Joint Final Report

Ferris Fields Supplemental Project

Funded by Plumas Watershed Forum
and
Plumas Resource Advisory Committee
(Secure Rural Schools and Community Self-Determination Act of 2000 Public Law 106-393)

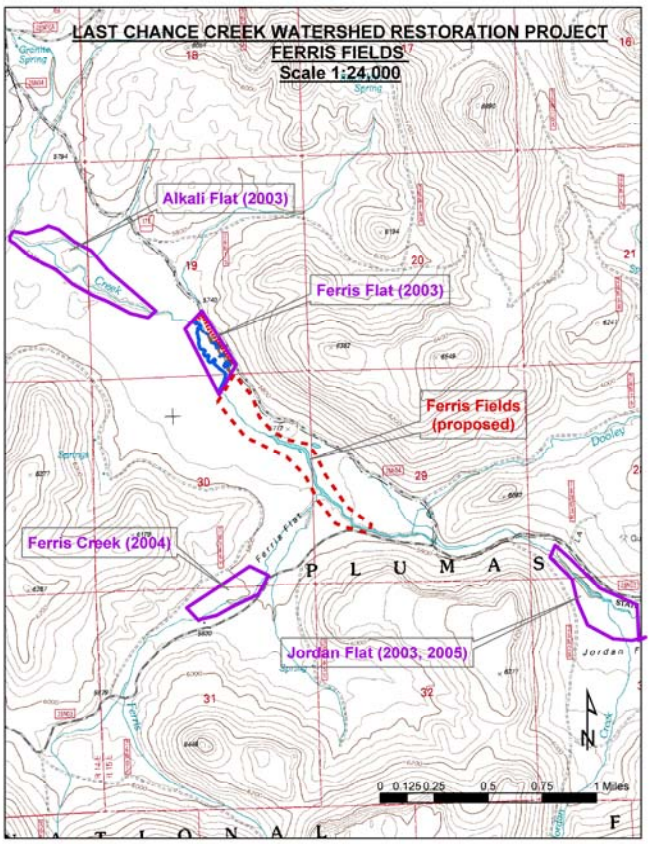
Prepared by
Plumas Corporation
January 2009

Project Description

The goal of the project was restore the full function of the stream channel/meadow ecosystem, while restoring fish passage and habitat as well as improving water quality. As background, the first phase of the project entailed eliminating approximately 2,200 feet of channel length, using the pond and plug technique, on Last Chance Creek at the downstream end of Ferris Fields, as well as 2,500 feet of gully on Ferris Creek above the confluence with Last Chance Creek which is within the project area.

This supplemental project entailed eliminating an additional 4,500 feet of gully on Last Chance Creek using the same technique. The treatment entailed the construction of 18 plugs and 16 ponds on the existing Last Chance Creek gully. Streamflow was restored to the meadow surface into existing remnant channels.

Figure 1. Project location in red (labeled here as "proposed"), and in relation to previously completed projects. The project is located in T.26N. R.15E. Sec. 19, 29, 30.



Re-vegetation work started with the removal and stockpiling of top soil and plants to be disturbed. Completed plugs are then covered with the topsoil and seeded with locally collected native seeds. Rooted plants are re-located with heavy equipment on the plugs and other places likely to receive stress from flowing water. Willow slips were collected by the Plumas National Forest fisheries crew, rooted in a greenhouse, and planted in the project area in fall 2007. Willow slips were planted by the California Conservation Crew in May and October 2008.

The supplemental project also included 2.5 miles of fence repair/replacement around the Ferris Fields pasture. The new fencing alignment changed the potential grazing management in the project area from permanent exclosure to riparian pasture by expanding the boundaries of the fence. The project may be grazed possibly in 2011, which would provide three growing seasons of rest after construction.

Funds provided for the project were as follows:

$47,000	Plumas Co. Resource Advisory Committee
$86,000	Plumas Watershed Forum
$ 8,000	Plumas National Forest (fence materials, willows & planting, assistance with fish relocation during construction, contract administration)

