



Algal Blooms and Nutrients in the San Francisco Bay

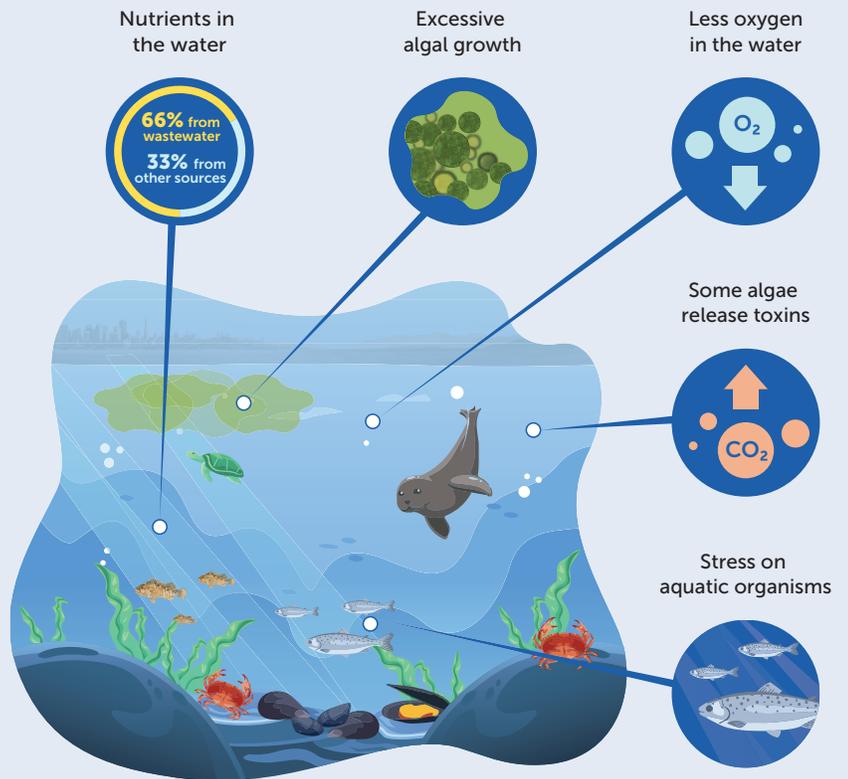
The Bay Area Clean Water Agencies (BACWA) are on the front lines of environmental stewardship of San Francisco Bay. Our member agencies clean the Bay Area’s wastewater to the highest national and state standards, protecting public health and the environment.

Algal Blooms - What We’re Seeing

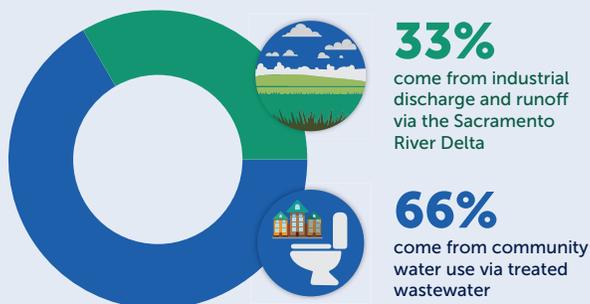
In 2022 and again in 2023, harmful algal bloom events occurred in the San Francisco Bay. Scientists don’t fully understand what triggered the blooms, but know that nitrogen, which is a naturally occurring nutrient in treated wastewater, contributed by providing “food” for the algal species, *Heterosigma akashiwo*, which led to levels of growth not previously seen.

Algal blooms and the nutrients that feed them in the Bay are a community problem. When you flush a toilet, wash your dishes, or take a shower, that water (called wastewater) flows through sewers to one of 37 wastewater treatment facilities in the Bay Area, where it is treated before being discharged into the Bay.

This complex system of pipes, pumps, and large-scale machinery totals billions in assets and is infrastructure that is owned by the community and maintained through the payment of rates to your local wastewater agency.



Where Do Nutrients Come From?



While all wastewater treatment facilities meet robust, science-based standards for treating wastewater, it all contains some amount of nitrogen - or nutrients - which is now negatively affecting the health of the San Francisco Bay.

We do not fully understand the triggers for algal blooms, but they are an important reminder that the Bay’s historic resilience to nutrients added to the Bay via wastewater is being stressed by changing climate impacts.

The levels of nutrients discharged to the Bay by clean water agencies have been reduced by more than 10 percent in recent years, but these historically “normal” levels of nitrogen are now stressing the Bay’s ecosystem.

2024 Watershed Permit

Since nutrients are so interconnected to the health of the Bay, BACWA (representing more than 50 local clean water agencies that protect the Bay), regulators, environmental advocates, and scientists are proposing policy changes to reduce allowable nutrient levels discharged to the Bay.

Nutrients are regulated via a Watershed Permit administered by the San Francisco Regional Water Quality Control Board. An updated Watershed Permit will be adopted in 2024, when the 2019 permit expires. BACWA serves as a venue for all Bay Area local clean water agencies to negotiate provisions with the Water Board and assists its members with compliance with the Watershed Permit once adopted. As our environmental stewards, BACWA and the Water Board have been discussing requirements to reduce nutrient levels in the 2024 Watershed Permit for several years.

During these ongoing conversations, BACWA remains committed to science-based strategies that reduce nutrient levels in wastewater that is discharged to the Bay while balancing the fact that necessary upgrades

to achieve the required nutrient load reductions at every Bay Area wastewater treatment plant will cost the region over 11 billion dollars, or \$4,000 per household.

Upgrade costs will be borne by community members via increases to their wastewater rates. Therefore it is incumbent upon the clean water community to make careful decisions to protect both the Bay and ratepayers. Investment in our wastewater infrastructure by the state and federal government would help lessen the impact of these rate increases on Bay Area communities.



\$11 BILLION

cost to upgrade all Bay Area wastewater treatment facilities

BACWA's Vision for the 2024 Watershed Permit is Science-Based, Flexible, and Innovative



Science-Based

Ensure the Watershed Permit reflects the best understanding of nutrient reduction science, based on BACWA-funded research by the San Francisco Estuary Institute and other scientists.



Innovative

While they may take longer than traditional upgrades to implement, the 2024 Watershed Permits should ensure innovative ideas like nature-based solutions and recycled water that provide drought resilience, shoreline protection, and/or habitat enhancement are prioritized.



Flexible

Since the Watershed Permit will likely establish limits on a Bay-wide basis, our region has a unique opportunity to work together to maximize nutrient removal and minimize expense via regional planning. Flexibility to support treatment plant upgrades consistent with capital planning schedules and considerations for community engagement, construction costs, and other factors is imperative.

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Bay Area wastewater treatment facilities have already enhanced nutrient removal, and others are implementing upgrades