

## Lion Creek Fish Passage Improvement Project

This project improves fish access for adult and juvenile steelhead to 9.5 miles of upstream habitat in Lion Creek, which is a tributary to San Antonio Creek in Ventura County. The project is collaboration between private, non-profit, local, state, and federal agencies. It includes demolition of an existing low water crossing, which was replaced with an 85 ft long X 13.75 ft wide Railspan steel flatcar bridge. Steelhead are now able to access medium to high quality habitat in the upper reaches of Lion Creek, thereby facilitating migration for spawning adults and over-summering juveniles.

Steelhead trout in the Ventura River system have come under extreme pressure as a result of human activities. The construction of the Matilija and Casitas Dams in the 1940's and 1950's, respectively, cut off miles of historic steelhead spawning areas. Since that time human stresses on the river system have increased exponentially with booming populations, increased water withdrawals and degradation of water quality and reduced and degraded habitat. As a result of these conditions the numbers of steelhead have plummeted. San Antonio Creek is the largest tributary to the Ventura River and has important habitat value to the federally endangered Southern steelhead. Southern steelhead have historically been present in the watershed and the confluence of San Antonio Creek and Lion Creek was a popular fishing hole for steelhead in the 1940's. More recently adult steelhead were identified at the confluence of San Antonio and Lion Creek in July 2003 and young of the year were spotted in August 2004.



Lion Creek, the first tributary on San Antonio Creek, is a sub-watershed (8 km<sup>2</sup>) of the Ventura Watershed (228 km<sup>2</sup>). It originates in the Upper Ojai Valley and drains through Lion Canyon to San Antonio Creek. Lion Creek is ephemeral in the lower reach in some years, with perennial water in the upper reaches of the canyon. However, the creek is perennial for a number of years following large rain years (e.g., 2005). Steelhead and California red-legged frogs have been recorded at the confluence of San Antonio and Lion Creeks.

The project goal was to increase migration opportunities for the federally endangered steelhead trout by replacing an existing concrete culvert bridge with a railroad car bridge that is above the 100-year flood level. The crossing that was removed was a concrete structure with three undersized 18" culverts which, under certain flow regimes, is a barrier to fish passage. By removing this crossing and replacing it with a free span bridge, steelhead (*Oncorhynchus mykiss*) adults and juveniles will have unimpeded access to an additional 9.5 miles of habitat.



**New rail span bridge being installed over Lion Creek**

Project Partners included the California Department of Fish and Game, National Fish and Wildlife Foundation, US Fish and Wildlife Service, California Conservation Corps, and Ventura County Resource Conservation District, among others.