Alaska Ocean Acidification Network

EXPANDING THE UNDERSTANDING OF OCEAN ACIDIFICATION PROCESSES AND CONSEQUENCES IN ALASKA

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Ocean Acidification in Alaska

- Ocean acidification (OA) occurs as human-generated CO_2 in the atmosphere is absorbed by the ocean, changing the chemistry of seawater.
- Alaska is expected to experience the effects of ocean acidification faster and more intensively than other regions. Much of this is due to cold water and circulation patterns which cause seawater to hold more CO_2 year-round.
- Because Alaska waters are already on the edge of suitable conditions for many organisms, the absorption of additional CO_2 from humans carries significant implications.
- The Gulf of Alaska, Chukchi, and Bering Seas are currently experiencing seasonally corrosive conditions and the Beaufort Sea is starting to experience more sustained corrosive conditions.

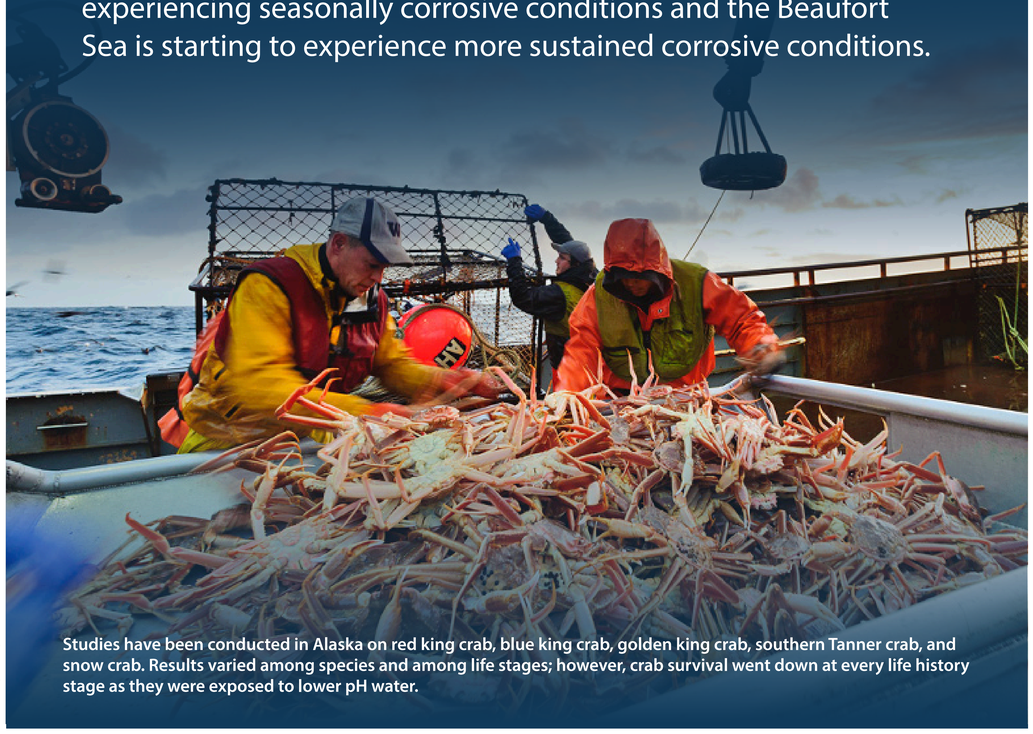

Photo by Corey Arnold

Studies have been conducted in Alaska on red king crab, blue king crab, golden king crab, southern Tanner crab, and snow crab. Results varied among species and among life stages; however, crab survival went down at every life history stage as they were exposed to lower pH water.

About the Network

The Alaska Ocean Acidification Network (AOAN) was formed in 2016 to engage with scientists and stakeholders to expand the understanding of OA processes and consequences in Alaska, as well as potential adaptation and mitigation strategies. It is hosted by the Alaska Ocean Observing System.

