

Hope Valley Meadow Restoration

FINAL PROJECT REPORT

Submitted to: Sierra Nevada Conservancy
SNC Project Reference #: 420
JUNE 2013

Sierra Nevada Conservancy - Final Report

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

Grantee Name: American Rivers

Project title: Hope Valley Meadow Restoration Project

SNC Reference Number: SNC 420

Submittal Date: June 28, 2013

Report Preparer: Julie Fair

Phone #: 530.412.1156

Check one:

6-Month Progress Report

Final Report

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

A. Progress Report Summary:

With support from SNC, American Rivers convened and led a strong partnership to develop science-based restoration designs for Hope Valley and build stakeholder support for restoration. Our key partners include Alpine Watershed Group, Friends of Hope Valley, US Forest Service, Institute for Bird Populations and Trout Unlimited. Together, our goal is to restore the full range of ecosystem services that Hope Valley meadow has the potential to provide including natural water storage, flood attenuation, clean water supply, aquatic and riparian habitat, and recreation.

Due to the meadow's size and complexity, the Hope Valley Meadow Restoration project was structured to proceed in four successive steps: 1) assessment and conceptual restoration design, 2) technical restoration design, 3) permitting, and 4) implementation and adaptive management. The current SNC grant (SNC 420) supported phases 1 and 2 of this project for which the following objectives apply:

- Build capacity of local stakeholder groups to be an integral part of the development and implementation of restoration
- Conduct a comprehensive and systematic assessment of meadow attributes to determine hydrologic and ecological function and overall meadow condition
- Initiate and complete conceptual restoration design based on the assessment
- Draft permit-ready technical restoration designs for Hope Valley Meadow

As described below, over the course of this SNC-funding period, we completed all tasks and deliverables, and made significant progress toward achieving our long-term goal of

restoring Hope Valley meadow. This report describes our progress toward the project objectives and summarizes the deliverables produced.

Summary of Progress toward Project Objectives

1. Build capacity of local stakeholder groups to be an integral part of the development and implementation of restoration.

Hope Valley has a long history of local community commitment to preservation and restoration. To directly engage this active community in restoring Hope Valley, American Rivers partnered with local groups Friends of Hope Valley (FOHV) and the Alpine Watershed Group (AWG). This partnership brought local knowledge and connections to the restoration effort and helped the project team to identify key stakeholders and build a stakeholder advisory committee for the project. American Rivers also partnered with Institute for Bird Populations (IBP) and Trout Unlimited (TU) to ensure adequate consideration of bird and fish habitat needs in restoration designs. Additionally, the Humboldt-Toiyabe National Forest, California Department of Fish and Wildlife (CA DFW), and a number of other agencies were included in the stakeholder advisory group and provided technical expertise in project development.

Over the course of this grant period, American Rivers convened six formal meetings to solicit project partner and stakeholder input. Partners and stakeholders were involved in all aspects of project development, including initial project kickoff, site visits in the field, selection of a design consultant, and review of conceptual and technical restoration designs. In addition, American Rivers sent out numerous project status updates, circulated all project materials for review, and contacted stakeholders individually to address questions and concerns about project designs. The US Forest Service (USFS) anticipates that our advance stakeholder effort will accelerate the permitting process by an entire year.

In collaboration with FOHV and AWG, American Rivers also created a group of local volunteer "Meadow Stewards" to assist in project monitoring and provide hand labor needed for future on-the-ground restoration. FOHV, AWG, and American Rivers held two on-site orientation events addressing site-specific issues and training volunteers to monitor stream flow. Meadow stewards continued to assist with monitoring over the course of the 2012 field season and plan to continue monitoring activities this coming season.

2. Conduct a comprehensive and systematic assessment of meadow attributes to determine hydrologic and ecological function and overall meadow condition.

Over the 2011 field season, American Rivers worked with project partners and the USFS to compile all existing data for Hope Valley and to develop a set of study parameters for initial assessment and ongoing monitoring. The project team's initial assessment focused on establishing baseline site conditions and understanding impacts to the meadow. It

included a GPS delineation of meadow extent, GPS and photo assessment of surrounding area culvert conditions, representative channel cross-section surveys in upper, middle, and lower areas of upper Hope Valley, and a qualitative assessment of tributaries and erosion source areas. The team also strategically installed three continuously recording streamflow gages to monitor changes in streamflow and water temperature pre- and post-restoration.

