



Sierra Nevada Adaptive Management Project Annual Meeting Notes

US Fish & Wildlife Service Office, 2800 Cottage Way, Room C-1001- C-1002, Sacramento, CA
October 27th, 2011, 10:00 to 3:30 pm

In Attendance:

Heidi Ballard, UCST – UC Davis
Reg Barrett, UC - UC Berkeley
John Battles, UCST - UC Berkeley
Vince Berigan, UCST – U Wisconsin
Tray Biasioli, US Forest Service - PSW
Sam Blanchard, UCST - UC Berkeley
Rick Bottoms, US Forest Service - PSW
Sue Britting, Sierra Forest Legacy
John Buckley, Central Sierra Env. Res. Center
Esther Burkett, CA Dept. of Fish & Game
Pete Cafferata, CalFire
Mike Chapel, US Forest Service, Region 5
Brandon Collins, US Forest Service - PSW
Casey Collins, US Fish & Wildlife Service
Marie Davis, Placer County Water Agency
Robert Dean, Calaveras County Water Dist.
Lorna Dobrovolny, CA Dept. Fish and Game
Tom Efird, Retired US Forest Service
Helge Eng, CalFire
Gary Estes, American River Watershed Inst.
Shasta Ferranto, UCST – UC Berkeley
Todd Ferrara, CA Nat. Resources Agency
Chris Fischer, USFS, Tahoe Natl. Forest
Jacob Flanagan, UCST – UC Merced
Pat Flebbe, US Forest Service, Region 5
Pamela Flick, Defenders of Wildlife
Chris Frissell, Pacific Rivers Council
Frank Gehrke, CA Dept. Water Resources
Cay Goude, US Fish & Wildlife Service
Rocky Gutierrez, UCST – U Minnesota
Qinghua Guo, UCST – UC Merced
Barnie Gyant, USFS Region 5
Peter Hopkinson, UCST – UC Berkeley
Lynn Huntsinger, UCST – UC Berkeley
Kim Ingram, UCST - UCCE
Addie Jacobson, Ebbetts Pass Forest Watch
Jerry Jensen, SAF, AFRC
Marek Jakubowski, UCST – UC Berkeley
Jeremiah Karuzas, US Fish & Wildlife Service
Maggi Kelly, UCST – UC Berkeley
Mark Kleinman, Resources Legacy Fund
Susie Kocher, UCST - UCCE
Kelly Larvie, CALFIRE
Shufei Lei, UCST – UC Berkeley
Eric Loft, CA Dept. Fish & Game
Anne Lombardo, UCST - UCCE
Lynn Lorenson, Nevada Co Fire Safe & RCD
Diane Macfarlane, US Forest Service, Region 5
Dave Martin, USFS, Sierra National Forest
Sarah Martin, UCST - UC Merced
Sarah Matsumoto, Sierra Club
Tiffany Meyer, CalFire
Lindsey Myers, Central Sierra Env. Res. Center
Kim Rodrigues, UCST - UCCE
Gary Roller, US Forest Service - PSW
Richard Rypinski, unaffiliated
Hugh Stafford, USFS Region 5
Phil Saksa, UCST – UC Merced
Mary Scurlock, Pacific Rivers Council
Nerissa Sintetos, National Forest Foundation
Rosemarie and Steve Smallcombe, Mariposans
for Environment and Responsible Government
Scott Stephens, UCST – UC Berkeley
Brett Storey, Placer County
Adriana Sulak, UCST – UC Berkeley
Rick Sweitzer, UCST – UC Berkeley

Crawford Tuttle, CalFire
 Dana Walsh, USFS – El Dorado Natl. Forest
 Angela White, US Forest Service, PSW
 Sheila Whitmore, UCST – U Wisconsin
 Patrick Womble, UCST - UC Merced

On the Webcast:

