



Restoring Forests through Partnership: Lessons Learned from the French Meadows Project



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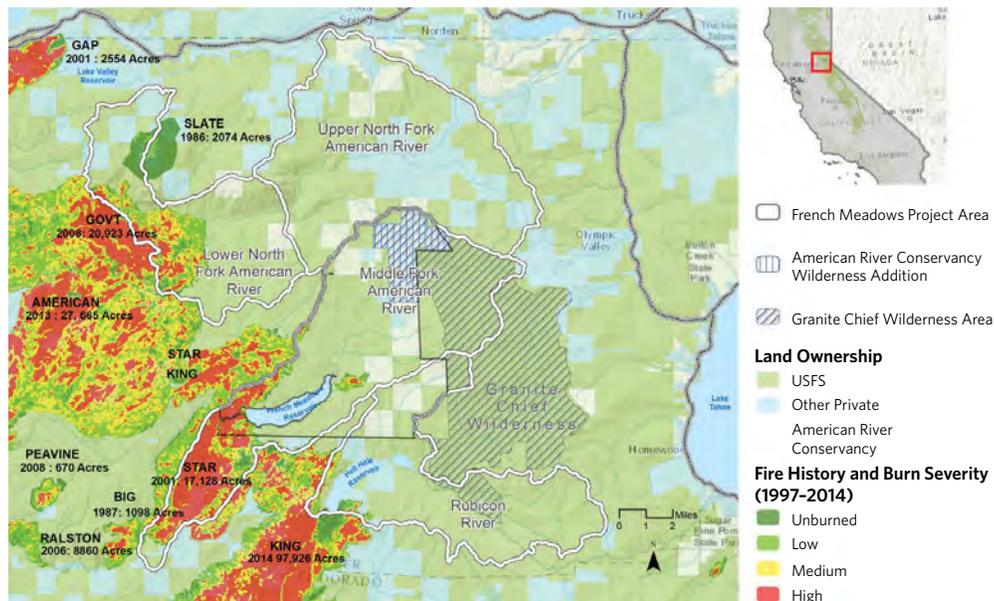
Restoring Forests through Partnership: Lessons Learned from the French Meadows Project

Healthy forests provide important benefits to people and nature, including clean water, clean air, carbon storage, wildlife habitat and recreational opportunities. Unfortunately, many forests of California's Sierra Nevada and the western United States are unhealthy and at serious risk of high-severity wildfire, insect mortality and drought due to fire suppression, past forest management and climate change. Forests that were once characterized by large, widely-spaced trees and beneficial, low-severity fire are now dominated by impenetrable thickets of small trees and brush and increasingly destructive megafires. Ecological thinning, biomass removal and prescribed fire are proven ways to reduce the risk of megafires, allow wildfires to be better managed and improve forest health and resilience, but the pace and scale of these activities need to be greatly increased given the scope of the problem.

The French Meadows Project is a forest restoration and fuels reduction project located in the headwaters of the Middle Fork of the American River on the Tahoe National Forest in

California's northern Sierra Nevada (see map). The Project area includes 27,623 acres, of which 22,152 acres are national forest land. The Project was developed not only to improve the health and resilience of an important municipal watershed, but also to address critical barriers to increasing the pace and scale of forest restoration in the Sierra. The partnership approach significantly reduced the typical time for planning similar projects on Forest Service lands while also reducing the burden on limited federal staffing and resources. Most importantly, a project that would still be in the preliminary stages of planning in the absence of the partnership has now been approved and will be implemented beginning in 2019.

This paper describes the genesis and development of the French Meadows Project, discusses key enabling conditions and lessons learned and offers recommendations to the Forest Service and other stakeholders for how to accelerate ecologically-based forest management and fuels reduction on national forest lands using a partnership model.



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Genesis of the French Meadows Project

Several factors came together to motivate the French Meadows partners—The Nature Conservancy (TNC), Placer County Water Agency (PCWA), Placer County, the U.S. Forest Service, American River Conservancy (ARC), Sierra Nevada Conservancy, and the Sierra Nevada Research Institute (SNRI) at the University of California, Merced—to work together on the French Meadows Project.

The 2014 King Fire, which burned approximately 97,000 acres, much of it at high severity, was an important catalyst for the Project. PCWA and Placer County, which own and operate French Meadows and Hell Hole Reservoirs and associated hydropower and municipal drinking water facilities in the headwaters of the Middle Fork of the American River, suffered significant damage from the King Fire. Post-fire erosion from the King Fire resulted in major, ongoing damage to reservoirs and infrastructure, at a cost of millions of dollars per year. Beyond the King Fire, much of the watershed below the

reservoirs has experienced high-severity wildfire in recent years (see map on previous page). Damage from the King Fire motivated PCWA and Placer County to act to reduce the risk of high-severity wildfire in the upper watershed.

