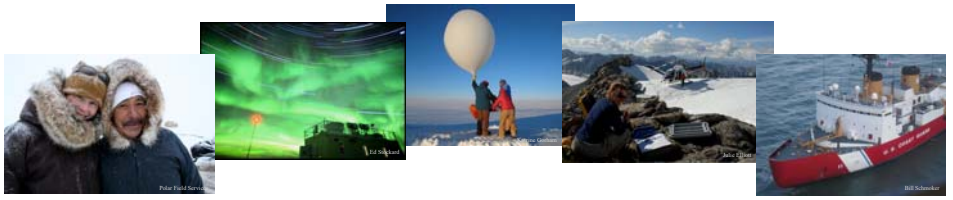
IN53B-0747

The Arctic Research Mapping Application and Arctic Observing Viewer: Applications Supporting Earth Science Planning

Mauricio Barba[1], Ryan Cody[1], Allison Gaylord[2], William Manley[3], Dilan Ramirez[1], Ari Kassin[1], and Craig E. Tweedie[1]

1.Biological Sciences, University of Texas at El Paso, El Paso, TX, USA; 2. Nuna Technologies, Homer, AK, USA; 3. INSTAAR, University of Colorado, Boulder, CO

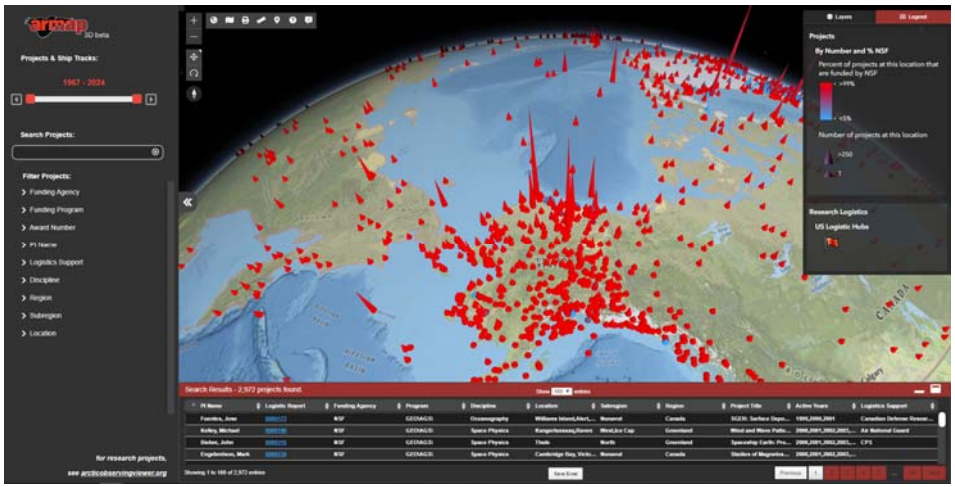


Abstract

The Arctic Research Mapping Application (ARMAP, armap.org) and the Arctic Observing Viewer (AOV, www.arcticobservingviewer.org) are online applications and data services that support Arctic science by providing tracking information (who's doing what, when, and where) for Arctic based projects and observing sites respectively. Both ARMAP and AOV are designed to help science planners, funding agencies, investigators, data specialists, and citizens to: Assess status, identify overlap, fill gaps, optimize sampling design, refine network performance, clarify directions, access data, coordinate logistics, educate communities and spark collaborations to meet Arctic science goals. Users have capabilities to visualize, navigate, select, search, draw, print, view details, and follow links to obtain a comprehensive perspective of environmental monitoring efforts. Recent improvements include: 3D models and visuals that can help to more easily identify patterns, optimized performance through an upgrade to ESRI API 4.X, custom visual layers, multiple valued fields for better queries, and more server-side operations for faster results and loading time. On the backend, the application incorporates improved search algorithms and filtering capabilities to support a higher volume of data without affecting performance. An upgrade to SOLR version 7.4.0 has also optimized performance and the user experience. Team members actively contribute to Arctic Data Committee interoperability work sessions on web services and metadata. Individually, ARMAP is in collaboration with 17 research agencies that provide project locations with key information about each project, with links to web pages that provide additional information. Additionally, ARMAP can be used to demonstrate past, present, and future research effort supported by the U.S. Government. AOV has over 32,000 documented long-term monitoring sites across 34 observing networks, including a range of boreholes, ship tracks, buoys, towers, sampling stations, sensor networks, instrumentation trams, vegetation plots, stream gauges, ice cores, observatories, and more. Contributing partners include the US NSF as well as the Arctic Data Center, NOAA, ADIwg, AOOS, BOEM, CAFF, IASOA, IABP, INTERACT, Isaaffik, NASA ABoVE, NEON, and USGS, among others.

armap

Research Projects



Search and visualize **research projects** from many disciplines spanning the terrestrial, marine and atmospheric sciences without needing to download data and install software.

Findable – machine-readable
Accessible – open web services
Interoperable – ISO metadata
Reusable – project information

ARCTIC OBSERVING VIEWER

Observing Sites

Search and visualize **observing sites** from many disciplines spanning the terrestrial, marine and atmospheric sciences without needing to download data and install software.

A properly resourced, comprehensive effort is needed to identify strengths and gaps in the current set of systems, sensors, networks, and surveys used to observe the Arctic.

– 2nd Arctic Science Ministerial

ARMAP is funded by the National Science Foundation Office of Polar Programs Arctic Sciences Section and is a collaborative development effort between the Systems Ecology Lab at the University of Texas at El Paso, Nuna Technologies, the University of Colorado INSTAAR, and CH2M HILL Polar Services. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the US National Science Foundation.