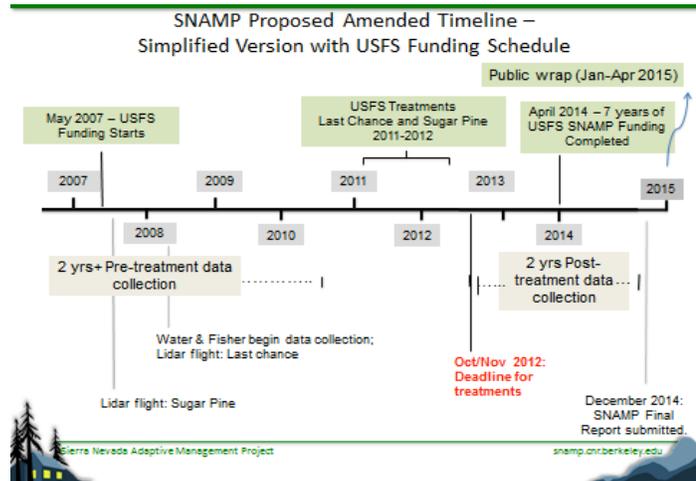
T. Engstrom
 Kari Fisher
 Danny Fry, UCST – UC Berkeley
 Ed Murphy, Sierra Pacific Industries
 Victor Lyon, USFS – Tahoe National Forest

All meeting materials including the power point presentations are posted here:
<http://snamp.cnr.berkeley.edu/events/oct-27-2011-snamp-annual-meeting>

I. INTRODUCTION: Kim Rodrigues welcomed everyone to the meeting and described the desired outcomes. For the morning session it was to present an overview of the research conducted by the University of California Science Team in the past year. The goal for the afternoon was to inform stakeholders of the anticipated effects of budget cuts and delayed treatment implementation schedules and the effect of these issues on project conclusion and deliverables.

John Battles introduced the Sierra Nevada Adaptive Management Project (SNAMP). He reminded the group of the goals of the science team to:

- Conduct innovative and relevant research in an open and transparent manner
- Provide a structured process for mutual learning throughout the adaptive management cycle
- Help develop and evaluate an adaptive management program with strong public participation.



He also reviewed the SNAMP timeline, and where the project currently is in the adaptive management process.

II. FOREST SERVICE IMPLEMENTATION UPDATE

Sugar Pine Project - Dave Martin, District Ranger of the Bass Lake Ranger District, gave an update on the Sugar Pine Project. The work at the Sugar Pine site began about 3 weeks ago in early October. This project was contracted with Sierra Pacific Industries (SPI) and Sierra Resource Management. The work includes about 1,000 acres of thinning and 400 of mastication. None of the work is complete yet. The contract is expected to be completed in two years, except for the burning. The finding of a new goshawk nest led to a goshawk Limited Operating Period (LOP), which limits work near the nest until September.

Last Chance Project – Chris Fisher, American River District Ranger, gave an update on the status of the Last Chance Integrated Vegetation Management Project. This project was also sold to SPI and contracted with a local logger. Assistance from the state helped push the project forward and will hopefully ensure the project can be done under the two year time constraint. Work began in early September and the project is expected to be 60% complete this year. Funding was also provided by the Placer County Resource Advisory Committee and the American Investment Recovery Act (stimulus). The project includes about 1,500 acres of tractor and cable thinning, mastication and prescribed fire. Eight miles of roads will be decommissioned, with about four and half completed so far. There will be about two miles of additional road construction. There will be about 900 acres of thinning which will yield about three million board feet of lumber. There is an additional 85 acres of hand piling, 85 acres of mechanical piling and 174 acres of prescribed burning planned. The work will continue as long as the weather holds out.

Question: Is biomass utilization a part of treatments?

Answer: The Forest Service is looking for biomass opportunities. They are working with Placer County's biomass program, but no agreements have been made yet.

Question: Which parts of the treatments will you complete?

Answer: All of them will be completed in two years, including the burning. About 10 – 15 % of the acres may remain, probably the acres to be burned since funding is difficult for that.

III. OVERVIEW OF RESEARCH: Each science team gave a PowerPoint presentation with an overview of their research in the past year (these are posted at <http://snamp.cnr.berkeley.edu/events/oct-27-2011-snamp-annual-meeting> along with the 2011 Annual Report).



Fire and Forest Ecosystem Health Team – Dr. Scott Stephens of UC Berkeley presented the forest health research approach and status. The goals are to quantify the landscape level impacts of SPLATs on fire behavior and measure the impact of fuel treatments on tree growth and survival. A fire history created by the forest team shows that the southern site suffered more fires in the past during the growing season while the northern site had fires occur more often in the dormant season. Fires decreased around 1900 for the northern site and a little later, 1920 in the southern site. The team will also be able to show how large the fires were because of the size of their sampling area. Tree cores were used to build a baseline for modeling tree mortality and a vulnerability profile was created for both sites. The results of this work show that assessment of the effects of treatment on tree survival should be done with re-coring at five, twenty and forty year intervals depending on tree species. Given delay in treatments, the team will not directly evaluate changes in tree vulnerability. Instead, they will use pre-treatment survivorship curves and measured demographic changes to model treatment impact on tree vulnerability. The plan for 2012 is to follow directly behind the operators to measure plots post-treatment and match them with measurements in reference areas.

