

Changing Conditions in the Arctic

Objective

Address environmental stewardship needs in the Arctic Ocean and adjacent coastal areas in the face of climate-induced and other environmental changes.

Why Do This?

Human-induced climate change is having the most immediate impact on polar regions. The Arctic, and indeed the world, faces serious consequences from accelerated permafrost thawing and carbon release, reductions in Arctic sea ice volume and extent, coastal erosion, and global sea-level rise from melting glaciers and ice caps. Increased human activity brings additional stressors that impact Arctic ecosystems and communities. At the same time, diminishing sea ice presents opportunities to further develop resources and to increase marine transportation. Working with all stakeholders, including the State of Alaska, and Alaska Native communities, we have an opportunity to develop scientifically informed plans to sustainably manage and encourage use of the Arctic while also continuing to protect it.

Potential Actions and Expected Outcomes

- **Improve Arctic environmental response management** - Developing new systems and procedures will help protect ecosystems, local communities, and subsistence resources from the effects of oil spills or other accidents associated with resource extraction and increasing Arctic marine transportation.
- **Observe and forecast Arctic sea ice** - Observing, predicting, and ultimately projecting the extent, thickness, and age of Arctic sea ice will improve daily forecasts and decadal predictions to help support safe, secure, and reliable marine operations and ecosystem stewardship.
- **Establish a distributed biological observatory** - Integrating biological and other oceanographic data from a network of observatories in the Pacific Arctic will improve understanding of climate and environmental change effects on marine ecosystems and communities that rely on them.
- **Improve Arctic communication** - Improving marine communication networks/architecture will support research, reduce environmental incidents, contribute to safe navigation, and facilitate emergency response, and search and rescue.
- **Advance Arctic marine mapping and charting** - Accurate hydrographic surveys and biological/shoreline mapping of U.S. Arctic waters and the Alaskan coastline are needed to improve the Arctic marine transportation system and to characterize habitats for ecosystem stewardship and restoration.
- **Improve coordination on Arctic issues** - Defining the roles and responsibilities of the Arctic interagency policy groups, as well as links to international efforts, such as through the Arctic Council, will result in greater government efficiency through decreased duplication of effort and increased sharing of resources, knowledge, and information.