting Tribal vision for the Reservation forests states that

...the Klamath [Reservation] Forest will move toward higher wildlife and fish populations, larger areas with a higher proportion of older trees, restoration of mule deer, fish and other habitat, and will move away from practices such as clearcutting and the maintenance of high road densities. More of the forest, in time, will visually resemble the largely remembered forests dominated by large pines with a variety of pine age classes on each acre, and an abundance of bitterbrush and other important browse species. More careful attention will be given to the maintenance of species of medicinal and spiritual importance to the Tribes (Interforest 2000, p. 12).

Table 1. Themes in the vision statement.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanence</td>
<td>We will think and plan generationally.</td>
</tr>
<tr>
<td>Collaboration</td>
<td>We will work collaboratively with our neighbors to bring the forest back to its fullest potential.</td>
</tr>
<tr>
<td>Sense of place</td>
<td>Forests and water will again be the underpinning of Tribal identity.</td>
</tr>
<tr>
<td>Ecological health</td>
<td>Forests will again be living mosaics of healthy and abundant plant and animal communities.</td>
</tr>
<tr>
<td>Balance</td>
<td>We will protect our resource while generating a sound economy and commerce.</td>
</tr>
<tr>
<td>Healing</td>
<td>When we heal the land, we also heal people.</td>
</tr>
</tbody>
</table>

From Interforest (2000, p. 14).

Management and Policy Implications

Indian tribes across the United States have knowledge and experience managing forests for multiple benefits, and restoration efforts on the national forests lag behind needs. Thus, engaging tribes to help manage our national forests may assist both the tribes and the US Department of Agriculture Forest Service. The Klamath Tribes provide an example of how tribes can help accelerate forest restoration efforts on the national forests. Their partnership with the Forest Service is building Tribal capacity to manage the natural resources of their homeland and may provide a new model of collaborative stewardship in project planning and implementation.
With the assistance of Interforest, the Klamath Tribes considered the following three alternatives for achieving this vision: Restoration emphasized moving the forest toward pretermination forest structure and complexity; Key Species focused on the most rapid path to the creation of additional habitat for wildlife species important to the Tribes; and Current Trajectory represented current practices at that time. The Tribes selected Restoration as the preferred alternative for achieving their goals. Restoration focuses on the most rapid path to the forest the Tribes envision in the long run. It should provide the most rapid and sure approach to the diverse forest and wildlife populations that were the pretermination spiritual and physical subsistence base for the Tribes and also provide a future base of timber production (Interforest 2000).

In 2001, the Klamath Tribes asked Norm Johnson, Jerry Franklin, and Debora Johnson, working cooperatively with the Klamath Tribes’ Natural Resource Department, to construct a management plan to implement the Restoration Alternative (Johnson et al. 2008). The principle management goal under this alternative is “to move as much of the forest as possible toward a structurally complex ponderosa and mixed-conifer dominated forest as rapidly as possible…” (Interforest 2000, p. 43). These complex forests are defined as those that retain much of their premanagement forest structure including the following:

1. A large-diameter tree component.
2. A spatially complex pattern of patches (e.g., large tree groves and open areas of dense regeneration).
3. Coarse wood habitats (snags and logs).
4. Well-developed understory communities of herbs and shrubs.
5. Moderate tree stocking levels (Interforest 2000).

In addition, restoration of a complex forest ecosystem also would address the suite of vegetation types and landforms that complement the complex forests described above. They include the interspersed riparian areas, meadows, draws, and hardwood patches.

**Key Planning Principles**

Key planning principles include the following:

- Basing desired future forest composition and structure on a consideration of historical information. Both the historical record and reconstructions suggested that the historical forest had the majority of its basal area in large pine trees at relatively low density across the landscape. Historic forest type maps (US Department of Interior Geological Survey 1921, USDA Forest Service 1936), along with other early reports and surveys that covered the Klamath Reservation forest, showed a complex, ponderosa pine-dominated forest with wet meadows, dry meadows, grassy glades, frosty flats, streambeds with lodgepole pine (Pinus contorta) (often with occasional ponderosa pine), and patches of quaking aspen (Populus tremuloides) and willows (Salix spp.) in the uplands and along streams. General descriptions of the historical forest were also provided by Youngblood et al. (2004), Fitzgerald (2005), Hessburg et al. (2005), and Spies et al. (2006). Recently, Hagmann et al. (2013) retrieved an archived, detailed BIA inventory taken between 1916 and 1924 and transferred the records to a database. Their in-depth analysis of this data set confirms a low-density historical forest dominated by old-growth ponderosa pine trees on both climax ponderosa pine and mixed-conifer sites.