Question: How will you tease out treatment effects versus weather effects on tree growth rings?

Answer: We have a reference/control site which will have the same weather but no treatments.

Question: Prescribed fires and their impacts are constricted to safe burn windows, and real fires occur outside of those safe windows. How will you predict SPLAT effectiveness for prescribed fires during limited ignition windows and weather and for real fires in the forest? How do you propose to evaluate SPLATs in the real fire environment?

Answer:

Water Quality and Quantity Team – Dr. Martha Conklin of UC Merced gave an overview of the research, hypotheses, status and summary of baseline data collected on water quantity and quality at each site. The Water Team predicts the increase in gaps between trees as a result of the thinning treatments will increase snow accumulation as snow on trees sublimates quicker. Decreased evapotranspiration (ET) will also occur as there are fewer trees to lose moisture. Stream flow will increase sooner following weather events due to the lack of vegetation to interrupt or absorb the water. Sediment movement will be largely a result of increased stream flow rather than sediment from overland flow and most will move in the earliest storms. Scour pans have been installed in the stream beds and are now providing sediment data. Data from the Kings River Experimental Watershed (KREW) was used to help parameterize the water models, as they have a more complete data set than SNAMP. The Water Team is working with the spatial and forest teams to incorporate high resolution vegetation information into modeling efforts. They are currently doing forest thinning experiments where they simulate the reduction in canopy and/or Leaf Area Index. They are currently doubling their efforts to catch up and finish with other teams. The shortened SNAMP timeline reduces the team's ability to understand of the role of ground water flow since it takes longer to reach the stream and be measured.

Question: Is it possible to determine the evapotranspiration rates for different species of trees?

Answer: No, the rates are currently measured in a mixed conifer forest at the Critical Zone Observatory at KREW. This instrument provides detailed information on the flux of ET from the mixed species forest below.

Public Participation Team – Dr. Lynn Huntsinger, of UC Berkeley, gave an overview of the Public Participation Team's work, including the public outreach activities, the website, and research. Participation in SNAMP events continues to be high as is the use of the SNAMP website. The adaptive management literature says that a central tenant of adaptive management is continual learning and that the process should be less about current decisions than about mutual learning that might lead to better future decisions. In addition, last year's online evaluation survey showed that SNAMP participants felt learning was a crucial outcome of SNAMP. Therefore, the research team developed a new focus on tracking learning amongst participants. Evaluation forms have been changed to better track learning and phone interviews to show who is learning what and from whom will be started soon.

Question: What kinds of things are people learning about adaptive management that we can take back to our forest?

Answer: There is an interest in finding out who is learning what in the adaptive management process. We are working on efforts to tease these differences out of our evaluations. You will see that they have become more specific. We are also working on survey questions that will assist this.

Spatial Team – Dr. Maggi Kelly presented the work of the Spatial Team. She gave an overview of the Lidar data collection process and what can be learned from it. They are deriving topographic and vegetation parameters from Lidar including elevation, mean and maximum height, tree diameter, height to live canopy base, canopy cover, and leaf area index (LAI). They have developed novel methods for lidar analysis: including individual tree detection from the Lidar point cloud, Lidar visualization, allometric equations for biomass estimation, and inputs to fire behavior modeling. Lidar data is more accurate for information located higher up a tree. Fuel loading estimated by Lidar is less accurate as the canopy above blocks good returns from anything less than one meter. It is difficult to detect structure in the 3 to 8 feet tall range as well. To overcome this, the team is hoping to combine “discreet Lidar” with the newer “wave-form Lidar” in the post treatment data gathering flights. Wave form Lidar was not available when Lidar was first used in 2008. Also, the team anticipates that increased penetrability post-treatment due to the removal of brush and trees will improve accuracy near the forest floor. They are currently characterizing California spotted owl nest stands and fisher denning trees using Lidar data and working on characterizing LAI for water modeling.

Question: Can Lidar be used to measure leaf area index?

Answer: Yes, and the advantage of using Lidar for LAI is the fine scale at which the information can be produced.

