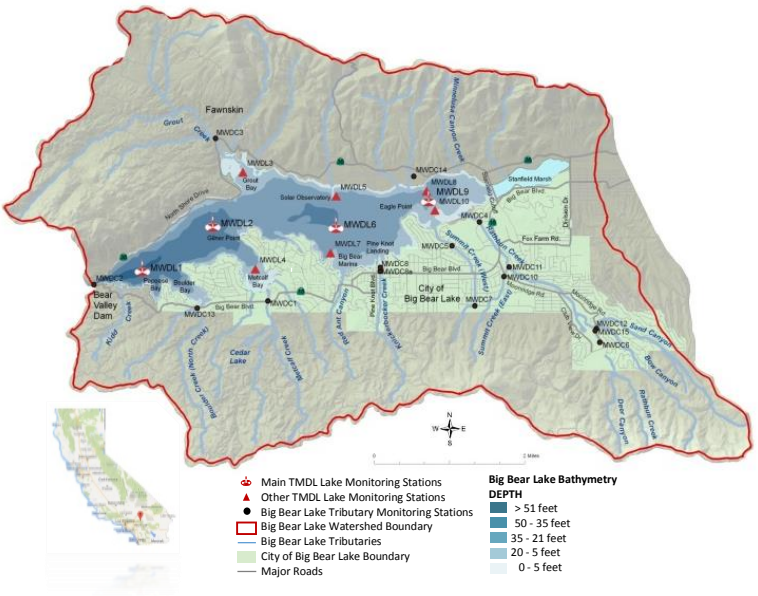
Water Quality Report Card		Nutrients in Big Bear Lake
Regional Water Board:	**Santa Ana, Region 8**	**STATUS** ☐ Conditions Improving ☐ Data Inconclusive ☑ **Improvement Needed** ☐ Targets Achieved/Waterbody Delisted
Beneficial Uses Affected:	REC-1, REC-2, WARM, COLD, WILD, RARE	
Implemented Through:	MS4 Permit, WDR, NPS Program	
Effective Date:	September 25, 2007	
Attainment Date:	2015 (dry), 2020 (wet)	**Pollutant Type:** ☑ Point Source ☑ Nonpoint Source ☑ Legacy

Water Quality Improvement Strategy

Big Bear Lake, located within the San Bernardino mountains in southern California, has a 37 square mile watershed. Approximately 80 percent of the watershed is comprised of forest lands managed by the U.S. Forest Service (USFS). Discharges from forest lands, as well as discharges from urban and ski resorts, constitute the primary external sources of nutrients. Internal recycling of nutrients from the lake sediment is also a significant nutrient source. Nutrient enrichment has resulted in the growth of aquatic plants, which impair fishing, boating, and swimming uses of the lake, and has led to periodic algae blooms and depletion of oxygen levels. To address the impairment, Region 8 adopted the Nutrient TMDL for Dry Hydrological Conditions for Big Bear Lake. The TMDL established total phosphorus (TP) and chlorophyll-a numeric targets to be met in 2015 for dry hydrologic conditions, and in 2020 for all other hydrologic conditions. The TMDL also established TP waste load and load allocations for point and nonpoint sources, respectively (specified as dry hydrologic season annual averages). The allocations are incorporated into existing permits and new permits, as appropriate. To address the internal recycling of nutrients, the TMDL requires dischargers to develop a plan and implement an In-Lake Sediment Reduction Plan.

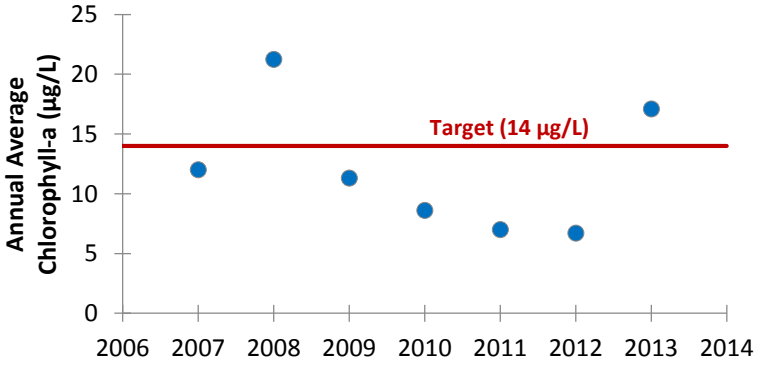
Big Bear Lake Watershed

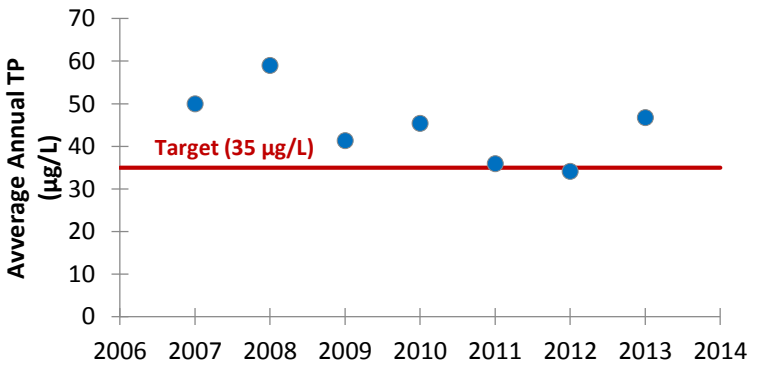


Water Quality Outcomes

- *Water quality data show improvement in lake chlorophyll-a concentrations. The 2009-2012 annual averages were below the numeric target; however, the 2013 annual average exceeded the numeric target.*
- *Water quality data show improvement in lake TP concentrations; however, TP concentrations continue to exceed numeric target.*
- *Municipal MS4 dischargers have implemented strategies (e.g., BMP implementation and macrophyte control) to meet numeric targets.*
- *As USFS has undertaken no activities to reduce nutrient discharges from forest lands, Region 8 has initiated development of WDR for the USFS to obtain their compliance with TMDL requirements; WDR expected to be adopted in 2015.*

Big Bear Lake Water Quality





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