- Using plant associations to classify forest site potentials. “Habitat types” provided the ecological basis for stratifying the Klamath Reservation Forest into areas with different site potentials, and, consequently, different responses to management regimes. The habitat types are named after the plant associations that identify and characterize these sites: Forest Service area ecology plant association guides are the primary source of this information (Hopkins 1979a, 1979b, Volland 1985). Understory shrubs, herbs, and grasses are especially important to the classification. These plant associations integrate soil, microclimate, and other conditions and, as such, are useful guides to productivity, species that are likely to be successful on the site, and potential regeneration problems. To simplify the stratification, similar habitat types were consolidated into plant association groups (Figure 2).

- Recognizing different stand structures in the pine and mixed-conifer forests as a result of past harvest. Within each plant association group, stands were grouped into three structural categories based on the number of trees over 21 in.dbh: Complex (more than 10 trees/acre over 21 in.); Simplified (less than 2 trees per acre over 21 in.); and Simplified with remnants (2–10 trees/acre over 21 in.). Complex forests were identified with an “old-growth” map developed in the early 1990s for the Winema and Fremont National Forests through a cooperative effort of the Audubon Society and the Forest Service, and cover less than 20% of the Reservation forest area. Simplified with remnant forests are the most common condition on the Reservation forest as a result of harvests from 1920 to 1955, which generally left an overstory of two or more residual trees per acre. Most of these lands today contain 2–8 residual trees per acre over 21 in. dbh.

- Emphasizing forest restoration rather than fuel treatments. The contemporary forest on the Reservation is quite different from the historical with much of its basal area in small and medium sized trees as well as much more white fir (Abies concolor) and lodgepole pine and a more homogeneous distribution of trees across the landscape (Johnson et al. 2008, Hagmann et al. 2013). Many harvest prescriptions carried out on the Fremont-Winema National Forests in the early 2000s emphasized fuel treatments that simplified the forest by thinning from below on a spacing grid (leaving mostly big trees). The Klamath Plan attempted to restore the spatial complexity of these forests using the historical complexity (Franklin and Van Pelt 2004) as a guide, into which fire-safe principles (Agee and Skinner 2005) were embedded.

- Protecting old trees and increasing their survivability as the first step in all forest restoration. The orange-barked old trees are the ecological backbone of the ecosystem being, among other things, the most fire-resistant tree component and source of persistent snags and down wood. These trees are also the most iconic—those of primary interest to stakeholder groups, because of the character that they provide to the forest. Hence, retaining old trees (defined as greater than 150 years) was viewed as essential from both ecological and social perspectives; prescriptions not only retained old trees but also enhanced their survival by removing adjacent fuels and competing vegetation and provided eventual replacements. Old tree retention replaced the 21-in. dbh screen, which had been problematic because of the need to remove young, but fast growing trees over 21 in. dbh (particularly young white fir and Douglas-fir [Pseudotsuga menziesii] functioning as ladder fuels).

- Prioritizing restoration of complex mixed-conifer stands. The decision was made to prioritize the stands that had values that were at greatest risk. This turned out to be the complex (i.e., containing substantial
old-growth) mixed-conifer stands, which had responded vigorously to wildfire removal due to their productivity; current stands on these sites also had a high percentage of white fir, which produces an extraordinary fuel ladder because of its shade-tolerant character and the deep crown that it retains. Basically, the productivity of the mixed-conifer sites was much more important than the number of fire cycles that had been missed (Figure 3).

- Providing mule deer (Odocoileus hemionus) habitat as part of forest restoration.

