

Overview: Alaska Regional Action Plan for the Chukchi and Beaufort Seas



NOAA
FISHERIES

The Chukchi and Beaufort Seas are home to millions of migratory birds, polar bears, beluga and bowhead whales and thousands-year-old Inupiat culture. Climate change is already evident in these remote Arctic waters.

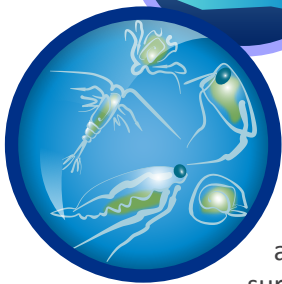


Communities and scientists have observed rapid decreases in summertime sea-ice extent.

As result, there has been poleward movement of commercial fish species from the adjacent Bering Sea.

Migratory patterns and the distribution of bowhead whales have been altered, affecting Alaska Native communities ability to secure traditional subsistence foods.

Scientists also suspect that energy and nutrient transfer between the surface and ocean seafloor has changed, potentially affecting ecosystem productivity.



Focal areas of research

- Long-term monitoring of marine life and marine ecosystems,
- Process-oriented research (i.e., studying environmental effects on species' reproductive potential, diets, and genetics),
- Climate and ecosystem modeling,
- Marine mammal studies,
- Studies to understand and address climate change impacts on human communities, and
- Synthesis of data for management decisions.

This science will be used to inform preemptive and flexible policy and resource management decisions and help communities plan for the future.

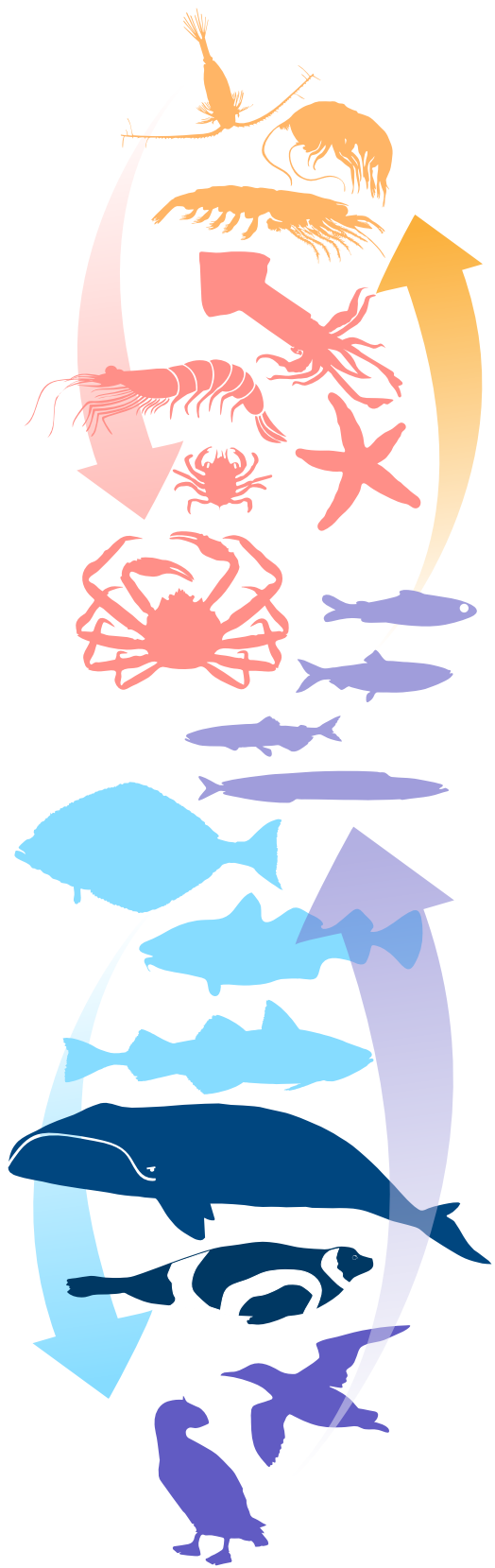
NOAA Fisheries is soliciting public comments on the draft Regional Action Plans through July 29, 2022.

Science to respond to climate change

To help increase the resilience of the region's valuable marine resources and the communities that depend on them, decision-makers need information on what's changing, why it's changing and how to respond.

Scientists at the Alaska Fisheries Science Center developed a Draft Chukchi and Beaufort Sea Climate Regional Action Plan (2022-2024). In this 3-year plan, scientists identify their recommendations for needed research to implement [NOAA Fisheries Climate Science Strategy in Alaska](#).





Proposed Activities	Objective	Sub Group
Bridging Knowledge to Inform Arctic Management 1. Promote interdisciplinary partnerships; 2. Document Indigenous Conceptual Models; 3. Demonstrate collaborative methods.	2	
Communications To Support Co-Producing Science with Arctic Communities 1. Conduct radio interviews and local newspaper features; 2. Develop educational efforts targeting students, teachers and parents in the communities. 3. Use NMFS communications platforms to highlight collaborative efforts	2	
Predicting HABs and juvenile snow crab status using satellite-based measurements of ocean color 1. Develop a phytoplankton community size structure algorithm, 2. Advance a specific algorithm for the detection of small photosynthetic bacteria (Synechococcus), 3. Develop an algorithm for diatom abundance and 4. Explore satellite metrics to predict HAB prevalence and juvenile crab abundance	5	
Renew Arctic ecosystem status report 1. Update the Arctic ESR during 2022-2024	1, 3, 6	
Cetacean sampling in the Chukchi Sea 1. Maintain and improve passive acoustics; 2. Develop and implement vessel and/or aerial survey	6	
Overwinter survival of Arctic gadids 1. Predict impact of summer warming on juvenile condition 2. Predict impact of condition on overwinter survival	5	
Expand Trophic and Spatial Models for Arctic Ecosystem 1. Update Chukchi food web model 2. Develop Beaufort food web model 3. Compare system-level optimum yield across all Alaska ecosystems 4. Spatio-temporal synthesis model for survey planning;	1, 3, 4	
The trophic roles of ice seals in Chukchi and Beaufort seas 1. Estimate seasonal prey requirements 2. Expand to total ice-seal consumption	1	
Focused involvement regarding demersal communities within the Distributed Biological Observatory 1. Add beam trawls 2. Extend exploratory large-mesh trawling 3. Add benthic respirometer 4. Add environmental DNA	6	
Local Knowledge, Traditional Knowledge, and Subsistence Taskforce for Arctic Region 1. Convene Arctic LKTKS Task force	3	
Bottom trawl and acoustic-trawl survey to detect northward distribution shifts 1. Develop survey design 2. Conduct short gear trial 3. Implement combined sampling effort	7	

- OBJECTIVES**
1. Climate-Informed Reference Points
 2. Robust Management Strategies
 3. Adaptive Management Processes
 4. Project Future Conditions
 5. Understand Mechanisms of Change
 6. Track Change and Provide Early Warnings
 7. Build and Maintain Adequate Science Infrastructure

- PRIMARY AFSC SUB GROUP**
- Socio-economics
 - Marine Mammals
 - Monitoring
 - Process Research
 - Management - Oriented Synthesis

