

**CLARKS CREEK:
Pond-and-plug technique restores high water table in meadow**

PLUMAS COUNTY, CALIFORNIA



Source: Rune Storesund, 2006

What was done and why?

Clarks Creek drains a 48-square km (18.5 sq mi) watershed that receives 99cm (39in) of annual precipitation, predominately as snow. A geomorphic reconstruction of land use history indicated that a cattle trail during historic overgrazing (~1900) likely caused channel downcutting. In addition to incision, the existing shallow meadow water table lowered and subsequently converted the floodplain from mesic (moist) site plants to a xeric (dry) site vegetative community. The Clarks Creek watershed consists primarily of decomposed granite with a high sand sediment supply.

In 1990, the Plumas National Forest began restoration efforts on Clarks Creek with the development of the Clarks 2000 plan, which entailed road closure/rehabilitation, channel stabilization, and grazing management changes throughout the watershed. However, the entrenched channel persisted and resisted restoration efforts. So long as flows were confined to the channel and could not spill out onto the meadow, even moderate floods

contributed to continued channel instability, erosion, and habitat loss. The Clarks Creek Project obliterated 1,067 meters (3,500ft) of gully, while redirecting stream flow into a well-defined remnant channel throughout the meadow. The gully was eliminated by excavation and placement of approximately 17,585 m³ (621,000 cubic feet) creating ten small ponds and ten plugs (Feather River Coordinated Resource Management, 2001b). Several hundred mature willow plants and meadow sod mats were transplanted out of the gully prior to burial or inundation. These transplants were placed in high stress areas of the remnant channel and onto newly-constructed plugs, sustained during the construction period by irrigation from a water truck.

Who was involved?

Collaborators included Plumas National Forest, the Feather River Coordinated Resource Management Technical Advisory Committee, the grazing permittee, Plumas County Department of Water Resources, the State Water Resources Control Board, and the Regional Water Quality Control Board.

Where can I see the project?

The project is located in the Plumas National Forest at -120.507609 N 40.136141 W. Guidance on how to access the site should be requested from the Feather River Coordinated Resource Management, Plumas Corporation, at (530) 283-3739.

Why was this a model project?

Monitoring on Clarks Creek includes wildlife monitoring, groundwater wells, long-profile survey with accompanying features map, and aerial and ground photography. Water levels in the groundwater monitoring wells were higher in the post-project treatment wells than at any time prior to treatment. Changes in vegetation at the wells included the appearance of willow, forbs, and grasses (all naturally occurring meadow plants) and a decrease in sage (a plant not tolerant of high water conditions).

For more information on this restoration project, please contact:

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