

# CARLSBAD DESALINATION PLANT

## State of the Ocean Report



**A** new scientific study found that California's strict ocean protection regulations are working and that the Claude "Bud" Lewis Carlsbad Desalination Plant offers an environmentally friendly supply in an era of increasing water scarcity. The findings highlighted how ocean waters near the plant remain healthy and minimally impacted.

The analysis focused on the Carlsbad Desalination Plant, which has produced up to 54 million gallons of drought-proof water per day for the greater San Diego region for nearly a decade.

"The most robust monitoring program of the area ever completed demonstrated the Carlsbad Desalination Plant is operating in compliance with all applicable regulations and permits in harmony with the coastal marine environment," said the study, prepared by Miller Marine Science & Consulting, Inc. of Aliso Viejo.

### Plant Background

The Carlsbad Desalination Plant minimizes the San Diego region's vulnerability to statewide drought conditions. It is part of a \$1 billion project that includes the nation's largest, most technologically advanced and energy-efficient seawater desalination plant, a 10-mile large-diameter pipeline, and improvements to Water Authority facilities for distributing desalinated seawater throughout San Diego County.

The plant draws seawater from Agua Hedionda Lagoon, which is adjacent to the Pacific Ocean and also home to the Hubbs SeaWorld Research Institute's premier aquaculture facility for restoring California's white seabass population. The desal plant provides several environmental benefits by using cutting-edge technology to recapture energy from the reverse osmosis process, offsetting carbon emissions and restoring extensive coastal wetlands to enhance fish populations along the San Diego County coastline. The desalination plant provides several environmental benefits by using cutting-edge technology to recapture energy from the reverse osmosis process, offsetting carbon emissions, and restoring extensive coastal wetlands to benefit native fish, wildlife and plant species in South San Diego Bay.

A new intake structure is under construction to meet strict state laws for environmental protection. Federal grant funds are being used to modify the initial intake and discharge operations, including construction of a new screening structure to further protect sea life.



Construction began in January 2023.

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## Ocean Health Assessment

Ocean monitoring was ordered by the San Diego Regional Water Quality Control Board to determine what impact the desal plant was having on sediments and water quality, including any impacts on surfing, diving and shellfish.

The Miller Marine study started July 2019 and ran through fall 2023 (except during the early days of the COVID-19 pandemic). All monitoring was conducted while the desal plant was drawing water from the lagoon, discharging brine back to the ocean, and delivering potable water to the San Diego County Water Authority. Samples showed that the waters off the coast of Carlsbad are healthy in the monitoring areas,

and water quality has remained consistent with the regional patterns.

Occasionally, large harmful algal blooms negatively impacted the Carlsbad coastline, but the study found that desalination plant operation did not contribute to the blooms. In addition, the seabed environment offshore of Carlsbad was deemed healthy, with low levels of common pollutants (which were expected because they can derive from various sources in the ocean) and none creating a toxic environment. Communities of sediment-dwelling sea creatures in the area were as expected, indicating no effect of the desal discharge.

## The State of the Ocean report concluded that:

1. The Carlsbad coastal marine environment continues to support its full suite of beneficial uses.
2. The Carlsbad Desalination Plant's discharge is not disturbing the receiving water quality or environment outside the brine mixing zone.
3. The Carlsbad Desalination Plant is not discharging toxic substances to the detriment of the environment. The plant's operations result in an environmentally safe discharge to the marine environment in compliance with all regulations.



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