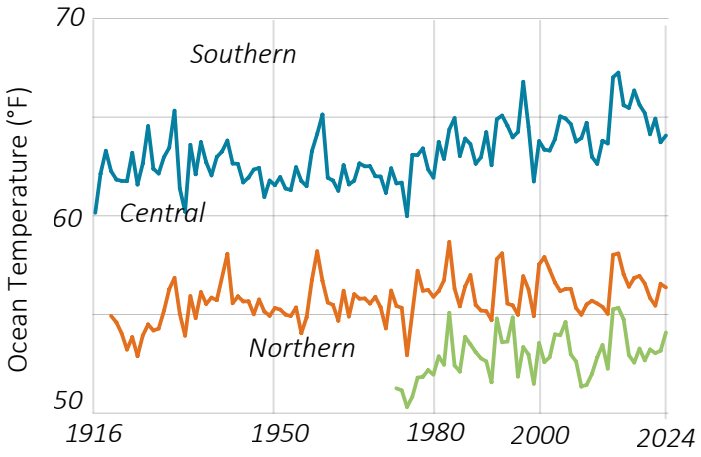
OCEAN TEMPERATURE

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

Ocean temperature shapes nearly everything Californians experience along the coast: the health of kelp forests, the location of fish and other marine life, the timing of harmful algal blooms, and the severity of coastal storms. California's ocean is naturally cooled by upwelling, which draws cold, nutrient-rich water from the depths and supports some of the world's most productive marine food webs. But the ocean is warming due to human-induced greenhouse gas emissions. Extended stretches of unusually warm water, known as marine heat waves, are becoming more frequent, with cascading effects on ecosystems and people.

STATUS

Ocean waters off California's coast are warming by approximately 2°F per century. In the past 50 years, ocean temperature in Southern California has warmed more than in other parts of the coast. Despite the long-term warming trend, 2024 temperatures were relatively close to average along most of California's coast. While the year started warmer due to El Niño, stronger upwelling brought cooler waters to the ocean surface in late 2024.



Since the 1970's, ocean temperature has increased 1.8F in Southern California. The temperatures in Central and Northern California show slower warming trends.

PROGRESS

California's network of 124 marine protected areas (MPAs), one of the largest ecologically connected MPA networks in the world, **may help strengthen resilience to ocean warming.** Scientific monitoring suggests some ecosystems, such as kelp forests and tide pools, may recover from marine heat waves faster within MPAs than in unprotected areas. **California is committed to research and monitoring** to better understand the impacts of ocean warming, how to employ tools like MPAs to bolster resilience, and where to focus conservation and restoration efforts.

LOOKING AHEAD

Climate change will continue to warm the ocean, leading to **more frequent and severe marine heatwaves**. Continued leadership and progress in reducing greenhouse gas emissions will help reduce the underlying driver of increasing ocean temperature and marine heat waves.
Investments in monitoring ocean conditions and ecological changes will ensure managers can understand, predict, and respond to temperature-driven changes along California's coast.

SPECIES MOVING WITH A WARMING OCEAN

As ocean temperatures rise, species move to water that is more suitable, reshaping ecosystems and food webs. Sensitive to temperature stress, animals and plants in the rocky intertidal zone are good indicators of ocean warming patterns. One in five species living in this zone is found further north than they were just two decades ago. Today, species such as the orange sea cucumber and wakame (winged kelp) can be found more than 200 miles further north than in the early 2000s.

Orange sea cucumber

© John D Reynolds

Wakame (winged kelp)

Of the 243 monitored rocky intertidal species, 51 species (21%) are now seen further north in cooler waters, and 10 species (4%) are found in southern locations.

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