

# SNAMP QUARTERLY MEETING – Q4 2010

## Notes

**Date and time:** Tuesday, January 11, 2011 1:00- 2:30 pm

**Location:** Conference call

**Participants:**

UCST: John Battles, Kim Rodrigues, Rocky Gutierrez, Rick Sweitzer, Anne Lombardo, Sarah Martin, Susie Kocher, Lynn Huntsinger

MOUP: Crawford Tuttle, Esther Burkett (DFG), Carie Battistone (DFG), Chris Fischer (USFS), Tony Rodarte (USFS), Ryan Olah (USFWS), Jeremiah Karuzas (USFWS), Mike Chapel (USFS)

### Summary of Agreements and Next Steps

*Agreements:*

- 1) UCST and MOUP members reiterated SNAMP's commitment to share scientific findings publicly and transparently (not contingent upon approval from DFG or other agency).
- 2) MOUP and UCST members that voiced an opinion on the call agreed that UCST should accept the contract if work around attempts are unsuccessful, and at worst the SWG funded data would not be included in SNAMP-specific analyses.
- 3) If the contract is accepted and a work around is not successful, UCST and MOUP need to be open and transparent with the public about the decision.
- 4) SNAMP 2011 Meeting Schedule
  - Q1. April 14. 1-4 pm.
  - Q2. July 14. 1-4 pm.
  - Q3 Annual Meeting. October 27 (tentative). All day. Back up date is October 26<sup>th</sup>.
  - Q4. Jan 12. 1-4pm.

*Next Steps - Budget:*

- 1) Carie and Esther (DFG) will investigate the option of turning the contract into a grant, which would allow a different data confidentiality clause to be written.
- 2) Carie will also look into whether a letter from the DFG Deputy Director, or if not the Deputy Director then another DFG authority, could supersede or clarify the confidentiality clause to indicate that only specific data, such as locations of sensitive species, are subject to the clause.
- 3) If the grant option is not verified by next Monday (January 17), UCST will move forward with the processing of the contract.
- 4) If the grant option will not work, then Esther and Carie will look into whether a separate clause can be added to the contract that data sharing will follow the procedures identified in the SNAMP Memorandum of Understanding.

*Next Steps – Update from Districts:*

# SNAMP QUARTERLY MEETING – Q4 2010

- 1) Mike will work with Chris and Dave to explore the practicality and estimated cost savings of a 1-yr treatment completion.
- 2) John will check with the science team that it is ok with the team workplans.
- 3) John and Mike will let Crawford know asap if they do not want him to pursue discussions with SPI about a 1-yr treatment schedule.

## 1) Budget

### a. Review current status of overall SNAMP budget for 2011 (Battles)

John reviewed the overall SNAMP funding structure. As of the most recent projections, the UCST is short ~\$150,000 for Year 5, attributed mainly due to a lack in private funding.

### b. Funding for the Owl Team: new restrictions imposed by the CA Dept. of Fish & Game (DFG) for proposed SWG funding (Battles, Gutierrez)

UC Berkeley and University of Wisconsin Madison will not accept the DFG contract. Zach Peery, co-PI on the Owl Team, can accept the contract through his PI status at the San Jose Research Institute, but the contract has a confidentiality clause that is difficult to interpret and is potentially problematic for SNAMP. John and Rocky explained the situation, as described in the letter “Spotted Owl Funding Situation\_10Jan2011.pdf” (appended to the end of these notes). A summary of the main points are below.

- 1) The critical need for the SWG funding to fill in the projected budget gap for the Owl Team over the next two years.
- 2) The potential restrictions that are tied to the funding including a restriction in data and information sharing without prior permission from DFG, which is in contradiction with UCST and MOUP commitment to transparency related to SNAMP data and science.
- 3) Specific consequences of not accepting the funding, including a 20% reduction of the SNAMP Owl territory sample size, which could substantially limit their ability to make inferences about the impact of SPLATs on owls.
- 4) Options that the Owl Team proposes for immediate action due to the pressing contract deadline (February 1): 1) reject the contract or 2) accept the contract but apply the funds to the Eldorado Study “regional” territories only, which significantly reduces the SNAMP sample size but buys them time to attempt to find another work around to the limitations imposed by confidentiality clause.