In 2012, during the design development process, American Rivers worked with Waterways Consulting to conduct additional assessments of geomorphic, hydrologic, and ecologic meadow attributes to better determine current meadow condition and inform restoration designs. These included additional channel cross section surveys, including measurements of particle size and bank full depth, observations of associations between stage and riparian vegetation, additional streamflow measurements, hydraulic modeling, and bank stability assessments. We also produced detailed topographic and photo mosaic basemaps to inform analyses and detailed design plans.

The USFS and IBP conducted additional assessments to inform site characterization and restoration designs. The USFS resurveyed historic vegetation plots, analyzed the soil profile of cut banks in the channel and provided wetland delineation mapping. IBP conducted bird surveys and provided information about current populations and the meadow's current status in terms of avian habitat.

3. Initiate and complete conceptual restoration design based on the assessment

The first step in initiating conceptual restoration designs was to hire a consultant to provide the required technical expertise. American Rivers undertook a competitive bid process and rigorous review, including partner and stakeholder input, in selecting the best possible consultant for the project. As a result of this process we contracted with Waterways Consulting to develop restoration design drawings. We set up the design process to proceed in steps, with draft design development, stakeholder review, and finalization phases for both conceptual and technical designs.

In developing conceptual designs, Waterways synthesized all available data, conducted additional assessments, analysis and modeling, and compiled this information into a site characterization describing the meadow's hydrologic and ecologic function and overall condition. Based on this analysis, our consultant team developed a draft conceptual design alternatives report, including conceptual drawings with supporting narrative and figures, which we circulated to our stakeholder committee for review. American Rivers also partnered with TU to convene a group of experts (Trout Unlimited, University Nevada Reno, CA DFW) to evaluate these conceptual design options for their benefits to the West Carson River fishery. We then convened stakeholders in a design charette to evaluate the three proposed conceptual alternatives and select a preferred alternative to move forward. Stakeholders involved in the design charette included: CA DFW, USFS, Alpine County Board of Supervisors, Lahontan Regional Board, Carson Water Subconservancy, local interests and our partners, about 20 people in total.

After a review and comment period, in which American Rivers and Waterways addressed a number of stakeholder concerns, Waterways incorporated revisions and the project team finalized conceptual restoration designs.

4. Draft permit-ready technical restoration designs for Hope Valley Meadow

Based on the selected preferred conceptual design alternative, Waterways developed a set of draft permit-ready 50% technical designs. These included disturbance, access, and cost considerations needed for permitting and implementation. Upon completion, these designs were again circulated to the broader stakeholder committee and a charette was convened for review. We then held another review and comment period, where the relatively few remaining concerns were addressed. Fifty percent technical designs have since been finalized and we are poised to move on to the permitting phase of the project.

B. Deliverables or Outcomes completed during this Reporting Period or Milestones Achieved

Below is a summary of the deliverables and outcomes completed under each task of this grant. All deliverables are available to view and download via the following link: <https://amrivers.box.com/hopevalley>. Detailed Project Deliverables as outlined in the grant agreement are underlined below and are located in the SNC Detailed Project Deliverables folder. Additional materials/outcomes are also listed below (not underlined) and are located in the Additional Project Materials folder. File names are given in parentheses.

Task 1. Management and Performance Measures

All deliverables and/or outcomes were completed for this task, including the following:

- Finalized Work Plan and Budget: Managed project budgets and subgrantees/subcontractors, including Waterways Consulting.
- Execute Subcontracts/Grants with Project Partners: Executed subgrants with AWG, FOHV, and IBP and established TU as a new project partner to provide a fisheries perspective on the project.
- Ongoing coordination with partners and diverse community and agency stakeholders. Also built partnership with the landowners - Humboldt-Toiyabe National Forest.
- Completion of reporting and invoicing and ongoing coordination with SNC.

Task 2: Hope Valley Meadow Assessment

All deliverables and/or outcomes were completed in this task, including the following:

- Assessment Protocol and Monitoring Plan: Plan for initial assessment and ongoing monitoring developed with the USFS and project partners, field-tested

and finalized (Final Assessment and Monitoring Plan and AR Hydrology Monitoring Protocol).