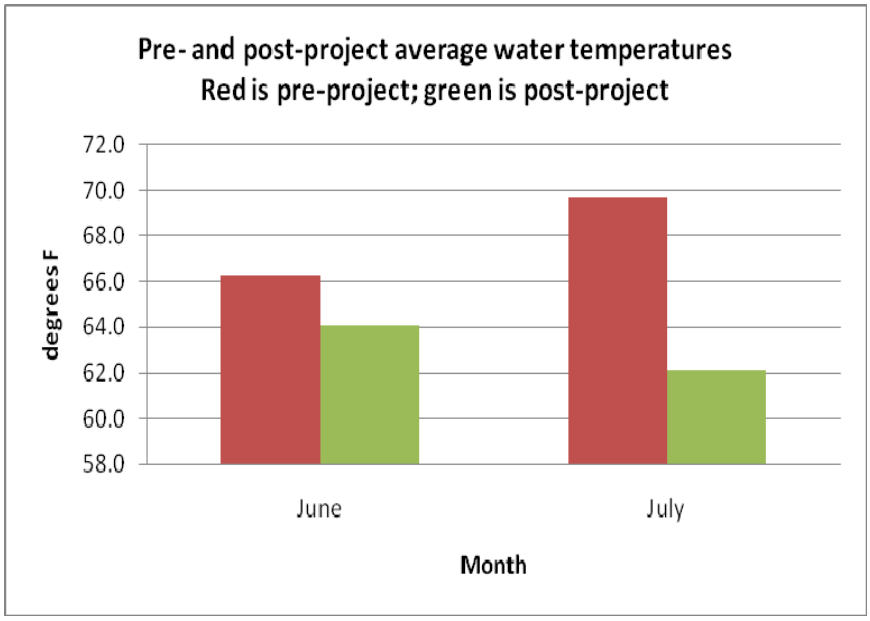
Final construction costs were $21,011 over budget. Cost over-runs were likely due to the presence of an FR-CRM staff trainee on the project, as well as an underestimate of the time required for final design and contract administration.

Project construction began on July 23, 2007 and was completed on August 29, 2007. Out of five bidders, the construction bid was awarded to Grizzly Creek Excavating for $83,700.

Did the project meet purposes of the Monterey Settlement?

Improve retention of water for augmented base flow in streams**:** No flow measurements were taken for this specific project, however, project area flows affect on-going flow measurements at the FR-CRM continuous-recording flow station at Doyle Crossing. However, due to the incremental increases in flow in this length of channel, and the distance to the station, project-induced changes in flow are not expected to be discernable at the Doyle Crossing station.

Improve water quality and streambank protection**:** Water temperatures were measured approximately 500 feet below the project in 2007 and 2008 in July and August. The following chart shows a decrease in water temperatures of 2.2 degrees in June and 7.6 degrees in July.



Due to low precipitation, sedimentation data were not collected, but the following sets of photos display an elimination of raw banks due to the project. Pre-project photos on the left were taken in July 2007. Post-project photos on the right were taken in May 2008 before the first growing season.


Note the gullied channel on the far right in the left photo. In the post-project photo, the channel is on top of the meadow, and the sagebrush is dead.

Improve upland vegetation management**:** No data were collected.

Improve groundwater retention in major aquifers**:** No groundwater measurements were taken in association with this project, however, numerous groundwater wells associated with similar projects in the Last Chance Creek drainage show an unequivocal improvement in groundwater retention and release as a result of projects of this type.

Did the project meet the purposes of Public Law 106-393 legislation?

Implements stewardship objectives that enhance forest ecosystems: The pre-project concrete check dams in the project area posed a fish passage barrier, so that fish could not migrate past the project area into upstream forested areas. The project replaced concrete and sheetpile check dams with plugs, and re-directed water into meadow-elevation remnant channels, thus eliminating fish barriers, as shown in the pre- and post-project photos below.


Restore and improve land health: By restoring the channel to meadow elevation, highly productive riparian habitats can expand beyond the confines of the gully, to the entire width of the valley bottom.

Restore water quality:
See water temperature discussion under the second Monterey Settlement purpose statement.

Lessons learned
The hobo temp placed above the project area in 2007 was lost, most likely due to beaver. To avoid data loss, two hobo temps should be placed in areas where beaver are known to occur.

Continued Monitoring
A pair of sandhill cranes were observed in the project area in 2008. Perhaps Forest Service personnel or the Plumas Audubon Society could assist with avian monitoring in the Last Chance project area.

Plug revegetation should be monitored, especially where seasonal overland flows drop over the plugs. Minor incisions should be monitored. Noxious weed monitoring and hand removal was conducted in 2008, and will continue through 2010. Some bull thistle were removed. Mullein, a non-native is abundant in the project area. Some, but not all, were removed. Mullein is not considered noxious, and is moving into other areas of the Last Chance drainage along roads, etc.

It would be interesting to monitor the evolution of channel morphometry throughout the Last Chance Creek project area, however funding for post-project long term monitoring of this type has not yet been available.