Participants from UCST and MOUP on the call were asked for their feedback on the proposed options and several potential solutions were identified.

Please see Summary of Agreements and Next Steps for outcomes from this discussion.

# SNAMP QUARTERLY MEETING – Q4 2010

## 2) Updates from Districts

Dave Martin was not able to attend the call. Chris Fischer reported that some pre work maintenance was completed along haul routes in Last Chance last year. Work is expected to begin in the beginning in summer / June. They are still expecting treatments to be completed in two years.

SPI was awarded the contracts for both Last Chance and Sugar Pine. Crawford Tuttle is talking with SPI to explore the possibility that they might be able to complete these projects in one year. John and Mike agree that it would most likely be a benefit and a cost savings to SNAMP to complete the treatments in one year. Chris's only concern is that the district has enough staff to monitor the treatments, and might need to bring in other personnel.

Please see Summary of Agreements and Next Steps for outcomes from this discussion.

**3) UCST research updates** - This item skipped due to lack of time. See summary appended to the end of these notes.

## 4) Integration Team (IT) preliminary plan for 2011

a. Suggestions to hold an Integration Team meeting with the Fisher Team earlier in the year than usual, in order to address high female fisher mortality.

Susie described this suggestion, which was made at the SNAMP 2010 Annual Meeting. Rick explained that the Fisher Team does not want to hold an IT meeting any earlier than usual (July), because they need time to work up the data from this year's season (ends on March 31) before presenting results from this year. The Fisher IT meeting date is set for July 19 in Fresno.

Susie and Rick will post an explanation of the Fisher Team's decision to the SNAMP website, and invite comment. They will also post an announcement of the Fisher Team's presentations at the Wildlife Society's Conference in Riverside on February 8-11. The SNAMP Fisher Team and the Kings River fisher researchers will present their knowledge to date of the status of fishers in the southern Sierra Nevada at the conference.

b. Suggestion for UCST to track the MOUP's use of SNAMP data and findings

Susie and Lynn reported that the Public Participation Team is planning to address this suggestion which also came from the Annual Meeting. They will be contacting USFS to explore ways in which this can be achieved. This topic is also the focus of the upcoming Integration Team meeting on February 2<sup>nd</sup>, as well as reporting on the information gathered from PPT Research's surveys and interviews. A final agenda for the meeting will be sent to SNAMP list soon.

# SNAMP QUARTERLY MEETING – Q4 2010

c. Review current ideas for IT meetings and field trips in 2011.

PPT IT meeting – February 2

Water Team field trip – March or April

Fisher IT meeting – July 19<sup>th</sup> in Fresno

Field trip(s) this summer at both sites, with media, of the treatments in action.

Other field trips or meetings are being considered but have not yet been confirmed.

## **5) Dates for 2011 SNAMP meetings**

Quarterly meetings are scheduled in 4 hour blocks of time in the event that it is deemed beneficial to meet in person. If not, they are conducted by conference call and are usually about 2 hours or less in length, depending on the subject matter of the agenda.

Q1. April 14<sup>th</sup> from 1-4 pm.

Q2. July 14<sup>th</sup> from 1-4 pm.

Q3 (Annual Meeting). October 27<sup>th</sup>, all day. Back up date is October 26<sup>th</sup>.

Q4. Jan 12 from 1-4pm.

Date for Annual Meeting is tentative. Ann and Mike will check with the UCST and MOUP members before confirming the date.

