

Increasing Arctic Accessibility Over the Next Twenty Years

Arctic Research Support and Logistics Workshop Report

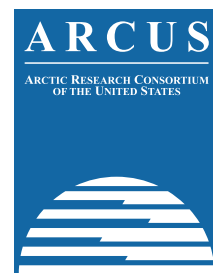


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James Morison and Jacqueline Richter-Menge (workshop co-chairs)

Kristina Creek, Peter Griffith, Steven Oberbauer, Sophia Perdikaris,
Matthew Shupe, Craig Tweedie, and Helen Wiggins (eds.)



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The organizing committee for the Workshop on Future Directions for Arctic Research Logistics consisted of co-chairs James Morison and Jacqueline Richter-Menge, Peter Griffith, Steven Oberbauer, Sophia Perdikaris, Matt Shupe, Craig Tweedie, and Helen Wiggins.

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Photos: PolarTREC program, courtesy of ARCUS.

Cover photo: The USCGC *Healy* breaks sea ice in the Bering Sea. Photo by Deanna Wheeler (PolarTREC 2009). Courtesy of ARCUS.

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Alicia Gillean observes Arctic ground squirrels. Atigun River near Toolik Field Station, Alaska. Photo by Alicia Gillean, courtesy of ARCUS.

Executive Summary

The impact of the warming climate is readily apparent in the Arctic: temperatures have increased more than elsewhere on Earth, sea ice has declined drastically, permafrost is degrading, and ecosystems are changing. Local communities must adapt to new norms. These changes, and the expectation of a continued increase in global temperatures through the twenty-first century, have elevated the socioeconomic and geopolitical importance of the Arctic. It is, therefore, straightforward to anticipate an increasing need for scientific research in the region and hence an increasing demand for logistical support. It is also apparent that this logistic support must provide more complete access to the Arctic—access that is Arctic-wide and year-round.

This report, largely informed by discussions at a workshop and feedback from many Arctic researchers, recommends that to meet the urgent demand for full access to the Arctic it is necessary to:

1. Sustain current capabilities while expanding new logistics resources, developing and implementing a strategic investment plan to maintain and advance critical facilities and technologies. These resources include marine vessels and sea-ice camps, terrestrial research hubs and smaller mobile camps, and aircraft. It is also necessary to strike an improved balance of advancements in communications requirements, technology development, and electrical power against the requirements for greener power generation and lower energy consumption.
2. Ensure the vitality of future Arctic research and logistics by facilitating the transfer of knowledge and capabilities to empower a new generation of Arctic research and logistics experts to design, lead, and implement future plans and initiatives. Further integration of members from local communities into Arctic research support and logistics will also provide unique opportunities to train, contribute to, and benefit from community knowledge. In developing the human resource capacity, it is important to build a research logistics culture that is founded on the principle that science needs are what drives logistics priorities.

3. Seek and take advantage of opportunities to improve the coordination of logistic resources, increasing interaction and partnerships across disciplinary, agency, organizational, and international boundaries. These efforts should aim to reduce duplication of effort in providing logistics, take full advantage of existing resources, and foster the highest quality science. In this vein, the results of this report should be shared beyond NSF to encourage new discussions and initiatives within the local, national, and international Arctic research and logistic communities.

Fundamentally, it should be recognized that the complexities of the Arctic environment and its communities, the reality of limited funding, and the rapidly increasing interest in the region require the development of support capabilities that are flexible and agile—Arctic research logistics support must respond to the pace of rapid change.



Crevasses of a glacier as seen from a P-3 Orion, flying over Greenland. Photo by Mark Buesing, courtesy of ARCUS.