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KELLY ABREU

Salt marshes will vanish in less than a century if seas keep rising and California keeps building, study finds

By ROSANNA XIA 7:11 PM, 2/21/2018

Coastal wetlands such as Bolinas Lagoon in Marin County, the marshes along Morro Bay and the ecological preserve in Newport Beach can purify the air, cleanse urban runoff before it flows into the sea and reduce flooding by absorbing storm surges like a sponge.

But there's little room left for this ecosystem along the changing Pacific Coast, as the sea continues to rise and Californians continue to develop the shore. Southern California today has already lost three-quarters of its salt marshes.

The rest could be gone within 100 years. Salt marshes in California and Oregon could disappear entirely by 2110, according to a new study by a team of scientists led by the U.S. Geological Survey. Only a few might survive in Washington. The research quantifies for the first time the fate of this entire ecosystem on the West Coast, based on current projections of sea level rise.

"We're essentially drowning the marshes," said Glen MacDonald, a UCLA professor of geography and one of the authors of the study. "If we stay on the same carbon pathway that we are on now, and we take a look at conservative estimates of sea level rise, we would see California vegetated salt marshes we know today, Oregon vegetated salt marshes we know today, 100% gone by the first decade of the 22nd century."...



RESEARCH ARTICLE ECOLOGY

U.S. Pacific coastal wetland resilience and vulnerability to sea-level rise

Karen Thorne^{1,*}, Glen MacDonald², Glenn Guntenspergen³, Richard Ambrose⁴, Kevin B...

✦ See all authors and affiliations

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Abstract

We used a first-of-its-kind comprehensive scenario approach to evaluate both the vertical and horizontal response of tidal wetlands to projected changes in the rate of sea-level rise (SLR) across 14 estuaries along the Pacific coast of the continental United States. Throughout the U.S. Pacific region, we found that tidal

wetlands are highly vulnerable to end-of-century submergence, with resulting extensive loss of habitat. Using higher-range SLR scenarios, all high and middle marsh habitats were lost, with 83% of current tidal wetlands transitioning to unvegetated habitats by 2110. The wetland area lost was greater in California and Oregon (100%) ...

The California coast is disappearing under the rising sea. Our choices are grim

July 7, 2019

By Rosanna Xia

www.latimes.com/projects/la-me-sea-level-rise-california-coast/

THE CALIFORNIA COAST GREW AND PROSPERED during a remarkable moment in history when the sea was at its tameest.

But the mighty Pacific, unbeknownst to all, was nearing its final years of a calm but unusual cycle that had lulled dreaming settlers into a false sense of endless summer.

Elsewhere, Miami has been drowning, Louisiana shrinking, North Carolina's beaches disappearing like a time lapse with no ending. While other regions grappled with destructive waves and rising seas, the West Coast for decades was spared by a rare confluence of favorable winds and cooler water. This "sea level rise suppression," as scientists call it, went largely undetected. Blinded from the consequences of a warming planet, Californians kept building right to the water's edge.

But lines in the sand are meant to shift. In the last 100 years, the sea rose less than 9 inches in California. By the end of this century, the surge could be greater than 9 feet.

Wildfire and drought dominate the climate change debates in the state. Yet this less-talked-about reality has California cornered. The coastline is eroding with every tide and storm, but everything built before we knew better — Pacific Coast Highway, multimillion-dollar homes in Malibu, the rail line to San Diego — is fixed in place with nowhere to go.

But the world is getting hotter, the great ice sheets still melting, the rising ocean a slow-moving disaster that has already swept past California's front door. Seaside cliffs are crumbling in Pacifica, bringing down entire buildings. Balboa Island, barely above sea level, is spending \$1.8 million to raise the wall that separates it from the ocean.

Winter storms pummeled a Capistrano Beach boardwalk, turning the idyllic shoreline into a construction zone as bulldozers rushed to stack boulders into a barricade. From San Diego to Humboldt counties, homeowners scramble to fend off increasing erosion and storm surges, pleading with officials for bigger seawalls that can hold back the even bigger ocean...