

Arctic Research Program

GOMO's presence in the Arctic

David Allen, Cynthia Garcia-Eidell, Kelley Uhlig



Our Mission

A person wearing a white jacket is shown in profile, looking out over a vast, snowy landscape. The sun is bright and low in the sky, creating a lens flare effect. The background shows a snow-covered field or tundra with some distant trees and a wooden structure, possibly part of a research station or sled team.

ARP sponsors multiple sustained, in situ observations focusing on the ocean-ice-atmosphere environment and complementary marine ecosystem studies to characterize the northern Bering, Chukchi, and Beaufort Sea response to climate change. ARP also supports model improvement and use in support of NOAA's mission of science, service, and stewardship.

ARP Focus Areas:

Ecosystem & Oceanographic Studies

Sea Ice Modeling & Observations

Coupled Atmospheric & Ocean Modeling

Technology Development

Assessments & Reports



The Arctic is changing...

Impacts:

Overall: More open water conditions and thinner, younger ice

Migration of key fish species northwards

Increasing Ocean Acidification and Harmful Algal Blooms

Dramatic increase of heat flowing from Pacific Ocean into the Arctic Ocean

Link between Arctic amplification and mid-latitude weather patterns may be emerging

2021 Sea Ice Minimum
1981-2010 Avg Minimum

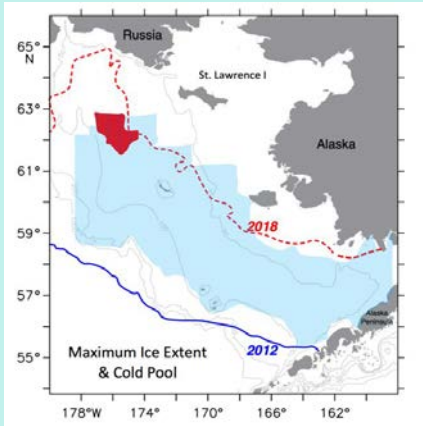
GOMO's presence in the Arctic!

- Funding ~ \$3.3M / yr over the last 5 years
- Renewed national focus on the Arctic - *opportunity!*
- 2019: ARP review and OAR Arctic Forum led to the development of the ARP Strategy



Ecosystems and Fisheries-Oceanography Coordinated Investigations & Distributed Biological Observatory

- *Cold pool formation impacts on fisheries*
- *Emergence of harmful algal blooms in areas previously unknown*



Coupled Arctic Forecast System & GLERL-CIGLR Arctic Sea Routes

- *High-resolution coupled sea ice models improving operational forecasts*
- *Informing shipping, transportation, and weather forecasting*



ARP

US Arctic Observing Network

- *Identifying key contributions to Arctic observing systems*
- *Defining Shared Arctic Variables at the regional and international level (SAON)*

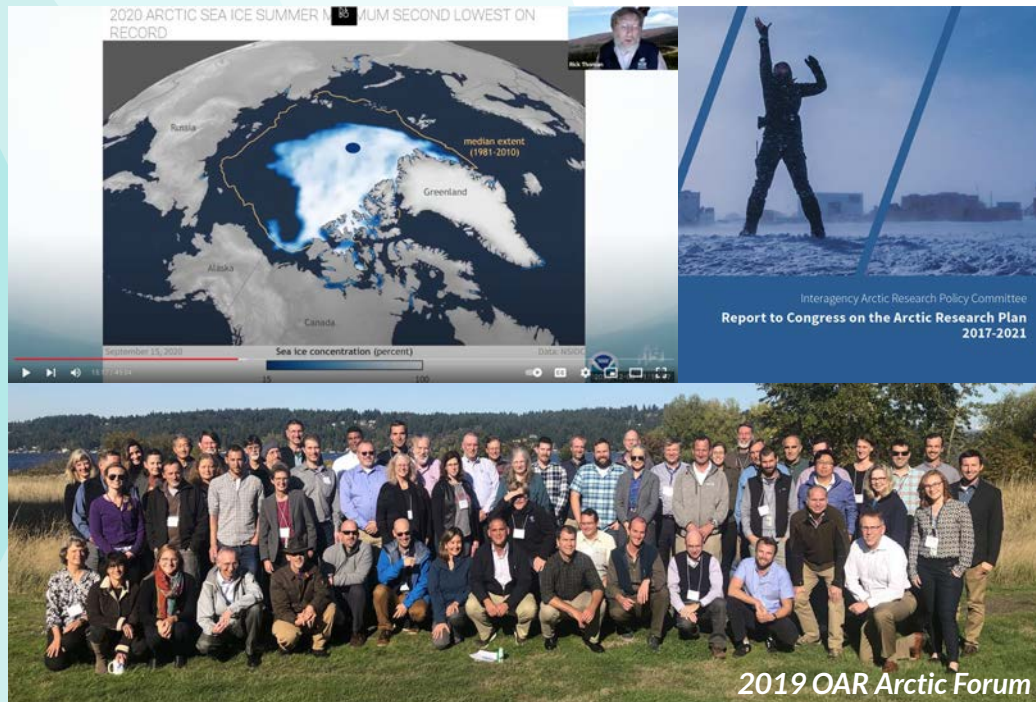


NOAA's Arctic Report Card

- *Peer-reviewed and highly publicized accounting of yearly Arctic observations and essays on emerging topics for over 15 years*



ARP Leadership Resonates Across the US Government



Future plans and opportunities

- Sustaining long-term **Observations** and developing & evaluating new observational technologies
- Investing in critical **Modeling** needs
- Making sure that the **Data** are **FAIR** and **CARE**
- Supporting relevant and readily-usable **Products**
- Expanding meaningful **Engagement** with Indigenous and coastal communities in Alaska
- Improving **Partnerships** across OAR, NOAA, between agencies, and internationally

