Water Quality Report Card

Phosphorus in Indian Creek Reservoir

Regional Water Board: Lahontan, Region 6

Beneficial Uses Affected: COLD, COMM, REC-1, REC-2

Implemented Through: CWA 319(h), Nonpoint Source Grant

Effective Date: July 1, 2003

Attainment Date: 2024

STATUS Improvement Needed

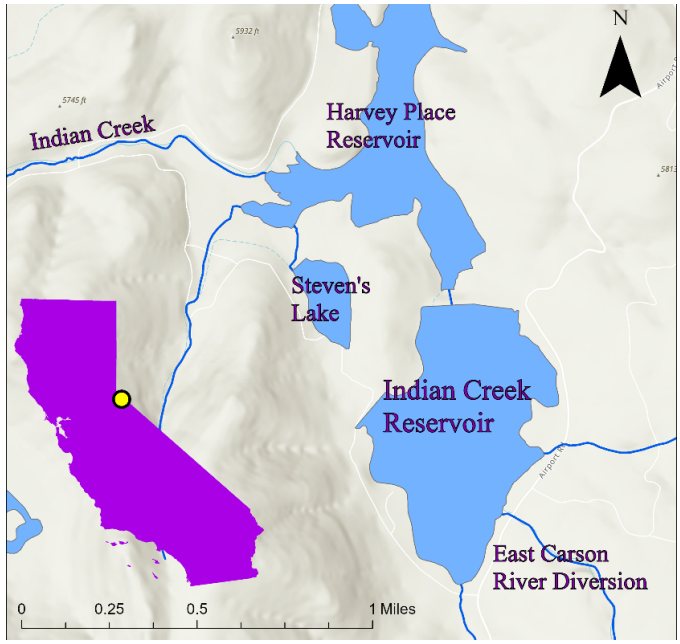
Pollutant Type: Nonpoint Source

Pollutant Source: Naturally-Occurring, Erosion/Siltation, Nonpoint Source Runoff

Water Quality Improvement Strategy

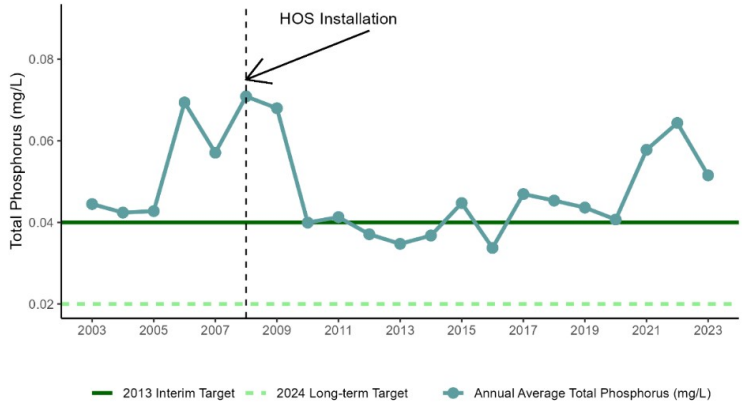
Indian Creek Reservoir (ICR) is in Alpine County ~30 miles south of Lake Tahoe. Since 1989, the water in ICR has been provided by freshwater diversions from Indian Creek and the West Fork of the Carson River. ICR has been impacted by eutrophication since the 1970s, and phosphorus was identified as the primary nutrient. The phosphorus source loading is primarily from internal sources (sediment load). The responsible parties (RPs) are to reduce eutrophication within ICR. The RPs are: South Tahoe Public Utility District (STPUD), the U.S. Bureau of Land Management, Alpine County, and other owners and land managers in the watershed. The Regional Water Board completed the Indian Creek Reservoir TMDL for Phosphorus which was approved by USEPA in July 2003. In December 2008, as part of the TMDL mitigation project, STPUD installed a hypolimnetic oxygenation system (HOS) in the deepest portion of ICR. Installation of the HOS was funded through a Clean Water Act Section 319(h) Nonpoint Source Implementation Grant to the STPUD. The grant was administered to reduce internal sources of phosphorus into ICR from sediment, and to optimize reservoir management to protect and enhance beneficial uses. ICR is evaluated for eutrophication by monitoring total phosphorus (TP), dissolved oxygen (DO), chlorophyll-a (Chl-*a*), trophic state index (TSI), and Secchi Depth (SD). TSI is a numeric target used to determine the status of a water body by assessing its biological condition, and SD is a measurement of water clarity. The TMDL implementation schedule calls for achieving the interim phosphorus TMDL target (0.04 mg/L) by 2013, and the long-term phosphorus target (0.02 mg/L) by 2024.

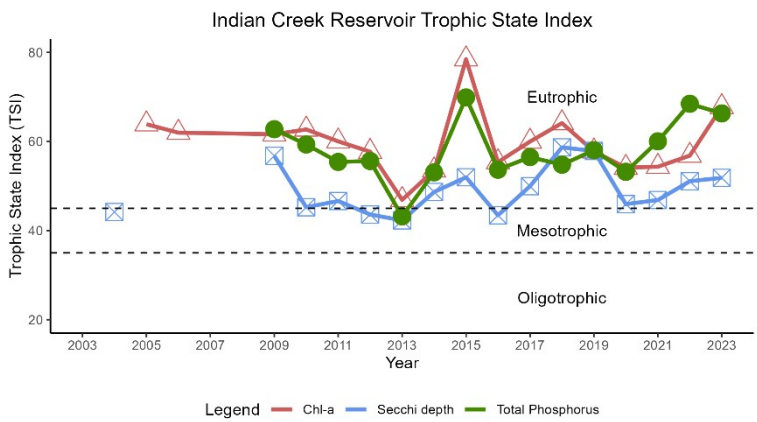
Indian Creek Reservoir



Water Quality Outcomes

- Long-term TMDL targets have not been attained.
- Annual mean TP concentrations were decreasing through 2015, but in 2020 started to increase again. The ICR catchment burned in the 2022 Tamarack fire.
- The HOS has been inoperable since 2023, and STPUD does not plan to maintain the system due to increasing costs and lack of improvement to conditions in ICR.
- STPUD is currently studying alternative sediment treatment methods to address internal phosphorus loading.
- Regional Board staff are engaging with surrounding landowners to address external sources of sediment.





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