

## STATION 6

# solutions

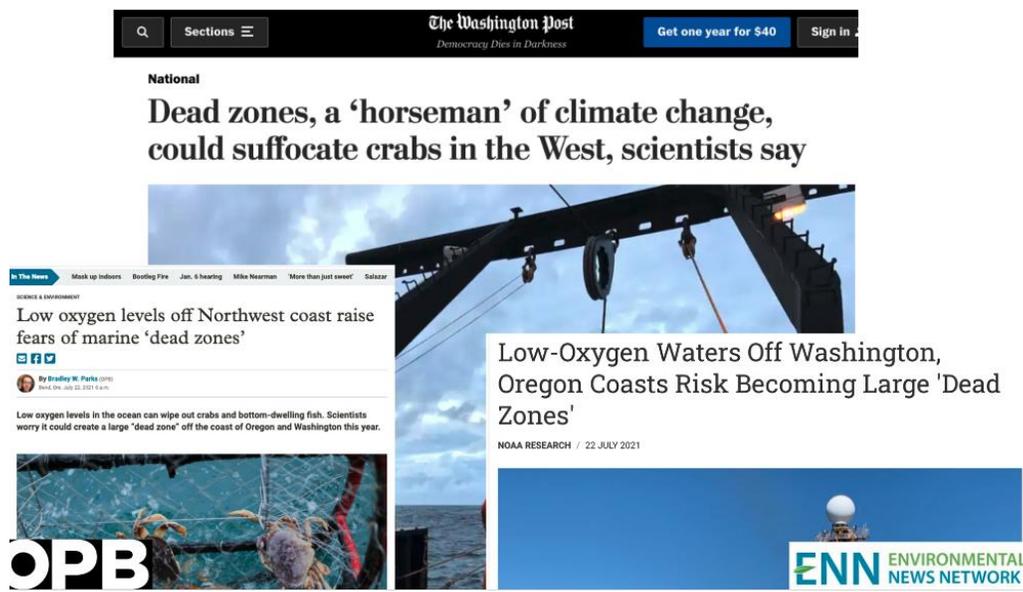
Scientists began observing low oxygen levels on the Oregon Coast starting in the early 2000s. Observations and research have led scientists to determine Oregon now has a “hypoxia season” just like it has a fire season — and in 2021, the hypoxia season came far earlier than usual.

These hypoxia events can result in “dead zones” that occur as winds pick up in the spring and summer, driving cold water from the bottom of the ocean toward the surface. That contributes to blooms of phytoplankton, which later die and sink to the ocean floor. Bacteria consume oxygen while decomposing the plankton. “Place bound” marine creatures or those who cannot relocate quickly, like crabs, can’t escape the low-oxygen zone and are left to die. This is the most likely hypothesis for why **Crabbins** wasn't seeing crabs in his crab pots!

