Visualization, Strategic Assessment, and Decision Support for Arctic Observing: The Arctic Observing Viewer (AOV)

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To better assess progress in Arctic Observing made by U.S. SEARCH, NSF AON, SAON, and related initiatives, an updated version has been released for the Arctic Observing Viewer (AOV; http://ArcticObservingViewer.org). This web mapping application and information system conveys the who, what, where, and when of "data collection sites" – the precise locations of monitoring assets, observing platforms, and wherever repeat marine or terrestrial measurements have been taken. Over 7700 sites in AOV encompass a range of boreholes, ship tracks, buoys, towers, sampling stations, sensor networks, vegetation plots, stream gauges, ice cores, observatories, and more. Contributing partners are the U.S. NSF, ACADIS, ADIwg, AOOS, a2dc, AON, CAFF, GINA, IASOA, INTERACT, NASA ABoVE, and USGS, among others. While focusing on U.S. activities, information exchange with international groups is welcomed for mutual benefit. Users can visualize, navigate, select, search, draw, print, view details, and follow links to obtain a comprehensive perspective of environmental monitoring efforts. We continue to develop, populate, and enhance AOV. Recent improvements include: a more intuitive and functional search tool, a modern cross-platform interface using javascript and HTML5, and hierarchical ISO metadata coupled with RESTful web services & metadata XLinks to span the data life cycle (from project planning to establishment of data collection sites to release of scientific datasets). AOV is founded on principles of interoperability, such that agencies and organizations can use the AOV Viewer and web services for their own purposes. In this way, AOV complements other distributed yet interoperable cyber resources, and helps science planners, funding agencies, investigators, data specialists, and others to: assess status, identify overlap, fill gaps, optimize sampling design, refine network performance, clarify directions, access data, coordinate logistics, and collaborate to meet Arctic Observing goals.