

Feather River Coordinated Resource Management

Implemented by PLUMAS CORPORATION
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2012/2013 Annual Report



Indian Creek at Arlington Bridge on December 2, 2012.

Photo Credit: Kara Rockett-Arsenault

April 2014

•California Department of Conservation •California Department of Fish and Wildlife •CALFire
•California Department of Parks and Recreation •CalTrans •California Regional Water Quality
Control Board •California Department of Water Resources •Feather River College •Feather River
Resource Conservation District •Natural Resource Conservation Service, USDA •Pacific Gas &
Electric •Plumas Audubon •Plumas Corporation •Plumas County •Plumas County Community
Development Commission •Plumas National Forest USFS, USDA •Plumas Unified School District
•University of California Cooperative Extension •Salmonid Restoration Federation •Sierra Valley
Resource Conservation District •Trout Unlimited •U.S. Army Corps of Engineers •USDA Farm
Services Agency •U.S. Fish & Wildlife Service•

Introduction

This report summarizes the Feather River Coordinated Resource Management (FRCRM) group's 2012 & 2013 accomplishments and program activities, projects, and plans for 2014-2015. This is the eighth annual report prepared for the signatory agencies and participating partners of the FRCRM. This report summarizes the accomplishments made in 2012 and 2013 through the group's implementation partner, Plumas Corporation. It also serves as an accountability of resources (local, state, and federal public and private funds) used for project work to all funders and interested stakeholders. The continued support of all partners has made these collaborative achievements possible. These are not solely one entity's undertakings, but are accomplishments made possible through the partnership. These efforts not only benefit watershed health, but assist in advancing partner agencies' goals and missions, as well. Participating organizations should include FRCRM project accomplishments in their progress reports. The FRCRM exemplifies what can be achieved by public and private entities supporting local communities to achieve mutual goals. For more detailed information, please visit the website at www.feather-river-crm.org

Participation of FRCRM signatory partners has varied over the years, but without some level of involvement by partnership organizations and willing landowners, watershed restoration efforts in the upper Feather River Watershed would not be possible. In these difficult economic times partner involvement can be difficult; however, it is during such times that collaboration is vital to protect, restore, and enhance Feather River ecosystems and community stability.

Background

The Feather River Coordinated Resource Management group was established in 1985. The structure and process of the partnership organization was carefully reviewed by watershed stakeholders in 2012. The review revealed that the organizational process as outlined in the 1996 Feather River Coordinated Resource Management Plan had not been consistently followed.

The goals and objectives of the 1996 FRCRM Plan are to "maintain, protect, and improve, where possible, water quality and quantity in the Feather River." Signed by fourteen partners in 1996, the FRCRM Plan states, "It will be the goal of this CRM Plan to optimize the beneficial uses of the waters of the Feather River. These beneficial uses are: domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources. The CRM will emphasize education to prevent future water quality degradation of the Feather River. The CRM Group will cooperatively design and assist with funding for water quality improvement projects to abate water quality degradation in the Feather River."

Precursors to the 1996 Plan, the following documents guide the FRCRM: The 1987 *Memorandum of Agreement (MOA)* regarding a regional erosion control plan for the Feather River Watershed; the 1987 *Memorandum of Understanding (MOU) for Coordinated Resource Management* signed by four federal entities (U.S. Forest Service, Bureau of Land Management, Soil Conservation Service, and the Science and Education Administration-Extension); and the 1989 *Memorandum of Understanding for Coordinated Resource Management in California* signed by fourteen federal and state partners.

The 1996 Plan outlined the organizational governance structure as to how the plan was to be implemented, including the formation of a Steering Committee and an Executive Committee.

Plumas Corporation was identified as the partner organization that would facilitate the implementation of the FRCRM Plan.

As stated in the Plan the Executive Committee “provides central guidance, planning, and policies for the CRM; establishes financing, budgeting, and project ranking procedures, as well as project implementation oversight”. The Executive Committee is to be made up of four members serving staggered two year terms. Three members are appointed by the following entities: Feather River Resource Conservation District (RCD), Plumas County Board of Supervisors, and the Plumas National Forest. These three members are to appoint one member-at-large. The recently formed Executive Committee added a member of the Sierra Valley Resource Conservation District, as well.

The Steering Committee provides the nuts and bolts to the Plan implementation providing “continuity to the Feather River CRM effort from project to project and from year to year”. They “approve the conceptual plan for each project and refer projects to the Finance and Technical Review Subcommittees for design and funding development”. The Steering Committee is made up of at least one representative from each of the signatories of the MOA, and representatives of interested organizations and community groups. The Executive and Steering Committees are supposed to meet at least semi-annually.

The original signatories of the MOA are: CA Dept. of Transportation (CalTrans); CA Dept. of Fish & Game (now CA Dept of Fish & Wildlife); CA Dept. of Forestry and Fire Protection (now CALFire); U.S. Forest Service-Plumas National Forest; Plumas Corporation; Indian-American Valley Resource Conservation District (now Feather River RCD); Plumas County; Pacific Gas & Electric Co.; Soil Conservation Service (now Natural Resources Conservation Service); CA Regional Water Quality Control Board; Agricultural Stabilization and Conservation Service (now Farm Services Agency); Army Corp of Engineers; and U.S. Fish & Wildlife Service.

The Steering Committee has met twice a year for the last fifteen years, but over that time signatory partner representatives have changed and/or partners have waxed and waned in their participation levels. The end result has been Steering Committee members relying more on Plumas Corporation staff to keep them informed and not taking as active a decision-making role as outlined in the Plan. Current active Steering Committee members consist of ten partners:

- U.S. Forest Service-Plumas National Forest (USFS-PNF)
- Plumas County
- CA Department of Water Resources (CDWR)
- USDA Natural Resources Conservation Service (NRCS)
- Feather River Resource Conservation District (FRRCD)
- Sierra Valley Resource Conservation District (SVRCD)
- University of CA Cooperative Extension (UCCE)
- Trout Unlimited-Feather River Chapter (TU)
- CA Department of Fish & Wildlife (CDFW)
- Plumas Corporation

The Executive Committee had never formally met since its inception in the 1996 Plan. With the recent call for a process review and local controversy over use of the pond and plug meadow restoration technique, the Executive Committee convened in 2012.

The FRCRM Plan designates the Feather River RCD Directors and landowners from Indian, American, Sierra, Mohawk, and Meadow Valleys to “identify projects through local contacts”. The RCD “refers potential projects to the Steering Committee for technical assistance and funding and oversees the implementation of projects approved by the Executive Committee in a timely manner, meeting project specifications within budget constraints”. In the early years of the FRCRM most projects were referred by the RCD. However, as FRCRM project work expanded many landowners began contacting Plumas Corporation directly for project assistance. Plumas Corporation staff would meet with landowners at their request and get an idea of their needs. If staff felt it was something they could assist with they would let the landowner know they needed to make a formal request for assistance through the RCD. The 2012 process review did reveal that not all projects went through this chain of approval, especially if the project was located on a stream or with a landowner that had received past project approvals, and/or was identified in a stream assessment and strategy that had been completed through the FRCRM. Completed watershed assessments and strategies that have identified high priority areas for restoration, include the Feather River Watershed Strategy (2004), the Integrated Regional Water Management Plan (2005), and other sub-watershed assessments (Sulphur Creek, 2004; Spanish Creek, 2006).

The result of the FRCRM structure and process review completed in April 2012 was a halt on all planned and proposed projects until the Executive Committee (EC) could review each one. The EC met five times in 2012 (May, June, July, October and November) and approved continued work on five stream restoration projects. One other project was reviewed in 2013. The projects approved for continued work are listed in Table 1.

Table 1. Summary of planned and proposed projects reviewed by the FRCRM Executive Committee in 2012 and 2013.

Project Name	Executive Committee Review Date	Type of Project	Status of Review
Yellow Creek – Humbug Valley	May 23, 2012	meadow/floodplain restoration utilizing pond and plug	Approved for implementation; constructed in Aug-Oct 2013.
Upper Dotta Canyon	May 23, 2012 June 27, 2012	meadow/floodplain restoration utilizing pond and plug	Decision delayed in May pending engineering review by partner agency engineers; Approved for implementation in June pending County approval of stamped engineered plan for grading permit that incorporates partner agency engineer recommendations and third party flow monitoring by DWR; plans approved in May 2013; constructed June-Aug 2013.
Spanish Creek in Meadow Valley	June 27, 2012	Stream restoration – bank stabilization & gravel management	Approved for implementation; 2 yr. phased construction-Phase I constructed in 2013.

