Fish Passage Improvement at Budiselich Flashboard Dam

The primary purpose of this project was to remove a migration impediment to Central Valley fall-run Chinook salmon and Central Valley steelhead trout in the lower Calaveras River of San Joaquin County, California. A secondary purpose of the project was to serve as a model to demonstrate that agricultural, governmental, environmental, and education interests can work cooperatively together to foster sustainable fish populations without adversely affecting agricultural and municipal water supplies or land access. Collaborators include the Stockton East Water District, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Department of Water Resources (DWR), and California Department of Fish and Game. This project was part of a larger effort that addresses numerous impediments to fish passage on the lower Calaveras River. Improving passage at these structures will increase opportunities for fish to access quality spawning and rearing habitat.

The Budiselich Flashboard Dam is located in the Mormon Slough/Stockton Diverting Canal channel, which serves as the main route for the lower Calaveras River. DWR prepared engineering plans to retrofit the dam. The removed structure was a concrete dam that spanned the length of the low flow portion of the Stockton Diverting Canal. The dam was perpendicular to flow, 100 feet wide, and had 8-foot high abutments on each side. There was a concrete apron, and the downstream face of the dam was protected by riprap that extended at least 50 feet downstream. The structure was a significant barrier to upstream fish migration because of shallow flow depths over the dam and the 6-10% slope of the channel (much of it over riprap) at the downstream end of the apron. The shallow flow depths and steep slope significantly impaired upstream migration for all species and life stages during flows less than 200 cfs. The proposed design for improving fish passage at the structure included a rock ramp fishway and series of boulder weirs. These passage improvements increase depth over the dam, overcome the steep channel slope, and achieve acceptable velocities.