

Sierra Nevada Conservancy - Final Report

**Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control
River and Coastal Protection Act of 2008 (Proposition 84)**

Grantee Name: Regents of the University of California on behalf of its Berkeley Campus

Project title: Sierra Nevada Adaptive Management Project

SNC Reference Number: SNC 070162 Submittal Date: 12/15/2010

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Check one:

6-Month Progress Report
 Final Report

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| <p>6-Month Progress Reports should reflect the previous six months. Final Reports should reflect the entire grant period.</p> |
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A. Progress Report Summary: (Please provide a general description of work completed during this reporting period.)

The Sierra Nevada Adaptive Management Program studies the application of fire-hazard reduction treatments in Sierran watersheds. Within these watersheds, fire behavior is influenced by watershed canyon topography, where windflow and elevation changes can accelerate fire spread. This project seeks to integrate the public into an adaptive management program for the use of strategically placed land area treatments (SPLATs) for reducing fire hazard in Sierra Nevada National Forests. Catastrophic wildfires damage watersheds, causing excessive erosion, and sediment and pollution inputs into streams and waterways critical to California water supplies.

Over the course of this grant the project has developed a multitude of field opportunities for public/stakeholder, and collaborating agency participation in scientific research on water, wildlife, and forest health issues. In the summer and fall of 2008, 2009, and early 2010, at least 18 field trips for stakeholders, communication workshops with collaborators, and educational programs for local schools were developed and held. At least 12 Integration Team meetings have been held on topics of interest to stakeholders, and have included active participation by scientists engaged in SNAMP research as have the two annual meetings held to date. Direct face-to-face interaction among scientists, stakeholders, and agencies has been facilitated and is now a SNAMP focal point. In addition, outreach staff attended and presented at over 60 community meetings and natural resource-oriented symposia (see details in section B).

Outreach materials developed during this extended grant period include 6 newsletters on several components of the project (attached), a banner, and a poster display. The SNAMP website has been developed into a state-of-the-art interactive outreach, communication and archive tool, enabling broader participation by the public, agency personnel, and scientists. Numerous posted comments and questions have been monitored and responded to in a timely manner. Detailed study area maps are now provided. Notes from all meetings are posted after review. Webinar technology has been implemented, allowing public meeting participation from distant sites. A

comprehensive stakeholder contact list has been continuously updated and used for communication with all interested parties.

Active research into Forest Service participation methods was conducted via observation of NEPA related meetings and interviews with the public and SNAMP participants of all types. A workshop with the Forest Service on our preliminary results was held on January 27th, 2009 where research results were presented and extensively discussed. In addition a white paper created to look into decision-making with the Forest Service has evolved into an article to be submitted for publication in the fall of 2010. A second publication of perceptions of forest health is in progress. The impacts of the SNAMP project, and perceptions of participants of adaptive management, forest management, UC research and outreach, have been researched via in-depth interviews and results will be analyzed in the next phase of the SNAMP project.

A visit to the website at: <http://snamp.cnr.berkeley.edu> is highly recommended. SNAMP outreach materials, meeting notes, and interactive discussions are available there, as well as numerous photos of SNAMP subjects and activities.

B. Deliverables or Outcomes completed during this Reporting Period or Milestones Achieved: (Include specific information, such as public meetings held, agency participation, partnerships developed, or acres mapped, treated or restored.)

Here we will specifically address each of our grant's stated goals and our success in achieving them:

Goal 1: Develop field opportunities for public/stakeholder participation in science with a focus on water, wildlife and forest issues.

Deliverable: Summer and Fall 2008, 2009 and early 2010 field workshops with opportunities for public participation in monitoring of water, wildlife, and forest health, data collection were held as well as presentations by SNAMP scientists to local high schools.

Final Update: At least 99 public involvement events have occurred since the beginning of the SNAMP program. This has included 9 public or annual meetings, 18 field trips, workshops or educational programs, 12 Integration Team meetings, and presentations at 60 local meetings by UC Cooperative Extension outreach staff. Since the grant began in 2008, our capacity to offer these involvement opportunities has greatly increased (Figure 1). Local outreach representatives also began to go to local group meetings in acknowledgement that SNAMP cannot expect all stakeholders to come to us. This is now an important emphasis of our plan.

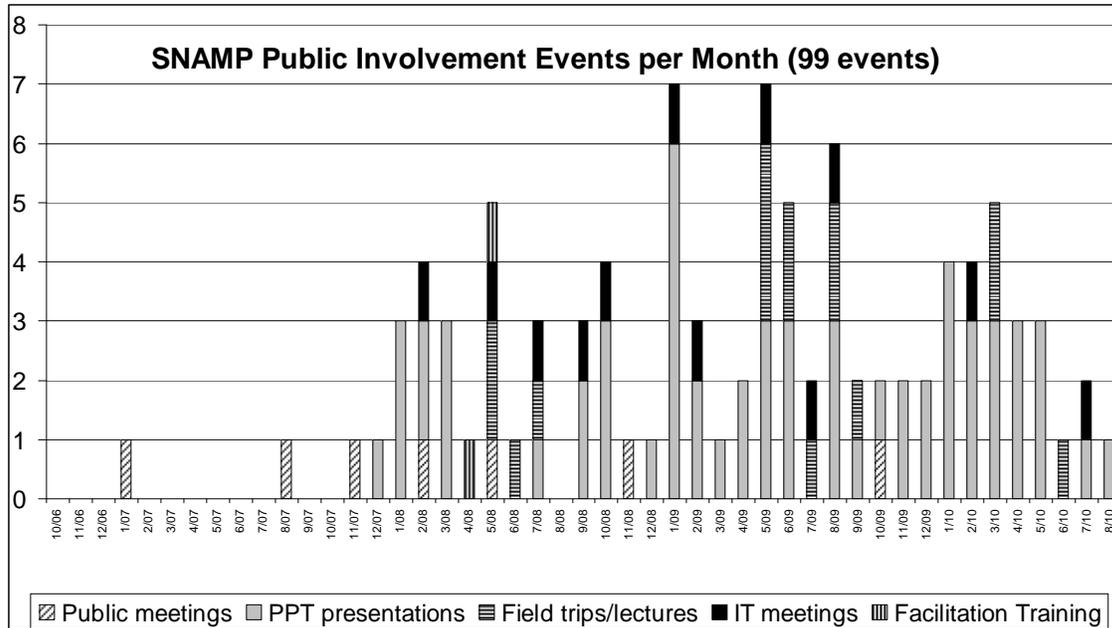


Figure 1: Total SNAMP public involvement events held since the beginning of the project in 2005

Goal 2: Use information and analysis to develop outreach materials for stakeholders focused on educating the public about Sierra water, wildlife, and forest health.