- Analyzed Datasets: Data collected by American Rivers, Waterways, AWG and FOHV, IBP and the USFS, including vegetation plot and stream flow monitoring, surveying, geomorphic and hydrologic assessment, and bird surveys. Additional GIS assessments and HEC-RAS hydraulic modeling performed by Waterways. American Rivers, AWG, and FOHV conducting ongoing monitoring of stream flow and temperature (Final Conceptual Alternatives Analysis – Section 2 and Appendices, IBP Hope Valley Bird Survey Report).
- Final Meadow Assessment Technical Memo: Existing data, new analyzed datasets, and additional assessments and modeling integrated to create a site characterization of current conditions related to meadow function (included in Final Conceptual Alternatives Analysis Report – Sections 2 and 3).
- Meadow Stewards: Recruited approximately 20 volunteer “Meadow Stewards” for ongoing monitoring and eventual assistance in restoration. These Meadow Stewards contributed more than 140 volunteer hours to the project (Meadow Stewards List and Hours).

Task 3: Hope Valley Conceptual Restoration Design

All deliverables and/or outcomes were completed in this task, including the following:

- Conceptual Models and Limiting Factors: Held field meeting in June 2012 with USFS, Waterways and other partners and developed a set of limiting factors and project objectives to guide conceptual design (Project Objectives and Limiting Factors Memo).
- Climate Change Scenarios: Developed report on climate change scenarios for Hope Valley based on predicted precipitation and hydrology patterns, and circulated this report for consideration in review of restoration designs (Hope Valley Climate Change Report).
- Draft Hope Valley Meadow Restoration Conceptual Designs: Produced draft Conceptual Design Alternatives Analysis Report, circulated via email to over 30 stakeholders, and convened a stakeholder review meeting with ~20 participants.
- Final Hope Valley Meadow Restoration Conceptual Designs: Developed finalized designs based on the preferred alternative selected during the stakeholder review process, incorporated stakeholder suggestions and critiques (Final Conceptual Alternatives Analysis).

Task 4: Technical Restoration Design

All deliverables and/or outcomes were completed in this task, including the following:

- Project Vicinity, Aerial and Contour Maps: Produced detailed aerial topographic basemap and photo mosaic of approximately 600 acres that served as the basis for much of the data collection, analysis, and design effort (Topo Basemap and Photo Mosaic).

- Detailed Design Drawings: Developed draft permit-ready, 50% technical designs based on the stakeholder-vetted preferred conceptual design alternative, circulated to more than 30 stakeholders via email, and convened a stakeholder review meeting with ~20 participants (Draft 50% Basis of Design Report, see Appendix 6 for design drawings).
- Final Technical Design Plans and Maps: developed finalized 50% technical designs, incorporating stakeholder suggestions and critiques (Final 50% Basis of Design Report).

Additional Outcomes

- Institute for Bird Populations' Bird Survey and Restoration Report: Describes current bird populations and recommendations on habitat enhancement for focal and special status species like Willow Flycatcher (IBP Hope Valley Bird Survey Report).
- Trout Unlimited's Meadow Restoration Fish Analysis Tool (MRFAT) Report: Analyzed conceptual designs in terms of their impacts and benefits to the West Carson fishery (MRFAT Hope Valley Report).
- Presentation to County: American Rivers presented at an Alpine County Board of Supervisors meeting in February to give information about and garner support for the proposed restoration project.
- Additional Technical Memo: Produced an additional memo to address stakeholder concerns about disturbance associated with various restoration techniques (Post Meeting Technical Memo).
- Involving Native American Youth: Through a partnership with the Sierra Native Alliance, American Rivers led a fieldwork trip for the Sierra Native Youth Conservation Corps in which the Corps took streamflow and bank stability measurements and monitored for beaver dams –finding more than 20 remnant dams within a half-mile reach (Hope Valley Photos - Sierra Native Alliance 2012).

C. Challenges or Opportunities Encountered

Challenges:

Over the course of the project we had some minor delays due to a prolonged competitive bid process and having to run a second flight for our aerial survey work due to errors with the first run. However, we established a revised schedule and easily completed all deliverables by the original end date.

Opportunities:

Project partner and stakeholder interest and support have been high and local community backing and enthusiasm has continued throughout the project. This was evidenced by the

strong turnout for stakeholder review meetings and the active participation in the stakeholder review process generally. We have also had great success with our Meadow Stewards group, which monitored throughout the previous field season and plans to continue this year. Local project partners AWG and FOHV have been instrumental in the continued positive reception of and high level of involvement in the project. The Alpine Watershed Group also arranged an opportunity for American Rivers to present at an Alpine County Board of Supervisors meeting in February 2013. The presentation was well-received and it was an effective way to provide additional outreach to local officials and community members.