Second, in 2015, The Nature Conservancy and the Northern Sierra Partnership worked with the American River Conservancy to acquire approximately 10,000 acres of privately owned forest land near French Meadows Reservoir, referred to as the American River Headwaters (ARH). The acquisition was motivated by the potential to expand the adjacent Granite Chief Wilderness and to consolidate the checkerboard pattern of public-private land ownership (see text box, p. 3). In addition, a key goal for The Nature Conservancy was to establish a demonstration site that could serve as a platform for developing and promoting practices and research to accelerate ecologically-based forest management in the Sierra.

The King Fire of 2014 caused major sedimentation in the Middle Fork of the American River, negatively impacting both aquatic habitat and water and hydropower infrastructure. All partners were motivated to lessen the likelihood of high-severity wildfire in the watershed. © Placer County Water Agency



Third, the French Meadows area had been on the Forest Service planning schedule for some time, but the agency had been unable to garner the resources to launch planning in earnest. The Forest Service was eager to proceed with forest restoration in the area and welcomed the opportunity to partner with other stakeholders to advance this goal.

Fourth, the Sierra Nevada Research Institute and The Nature Conservancy shared an interest in advancing research on the link between ecologically-based forest thinning and water supply. The Sierra Nevada is the source of more than 60% of California’s developed water supply, and clean water is one of the most important benefits provided by forested watersheds. Work by SNRI and TNC supported the hypothesis that ecological thinning of overly dense forests to reduce wildfire risk, if implemented at a landscape scale, could increase downstream water supply as well as protect water quality.¹ SNRI had already conducted significant research in the watershed, and the project site was well situated to support additional empirical research on the link between healthy forests and water supply.

Finally, all the partners shared a concern about the adverse impacts to both people and nature from high-severity wildfire and an interest in increasing the pace and scale of ecologically-based forest management to reduce these risks and promote healthier forests. For example, the Forest Service in 2011 announced its commitment to ecological restoration²



An aerial view of the aftermath of the King Fire of 2014, which burned more than 97,000 acres. © Placer County Water Agency

as a key goal for national forests in California, the Sierra Nevada Conservancy developed a Watershed Improvement Program³ to accelerate Sierra forest restoration and The Nature Conservancy’s Restoring America’s Forests⁴ program aimed to double the pace of restoration on national forests throughout the country.

Based on these shared interests, and through a series of meetings and discussions, the partners in 2016 signed a Memorandum of Understanding (MOU) to provide a broad framework of collaboration to advance ecologically-based forest management in the forested headwaters near French Meadows Reservoir. The MOU helped the partners to raise funds for the Project, to galvanize internal and external support and to begin the process of developing, analyzing and advancing a proposed action.

FINDING SHARED INTERESTS

Placer County Water Agency, The Nature Conservancy and American River Conservancy were brought together by what at first appeared to be opposing interests. PCWA had expressed opposition to ARC’s acquisition of the American River Headwaters based on concerns that expanding the Granite Chief Wilderness would limit road and vehicle access and thereby undermine efforts to manage forests to reduce wildfire risk. Based on a series of discussions, the parties agreed that an opportunity existed to improve fire resiliency at a landscape level in an important watershed by including Forest Service and ARH lands in a coordinated management project. TNC, PCWA and ARC then met with the Forest Service and proposed the idea of partnering to advance the French Meadows Project. Based on these shared interests and a commitment to work together to advance them, PCWA ultimately withdrew its objection to the ARH acquisition and the Granite Chief Wilderness expansion.

Project Development

Projects on national forest lands typically rely entirely on federal funding and Forest Service personnel to develop the proposed action, conduct required surveys, gather necessary information and undertake environmental analysis. With limited Forest Service resources committed to other priority projects across the Tahoe National Forest, the French Meadows partners recognized the need for a different paradigm to advance the Project expeditiously. Consistent with recent Forest Service policy guidance on shared stewardship,⁵ the partners collectively managed the Project, raised funds from a variety of sources and hired contractors where needed to undertake required surveys and analyses, all in close coordination with the Forest Service. Some of the key elements of this approach included:

- Forming a steering committee with membership from each of the partners to manage the overall process of project development and environmental analysis. The steering committee met monthly, beginning in 2016. The partners were represented in the meetings by individuals with decision-making authority, and each partner made it a high priority to participate in every meeting.
- Developing and signing a Memorandum of Understanding.
- Hiring a Registered Professional Forester early in the process to assess forest conditions and work with the partners to develop a preliminary proposed action. The partners agreed that the project should generally be guided by principles of ecological forestry as described in two Forest Service reports referred to as GTR-220 and GTR-237.⁶
- Hiring consultants with subject matter expertise to serve as the Interdisciplinary Team leaders to oversee completion of surveys and analyses required by the National Environmental Policy Act (NEPA) and other laws and policies. The consulting team had experience working on Forest Service projects, including in the Tahoe National Forest. The Forest Service retained final authority to review all information and analyses, comply with NEPA and other laws and regulations and issue and sign the final decision.
- Developing a detailed work plan and timeline to identify and track all tasks required to take the project from initiation through a final Forest Service decision.
- Required on-the-ground surveys (e.g., wildlife, botany, stand exams) were conducted by contractors under the guidance and direction of the Forest Service; archaeology surveys were conducted by the Forest Service.
- NEPA analysis was conducted and prepared by a combination of consultants, Tahoe National Forest personnel and staff with the Forest Service Enterprise Program. The public scoping notice, environmental assessment, specialist reports and decision notice were drafted, reviewed and edited by the Forest Service, consultants and partners, with the Forest Service retaining final authority regarding the content of all documents and analyses.