Deliverable: Outreach materials.

Final Update: 6 SNAMP newsletters produced (attached and accessible at:

<http://snamp.cnr.berkeley.edu/news/categories/features/>):

October 2008: Vol 2. No. 1: Fisher Team Research

October 2008: Vol 2. No. 2: Spotted Owl Team Research

October 2008: Vol 2. No. 3: Spatial Team Research

May 2009: Vol 3. No. 1: Public Participation Team Research

October 2009: Vol. 3 No. 2: Water Team Research

March 2010: Vol 4. No. 1: Fire Integration Project

Goal 3: Encourage voluntary feedback on all aspects of the UC Science Team's efforts including water, wildlife, forest health, and public participation, via the web page and continue to monitor comments and regular posing of notes, documents, and responses to comments.

Deliverable: Website.

Final Update: Website completed and active. In the last year, we have had 4,287 unique visits (an average 11.75 unique visits/day) from 101 countries (84.6% from the US). Map at right (Figure 2) shows recent web visitors to the SNAMP website from within California.



Figure 2. SNAMP website visitors from California between August 2009 through July 2010.

Goal 4: Improve the website to provide more user-friendly interaction between scientists and stakeholders. Add a geographical interface that allows users to identify areas of interest spatially.

Deliverable: Interactive website with spatial database specifically focused on water, wildlife, and forest health components.

Final Update: This component of the website is completed and available for users. A snapshot is shown below (Figure 3).

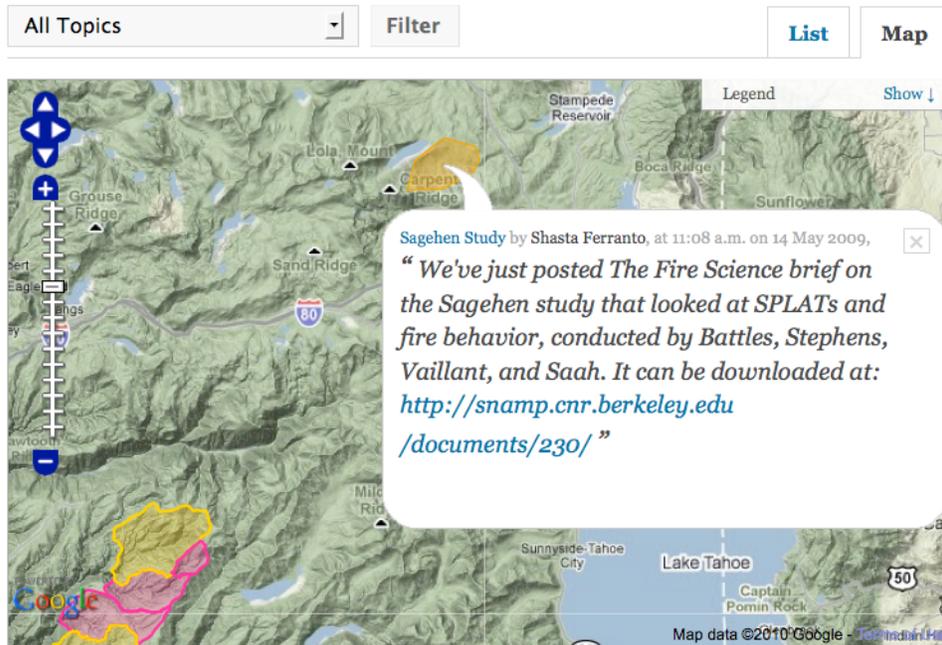


Figure 3. An example of a spatially-enabled discussion post.

Goal 5: Continue to encourage, assist, and facilitate the development of the Integration Team (IT), workshops for the IT, and provide feedback from the workshops to the MOUP Partnership and UC Science Team on how science may be integrated into the adaptive management plan.

Deliverable: UC Cooperative Extension expert facilitation of SNAMP public IT and MOU meetings.

Final Update: Ten public IT meetings have been organized and facilitated (Table 1). At every IT meeting the status of the project on the adaptive management cycle is reviewed and discussed (Figure 4). Generally we are located in more than one place on the circle at a time – for example, the fisher team has affected Forest Service treatments through the location of fisher dens placing them ahead on the circle, whereas the water team is setting up equipment and just beginning their data collection. There are constant feedback loops of adaption within the larger adaptive management cycle.

Adaptive Management Framework



Figure 4. SNAMP's adaptive management cycle

Goal 6: Assist the Forest Service with evaluating and improving its public participation processes, specifically as related to adaptive management framework. Through attending Forest Service public meetings and field trips, and conducting systematic interviews of stakeholders, Forest Service personnel, and scientists identify practices that are effective and practices that might be improved.

Deliverable: Workshop with Forest Service personnel from meeting observations.

Final Update: This workshop with the Forest Service was conducted January 27th, 2009 at the Forest Service offices in Sacramento (meeting notes attached). Preliminary results of interviews with stakeholders, scientists, and agency personnel were evaluated and presented.

Goal 7: Assess the creation, adaptation, and implementation of information generated as part of the adaptive management project, including stakeholder engagement. Evaluate the ability of the US Forest Service to share in land management with the public.

Deliverable: Policy white paper

Status Update: This policy white paper was completed and distributed to the MOU Partners and the public in 2008 (Co-Management White Paper attached). The paper then supplied the basis for another similar work in progress intended for journal submission in fall 2010. In depth interviews with stakeholders, resource professionals, and scientists were conducted and will provide the foundation of an evaluation of the SNAMP program, including stakeholder engagement. Results also provided the basis for the report to the Forest Service about how the NEPA process is perceived and used by stakeholders. The full results are now being analyzed.

