

# LEARN ABOUT YOUR OCEAN



Once a week, the *M/V Columbia* sails the 1,854-mile roundtrip between Bellingham, Washington and Skagway, Alaska.

## WHAT IS OCEAN ACIDIFICATION?

Oceans absorb a quarter of the carbon dioxide (CO<sub>2</sub>) that humans emit into the atmosphere. That means about 7 million tons of CO<sub>2</sub> enter the oceans each day.

The extra CO<sub>2</sub> changes the chemistry of seawater, making it more acidic. Higher acidity slows the growth of animals with hard shells, like clams, oysters, crabs, corals, and plankton.

Shellfish farms and fisheries in the Pacific Northwest are already experiencing negative effects of ocean acidification—shellfish larvae cannot form their shells fast enough to survive.



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## WHY ARE COASTAL OCEANS DIFFERENT?

In coastal Alaska and British Columbia, meltwater from glaciers and massive amounts of freshwater from rivers intensify ocean acidification, making the region a potential hotspot for change.

## WHAT ARE WE MEASURING ON THE FERRY?

The Alaska Marine Highway System provides an ideal research platform to study ocean acidification. Instruments installed on this vessel are recording CO<sub>2</sub>, as well as seawater temperature, salinity, and dissolved oxygen.

Tracking these variables lets us study seasonal changes in ocean chemistry, how it varies from place to place, and what drives these changes.



## RECORDING

CARBON DIOXIDE



WATER TEMPERATURE



SALT CONTENT



DISSOLVED OXYGEN

EVERY 3 MINUTES,  
EACH TRIP, ALL SEASON

**LEARN MORE**  
[aos.org/ferry-for-science](http://aos.org/ferry-for-science)

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# FERRY FOR SCIENCE

TRACKING OCEAN CHANGES WHILE SAILING THE SCENIC INSIDE PASSAGE