

**Plumas Watershed Forum**  
**Review of Ongoing Projects**

*Updated 10/1/008*

**Hosselkus II Restoration Project**

Sponsor: Feather River CRM

Approved Funding: \$80,000 (A funds)

Expended By 10/1/08: \$79,603



This pond-and-plug creek restoration project was constructed in October 2006, with initial re-vegetation work immediately following construction.

Activity continued in the 2007 work season with further re-vegetation work by volunteers, planting drier plug sites with pine saplings donated by the Forest Service, installing temperature loggers above and below the confluence of Hosselkus Creek and Indian Creek, and monitoring groundwater levels.

Monitoring of the project continues with monthly collection of data on water temperature and groundwater levels.

### **Feather River College Riparian Protection Project**

Sponsor: Feather River College

Approved Funding: \$92,453 (A funds)

Expended By 10/1/08: \$92,420

This project was designed to improve the native pasture and wetlands on the Feather River College campus and better manage livestock with the goals of improving water quality in Spanish Creek and its riparian habitat and to offer educational opportunities to students and the community.

Primary work on this project was completed in the summer of 2005 with fencing to exclude livestock from riparian areas and the installation of heated and unheated off-stream water sources. The college also expanded and began the use of new dry-lots. The Natural Resource Conservation Service completed a pasture condition report in May of 2006 and water quality monitoring continued. The college also began using the new livestock facilities in conjunction with three new agriculture courses to demonstrate wetlands management, livestock management, and grazing practices.

The monitoring of water and wildlife will be an ongoing, permanent practice, including specific monitoring through 2010 that was included in the Forum funding agreement.

### **Sierra Valley Aquifer Testing**

Sponsor: Sierra Valley Groundwater Management District

Approved Funding: \$30,000 (A funds)

Expended By 10/1/08: \$10,724

This project consisted of three aquifer tests in the southwestern part of Sierra Valley near Sattley, east of Beckwourth, and north of Loyalton. The three aquifer tests, along with about ten additional aquifer tests performed at different times since 1982, were to be used to determine aquifer characteristics and predict the effects of continued groundwater pumping on groundwater levels in certain areas. Where well interference is a significant problem, possible mitigating measures include development of well spacing criteria for new wells.

Ken Schmidt, the contract geohydrologist for the Sierra Valley Groundwater Management District, prepared an initial report which was included as Appendix C in the 2007 Annual Report.

Additional aquifer testing is proposed in the area of Sierraville to provide additional geographic coverage of the Sierra Valley area. Ken Schmidt has requested that any further testing be conducted in coordination with the Upper Middle Fork modeling work that will be performed by U.C. Davis/California Hydrologic Research Laboratory under a Prop. 50 IRWM grant.

### **Red Clover Monitoring Project**

Sponsor: Plumas Geo-Hydrology

Approved Funding: \$28,000 (A funds)

Expended By 10/1/08: \$24,565

This is a monitoring project with the objective of assessing baseflow augmentation due to stream restoration in a meadow that is affected by an adjacent ground water discharge area. The project focuses on Red Clover Valley, which has been the site of a number of past restoration projects, including an expansive Cal-FED funded project that was completed in the fall of 2006.

Data collection was scheduled to end in September 2007, but the appearance of beaver dams delayed the return of steady stream flow below the project until December 2007. Data collection continued through the summer of 2008 to enable a comparison of pre- and post-project conditions.

### **Clark's Creek Aspen Enhancement and Ecosystem Restoration Project**

Sponsor: Plumas National Forest

Approved Funding: \$84,500 (A funds)

Expended By 10/1/08: \$57,088

The Forum provided funding for the Plumas National Forest to perform the resource surveys and NEPA preparation that is required as a prerequisite to the Clark's Creek aspen enhancement and ecosystem restoration project. The project will enhance the local ecosystem by contributing to water quality, water yield, and water retention.

This project will restore the functioning condition of aspen stands within the Clarks Creek watershed, a tributary to Last Chance Creek. The project focuses on the release and regeneration of aspen communities from conifer suppression and encroachment. Conifers to be removed are within the existing aspen stand and include those trees actively suppressing aspen community productivity and function on 331 acres of land. Coniferous trees bordering aspen stands will also be removed to encourage the extension of the aspen community and improve the health of the existing stand. Timber removal activities will be accomplished through a combination of mechanical and manual thinning methods.