Table 1. SNAMP Public Participation Meetings (notes posted to web)

| Date | Topic | Location | # | Description and Agencies/organizations represented |
|----------------------------------|--|----------------------|----------|--|
| February 20 th , 2008 | Project Integration meeting, "Triggers and Thresholds Workshop" (since replaced by Integration Team workshops/ meetings) | Davis | 12 | Exploration of how to collaboratively design and implement adaptive management practices. A one day training to introduce the Structural Facilitation processes UCST used in the workplan development. The overall goals of the day were 1) to raise awareness regarding successful methods and processes that are needed to support adaptive management in SNAMP, 2) to practice using the methods to design the next meeting, and 3) get feedback on what elements seem most important to the participants. Attendees included USFS, USFWS, Cal-Fire, California Forestry Association, Placer County Water Agency, Sierra Forest Legacy |
| February 26 th , 2008 | Quarterly Meeting | Merced | 23 | Meeting held at the Tri-College Center in Merced. Attendees included USFS, DWR, USFWS and Sierra Forest Legacy. |
| May 27 th , 2008 | Forest team research Integration Team meeting | Davis | 28 | The IT meeting was held from 10am - 1pm. The goal of the meeting was to further define the adaptive management loop, in this case focusing on the fire and forest health team data collection and analysis process. Attendees included: USFS, USFWS, California Forestry Association, Regional Council of Rural Counties, Placer County Water Agency, Sierra Forest Legacy, Defenders of Wildlife |
| July 25, 2008 | Owl team research Integration Team meeting | Auburn and webinar | 35 | The meeting included presentations on the current spotted owl research on the Tahoe National Forest and an opportunity to interact with the Owl Team. Desired outcomes of the meeting were to increase knowledge about methods of spotted owl research and how this research will inform future management decisions. Attendees included: USFS, Cal-Fire, CA F&G, USFWS, Sierra Nevada Conservancy, Nevada County Fire Safe Council, California Forestry Association, SPI, Quincy Library Group, Sierra Forest Legacy, Defenders of Wildlife |
| Sept 17, 2008 | Fisher team research Integration Team meeting | Oakhurst and webinar | 66 | The meeting included presentations on the status of the Sugar Pine Project on the Sierra National Forest and the current fisher research there. The goal of the meeting was to better understand how the fisher team's research will inform future forest management decisions. Powerpoints and materials presented at this meeting are posted on the web. Attendees included: the USFS, CalFire, CDFG, CDFA, USF&W, Sierra Nevada Conservancy, Sierra Forest Products, California Forestry Association, Sierra Pacific Industries, Quincy Library Group, Sierra Forest Legacy, Sierra Club, Defenders of Wildlife, Central Sierra Watershed Committee, and Yosemite Sequoia |

| Date | Topic | Location | # | Description and Agencies/organizations represented |
|-------------------------------|---|------------------------|----------|---|
| | | | | RCD. |
| Nov. 5, 2008 | Annual Public Meeting with whole UC Science Team | Sacramento and webinar | 70 | Two sessions. The morning session objectives were to present an overview of the research conducted so far by the UCST and to allow for public involvement and input with the various teams. Collaboration and synthesis of public comment in the interactive session will help to guide SNAMP public involvement for the next year. The afternoon session objective was to brief state and federal agency leaders on the status of the SNAMP project. This includes research highlights, project level success and challenges, the future of SNAMP, public commentary and a question and answer period. Attendees included: USFS, Cal-Fire, CA F&G, USFWS, Sierra Nevada Conservancy, Nevada County Fire Safe Council, California Forestry Association, SPI, Quincy Library Group, Sierra Forest Legacy, Defenders of Wildlife, and Wilderness Society. |
| Feb 6 th , 2009 | Sugar Pine project Integration Team meeting | Oakhurst and webinar | 37 | The meeting was held to share the Forest Service's alternatives for treatments described in the draft EIS and gather additional public input for the NEPA process. Attendees included: USFS, Sierra Forest Legacy, Defenders of Wildlife, Mariposa Fire Safe Council, Sierra Forest Products, local watershed councils, Madera County, Mariposa County Fire and Sierra Forest Products, |
| May 19 th , 2009 | Public Participation team research Integration Team meeting | Davis and webinar | 28 | The meeting was held to inform stakeholders about SNAMP public participation research, get feedback on outreach strategies, and further develop how best to include the public in adaptive management. Attendees included: USFS, Sierra Forest Legacy, Defenders of Wildlife, Placer Resource Conservation District, Washoe tribe. |
| July 15 th , 2009 | Fisher team research Integration Team meeting | Fresno and webinar | 63 | The goal of the meetings was to share the latest findings from the UC SNAMP fisher team after almost two years of study and receive input on a preliminary proposal by the team for fisher management indicators. Attendees included: USFS, CalFire, CDFG, USF&W, Southern California Edison, Yosemite National Park, Sequoia-King's Canyon National Park, CSERC, Sierra Forest Legacy, and Defenders of Wildlife. |
| August 5 th , 2009 | Spotted Owl team research Integration Team meeting | Foresthill | 34 | The goal of the meeting was to share the latest findings from the UC spotted owl research team and to review potential indicators for management of owls. Attendees included: USFS, CalFire, CDFG, USF&W, USGS California Forestry Association, Sierra Pacific Industries, Sierra Forest Legacy, and the Foresthill Fire Dept. |

| Date | Topic | Location | # | Description and Agencies/organizations represented |
|----------------------------------|--|------------------------|----------|---|
| October 20 th , 2009 | Annual Public Meeting with whole UC Science Team | Sacramento and webinar | 65 | The meeting was held to promote shared understanding of the current status of the SNAMP project and findings, and to allow for public interaction and involvement with the project. The morning session included an overview of the methods and findings of each of the 7 SNAMP science teams. The afternoon session included small group discussions for the public with each science team. Attendees included: USFS, CalFire, CDFG, CDFG, California Resources Agency, California Energy Commission, CADWR, California Academy of Sciences, USF&W, Sierra Nevada Conservancy, Sierra Business Council, California Forestry Association, Sierra Pacific Industries, Quincy Library Group, Sierra Forest Legacy, Defenders of Wildlife, Ebbetts Pass Forest Watch, Protect American River Canyons, Central Sierra Environ. Res. Center, and the Georgetown Fire Dept. |
| February 19 th , 2010 | Fire and Forest team research Integration Team meeting | Davis and webinar | 49 | The goal of the meeting to share the results of SNAMP sponsored research on the difficulties and effectiveness of implementing landscape scale fuels treatment reduction projects. Attendees included: USFS, CalFire, CDFG, Placer County Air Pollution Control Dist, Lahontan Regional Water Quality Board, USFWS, California Forestry Association, Quincy Library Group, Sierra Forest Legacy, Defenders of Wildlife, Tahoe Resource Conservation District, and El Dorado Fire Safe Council. |
| July 22 nd , 2010 | Fisher team research Integration Team meeting | Fresno and webinar | 74 | The goal was to share the latest findings from the UC SNAMP fisher team after three years of study and review issues arising in fisher research. Attendees included: USFS, CalFire, CDFG, USFWS, National Park Service, Conservation Biology Institute, California Forestry Association, Southern California Edison, Society of American Foresters, Sierra Forest Products, Sierra Forest Legacy, Defenders of Wildlife, CSERC, Sierra Club, Central Sierra Watershed Committee, Madera County, Yosemite Sequoia RCD, and the Tule River Tribe. |