Project partners met regularly in person to design the project to promote long-term forest health and resilience while maintaining important habitat for wildlife. © Elijah Nouvelle

This partnership approach proved to be an effective and efficient way to develop, analyze and manage the project. The overall process, from public scoping through a signed decision notice, took under 18 months, compared to four years or longer for typical Forest Service projects of a similar scope and scale. Perhaps most importantly, the partners secured Forest Service approval for a critical project that, without the partnership, would likely still be in the initial planning stages.

Project Funding and Support

The process of designing, analyzing and managing a large forest restoration project requires significant time and expense. In most cases, these costs are borne entirely by the Forest Service. With the agency’s budget on a flat to declining trend, an increasing share of the budget dedicated to fire suppression and millions of acres of land in need of restoration, costs related to project planning are one of several significant barriers to increasing the pace and scale of ecologically-based forest management on Forest Service lands.

Understanding that it would be necessary to raise significant funds for project development and planning, the partners made a concerted effort to build support for the project and to cultivate diverse federal, state, local and private funding sources. This outreach effort took several forms, including (1) multiple meetings with the Forest Service, beginning with the District Ranger and later with the Forest Supervisor, Regional Forester, Chief of the Forest Service, and Under Secretary of Agriculture for Natural Resources and Environment; (2) multiple visits to Washington D.C., including meetings with the Forest Service, other relevant federal agencies (e.g., Interior Department, Office of Management and Budget, Council on Environmental Quality, Natural Resources Conservation Service), members of Congress and legislative and committee staff; (3) meetings with state officials; and (4) multiple field trips and site visits for federal and state agency staff and other stakeholders.

The overall out-of-pocket cost of planning the French Meadows Project, from project initiation through project approval, was approximately \$1.3 million, or \$46 per acre (see table). These planning funds came from a wide variety of sources, including federal funding from the Forest Service and state funding from Sierra Nevada Conservancy. The water utility and local county provided significant funding based on their experience with the King Fire and their concerns about potential adverse impacts to their facilities from a high-severity wildfire in the upper watershed. Many private donors gave to the project through The Nature Conservancy, including funding from private beverage companies, both individually and as part of the California Water Action Collaborative,⁷ based on their interests in watershed restoration and research, particularly in watersheds that provide water for company facilities.



Talbot Creek flows into the French Meadows Reservoir. The Sierra Nevada Research Institute is studying how forest treatments impact forest health and water resources. © The Nature Conservancy

PROJECT PLANNING COSTS	
NEPA Coordination	\$285,000
Surveys	\$478,000
Data analysis and NEPA document production	\$249,000
Forestry	\$185,000
Fire modeling, GIS, other project support	\$104,000
Total	\$1,301,000

These costs are approximate and do not include the significant time partners dedicated to the project as in-kind support.

Overall, the partners’ success in raising funds for project planning reflected the strength and diversity of the partnership, the ability to make the case that the project could be a model that could accelerate restoration on national forest lands, the nesting of the project within broader efforts like the Tahoe-Central Sierra Initiative⁸ and the Sierra Nevada Conservancy’s Watershed Improvement Program and the growing understanding of the importance of an all-lands, landscape-scale approach to reduce the risk of high-severity wildfire and promote forest resilience.

Lessons Learned

The French Meadows Project partnership approach can potentially serve as a model that can be replicated in other watersheds to increase the pace and scale of forest restoration and fuels reduction. This section highlights the enabling conditions that have contributed to project success and the lessons learned along the way.

1. Partnership and Collaboration.

- **Formalizing the Partnership.** Signing the MOU was a key step in advancing the project. It provided the opportunity for all partners to discuss their interests and confirm their shared goals and their long-term commitment to the project. The MOU memorialized the shared vision and formalized the project, which made it easier to advocate and fundraise for the project. It also clarified for each partner what the shared vision was, which allowed the partnership to move quickly to incorporate the shared interests into the project design.
- **Shared Cost and Shared Work.** All partners shared the cost and burden of project planning through significant financial contributions, in-kind contributions or both; everyone “anted up” and had a significant stake in project success. The first financial contribution was offered early in the project planning, quickly followed by contributions from other partners. This provided assurance that all partners were financially and organizationally committed to working toward shared success.
- **Common Interests.** The partners include a range of stakeholders (i.e., a local county, a state agency, a federal agency, a water utility, conservation groups and a research institute), so it was important to spend time at the outset of the project identifying common interests. Through that discussion, the partners were able to develop a project that advanced the common interest in ecologically-based forest management and fuels reduction while also accommodating the specific interests of individual partners (e.g., protecting recreation sites, advancing research and restoring meadows).