Project Name	Executive Committee Review Date	Type of Project	Status of Review
Greenhorn Creek Integrated Restoration	June 27, 2012	Stream restoration – bank stabilization	Approved for implementation and to seek funding; funded by Sierra Nevada Conservancy (SNC) grant in 2013; 2 yr. phased construction- Phase I planned for 2014.
Last Chance II	June 27, 2012 July 25, 2012	Meadow/floodplain restoration with proposed pond and plug	In June approved to continue investigation of project; EC agreed in July to move forward with project alternative development and environmental analysis process; Plumas County withdrew state grant funding in 2013; Forest Service plans to release Proposed Action in 2014.
Sulphur-Barry Creek	May 13, 2013	Stream restoration-rehabilitate processes to manage excess material moving through the system	Steering members agreed to make recommendation to the EC to adopt the project and move forward with the environmental analysis process.

History of Accomplishments

Over the last 28 years the FRCRM has implemented a total of 122 projects. Of this total, 72 projects have been on-the-ground restoration, 13 studies/strategies, 19 planning/coordination projects, and 18 education projects. On-the-ground projects have included 39 in-channel restoration projects to reduce erosion and/or treat headcutting. Techniques utilized vary from bank sloping and installation of boulder vanes, weirs, and woody debris jams to use of vegetation, rock dams, and step pools. Remaining projects are 2 fish passage projects involving the installation of natural fish ladders, and 31 meadow/floodplain restoration projects using either pond and plug or riffle augmentation to restore floodplain function. Many projects also include other land use management project components such as fencing for grazing and riparian zone protection. To date, a total of approximately 51 stream miles have been treated consisting of 35 miles of meadow/floodplain and 16 miles of in-channel restoration, which has directly restored approximately 3,983 acres of meadow/floodplain and 490 acres streamside habitat within the upper Feather River watershed.

2012 & 2013 Accomplishments

FRCRM Structure and Process Review- The FRCRM Executive Committee met a total of ten times in 2012 and 2013. A total of six planned and proposed projects were reviewed and approved to move forward. See Table 1 above for summary of projects reviewed for approval by the FRCRM Executive Committee.

A review of one completed pond and plug project on Long Valley Creek, a tributary to the Middle Fork Feather River, was discussed in response to complaints from a downstream

landowner regarding the reduction and cessation of surface flow to his diversion during late season. Plumas Corporation staff initially mitigated the landowner's concern by paying to pump groundwater from an industrial well to feed his diversion during periods of subsurface flow from 2008-2010. In 2011 no supplemental water was needed. The landowner requested pumping water again in April 2012, but was denied due to lack of funding. A Technical Advisory Committee (TAC) met in October 2012 to develop some potential solutions to the issue. A summary of options consisting of piping through the subsurface reach to pumping from the industrial well with a solar pump was prepared and shared with the Executive Committee. The Committee voted in July 2013 that Plumas Corporation was to put forth a firm proposal with funding to mitigate the downstream flow issue by September 2013, with implementation completed by November 15, 2013. The TAC met again in late July 2013 to review options and concluded the simplest mitigation for lower costs and less long-term maintenance would be to drill a shallow livestock well at an existing trough at the bottom of the project area, and pipe the overflow to the creek at the diversion. The NRCS suggested a potential partial funding source through their Environmental Quality Improvement Program (EQIP) if the landowner was interested in applying. Plumas Corporation discussed the option with the project landowner, who supported the proposal but was unwilling to apply for EQIP funds and take any responsibility for the long-term maintenance of any implemented mitigation. As of the end of 2013, no long term mitigation or resolution to the Long Valley Creek issue had been realized.

Other issues discussed and to be further addressed in the future by the Executive and Steering Committees include:

- Long-term project maintenance- Who is responsible? Who pays for maintenance?
- Partner participation and involvement- Which signatories are still active? Is there a need to review project engineered plans? Should plans be stamped by a certified engineer? What assurance is provided if construction plans are stamped by an engineer?
- Continuation of project monitoring- Who is responsible? Who pays for monitoring? Who maintains data?

Sierra Nevada Range-wide Meadow Restoration Coordination- In 2009, the National Fish and Wildlife Foundation (NFWF) developed a Sierra Nevada Meadow Restoration Initiative Business Plan. The Foundation's Plan focuses on meadow restoration projects, with the goal of improving watershed function and wildlife habitat in Sierra Nevada meadows. To assist in sharing meadow restoration technology throughout the Sierras, NFWF approved \$51,000 for Plumas Corporation staff to assist in coordinating their efforts range-wide. In 2012-2013, work on technical assistance and outreach consisted of the following activities:

- Giving meadow restoration presentations at the Placer Nature Center in Auburn, CA and a USFS Meadow Restoration Monitoring Forum in Graeagle, CA.
- Providing input to the Little Truckee River Watershed group on meadow restoration monitoring for the Perazzo Meadows project.
- Meeting with Ducks Unlimited and Intermountain West Joint Venture (IWJV) staff to discuss pond and plug meadow restoration, assist with project tours in the Pit River Watershed, and share the technology with others at an annual IWJV meeting and tour in Klamath Falls, Oregon.

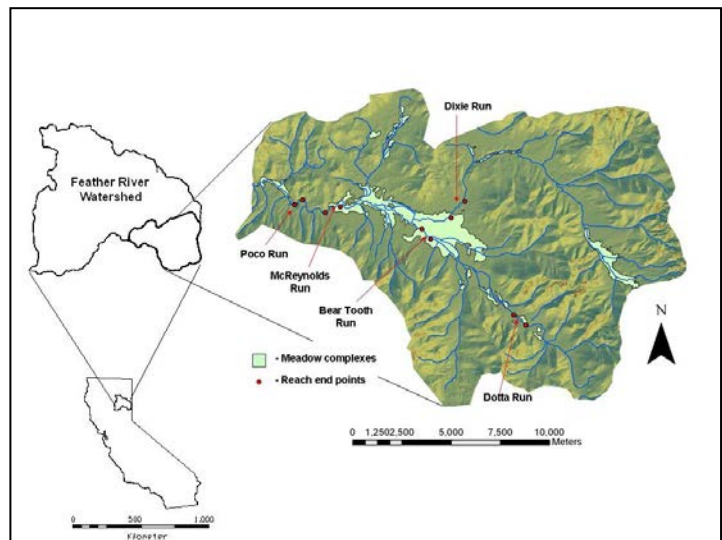
- Providing technical assistance to the Sequoia National Forest (Kern and Kings River Watersheds), Shasta-Trinity National Forest (McCloud Watershed), El Dorado National Forest, Honey Lake Resource Conservation District (Susan River Watershed), Pit River Watershed, Mokelumne Watershed, South Yuba River Citizens League (Tahoe National Forest), Sierra Foothill Conservancy (Merced River Watershed), and the Yakama Tribe in Washington.
- Providing construction oversight for a project on the El Dorado National Forest in the central Sierras.
- Coordinating with other Watershed Coordinators in the region to collaborate on watershed efforts, and attending the Integrated Regional Water Management Northern Region Leadership Exchange hosted by the CA Department of Water Resources.



Project construction on the El Dorado National Forest in the fall of 2012.

Another \$15,000 was awarded to Plumas Corporation in 2012 from Ducks Unlimited through the Intermountain West Joint Venture to focus similar efforts in the larger northeastern California region. This region includes Siskiyou, Shasta, Modoc, Lassen, Plumas and Sierra counties. Plumas Corporation subcontracted with the Pit River RCD to facilitate meadow restoration outreach in this region in 2012-2013.

