

The Arctic Observing Viewer: Visualization, Data Discovery, Strategic Assessment, and Decision Support for Arctic Observing

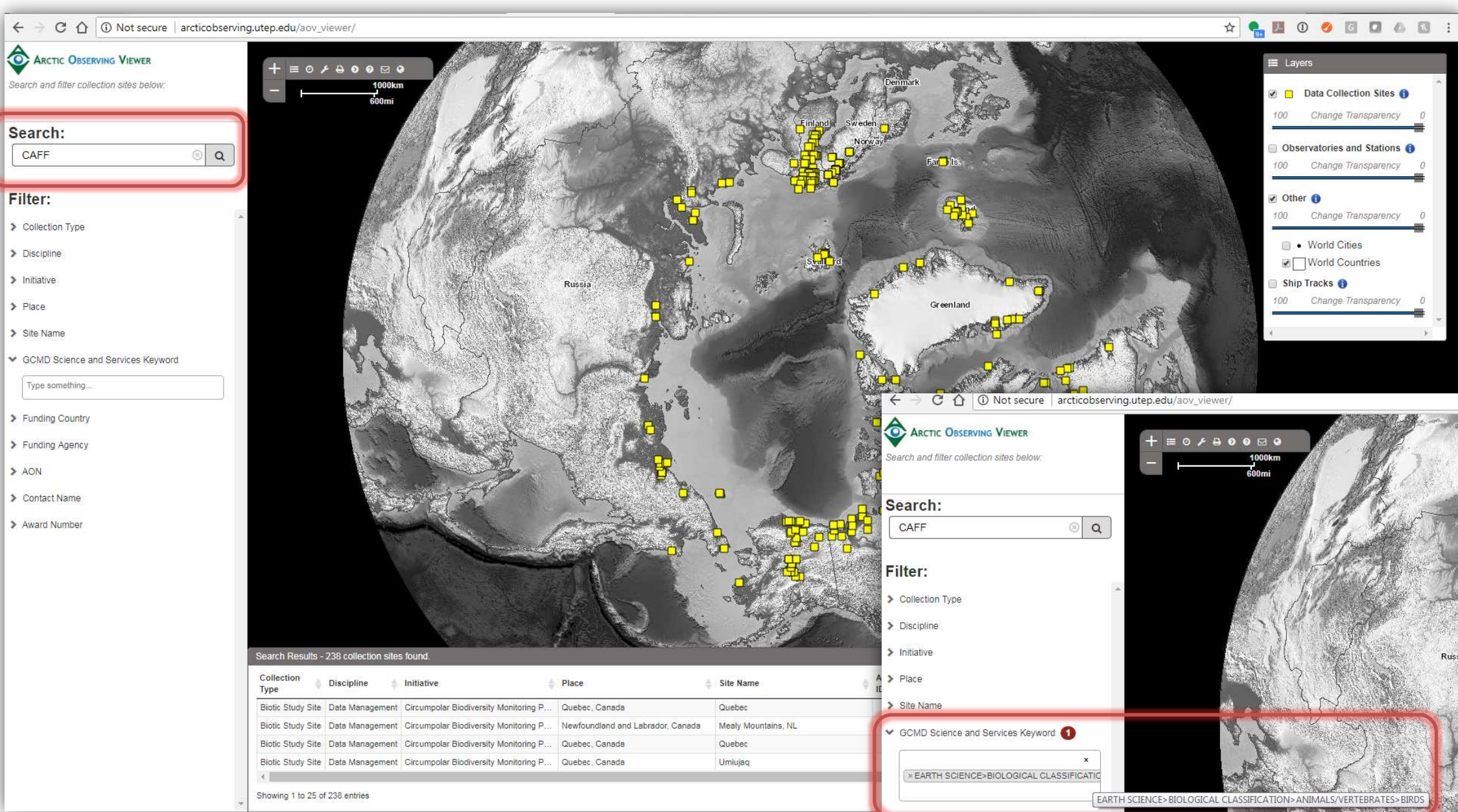
Ari Kassin¹, Ryan Cody¹, William Manley², Allison Gaylord³, Sandra Villarreal¹, Mauricio Barba¹, Stephen Escarzaga¹, Ted Habermann⁴, Roberta Score⁵, and Craig E. Tweedie¹

1.Biological Sciences, University of Texas at El Paso, El Paso, TX, USA; 2. INSTAAR, University of Colorado, Boulder, CO; 3. Nuna Technologies, Homer, AK, USA; 4. The HDF Group, 1800 South Oak Street., Champaign, IL. USA; 5. CH2M HILL Polar Services, Englewood, CO, USA.

