Sierra Nevada Conservancy-Progress 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: **Bureau of Land Management, Bishop Field Office**

Project title: **Inyo Complex Post-Fire Watershed Recovery**

SNC Reference Number: **SNC 080181** **Submittal Date: 2013-02-05**

Report Preparer: Joy Fatooh **Phone #: (760) 872-5029**

Check one:

_____ **6-Month Progress Report**
_X_ **Final Report**

6-Month Progress Reports should reflect the previous six months. **Final Reports** should reflect the entire grant period.

A. Progress Report Summary: *(Please provide a general description of work completed during this reporting period.)*

Intensive Stream Monitoring: Burned vs. pre-fire
Water quality sampling: Burned vs. unburned
Aquatic invertebrates as water quality indicators: unburned vs. burns of varying intensity
Riparian songbird breeding populations: pre- vs. post-fire with unburned control areas
Upland vegetation: 1st & 2nd year post-fire baseline monitoring
Integrated discussion of ecosystem interactions

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.)*

Comparisons of post-fire conditions with pre-fire and/or unburned sites for the resources listed above. Effects of fire documented for the first 4 years post-fire and considered on a watersheds-wide, ecosystem level. Baseline established for observation of long-term effects. See full report, enclosed.

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.)*

Project is on schedule. When contract costs were greater than anticipated and materials costs were less than anticipated, we worked with SNC to amend the project budget, reallocating funds from materials to contract costs.

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

Prior to the 2009 project start date, field office personnel trained in songbird point count monitoring worked with PRBO Conservation Science to identify appropriate control sites and conduct point counts in 2008, so as not to miss the opportunity to capture bird community composition in the first season post-fire. As a result PRBO was able to work with four seasons of data instead of three when analyzing the results and preparing their report for us.

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	Budgeted SNC Dollars	Actual Dollars
Contract – Range Management Consultant	4,881.00	5,000.00
Contract – Riparian Songbird Study	15,419	15,500
Contract – Aquatic Invertebrate Study	14,000	14,000
GRAND TOTAL	**34,300**	**34,500**

Explanation: BLM provided additional funding for range management consultant and riparian songbird study.

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.)*

Please see below, for final report.

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.)*

Full reports from the aquatic invertebrate and riparian songbird studies are provided, in addition to the summary report.

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

The project as funded is completed; this is the final report. Additional study in future years will allow us to track long-term recovery and any long-term ecological change.

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?)

We strengthened our partnership with Inyo National Forest by continuing riparian songbird study transects that encompass both BLM and Forest Service lands; and by collaborating on training in, and implementing, the new upland vegetation monitoring method.

Description of Project Accomplishments:

1. **Most Significant Accomplishment**
   Describe in one concise, well-written paragraph, the most significant accomplishment that resulted from this grant.

   This project, unprecedented in the Eastern Sierra region, was a comprehensive watershed-scale look at several important and interrelated ecosystem elements in the first years after a large, high-intensity wildfire. It established several measureable differences between pre- and post-fire and/or burned and unburned conditions. It also provided abundant baseline information, so that replicating aspects of it at appropriate intervals can increase our knowledge of how this area – representative of a large ecoregion – responds to fire over time, informing future fire suppression and post-fire restoration efforts.

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

   Aquatic and riparian life showed remarkable resilience at an ecosystem level. Riparian vegetation including willow and water birch, reduced to charred stumps, began resprouting immediately. Bird abundance and diversity rebounded within four years, with a shift in bird community composition to greater abundance of native species that thrive in post-fire conditions. Aquatic invertebrates responded to differences in water quality and canopy cover with high diversity at a high-intensity burn site, and low diversity but great abundance at a low-intensity burn site.

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?

   Whenever possible, contract specialized work to subject matter experts; make sure that an analysis of the data and discussion of its significance is part of the

deliverables; and make sure that the funding requested at the outset will be sufficient to cover those final steps. The parts of the project for which we did this are stronger than the ones for which we field office personnel had to take time from our regular workload.

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.

None to report at this time.

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.

Inyo National Forest participated in training in the new upland vegetation monitoring method and implementing it on National Forest lands, and allowed us to continue point count monitoring transects established collaboratively in 1998 and encompassing both BLM-administered public lands and National Forest lands.

Our ongoing collaboration with PRBO Conservation Science, the nonprofit with statewide expertise in avian studies, continues to be of outstanding quality. Thanks to PRBO's expert assistance in selecting appropriate control sites and timing the point counts correctly, combined with their past diligence in training field office personnel in their methods and providing access to their database to input field data, we were able to conduct the first year of point counts prior to funding availability. PRBO always works closely with us to ensure that their efforts will be of value to our agency's mission.

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.

Our organization is a part of the Federal government. With "fiscal cliff" sequestration measures due the same day as this report, the capacity of the Federal government is a matter for Congress to determine.

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"?

When contract costs were greater than anticipated and materials costs were less than anticipated, we worked with SNC to amend the project budget, reallocating funds from materials to contract costs.

We had hoped to conduct Intensive Stream Monitoring at more than one station, using BLM funding and personnel, and were unable to do so due to the greater urgency of other BLM priorities.

The delay in project start date due to the Proposition 84 bond freeze presented a challenge. We were able to use BLM personnel and funding to commence riparian songbird studies in the first year post-fire, which were continued by PRBO Conservation Science using project funds after the start date.

We originally stated that our report would include management recommendations based on our findings; however, we have realized that we cannot generate recommendations based on these first early years of post-fire recovery. The project established post-fire conditions and captured short-term change, providing a baseline for long-term monitoring on which management recommendations can be based.

