

San Diego Water Board Project to Assess Non-Perennial Streams
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The health of the watershed depends on the health of all streams, including non-perennial streams. Non-perennial streams provide numerous ecosystem services including watershed and landscape hydrologic connections, water supply protection and water-quality filtering, wildlife habitat and movement/migration corridors, sediment transport, storage and deposition, groundwater recharge and discharge, vegetation community support, and nutrient cycling and movement. The large extent of non-perennial streams in the San Diego region (and in California as a whole) makes their inclusion into assessment programs essential if watershed managers want to understand the health of their watersheds. Although non-perennial streams comprise the majority of stream miles in the San Diego region, they are often excluded from monitoring and assessment programs because it is unclear if existing assessment tools can be used to accurately identify and evaluate condition. This means that many stream surveys are incomplete, and regulatory programs (such as National Pollutant Discharge Elimination System [NPDES] or Clean Water Act section 401 water quality certifications) have limited ability to evaluate stream health.

Non-perennial streams are defined as streams that lack surface flow for at least several days per year in most years. This definition covers a large variety of streams, from ephemeral washes and headwaters that flow for only a few hours after rain events, to those with sustained flows lasting nearly all year.

The San Diego Water Board has secured funding to continue to address non-perennial streams in the San Diego region. The proposed work will be funded by contract funding from the State Water Resources Control Board (\$180,000) and by regional funds from the Surface Water Ambient Monitoring Program (\$120,000). The project will be conducted in collaboration with the Southern California Coastal Water Research Project (SCCWRP) and the Department of Fish and Game (DFG). Dr. Lilian Busse, Staff Environmental Scientist at the San Diego Water Board, will be the project and contract lead.

The project will: (1) develop an approach to characterize flow regimes at non-perennial stream sites, (2) monitor non-perennial streams in reference conditions to capture the full gradient of natural flow regimes, and (3) identify hydrologic stressors of non-perennial streams in impaired conditions. The following products will be prepared for the proposed project: (1) An updated GIS-based hydrologic map showing locations of non-perennial streams; (2) a report characterizing non-perennial streams, and (3) recommendations for broadly applicable tools/assessment methods to monitor and evaluate the condition of non-perennial streams.

Work on non-perennial streams will also advance top-priority statewide policies for Biological Objectives and Wetlands and Riparian Area Protection by informing future extensions of these policies to non-perennial streams. It will also help protect non-perennial streams under the section 401 water quality certification and municipal storm

water programs in the San Diego region because the majority of streams impacted under these programs are non-perennial.

Previous Proposition 50 funding supported a project on non-perennial streams in southern California conducted by SCCWRP and DFG. The goals of that project were (1) to evaluate the extent of non-perennial streams in the region, and (2) to examine the applicability of the Southern California Index of Biotic Integrity (IBI) for use in non-perennial streams. Results from this project showed that non-perennial streams comprise 73 percent of the streams in the San Diego region. These streams were found to be extensive in open space and agricultural settings, whereas many urban streams appeared to have been 'perennialized' (converted to flow year-round), mostly due to dry-weather urban runoff. The study also illustrates that non-perennial streams can be incorporated into routine bioassessment programs with little modification of tools. The study, however, only included 12 non-perennial stream sites, and did not include the full diversity of non-perennial stream types, such as streams with short flow durations; therefore additional studies are necessary. The current project implements several recommendations from this study.

The Technical Report on the previous non-perennial stream project can be accessed here: <ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/>