Table 2. Local Field Trips and Workshops

| Date | Event/ Location | # | Description and Organizations Represented |
|-------------------------------|--|----------|--|
| April 24 th , 2008 | Workshop on communication tools for adaptive management, | 16 | This workshop was one of two designed to: * build working relationships between SNAMP participants to inform the next steps in adaptive management development; * provide tools to support effective communication |

| Date | Event/ Location | # | Description and Organizations Represented |
|--|---|----------|---|
| | Bass Lake | | between SNAMP partners; and * prepare participants for the next Integration Team meeting. Attendees included: USFS, Madera County, SJV Resource Conservation District, Central Sierra Watershed Council |
| April 29 th , 2008 | Workshop on communication tools for adaptive management, Auburn | 11 | This workshop was one of two designed to: * build working relationships between SNAMP participants to inform the next steps in adaptive management development; * provide tools to support effective communication between SNAMP partners; and * prepare participants for the next Integration Team meeting (May 27 in Davis). Attendees included: USFS. |
| May 21 st , 2008 | Fisher Team presentation, Oakhurst | 65 | Fisher presentation at Yosemite High School. Presentation by fisher study lead PI. Attendees included: USFS, Sierra Club, Merced County Office of Education, Yosemite High School, California Department of Food and Agriculture, Calvin Crest Outdoor school, Sierra Forest Products, Central Sierra Watershed Committee. |
| June 21 st , and Sept. 6 2008 | Forest Team field trip, Oakhurst and Foresthill | 52 | Desired outcomes of this field trip were to provide an opportunity for on the ground involvement with the Forest Science Team and an opportunity for the public to participate in data collection. The field trip included presentations on the current forest inventory work being done on the Sierra and Tahoe National Forests to understand the effects of USFS thinning treatments to reduce the risk of catastrophic wildfires. The field trip was held from 10am to 1pm. Participants joined some of the UC Science Team members that have been collecting local forest inventory data. Attendees included: Oakhurst Elementary, Yosemite High School, Cal Poly/Pomona, UC Merced, SJV Resource Conservation District, California Department of Agriculture, Mariposa Fire Safe Council, San Joaquin Watershed Council, USFS |
| July 29 th , 2008 | Owl Team field trip, Placerville | 8 | Desired outcomes of this field trip were to provide on the ground involvement with the Owl Science Team and an opportunity for the public to participate in data collection. Attendees included: CA F&G, Defender's of Wildlife |
| Oct 17, 2008 | Fisher field trip, Oakhurst area | 27 | The Forest Service and UC Science Team hosted a field trip to the Cedar Valley and Sugar Pine fuel treatment sites near Oakhurst on Friday, October 17th. The goal for this field trip was to provide information and dialogue about the effects of the 2004 Sierra Nevada Forest Plan Amendment's fisher standards and guidelines on the thinning options for the Sugar Pine Project. |
| May 8th, 2009 | Spotted owl field trip, Foresthill area | 10 | The purpose of this trip was to provide the Foresthill High School Natural Resources class with an introduction to field research methods such as mousing, capture and banding and to get into the field to see and mouse banded birds. |
| June 3rd | LiDAR | 60 | Two educational workshops were held on the uses of |

| Date | Event/ Location | # | Description and Organizations Represented |
|--|--|----------|---|
| and 4th, 2009 | workshop, Oakhurst (6/3/2009) and Foresthill (6/4/2009) | | LiDAR in forest research and management. LiDAR (Light Detection and Ranging) is a remote sensing technology that uses scattered light to characterize ground based resources. Attendees represented the USFS, National Park Service, CDFG, Tahoe Science Consortium, Tahoe Regional Planning Agency, Placer County RCD, and Placer County Water Agency. |
| July 11th, 2009 | Spotted owl field trip, Foresthill area | | The purpose of this trip was to provide the public with a brief history of the El Dorado Spotted Owl Demographic Study and the SNAMP Spotted Owl Study, with an introduction to field research methods such as mousing, capture and banding. Attendees included: USFS, Foresthill Fire District, the Nature Conservancy and unaffiliated locals. |
| May 18 th , 2009 | Fisher team presentation to Mountain Home school, Oakhurst | 22 | The lead fisher team principal investigator gave a presentation on the Fisher to students and parents at the local home school. |
| August 25th and September 1st, 2009 | Water field trip, Oakhurst (8/25/2009) and Foresthill (9/1/2009) | 46 | The goal of these field trips was to inform SNAMP participants and other interested parties about the research questions and methods used by the UC Water Team to study the effects of US Forest Service fuels treatment projects on water quality and quantity. Attendees represented diverse agencies and organizations including USFS, NRCS, CalFire, Nevada County Fire Safe Council, Placer County Water Agency, Placer County RCD, Coarsegold RCD, Sierra Forest Products, Madera County, Foresthill Forum, Sierra Nevada Alliance, Protect American River Canyons, Revive the San Joaquin, Revive the San Joaquin, San Joaquin Watershed Council, North Fork Rancheria, Table Mountain Rancheria, Reedley College, and Mountain Home School. |
| March 18 th , 2010 | Fisher team presentation to Yosemite High school | 65 | Rick Sweitzer of the Fisher Team gave a presentation to Yosemite High School science students about the Fisher. Many of these kids live in fisher territory and a few think they have seen it. |
| March 8 th 2010 | Water Team presentation to Reedley college | 32 | Sarah Martin from the Water Team and Anne Lombardo from the Public Participation Team gave a presentation to Kent Kinney's watershed ecology class at Reedley college. |
| June 15th, 2010 | Spotted owl field trip, Blodgett, Forest, Georgetown, (owl field trip sizes must be kept small to minimize impacts on birds) | 14 | The purpose of the trip was to bring the public out into the field, discuss research methods and practices in the Eldorado Demographic Study Area, ask questions and to see owls. Attendees included USFS personnel, Sierra Pacific Industries, and National Forest Foundation. |

C. Challenges or Opportunities Encountered: (Please describe what has worked and what hasn't; include any solutions you initiated to resolve problems. If your project is not on schedule, please explain why here.)

