

UC Science Team updates for SNAMP 2011 Second Quarter (Q2)

Main research findings and work accomplished since last reported on April 13, 2011

July 12, 2011

Project Integration and Management Team

Budget

- We have discussed in detail the budget situation with the MOUP. From the start of the project, there always was a gap in the funding committed by the partner agencies (USFS, DWR) and the SNAMP budget. There was an agreement to work to obtain additional funding. We have had some successes but have not filled the budget gap. In addition, the Year 5 allocation from the DWR has been delayed (due in June 2011) adding to the gap and the uncertainty. Some aspects of the project have been curtailed; balances for the current fiscal year are summarized in Table 1 at the end of the document.
- Met with state Secretary for Natural Resources John Laird to discuss SNAMP and initiate discussion regarding 2011 funding of the water and spatial teams, July 12th

UCST Coordination

- Logistics: Monthly UCST conference calls, field crew housing, begin planning for All Scientist Meeting, approve SNAMP data server accounts, maintain bSpace
- Keeping track of adherence to SNAMP and UC science team agreements
- Assist Water Team in the field, visit with Fisher Team
- Training and transition to new Academic Coordinator, Peter Hopkinson

Communication with MOUP

- Present SNAMP to USFS Regional Office in Vallejo, May 24th
- Present SNAMP to state Secretary for Natural Resources John Laird, Sacramento, July 12th
- Confirm study site treatment schedules, contract completion end dates
- Explore potential data collaboration with PSW bird and small mammal study

Spotted Owl Team

Fieldwork

- Access to most of the SNAMP owl study area has been limited due to snow and the large number of logs blocking the roads. We are about 2-3 weeks behind our typical schedule for conducting surveys on the SNAMP Owl Study Area. However, we anticipate that we will be able to catch up by the end of the field season.
- We have visited nearly all of the Eldorado Demography Study Area territories and are making good progress there. It appears to be a poor nesting season; we have found only 4 nests at the 43 sites where we have detected owls.

Presentations

- We took Forest Service employees from the Georgetown District and Sacramento Regional Office on a field trip on June 29th. We also have a public SNAMP field trip planned for July 14th.

Fire and Forest Ecosystem Health (FFEH)

FFEH: Fire

- Developing the information needed to evaluate the SPLAT network in the southern site. We received plot-level lidar metrics from the Spatial Team. This data consists of 20 variables of the lidar point cloud directly over ~130 of the forest inventory plots. We will explore different methods and relationships between the plot and lidar data to predict fuel models and fuel metrics for the southern site.

In the summer we plan to:

- Continue work on the southern study site SPLAT evaluation. Evaluate SNF vegetation classifications with plot data. Continue spatial analysis with subset of plots.
- Continue to cross-date fire history samples taken from the northern and southern site. About 65% of these samples have been dated.

FFHE: Forest Ecosystem Health

We have finished processing the tree cores and are finished with the cross-dating for all the model pairs. We still need to quality check the pretreatment samples. We have developed predictive mortality models for all the major species. We plan to have a preliminary, pre-treatment vulnerability analysis completed for the Last Chance tree populations for the All-scientists meeting in September.

Summary of core processing as of June 31, 2010.

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

Spatial Team

Spatial team has been working on:

- Using lidar data to predict fuel models and fuel metrics; this work will be submitted to Photogrammetric Engineering and Remote Sensing in July.
- We have a provisional acceptance for our paper to Photogrammetric Engineering and Remote Sensing that presents a new method for characterizing individual trees from the lidar point cloud.
- We have a draft paper that describes estimating biomass from lidar data using 1) a range of allometric equations, and 2) a range of regression models. This should be submitted before Fall 2011.
- We are in discussions with the Fisher team to develop a paper that compares the area surrounding fisher denning trees as characterized by lidar with the background forest.

