
RISING WATERS
ON THE WEST COAST

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From about 1993 to 2010,

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off the West Coast of the United States, we've seen about zero sea level rise or even negative sea level rise,

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so sea level was falling during that time period,

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but since about 2010, 2011, we've seen this really rapid increase

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in sea level off the U.S. West Coast.

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We’re seeing this recovery back towards the global mean,

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and if this continues to increase, then you would expect to start to see sea level impacts

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associated with this increase, increased coastal erosion,

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increased high-tide flooding, these kinds of things as sea level continues to increase.

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Sea level rise is caused by climate change.

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So there's a number of things happening. One is there's this background increase in sea level associated

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with global warming, so thermal expansion and the melting of ice, which is

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impacting sea level along the West Coast. That's causing this long-term increase.

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Natural Climate Cycles

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But on top of that increase, there’s this oscillation that occurs. Actually a number of oscillations.

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So the Pacific Decadal Oscillation is one of those. The El Nino-Southern

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Oscillation is another. The Pacific Decadal Oscillation is

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a large-scale climate signal centered in the Pacific Ocean. Every 10 years,

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we see this shift in the sea level between what we see in the Western Pacific

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and what we see in the Eastern Pacific. And these oscillations suppress

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or elevate sea level over different time periods, and really either exacerbate

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or diminish the effects of that long-term sea level.

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Since about 2010, 2011, we’ve been seeing this

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shift in that decadal variability associated with the Pacific Decadal Oscillation,

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and what that’s doing is casing sea level along the West Coast of the U.S.

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to go up.
Since 2015, sea level has risen on the West Coast bu almost one centimeter per year

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The global average is 3.3 millimeters.

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So really high rates of sea level, causing sea level to shift very dramatically, and this increase that we've been

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in the satellite records, and also in some of the tide gauge records along the U.S. coast,

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as well.
Why It Matters

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Trying to get a clear understanding of how sea level's going to change and how it's going to change, I think,

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is really important so we can inform people and they can make good decisions for their future