Question: Are you able to compare species of trees and their evapotranspiration or LAI rates?

Answer: Not yet, but a student is working on this with the goal of classifying individual trees that have been assembled out of the Lidar point cloud.

Pacific Fisher Team - Dr. Rick Sweitzer gave an overview of the fisher study and its current findings. The Fisher Team has the best data on causes of mortality for fisher in the country due to the aerial telemetry available to the team. Predation is the leading cause death for fisher in the SNAMP study area, with road kill as the second leading cause. There will be some bobcat trapping in the study area beginning next week by Greta Wengart from UC Davis to help better understand the predation issue. The team is also identifying source and sink areas within the study area, dispersal, habitat use, population parameters and limiting factors. Rick is working on manuscripts describing his team’s experience with distemper and rodenticides. Two of the four known fisher deaths from rodenticide in the U.S. have been in the SNAMP study and over 85% of sampled fisher carcasses have shown exposure to it. The team knows of 71 den trees and has collected habitat information from 42 of them. Rick is working with the Conservation Biology Institute (CBI) on a model for fisher den tree habitat. He is also working with the Hoopa project up north on a model for female fisher reproduction. The team has learned a great amount about the dispersal of juveniles in the last year. The fisher office is collecting data from camera surveys done in Yosemite National Park and by Central Sierra Environmental Research Center (CSERC) scientists.

Question: How do survival and reproduction levels in SNAMP compare to other areas where people feel the population is stable?

Answer: Our male juvenile survival is lower than the Kings River Project. The Hoopa tribe’s survival is slightly better. There is one other Olympic Peninsula study that Rick does not have access to statistics for.

Question: You have found that the Central Camp area is a sink, is there any explanation of why? Is it due to predation?

Answer: There is one bobcat known to have killed at least three fisher in that area. He has developed a taste for and ability to catch them apparently.

Spotted Owl Team - Dr. Rocky Gutierrez gave an overview of the Owl Team research and preliminary findings. The owl team surveyed 75 owls this year and banded 14 new birds along with 61 re-sightings. Occupancy was similar this year with 48 of 59 territories occupied, a rate of 0.81, as compared to 0.80 from 2007-2010. Reproduction was poor this year with only four of the 36 pairs producing only five new fledglings. This is not uncommon in springs with late snow and rain.

The owl team very recently has re-analyzed their historic demographic data to explore why Lambda (the finite rate of population change) was stable while occupancy of owl territories appeared to be decreasing. They re-examined the owl capture histories (CH) and reviewed the individual CHs that were excluded from the previous meta-analyses of California spotted owls because of the potential for misidentification (same sex bird with same band). However, they realized that the probability of this misidentification was extremely low for 8 of these birds. When they included these eight owls in their analyses and recalculated Lambda, Lambda was declining at approximately the same rate as occupancy. Hence, the Eldorado population has been declining since 2001 and Lambda is significantly less than 1 (or a stationary population).

A recent power analysis using simulated data suggests that the statistical power to detect small changes in owl occupancy due to SPLATS is low, given the existing sample size and time frame of the SNAMP owl data. The Owl Team is considering using data collected on the Eldorado Study Area from 1993-2006 to supplement the SNAMP data (2007-2013). The larger sample size and longer time horizon would greatly increase statistical power. This approach would involve reconstructing an annual history of land use and vegetation change within the study area, which would be used to analyze the effects of habitat alteration (timber harvest on USFS and private lands, wildfire) on owl vital rates. The Owl Team believes that timber harvests on USFS land prior to the 2004 Sierra Nevada Framework were similar to SPLATs because these harvests followed the CASPO recommendations adopted by the USFS in 1993. The Owl, Fisher, and Forest Teams recently submitted a joint funding proposal to the Joint Fire Science Program that would include funding for this effort.

They are working on papers about the power to detect changes in occupancy under a BACI experimental design [now likely to be accepted at Ecological Applications], trends in California spotted owl occupancy, evaluating PAC delineation with long-term location data [now likely to be accepted at Journal of Forestry], the impact of forest management on Spotted Owl reproductive and survival rates, and the effects of climate change on California and Mexican owls [now published in Global Climate Change].

Question: Are you collaborating with other scientists looking at owl decline in the Lassen Plumas area?

