



US ARCTIC RESEARCH COMMISSION

ABOUT

The US Arctic Research Commission (USARC) is an independent federal government agency created by the Arctic Research and Policy Act of 1984. The Commissioners are appointed by the President of the United States.

USARC is responsible to both the President and the Congress. Every two years, the Commission develops goals and objectives for the nation's Arctic research program, which has a budget of approximately \$400 million per year, and is conducted by approximately 15 US federal agencies and state agencies, local governments, university partners, and private-sector collaborators. The Commission's goals are adopted by an Interagency Arctic Research Policy Committee (IARPC) that develops the national five-year Arctic Research Plan. The Commission is also explicitly tasked with making recommendations on the means for developing international scientific cooperation in the Arctic.

DUTIES

- Develop and recommend a national Arctic research policy
- Assist IARPC in establishing a national Arctic research program plan to implement the policy
- Facilitate cooperation in Arctic research among federal, state, and local governments, and international partners
- Review federal Arctic research programs and recommend coordination improvements
- Recommend improvements in Arctic research logistics
- Recommend improved methods for data sharing among research entities



ARCTIC UPDATE

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THE US ARCTIC RESEARCH COMMISSION ENCOURAGES RESEARCH IN FIVE GENERAL AREAS

Environmental Change of the Arctic Ocean and Bering Sea

The Arctic is a clear priority for marine scientific research because the combination of climate change, technological advances, and economic forces make this region increasingly accessible for resource development, transportation, tourism, sovereignty, and security. USARC calls for coordinated research in the Chukchi and Beaufort Seas akin to what was accomplished by the Bering Sea Ecosystem Study. The Study of Environmental Arctic Change (SEARCH), an enduring, interagency effort to understand the nature, extent, and evolution of Arctic environmental change, has grown by the addition of the Arctic Observing Network (AON). The emerging Distributed Biological Observatory (DBO) initiative shows great promise for the Pacific Arctic sector. USARC recommends:

- Increased support for, and broader participation in, AON, DBO, and SEARCH
- Greater integration of Arctic marine research, and support for the strategic action plans being developed by the National Ocean Council

Arctic Human Health

A distinctive approach is required to address health issues of indigenous peoples and to effectively overcome the region's health disparities. US Arctic residents are susceptible to a broad range of physical and behavioral health issues that result in lower life expectancies and higher infant mortality rates than found elsewhere. While the transition from a traditional subsistence lifestyle has brought positive change, it has also increased the prevalence of chronic diseases such as diabetes, hypertension, obesity, and cardiovascular and mental illnesses. Study has just begun on the impact of environmental pollutants and climate change on food safety and health consequences. USARC recommends:

- Developing and implementing an interagency Arctic human health research plan
- A focus on mental and behavioral health issues
- Greater focus on research that would improve access to clean water and improved sanitation systems in rural Alaska

Civil Infrastructure Research

Climate change is impacting civil infrastructure (e.g., roads, buildings, pipelines, ports). Thawing permafrost, increasing coastal erosion, and generally warmer conditions are all contributors. The implications for the Arctic's transportation, communication, energy, and community infrastructure networks are considerable, largely because long-

held engineering standards assumed a perpetually stable thermal/permafrost regime. Research is needed to develop new and climate-change-adaptive standards for design, construction, and maintenance. Research and innovative engineering solutions are needed to create new infrastructure to address the demands of an increasingly accessible Arctic, whether by land, sea, or air.

Natural Resource Assessment and Earth Science

As has been clear since the building of the Trans-Alaska Pipeline System, the US Arctic is rich with natural resources from oil and gas, minerals (including rare earth elements), fisheries, lumber, and wildlife ecosystems. Further assessments of living and nonliving resources are needed in the Arctic. Specifically, the US Geological Survey should implement its "Resource Assessment Program" (AMRAP) required by law. Earth science initiatives should continue to incorporate fundamental geophysical and geological research (especially in the Arctic Ocean) so that as a nation, we understand our land, its value, and the extent of our offshore sovereignty beyond the current Exclusive Economic Zone. Emphasis should also be placed on oil-spill prevention and response in the Arctic and sub-Arctic, better Arctic mapping, gas hydrate research, studies of contaminant fluxes and impacts, and long-term funding for the North Slope Science Initiative.

Indigenous Language, Identity, and Culture

Language defines the cultural diversity of our planet, and allows us to separate one population from another. Although critical, language is one of the most vulnerable elements of our cultural heritage. Of the thousands of known languages, fewer than 10 are used by nearly 60 percent of the global population and more than 500 are extinct. In the Arctic, language vulnerability is especially acute, where loss stems from separation of indigenous people from their cultural past. Without a research plan to address Arctic language preservation, the path to language extinction is likely to shorten. This plan should incorporate:

- Regular, permanent census processes to understand the diversity of languages spoken by Arctic people, and the viability of those languages
- Documented procedures to ensure that languages and place names spoken and given by Arctic people are recorded and preserved
- Defined policy options and processes for language preservation that have succeeded in the Arctic, and elsewhere, and are made available to Arctic policymakers and residents