8. **Photographs**

Photographs are included in our final report narrative and are available as individual jpg files on request.

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) Replicaton or use of findings; (3) Names of other organizations you expect to involve; (4) Plans to support the project financially, and; (5) Communication plans?

BLM Bishop Field Office's intentions to replicate aspects of the study are as follows:

Intensive Stream Monitoring: The ISM protocol calls for monitoring to be repeated as conditions warrant. During post-fire recovery, it would be informative to repeat this at approximately 5- or 10-year intervals as time allows. These data will also be supplemented by Proper Functioning Condition assessment at similar intervals. In the interim, riparian condition will be assessed by required livestock utilization monitoring at a minimum.

Water Quality Sampling: We are often asked to mentor high school science students in an Advanced Placement project; we will encourage future students to follow up on the water quality monitoring initiated by their peers.

Aquatic Invertebrate Studies: Future studies at these sites would make it possible to confirm the impact of wildfire on the aquatic invertebrate communities, including what factors account for differences in density and diversity, and ascertain how overall stream health is trending. Our ability to pursue this will be influenced by funding, other workload priorities, and whether we again have the opportunity to incorporate this work into a larger regional study.

Riparian Songbird Monitoring: Point count studies are ideally conducted for at least three consecutive years. Workload and funding permitting, it would be valuable to conduct a three-year set every decade in order to characterize long-term changes in bird community abundance, diversity and composition, using the same transects in burned and unburned areas that were used in this study and that also have several years of pre-fire data for comparison. We would also seek to repeat collection of vegetation data and establish correlations between changes in vegetation and changes in bird community.

Upland Watershed Vegetation Monitoring: This monitoring protocol will be repeated at 10-year intervals. Rangeland health monitoring will also be repeated at appropriate intervals to assess plant community composition and vigor, soil susceptibility to erosion, and status of invasive weeds. In the interim, upland vegetation condition will be assessed by required livestock utilization monitoring.

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.

Steve Nelson, Supervisory Natural Resource Specialist
(760) 872-5006
snelson@blm.gov

Martin Oliver, Botanist
(760) 872-5035
mpoliver@blm.gov

or other BLM Bishop Field Office natural resources staff
General phone number:
(760) 872-5000

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

Our Grant Acreement identivied the following 5 performance measures.

1) Resources leveraged in the Sierra Nevada

Inyo NF used $10,000 matching National Fire Plan Rehabilitation/Restoration funds toward implementing vegetation monitoring on the Inyo NF portions of the project area.

The range monitoring consultant provided training/monitoring equipment as an in-kind contribution, with a value of $1,000.00

BLM used $35,000 matching internal funds to fund personnel hours for work not covered by this proposal, e.g. weed removal, on the Inyo Complex burn area.

Additional funding provided by BLM allowed PRBO Conservation Science to commence work at the beginning of the breeding songbird season in 2009 prior to the grant start date, and supported part of the upland vegetation monitoring (see section E).

Two high school students contributed a total of 48 hours of time to water quality sampling. Mammoth Community Water District donated their analysis of water quality parameters, with a value of $200.00

Aquatic invertebrate monitoring is incorporated into a larger study allowing comparison of Owens Valley watersheds with Walker River watersheds.

Breeding status data for seven riparian, five sagebrush, three coniferous forest and one grassland California Partners In Flight (CalPIF) Bird Conservation Plan focal species was submitted for inclusion into the CalPIF statewide database to assist in documenting the species' most current California breeding distribution.

2) Number and Diversity of People Reached

Our final summary report from this project will be made available on our website, in Section 508 compliant format. In this manner it will be able to reach all users listed under "Diversity of Participants" for this performance measure, plus the visually impaired.

Two persons participated in the project as an educational activity: two high school youths who conducted water quality sampling and analysis as an Advanced Placement Biology project.

3) Number and Type of Jobs Created

a) This project provided full-time short-term employment for persons in the category "Professional, Scientific, and Technical Services."

b) Number of people employed: 15 persons worked an average of 40 hours per week for 3 weeks, primarily in the late spring and summer (data collection) with about 1/3 of all work occurring in the winter (data analysis).

c) FTE = (15x3x40)/2080 = 0.87

No jobs were created by/are directly attributable to the SNC project; that is, the jobs existed before the project, and the project helped to sustain them.

4) Number and Value of New, Improved, or Preserved Economic Activities

The economy of the Eastern Sierra region is largely dependent upon natural resources-based tourism. For this reason there is a relationship between the project, which studies the recovery of natural resources post-fire, and economic activity. However, the relationship is indirect and cannot be quantified. This project constitutes the first of the following incremental steps:

Understand initial post-fire recovery and establish a baseline for future study
Continue monitoring; respond to unfavorable change (e.g. weed invasion)
Develop management guidelines; prevent future unfavorable change
Promote ecological integrity on a landscape/ecosystem scale
Maintain viability of natural resources that support tourism
Attract tourists who contribute to the economy

5) Number of Collaboratively Developed Plans and Assessments

One collaboratively developed assessment was produced as a result of this project, *Inyo Complex Post-fire Watershed Recovery: BLM Bisho Field Office Final Report to Sierra Nevada Conservancy, 2013.* This written report was produced by BLM Bishop Field Office with the direct collaboration of Bishop Union High School students, PRBO Conservation Science, Dr. David Herbst/UC Santa Barbara, Synergy Resource Solutions, and Inyo National Forest. They will be made available to the public via the BLM website.