

## Briceland-Thorn Road stream crossing upgrade, Mendocino County, California

Title: PWA implements a successful upgrade of a stream crossing culvert on a paved county road in the Mattole River watershed, Mendocino County, California.

Clients: Save the Redwoods League and Sanctuary Forest, Inc.

Location: Briceland-Thorn Road, Mendocino County, California

**Project Details:** In this public road project, PWA designed and provided technical oversight for culvert replacement and upgrading on a paved county road. Treatment of active erosion at this deteriorating stream crossing led to an immediate benefit to water quality and fish habitat protection in the upper Mattole River watershed. This tributary of the Mattole River drains property owned by Save the Redwoods League near the Four Corners area upstream from Whitethorn, CA. Stream crossing treatments - The existing undersized culvert was removed and replaced with a new 36" diameter culvert. Aggraded sediment stored in the channel 80 ft upstream of the culvert inlet was excavated and hauled to an off-site spoil disposal location. The freshly excavated channel was then armored with rock to prevent headcut migration. On low speed dirt or gravel roads, a critical dip is generally built into the down-road hinge line of a stream crossing as a way of preventing stream diversion. On a paved public road where vehicle speeds tend to be higher, a critical dip could create a driving hazard. As an alternative, we incorporated an emergency overflow pipe in the design of the upgraded stream crossing to avert stream diversion or road overtopping that could result from plugging of the primary stream-crossing culvert during high flow events. Working on public road projects has its own set of unique challenges compared to private forest and ranch road projects. Not only must the stream crossing perform as expected during periods of flood flow, but construction standards for the project are more explicit and counties often have specific performance criteria and methodologies that must be followed. Working on public roads typically requires close attention to public safety standards, such as traffic control and securing the work site during non-work hours and weekends.