An additional focus of this project is to protect sprouts from excessive browsing. To limit extensive browsing of sprouts, Forest Service specialists and the allotment permittee will design and implement strategic grazing plans. Under these adaptive plans, existing levels of grazing within the project area could continue, but season or duration of use may be altered. When season or duration of use is inflexible, where intensive use has been previously documented, or where retaining any induced sprouting is absolutely critical, temporary exclusion fencing would be constructed. Traditional fencing (such as wire, or log fence) will be utilized when essential protection is required. Nontraditional fencing (strategic jackstraw barriers or guardian log placement) will be used when traditional fence construction is impractical or when high maintenance cost is anticipated.

Initial wildlife, botany, and archeology work was performed in the summer of 2006, with continued NEPA preparation and sale planning during the summer of 2007. The public notice for comment on the draft Environmental Assessment was issued in September 2008, and a final decision on the project is expected in November 2008.

### **Meadow Valley – Silver Creek Restoration Project**

Sponsor: Feather River CRM

Approved Funding: \$51,000 (A funds)

Expended by 10/1/08: \$28,049

This project is the result of a Forum-funded project development grant. The project was intended to restore Silver Creek in Meadow Valley, a major tributary of Spanish Creek. The entire Meadow Valley stream system has degraded, including that portion of Silver Creek located in the valley. The projects includes affecting 250 feet of stream channel upstream of the main treatment section with three large, log jams designed to capture bedload; treating 50 feet of channel bank with boulder vanes, sloped bank and transplanted vegetation at the one bridge within the project reach; treating 60 feet of stream length with a fourth log jam within the actively eroding channel section to capture bedload and maintain channel grade; stabilizing 170 feet of channel bank with boulders placed under exposed tree roots and with transplanted vegetation; treating 320 feet of meander bend streambank with reshaped bank, boulder vanes and transplanted vegetation; treating 550 feet of stream channel with raised riffles and improved scour holes to reconnect the inset channel with a mid-terrace (floodplain) and dissipate energy; and sloping back 110 feet of channel bank and vegetation with transplanted material.

Resources surveys were conducted in the summer of 2007 to meet CEQA requirements, and construction began in the summer of 2008. The project is scheduled to be completed this year.



**Log Jam Constructed on Silver Creek**

## **Meadow Valley – Spanish Creek Restoration Project**

Sponsor: Feather River CRM

Approved Funding: \$147,000 (A funds)

Expended By 10/1/08: \$50,404



**Boulder Vanes Constructed on Spanish Creek**

This project is the result of a Forum-funded project development grant. The project is intended to restore Spanish Creek in Meadow Valley at Spanish Ranch. Spanish Creek in Meadow Valley has been historically manipulated and channelized, and it subsequently degraded. Spanish Ranch Road (County Road 413) forces Spanish Creek to flow under a 43-foot wide bridge, which reduces the stream channel-floodplain width by 90 percent. The constriction is an effective barrier to high flows, causing it to slow and a large backwater area to form. Bedload material quickly deposits within this backwater area, creating large gravel bars that force flows against the opposite, eroding channel banks. The long-term result is the loss of property and a migration of the stream channel around the bridge. The restoration treatments include inserting 12 culverts into the south approach to the bridge to alleviate pressure on the bridge, spread flood flows out onto 100 feet of floodplain, alleviate the backwater effect, and reduce upstream bank erosion and the potential for the stream to end-run the bridge. The project treats 200 feet of eroding outcurve channel bank with boulder vanes, sloped bank, and transplanted vegetation. It also removes 1,200 cubic yards of gravel berms used to further constrict and direct stream flows within a 2,300-foot long section of channel-floodplain upstream of the bridge, opening the section up for improved overbank flows and reducing concentration of flows against the entrenchment banks.

Environmental surveys and reports required for the project were conducted in the summer of 2007, and construction began in the summer of 2008. Construction will be completed this year.

### **Little Last Chance Restoration Project**

Sponsor: Feather River CRM

Approved Funding: \$92,977 (A funds)

Expended By 10/1/08: \$91,837

As reported above in the explanation of revised project budgets, the Little Last Chance Creek restoration project involved construction of rock riffles to reduce erosion, stabilize streambanks, and raise the level of the channels. Construction began in November 2007 and was completed within six weeks. Forum funding was matched by \$467,000 from a Prop. 40 Non-Point Source Pollution grant and upstream work was completed using \$153,000 in Title II funds from the Secure Rural Schools and Community Self Determination Act. A total of five miles of stream channel along Little Last Chance Creek was restored.



