

# Study Points Way to Steelhead Restoration in Arroyos

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A 382-page historical study of the Alameda Creek watershed shows how much fish populations have declined in the creek and its tributaries. The study points to what water and flood control agencies can do to try to improve the future for such fish species as steelhead trout.

The Alameda Creek Watershed Historical Ecology Study was prepared by the San Francisco Estuary Institute (SFEI). The authors pored over old maps and records, some dating back 200 years, to determine the condition of streams, arroyos and Bay marshes over the years to determine the impact of changes from development that have reduced fish populations throughout the watershed.

By looking at the past, and the impact of human intervention in the natural environment, it is possible to design projects in the future that won't have such far-reaching negative impacts on fish populations, says the study. Further, there are measures that could be taken that could restore some fish populations to Alameda Creek and its tributaries.

The streams and arroyos that run through the Valley feed into the main channel of Alameda Creek near Sunol. The creek runs through Niles Canyon, into Fremont and down to the Bay.

Jeff Miller, director of the Alameda Creek Alliance, said the study is a "useful tool for us trying to restore streams or other habitat. We can see what it once looked like. Obviously, we cannot go straight back to what was there, but we can see how the creek functioned, how it was connected to wetlands, what cold-water fish needed in order to survive year-round, and where there are opportunities to restore that kind of habitat."

The study was funded primarily by the Alameda County Public Works Department and the San Francisco Public Utilities Commission (SFPUC). County public works has jurisdiction over the flood control channels. Its changes to arroyos over the decades have impeded fish migration and feeding, says the report.

SFPUC controls thousands of watershed acres at the mainstream headwaters of the creek. The SFPUC also built Calaveras Dam, which has been a major impediment to steelhead spawning since its construction in 1925.

Zone 7 Water Agency contributed staff time and knowledge, and some funding to the study, as did several other participating agencies.

SFEI senior scientist Robin Grossinger, who worked on the study, said that normally such a study might cost \$1 million. However, because of the data contributed by participating agencies and the SFEI staff of 50 employees, the price tag came to about \$450,000.

Having reliable data will save all of the participating agencies a great deal of money in the future, according to Grossinger. They will be able to be more accurate in planning flood control and water supply projects.

Zone 7 integrated planning manager Carol Mahoney confirmed that the new document will be a money-saver. Zone 7 needs to look at long-term management of a flood-control arroyo, and crafting a good plan is paramount. "It's very expensive, if you choose the wrong plan or configuration," said Mahoney.

Besides the financial aspect in planning, Zone 7 must also look at the ecological aspects. In its Stream Management Master Plan (SMMP), the agency is committed to recreation as one of the uses of its channel areas. Designing nature into the project, instead of using the old-style concrete channels, improves this aspect.

The study cites a 1998 report that mentions the presence of Steelhead in Niles Canyon and "several small intermittent and perennial tributaries in the Fremont-Livermore hills." Zone 7 already uses fish ladders in two of its arroyos, in order to enable any future upstream steelhead migrations, if they occur.

One thing that has discouraged steelhead migration has been the lack of shade trees near the creeks. Zone 7 is restoring part of the Arroyo Mocho near Stanley Boulevard. The pilot project will plant trees and shrubs in an effort to make the waters more fish-friendly.

Mahoney said that Zone 7 has contracted with SFEI for a further study of the Livermore Valley.

"We thought it would be great to go in-depth for information on the Livermore Valley. It could provide our Stream Management Master Plan with new data. By looking at the historical ecology, we can see how to operate the streams of the future," said Mahoney.