



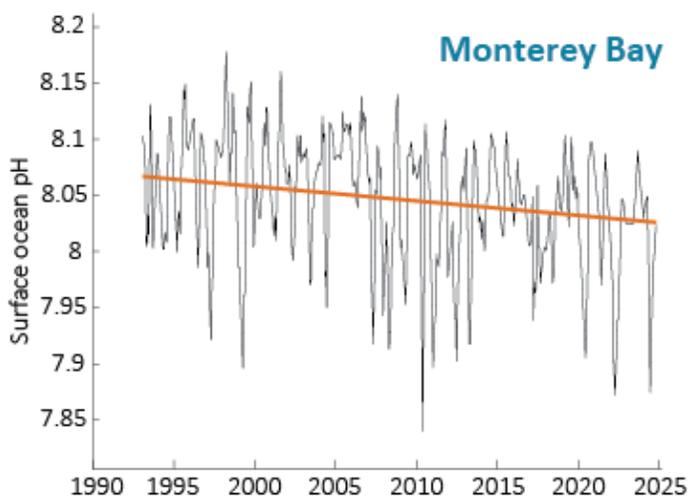
# OCEAN ACIDIFICATION

California Coast and Ocean Report  
*Status, Progress, and What's Ahead*  
**2026**

The ocean absorbs excess carbon dioxide that humans release into the atmosphere, and that is changing the chemistry of California's coastal waters. Ocean acidification makes seawater more corrosive, weakening the shells and skeletons of crabs, oysters, clams, and other animals that Californians harvest and depend on. For fishing communities, shellfish farmers, and tribes with deep cultural ties to the sea, this is not a distant threat. It is already affecting livelihoods and cultural connection, in addition to impacting ecosystem health.

## STATUS

The amount of **seawater that is corrosive to marine life's shells is six times larger** off California's coast than before the widespread use of fossil fuels. Acidification can be further **intensified by land-based sources of nutrients**, such as wastewater, especially near densely populated urban areas.



*Ocean acidification time series observed in Monterey Bay showing long-term acidification.*

## PROGRESS

California is taking action on ocean acidification. The state is committed to **ambitious carbon emission reduction goals**, including 100% carbon-free electricity and economy-wide carbon neutrality by 2045 to directly address the carbon emissions driving acidification. California has also built **one of the most comprehensive ocean monitoring networks** on the West Coast, tracking acidity levels in real time and funding research to understand how acidification is already affecting fisheries and marine food webs.

## LOOKING AHEAD

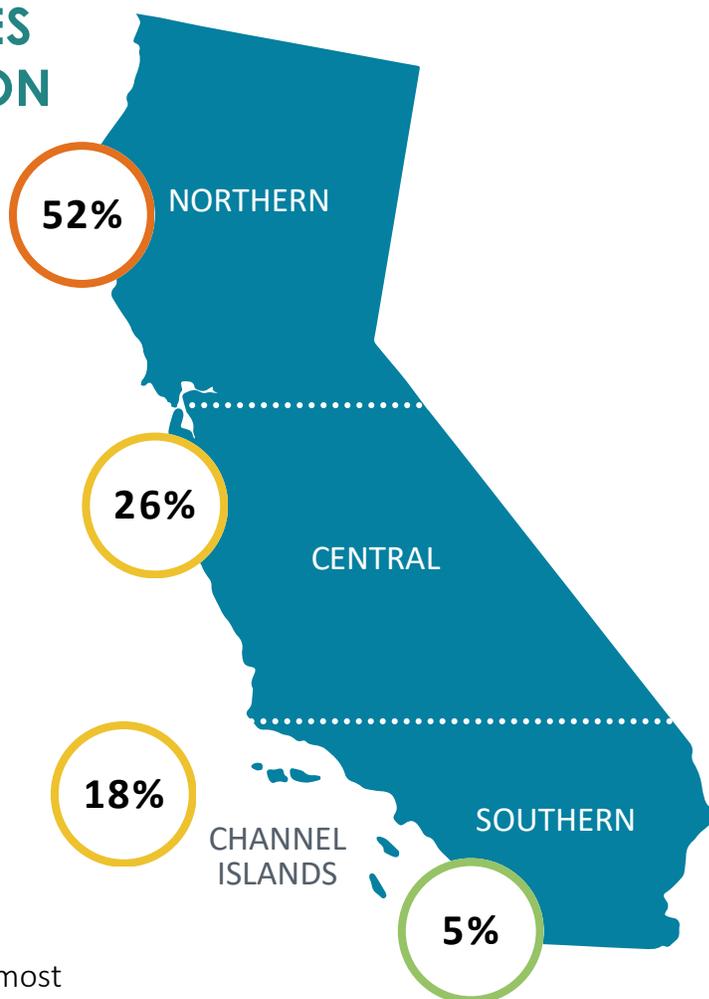
As carbon dioxide emissions increase, **ocean acidification will continue to worsen and shrink the area of the ocean that is favorable to shell-building marine life**. In addition to California's ambitious carbon neutrality goals, the State Water Resources Control Board is also considering **taking action to address the impacts of land-based nutrients** on coastal acidification.

# OCEAN ACIDIFICATION VARIES SEASONALLY AND BY LOCATION

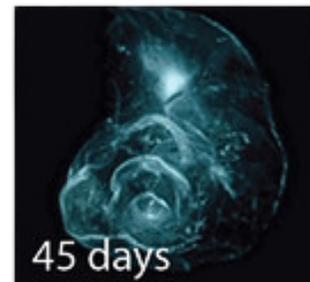
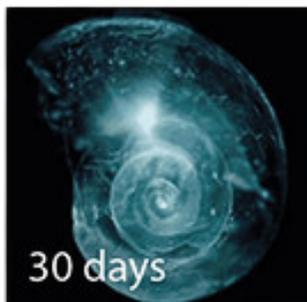
Ocean acidification is influenced by both natural (e.g., upwelling) and human-caused processes (e.g., atmospheric carbon dioxide and land-based nutrients). Its severity fluctuates seasonally and regionally across California. In the summer, strong winds push acidic, nutrient-rich water from the deep ocean to the surface, a process called upwelling. Upwelling is strongest in Northern California, where 50% or more of waters are corrosive during the summer months. Conditions in Northern California are more acidic compared to Southern California. California is particularly vulnerable to ocean acidification because of these natural upwelling processes.

## IMPACTS ON MARINE LIFE AND FISHERIES

Ocean acidification is already impacting California's most valuable fisheries and marine food webs. As seawater becomes more acidic, animals such as **crabs, oysters, clams, mussels,** and **pteropods** have a harder time building their shells and skeletons. To reduce these impacts, some California oyster farmers are testing strategies to make seawater more favorable to shellfish, like growing oysters alongside kelp.



*Typical values of the percent of corrosive waters in the summer. In some years, corrosive waters can exceed 80% off Northern and Central California and up to 30% off Southern California.*



*Pteropod shells dissolving under severe ocean acidification conditions.*