

The US Arctic Observing Viewer: A Tool for Data Discovery, Visualization, Strategic Planning, and Decision Support

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The US Arctic Observing Viewer (AOV) is a catalog of US Funded observing assets that features an interactive web mapping application and open webservice. This information system communicates the who, what, where, and when of US “observing sites” across the the Arctic. To better assess Arctic Observing and research efforts made by US National Science Foundation’s Arctic Observing Network program (NSF-AON), US AON, SAON, and related initiatives, a series of enhancements to the AOV web mapping application has been published. The precise locations of monitoring assets, observing platforms, and locations where repeat measurements of marine, terrestrial, cryospheric, and atmospheric environments have been established are available and visualized through this tool. Over 37,000 sites are documented, including a range of boreholes, buoys, towers, sampling stations, sensor networks, robotic tram systems, vegetation plots, stream gauges, ice cores, observatories, and more. Contributing partners include the US NSF and related Arctic Data Center, NOAA, CAFF, IASOA, INTERACT, SIOS, ArcticLCC, NASA ABoVE, and USGS, among others. Users have basic GIS capabilities to visualize, navigate, select, search, print, view details, and follow links to obtain a comprehensive perspective of environmental monitoring efforts. Recent updates include implementation of a new application framework for enhanced performance, and vastly improved search and filter tools with free text queries and auto-complete functionality. Team members actively contribute to SAON’s Polar Observing Assets working group to advance the development and adoption of interoperable metadata to address the challenge of the Arctic’s diverse, distributed, and fragmented observing efforts. AOV complements other distributed, interoperable cyber resources and helps science planners, funding agencies, investigators, data specialists, and citizens to: assess observing status, identify overlap and gaps, optimize sampling design, refine network performance, clarify priorities, access data, coordinate logistics, educate communities and spark collaborations to meet Arctic Observing goals. AOV is a partner application to NSF’s Arctic Research Mapping Application (armap.org), which is focused on broader discovery-level project information and mapping of project-level logistic operations