Mule deer have long been important to the Klamath Tribes for sustenance and as part of their cultural heritage. Restoration treatments retain hiding and foraging cover, and prescribed fire is used judiciously to create a mosaic of bitterbrush and small patches of trees throughout restoration units.

- Emphasizing what could be accomplished in the near-term (20 years) rather than long-term (80- or 100-year) goals. The emphasis in the plan was on restoring as much of the forest as possible to a more resilient condition in the next 20 years. Classical long-term harvest scheduling analysis was seen as counterproductive because it was based on an illusion of certainty that did not exist. Considering 80- or 100-year projections of forest conditions seemed neither helpful nor credible, given the risk of wildfire and drought, particularly in a warming climate. Rather, the plan focused on restoring the character and resilience of Klamath Reservation forests in the next 20 years to reduce risks and increase options for the Klamath Tribes and society at large beyond that period. Achieving this goal did not necessitate entering all stands during
that period; rather, actions would address the major problems in each area based on landscape plans.

**Silvicultural Prescriptions**

All restoration treatments are partial harvests to reduce overall stand densities and restore spatial heterogeneity. Restoring the dominance of old and mature fire- and drought-tolerant trees is fundamental to these prescriptions, since this will move the forest back toward historical reference conditions and increase resilience in the face of climate change. Desired basal area levels vary across the gradient of habitat types and the current densities of large (over 21 in. dbh) early seral trees. The goals of the plan’s silvicultural prescriptions are to do the following:

- Significantly reduce stand densities and fuel loadings across the forested area, while increasing mean tree diameter.
- Retain old trees (generally over 150 years of age) and increase their survivability by removing fuels and competing vegetation within twice the canopy drip line.
- Shift species composition toward more fire- and drought-tolerant species, such as ponderosa pine and sugar pine (*Pinus lambertiana*).
- Recover the patchy spatial distribution of these forests by retaining small untreated patches (skips) and creating or enhancing openings: structural complexity is achieved through a fine-scale mosaic of skips and openings along with scattered large trees, snags, and down logs. Small, untreated patches should total about 10–15% of the stand area.
- Protect and restore understory plant communities that play an important role as forage for mule deer and other wildlife and as surface fuels. Use mechanical treatments or cool patchy prescribed fires to rejuvenate decadent shrubs and improve understory conditions.
- In the portion of the forest that lies within the range of the northern spotted owl (*Strix occidentalis caurina*), create a resistant and resilient landscape within which approximately one-third of the forested area is retained in scattered dense, untreated patches where owl core habitat can be credibly conserved. In addition to core habitat areas these 300– to 500-acre patches should include denser forest at suitable elevations and favorable exposures.

**Landscape Planning**

The Tribes’ forest plan divided the Reservation forest into large landscape-level treatment areas, varying from 15,000 to 40,000 acres, and called for treating one or two of them each year to achieve the goal of moving over the forest in 20 years. When a restoration unit is treated, all major resource issues, including stand density reduction, hardwood restoration, riparian bank stabilization, and other problems are addressed. The large treatment areas help ensure that landscape-level management considerations come into effect, such as retaining dense patches for particular species and maintaining forage/cover ratios for others. They also enable stands where restoration treatments produce a net income to offset those where treatments incur a net cost.

**Adoption and Use of the Forest Plan**

The Klamath Tribes adopted the forest plan described in Johnson et al. (2008) as their Tribal Forest Plan. Since then, the plan has provided guidance in interdisciplinary project planning and in project implementation as described below.

In addition, the Tribes’ Forest Plan, in a draft stage, was summarized in a popular field guide supported by Ecotrust (Wolf 2004), which makes the concepts in the plan accessible to a broad audience. Also, all technical elements of the plan were incorporated into a field guide for the restoration of dry forests in eastern Oregon (Franklin et al. 2013), which has been widely distributed and used on other national forests. Finally, many of the dry forest restoration strategies developed for the Plan provide the foundation of recommendations for restoring the federal forests of the Pacific Northwest published in the *Journal of Forestry* (Franklin and Johnson 2012).