We determined by our six month report that large scale public meetings were not as effective or accessible to local publics as a series of smaller meetings, and so we re-oriented our outreach to include more local meetings and field trips focused on reviewing and integrating the scientific results related to each research area, termed "Integration Team Meetings". We see this as part of developing an involved stakeholder community engaged in the process of social learning. Thus far we have had meetings focused on each of the teams (see Table 1). One hitch in the success of the Integration Team has been the diverse interests and knowledge levels of the attendees. It is an explicit goal of the project to engage as many people as possible, but it has been a challenge to make sure that all participants are prepared to participate in a meaningful fashion at each meeting. To cope we have tried to use a very focused agenda, and to be clear with attendees about the topic and how they need to prepare for the meeting. We have had to work with the scientists to make sure they address the topics prepared for and stay on track. We still have one annual meeting a year held in Sacramento where all teams report their progress for the year in very short presentations. We have then chosen to follow the presentations with round table discussions where each team holds a focused discussion for two sessions and participants are encouraged to attend the sessions of their choice. This allows stakeholders more opportunity to discuss progress and issues in greater depth.

Also by the 6 month report, the "Integration Team" (IT) had replaced our "triggers and thresholds" work. It was determined that it was more important to focus on the interpretation and integration of research results, and stakeholder input, rather than to create "triggers" that are set in stone. This is a better fit to the adaptive approach, and allows us to make changes in response to research results. Stakeholders have informed us that their greatest concern is seeing that the scientific and stakeholder information generated from the project is actually incorporated into Forest Service management. We drafted a white paper explaining the policy setting for collaboration with the Forest Service, distributing it to our stakeholders. This paper now forms the basis for a paper that was submitted for journal publication in the November of 2010.

The SNAMP project is a long-term study, enabling us to follow the participation process over the course of project development, implementation, and evaluation. This allows a unique opportunity to follow the outcomes of attempts at incorporating stakeholders and public into the adaptive management project from the beginning to project completion. There are some environmentally concerned groups who have not yet participated. We interviewed representatives of such groups to learn about their perspective of on participatory natural resource management projects. For example, one of the premises behind enhanced public participation processes is the idea that increased access and input into a process might reduce conflict and increase Forest Service management activity. As it turns out in our case, both of the two study area projects were appealed. One person who appealed has been involved in SNAMP meetings and the other has not. For now the appeals have been denied by the USFS and the projects will move forward allowing the SNAMP research project to continue. It remains to be seen as we continue together, how the SNAMP public participation process will affect the project outcome and public response.

We have also placed more emphasis on going to our stakeholders and so our local UC Cooperative Extension representatives have stepped up their presentations at local interest group meetings – meetings such as County Boards of Supervisors, Fire Safe Councils, Sierra Club meetings, Resource Conservation Districts, Watershed Councils, local colleges and high schools including Reedley College and Yosemite high school. The ability to speak at meetings like these is an opportunity our team has capitalized on, reaching more people of diverse interests than stand-alone SNAMP sponsored presentations could have. This has created a much larger pool of

people around the study sites who have heard of SNAMP and are knowledgeable about what the project intends to accomplish.

In addition to recently resolved delays in funding for water instrumentation, the fisher research has located so many dens at the southern site that established Forest Service standards and guidelines for fisher den locations may preclude some of the vegetation treatments designed to protect the watershed from fire. Delay of the water research has forced the water team to have fewer public events than the other teams, while the excitement generated by the fisher team's discoveries has resulted in more fisher events than expected. Forest Service fuels treatments have also been delayed so this too has caused some teams to be less active than others at this time. UC Cooperative Extension is now waiting for treatments to start to do joint field trips with the Forest Service demonstrating how the treatments are conducted. These kinds of changes are part of the challenge of a large long term project like SNAMP, but the flexibility of our Integration Team and field trip programs allows for quick adaptation.

One issue that has come up is that some SNAMP stakeholders, including the Forest Service, have requested that SNAMP research results be applied in the implementation of study area projects as well as in other treatment plans immediately. According to UC Science Team research design, to give input into the study area treatments at this point would negate our ability to study the implementation of SPLATs as the Forest Service would normally implement them. This means that the UC Science Team would not be studying Forest Service SPLATs but some sort of a university-enhanced version of a Forest Service SPLAT. The other issue, of providing UC Science Team preliminary results to other projects in the Sierra, is also problematic in that results are not yet complete or refereed. These topics will be part of an ongoing discussion that the Public Participation Team will need to continue to facilitate.

D. Unanticipated Successes Achieved: (Please describe any additional successes beyond completing scheduled tasks or meeting scheduled milestones.)

The "Integration Team" that evolved out of the "Triggers and Thresholds" group has led to the development of a committed group of stakeholders ready to tackle difficult issues, such as the conflict between standards and guidelines for fisher dens and the planned forest fuels treatments. Our work with this group may prove to be an important advance for participatory adaptive management programs. The last meeting of this group focused on the fisher research and had 68 attendees. Of those attendees, 91% reported that they strongly agreed that they learned something new at the meeting. This fisher team meeting is the most recent in the increasingly impressive attendance and attention to IT meetings that has grown over the last three years as has SNAMP attendance over all (Figure 5).