10 January, 2011

Dear MOU Partners and UC Science Team,

By this letter we bring to your attention to issues related to funding for the Spotted Owl component of SNAMP. As you recall, we merged our long-term (1986-2010) Spotted Owl study (Eldorado study area) with SNAMP project because the Last Chance study area did not contain enough owl territories to assess rigorously the effects of SPLATs on owls. This merger was discussed by the UCST, MOU Partners, and the public. All agree this was a reasonable merger.

Historically, the Eldorado project has been funded by the US Forest Service and State of California contracts separate from SNAMP funding, which has resulted in considerable in-kind support for SNAMP. The SNAMP owl budget was reduced from about \$155K in 2010 to \$115K in 2011 and the Forest Service has proposed to reduce the Eldorado budget by up to \$100K in 2011. The exact amount of the Forest Service reduction remains to be determined (the 2010 budget was \$350K). Some of the funding cuts can be compensated by unspent SNAMP funds at the University of Minnesota, but we likely would still experience about a \$50K shortfall in 2011 and perhaps greater in subsequent years when the unspent funds are exhausted. As a result, these reductions seriously threaten the viability of both owl projects (SNAMP Owl and Eldorado Owl Monitoring).

Recently, the California Department of Fish and Game agreed to award the owl component of SNAMP \$110K from the State Wildlife Grant program to reduce this shortfall. Originally, it was agreed that these funds would be administered to the University of Wisconsin via a subaward from UC Berkeley. However due to ongoing contractual issues between DFG and UC and because UW was unwilling to enter into a contract with DFG because of contract language (see below), we decided to route the funds through the San Jose State University Research Foundation where Zach Peery still has an appointment that allows him to be a PI.

The DFG included a clause in its standard exhibits related to the confidentiality of data that could be an issue related to SNAMP's commitment to transparency. The clause in question is ambiguous, and hence, is very difficult to interpret. Therefore, we provided both versions of the clause in question at the end of this letter (versions dated Oct 2010 and Feb 2010, respectively) and highlighted in the February version the part that we think has the greatest potential to conflict with the philosophy of SNAMP. This clause could be interpreted that permission would be needed from DFG before the owl data could be published or shared with interested parties. Our conversations with DFG staff indicated that this language will not be changed in time for the 2011 field season.

Thus, the owl team is faced with at least two options with respect to the SWG funds. The first would be to reject the funds, which could seriously compromise our ability to assess the effect of SPLATs on owls because it would reduce our sample size. In addition, the potential for sample size reduction could be exacerbated by the uncertainty about the extent of budget reductions in Eldorado project funding that might be forthcoming from the Forest Service. The second option would be to accept the funds, and risk our ability share or publish SWG-funded data if DFG was unwilling to grant us permission to do so. We do not feel that this would occur because of their membership in the MOU partners and other reasons.

10 January, 2011

If DFG was unwilling to agree to cooperate in our data sharing/publication, we could limit use of DFG SWG funds to monitoring a subset of owl territories. Specifically, we would propose to limit the use of SWG funds to survey 20 “regional” owl territories that currently occur outside of the boundaries of both the original Last Chance study area and the historic Eldorado “Density” study area. Doing so would allow us to continue a sampling design based on the Eldorado density study area, which would retain all our territories for analysis except for the 14 control and 6 treatment “regional” territories that would likely be lost if we do not accept the SWG funds. Essentially, this would create a firewall between SNAMP data and other data, but would nevertheless be extremely unfortunate. It would impact our study, but it is impossible to know the extent of that impact. Ideally, DFG will grant us permission to use the data as we see fit. In essence, without accepting the SWG funds, we will likely have to drop the 20 regional territories from SNAMP. By accepting the DFG funds, we at least retain the possibility of including these sites in SNAMP.

