Arctic Research Program

GOMO’s presence in the Arctic

David Allen, Cynthia Garcia-Eidell, Kelley Uhlig
Our Mission

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.
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**

**ARP Focus Areas:**

- Ecosystem & Oceanographic Studies
- Sea Ice Modeling & Observations
- Coupled Atmospheric & Ocean Modeling
- Technology Development
- Assessments & Reports
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

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

OAR Arctic Community of Practice

NOAA Arctic Action Team & Policy Support

IARPC & US AON Leadership

2019 OAR Arctic Forum
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