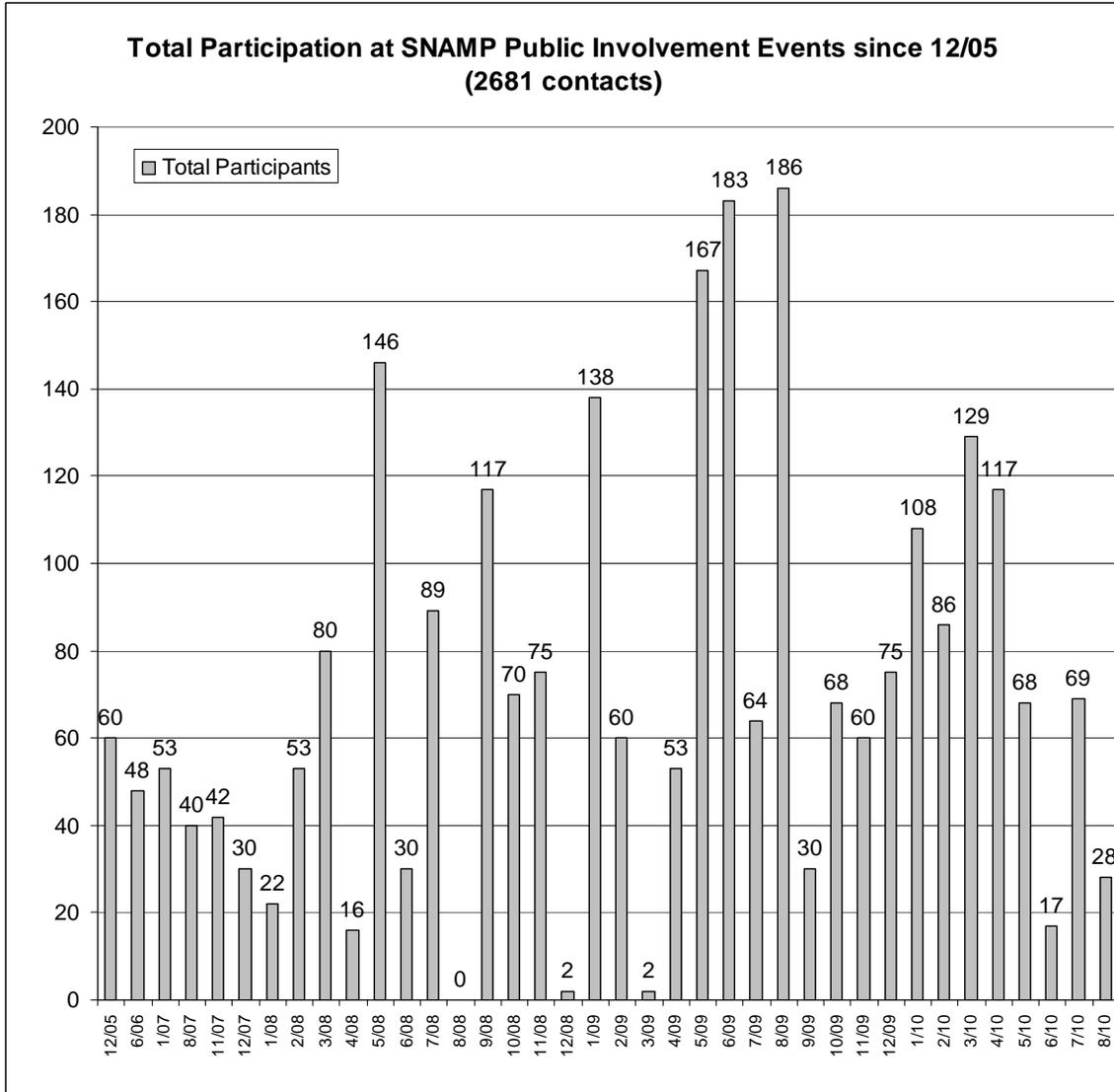


Figure 5. Total participation at SNAMP public involvement events since December 2005.

As mentioned above, at the last two annual meetings, we broke into small groups focused on particular research areas. This has led to considerable direct interchange between scientists and the public. Attendance was high and evaluations quite favorable (see attached annual meeting evaluation summaries for 2008 and 2009).

One of our central hypotheses in the area of adaptive management was that it was important to have representatives living in the local communities in order to effectively build local communication networks and social capital for working with the Forest Service in those communities. This has definitely proven to be the case, with our UC Cooperative Extension program representatives making inroads into local community meetings and media.

Our local Public Participation Team representative in the south, along with the fisher team and our central team administration, has worked very hard to bring representatives from Yosemite National Park into the project. Representatives from the Park now attend meetings and participate in the project regularly by coordinating and cooperating with the fisher team in their daily work within the Park. This has been a very exciting advance in the project's inter-agency partnerships.

There are several stakeholder groups that regularly initiate lawsuits against forest management actions. We have managed to get participation by all but one of these groups. This is an important accomplishment for the project and we hope to continue this high level of interest and involvement as we approach post-treatment analysis and begin to discuss results and their implications for forest management.

E. Compare Actual Costs to Budgeted Costs: (Please refer to your grant agreement to list your deliverables/budget categories and budgeted costs compared to actual costs incurred during this reporting period in the table below.)

| PROJECT BUDGET CATEGORIES | Original Budget | Revised Approved Budget |
|----------------------------------|------------------------|--------------------------------|
| Salaries, wages, and benefits | \$79,700 | \$119,237 |
| Travel | \$7,000 | \$1,392 |
| Expendable supplies and services | \$36,300 | \$2,371 |
| GRAND TOTAL | \$123, 000 | \$123,000 |

Explanation: Rebudget request was submitted and approved in June, 2010 copy attached.

F. Do you have information to report on the project-specific Performance Measures for your project? (If so, please list the Performance Measures below and describe your progress.)

N/A

G. Were there any other relevant materials produced under the terms of this Agreement that are not a part of the budgeted deliverables? If so, please attach copies. (Include digital photos, maps, media coverage of project, or other work products.)

There have been a few news articles about SNAMP in the Sierra Star in the area of the Southern site – March 2008 “*Wheeler argues for Mountain Area’s share*”, September 2008 “*Fire prevention and a weasel*”, February 2009 “*It’s time to weigh in on how to protect forests, wildlife from fire*”, June 2009 “*A question of forest health*”, August 2009 a community brief on a SNAMP field trip, and May 2010 “*Five orphaned Pacific fishers rescued*”.

We published a SNAMP outreach piece in the spring 2010 issue of the Forestland Steward put out by CalFire and Placer County RCD (attached).

Our UC Cooperative Extension local representatives have begun to create videos for the SNAMP website that will describe certain focal areas of the project that they feel are relevant to making SNAMP more generally accessible. The first one was posted May 2010 and focuses on what public participation actually means to our participants (please see <http://snamp.cnr.berkeley.edu/news/2010/jul/15/public-participation-video/>). There are a few other videos in production that should be posted soon. In addition, the Public Participation Team has made the commitment to develop a series of science briefs on all academic papers published as part of SNAMP. This increases the access, readability and so relevance of SNAMP work to a broader audience.