Zach Peery  
Assistant Professor  
Department of Forest and Wildlife Ecology  
1630 Linden Drive  
University of Wisconsin-Madison  
Madison, WI 53706  
831-706-5059

R. J. Gutiérrez,  
Professor and Gordon Gullion Endowed Chair  
Department of Fisheries, Wildlife, and Conservation Biology  
University of Minnesota  
St. Paul, MN 55025  
Phone: 612-624-2720

**Oct 2010 - CONFIDENTIALITY OF DATA** ~ All financial, personal, technical, and other data and information relating to the California State Department of Fish and Game operations which are designated confidential by the California State Department of Fish and Game, and made available to the Contractor in order to carry out this Agreement, or which becomes available to the Contractor in carrying out this Agreement shall be protected by the Contractor for the protection of the Contractor’s data and information are deemed by the California State Department of Fish and Game’s confidential information, such methods and procedures may be used, with written consent of the California State Department of Fish and Game, to carry out the intent of this paragraph. The Contractor shall not be required under the provisions of this paragraph, to keep confidential any data or information which is or becomes publicly available, is already rightfully in the Contractor’s possession, is independently developed by the Contractor outside the scope of this Agreement or is rightfully obtained from third parties.

**Feb 2010 - CONFIDENTIALITY OF DATA** ~ All financial, personal, technical, and other data and information relating to the California State Department of Fish and Game, and made

10 January, 2011

available to the Contractor and/or any of its approved Sub-contractors in order to carry out this Agreement, or which becomes available to the Contractor in carrying out this Agreement shall be protected by the Contractor. Such methods and procedures may be used, with written consent of the California State Department of Fish and Game, to carry out the intent of this paragraph. The Contractor shall not be required under the provisions of this paragraph, to keep confidential any data or information which is or becomes publicly available, is already rightfully in the Contractor's possession, is independently developed by the Contractor outside the scope of this Agreement or is rightfully obtained from third parties.

## **UC Science Team Updates for SNAMP Q4 Meeting**

Main research findings and work accomplished since last reported on October 21, 2010  
January 10, 2011

### **Project Integration and Management Team**

#### *Budget*

In-hand funding for Year 5 for the Wildlife, Public Participation, Fire and Forest Ecosystem Health, and Project Integration and Management is \$287,716 short of the budgeted amounts in the workplan. As of October 31, 2010, we are projecting a carryforward from these research teams of \$147,285 (Table 1). Given the funding outlook, we requested that teams conserve funds whenever possible in order to buffer shortfalls. We have not yet started discussions with the Department of Water Resources regarding support for Water and Spatial research teams for the current fiscal year.

#### *UCST Coordination*

- Spatial & Forest team science integration meeting in December.
- Monthly UCST conference calls.
- Online document archival (manage bSpace site).
- Distributed 2007 Sierra N.F. vegetation map, and posted to the SNAMP data server (snamp.ucmerced.edu).

#### *Communication with MOUP*

- MOUP quarterly meeting in October coordination with PPT and follow-up.
- Delivered updated study area shapefiles to Forest Districts, which are also available to the public on the SNAMP data server (snamp.ucmerced.edu)

#### *Other*

- Annual update to the SNAMP Oversight Committee.
- Follow up on private landowner road issues in Bass Lake.
- Updated MOUP contact list for UCST and SNAMP website.

**Table 1.** Summary of expenditures of the Sierra Nevada Adaptive Management Project for Year 4 from 1/1/10 - 10/31/10. Received amounts reflect actual transfers of funds to the contracting institutions. Balance reflects account balance as of 8/31/10. Encumbered amounts reflect funds already committed to pay salaries (as specified in hiring agreements) and ordered supplies/services. Projected balances are the difference between available funds and encumbered funds. All amounts in USD(\$).