**Pre-Project Conditions on Little Last Chance Creek**

The restoration concept was riffle augmentation. The stream channels had been highly manipulated because of the fan location and intensive livestock and hay production. Rather than

a network of often changing, shallow channels across the valley, flow has been restricted into two main channels. A combination of concentration of flow, highway culverts, loss of sediment supply, and intensive agricultural use contributed to the development of the degradation of the channels to an existing depth of three to nine feet. Irrigation diversion ditches and a grade control dam helped reduce the rate of down-cutting, but the depth of the gully captured enough flood flows to thwart most in-gully attempts at control. Two diversion structures were no longer operable, and most of the rest were at risk of failure. Because the channel bottom had not yet reached a resistant layer, without treatment, incision cycles were expected to continue moving upstream, resulting in a deeper and wider gully, making irrigation structure maintenance more difficult and expensive. Riffle augmentation was proposed for over 100 locations to cause flows slightly over 200 cfs in each channel to spill onto the floodplain.



**Little Last Chance Creek After Construction**

NEPA review and pre-project monitoring were completed in the summer of 2007, and construction was completed late in the 2007 season. With financial assistance from other sources, the project was completed without using all of the funding allocated by the Forum, and the Forum approved a request from the Feather River CRM to reallocate funds to other projects that were completed over budget. The remaining funding for the Little Last Chance Creek project will be used for post-project monitoring and to complete a final report.

### **Lake Davis Water Treatment Plant**

Sponsor: U.S. Army Corps of Engineers

Approved Funding: \$588,260 (A funds)

Expended By 10/1/08: \$588,260

This project involves the construction of a new 1.5 million-gallon-per-day water treatment plant at Lake Davis to serve the City of Portola and the Grizzly Lake Resort Improvement District. The original water treatment plant was taken out of service in 1997 when the Department of Fish and Game poisoned Lake Davis in an attempt to eradicate northern pike. Once the lake was recertified as a municipal water source and the City of Portola agreed to return to the lake as its water supply, it was determined that the old water treatment plant was obsolete and needed to be completely replaced.

The U.S. Army Corps of Engineers is the lead agency for the project, and the prime contract was awarded to Engineering and Remediation Resources Group of Concord, California. Construction began in June of 2008, and the water treatment plant is expected to be in operation by July of 2009.

In late 2007, the Department of Fish and Game undertook a second attempt to eradicate northern pike from Lake Davis. Following an extensive water quality testing program, the California Department of Public Health recertified Lake Davis as a municipal water supply in May of 2008, after all chemicals used to treat the lake had reached non-detect levels. Monitoring of the fish population continues, but no pike had been encountered as of the end of the 2008 fishing season.

### **Feather River Watershed Public Awareness Campaign**

Sponsor: Feather River CRM

Approved Funding: \$33,668 (B funds)

Expended By 10/1/08: \$23,493

The *Feather River Watershed Public Awareness Campaign* is a concerted effort to bring water quality and watershed-related information into the homes and minds of residents of the Feather River watershed. By engaging landowners, educators, students and community members in multiple formats for learning about watershed issues, improved understanding and increased participation in stewardship activities will result over time.

Other outreach and education activities have included completing a sediment and erosion control brochure for small-scale construction sites; sponsoring a storm drain stenciling watershed stewardship event in Quincy to celebrate Watershed Awareness Month; publishing a watershed awareness opinion article in the Plumas County newspapers; and producing a map of the Feather River Watershed showing the relationship of the Feather River to the Sacramento River watershed and the rest of California.

Work that remains to be done on this project includes implementing a system to sell the watershed map at various locations in the Feather River region and completing a brochure for landowners.



As part of the public awareness campaign, the Feather River CRM conducted a contest to create a logo to accompany the tagline “Feather River Watershed: Clean Water Starts Here.” In the picture at right from the *Feather River Bulletin*, the three finalists display their entries. The final logo, below, is based on the entry from Dale Keefer of Chester, but it was simplified by a graphic artist to facilitate reproduction.