D. Unanticipated Successes Achieved:

The project offered a great opportunity to leverage SNC funds to secure two additional grants for the project from the Bella Vista Foundation (\$35,000) and the National Fish and Wildlife Foundation (\$63,000). This provided all match funding needed to successfully complete the project’s current scope and to expand it. Through this additional funding we were able to include TU as a project partner, thereby more fully addressing the needs of fish in restoration designs. In addition, as part of the Sierra Native Alliance’s Native Youth Conservation Corps program, we had the opportunity to involve Native American youth in two days of monitoring fieldwork. We camped across from Hope Valley and spent the days surveying bank stability, beaver activity, and streamflow with the youth. For more information, visit the following link to our American Rivers blog: <http://www.americanrivers.org/newsroom/blog/lhunt-20130227-native-youth-restore-headwaters.html>.

E. Compare Actual Costs to Budgeted Costs

PROJECT BUDGET CATEGORIES	Budgeted SNC Dollars	Actual Dollars
Staff/Personnel Expense	\$48,044.28	48,652.03
Travel/Meeting Expense – Project Related	\$1,850.00	1,844.56
Sub-grants/Contracts/Consultants – Project Related	\$58,605.20	58,725.82
Materials/Supplies – Project Related	\$61.89	61.89
Equipment Leases/Purchases – Project Dependent	\$436.52	436.52
Outreach Education	\$2,500.00	2,500.00
Performance Measure Reporting	\$2,942.95	2,942.25
Administrative Costs	\$13,949.66	13,827.80
GRAND TOTAL	\$129,000.00	128,990.87

Explanation:

The above are invoiced expenses as of our final invoice, based on the line item shift from May 2013.

F. Do you have information to report on the project-specific Performance Measures for your project?

Below we list our progress toward our project-specific Performance Measure targets as outlined in our original proposal.

Resources Leveraged in the Sierra Nevada

Project Funds from Other Sources:
\$98,000 out of \$44,000

Matching Funds Source	Description	Amount
Bella Vista Foundation	Ecosystem Restoration Program	\$35,000
National Fish & Wildlife Foundation	Sierra Nevada Meadow Restoration Initiative	\$63,000

Volunteer Hours:
\$4331.25 out of \$5000.00

Meadow Stewards: 25 volunteers completed a total of 142 volunteer hours.
AWG volunteers at meetings: 11 volunteers completed a total of 33 volunteer hours.

Value based on the Independent Sector's value for California Volunteers, \$24.75.

Number and Diversity of People Reached

- Conservation Groups/Individuals: 7 groups, 20 out of 20 individuals (Alpine Watershed Group, Friends of Hope Valley, Institute for Bird Populations, CalTrout, Trout Unlimited, Sierra Native Alliance, The Nature Conservancy, Foothill Conservancy)
- Resource Professionals: 2 out of 10 (Waterways Consulting)
- Government Officials: 15 out of 10 individuals (USFS, CA DFW, Alpine County Board of Supervisors, Lahontan Regional Board, Natural Resources Conservation Service, Placer County Resource Conservation District, Western Nevada Resource Conservation & Development)
- Sierra Nevada Residents: 25 out of 10 individuals (orientation and streamflow monitoring training)
- 560 people reached through our American Rivers Hope Valley Restoration webpage (<http://www.americanrivers.org/initiatives/water-supply/projects/hopevalley.html>).

Number and Type of Jobs Created

0.81 FTE out of 2.5 FTE

Occupational group	Number of people employed	Length of employment	Average number of hours worked/week	Total FTEs	Employment season
Professional, Scientific and Technical Services - Waterways	8	5.6	18.65	0.54	Primarily Summer/Fall (divided by 1560 hrs.)
Professional, Scientific and Technical Services - American Rivers Contractor	1	13	10.92	0.27	Winter (divided by 520 hrs.)

Number of Collaboratively Developed Plans and Assessments

- Assessments: 3 out of 1 (site characterization, TU MRFAT Report, IBP Bird Survey Report)
- Plans: 2 out of 1 (conceptual design plans and 50% technical design plans)

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.