- **Partnership Model.** A decision was made to limit the partnership to a small, manageable number of groups with common interests in advancing the project and a willingness to contribute significantly to the cost and work required. This proved to be an efficient model that helped to accelerate project planning and design. While there are benefits to broader collaborative models, the downside can include involving stakeholders not committed to a common vision or lacking a joint stake in project success, which can significantly slow down or derail the project. In this case, the partnership model was very efficient in advancing the project from the idea stage to final approval.
- **Meeting Attendance and Staffing.** The partners met regularly (at least monthly), and the individuals representing the groups were both consistent in their attendance and empowered to make decisions. This allowed the partners to advance the project efficiently, minimizing time spent getting attendees up to speed or conferring with others in their organizations outside of the meetings in order to make key decisions.

California spotted owl habitat within the French Meadows project area.
© Angel Hertslet/TNC



2. Project Planning and Analysis.

The partners were integrally involved in every stage of the planning and analysis for the French Meadows Project. Through this engagement, the partners gained firsthand experience into what works and what doesn't and how the process might be improved. Based on this experience, the partners believe there are opportunities to make planning and analysis more efficient without compromising environmental standards.

- **Surveys.** The Forest Service is required by law, regulation and policy to undertake on-the-ground surveys with respect to wildlife, botany, cultural resources and other natural and human resources as part of project planning. These surveys serve important purposes; for example, by identifying locations of sensitive resources, the surveys can allow projects to be designed to avoid or minimize adverse impacts to those resources. On the other hand, surveys are both expensive and time-consuming, requiring significant upfront investment from limited federal appropriations before projects can be designed, approved and implemented. For example, it cost nearly \$500,000 to conduct surveys for the French Meadows Project and another \$265,000 to analyze and write up the survey results, and, because of survey protocols and other factors, the survey work required two field seasons to complete. In the context of ecologically-based forest restoration and fuels reduction projects like the French Meadows Project, this dilemma is especially acute: the greater the expense of surveys and planning, the less funding will be available for on-the-ground restoration.

The partners suggest that the Forest Service consider the following ideas with respect to survey requirements:

- » Where available, use LiDAR (Light Detection and Ranging) or other airborne, ground-based and satellite data to direct survey work where it is most likely to be useful. For example, these kinds of very high-resolution data can identify possible nest sites for California spotted owl and northern goshawk while excluding unlikely sites, a process used at French Meadows to make the survey process more efficient. A similar approach could be used to identify possible habitat for sensitive or rare

plants or cultural sites. Finally, LiDAR can be used to develop prescriptions at the stand level and to improve projections of water benefits from treatments.

- » The full array of survey requirements would benefit from a comprehensive agency review, with interested stakeholders, to assess opportunities for making the requirements less onerous and expensive while still providing enough data to inform project design and safeguard sensitive resources. One possibility would be to define a category of projects or activities with clear environmental benefits (e.g., prescribed fire in fire-adapted Sierra forests) with respect to which the requirements could be greatly simplified by amending the applicable Forest Service plans or policies. Another possibility could be an integrated survey approach, with surveyors trained to identify sensitive resources across disciplines, which would likely be more efficient. Additionally, as was the case at French Meadows, there may be situations where flagging and avoiding potentially sensitive resources is more cost-efficient than undertaking a comprehensive survey.
- » In determining appropriate survey requirements, the Forest Service should consider both benefits and costs. More is not always better, particularly if the result is that the costs of surveys are a barrier to increasing the pace and scale of ecologically-based forest restoration projects, which can have multiple environmental benefits.
- » At a minimum, the Forest Service Regional Office should provide greater clarity to field staff regarding required minimum survey requirements. The partners were surprised by the challenges encountered in providing consultants with clear, simple direction regarding survey requirements. Survey requirements are an amalgam of laws, policies, plans and guidelines that have not been well integrated and the precise content of which is not always clear. Both the survey protocols and the decision framework that clarifies which protocol to use should be publicly available online to increase transparency and avoid confusion.



Hell Hole Reservoir (left) and French Meadows Reservoir (right) are located in the upper reaches of the American River watershed. The Sierra Nevada provides more than 60% of California's developed water supply, and clean water is one of the most important benefits provided by forested watersheds. © Placer County Water Agency

- **NEPA.** The Forest Service's process for developing, analyzing and approving projects like the French Meadows Project is guided by the National Environmental Policy Act (NEPA) and related regulations and policies. NEPA is one of our country's bedrock environmental laws. Its purposes are to ensure that environmental impacts are considered in federal agency decision making and to provide for opportunities for public engagement in the decision-making process. These are obviously important goals. At the same time, the time and expense required to comply with NEPA can be significant, which has led to a range of legislative, regulatory and policy proposals to "streamline" NEPA.