**Tribal Involvement in Project Planning and Implementation**

**Interdisciplinary Project Planning**

Most of the Reservation forest is on the Chiloquin District of the Fremont-Winema National Forest, located in Chiloquin, Oregon, just down the road from Tribal Headquarters. The District’s interdisciplinary team develops projects and evaluates their environmental impacts as part of their National Environmental Policy Act (NEPA) planning process. Grounded by procedures that are outlined in a Memorandum of Agreement that establishes a government-to-government process (Feb. 19, 1999 as amended Feb. 17, 2005) between the Klamath Tribes and the Forest Service, Tribal natural resource professionals and Tribal consultants participate on the interdisciplinary teams, using the Tribal Forest Plan to represent Tribal views on management. Key contributions to project planning through this involvement include the following:

1. On-the-ground knowledge that the Tribal Natural Resources staff brings to the process through their extensive field experience.
2. Additional support to landscape level planning that Tribal data and analysis expertise provides.
3. A focus on retaining old trees and increasing their survivability, regardless of their size, as well as reducing stand densities in complex (old-growth) mixed-conifer stands.
4. A shift from fuel treatments and spacing guides to restoration strategies that emphasize the clumpy nature of ponderosa pine forests, which has been aided by the development of quantitative guides to heterogeneity (Churchill et al. 2013).
5. An emphasis on maintaining and restoring habitat for plants and animals important to the Tribes.
6. A push to consider larger project areas.

**Acceptance of Tribal Vision, Plans, and Assistance**

While many Indian tribes participate in the management of federal forests, often to ensure that traditional cultural uses and practices are considered (e.g., Bussey et al. 2016), it is certainly unusual for an Indian tribe to construct a forest plan with detailed prescriptions for 670,000 acres of a national forest. After all, the Forest Service is the agency responsible for managing these lands and waters, considering the interests of the Tribes and the other citizens of the United States.

How easy was it to integrate this Forest Plan into project planning on the Fremont-Winema National Forest? In many ways the Tribes’ desire for increased involvement came at a fortunate time in that, at the regional level, the Forest Service was shifting to a more open and inclusive planning process:

- The agency’s new emphasis on collaboration matched the ‘Tribes’ interest as a participant in constructing projects rather than as a critic of agency efforts.
The agency realized that it does not have the resources to adequately plan large areas.

The agency desired support for reducing densities in old-growth areas, among the most controversial of agency restoration actions.

The agency was attempting to move to larger project areas after demonstrating to the public, in smaller areas, that they could be trusted to manage these forests.

The Fremont-Winema National Forest’s own analysis showed that the Klamath Reservation Forests were a high priority for restoration (Markus et al. 2014).

Still a number of issues have arisen. First, the Tribes’ approach to forest management focused more on fieldwork and an intimate knowledge of the forest, derived from living in these forests for many, many generations and less on documentation and analysis. Thus, the two groups approached planning differently. Fortunately, that has largely sorted itself out with Tribal staff fine-tuning Forest Service proposals based on detailed site-specific knowledge and field visits that then contribute to the agency’s planning and documentation.

Second, the Forest Service has considerable silvicultural expertise, and the ideas in the Klamath Tribal Plan differed somewhat from those of the Forest Service. As an example, the Tribal plan focuses on protecting all old trees (regardless of their size) rather than protecting large trees. In addition, the notion that there should be no “thinning” in clumps of older trees has been especially controversial. These differences have resulted in many field trips and discussions and are still a work in progress.

Third, the Tribes’ Forest Plan calls for restoration across the Reservation forest in the next 20 years. Whereas the agency has committed to increasing the pace of restoration, its many considerations, including habitat issues related to species of special interest, such as the northern spotted owl, result in discussions about acceptable treatment intensities.

Fourth, it is not always clear when and how the Forest Service needs to adjust its internal planning processes to reflect the Memorandum of Agreement with the Klamath Tribes. That Memorandum contains a number of formal steps of consultation, yet some of the greatest progress in integrating the interests of the Forest Service and the Klamath Tribes occurs through the day-to-day informal interactions of the natural resource professionals in both organizations. The balance between formal and informal relations remains a challenging dynamic in the relationship between the two groups.