Additional materials produced under this agreement are available to view and download via the following link: <https://amrivers.box.com/hopevalley>. They are located in the Additional Project Materials folder and include:

- All materials listed above under Additional Outcomes
- GIS files
- HEC-RAS Hydraulic Modeling files
- Photos from the field and events
- Notes from stakeholder meetings

H. Next Steps

Through additional funding graciously provided by the Sierra Nevada Conservancy work in the next 6 months will include:

- Finalizing new work plan, budgets and subgrants with project partners
- Developing a monitoring plan for pre-restoration forage monitoring
- Initial review, and discussion of best management practices around grazing on the restored site
- Initial data collection aimed at the USFS beginning to develop a site-specific management plan
- Initiation of permitting including completion of National Environmental Policy Act (NEPA) and 401 and 404 permits. American Rivers will support the USFS in their role as lead for NEPA and assist with other permitting.

FINAL Report ONLY

Capacity-Building Results and Collaboration and Cooperation with Stakeholders:

American Rivers' Capacity:

This grant improved our organization's capacity in two major ways. First, leveraging the current funding from SNC allowed us to gain additional funds from other sources, improving our capacity to pursue additional work on the Hope Valley restoration project, both for the current project phase and future phases. Second, this grant funded a successful restoration design process, including a thorough baseline assessment and extensive stakeholder involvement that can be used to inform other projects, both for American Rivers and other practitioners. American Rivers currently has five other meadow restoration projects underway and our experience with Hope Valley will help tremendously in guiding our approach to establishing project partners, developing restoration designs and designing assessment and monitoring plans. It will also improve our capacity to execute future projects and to advise other efforts, increasing our ability to act as a leader in the restoration of Sierra Meadows. We plan to sustain this increased capacity by leveraging work completed on the first two phases of this project to gain additional funding for implementation of restoration at Hope Valley and initiation of similar projects.

Partnerships:

This project initiated and strengthened many collaborations and partnerships that contributed significantly to overall project success, as well as improved the capacity of local stakeholder groups. Below we discuss these partnerships in more detail.

Alpine Watershed Group:

The Alpine Watershed Group was an invaluable partner in establishing widespread community and stakeholder support for this project. Due to their affiliation with Alpine County they provided a great connection to local officials, agencies, and key players in the watershed and helped us identify and establish connections with these important stakeholders. They were also great contributors to our ongoing monitoring efforts for the project. They helped recruit and organize the Meadow Stewards group and collected and organized ongoing streamflow monitoring data to be used as an indicator of project success post-implementation.

Friends of Hope Valley:

As a grassroots, volunteer-oriented stewardship group that has worked in the area for over a decade, Friends of Hope Valley was an important contributor to project success. They helped us identify key community members for the stakeholder advisory committee, helped recruit and organize the Meadows Stewards group, and assisted in monitoring efforts. In addition, they and their team of volunteers have already contributed significantly to restoring bank stability in Hope Valley by planting willows annually for over 10 years. They were also a great source of knowledge on the history of the site and past threats and conservation efforts.

Institute for Bird Populations:

Institute for Bird Populations conducted multi-species monitoring and monitoring specific to California-endangered Willow Flycatcher at Hope Valley to provide baseline pre-project bird population data and to provide specific recommendations for improving habitat conditions for Willow Flycatcher and other meadow focal species. This information was presented to stakeholders and incorporated into restoration designs, which will help lead to improved bird habitat and hopefully greater bird populations as a result of restoration.

Trout Unlimited:

During the project we developed a partnership with Trout Unlimited to add a fisheries perspective to our analysis and review process. TU contributed to the project by using their Meadow Restoration Fish Analysis Tool to quantify the effects of Hope Valley restoration on fish in the Carson River and ensure that restoration would benefit fish populations, not just improve overall hydrologic function. Since fishing is a very important recreational activity in Hope Valley and the West Carson is an import fishery more generally, this analysis was key to building stakeholder support. In addition, TU developed a fisheries and aquatic habitat monitoring plan for the project aimed at quantifying benefits of restoration for fish over the long term.

Waterways Consulting:

We contracted with Waterways Consulting to provide technical expertise in developing conceptual and technical restoration designs. After an extensive competitive bid process they worked effectively within our limited timeframe and helped complete this phase of the project on time. They also helped the project proceed smoothly through their willingness and availability to respond to individual concerns and their effective explanation of designs at stakeholder meetings. They were a good fit for the project because they were in favor of a light-handed approach that would minimize disturbance, an approach that fit well with community sentiment and within the limiting factors identified for the site.

