

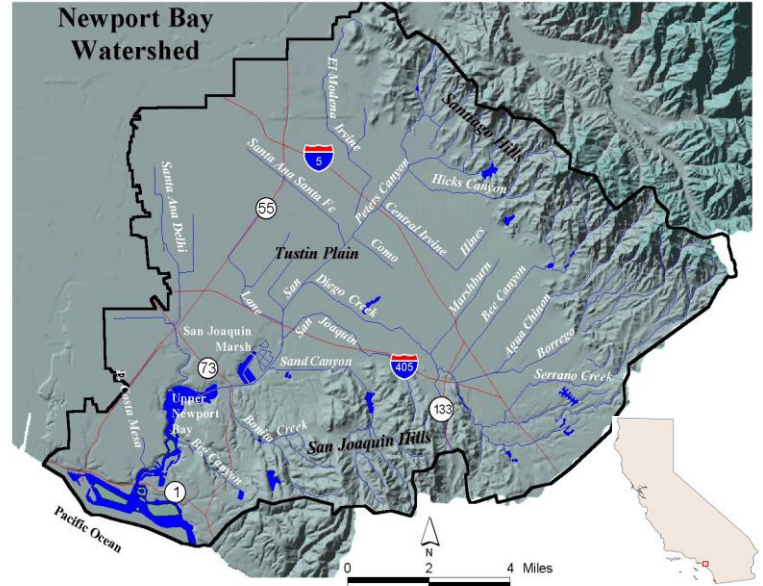
| Total Maximum Daily Load Progress Report | | San Diego Creek and Newport Bay Selenium TMDL | |
|--|---|--|--|
| Regional Water Board | Santa Ana, Region 8 | STATUS <input type="checkbox"/> Conditions Improving <input type="checkbox"/> Data Inconclusive <input checked="" type="checkbox"/> Improvement Needed <input type="checkbox"/> TMDL Achieved/Waterbody Delisted | |
| Beneficial uses affected: | RARE, SPWN, WARM, WILD | | |
| Pollutant(s) addressed: | Selenium | | |
| Implemented through: | General and individual groundwater dewatering and clean-up permits, MS4 permit , Non-regulatory actions | | |
| Approval date: | June 14, 2002 | | |

TMDL Summary

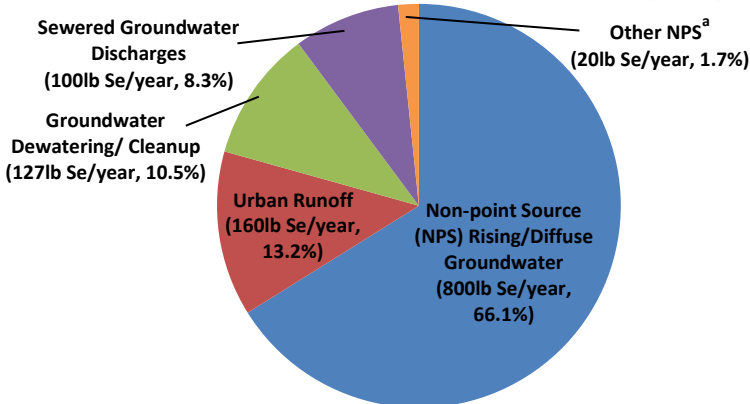
Selenium (Se), an essential nutrient that can be toxic to waterfowl and aquatic life at high levels, is naturally present in the Newport Bay watershed. However, urbanization and hydromodification have increased Se concentrations in surface water, primarily from nonpoint source rising groundwater and groundwater dewatering projects. To address increasing Se concentrations, a [technical TMDL for Se in San Diego Creek and Newport Bay](#) was developed by the [U.S. EPA, Region 9](#) as part of the [San Diego Creek/Newport Bay Toxics TMDLs](#). The TMDL was approved by the U.S. EPA in June 2002.

The TMDL established Se targets based on the California Toxics Rule (CTR) Se in fresh and saltwater criteria. However, Se enters the food web primarily via diet, not water. As a result, measurement of Se concentrations in water cannot provide adequate information on bioaccumulated concentrations in aquatic species. To address this limitation, the Santa Ana Regional Water Board is revising the TMDL to establish (1) numeric targets for Se in fish and bird egg tissue, (2) an implementation plan and (3) a compliance schedule. The new TMDL is expected to be adopted by the Regional Board in 2014.

Newport Bay Watershed



Selenium Sources and Estimated Annual Loads (2009)

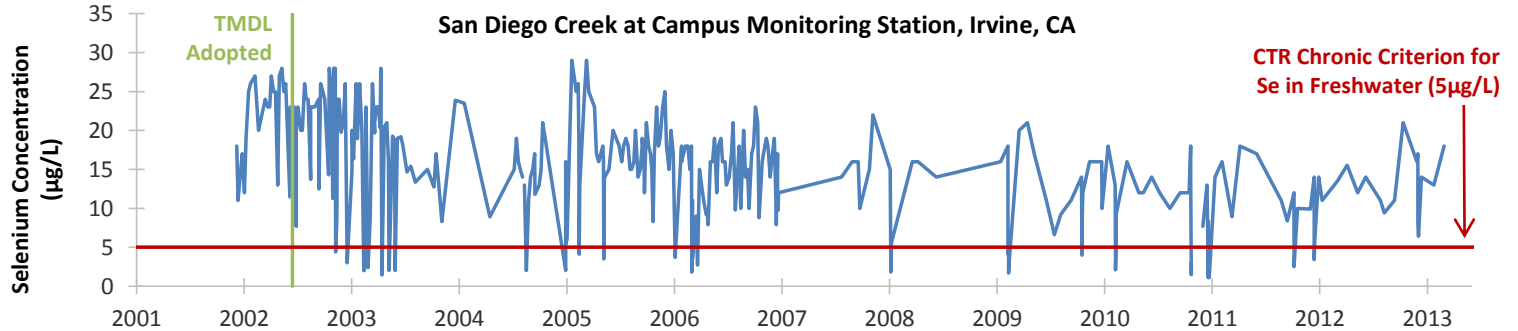


Source: [Sources and Loads for Selenium in the Newport Bay Watershed](#) Table 9. (2009 Draft).
^a“Other NPS” includes agriculture discharges, open space, and atmospheric deposition.

Water Quality Outcomes

- Water quality data show that Se concentrations in San Diego Creek & other freshwater bodies in the watershed consistently exceed the CTR Chronic Criterion for Se in freshwater.
- Since 2004, a watershed stakeholder group, the [Nitrogen and Selenium Management Program](#) (NSMP), has conducted studies to assess Se sources, loads, reduction options, and potential impacts in fish and wildlife.
- The construction and operation of a [field-scale pilot](#) Se removal system and diversion of groundwater discharges to the sanitary sewer have removed 135 lbs Se/yr (15% of Se removal called for in the TMDL).
- A revised TMDL that will better address Se bioaccumulation in waterfowl and aquatic species is currently under development.

San Diego Creek Water Quality



Note: Se concentrations do not account for changes in stream flows (e.g. measured Se concentrations in 2005 were relatively lower due to higher stream flows).