Fifth, the Tribes’ historical claims to these lands and their status as a recognized tribe, gives them a special “place at the table” in planning and management of these lands, as recognized in the Memorandum of Agreement. In addition, the role of the Tribes in planning and management continues to evolve as they gain capacity and personnel. Explaining and highlighting this special government-to-government relationship, by both the Forest Service and the Tribes, remains an important element in achieving a successful and productive relationship.

Sixth, the Forest Service must consider Tribal requests in the context of the laws, regulations, and other considerations and demands under which the national forests operate. Thus, this partnership proceeds within a very complicated policy environment.

Results So Far

The Klamath Tribes have been involved in project planning for the last three decades, but this effort has greatly increased in the last few years. The Accelerated Restoration and Priority Landscapes Plan (Markus et al. 2014) that the Fremont-Winema National Forest adopted recently acknowledges the need to increase the pace and scale of restoration because of the threat to degraded forests from fire, climate change, and insect infestations and divides the forest into restoration units that range from 50,000 to 200,000 acres. In addition, priorities for treatment are established based on variables that include crown fire potential, proximity to the wildland-urban interface, and the current stand structure (Markus et al. 2014) (Figure 4). The Tribes have been heavily involved in the planning for Red Knight (30,000 acres), Black Hills (30,000), and Blue Jay (60,000 acres) project areas and are currently involved in the planning for Lobert (100,000 acres) and East Hills (140,000 acres) project areas (Figure 4). The Red Knight effort is described in-depth below.

Project Implementation

The Klamath Tribes’ important role in project implementation is probably the most innovative part of their involvement in national forest management. On Sept. 22, 2011, the Klamath Tribes and their partners (Lomakatsi Restoration Project and The Nature Conservancy) entered into a Master Stewardship Agreement (MSA) with the Forest Service that encompasses about 1.7 million acres. This strategic alliance brings together organizations that have experience in planning, design, administration, and implementation of restoration projects. Through the MSA the partners hope to (1) reduce fuel hazards and the risk of high-severity wildfire, (2) restore forest and watershed health, (3) train and employ a Klamath Tribal workforce, and (4) enhance local wood product processing and capacity.

The MSA defines the broad geographic area where projects will occur and outlines specific partner roles. Supplemental Project Agreements (SPAs) tier to the MSA and are developed collaboratively by the partners for specific projects. Currently the Klamath Tribes and their partners have 29,000 acres of SPAs that are in different stages of implementation. All of the SPAs are on the Reservation and are parts of landscape level projects that the Tribes have helped plan.

The Red Knight Project: An Example of Tribal Involvement in Project Planning and Implementation

Red Knight is a 30,000-acre project on the Chemult District of the Fremont-Winema National Forest that focuses on retaining and improving the survivability of the remaining old trees (by clearing out competing vegetation around them), reducing stand densities, favoring fire-tolerant tree species, and creating spatial heterogeneity that reflects the historical clumpy patterns of these forests. In addition, other goals include protecting habitat for sensitive species and cover for big game, protecting special places such as cultural sites and recreation areas, and restoring degraded hardwood stands (Figure 5).

The Tribes actively participated in the landscape design and planning process for this project and together with their partners are responsible for implementing 17,500 acres under an SPA tiered to the MSA.

SPA areas are subdivided into phases of manageable acreages to promote cost-efficient implementation, ensure economic viability, and target contractors of varying capacity. Each phase requires a technical proposal that details specific techniques, procedures, and programs, such as
plan of operations, timeline, and rationale for achieving desired objectives before the planned operating periods. These proposals are developed by the partners and submitted to the Forest Service for review. Once a technical proposal has been reviewed and accepted, on-the-ground sale layout activities can begin.

The Klamath Tribes, as the senior partner under the MSA, lead collaborative efforts between the partnership and Forest Service at all stages and levels of planning and implementation of each project, and each partner has a different level of involvement depending on the specific activity. To date, the partners, led by the Tribes, have finished laying out sale boundaries, collected inventory data, developed silvicultural prescriptions, marked trees, and designated skip locations on phases 1 and 2 (5,600 acres). Harvest operations for phase 1 are currently under contract. Inventory data collection has initiated planning for phases 3, 4, and 5 (11,900 acres).