Based on the French Meadows experience, the partners believe there are opportunities to improve the application of NEPA so it meets the statute's goals and requirements more efficiently. The Forest Service, in a recent advanced notice of proposed rulemaking related to NEPA, established a goal "to complete project decision-making in a timelier manner, to improve or eliminate inefficient processes and steps, and where appropriate, increase the scale of analysis and the amount of activities authorized in

a single analysis and decision."⁹ The partners support this goal and offer the following ideas for how application of NEPA to projects like French Meadows might be improved:

- » **Focus on Significant Issues.** The Forest Service should work to narrow the delta between what is required by law, regulation, policy and case law and what is done in practice. Forest Service and consulting specialists prepared 800 pages of "specialist reports" to support the French Meadows Project, requiring substantial time and expense. These specialist reports addressed a wide range of environmental impacts, most of which were not identified by the Forest Service or the public as either significant or controversial. The regulations of the Council on Environmental Quality (CEQ) direct federal agencies to "concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail," to "reduce excessive paperwork by ... discussing only briefly issues other than significant ones" and to prepare NEPA documents that "shall be kept concise and shall be no longer than absolutely necessary to comply with NEPA."¹⁰ These and other policies provide the Forest Service with ample authority to make the environmental



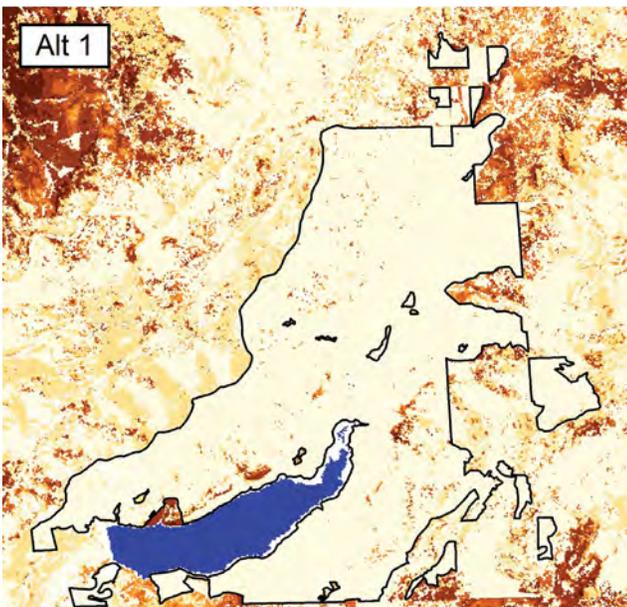
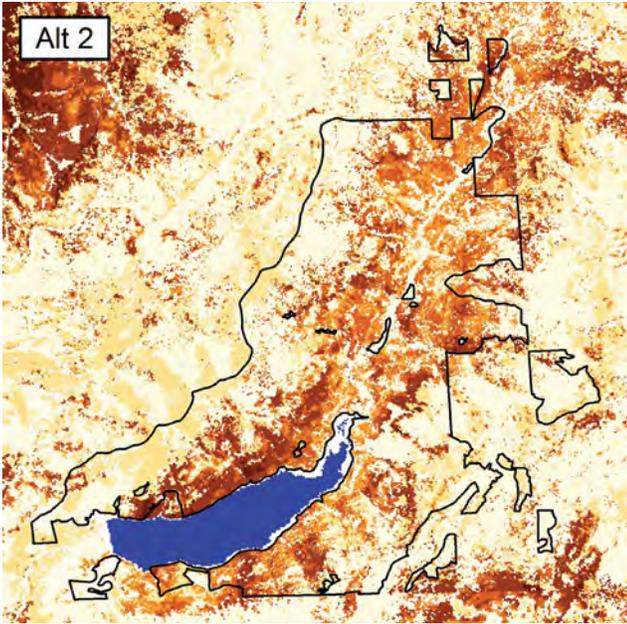
review process more streamlined and efficient; in the case of French Meadows, this could have been done by focusing analysis on significant issues (e.g., potential impacts on forest health, wildfire risk and the California spotted owl) while curtailing lengthy analyses of other issues.¹¹

- » ***Grouping species for purposes of analysis.*** Another opportunity for reducing the cost and expense of preparing NEPA documents without compromising the integrity of the analysis is to group species by habitat associations (or other logical groupings) in the analysis, particularly when impacts on those species have not been identified as significant concerns. For example, forest carnivores could be grouped, bat species could be grouped and so on. For the French Meadows Project, considerable time was spent on detailed analyses for species that were not identified as significant concerns by either the public or the Forest Service.
- » ***Regional Planning and Guidance.*** The interdisciplinary team spent considerable time trying to determine what information and analysis were necessary to comply with NEPA, particularly with respect to the California

spotted owl. Given that the owl is identified by the public and the Forest Service as a “significant” issue in virtually all forest management projects in the Sierra, it does not make sense to “reinvent the wheel” regarding data and analytic needs for the owl on a project-by-project basis. One possible solution would be for the Forest Service to develop a regional or programmatic management plan and environmental impact statement (EIS) for the California spotted owl, based on the best available data. Site-specific NEPA documents could then tier to the regional EIS or incorporate portions of the EIS by reference, consistent with CEQ guidelines;¹² this could lead not only to better analysis (because impacts would be considered both at a landscape scale and site-specific scale) but also to greater overall planning efficiency. Alternatively, the Regional Office could provide direction to ranger districts, with sample templates, to identify data, analytic and modeling requirements to ensure compliance with NEPA and other laws with respect to the owl. Similar regional guidance (and templates) would be useful on a range of issues, particularly where consultants are hired to do the NEPA analysis.