Research Theme	Contracting Institution	Received <sup>1</sup> 1/1/10 <sub>USFS</sub> 7/1/10 <sub>DWR</sub>	Balance 10/31/10	Encumbered thru 12/31/10	Projected Balance 10/31/10
<b>Spatial<sup>2</sup></b>					
	UC Berkeley	100,357 <sup>3</sup>	--	--	--
	UC Merced	92,946	--	--	--
Fire and Forest Health	UC Berkeley	159,216	34,019	22,078	11,941
Wildlife	UC Berkeley (fisher)	490,679	152,136	77,807	74,329
	U Minnesota (owl) <sup>4</sup>	144,415	?	144,415	0
Water <sup>2</sup>	UC Merced	271,281	--	--	--
Project integration	UC Berkeley	158,792	53,006	43,076	9,930
Public participation	UC Cooperative Ext <sup>4,5</sup>	126,188	?	126,188	0
	UC Berkeley	87,385	51,085	31,649	19,436
<b>TOTAL</b>	<b>UC Science Team</b>	<b>1,204,000</b> <b>(USFS)</b> <b>364,227</b> <b>(DWR)</b>			

## NOTES

1. Spatial and water components are funded by California Department of Water Resources (DWR). This funding arrived in 7/1/10. The US Forest Service (USFS) funding began on 1/1/10.
2. The funding from DWR arrived in 7/1/10 and has an end date of 6/30/11.
3. This allocation does not include the \$37,250 provided as bridge funding by the USFS while DWR processed the spatial contracts.
4. We cannot track subaward finances (UC Cooperative Extension and University of Minnesota) as closely as the awards held at UC Berkeley. Invoicing lags by approximately a fiscal quarter.
5. The public participation subcontract with UC Cooperative Extension was from 1 May 09 to 30 April 2010. Thus it is the only USFS award that extends past the calendar year for Year 3. Year 4 started on 1 May 1, 2010 and continues to 30 April 2011.

### **Spotted Owl Team**

Working on fall and winter:

- Estimated survival, occupancy and reproductive rates for owls on all study areas 2007-2010
- Estimated locations of owl territory centers for pre-treatment years (2007-2010)
- Updated vegetation classification map to account for changes to estimates of territory centers (ongoing)
- Updated vegetation map to account for recent USFS and private treatments and update using NAIP 2009 image (ongoing)
- Submitted research update for owl newsletter

Currently working on now and in the near future:

- We have begun our hiring process for the 2011 field season
- Resolve budgetary situation regarding CA Dept of Fish and Game grant

## **Fisher Team**

- We are currently monitoring the activities/fates of 24 radiocollared fisher, including the four orphaned fisher kits that were released on the Sierra National Forest October 2, (1 pair of female kits), and October 9 (1 female and 1 male kit), respectively. A detailed update on the status of the orphaned fisher kits will be presented in a meeting of the Southern Sierra Nevada Fisher Working Group on February 11, 2011.
- 4<sup>th</sup> year repeat camera surveys in the Key Watersheds portion of the Fisher Study Area have been ongoing since mid-October, and will continue through the rest of the winter season. We are also performing camera surveys for fisher presence in other parts of the study area where management treatments are known to have occurred after Fall 2007.
- Trapping is ongoing and will continue until mid-March when female fishers initiate denning. Fall and winter is typically the busiest time of the year for trapping when we are attempting to capture/radiocollar young of the year (juvenile) fisher kits detected by camera, or suspected present based on home ranges of reproductive adult females from Spring 2010. Trapping success has been unusually low this fall/winter compared to previous years, partly related to interruptions from a number of fall and winter snowstorms and difficulty accessing many parts of the study area due to poor road conditions and deep snow. Although the fisher population in our study area experienced relatively low survival during spring and summer 2010, we are detecting a good number of unknown (noncollared) animals at our camera stations, and hope to be able to capture many of these individual fishers over the next several months.
- We detected and recovered the carcass of a single radiocollared fisher on October 22, 2010, otherwise there were no other mortalities of radiocollared fishers during the reporting period. Our collaborators at UC Davis have reported evidence of exposure to rodenticides for several radiocollared fishers from the study that initially appeared to have died from other causes. As a result of these findings, we are now testing archived liver tissue from other fisher mortalities for exposure to rodenticides. Importantly, evidence of fishers being exposed to rodenticides is not isolated to the SNAMP Fisher Study; multiple recent fisher mortalities from the Kings River Fisher Study and the Hoopa Fisher Study have also tested positive for rodenticide residue. We suspect that rodenticides used in/around illegal marijuana farms is the source of

exposure via fishers ingesting poisoned rodents/squirrels. We are working closely with our collaborators to learn more about this emerging issue.