Humboldt-Toiyabe National Forest:

The Humboldt-Toiyabe National Forest acts as land manager for the project site and thus their buy-in and participation in the project is essential. Since project onset, The USFS has been a very helpful and informative partner, assisting the project team in identify limiting factors and objectives for the project and actively participating in the review of restoration design plans to ensure a permit-ready result. They will also act as the lead for NEPA and additional permitting in the next phase of the project.

Additional Collaboration:

In addition to these major partnerships we had cooperation and support from a variety of other stakeholder groups, including the Alpine County Board of Supervisors, the Carson Water Subconservancy, Natural Resources Conservation Service, CA Department of Fish and Wildlife, Western Nevada Resource Conservation & Development, The Nature Conservancy, the Washoe Tribe, and others.

Description of Project Accomplishments:

1. Most Significant Accomplishment

The most significant accomplishment must be considered in the context of the long-term project goal of restoring the full range of ecosystem services to Hope Valley meadow. In this context, the most significant accomplishment is the completion of permit-ready restoration designs for Hope Valley that is based on the findings of a thorough assessment of baseline ecological, hydrologic, and geomorphic conditions and has been vetted by an extensive stakeholder review process. These permit-ready technical designs reflect the integration of a significant amount of information collected from a variety of sources and methods, as well as the interests of a multitude of stakeholders.

2. WOW Factor

A particularly impressive aspect of the project is the amount of stakeholder and community involvement over the course of this phase. We've had active, constructive participation from a stakeholder advisory group consisting of more than 30 individuals from at least 15 different groups. These stakeholders have enthusiastically attended review meetings and provided thoughtful and insightful comments and suggestions that have greatly improved project design and ensured community buy-in. The USFS anticipates that our advance stakeholder effort will accelerate the permitting process by an entire year since relevant parties have already had a chance to voice concerns that might otherwise have come up in the NEPA process. We have also had great community involvement through the Meadow Stewards program, which has allowed us to engage the community through an additional outlet. So far we have had more than 20 participants, and we hope to recruit additional members this coming season.

3. Design and Implementation

There are two major lessons we learned through the implementation of this project that would benefit other grantees. First, it is important to budget plenty of time and staff capacity for a competitive bid process and in this process, parameters should be set in the request for proposal, such as confining scope of work or total budget, which will allow you to directly compare bids. In this project we could have avoided some redundancy in the process of hiring our design consultants by laying out stricter parameters from the beginning.

Second, although including an extensive stakeholder review process is time-consuming, it is highly beneficial to overall project success. In this project, partners and stakeholders were involved with the development of restoration designs from the beginning. Identifying and connecting with stakeholders, organizing meetings, and circulating materials is a significant time commitment, but will provide multiple benefits, including stakeholder support, ongoing stewardship, and a feeling of ownership of the site. For this project, as we enter the permitting phase we anticipate little opposition and a swift

turnaround since stakeholders have had ample opportunity to voice concerns and provide input throughout design development.

4. Indirect Impact

One indirect impact is that the Meadow Stewards program and monitoring equipment purchased through this grant have yielded data and outcomes, such as outreach to community members, which is useful for purposes beyond the current restoration effort. For example, this data can be used by the AWG to improve knowledge of the upper West Carson watershed, and Meadow Stewards outings provide training about widely applicable streamflow monitoring techniques and meadow health more generally. In addition, the community stakeholder and design development process and formal materials produced through this project, such as conceptual and technical designs, can be distributed as examples for others pursuing meadow restoration.

5. Collaboration and Conflict Resolution

As mentioned above, partnerships were an important element of this project and we collaborated with several organizations. We subgranted to AWG, FOHV and IBP through SNC funding and to TU through funding from the Bella Vista Foundation. We also subcontracted with Waterways Consulting and worked closely with the Humboldt-Toiyabe National Forest. AWG and FOHV have been assets in recruiting and organizing volunteers, ongoing monitoring, and community outreach. AWG has also been a central player in recruiting agency stakeholders, communicating with Alpine County, and organizing stakeholder review meetings. IBP and TU have helped incorporate a wildlife perspective to both our baseline conditions assessment and restoration designs. This has helped to ensure benefits for fish and birds as a result of restoration. Waterways Consulting provided the technical expertise in developing restoration designs and worked extensively to inform stakeholders and address any concerns. The Humboldt-Toiyabe National Forest has been an active participant in identifying limiting factors and contributing important technical feedback on design plans. We encountered almost no conflict in the project, which we attribute to our efforts to involve and respond to a multitude of stakeholders.

