

# Water Quality Report Card

## Nutrients in Rainbow Creek Watershed

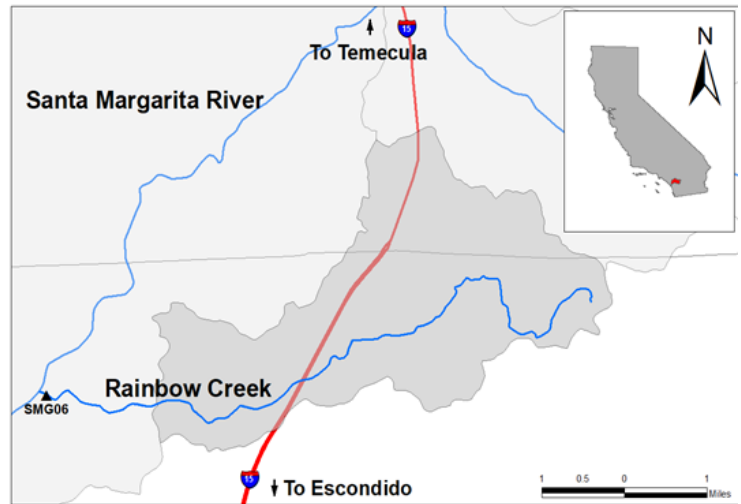
<b>Regional Water Board:</b>	San Diego, Region 9
<b>Beneficial Uses Affected:</b>	COLD, RARE, REC-1, REC-2, WILD
<b>Implemented Through:</b>	Total Maximum Daily Load (TMDL)
<b>Effective Date:</b>	2006
<b>Attainment Date:</b>	2021

<b>STATUS</b>	<input checked="" type="checkbox"/> Improvement Needed
<b>Pollutant Type:</b>	<input checked="" type="checkbox"/> Point Source <input checked="" type="checkbox"/> Nonpoint Source
<b>Pollutant Source:</b>	Urban Storm Water Runoff Onsite Wastewater Treatment Systems Non-Point Source Runoff Irrigated Crop Production

### Water Quality Improvement Strategy

Rainbow Creek was listed on the Clean Water Act 303(d) List in 1996 as an impaired waterbody due to eutrophication (excessive algae growth which can lead to mortality in aquatic life from dissolved oxygen depletion in water). The listing was modified in 2002 to reflect impairment due to total nitrogen (TN) and total phosphorus (TP). These nutrients exceeded the water quality objective for biostimulatory substances, threatening aquatic life beneficial uses (RARE, COLD, and WILD). Excessive algae growth and nuisance conditions also threaten contact and non-contact water recreation beneficial uses (REC-1 and REC-2). Major sources of excess nutrients into Rainbow Creek include municipal storm water runoff from residential and urban areas, agricultural discharges from irrigation return flows, and septic tank disposal systems. The [Total Maximum Daily Load \(TMDL\) for Rainbow Creek](#) sets annual load allocations and waste load allocations for TN and TP, as well as a compliance schedule by December 31, 2021. The Basin Plan sets Water Quality Objectives (WQOs) of 1.0 mg/L of TN and 0.1 mg/L TP to protect aquatic life from the adverse effects of excess nutrient loading.

### Rainbow Creek Watershed Map

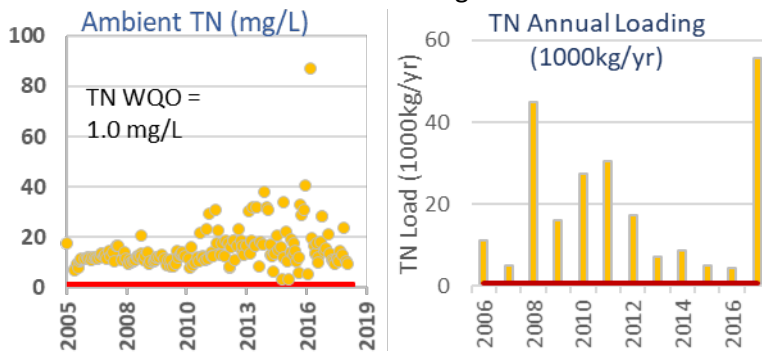


### Water Quality Outcomes

- Annual loads of both TN and TP exceed TMDL waste load allocations for Rainbow Creek, which are 796 kg/year for TN and 41 kg/year for TP.
- Nutrient loading correlates with rainfall.
- Ambient TN and TP concentrations have continued to exceed regional WQOs in wet and dry years.
- TN data show greater variation and some higher concentrations beginning in 2011. TP concentration data have a scattered pattern.
- California Stream Condition Index (CSCI) scores upstream of SMG06 have decreased over time
- Significant improvement is needed to meet TMDL requirements for beneficial uses restoration in Rainbow Creek.

### TMDL Waste Load Allocations/Load Allocations

Estimated Annual Loading at SMG06



### California Stream Condition Index (CSCI) Scores in Rainbow Creek