**Implementation Challenges**

Implementing large projects through this innovative partnership is not without challenges, but the Klamath Tribes Natural Resources Department has worked through solutions (in italics below).

1. The Klamath Tribes work with limited capacity within the Natural Resources Department. This poses a challenge, given the attention required on each task per phase of each SPA. Inadequate internal capacity limits the ability to pursue funding necessary to hire, educate, and retain additional staff, reducing the opportunity to capture expertise and further develop the institutional knowledge. Presently they rely heavily on outsourcing to pursue funding and supplement or provide the capacity and expertise necessary to function effectively.

2. Outsourcing Tribal capacity also creates challenges when working with multiple partners consisting of private consultants, nongovernmental organizations, and government agencies that have different cultures, sources of funding, and skill sets. Those that live out of the area require travel and are less available than internal staff. In addition, it is difficult to coordinate scheduling to accommodate increased pace and scale and to help meet annual timber targets. Presently they deal with these issues by remaining in close communication with their partners and consultants and understanding the unique skill set that each partner and consultant can bring to any given issue.
3. Stewardship Agreements are relatively new, which has created a level of uncertainty within the Forest Service and the forest community. Efforts to learn and develop processes associated with SPAs may not translate between districts within the forest. Aside from the few Forest Service staff with extensive Stewardship experience and expertise who oversee portions of the Agreements, district staff may be inexperienced with the MSA. Presently they handle these issues by working with key individuals within the agency and maintaining an advanced knowledge of agreements, project implementation, and ecological restoration within the partnership and through consultants. Concerns, especially by stakeholders, will hopefully be reduced in time through successful project implementation.

4. Working with advanced ecological concepts requires knowledgeable staff who can train seasonal temporary workers. The inability to retain a full-time workforce results in high annual turnover and the need to keep training new workers. The Klamath Tribal labor crew relies on timber product value from SPAs to fund service. Because SPA projects have not yet generated receipts through commercial harvest, the crew is often forced to work outside of the Klamath Basin, in a large geographical area and on dozens of projects to remain employed. They have dealt with these issues by relying on experienced staff, returning seasonal staff, and contractors/consultants to train new crew members. They also often rely on one of their partners (Lomakatsi) to supplement their capacity with their full-time field staff.

**Summary**

The Klamath Tribes have expressed the desire to restore their homeland forests and have begun to make a major contribution toward a restoration effort. First, they commissioned a science-based forest plan that they could use as their restoration template. Next, their Natural Resource Department brought forward recommendations from their forest plan and their knowledge of the local area by working together with the Forest Service on interdisciplinary teams for projects within the Klamath Reservation boundary. Although many other Tribes bring their local ecological knowledge to help conserve resources on public lands that they hold dear, developing a forest plan for these lands is unusual.

The Klamath Tribes are now starting to undertake management responsibilities for implementing projects, contributing their own resource professionals for many of the tasks required for restoration to occur. It appears that such an effort is largely unprecedented in the history of the national forests and is a potential model for the future, making comanagement of the national forests by tribes and the US Government a reality as never before. Such an approach, as outlined here, would enable tribes to demonstrate their approach to implementing the principles of forest restoration and help ensure that the details and subtleties of forest restoration reflect tribal interests. In addition, leading project implementation would help build tribal capacity for management and could increase interest of tribal youth in pursuing natural resource careers. Finally, these implementation responsibilities would enable tribes to develop a better understanding of the realities of federal forest management and help build an improved foundation for Tribal-Forest Service discussions of the possibilities and limitations of forest management on the national forests.

**Literature Cited**


US DEPARTMENT OF AGRICULTURE FOREST SERVICE. 1994. Continuation of interim management direction establishing riparian, ecosystem and wildlife standards for timber sales; Regional Forester’s Forest Plan Amendment #1. USDA For. Serv., Pacific Northwest Region, Portland, OR.