Public Participation Team (PPT)

PPT: Website

- Continuing to maintain website
- SNAMP newsletter Vol 5 No 1 published; focuses on the Spatial team
- SNAMP newsletter Vol 4 No 3 published; focuses on the Owl team
- Sent out web updates to the full SNAMP distribution list in Feb 2011
- Poster on SNAMP presented at George Wright Society Conference on Parks and Protected Areas, March 15, 2011

PPT: Outreach Team Activities

- Organized and completed a Water Team IT meeting April 8 2011
- Working with whole team to identify ways to collect information on learning outcomes from SNAMP events.
- Participated in all day PPT retreat in Woodland on June 14th, 2011
- Planning:
 - Water team field trip late July 8th, 2011
 - Spotted Owl field trip July 14th, 2011
 - Fisher Team IT meeting July 19th, 2011
 - Field trips to see SPLAT implementation in September 2011
 - October 27th, 2011 Annual meeting in Sacramento
 - Presentation to Stanislaus NF staff in Groveland Ranger District in July
- Outreach Presentations:
 - Rio Americana High School, May 17, 2011
 - Sierra Club, Sierra Nevada Chapter, May 20, 2011
 - Presented to 150 USFS employees at Bass Lake District and Sequoia NF Wilderness Society staff in San Francisco
- Participation in:
 - Lake Tahoe 2011 Wildfire Summit, June 24, 2011
 - SNAMP Owl team and USFS workshop at Blodgett, June 28, 2011
 - Fire Resilience Conference in Sacramento-facilitation and note-taking
 - Fieldtrip for the Dinkey Creek collaborative process.
 - 3 day facilitation training in Davis.
 - Met with Yosemite Institute to confirm adding SNAMP acorn count to their environmental education programs.
- Projects:
 - Collecting and producing introductory SNAMP videos for posting to SNAMP website
 - Developing a website with a catalog of information on California spotted owl <http://ucanr.org/sites/spottedowl/> and Pacific fisher <http://ucanr.org/sites/pacificfisher/>
 - Attended:
 - Presentation by Brandon Collins, USFS PSW at the Forest Biology Research Center, May 25, 2011 on 'Landscape level fire behavior and forest fuels treatments

PPT: Research

- Return of post-doc to SNAMP after maternity leave.
- Revising workplan to incorporate PPT IT results and outcomes from PPT retreat.
- Developed increased focus on mutual or social learning, Prof. Heidi Ballard will be working with us on a part-time basis.

- Completing white papers - revising and preparing to post.
- Archiving SNAMP materials – on going
- Analysis of online survey, interview and observational data – on going
- Program evaluation matrix refinement – on going
- Drafting and submitting papers for publication – on going
- Program evaluation planning – on going

Fisher Team

- We have just recently completed intensive monitoring of radiocollared female fishers for the spring 2011 denning season (late March to mid June). During this period we located and verified 15 live trees/snags used by female fisher for denning activities/reproduction. Similar to observations from last year, several spring 2011 den trees had been used during previous denning seasons (n = 5). Also, approximately 75% of the adult females in the study population reproduced, which was lower than for previous years.
- We are currently monitoring the activities/fates of 20 radiocollared fisher across the Fisher Project Study area. There were 5 mortalities among radiocollared fishers during the period from April 12, 2011 to June 3, 2011. All five of these mortalities appeared due to predation, and the carcass remains are being evaluating using DNA forensics and other methods to assign definitive causes of death.
- One of the five fisher mortalities during this period was a denning female with live kits in a known den tree. However, the den tree was a very large fir tree snag that was considered unsafe to ascend for attempting to rescue orphaned kits. SNAMP Fisher followed a new policy developed by the Department of Fish and Game, and after consultation with DFG, decided that attempting to rescue orphaned kits from the fir snag would have been too risky for crew safety. Therefore, the adult female's orphaned kits were not rescued and nature was left to take its course.
- Now that the denning season is over, we have resumed trapping activities in different parts of the study area. Trapping during the summer period will be targeted/focused on recapturing/recollaring several fishers that dropped their radiocollars during the winter+spring period, and on several noncollared fishers that were detected by survey cameras over the last 3 months.
- Our two primary research activities summer-early fall 2011 will be livetrapping and using automatic cameras to survey remote parts of the study area for fisher present/absence.
- Office-related work includes data analyses, writing, and preparing for the Fisher IT Meeting.
- The 2011 Fisher Integration Meeting is scheduled for July 19 in Fresno. Project Leader Rick Sweitzer is working on a variety of data analyses in preparation for this event.
- Outreach during the period included newspaper articles on various aspects of the SNAMP Fisher Team research in the *Fresno Bee*, *Sacramento Bee*, and *Merced Sun Star*. There was also an official News Release by the National Park Service on the discovery of the first known fisher den tree within Yosemite National Park, which was made by the SNAMP Fisher Team and involved one of our radiocollared fishers. Finally, we prepared and posted a short informational story on the UC ANR GreenBlog describing a variety of findings by SNAMP Fisher during the spring 2011 denning season. See Fisher Team webpage on the SNAMP website for the newspaper articles and the GreenBlog - <http://snamp.cnr.berkeley.edu/teams/fisher>.