Red Clover Valley Seepage Run Study- This study was undertaken in 2011 by the US Forest Service Region 5 Regional Hydrologist to further investigate downstream water users' concerns about pond and plug projects affecting streamflow. The study involved taking a series of simultaneous streamflow measurements along a channel reach for the purpose of identifying and quantifying gains and losses in streamflow due to groundwater seepage. The streamflow measurements were taken in conjunction with groundwater levels, conductivity, water and air temperature, and stream stage. In 2011, measurements were taken in June, September, and October at five locations in Red Clover Valley, two restored and three un-restored. In 2012, the measurements were repeated at the same locations but taken more frequently, May-August and October. The study showed that downstream restored meadow reaches had higher rates of groundwater discharge than upstream un-restored



Map of measurement locations for the Red Clover Seepage Run Study in the East Branch North Fork Feather River Watershed.

reaches early in the summer. Later in the summer un-restored reaches continued to gain flow from groundwater discharge as the meadows continued to drain out, while the restored reaches continued to maintain higher groundwater elevations and connectivity to surface water flows. Partners contributing to this project included Plumas Corporation, Plumas National Forest, CA State University Sacramento, and USDA Natural Resources Conservation Service. The same type of measurements were taken on Last Chance Creek one time in September 2012.

Review of Effects of Meadow Restoration on Stream Flow- Concerns regarding impacts to downstream late season flows from meadow restoration projects was the impetus for this review that was conducted in 2013 by Plumas National Forest Hydrologist- Joe Hoffman, retired Fish Biologist from Lassen National Forest- Ken Roby, and private consulting Geohydrologist- Burkhard Bohm. Reviewing monitoring data collected in the Upper Feather River Watershed and pertinent meadow improvement research, the authors' purpose for the paper was to briefly describe the nature of the expected changes to flow due to restoration and to summarize results of flow monitoring conducted to date, particularly in the Red Clover Creek and Last Chance Creek drainages in the Upper Feather River Watershed. Input and review of the paper was provided by FRCRM Steering Committee members. Some of the key findings outlined in the Executive Summary were:

- *In retrospect, it appears that it was mistakenly assumed that an increase in spring flows would extend into the late season for all projects. Project effects observed on Red Clover and Long Valley Creeks indicate that some pond-and-plug projects can cause decreases in late season flow within and immediately downstream of treated reaches, at least for the first few years after restoration. This is a significant finding because the working assumption for the first decade-plus of planning and construction of these projects in the upper Feather River watershed has been that late season flows would increase at all project sites.*
- *Considerable caution should be exercised in analyzing data collected in the near term after project construction because the meadow soils may not have had enough time to "fill" and the ground and surface water flow systems may not have reached a long-term equilibrium. Heede (1975) indicated that a likely equilibrium was achieved for one project 7 years after restoration.*

The Executive Summary and full paper can be found on the web at http://www.feather-river-crm.org/pdf/PPlug_FlowSummary_Final_June2013.pdf.

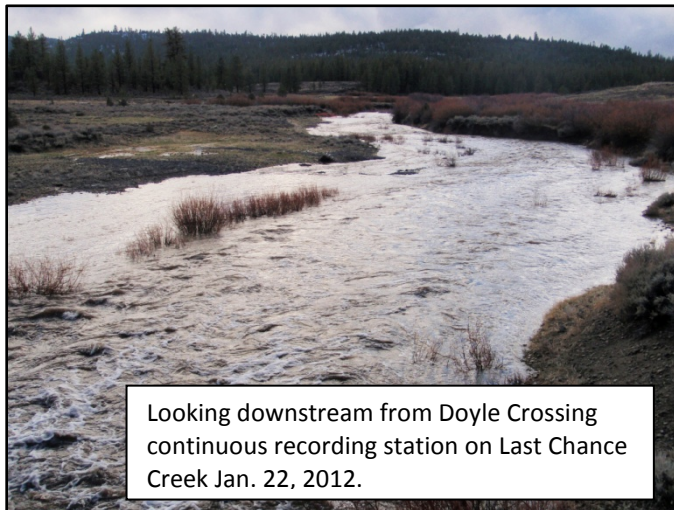


Kara Rockett-Arsenault taking stream flow measurements on Lights Creek during December 2012 storm.

Watershed Monitoring Program- A watershed-wide continuous monitoring program to examine effects of watershed restoration efforts at varying watershed scales was started by the FRCRM in 1999. Statewide, this monitoring program is exceptional in the amount of stations involved and the longevity of the program. A total of thirteen years of data has been collected to date. Data is reviewed and reported annually. Background information on the monitoring program objectives and protocols can be found in the FRCRM annual watershed monitoring reports from 2003 and 2005. All reports can be found on the monitoring page of the FRCRM website

at www.feather-river-crm.org. FRCRM signatories recognize the value of having this monitoring data and will strive to continue to find sources of funding for the program.

Ten continuous recording monitoring stations (CRS) located in the eastern two-thirds of the Feather River Watershed on public and private lands collect streamflow and temperatures. One site (Indian Creek at Taylorsville Bridge) also collects turbidity measurements. Three other continuous recordings stations operated in partnership with the Plumas National Forest are located on Spanish Creek, Sulphur Creek, and Rowland Creek. Additional in-kind support of the monitoring program is provided by the CA Department of Water Resources through their maintenance and operations of four weather stations in the upper Feather River Watershed, for the purpose of monitoring climatic conditions in order to evaluate watershed restoration efforts. These four stations are: Doyle Crossing, Jordan Peak, Taylorsville (Nelson St.), and Thompson Valley (supports the Thompson Creek Meadow Water Budget Study). Each station records precipitation, temperature, relative humidity, barometric pressure, wind speed, and solar radiation. The recorded data are transmitted via GOES for reporting on the California Data Exchange Center website (<http://cdec.water.ca.gov/>). They also operate and maintain a CRS on Indian Creek at Indian Falls (downstream of Indian Valley).



Looking downstream from Doyle Crossing continuous recording station on Last Chance Creek Jan. 22, 2012.

The primary objectives of the CRS stations are to determine if there are any measurable changes to late-season stream flows and water temperatures due to restoration activities. The cause-and-effect relationship between restoration and base flows is difficult to make. Pre- and post-project trends in late season flow are inherently difficult to determine due to annual variations in precipitation, small magnitudes of late season flow, and the uncertain nature of stream and groundwater interaction.

Similarly, water temperature trends are difficult to determine due to annual variations in air temperatures through the summer months and due to variations in temperature that occur along stream reaches due to differences in shading, stream depth, and groundwater input. Last Chance and Lights Creeks continue to be the most impaired streams for cold water fisheries that the FRCRM monitors. Stream temperature data from the past seven years suggest potential improvements in water temperatures for the Last Chance Creek site at Doyle Crossing and the Red Clover Creek site at Notson Bridge. However, analysis of these temperature data has not been performed to determine whether the trends observed are statistically significant. Theoretically, water temperature improvements may have occurred due to extensive stream and meadow restoration that has occurred upstream of these monitoring stations. Over 10 miles of stream channel and almost 1,500 acres of affected meadows have been restored by FRCRM on Last Chance Creek above Doyle Crossing and 6 continuous miles of channel and over 500 acres of floodplain have been restored on Red Clover Creek approximately ten miles upstream of Notson Bridge.

The FRCRM monitoring program also monitors twenty-two stream condition inventory (SCI) sites that have been established throughout the watershed. Data collection on these reaches is targeted every five years pending available funding. Fourteen of the 22 sites were

re-surveyed in 2011. The remaining 8 reaches were last surveyed in 2003. A small component of the program works with Citizen Monitors, made up of community residents and student volunteers, who collect storm event water samples in Indian, Spanish, and Sulphur Creek watersheds to measure turbidity levels.

Initial funding for the FRCRM's monitoring program was provided to Plumas Corporation through a Clean Water Act 319(h) grant (Aug 1998 to Dec 2000). Subsequent funding sources have included: the California Surface Water Ambient Monitoring Program (SWAMP) from Oct 2000 to Dec 2003 and the Plumas Watershed Forum (2004 to 2006). In 2007 through 2009 the monitoring program was funded through the UC Davis Indian Creek Modeling project and various implementation projects. Funding has been provided by the USFS via the Secure Rural Schools Title II funds through the Plumas County Resource Advisory Committee (RAC) to operate and maintain the continuous recording stations for the last four years (2010-2013). Title II funds will continue to support monitoring efforts through 2014, supplemented with funding secured in 2013 from the Rose Foundation. Securing monitoring funds has always been problematic, but the FRCRM has managed to keep the monitoring program afloat through a variety of sources over the years, including in-kind contributions from partners and citizen volunteers.