Flame Length (feet)	Percent of Treatment Boundary	
	Alt 2	Alt 1
0 - 4	43%	95%
4 - 8	15%	2%
8 - 12	15%	1%
12 - 20	16%	1%
20 - 50	10%	<1%
> 50	<1%	<1%
Nonburnable	2%	2%

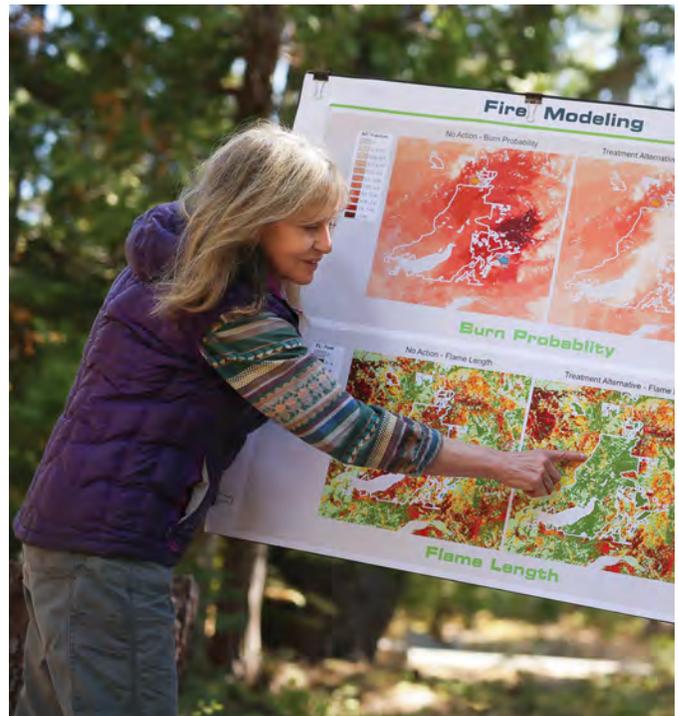
Treatment Boundary
 Water



The fire modeling demonstrates the likely flame length of any fire would be significantly reduced if the project is implemented. Alt 2 models no action, Alt 1 models the proposed action. © TNC/Pyrologix LLC

- Fire Behavior Modeling.** The partners hired consultants to undertake state-of-the-art fire behavior modeling of the greater Project area. This approach was very helpful both in making the case for restoration and fuels reduction and for refining the proposed action. The fire modeling showed that, under current conditions, most of the project area is at high risk of a destructive crown fire. By comparison, after proposed treatments, most of the project area would have a lower risk of crown fire, have a lower probability of high-severity fire and, if burned, would burn as a lower intensity fire with slower spread rates (see left column). The fire modeling also allowed the team to refine the proposed action, for example, by substituting biomass removal for mastication around recreation sites to reduce the risk of high-severity wildfire. Because mastication rearranges surface and ladder fuels while biomass removal reduces them, the fire modeling informed the decision to increase biomass removal in order to reduce fire risk. The Forest Service should consider using fire behavior modeling for other projects, both to make the case for restoration and fuels reduction and to help refine where and what kinds of treatments make most sense from the perspective of reducing the risk of high-severity fire.

Through fire modeling, partners quantified and communicated the fire risk of inaction, which helped to clarify the urgency of the work and helped to inform the design of the proposed action. © Elijah Nouvelle



3. Use of Consultants.

A key element of the project design was to hire consultants to assist with project planning, analysis and management. The partners hired consultants to assist with or lead critical tasks including forest and vegetation planning and analysis and GIS support (Mason, Bruce and Girard), wildlife surveys and analysis (Janelle Nolan and Associates), botanical surveys and analysis (Garcia and Associates), fire modeling (Pyrologix) and Interdisciplinary Team lead and NEPA analysis (Landmark Environmental). The partners prioritized hiring consultants with local knowledge and experience working with the Forest Service. While the use of consultants allowed the partners to accelerate project planning—especially given the Forest Service’s limited staffing and budget and competing priorities—the hiring and management of multiple consultants required significant partner time.¹³ Along the way, the partners learned important lessons about the efficient use of consultants for planning similar projects.

- **Advantages of Consultants.** Contractors build their professional reputation through their ability to complete work consistent with project deadlines and within budget. Forest Service staff typically work on multiple projects with multiple priorities and are not infrequently reassigned to new tasks, such as wildfire suppression or response. Forest Service staffing is also constrained by the federal budget. Use of private consultants (who can be funded through diverse federal and non-federal sources) builds local expertise that can be used by the Forest Service and other agencies to increase the pace and scale of restoration beyond what would be possible using agency staff alone.

- **Challenges with Consultants.**

- » It can be difficult to coordinate the work of multiple consultants, each of whom has a separate contract, budget, work plan and timeline, especially when different partners are overseeing different contracts. The partners hired Landmark Environmental as the NEPA Interdisciplinary Team Leader with the task of coordinating the overall planning effort, but Landmark did not have authority to manage the individual contractors. In hindsight, the partners could have done a better job of sharing all the consulting budgets, work plans and timelines with Landmark, which would have made it easier for Landmark to coordinate and oversee all the work. Additional planning calls and meetings, attended by all consultants, would also have been beneficial.