Answer: We are collaborating with the other study groups in the Sierra Nevada that lead the other 3 owl studies, one is the Lassen and two others in the southern Sierra, which are led by U.S. Forest

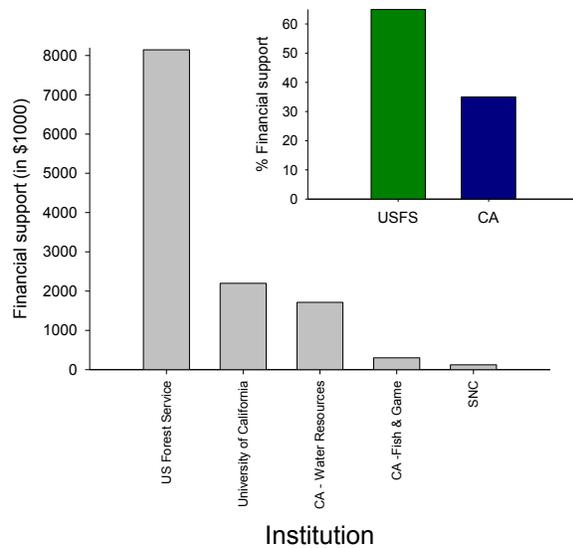
Service scientists, to conduct a new meta-analysis. These scientists have proposed to include changes in vegetation over time in the new meta-analysis.

Question: Lambda population numbers look grim. In the adaptive management context; we talked about indicators of things needing change, are we there now? When will you have the analysis done and available?

Answer: It is not clear if we are at this point of change because we do not know if the decline is correlated with human-caused changes, specifically SPLAT-type treatments. This is why we need the retrospective study. Thirty-seven percent of the land in the area that we study is privately owned, which is subject to clear cutting. There appears to have been an increase in clear cutting on private lands in the past decade and this may be a factor. Thus, we need to tease out the relationship between SPLAT treatments and other logging or habitat changes. If we do a retrospective analysis, the short answer is that it will take one to two years of analysis to assess these change relationships.

IV. MOU Partner funding update

Todd Ferrara from the California Resources Agency discussed the difficulties that the State of California is having contributing funding to the project this year. No funds from the state have yet been allocated to SNAMP in 2011-12. Frank Gerke from the Department of Water Resources said that DWR has contributed \$1.7 million to the project. The money had previously come from the general fund and Proposition 84, both of which are depleted at this point. Without state funds, the project is down between \$250,000 and \$300,000 for the year. In prior years the state funds went to support the Water and Spatial Teams. Other state financial contributions have mostly come from the State Wildlife Grant (SWG) program, administered through California Department of Fish and Game, and also the Sierra Nevada Conservancy. The Owl Team has received two of the SWG grants and the Public Participation Team received Sierra Nevada Conservancy funding.



Another SWG grant could be a possibility for the Owl Team though there are some issues with this: both, the fiscal policies of the state and universities, and the pass through from the US Fish and Wildlife Service made this grant difficult to administer. In addition, there is a matching requirement that would be a challenge because of the status of the state's general fund. A suggestion was made that foundations may be interested in a collaborative SWG proposal with SNAMP since this would be more powerful than a proposal from an NGO alone. Perhaps private monies could be found that would fund a focused effort to implement a wildlife grant. Cay Goode mentioned that this was being pursued.

Comment: The state was an MOU partner that started the SNAMP because of concerns about Sierra forest planning efforts. If SNAMP fails due to lack of funds, what would the state be doing about the regulatory process?

US Forest Service Region 5: Barney Gyant, Deputy Director Ecosystem Management for the US Forest Service, Region 5 spoke for Dan Jiron was unavailable due to illness. The Forest Service has provided \$1.4 million per year to SNAMP and an additional \$300,000 in in-kind aircraft support. This amount decreased by 15% in 2011-2012 and there are many challenges ahead for funding in 2013.

Comment: The 2004 Framework was affirmed by the Forest Service because it had adaptive management and it had to address owl, fisher and marten viability. This program officially was adopted by the Forest Service. To fulfill the requirements you have to do the AM program. With reductions in funding this and next year, and cutting the post project data collection time down by a year, many are asking whether we are still within the bounds of the decision. We remain concerned for the viability of the owl and fisher.