Watershed Education Program- Established in 2004, the Feather River CRM Watershed Education Program focuses on two components: public outreach and school-based education.

Seed money for the program was provided by the California Department of Water Resources from 2004 through 2006. Subsequent funding has come from a variety of sources. Current funding support for the education program (2011-2014) is from Secure Rural Schools Title II RAC monies and the Sierra Nevada Conservancy Proposition 84 funds. Similar to monitoring



Chester High School students stake willows along the North Fork Feather River as part of the Students As Stewards program.

efforts, sustaining education funding has been especially difficult in these challenging economic times. The CRM continues to seek and develop sustainable sources of funding through collaboration with partners.

“WATERS” (Watershed Awareness through Education, Recreation, and Stewardship) is the committee that oversees the regional and collaborative educational efforts in the upper Feather River Watershed. Participant organizations in WATERS includes:

University of California Cooperative Extension, Plumas Audubon, Feather River Resource Conservation District, Feather River College,

Sierra Institute, Plumas Unified School District (PUSD), Plumas County 4H, Mountain Passages, Plumas County Charter Schools, Feather River Land Trust, Trout Unlimited-Feather River Chapter, and Plumas Corporation.

The 2012 and 2013 school-based FRCRM Watershed Education Program was supported by collaborative partnerships with Feather River College (FRC) programs- Educational Talent Search and Outdoor Recreation Leadership, and the Feather River Land Trust's (FRLT) Learning Landscapes Program. FRC programs have provided matching funds for transportation and other in-kind support for 6th and 7th grade watershed education field trips, while the Learning Landscapes Program has provided outdoor sites within walking distance of each school

Portola sixth grade students follow the Feather River on their 2012 Plumas to the Pacific field trip.



campus for K-12 students to implement hands-on projects. 2013 was the ninth school year that the 6th grade watershed program was successfully implemented. Over 200 students participated in the program County-wide over the two year period (2012 and 2013). The program includes approximately eighteen “backyard” field trip days in the winter and spring and four Plumas to the Pacific field trips in May/June. A full curriculum set (including maps, vocabulary, and lesson plans) for each 6th grade “Watercourse” in PUSD including

Portola, Quincy, Taylorsville, Greenville, and Chester was developed and distributed to each sixth grade instructor at a full day training workshop in 2012. The “Students As Stewards” program has worked with more than 600 PUSD secondary students and their teachers to implement hands-on restoration projects on Learning Landscape properties since 2011.

On the public outreach front, the FRCRM organized the 4th & 5th annual Great Sierra River Cleanups in 2012 and 2013, respectively. Combining efforts from both years, a total of 125 volunteers cleaned up over 1200 pounds of garbage and recyclables from sites in Quincy, Greenville, Chester, and Westwood. The FRCRM also led a World Water Monitoring Day effort for the seventh year with Feather

River College Environmental Studies students in 2012, as well as, hosted the fifth and sixth annual Wild & Scenic Environmental Film Festival in partnership with Plumas Arts and Feather River Trout Unlimited (2012). Additional public outreach activities included participating in the Plumas National Forest’s Fall Festival, holding a fly-casting clinic at the Creekside Festival in Quincy, and partnering with Plumas National Forest on a stream table



2012 Great Sierra River Cleanup on Spanish Creek

demonstration booth at the Quincy/Pioneer Elementary School Family Science Night.

FRCRM Restoration Projects- Some projects planned for implementation in 2012 (Upper Dotta Canyon and Spanish Creek in Meadow Valley) were postponed due to a Plumas County grading permit prerequisite that projects moving more than 50 cubic yards of material need to have stamped engineered design plans. In the past, this was not a requirement for stream restoration projects as grading permit conditions generally apply building codes that are not directly applicable to stream restoration work. However, in response to past project issues (namely the large-scale erosion that occurred in 2011 at the Red Clover-Poco project) and the review of FRCRM structure and processes, the County opted to enforce this requirement for any future projects moving forward. So, even though projects were approved to move forward

in 2012 by the Executive Committee, construction for two projects was delayed to 2013 until stamped engineered plans were approved by the County for issuance of the grading permit.

Red Clover/Poco Creek Restoration Project (USFS)- This project, located on Plumas National Forest, was constructed in the summer/fall of 2010. Record snowpack, followed by prolonged spring flooding events, occurred the first season after project construction, resulting in erosion



and breaching of 20 of the constructed plugs. In response to the 2011 event, partner engineers from the Natural Resources Conservation Service, CA Department of Water Resources, Plumas County and U.S. Forest Service reviewed the initial project design, subsequent project damage, and the proposed repairs. NRCS engineers voiced concerns with the initial design and felt the 2011 damages could have been avoided if other design parameters would have been included. Project repairs occurred in the fall of 2011. Implementation

funding was provided through the State Water Resources Control Board (SWRCB) by Proposition 13 via the Coast-Machado Water Act of 2000, and Proposition 50 via the Water Security, Clean Drinking Water, Coastal Beach Protection Act of 2002.

Plumas National Forest staff and Plumas Corporation staff worked with the California Conservation Crew in October 2012 completing supplemental re-vegetation work on the repaired plugs transplanting sedge plants and spreading sedge seed on approximately twelve plugs. Post-project monitoring in 2012 consisted of replicating photo points; measuring stream flows, water temperatures, groundwater well levels, and dissolved oxygen levels in ponds; taking storm event water turbidity samples; conducting avian bird counts, vegetation transects, and fish sampling,. Stream flows at the bottom of the project area were measured monthly when accessible in 2013.

The final project report was submitted to the SWRCB in March 2013. The final report and monitoring results can be found on the Feather River CRM website at http://www.feather-river.crm.org/index.php?option=com_content&view=article&id=93&Itemid=96. Total project expenditures provided by the project grant were \$1,144,666 out of a project budget of \$1,169,650. Seventy-six percent of grant funds paid subcontractors for construction and professional services, 23% paid staff for project work and monitoring, and 1% paid for operating expenses such as travel and postage. A total of \$404,731 was provided in match contributions from Plumas National Forest, Plumas County Dept. of Public Works, CA Dept. of Water Resources, Point Blue (formerly PRBO Conservation Sciences), Plumas Audubon, Feather River Chapter Trout Unlimited, Clover Valley Ranch, and community/student volunteers.

Upper Dotta Canyon- This meadow restoration project on Red Clover Creek aims to raise the water table by reconnecting the channel and floodplain utilizing the pond and plug restoration technique on 253 acres of both private (Goodwin Ranch) and public (Plumas National Forest) lands. The success of a similar project implemented downstream on the Goodwin Ranch in 2006 impelled the Goodwin's to seek further assistance in restoring their property in Dotta



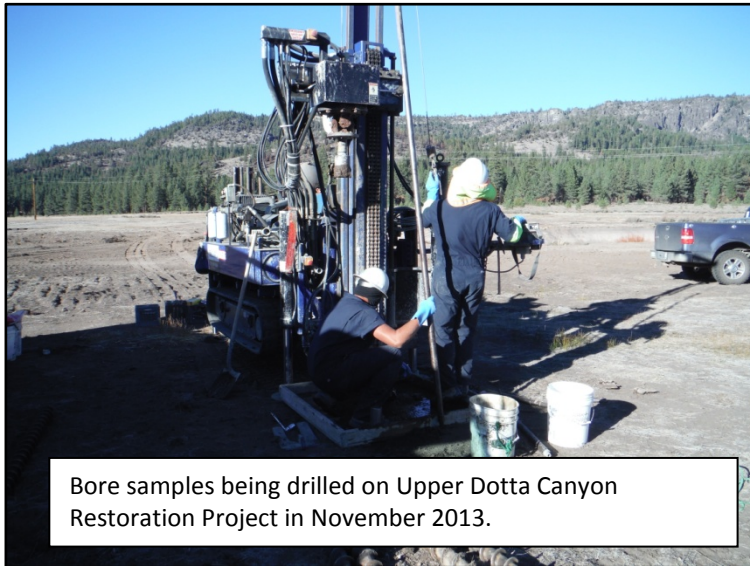
Canyon, where the degraded channel was six to fourteen feet below the meadow floodplain surface.