6. Capacity-Building

American Rivers is a robust national organization, and the work of the California regional office is critical to realizing the larger organization's mission and goals. Additionally, there is a general trend of growth in the California office—in the past few years our conservation staff has increased from two to ten. This growth is successfully supported through a strong grants program, effective cooperation with our national office, and active engagement of local donors and supporters. We have expanded multiple program areas to include additional projects, particularly our headwaters restoration program. Membership remains strong, with AR having 100,000 supporters, members, and volunteers nationwide. American Rivers has increasingly taken on a leadership role in realm of Sierra meadow restoration, with an increased emphasis on growing the meadow

restoration movement and acting as mentor to other organizations wishing to implement their own projects. Funding from SNC for this project has increased American Rivers' capacity to act in this role by enabling us to spearhead a complex project that can be used as an example for others. The project provides a model for a stakeholder-vetted design process that can be used by other practitioners, thereby building the capacity of the wider meadow restoration effort. One challenge we have faced is in obtaining funds associated with bigger picture planning work, such as funding to address water rights issues associated with meadow restoration or higher level policy work on instream flow dedication. We believe addressing these types of issues are essential to large scale restoration and conservation, but have had difficulty funding them.

This project has also improved the capabilities of our partners in many ways. By providing resources to launch a monitoring program and establish a group of meadow stewards it has improved Friends of Hope Valley's ability to monitor conditions in Hope Valley and the Alpine Watershed Group's ability to monitor the upper section of the West Carson watershed. It also enabled Institute for Bird Populations to add to their data on Willow Flycatcher and other species. And it improved the capability of the USFS to implement restoration in Hope Valley since they had to expend few resources in this phase and can dedicate them to permitting instead.

7. Challenges

The most significant challenge was the need to work within the limiting factors and constraints resulting from the size and complexity of the meadow, the history of preservation and stewardship in the area, and working with the USFS as land managers. These factors effectively ruled out any large-scale channel reconstruction or pond-and-plug approaches due to concerns regarding cost, construction disturbance, and risk of failure. This imposed limitations on project designs and expected outcomes, but was necessary in this particular situation. Despite these limitations we have developed a broadly supported, science-based restoration design that will greatly improve the condition of Hope Valley meadow.

8. Photographs

Project related photos are available to view and download via the following link: <https://amrivers.box.com/hopevalley>, in the Hope Valley Photos folder. They include photos from field assessments and monitoring as well as significant events.

9. Post Grant Plans

Current funding from SNC supported the first two phases of a project designed to proceed in four phases (assessment and conceptual restoration design, technical restoration design, permitting, and implementation and adaptive management). At the conclusion of this funding period, through additional funding from SNC and others, we

will pursue the third phase of the project in which we will acquire all permits necessary for the project to be "shovel-ready." We will also conduct additional monitoring to quantify forage abundance and quality pre- and post- restoration and, based on best management practices around grazing, work with the USFS to develop a site-specific grazing management plan for Hope Valley.

Design plans from this phase will be used to acquire permits and guide implementation. The current assessment and monitoring data will be used to gauge project success post-project. In the next phase of the project we will work extensively with the Humboldt-Toiyabe National Forest as they will act at the lead in permitting. We will also continue to subgrant to AWG and FOHV to continue the Meadow Stewards program and monitoring. The permitting phase will be funded by SNC and the National Fish and Wildlife Foundation, and we have applied to Coca-Cola's Replenish Foundation and the Wildlife Conservation Society to fund implementation. We have already circulated design plans to our stakeholder committee, but will circulate them even further through the NEPA process. We will also make plans and other materials available on our American Rivers website and circulate them to other agencies and organizations as applicable.

10. Post Grant Contact

Elizabeth Soderstrom
Senior Director of Conservation
American Rivers
432 Broad Street
Nevada City, CA 95959
530 478 5694

SNC-approved Performance Measures

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Professional, Scientific and Technical Services - American Rivers Contractor	1	13	10.92	0.27	Winter (divided by 520 hrs.)

Number of Collaboratively Developed Plans and Assessments

- Assessments: 3 out of 1 (site characterization, TU MRFAT Report, IBP Bird Survey Report)
- Plans: 2 out of 1 (conceptual design plans and 50% technical design plans)