- » For obvious reasons, consultants who have not worked with the Forest Service are generally not as familiar with Forest Service protocols, guidelines, data needs, modeling tools and standard approaches to undertaking surveys, planning and environmental analysis as are the agency’s own staff. They also may not have working relationships with each other or with the Forest Service staff. This makes it critically important to coordinate the work of all the various consultants in advance—in close partnership with the Forest Service—and to be as clear as possible in advance (and in writing) regarding survey protocols, data sources, environmental analysis requirements and the expected document review process and timelines. Additionally, the resource specialists should have opportunities to determine data interdependencies, model assumptions, the appropriate scales of analyses, shared terminology and to what extent analyses should be quantified.

- » The District Ranger or Forest Supervisor should provide clear guidance in advance regarding the expected relationship between consultants and agency specialists (lines of communication, roles and responsibilities, timelines for document review, etc.). Consultants are doing work usually done by agency staff, yet the agency is ultimately responsible for the analysis and decision, so finding the appropriate level of delegation without micromanaging can be difficult. Again, being as clear as possible (as early as possible) with both consultants and Forest Service staff regarding expected data sources, modeling protocols and analytic requirements can save time and reduce duplication of effort in the long run. Taking the time to develop and communicate a work plan before the field season is underway will reduce confusion and save time and money.

- » Another challenge is to ensure that consultants work together as an interdisciplinary team (rather than a multidisciplinary team). Effective, ongoing communication between the various consultants, particularly as it relates to integrated, overlapping analysis assumptions (e.g., stand structure, terrestrial wildlife habitat, fuels and fire modeling) is critical to project success.

4. Other Enabling Conditions.

The French Meadows Project has been successful to date in part due to other enabling conditions, some of which may be relevant for other stakeholders who are considering launching similar projects.

- **Forest Service “Outside the Box” Leadership.** Partnership projects like this are only possible where Forest Service leadership is willing to change the dominant paradigm under which projects on national forest lands are driven entirely by the agency’s own priorities, staff and funding. For the partnership approach to work, the Forest Service needs to be willing to delegate important tasks to partners and consultants and to avoid the temptation to micromanage while maintaining ultimate decision-making authority. The success of the French Meadows Project can be credited in part to innovative, flexible and inclusive leadership from the Forest Supervisor, District Rangers and their teams. Support from the Forest Service’s regional and national offices has also proven invaluable.

- **Public-Private “All Lands” Approach.** The problems facing Sierra forests with respect to wildfire risk and forest health occur across all land ownerships and must be addressed at a landscape scale for restoration to be effective. One key factor in the success of the French Meadows Project to date has been very close coordination with the American River Conservancy (ARC), which owns and manages 6,700 acres near and adjacent to the Project area. As described earlier, ARC’s acquisition of these lands—the American River Headwaters—was instrumental in launching the broader French Meadows Project. The involvement of ARC and the inclusion of private lands in the broader project allowed the partners to increase the Project’s visibility, to raise funds from specific sources that are limited to or prioritize restoration of private lands and, most importantly, to make an effective case that by restoring healthier forests using an “all-lands” approach, the French Meadows Project will result in more resilient conditions at a landscape scale (see box next page).

Restoration work on ARC lands. © David Edelson/TNC



ALL LANDS RESTORATION

ARC's restoration of the American River Headwaters is proceeding expeditiously. More than 3,300 acres were restored and donated to the Tahoe National Forest for addition to the Granite Chief Wilderness in 2017. To date, ARC has reduced forest fuels on an additional 375 acres, restored 13 acres of meadow and more than 100 stream crossings, decommissioned and restored 48 miles of deteriorated dirt roads (which were surplus for current management needs) and created 7 miles of new trail, with funding from the Forest Service, State of California and private donors. This work is likely to continue through 2022.

- **Watershed Research.** The Sierra Nevada Research Institute (SNRI) is leading research at French Meadows to better understand, project and verify the Project's potential forest health and water supply benefits. This cutting-edge research helped the partners to raise the Project's profile and contributed to overall success in raising funds. Some donors, particularly private beverage companies, contributed to the Project in part because of the potential to better understand whether investing in forest headwaters might protect water quality or increase water supply. Other public and private donors were drawn to the research and monitoring that SNRI's engagement provided. Given that the Sierra Nevada provides more than 60% of California's developed water supply, making the link between healthy headwaters and water quality and quantity is important to promote public understanding and support for ecologically-based forest management. The research and modeling approach and tools emerging from this Project should be applicable to forest restoration projects throughout the Sierra.