Project design development, environmental surveys, CEQA/NEPA analysis, and permitting was funded through Secure Rural Schools Title II Resource Advisory Committee (RAC) funds (\$119,930) from 2010-2012. The CEQA and NEPA environmental analysis decisions were filed in January and March of 2012, respectively. All permits had been acquired, with the exception of the Plumas County grading permit. The Army Corps of Engineers Nationwide

404 permit expired and had to be reapplied for in 2013. The Stormwater Pollution Prevention Plan (SWPPP) permit was cancelled and refunded for 2012. In response to concerns with the erosion that occurred on the Red Clover-Poco project, a technical advisory committee consisting of five engineers from FRCRM signatories convened in 2012 to review the project design. This committee formulated several recommendations for the design and construction of the project. In addition, a local registered civil engineer was retained in the fall of 2012 to complete stamped engineered plans, in order to comply with Plumas County grading permit requirements and to satisfy a project requirement directed by the FRCRM Executive Committee. Some engineering was paid for through remaining RAC funds and the rest was covered by the implementation grant provided through the Army Corps of Engineers Sacramento Wetland Conservation Fund (\$441,184). The stamped plans were submitted to the County in March 2013. The plans were approved and the grading permit issued the end of May 2013. An additional \$55,000 in funding support for construction and monitoring was secured in 2013 from the Bonneville Foundation.

The Natural Resource Conservation Service (NRCS) and landowner supplemented funds for grazing management, including re-vegetation, fencing, a cattle guard, off-site water, deferred use and weed control. Construction of the fencing component began in October 2012 through November 2012 until weather inhibited access to the project site. Fencing work resumed in June 2013 and was completed by the end of November. Other grazing infrastructure components completed in 2013 included installation of the cattle guard and well-drilling for future installation of off-site water in 2014. All constructed plugs and access roads were seeded with a variety of native grasses and Nebraska sedge on the wetter sites. Grazing will be deferred from the project area for up to three years post-project pending annual review of site conditions. Noxious weeds will also be monitored and removed for three years post-construction.

Project construction began in late June 2013. Observations of project construction by a CA Department of Water Resources (DWR) engineer in late July documented in an internal report shared with TAC members resulted in the call for a field meeting of all project partner engineers during the last day of construction. This included the original engineering TAC members from DWR, NRCS, U.S. Forest Service-Plumas National Forest (USFS-PNF), Plumas County, and Plumas Corporation's retained engineer and Board Directors. The report and field meeting identified certain elements of the stamped engineered plans that were not followed to specs. It was noted that the original recommendations made by the TAC in May of 2012 were



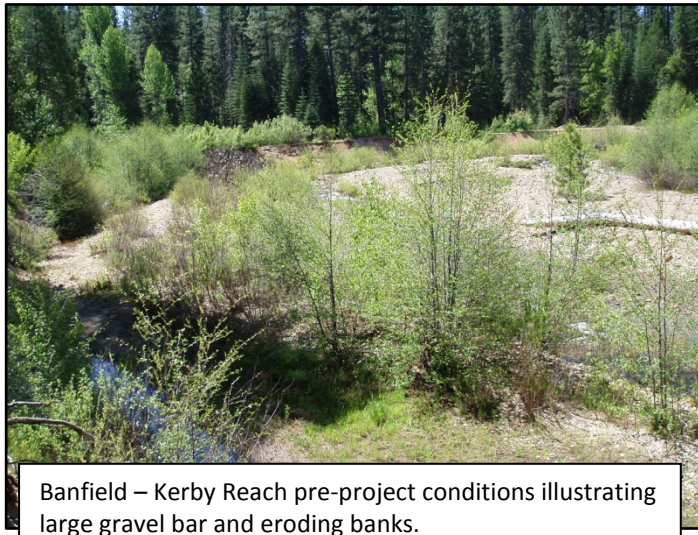
Bore samples being drilled on Upper Dotta Canyon Restoration Project in November 2013.

incorporated into the design, but not implemented to the complete satisfaction of the TAC members. This was the first time engineered plans had ever been developed for a pond and plug meadow restoration project, and a first for Plumas Corporation staff to follow such designs with no guidelines for doing so. Because the construction was already completed, the retained engineer for Plumas Corporation recommended drilling 2-3 borings in select plugs for a total maximum of 6-9 borings to

collect samples for the following laboratory testing: (1) moisture content and density; (2) pinhole dispersion to evaluate susceptibility to piping; (3) triaxial shear testing; (4) hydraulic conductivity; and standard classification tests including (5) grain size analysis; and (6) Atterberg limits. In September 2013 the Plumas Corporation Board approved the engineer to move forward with hiring a driller and collecting the samples. A total of 13 bore samples were drilled and collected November 4-8, 2013, with some taken in the native meadow. Piezometers were installed in 10 of the borings after completion (7 on plugs; 3 on native). The engineer has done field inspections and is conducting analyses of laboratory test results to evaluate plug stability and as-built armoring along the downstream crest of critical plugs. He will provide a summary report of findings with a certification statement if warranted or recommendations for remedial work if necessary in 2014. In addition, on Oct. 15-24, 2013 DWR completed plug elevation surveys at several points across the crown of each plug and adjacent grade for each structure, setting control points for future follow-up. These points were placed along fence lines or other areas that avoid impacts to cattle, where possible. During a post construction reconnaissance by the Project Manager in late September, it was identified that three plugs had settled in the center. The Project Manager requested the retained engineer to review the plugs. Supplemental work was done on these plugs and six others in early October 2013.

Pre-project monitoring conducted to date includes: a bank walking survey for spawning fish in Red Clover Creek conducted in June 2013; monthly stream flow measurements taken above and below the project area starting in May-September 2010-2013; four years of avian surveys (2010-2013) conducted by project partner Point Blue (formerly PRBO Conservation Science); annual vegetation transects to measure change in plant species composition (2011-2012); continuous water temperature data collection at the bottom of the project area from May-September 2012-2013; collection of soil carbon samples to capture change in carbon

stocks (2013); installation by DWR of three flumes (2012-2013) with continuous recorders located in two upstream tributaries and in the main channel immediately downstream of the Dotta Pond, all for the purpose of better capturing late season flow measurements; monthly monitoring of groundwater levels in eight wells installed by the USFS-PNF in July 2013; and collection of turbidity samples during storm and run-off events above and below project pending accessibility. Post-project monitoring will be conducted in 2014. DWR is maintaining and collecting the data from the flumes to meet an Executive Committee requirement for third-party monitoring of stream flows.



Banfield – Kerby Reach pre-project conditions illustrating large gravel bar and eroding banks.

Spanish Creek in Meadow Valley- This project was identified in the Spanish Creek Assessment and Rehabilitation Strategy completed in 2006. Encompassing four distinct project reaches totaling 72 acres, project objectives focus on passive gravel management and bank stability to deal with excess bedload and streambank erosion that impacts channel function, stability, and water quality downstream. Project development and environmental analysis work began in 2009 with Plumas Watershed Forum funding (\$44,300), and continued

through 2012 with funding from Secure Rural Schools Title II RAC funds (\$22,000). The CEQA environmental analysis and permit applications were submitted to their respective regulatory agencies in 2012, with the exception of the grading permit. A certified engineering firm out of Redding was retained to complete the stamped engineering plans in early 2013. The plans were submitted to Plumas County in June; after review of the plans the County determined the project did not require a grading permit. Implementation funding was secured through the Army Corps of Engineers Sacramento Wetlands Conservation Fund for \$464,750 in October 2011. Additional permitting was required by CA Dept. of Fish & Wildlife (CDFW) due to state listing of the Sierra Nevada yellow-legged frog (SNYLF) as a threatened species in 2012. The SNYLF occurs within the project area. Although mitigations had been incorporated into the project to protect the frog, additional measures and financial assurances to the CDFW had to be included to satisfy CDFW permitting requirements. Project implementation is being phased over three years. Phase I began in August 2013 and continued through October. Work was completed on the Banfield-Kerby Reach and started on the Greens Flat Reach of the project. Students from Feather River College and Quincy Jr./Sr. High School both visited the site and assisted with spreading straw and staking willows.