*Here are some news stories of dead zones on the Oregon coast:*



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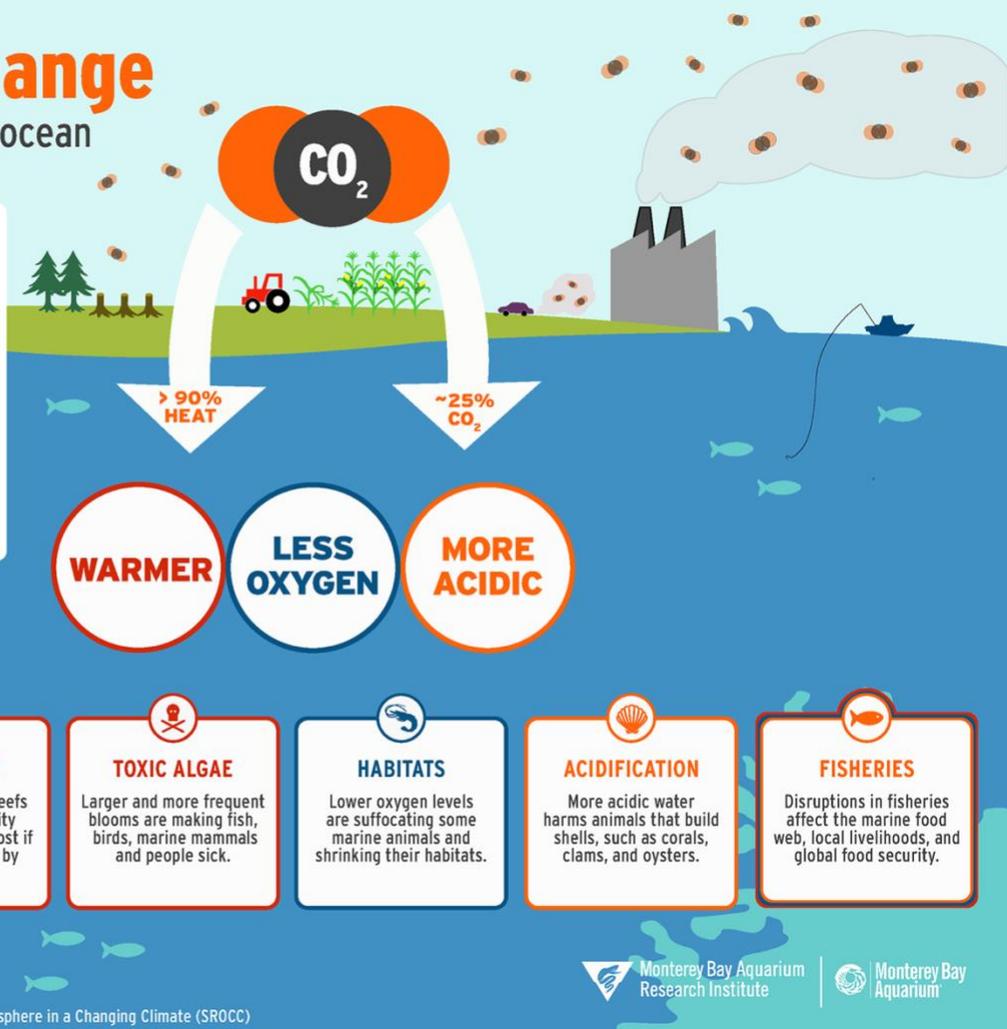
The collage features three news stories:

- The Washington Post:** "Dead zones, a 'horseman' of climate change, could suffocate crabs in the West, scientists say". The article is categorized as "National" and includes a sub-header "Democracy Dies in Darkness".
- OPB (Oregon Public Broadcasting):** "Low oxygen levels off Northwest coast raise fears of marine 'dead zones'". The article is by Bradley W. Parks and dated June 10, 2021. It includes a sub-header "SCIENCE & ENVIRONMENTMENT" and a sub-sub-header "In The News".
- ENN (Environmental News Network):** "Low-Oxygen Waters Off Washington, Oregon Coasts Risk Becoming Large 'Dead Zones'". The article is from NOAA RESEARCH and dated 22 JULY 2021.

# Climate Change

## A triple threat for the ocean

Burning fossil fuels, deforestation and industrial agriculture release carbon dioxide (CO<sub>2</sub>) and other heat-trapping gases into our atmosphere, causing our planet to warm. The ocean has buffered us from the worst impacts of climate change by absorbing more than 90 percent of this excess heat and about 25 percent of the CO<sub>2</sub>, but at the cost of causing significant harm to marine ecosystems.



Source: IPCC, 2019: Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)

Monterey Bay Aquarium  
Research Institute

Monterey Bay  
Aquarium

The loss of oxygen in our oceans is just one of the ways rising carbon dioxide levels in the atmosphere reveals itself. Without a serious reduction in carbon dioxide, scientists predict the ocean will eventually become a hot, sour, and breathless place.

That sounds depressing.

### So what can we do?

1. Collect data. We can't fight something we don't understand.
2. Develop new technology.
3. Work together to reduce carbon dioxide emissions worldwide.

## Activity: Taking positive climate action!

We've learned a lot about the *challenges* that we encounter on the Oregon Coast.

This is just ONE story and ONE of the ways climate change affects communities across the world. Choose one of the following prompts:

1. Search online for a positive climate story that shares how a community has overcome the challenges they face due to climate change.
2. Get creative and come up with an idea for a product, company, phone application, etc. with the potential to help combat global ocean deoxygenation.
3. Use the information you've gathered here and think about your own local community. Think of a climate driven challenge that faces the community **you** live in and try to come up with a solution / experiments / product that would help your community combat climate change.