H. Next Steps: (Work anticipated in the next 6 months, including location and timing of any scheduled events related to the project.)

SNAMP will continue for the next few years with field workshops and IT meetings held as needed and annual meetings each fall. Our 2010 annual meeting was held October 21st in Sacramento. Outreach materials, newsletters, observations and interviews, journal publications, white papers, and reports will continue to be produced and refined as we learn more about the needs and interests of stakeholders. The team is currently collecting demographic information on participants in order to be able to analyze social characteristics and increase outreach to underserved populations.

Please Complete this Section for FINAL Report ONLY

Capacity-Building Results and Collaboration and Cooperation with Stakeholders:
(What partnerships did you initiate or strengthen as a result of this project? How did they affect the project outcome? If applicable, how did this grant increase your organization's capacity? What is your plan to sustain this increase?)

The SNAMP project and the public participation team's role specifically, are focused on partnerships. The project began with a formal partnership between four the MOU partners – the USDA Forest Service, the USDA Forest Service South West Research Station, the USDI Fish and Wildlife Service and the California Resources Agency. Another federal agency has since become heavily involved – the USDI National Park Service through Yosemite National Park. The fisher team's research extends into the park and their collaboration is crucial to the project. As for the original partners, their internal cooperation has continued and improved especially in terms of solidifying funding and shared understanding. Partner attendance at meetings is dependable and consistent. It is clear that these partnerships have improved and enthusiasm has increased over time through the many SNAMP UC-facilitated meetings and shared experiences. We hope to facilitate the continued improvement and coordination of these partnerships for the life of the project.

From the beginning the SNAMP process has been one of collaboration, participation and compromise. For example, water was one of the study topics in the original MOU. However, the Forest Service felt that water was not a priority for them for this research project and did not feel they had the funding for it. So in May of 2005 the UC Science Team declined to continue with the process given that our scientific consensus was that water was vital. Ultimately we re-engaged when California's Department of Water Resources agreed to fund the water research. This awkward beginning has impeded the water team since inception but their work is now finally implemented and data is being collected. Since the beginning of the project water issues have gained even more visibility, and the results of the water research are of growing interest. One clear case where public input dramatically affected study design was the focus on study sites in the mixed conifer forest where the fire hazard is greatest. Originally the UC Science Team was contemplating firesheds higher in elevation that included true fir forests. In water-lingo, these sites included the "rain-snow" transition. However the public, in particular local residents and county supervisors wanted the emphasis lower down closer to communities. The UC Science Team accommodated their wishes by changing the study design to fit participant suggestions. This project was and continues to be full of back and forth between agencies, stakeholders and scientists—we believe this is essential to a successful collaborative project.

The role of the Sierra Nevada Conservancy is important to SNAMP as a collaborator as well as funder. Regular participation by Conservancy staff is appreciated and very valuable to the project and will hopefully continue past this grant commitment. This financial support from the Sierra Nevada Conservancy enabled the public participation team to conduct interviews with

stakeholders that have been of great help in assessing the impacts and context of the project. We conducted 43 interviews with a large variety of stakeholders – those that participate actively, some only a little, as well as those who have not been to a SNAMP meeting. We spoke with environmentalists, agency and MOUP participants, industry representatives, local users of the forest and regional recreation groups – anyone we could think of that seemed to have a connection to the project. Interviews covered the issues at stake in the project – forest health and adaptive management – as well as experiences with universities, agencies and the Forest Service specifically and then observations of the SNAMP project itself. We considered these interviews as not only data but as another form of outreach – specifically asking and listening to individual stakeholder perspectives and hopefully encouraging them to begin or continue their engagement in SNAMP. Results from these interviews were important for our reporting to the Forest Service about their NEPA process and will be crucial to all our planned future publications.

Working with the SNAMP project has increased the capacity of public participation team members to experiment with multiple means of outreach such as webinars, videos, website discussions and mailing lists. This experience is being used in other programs throughout the state. We are currently seeking funding to continue these efforts. For the time being we have some funds from general SNAMP funding.

Relationships that have developed between SNAMP participants have resulted in additional collaborations outside of the SNAMP project. One notable outcome was the hosting of a major conference on Pre- and Post-Wildfire Forest Management for Ecological Restoration and Fire Resiliency in February 2010 in Sacramento (<http://groups.ucanr.org/wildfire2010/>). Over 350 people, including many SNAMP stakeholders, attended this conference sponsored and organized by the US Forest Service and the University of California Cooperative Extension. Several unanticipated outcomes developed from this conference. First was the development of a Sierra Dialog group sponsored by the USFS and facilitated by the Center for Collaborative Policy. The group includes a broad list of stakeholders that will be meeting to deliberate on the future of the Sierra Nevada and Cascades, with a focus on the national forests in these regions. Dialogues provide an opportunity for learning, shared meaning, aligned actions, mutual respect and understanding different perspectives. A second outcome of the 2010 conference was the recommendation for a follow-up conference, to be held in April 2011 with a draft title of *Working with People in Sierra Nevada Forest Management*. The goal will be to examine how social dynamics influence public forest management in the Sierra Nevada including examples of collaboration such as SNAMP.

Description of Project Accomplishments:

1. Most Significant Accomplishment

Describe in one concise, well-written paragraph, the most significant accomplishment that resulted from this grant.

The diverse modes used for enabling and facilitating public participation that were developed and tested in this project have achieved participation in water, forest health, and wildlife research that is both broad and deep. Development of the Integration Team format has given us a new outreach tool for sharing science, allowing group discussion and information sharing, and face-to-face interaction between research scientists, agency personnel, and the public. The interviews conducted with active participants as well as non-participants concerned with forest management were another way of integrating outreach and research, as the format allowed interviewees to think about, discuss, and express their thoughts on the SNAMP process on an individual basis and in great detail. At the same time, some key participants were drawn in to the SNAMP program as a result of being interviewed. The development of a state-of-the-art interactive website allowed SNAMP to reach people all over the world. The information gathered through all these methods fed back into our outreach process and has been key to the development of the SNAMP process. Because of the adaptive management format, we have continually improved

and developed participation methods using the adaptive management format to develop outreach and participation research is unusual and perhaps unique to this project.

2. WOW Factor

If applicable, please describe anything that happened as a result of the project or during the project that is particularly impressive.