Breeding surveys for the SNYLF were conducted in the spring and early summer prior to construction. The CDFW collected genetic samples to verify the frog population species in Spanish Creek. The final report on the genetic sampling results was released in November 2013, and can be found at www.feather-river-crm.org. The results presented strong support that the species were more likely foothill yellow-legged frogs, which are not listed, rather than Sierra Nevada frogs. The final result is still inconclusive to completely rule out the occurrence of the listed Sierra Nevada YLF in the project area; however, a proposal to conduct further studies is being pursued through a partnership between the CDFW, Plumas Corporation, and the Sierra Nevada Aquatic Research Laboratory.



A male Sierra Nevada yellow-legged frog on Spanish Creek.

The SNYLF is expected to be listed by the Federal government in 2014 and will require a biological consultation with the U.S. Fish and Wildlife Service (USFWS) to meet federal requirements. Plumas Corporation has been in contact with USFWS to prepare for this occurrence for Phase II construction plans.



Pre-project stream conditions on Yellow Creek in August 2006.

Yellow Creek in Humbug Valley- The Feather River CRM was asked to assist Pacific Gas & Electric (PG&E) and the Humbug Valley Subcommittee of the

Ecological Resources Committee (ERC) to develop a potential restoration project on Yellow Creek in Humbug Valley in 2006. The channel upstream (north) of the county road has progressively been widening and actively head-cutting on both the main stem of Yellow Creek and along irrigation ditches that have captured perennial stream flow. PG&E provided \$20,000 to complete initial field surveys and monitoring in 2006, and funded an additional \$77,000 in 2008 to develop conceptual project design alternatives, complete resource surveys, continue site monitoring, facilitate stakeholder meetings and seek implementation funding. In 2010, the conceptual design alternatives were presented to the ERC. A consensus decision could not be reached due to concerns from California Dept. of Fish & Wildlife (CDFW) over the potential spread of whirling disease via ponds within the design. In late 2010, PG&E provided another \$14,000 to resolve the project design issues and complete the CEQA and permitting processes. To address concerns about whirling disease, a new channel design that does not pass through

any ponds was developed. In addition, a whirling disease study, funded through the U.S. Forest Service and PG&E with in-kind contributions from CDFW and UC Davis, was conducted in 2012/13 to establish baseline information on the prevalence of the disease within the watershed. The report can be found at http://www.feather-river-crm.org/pdf/YC_FINAL%20REPORT.pdf.

This project did not require a grading permit from Plumas County because it was on public utilities land owned by PG&E. Implementation funding was secured through the Army Corps of Engineers Sacramento Wetland Conservation Fund for \$297,400 in 2012. Implementation was scheduled to start late summer 2012, but was postponed to 2013 due to the Chips wildfire. Construction began on August 27th and was completed on October 3rd, 2013. Students from Chester High School visited the project site in October and staked over 400 willows.

Post-construction monitoring for turbidity, water temperature, and birds will be conducted in 2014. The ERC (including CDFW) will determine what and when post-project fish monitoring will be conducted.



Chester High School students staking willows along the “new” remnant channel on Yellow Creek.

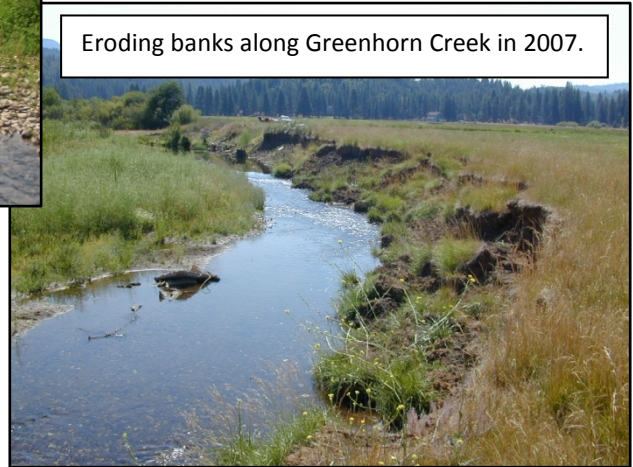
Integrated Greenhorn Creek Restoration Project- Restoration work along Greenhorn Creek by the Feather River CRM began in 1991, with subsequent projects implemented in the early



Reid-Plumas National Forest bank stabilization reach constructed in 2011; photo taken Sept. 2012.

2000's. Current efforts began in 2007 in response to several landowners who were losing pasture for their horses and/or cattle along the creek. Initial funding for project development was provided through the Plumas County Board of Supervisors Title III funds (\$19,550). This effort included

Eroding banks along Greenhorn Creek in 2007.



contacting other landowners (including the Forest Service), field data collection, data analysis, development of conceptual designs, and coordinating with stakeholders. In 2009, Secure Rural Schools Title II RAC funding for CEQA/NEPA analysis, permits, and construction

was awarded. Analysis work began in 2010 and was completed in early 2011. Permits were acquired for all project reaches, with the exception of the County grading permit and the CA Dept. of Fish & Wildlife Streambed Alteration Agreement (SAA) (these were only permitted for one of the seven project reaches, Reid/PNF Bank Stabilization, which was constructed in 2011).

A collaborative partnership between the FRCRM, Plumas County, and CC Myers (CalTrans contractor for the Spanish Bridge replacement project on Hwy. 70) resulted in a donation of approximately 7,000 cubic yards of fill and rock material, valued at \$98,000, for two fish passage structures. The material is currently being stored on Plumas County property near the Gansner Airport. In 2012 implementation funds were applied for through the Sierra Nevada Conservancy (SNC) for the remaining six project reaches. The project was selected for funding by the SNC Board in early 2013, but permitting requirements delayed executing the funding contract until September 2013. Due to the presence of the bank swallow, a CA threatened species, some areas planned for stabilization had to be dropped from the project to accommodate the swallows and obtain the SAA permit. The landowners agreed to assist with some of the engineering costs, and the Plumas County Fish & Game Commission contributed \$600 to the project in 2013. The project is planned for construction over two seasons beginning in 2014.

Last Chance Phase II- This project was submitted as part of Plumas County's Proposition 50 Integrated Regional Water Management implementation grant application in 2006. The original project proposal described in the grant would restore 402 acres of relic meadow and 7.8 miles of channel along Last Chance Creek on Plumas National Forest lands using the pond and plug technique. The total project budget was \$3,700,000 with \$2,546,421 provided through the County grant with CA Department of Water Resources executed in 2008. Project surveys, design development, technical reviews, and pre-project monitoring began in 2008;

work was suspended in 2009 due to the state bond freeze and lack of reimbursement for work completed to date. In 2010, \$400,000 was awarded by the National Fish and Wildlife Foundation (NFWF) to assist in completing the CEQA and NEPA processes, design development, permits, and pre-project monitoring. An additional \$349,000 will be available from NFWF for implementation. In November of 2013 Plumas County notified Plumas Corporation that due to local controversy on the pond and plug technique and the possibility of lawsuits if the technique is implemented the project was not a prudent and effective use of grant funds. The County determined that other alternative projects would be a better use of the remaining Prop 50 grant funds allocated for Last Chance II. The remaining funds to be given to other projects are over \$2 million.

Work completed to date includes environmental surveys, design and layout on the initial proposal, technical reviews of the initial proposed pond and plug design, archaeological and botanical reports, on-going monitoring in the Last Chance watershed, and resource surveys for a proposed swing allotment to be used if the project area is to be rested from grazing use for any period of time. Concerns from local Plumas County residents and downstream water rights holders were brought forth in January 2012 during Plumas National Forest's project scoping for the initial Proposed Action. Several water right holders in Indian Valley have expressed unequivocal opposition to pond-and-plug projects in the upper watershed. These concerns focused primarily on potential impacts to downstream late season flows, potential impacts to fish habitat within the proposed treatment, and whether the proposed project would withstand flood flows. The Executive Committee's project review in June and July 2012 also highlighted these concerns. Subsequently, Plumas National Forest leadership decided to develop a new Proposed Action (PA) outlining other project design alternatives. The Plumas National Forest, Beckwourth Ranger District inter-disciplinary team began this effort in late 2012. An October field meeting at the project site was attended by more than 30 individuals, including downstream landowners and representatives from FRCRM signatories. A new PA is expected to be released by the Plumas National Forest in 2014 for public scoping.