V. SNAMP scenarios depending on funding and treatment implementation/ VI. Discussion

John Battles presented an overview of how the UC Science Team would be affected without the contribution of state funds this year. The Forest Service funds, with a 15% cut from last year have been received, but no state funds have yet been allocated for 2011-2012. The scenarios presented include:

- Scenario 1, continuation with full funding as in 2010, is not possible because of

SNAMP scenarios				
Scenario	Budget	Post-tx time	SNAMP finishes	Notes
1: Continuation of 2010	100%: \$1.8M/year USFS: ~\$1.5M DWR: \$300K	1 yr ecosystem rest ; 2 years data collection	2015+	Budget situation precludes
2: Current 2010	86%: \$1.4M USFS: ~\$1.1M DWR: \$300K	1-2 years data collection	Dec 2014	
3-1: No DWR \$ finish in 2012	~61%: \$1.1M/year USFS: ~\$1.1M DWR: \$0	0-1 years data collection	Dec 2012	No close of AM loop
3-2: No DWR \$ focus on Last Chance	~61%: \$1.1M/year USFS: ~\$1.1M DWR: \$0	2 years data collection, Last Chance only	Dec 2014	Most teams at only 1 site, Last Chance
3-3: No DWR \$ redistribute funding among teams and work at both sites	~61%: \$1.1M/year USFS: ~\$1.1M DWR: \$0	1-2 years data collection	Dec 2014	probably can't achieve SNAMP goals

- the 15% cut back this year from the USFS, and
- Scenario 2, (the scenario under which the UCST is currently moving forward) includes the 85% allocation from the USFS and the full state commitment of \$300,000 per year.
 - Scenario 3 was put together to plan for the strong possibility that the state will not contribute funds this year. The goal of the afternoon session was to engage the public and MOU partners in a discussion of the options under Scenario 3 and to solicit input on other potential options. The options presented included:

3.1 Closeout SNAMP by the end of 2012. This option is being considered by the Science Team because the loss of state money will not allow the spatial or water teams to move forward. The spatial team at UC Berkeley will be out of funds by December 2011 unless state monies are delivered. This would result in a lack of integration and the project would no longer be SNAMP. No or very little post project data would be collected and there would be no way to measure the impacts of fuels treatments. The Science Team would analyze data collected up to summer 2012, summarize science and management insights and submit a final report by December 2012.

Question: In this option, is there no close at all on the adaptive management loop?

Answer: It would not be “closed” meaning that the impacts of treatments on water, wildlife, forest health and fire could not be assessed. There are certainly closures to smaller loops that feed into that larger adaptive management loop that can be done. We will be answering different questions, smaller more conservative questions. We will need to integrate our results as there will be regulatory pressure on owl and fisher. We will need to provide essential information that might allow new Forest Service treatments to go forward.

Question: How hard would it be to start again if funding was found later?

Answer: It would be very difficult. Staff would have been laid off and there would be no funds to maintain complex instrumentation like the water instruments. It would not be possible to go back later and collect post project Lidar as time would have passed.

Question: Is the Forest Service even willing to go forward without its state partners?

Answer: The Forest Service funds have a high priority to focus on wildlife.

3.2 Close the southern research site, except for the fisher team and focus all the integrated SNAMP research on the northern site. This option is being considered because collecting only half the data would allow the Science Team to cut costs substantially, though not in half. It would still allow the project to go forward with integrated research at one site and answer the question about the impacts of fuels treatments. Savings from focusing on a single site would be reallocated to support the Spatial and Water Teams. SPLAT treatments are likely to be completed on Last Chance by fall 2012, allowing for 2 years of post-treatment data collection. Only the Fisher Team would continue data collection in Sugar Pine, possibly with limited post-treatment data collection. The goal is to meet the original SNAMP goal of measuring the effects of treatments on wildlife, water, forest

health and fire for at least one site. Under this scenario, SNAMP finishes in December 2014, regardless of treatment completion.

A difficulty for this option is that it would require that funding for the Eldorado Demographic Study continue. The SNAMP area has never been large enough for the owl study since only one owl territory is included. It would also require that other treatments besides Last Chance go forward, especially Big Grizzly in the Eldorado Study area so that there is enough statistical power to measure the effects on owls.

Shutting down integrated work on the southern site would also entail a loss of social capital in the south. If SNAMP is no longer there it would say something to the local community about how much it is valued. There would be no Public Participation Team to run meetings and outreach. The Public Participation Team may want to focus survey efforts on the effects of this. Also this would be a big let-down for Forest Service managers at the southern site as SNAMP represents years of work without meetings its goals.

