Evaluation of the Effectiveness and Success of the Forester Creek Improvement Project (Santee, California)

What is it?

Many rivers and streams in California are degraded and cannot fulfill the assigned beneficial uses. Restoration projects are typically conducted to reverse a past degradation, mitigate anticipated damage in a stream system, or some combination thereof. In 2006, the Forester Creek Improvement Project ($36 million), one of the largest restoration projects in the San Diego area, took place at a 2 km section of the stream historically subject to flooding. The main goals of the restoration were to (1) improve water quality, (2) improve flood control, and (3) improve physical habitat and biodiversity.

Post-project monitoring of the site was conducted in 2013 to evaluate if the Forester Creek Improvement Project met the goals for improving water quality, physical habitat, and biodiversity. San Diego Water Board staff conducted post-project monitoring and analyzed Forester Creek data from four independent sources in order to assess the success of the project in the context of the restoration goals.

Forester Creek restoration site during 2008 Post Restoration monitoring and during 2012 SWAMP monitoring

The results showed that the Forester Creek Improvement Project can only partially be considered a success based on the project's goals. While the planting and maintenance of the mitigation site increased the wetland and riparian habitat, it only improved those chemical metrics primarily associated with wetland and riparian plantings, namely pH, water temperature, and possibly some nutrient levels. No improvement, however, was found in levels of total

dissolved solids or fecal coliform concentrations. Sediments were also found to contain highly toxic concentrations of pyrethroid pesticides. Despite the extensive restoration efforts, no significant improvement was found for in-stream physical habitat scores at stream monitoring sites. Insufficient data was available to evaluate stream bioassessment scores using benthic macroinvertebrates, though overall scores remained in mostly poor condition, likely due to habitat condition, concentrations of total dissolved solids, and observed toxic concentrations of pesticides in sediment.

Why is it important?

Several stream and river restorations are being conducted in California in order to restore physical, chemical, and biological integrity. It is crucial to establish adequate goals for these restoration projects and to develop monitoring requirements for evaluating their success. In order for restoration projects to meet their full potential, actions in other regulatory programs beyond the scope of the project, such as stormwater, are also often needed to address issues which stream restoration alone cannot resolve.

How will this information be used?

The information from this study will be used by decision makers, water quality managers, and the public for improving restoration projects. It will contribute to the projects' associated monitoring requirements and ultimately their successes. The information from this study will also be published for the scientific community.

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