Financial Report

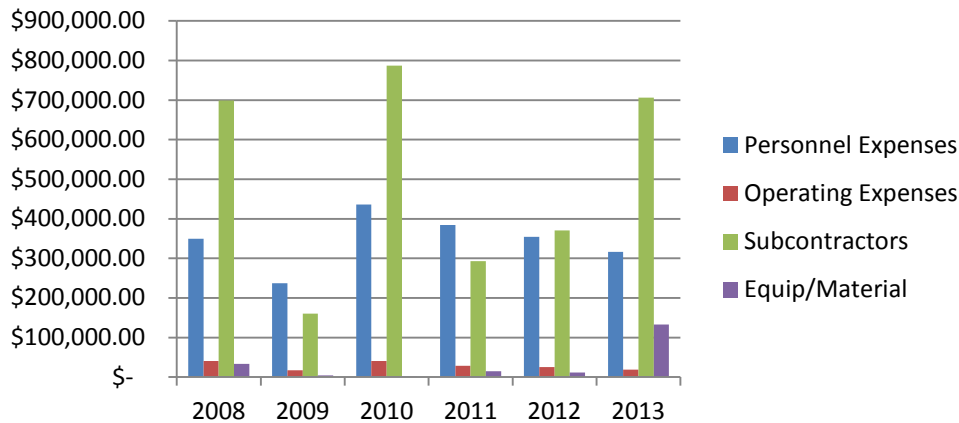
All projects, as well as general program outreach and coordination, have been funded from a variety of federal, state, local and private grant sources. Secured funding for projects, program coordination, monitoring and education through 2012 to 2014 includes grant funding from the following sources:

- CA Department of Conservation-Proposition 84
- CA Department of Water Resources-Proposition 50 Integrated Regional Water Management contract with Plumas County
- National Fish and Wildlife Foundation
- CA State Water Resources Control Board-Prop 13 & Prop 50
- Sierra Nevada Conservancy – Prop 84

- U.S. Army Corps of Engineers-Sacramento District Wetland Conservation Fund
- Secure Rural Schools PL106-393 Title II USDA Forest Service Pacific Southwest Region Plumas County Resource Advisory Committee
- Pacific Gas & Electric Company
- Intermountain West Joint Venture-Ducks Unlimited.

In these fiscally challenging and changing times, Plumas Corporation or other fiscal sponsor partners will need to continue exploring and diversifying funding opportunities for FRCRM projects and programs.

Figure 1. 2008-2013 Allocation of Funding

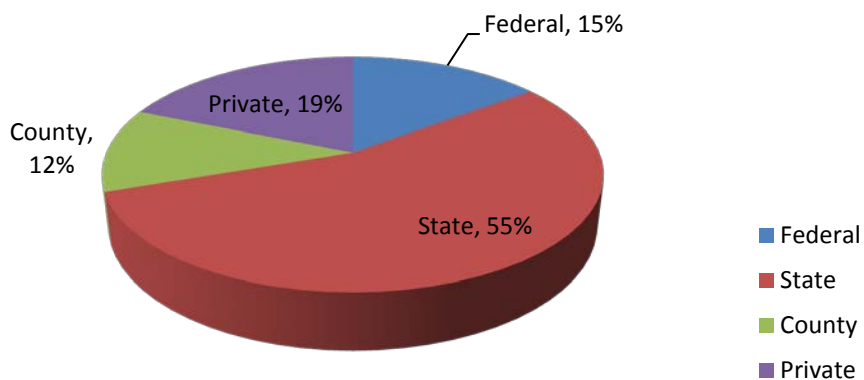


Over \$3 million, or 55% of grant funds expended over the last six years has paid subcontractors in the local region for a variety of services including project construction, environmental surveys, and

computer services. The remaining 45%, or \$2.45 million has paid for Plumas Corporation personnel, operating expenses (travel, permit fees, etc.), materials and equipment. All materials and equipment, if possible, were purchased locally. Figure 1 generated from QuickBooks financial reports depicts the allocation of grant funds between 2008 and 2013. Personnel expenses include salaries, benefits, taxes, insurance, and general administrative costs.

Figure 2 depicts the average percentage of grant funding sources over the last ten years. The majority of funding has been through state grants authorized by voter approved bond funded propositions for

Figure 2. Percent Funding by Source 2004-2013



water quality improvements, flood control, and riparian habitat enhancements (Propositions 204, 13, 40, 50, and 84). Federal funding has mostly consisted of funds allocated through Public Law 106-393 Secure Rural Schools Act. These Title II funds are awarded to Plumas County via the Forest Service supported by a local Resource Advisory Committee that reviews submitted

projects and recommends project funding awards to the Forest Supervisor. Plumas County funding has been through two sources, Secure Rural Schools Act Title III funds and Monterey Settlement Watershed Forum funds. The federal Title III monies are awarded directly to the County with specific federal criteria for what the money can be used for. The Board of Supervisors has sole discretion for selecting local projects to be funded with Title III funds. The Monterey Settlement Agreement funds came from a legal settlement between Plumas County and the California State Water Contractors. These funds also had certain criteria established for how they were to be spent. Projects were selected at the discretion of the Board of Supervisors and an advisory review committee made up of the County, CA Dept. of Water Resources, and State Water Contractor representatives. Private funds consist of landowner contributions, foundation funding, and private organizations, such as National Fish & Wildlife Foundation and Pacific Gas & Electric.

All grants are awarded through legally binding contractual agreements. Per the FRCRM 1987 Memorandum of Agreement, Plumas Corporation has coordinated the implementation of restoration projects, including award and administration of contracts. Most state-funded contracts are on a reimbursable only basis, meaning Plumas Corporation incurs the costs and is then reimbursed based on approval of submitted invoices. Generally invoicing is done quarterly, and reimbursement takes six or more weeks. All invoicing must be supported with back up financial documentation and progress reports. In order to pay subcontractors during construction in a reasonable timeframe, Plumas Corporation maintains a line of credit to cover project expenses until the work is reimbursed from the grant. The interest accrued from the loan is not reimbursable through grants and must be paid through other funds.

Plumas Corporation maintains separate project accounts in accordance with generally accepted accounting principles and undergoes an annual audit by a third-party every year. All grants are subject to audits by the granting agencies. In the last eight years, Plumas Corporation has undergone two audits on project grants. The most recent audit occurred in 2012 by the CA State Department of Finance, which audited three grants awarded to Plumas Corporation through the State Water Resources Control Board between 2004 and 2010. Two of the projects had been completed (Red Clover-McReynolds Project and the Upper Middle Fork Complex Project), and the third (Red Clover-Poco Project) was in the final stages of completion. The audit took almost five months and included a three day office visit and a field visit to each project site. Plumas Corporation received the final audit report from the State Department of Finance in late June 2013. Audit results indicated that grant expenditures were in compliance with grant agreements and deliverables. One observation was documented in the report regarding the accountability of matching funds on the Red Clover Poco project due to a lack of sufficient documentation in the project file. The audit report can be viewed on the web at http://www.dof.ca.gov/osae/prior_bond_audits/documents/Final_Report_Plumas_Corporation_proposition_13-40-50_Grant.pdf.

Coordination

Program coordination is imperative to the FRCRM's ability to carry out restoration projects. For twenty-seven years, Plumas Corporation staff on behalf of the FRCRM has successfully coordinated and implemented stream restoration projects, watershed studies, monitoring and education in the upper Feather River Watershed, with support and contributions from partners.

Expanding outreach and restoration efforts increases visibility of watershed issues and helps build watershed understanding both locally and regionally, but requires effective and efficient coordination. Landowner requests for assistance demand significant resources to provide quality service. All members of Plumas Corporation staff, as well as agency partners, have responded to assistance requests as available; however, limited financial support for these services strains existing budgets. As the breadth of understanding restoration effects grows and more projects are implemented, watershed monitoring of restoration efforts also continues to expand. This is particularly relevant given the growing concerns from local water users regarding potential project effects to downstream water rights.