- Data management and analysis is an ongoing activity, but now intensifying as we work to prepare several manuscripts on denning season habitat use, diel activity patterns, home range movements and dispersal, and survival and causes of mortality for fishers in the southern Sierra Nevada region.
- We are currently preparing a number of oral/posters presentations for the upcoming Western Section of The Wildlife Society Conference scheduled for February 8-11, 2011 in Riverside, CA. All five presentations will be made available for viewing on the SNAMP website after the conference.

### **Spatial Team**

Spatial team has been working on:

- Using lidar data to predict fuel models and fuel metrics; we expect to submit a paper in the early spring.
- Detecting individual trees from the lidar point cloud; we expect to submit a paper in the early spring.

We had a joint meeting with the FFEH team to discuss integrated work, including:

- How and when to incorporate lidar data (other than DEM and Fuel Models) in fire behavior modeling in SNAMP;
- New ways to use maps of individual tree results in the FFEH tree health models.

In the spring we plan to:

- Reconstruct CBD from lidar (spatial team);
- Use Qinghua's tree locations with tree health model (John and Adrian);
- Continue to examine the issue of "topographic normalization" and vertical topology;
- Our new postdoc arrives in January, and we plan on having him work with us on these cross-team research projects.

## Fire and Forest Ecosystem Health (FFEH)

### *FFEH: Fire*

- Developing the information needed to evaluate the SPLAT network in the southern site. We are planning on using lidar data and field data to predict fuel models and fuel metrics.
- We are exploring methods to do the southern SPLAT evaluation without lidar data too.
- We had a joint meeting with the Spatial team to discuss integrated work (see Spatial Team section).

In the spring we plan to:

- Continue work on the southern study site SPLAT evaluation. Lidar data has proved useful for more of the fire modeling needs but some data will need to be obtained outside of the lidar analysis.
- Continue to cross-date fire history samples taken from the northern and southern site. About 40% of these samples have been dated.

### *FFEH: Forest Ecosystem Health*

Our priority continues to be the processing of tree cores and the development of the predictive mortality models. In the last quarter, we have completed and cross-dated all sugar pine tree cores and white fir cores from the Sugar Pine Site.

**Table 2.** Summary of core processing as of Dec 31, 2010.

	Tree status	Collected (field)	Prepared (mounted/sanded)	Analyzed (rings read)	QAQC
Model pairs	Live	1553	1553	1553	714
	Dead	1553	1553	1553	700
Pre-treatment samples		1194			
	Live only	(includes subsamples with 2 cores per one tree)	Drying	0	

In the spring, we plan to build preliminary growth-mortality models for sugar pine and white fir and compare to our existing models of these species.

## **Public Participation Team (PPT)**

### *PPT: Website*

- Continuing to maintain website
- SNAMP newsletter Vol 4 No 2 published; focuses on the Fisher team
- Developing SNAMP newsletter to focus on the Spatial team; expected publication in late Spring 2011
- Developing SNAMP newsletter to focus on the Owl team; expected publication in Spring 2011
- Sent out web updates to the full SNAMP distribution list in Dec 2010

### *PPT: Research*

- Completed web survey of entire SNAMP participant list with PPT August 2010
- Completed initial interview process – 46 interviews: 42 programmatic and 4 local historical October 2010
- Archiving SNAMP materials – on going
- Analysis of online survey, interview and observational data – on going
- Program evaluation matrix refinement – on going
- Publication of journal articles with PPT
  - “Participatory management of natural resources: The Sierra Nevada Adaptive Management Project from an institutional viewpoint” submitted to the Journal of Environmental Planning and Management
  - “Perceptions of forest health among stakeholders in a Sierran Adaptive Management Project” to be submitted for publication in winter 2011
  - “SNAMP: Cooperative Extension and University Researchers Collaborate in Participatory Adaptive Management” to be resubmitted to California Agriculture with online survey data in winter 2011
  - Others in the draft form
- Plan PPT IT for February, collected stakeholder feedback and ideas on current and future research plans