Question: Could you focus on smaller sites rather than cutting one entire study site?

Answer: No, the Science Team is delivering answers at the fished scale for managers and needs to be working at the scale that they are currently working to get these answers at the right scale.

Question: Would it be possible to step back and shake out the strongest correlations between both sites and work on things you have to in the stepchild site, but work mostly on the strongest site and model out the rest?

Answer: This would be increasingly difficult without Lidar data. How to divide the money would be a difficult issue. It might just cheapen the work at both sites i.e. the fisher work would have no support to share its findings.

Question: Can you still meet your objectives by flying the plane three times a week instead of five so the money could go elsewhere? What model plane does the fisher team use?

Answer: This would most affect the ability to determine the cause of fisher mortality. We need to have a quick turn-around so that we can find the carcasses while they are still fresh enough that a necropsy can determine cause of death. The team uses a Cessna 185 and a Super Cub.

Question: Can Forest Service funds be reallocated to pay for Lidar? In the past, per a 2007 agreement, this wasn't possible.

Answer: This will need to be looked into.

Question: What are the costs of Lidar? How much would be saved by only flying one site?

Answer: The cost to obtain and process the data is about \$175,000. It will take at least one full time student for processing since we will be using wave form Lidar which is new and it will take time to develop the analytic methods. Cutting the area for which data is collected in half will not cut the cost in half.

Question: Without Lidar, would there be any landscape scale data available to the teams?

Answer: Yes, there would be other data possible to collect, but not of the same quality. And there would be no Spatial Team to assemble and interpret the data.

Question: How would the loss of Lidar affect the Fisher Team? Could it be funded through the upcoming Joint Fire Science Proposal?

Answer: The Fisher Team would have difficulty determining the effects of treatments on habitat without it. Also it will be difficult unless the Fish Camp project east of and adjacent to the Sugar Pine project is implemented. This project is not sold and is under revision to remove some of the plantation work from the offer in hopes of attracting more bidders.

3.3 Make needed cuts and continue at both sites. Team budgets would be reallocated to support Spatial and Water teams currently funded by California's Department of Water Resources. This is not preferred by the Science Team since reduced data collection abilities would reduce the likelihood that treatment impacts could be detected. Most of the funds would come from the Fisher Team's budget, as they have the largest budget, and would reduce their ability to track fisher. There would be limited post-treatment data collection at both sites for one to two years, depending on when treatments are completed. SNAMP would end in December 2014, regardless of treatment completion. This scenario was included primarily for purposes of comparison as achieving SNAMP goals is probably not feasible under this scenario.

Question: Can you comment on the effect of eliminating the ecosystem recovery year?

Answer: Each team gave an appraisal of the effects. For the Forest Team, the forest health post project tree coring has already been dropped and so this would make no difference. The Water Team was most concerned about this as it takes some time for ground water to make its way through the system.

There was little support from those assembled for this option. There was concern that the reductions would preclude achieving scientifically valid answers. One commented that all the values are important, but the Science Team would have to prioritize; otherwise it would just diminish all the work and SNAMP would not address the reasons it began in the first place.

3.4 Drop water (and possibly spatial) from SNAMP research. In this option, the loss of funds from the Department of Water Resources would be absorbed by defunding only the Water (and Spatial) Team at both sites while keeping the other teams intact. The integration with water issues would be lost but not with other aspects of the study.

Participants suggested this option which drops only the portions of the project currently funded by state funds and allow the integrated research in concert with both wildlife teams. The USFWS will be making decisions in the next few years where this integrated work could help support ways out of conflict. At the end of the day it will be about wildlife regulatory issues. Every decision of the Forest Service could be affected if we do not have the wildlife issues figured out.