Every project, whether it's a stream restoration, monitoring, or education project, requires coordination and collaboration between landowners, regulatory and funding agencies, and all interested stakeholders. The development of a restoration project, at a minimum, takes up to two years of outreach, data collection, and analysis to develop goals, objectives, and design concepts. Some project implementation funding sources require a project to be "shovel ready" before grant awards for construction will be given, meaning all state (CEQA- California Environmental Quality Act), federal (NEPA- National Environmental Quality Act), and permitting environmental requirements must be met before any FRCRM partner can apply for implementation funding. Limited financial assistance for planning, development, and completion of regulatory environmental processes, hinders the FRCRM's ability to efficiently complete a project from the planning phase through implementation. In addition, duplication of processes to satisfy both state and federal regulators, as well as increased permit fees and requirements have all amassed into considerably higher costs and staff time to complete project planning and development.

Coordination funding for the last five years has been limited to Proposition 84 Watershed Coordinator grant funds administered by the Department of Conservation, which only provides direct support to the Watershed Coordinator position. Proposition 50 IRWMP grant funds for the Last Chance II project provided coordination dollars for the remaining staff from 2011-2013.

Due to postponement of project implementation in 2012 and delays with moving forward on proposed projects, the beginning of 2013 saw a six month lay-off of one employee and the reduction of two employees to 60% and 50% time. Full-time staffing resumed in June 2013 through the field season (June-October). Plumas Corporation staff consists of (4) full-time positions and (1) three-quarter time position. These positions are as follows:

1- Project/Program Manager- Wilcox	80% Project funded/20% Coordination
1- Program Coordinator- Martynn	95% Coordination/5% Project funded
1- Project Manager - Mink	90% Project funded/10% Coordination
1- Project Manager- Benoit	90% Project funded/10% Coordination
1- Monitoring Coord.- Rockett-Arsenault	90% Project funded/10% Coordination

The future of staffing and Plumas Corporation's continued participation in the Feather River CRM remains uncertain due to limited funding and lack of consensus on the future direction of the partnership organization. It will up to the participating partners to determine the evolution of the FRCRM during these changing times.

Potential Future Proposed Projects

Sulphur Creek at Barry Creek - Ranked as the highest priority site in the 2004/2005 Sulphur Creek Restoration Strategy and Watershed Assessment. Sulphur at the Barry Creek confluence has been on the CRM's list of priority projects since 2006. In 2007 the CRM received \$10,000 from the Highlands Management Group of Whitehawk to complete field surveys and develop project design proposals necessary to begin the environmental analysis process for Barry Creek and Whitehawk Ranch project areas. One year later, the CRM secured \$19,530 to complete the environmental surveys, CEQA and NEPA analyses, and permits for the Barry Creek project through a Sierra Nevada Conservancy (SNC) Proposition 84 Strategic Opportunity Grant (SOG). The CEQA and NEPA work and permit applications were started the winter of 2008/2009, but the state bond freeze stopped all work from December 2008 through September 2009. Completion of the environmental analysis was further delayed due to concerns with the project design by the Forest Service. In 2010 and 2011, CRM staff worked with PNF hydrologists to develop a project design that satisfied everyone's concerns. SNC planning money for this project ended in March 2012. Additional funds were secured in 2012 through Plumas County Resource Advisory Committee (\$20,000) to complete the environmental analysis and permitting. The project was brought forward to the Executive Committee for review and approval to continue in May 2013. No implementation funding has been secured to date.

Thompson Creek Meadow Water Budget Study- In cooperation with Plumas National Forest and FRCRM, DWR is conducting a detailed pre- and post-project monitoring and groundwater modeling project on Thompson Creek to assess the effects of meadow restoration. No prior restoration efforts have occurred on this site except for a rock grade control structure near the upstream end of the meadow being evaluated. This site is adequate for the study in that 1) channel incision has and continues to occur throughout the project area and 2) the plug and pond technique of meadow restoration can be applied to the site. The project area is limited to a single main channel and one small tributary, all of which can be monitored and thus minimizing the need to estimate unknown parameters.



The project goals are to 1) estimate changes in total stream flow out of the meadow before and after meadow restoration; 2) assess the flood attenuation effects of a restored meadow; 3) develop a realistic surface-groundwater model of the meadow to study restoration effects on both surface water and groundwater components; and 4) evaluate environmental effects, including forage production. The project timeline includes 5 years of pre-project monitoring, design and construction of a plug and pond project, and 5 years of post-project monitoring. DWR is implementing the monitoring network, data collection, groundwater model development, analysis of the data, and final study assessment and reporting. CDWR will work in coordination with Plumas National Forest and FRCRM on the design of a meadow restoration

project. Funding for the final design, environmental permitting, and construction of the meadow project will be pursued through grants or other funding sources, not CDWR.



Upper Weir for Thompson Creek meadow study in 2013.

The monitoring network and activities cover both hydrologic and environmental parameters. The hydrologic monitoring includes measuring surface water (weirs and flumes), recording groundwater levels and temperatures, assessing aquifer characteristics, surveying topography, recording climate conditions, and monitoring soil moisture. To effectively evaluate the movement of surface and ground water into and out of the project boundary, weirs were

installed (September 2012) using sheet piles as cut-off walls to force all surface and groundwater (seepage) flow to the surface for measurement. Stage data are continuously recorded for all three sites. The environmental monitoring includes water temperature monitoring; pre- and post-project surveys of wildlife, avian, small mammal, fishery, and reptiles; and pre- and post-project vegetation mapping and biomass assessments. All monitoring equipment has been installed, and the pre-project monitoring timeline commenced in November 2012.

Mountain Meadows Restoration Project- These projects were brought to the FRCRM via Plumas Corporation in 2010 by W.M. Beaty and Associates, the land manager for the Walker Family/Red River Lumber Company. The projects are located on private lands in the Mountain Meadows watershed. There are three separate proposed project areas: upper Goodrich Creek, Mountain Meadows Creek, and Stroing Ranch/Greenville Creek. Approximately \$24,000 from Ducks Unlimited and Intermountain West Joint Venture was used to conduct preliminary project surveys in all three project areas from 2010 through 2012, including working with Mountain Meadows Conservancy on developing conceptual project designs and assisting the Honey Lake Resource Conservation District in submitting a planning grant application to the Sierra Nevada Conservancy in October 2012. Unfortunately, the proposal was not selected for funding. There is currently no funding for further planning or implementation of these projects.

Rowland/Meadowview- Located in a contiguous meadow system that straddles the watershed divide between Last Chance Creek, tributary to the North Fork Feather River (NFFR) and Rowland Creek, tributary to the Middle Fork Feather River (MFFR), these two projects cover both private and public lands. Rowland Creek has historically been a tributary to both watersheds through natural channel migration, and currently contributes the majority of its flow to the MFFR drainage, with flood flows contributing discharge to



Rowland Creek in October 2009

the NFFR. Meadowview is the uppermost meadow on Last Chance Creek. Both channels, including tributaries, are currently down-cut six to eight feet below the surface of the floodplain.

In 2009 the private landowner requested assistance from Plumas Corporation staff to reconnect the channel to the floodplain and improve channel stability along Last Chance Creek, Rowland Creek and tributaries. The landowner had worked with the FRCRM prior in 2004 on a project along Charles Creek in the upper Last Chance Creek Watershed. In 2009/2010, Plumas Corporation on behalf of the FRCRM was awarded \$109,700 for design development, environmental surveys, CEQA/NEPA analysis, and permit application work on these projects and Red Clover Dotta (Eastside Meadows) through Secure Rural Schools Title II RAC funding. Preliminary design work was completed in 2009, and environmental surveys and reports were done in 2010. The 2009 RAC grant with additional RAC planning funds in 2012 allowed for completion of the environmental analysis processes and permitting requirements for the Red Clover Dotta project, but was not enough to complete the planning for Rowland/Meadowview.

In response to the FRCRM process review in 2012, Plumas Corporation staff advised the landowner to request assistance from the Sierra Valley Resource Conservation District (SVRCD) to move these projects forward. The landowner submitted a letter to the SVRCD requesting assistance in 2013. To the knowledge of Plumas Corporation staff, the landowner has not yet received a response to his request from the SVRCD. There is currently no funding for planning or implementation of these projects.