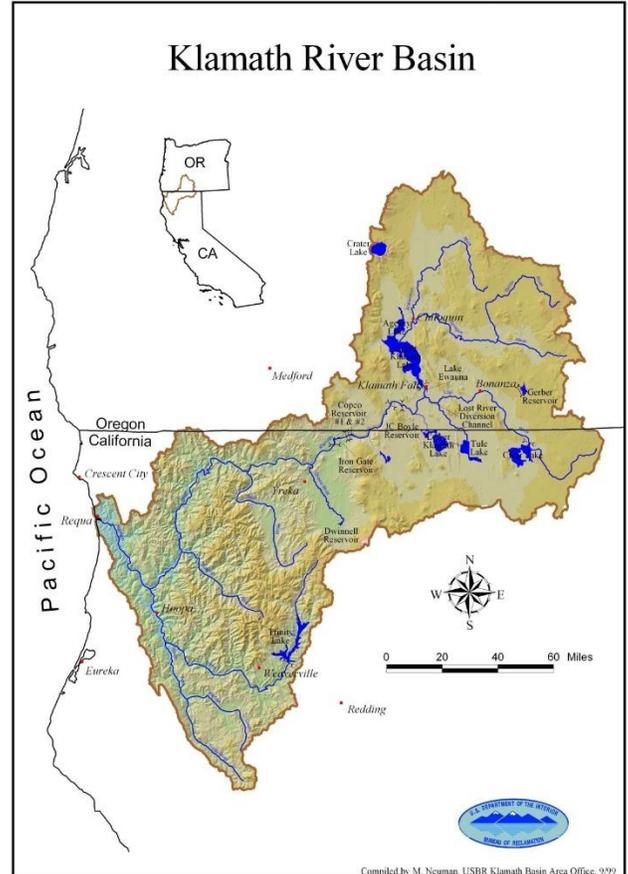


Water Quality Report Card		Microcystin in Klamath River	
Regional Water Board:	North Coast, Region 1	STATUS	<input type="checkbox"/> Conditions Improving
Beneficial Uses Affected:	COLD, RARE, MIGR, SPWN, COMM, CUL, REC-1, REC-2		<input type="checkbox"/> Data Inconclusive
Implemented Through:	Restoration, Coordination Efforts	<input checked="" type="checkbox"/> Improvement Needed	<input type="checkbox"/> Targets Achieved/Water Body Delisted
Effective Date:	December 28, 2010	Pollutant Type:	<input type="checkbox"/> Point Source <input checked="" type="checkbox"/> Nonpoint Source <input checked="" type="checkbox"/> Legacy
Attainment Date:	2050 or longer	Pollutant Source:	Hydromodification
			Naturally Occurring
			Irrigated Crop Production
			Logging
			Non-Point Source Runoff
			Grazing

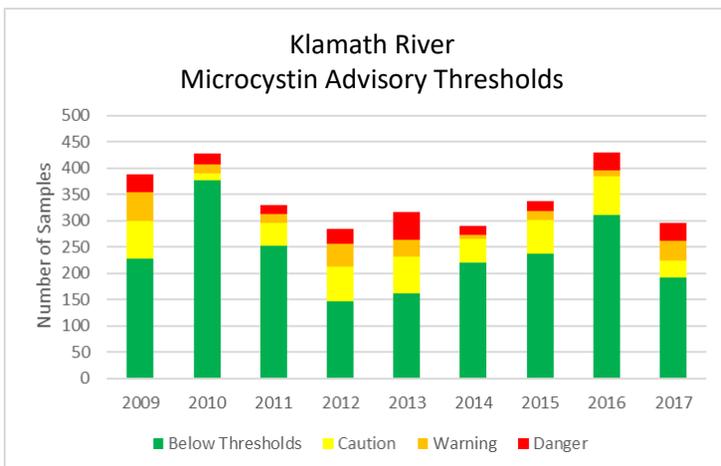
Water Quality Improvement Strategy

With origins in southwest Oregon, the Klamath River flows through Copco and Iron Gate Reservoirs near the California border, ultimately draining into the Pacific Ocean. Seasonal blooms of the cyanobacteria, *Microcystis aeruginosa*, produce high concentrations of the toxin microcystin in Copco and Iron Gate Reservoirs which flow downstream, resulting in non-attainment of beneficial uses in the Klamath River watershed. The [Klamath River TMDL](#) for microcystin was developed by the [North Coast Regional Water Board](#) in 2010. More recently, in 2016, the [California Cyanobacteria and Harmful Algal Bloom Network](#) adopted [statewide public health thresholds](#) for posting/de-posting of public health alert signs applicable to microcystin. Flow from Oregon's hyper-eutrophic Upper Klamath Lake, is the primary source of phosphorus in the watershed. Nutrient rich water flows into Copco and Iron Gate Reservoirs, where residence time allows the water to warm and stratify providing ideal biostimulatory conditions for cyanobacteria production, resulting in microcystin impairment. To alleviate these nutrient inputs, the [Oregon Department of Environmental Quality](#) has developed TMDLs for Upper Klamath Lake and the Upper Klamath River. TMDL implementation actions include restoration of more natural flows through dam removal, interim water quality projects associated with dam removal, wetland and riparian habitat restoration, and nonpoint source permits for agriculture, silviculture, and grazing discharges.

Klamath River Watershed Map



TMDL Waste Load Allocations/Load Allocations



Number of Samples Compared to Public Health Posting Threshold Concentrations.

Water Quality Outcomes

- Data from Klamath Tribes and PacifiCorp show that microcystin concentrations build in Copco and Iron Gate Reservoirs then flow downstream, ultimately impacting the estuary.
- Microcystin concentrations tend to peak during the late summer months and continue to exceed public health thresholds into the fall.
- The removal of Iron Gate, Copco 1 & 2, and JC Boyle dams is planned for 2021. Removal of these impoundments will restore a more natural flow regime, reducing nutrient build-up, warming, and stratification, and mitigating biostimulatory conditions favorable to cyanobacteria.
- Klamath Hydroelectric Settlement Agreement: Interim Measure 11 WQ Projects include diffuse source treatment wetlands, riparian restoration, lake fringe wetland restoration, and agriculture water conservation piping.