Water Team

1. Reinstalled YSI Water Quality Sonde at Bear Trap Stream in Last Chance after removal for repair and calibration.
2. Repairs following the winter months continue as sites become more easily accessible and should be finished by the end of July. Snow depth sensors were replaced at Bear Trap and Frazier Creek.
3. Turbidity threshold sampling setup is installed in Sugarpine. The program is working but needs some more refinement before deployment at Last Chance in late July.
4. Continued stream water and flow sampling in Last Chance and Sugarpine.
5. Snow accumulation at Duncan Peak damaged the GOES antenna, the temperature/relative humidity sensor, and hardware on the meteorological station tower and snow depth sensors at the north and south facing sites. Repairs were performed on the tower but snow depth sensors at the sites were not able to be repaired until access was possible after snowmelt.
6. Stream chemistry QA/QC continues.
7. The hydrological model (RHESSys) is now running for all streams except Bear Trap, which has a bug that still needs to be found and fixed (should be minor). The transpiration component of the water balance is currently not being calculated and needs to be fixed in all the streams. Once those issues are taken care of, the next steps are to finalize parameters for calibration, incorporate spatially distributed Leaf Area Index (LAI) information, and start simulating treatments.
8. Persistent snow on roads made site visits difficult but now that the snow is gone summer fieldwork can get underway.
9. Summer fieldwork goals are to complete the remaining repairs in Sugarpine and Last Chance, complete water quality sonde calibrations, install Isco samplers in Last Chance and upload revised turbidity threshold sampling programs, and install scour sensors if available from the manufacturer.

Table 1. Summary of expenditures of the Sierra Nevada Adaptive Management Project for Year 5 from 1/1/11 - 6/30/11. Received amounts reflect actual transfers of funds to the contracting institutions. Balance reflects account balance as of 6/30/11. 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 ¹ 1/1/11 _{USFS} 7/1/10 _{DWR}	Balance 6/30/11	Encumbered thru 12/31/11	Projected Balance 12/31/11
Spatial ²	UC Berkeley	100,357 ³	40,223	39,982	241
	UC Merced	92,946	--	--	--
Fire and Forest Health	UC Berkeley	142,339	73,730	67,730	6,000
Wildlife	UC Berkeley (fisher)	417,917	219,060	206,057	13,003
	U Minnesota (owl) ^{4,5}	115,477	?	115,477	0
Water ²	UC Merced	271,281	--	--	--
Project integration	UC Berkeley	174,611	86,699	46,416	41,496
Public participation	UC Cooperative Ext ^{4,6}	120,390	?	120,390	0
	UC Berkeley	70,266	33,368	32,140	1,228
TOTAL	UC Science Team	1041,000 (USFS) 364,227 (DWR)			

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 award for the Owl Team does not include the 2-yr contract from the Department of Fish and Game for \$87,229 in direct funding available to support SNAMP owl research in 2011 and 2012. This contract was awarded via the San Jose State University Research Foundation.
6. The public participation subcontract with UC Cooperative Extension was from 1 May 09 to 30 April 2011. Thus it is the only USFS award that extends past the calendar year for Year 4. Year 5 started on 1 May 1, 2011 and continues to 30 April 2012.