What We Do

- Engage with the research community, fishing, and mariculture industries, Tribes, policymakers, coastal communities, and the general public
- Identify knowledge gaps and priorities for monitoring and research
- Share data and best practices
- Host dialogues, presentations and events
- Act as a resource hub for OA information in Alaska

Ways to Get Involved

- Join the bi-monthly list-serve
- Educate yourself through the Alaska OA Network website
- Connect with OA experts using the "expertise database"
- Host an OA speaker in your community
- Participate in local efforts

Available Resources

- Regional conditions
- Response of Alaska species
- Researchers and their specialties
- Data catalog
- Downloadable handouts
- Recorded presentations and webinars
- Bi-monthly newsletters

2022 Spring Discussion Series

In 2022, the network hosted a four part virtual discussion series. The sessions were designed to address and explore ocean acidification topics of most interest to Alaskans, discuss ideas and identify priorities, and document key issues and needs. Each session was kicked off by a set of 3 speakers followed by smaller group discussion. Recorded presentations are accessible on the OA Network website. The discussion sessions included:

- **Regional Conditions:** What do we know about ocean acidification conditions around the state, what parts are expected to change most rapidly in the future, and what areas may be most sensitive to change?
- **OA and Local Communities:** What does ocean acidification mean for mariculture and subsistence?
- **OA and Commercial Species:** What does ocean acidification mean for commercially harvested species including groundfish, salmon, and crab?
- **Adaptation and Mitigation:** How can carbon dioxide reduction, removal, sequestration and natural climate solutions help us adapt to or mitigate climate change and ocean acidification?

What we learned from the discussion

Participants identified ways to expand outreach, engagement and coordination, and their recommendations are part of a new draft network strategic plan. Some of the top suggestions focused on developing specific tools for specific audiences, prioritizing actionable information, and continuing to build connections and collaborations with industry and Tribes. There was also a desire to shift the conversation towards solutions. A comprehensive list of recommendations is available at aoos.aoan.org.

PARTNERS

20 Tribal communities (collecting samples!)
Alaska Bering Sea Crabbers
Alaska Center for Climate Assessment and Policy
Alaska Conservation Foundation
Alaska Department of Fish & Game
Alaska Harmful Algal Bloom Network
Alaska Marine Conservation Council
Alaska Marine Highway System
Alaska Native Tribal Health Consortium
Alaska Ocean Observing System
Alaska Longliners Association
Alaska Sea Grant
Alaska Seafood Marketing Institute
Alaska Shellfish Growers Association
Aleut Community of St. Paul
Alutiiq Pride Marine Institute
Bering Sea Fisheries Research Foundation
Hakai Institute
Kachemak Bay Research Reserve
Kodiak Area Native Association
Meridian Institute
National Park Service
NOAA Alaska Fisheries Science Center
NOAA Kasitsna Bay Lab
NOAA Ocean Acidification Program
NOAA Pacific Marine Environmental Lab
North Pacific Research Board
Northern Latitudes Partnership
North Slope Borough Wildlife Dept
OceansAlaska Marine Science Center & Hatchery
Oregon State University
Pacific Seafood Processors Association
Prince William Sound Science Center
Renewable Energy Alaska Program
Salmon State
Sitka Salmon Shares
Sitka Sound Science Center
Sitka Tribe of Alaska
University of Alaska Anchorage
University of Alaska Fairbanks
United Fishermen of Alaska
U.S. Arctic Research Commission
And more!

The Future Ocean Podcast

Carbon policy and our Alaska fisheries

In 2021, the Alaska OA Network launched the podcast, "Our Future Ocean: what can carbon policy do for the ocean and Alaska fisheries?" This six-part series features local marine scientists, economists, and leaders in Alaska's clean energy transition as they introduce ocean acidification and discuss different carbon policy options, how they work, what the terms mean, and what action is currently happening regionally and nationally. The podcast aims to not only engage more Alaskans in conversation about the changes happening in our marine ecosystems but also the potential solutions.