

# Water Quality Report Card

## Nutrients in Machado Lake

**Regional Water Board:** Los Angeles, Region 4

**Beneficial Uses Affected:** WARM, WILD, RARE, WET, MUN, REC-1, REC-2

**Implemented Through:** MS4 Permit, NPDES Stormwater Permits, Memorandum of Agreement

**Effective Date:** March 11, 2009

**Attainment Date:** September 11, 2018

**STATUS** Improvement Needed

**Pollutant Type:** Point Source Nonpoint Source

**Pollutant Source:**

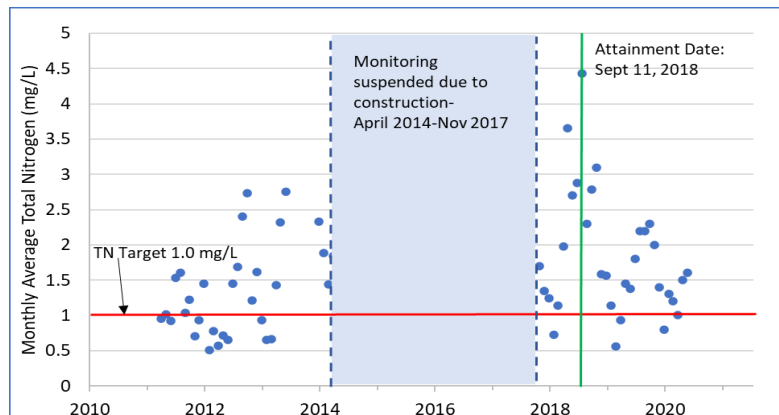
- Urban Stormwater Runoff
- Non-point Source Runoff

### Water Quality Improvement Strategy

Machado Lake is in southern Los Angeles County near Los Angeles Harbor. Excessive loadings of nitrogen and phosphorus to Machado Lake cause eutrophic effects, including excessive algae growth, odors, and low dissolved oxygen, and impair beneficial uses. These are identified on the federal Clean Water Act 303(d) list. The Los Angeles Regional Water Quality Control Board (Water Board) approved the [Machado Lake Nutrient TMDL](#) on May 1, 2008 to address these impairments. Point sources to the lake include stormwater discharges from the municipal separate storm sewer system (MS4), California Department of Transportation (Caltrans), and construction and industrial sites. The major nonpoint source of nutrients to the lake is internal through nutrient flux from sediments. The TMDL assigns waste load allocations (WLAs) to the point sources and load allocations (LAs) to the nonpoint sources. The implementation schedule required WLAs and LAs to be met by September 11, 2018 and set interim targets to be met by March 11, 2014. The WLAs are implemented through stormwater permit effluent limitations and the LAs, through a Memorandum of Agreement between the Water Board and the City of Los Angeles, owner of Machado Lake. The MS4 permittees split into three watershed management groups and developed their Enhanced Watershed Management Programs (EWMP) to implement their WLAs. Monitoring is conducted at two receiving water stations in Machado Lake to assess water quality.

Bi-weekly sampling at Machado Lake was suspended from April 2014 through September 2017 for the construction of the Machado Lake Ecosystem Rehabilitation Project. The Project is currently undergoing an optimization phase to ensure the efficacy of the Lake's Best Management Practices.

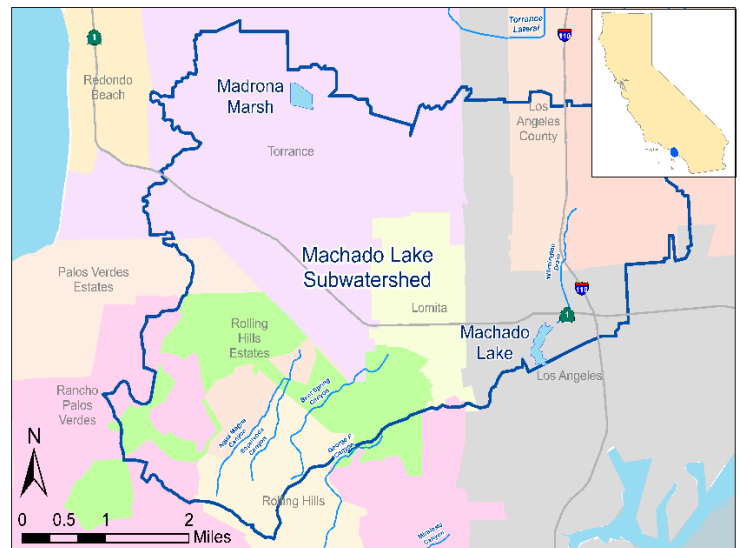
### Monthly Average Total Nitrogen in Machado Lake



### Machado Lake TN and TP WLAs and LAs

Deadlines	Monthly Average Total Phosphorus (mg/L)	Monthly Average Total Nitrogen (mg/L)
3/11/2009	1.25	3.50
3/11/2014	1.25	2.45
9/11/2018	0.10	1.00

### Machado Lake Watershed Map



### Water Quality Outcomes

- Data collected after September 11, 2018 show that TN and TP measured at two receiving water monitoring sites in the lake and three outfalls did not meet final TN and TP WLAs most of time.
- The City of Los Angeles plans to replace lake water with highly treated water from Terminal Island Water Reclamation Plant, which will result in achieving the final nutrient WLAs.
- Permittees may be deemed in compliance with the WLAs by participating in a Lake Water Quality Management Plan (LWQMP) and achieving the WLAs for Machado Lake. The City of Los Angeles has entered a Memorandum of Agreement with the Regional Board to implement a LWQMP.