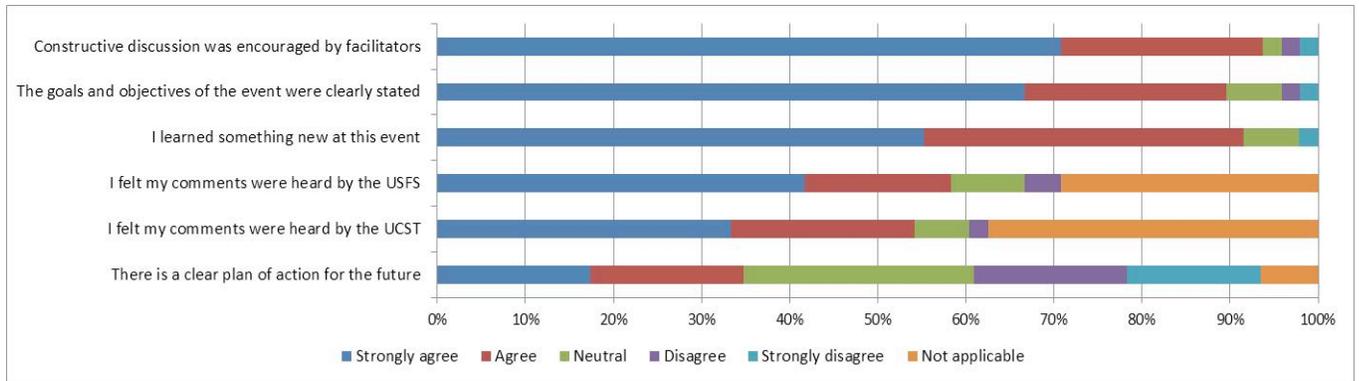
Some participants stated that water was critical to the overall integration and especially to wildlife. Since most studies lack water information, especially with climate change, integration is key. Still others said that the Water Team is more likely to find other funds because of the importance of water as an issue.

Comments:

- SNAMP was offered to the environmental community as a solution to roadblocks in the Sierra Nevada Forest Plan Amendment decision. Throughout this process there are other treatments going on everywhere with the faith that this project would provide a future direction. The USFS is moving more and more to rely on AM to deliver a landscape we want to achieve but if that is not an effective tool because we can't come up with the money to fund the required work then that is a broken system and the best option is to shut it down next year. If there is not funding for adaptive management now, then we cannot rely on it in future. How can we have confidence in the agency in the future? Without adequate funding, this project should be stopped now.
- If the project cannot perform as promised, it should be stopped. Stopping the project in 2012 would allow sharing of good information and the ability to close some loops.
- The full project should be operated for another more year while raising additional money from other sources. Since the budget shortfall is only about \$2 million over the remaining years, it may be possible to find funds from other sources since the project has value throughout the west and nation. Perhaps a few organizations could be found that would donate \$200,000 each.
- Many agency staff has a deep personal invested interest in the project and believe that they are doing work that matters. For this reason it is important to keep the conversation going collectively. All of us need to continue and not close the project.

VII. Next steps/Evaluation: Kim Rodrigues told the group that the scientists are committed to being open and honest in this process and will keep the stakeholders updated. A follow up meeting will be scheduled in January when more information will be available on the state funding and the SNAMP budget.

Meeting evaluation: Participants commented that the meeting location was good as was the food. The ability to have frank comments and have the MOUP partners there was important. The agenda with the framing in the morning with discussion following worked well. The presentations and facilitation was great. The meeting could have been improved by providing a summary table for all teams, similar to the one the Fisher Team handed out. In addition, 48 participants of the meeting filled out a paper evaluation form (out of 66 in attendance). Their ratings of the meetings and additional comments are listed below.



Additional written comments:

Format:

- Good framing of a difficult (horrible) issue.
- Should have started discussion with copies of MOU and other early documents. People were guessing about origin questions and obligations.
- I appreciate the frank discussion.
- By restricting the number of slides in the PowerPoint it is forcing the presenters to cram too much data, graphs, pictures etc on a slide. Most of the data was unreadable!!
- Having introductions at the beginning of the meeting would have been very useful.
- John Battles looked so authoritative in a coat and tie, just as a judge in judicial robes looks more powerful. I suggest that UC faculty speakers appear in their academic robes and hat.

Budget issues:

- I'm really disappointed that the project will not be completed as we were lead to expect due to government budget cuts.
- It seems that there is not strong MOU funding commitments.

Facilitation

- Excellent moderation
- Great job Kim!
- Very well run meeting
- PPT needs to listen more carefully to comments/supportive and be more flexible

Next steps:

- I like Sweitzer's table, do that for the spotted owl and water aspects.
- A clear plan forward on future of SNAMP as soon as is possible.
- I hope we don't stop thinking about option #2.
- Work on the importance of water to forest management.
- Keep the faith. Stay positive. Reap the best adaptive mangement conclusions you can, given budgetary constraints.
- SNAMP is an important and pioneering effort. You are doing a valuable service.

Evaluation survey:

- Add public to #11!!! And unknown.