5. Project Implementation.

On-the-ground implementation of the French Meadows Project will begin in the summer of 2019, so it is too early to report on successes or lessons learned with respect to implementation. That said, the partners are using an innovative approach to project implementation that can be a model for other partnership projects. The Project proposes to treat more than 12,000 acres with mechanical thinning, mastication, hand thinning, reforestation and aspen and meadow restoration. Placer County will be managing this work, on behalf of the partners, under a Master Stewardship Agreement with the Tahoe National Forest. In contrast to the typical timber sale model—under which thinning only gets accomplished if a logging company bids on the project, and, even then, work may not occur for five years or more depending on the contract terms—the Master Stewardship Agreement allows Placer County to hire contractors and determine when restoration occurs (consistent with the Forest Service-approved Decision Notice), using any and all available funding sources.

The Project also proposes more than 7,000 acres of prescribed burning. The plan is for The Nature Conservancy and the Forest Service to jointly manage the prescribed burning on behalf of the partners, under a cooperative agreement between the two organizations. There is a growing consensus regarding the importance of safely reintroducing low-intensity fire to Sierra forests, but there are multiple challenges to increasing use of prescribed burning. The partnership approach can help to overcome these barriers and move toward re-establishing a healthier fire regime in the French Meadows area and beyond.

Key Findings

- A partnership approach, like that used in the French Meadows Project, can help to increase the pace and scale of forest restoration and fuels reduction on national forest lands.
- The French Meadows Project partnership significantly reduced the typical time for planning forest restoration projects on Forest Service lands while also reducing the burden on limited federal staffing and resources.
- Some of the key elements of the French Meadows Project partnership included identifying common interests, formalizing the partnership and limiting the partnership to organizations with a significant stake in project success and a willingness to commit staff and resources toward that goal.
- There are opportunities to make project planning and analysis more efficient (i.e., less costly and time consuming) while maintaining environmental safeguards, specifically with respect to surveys and NEPA compliance.
- Consultants can play an important role in project design, planning and analysis, but this requires significant management and coordination.
- Flexible and innovative leadership from the Forest Service, and “outside the box” agency thinking, are important for the partnership model to succeed.



California spotted owl in the French Meadows Project area. © JNA Associates

Conclusion

There is a compelling need to better manage Sierra forests to reduce the risk of high-severity wildfire and safeguard all the benefits that healthy forests provide to people and nature. Using a partnership model, the French Meadows Project was developed and approved in less time and using less federal staffing and funding than a typical Forest Service project. The French Meadows Project suggests that effective partnership can play an important role in increasing the pace and scale of ecologically-based forest restoration throughout the Sierra Nevada and beyond.



The French Meadows Project is a partnership project, made possible only through the contributions of each partner.

Endnotes

- 1 P.C. Saksa, M.H. Conklin, J.J. Battles, C.L. Tague, and R.C. Bales. 2018. Forest thinning impacts on the water balance of Sierra Nevada mixed-conifer headwater basins, *Wat. Resour. Res.* doi: 10.1002/2016WR019240; K. Podolak, D. Edelson, S. Kruse, B. Aylward, M. Zimring, and N. Wobbrock. 2015. Estimating the water supply benefits from forest and meadow restoration in California's northern Sierra Nevada. An unpublished report of The Nature Conservancy prepared with Ecosystem Economics. San Francisco, CA.
- 2 <https://www.fs.usda.gov/detail/r5/landmanagement/?cid=STELPRDB5308848>
- 3 <https://sierranevada.ca.gov/wip/>
- 4 <https://www.nature.org/en-us/what-we-do/our-priorities/protect-water-and-land/land-and-water-stories/restoring-americas-forests/>
- 5 <https://www.fs.fed.us/sites/default/files/toward-shared-stewardship.pdf>
- 6 M.P. North, P. Stine, K.O. Hara, W Zielinski, & S. Stephens. 2009. An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests. USDA Forest Service, Pacific Southwest Research Station, Gen. Tech. Rep. PSW-GTR-220; M.P. North, editor. Managing Sierra Nevada Forests. 2012. USDA Forest Service, Pacific Southwest Research Station, Gen. Tech. Rep. PSW-GTR-237.
- 7 <http://cawateraction.org/actions/>
- 8 <https://sierranevada.ca.gov/wip/>
- 9 83 Fed. Reg. 302 (January 3, 2018).
- 10 40 C.F.R. Sections 1500.1, 1500.2, 1502.2.
- 11 These recommendations are consistent with informal Forest Service guidance regarding "Focused Environmental Assessments." <https://www.fs.fed.us/emc/nepa/FocusedEALearningTeam.htm>. Regarding specialist reports, that guidance states: "There are no requirements for 'resource' or 'specialist' reports. In many cases they can be eliminated altogether, particularly when there are no relevant issues for those resources. The purpose of focusing your EA should not be to solely reduce the size of an EA, but to increase overall efficiency. Doing the same level of detailed analysis and simply putting it in a resource specialist report instead of the EA does not increase efficiency."
- 12 40 C.F.R. Sections 1502.21, 1508.28.
- 13 The partners did not hire a single consultant to undertake and oversee all the work, in part because insufficient funds were available at the outset of the project and in part because the partners did not have a full understanding of all the required planning tasks (and costs) when the project was launched. In addition, given the significant work associated with overseeing and managing consultants, it made sense to divide this task among multiple partners.

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sierranevada.ca.gov

placer.ca.gov

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snri.ucmerced.edu