We feel that five years of cooperation and coordinated funding between multiple UC Science Teams, the Forest Service, and other federal and state agencies is an impressive feat in itself. In addition, the incorporation of a focus on water as a major element of SNAMP's research is unique; it is not usually a central part of Forest Service studies and is something that the UC Science Team encouraged. More recently, the levels of stakeholder participation in our project are worthy of note. The number of engaged participants continues to grow and will likely be further augmented by the attention the water team's results will garner as they begin to share them in the coming year. At the most recent IT meeting, the fisher team had over 60 attendees in the room and more on the phone/webinar. This level of contact and discussion between managers, researchers and stakeholders is an aspect of the project of which we are particularly proud.

3. Design and Implementation

When considering the design and implementation of this project, what lessons did you learn that might help other grantees implement similar work?

We learned that relying on large public meetings is difficult. This format makes input and discussion hard and our team is so large that it created never-ending meetings. Expecting all stakeholders to attend one large meeting a year also makes scheduling very difficult. Hence we have developed a spectrum of communication options – small and large meetings, field trips, web discussions and postings, webinar access to meetings, and taking our project to stakeholders through presentations at local group meetings.

We have also re-learned that communication is crucial and must be facilitated throughout the project from start to finish. Having a consistent facilitator that is perceived to be trustworthy and accessible to all has proved to be an asset for SNAMP's connection with the public as well as its agency partners. Dr. Kim Rodrigues from UC Cooperative Extension receives great evaluations at every meeting and her attention to punctuality is always appreciated. UC Cooperative Extension's reputation as neutral is critical and must be protected.

4. Indirect Impact

Please describe any indirect benefits of the project such as information that has been developed as a result of the project is being used by several other organizations to improve decision-making, or a conservation easement funded by this grant that encouraged other landowners in the area to have conservation easements on their property.

Our ability to reach out even to those who do not attend SNAMP meetings through our emphasis on going to local group meetings is a crucial part of our process and produces many important indirect impacts – general education on forest management, information sharing and outreach about SNAMP, and increased access to university researchers and UC Cooperative Extension personnel.

The most recent IT meeting (not covered by SNC funding) ended up providing a venue for most of the prominent fisher researchers to come together to share in SNAMP's findings. This was an outcome that was hoped for eventually, and this kind of meta-analysis is part of SNAMP's larger

workplan, but for it to come so soon and so easily in the project was a wonderful indirect impact on the larger fisher conservation and research community.

The most important indirect impact that we want to see is improved forest management and forest health, and greater consensus about how to achieve these goals.

5. Collaboration and Conflict Resolution

If you worked in collaboration or cooperation with other organizations or institutions, describe those arrangements and their importance to the project. Also, describe if you encountered conflict in the project and how you dealt with it, or if there was conflict avoided as a result of the project.

One of the Forest Service's goals for the SNAMP collaboration and outreach efforts was to reduce conflict over forest management actions. This was a goal that the UC Science Team could not commit to accomplishing. Both study area projects were appealed. Of those who appealed the southern project, one participates in SNAMP and one does not. We would like to think that the increased participation in Forest Service treatment planning that has occurred based on SNAMP's outreach efforts would decrease the likelihood of legal action but there is no way at present to verify this assumption.

In general SNAMP involves many organizations, including the Department of Water Resources, the US Forest Service, a variety of non-profit groups, and so on. The project is designed to facilitate collaboration among these groups.

6. Capacity-Building

SNC is interested in both the capacity of your organization, as well as local and regional capacity. Please describe the overall health of your organization including areas in need of assistance. SNC is interested in the strength and involvement of your board, significant changes to your staff, size and involvement of membership. In addition, describe how your project improved capabilities of partners, or the larger community.

Due to our SNC grant we were able to fully staff our public participation team and provide local representatives in each of our study areas. This is a very important component of our outreach effort and allowed us to reach many more people than we could have otherwise, especially those who do not attend SNAMP meetings. As of July 2010 our stakeholder list has over 670 valid email addresses as members of our email distribution list.

This project has afforded the MOU partners the chance to work together consistently for over 5 years now and it seems to have improved the working relationships between the agencies. Funding coordination and collaboration in itself has been a major obstacle for the partners and their success in continuing to fund the project is testament to their perseverance and collaboration.

7. Challenges

Did the project face internal or external challenges? How were they addressed? Describe each challenge and any actions that you took to address it. Was there something that SNC did or could have done to assist you? Did you have to change any of your key objectives in response to conditions "on the ground"?

The main challenge for this project has been unstable funding and the loss of Conservancy funding in the middle of our grant period was a serious obstacle. We greatly appreciate the

reinstatement of the grant and the support of your agency during those uncertain times. All teams in the SNAMP project reduced their budgets but the public participation team did not have to reduce its outreach or research services in ways perceptible to the public.

8. Photographs

Grantees are strongly encouraged to submit photos, slides or digital images whenever possible. These images will be used for SNC publications such as annual reports or on the website. Please make sure you clearly identify location, activity, and your project with each submitted image. Images will be credited to the submitting organization, unless specified otherwise.

There are many photos of all our meetings and events on the SNAMP website. Please visit: <http://snamp.cnr.berkeley.edu/photos/>.

9. Post Grant Plans

What are the post-grant plans for the project if it does not conclude with the grant? Include a description of the following (if applicable): (1) Changes in operations or scope; (2) Replication or use of findings; (3) Names of other organizations you expect to involve; (4) Plans to support the project financially, and; (5) Communication plans?

The SNAMP project over all plans to continue for the next few years assuming state and federal funding continues and funding from other sources can be developed. The water component is now fully funded by the Department of Water Resources and will reach its full capacity though it is behind schedule. All teams including the Public Participation Team will continue to operate at full capacity for the next fiscal year based on secured federal and state funding. The project will change focus as the treatments are implemented and we intend to conduct joint field tours with the Forest Service to show participants the treatments in action.

We intend to continue to implement the lessons learned from our Conservancy grant like going to local group meetings rather than expecting them to come to us, using the IT group to share science, and the interactive website. The IT will likely increase in prominence as the teams have more post implementation data, and the teams will turn to the IT to assist with interpretation and recommendations to the Forest Service as we close the adaptive management cycle.

10. Post Grant Contact

Who can be contacted a few years from now to follow up on the project? Please provide name and contact information.

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SNC-approved Performance Measures: (Please list each Performance Measure for your Project, as identified in your Grant Agreement, and the results/outcomes.)

N/A