*PPT: Outreach Whole Team Activities*

- Annual meeting October 2010
- Planning, analysis, and presentation production for Public Participation Team IT meeting February 2, 2011
- Planning Fisher Team IT meeting in July 2011
- Planning Spotted Owl Team IT meeting Summer 2011
- Collecting and producing introductory SNAMP videos for posting to website
- Collecting and analyzing demographic data for SNAMP participation

*PPT: Outreach at Northern Site - Kim Ingram*

- Outreach Presentations to Sierra Club October 2010; 49'er Rotary Breakfast Club December 2010
- Water Team field trip November 2010
- Participation in USFS Sierra-Cascades Dialogue Group meeting November 2010
- Submission of articles to UC Greenblog (<http://ucanr.org/blogs/Green/>) December 2010 and March 2011
- Submissions of SNAMP/Owl Team article to the Northern California Society of American Foresters newsletter February 2011
- Participation in UC & Forest Service Wildfire Conference April 2011
- Planning Spotted Owl field trip Summer 2011
- Developing a website with a catalog of information on California Spotted Owl

*PPT: Outreach at Southern Site – Anne Lombardo*

- Instigated a fall acorn count in local schools to assess food supplies for squirrels, the fisher's favorite prey September 2010. We are working to expand the number of schools involved and to make this an annual event
- Coordinated the first public visit to the SNAMP fisher office in Oakhurst October 2010
- Arranged for Minarets High School Media class to make a fisher documentary to include 2 interviews with Rick and visits to his office November/December 2010

- Facilitated Water Team presentation by Sarah Martin to The Central Sierra Watershed Committee in Oakhurst December 2010
- Article on SNAMP in California Fire Safe Councils e-newsletter December 2010
- Completed two videos: “What is SNAMP” picture series and “Fuel Treatment” video for SNAMP website
- Creating a fisher brochure to share with the general public
- Participation in an earth science day with local elementary students January 2011
- Participation in UC & Forest Service Wildfire conference April 2011
- Planning additional public visits to the Fisher office Spring 2011
- Developing a website with a catalog of information on Pacific Fisher

### **Water Quality and Quantity Team**

- 1) The automatic water samplers (ISCO samplers) have arrived. We are working out the final programming details to interfacing our water quality sensors, data loggers, and ISCOs for turbidity based sampling. We anticipate deployment within the next month.
- 2) We are continuing to collect manual stream grab samples for suspended sediment concentration, ionic content, and isotopic analysis.
- 3) QA/QC and analysis of all field data through the 2010 Water Year is in progress. Data will be available on the SNAMP Digital Library as work is completed.
- 4) Soil samples from soil moisture sensor installations have been analyzed for texture (sand/silt/clay) by the UC Davis ANR Lab. This data will be used to inform soil characteristics for hydrologic modeling.
- 5) The Regional HydroEcological Simulation System (RHESSys) Model is successfully running and producing results. Parameterization and calibration of RHESSys is in progress.
- 6) Sarah Martin presented a talk on the water team's research for the Central Sierra Watershed Committee in Oakhurst.

7) A wireless sensor network was installed at Duncan Peak to expand measurements of snow depth, soil moisture, temperature, and relative humidity. Currently, 6 of the 10 sensor sites are operating, with the remainder to be installed before maximum snow accumulation this winter.

8) The Water Team held a public field trip at the Last Chance site to educate and inform interested parties about the new wireless sensor network on November 18. As planned, we scheduled it for the last possible day before snow blocked the road to the site for the winter.

9) In December, two presentations were given at the American Geophysical Union meeting in San Francisco: a poster on the hydrological observation design for modeling and a presentation on the wireless network system.