Abstract

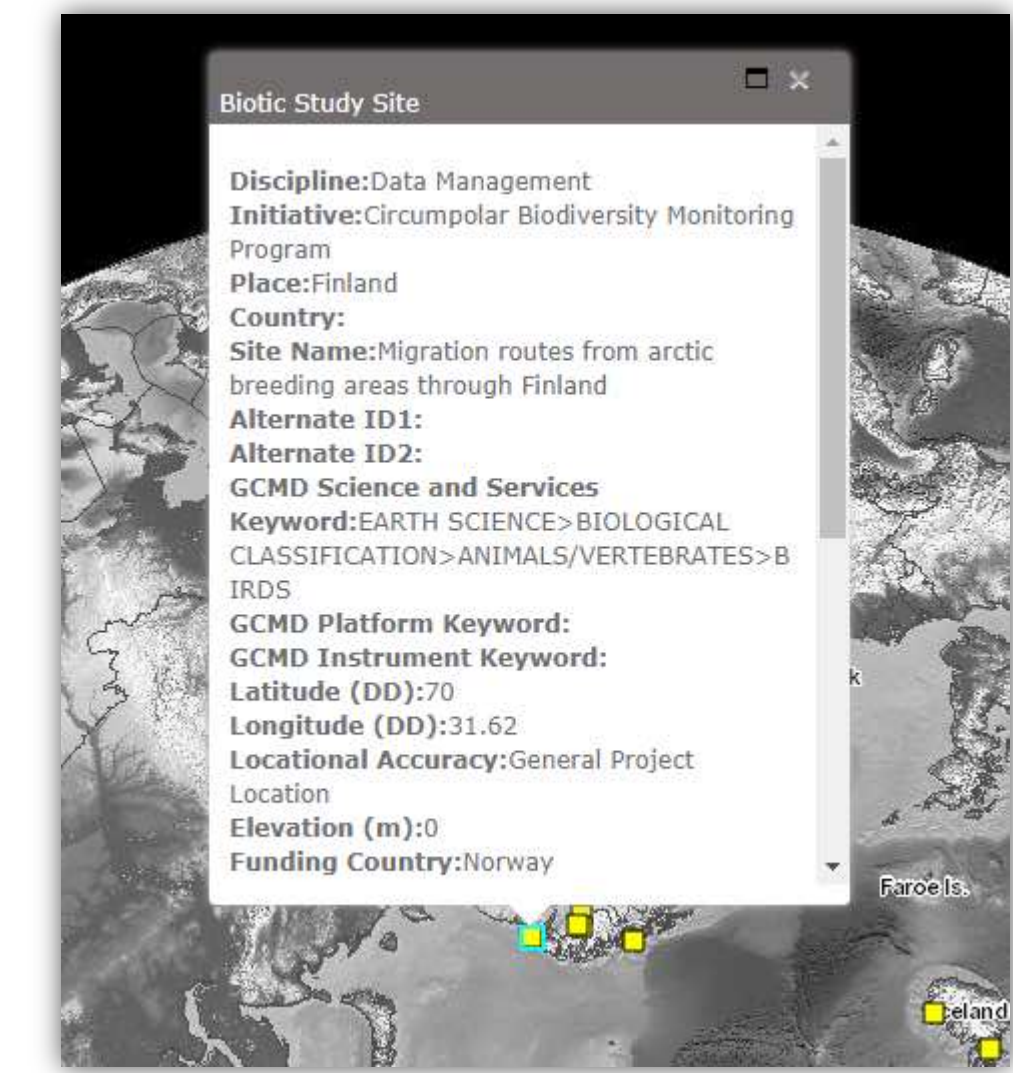
To better assess progress in Arctic Observing made by NSF AON, US AON, SAON, and related initiatives, an updated version of the Arctic Observing Viewer (AOV) has been released. This web mapping application and information system conveys the who, what, where, and when of “data collection sites” – the precise locations of monitoring assets, observing platforms, and wherever repeat marine or terrestrial measurements have been taken. Over 13,900 sites across the circumarctic are documented, including 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 US NSF, NOAA, the NSF Arctic Data Center, ADIwg, AOOS, a2dc, CAFF, GINA, IASOA, INTERACT, NASA ABoVE, and USGS, among others. 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 updates include: a vastly improved Search tool with free text queries, autocomplete, and filters; faster performance; heat maps to highlight concentrated research; and 3-D represented data to more easily identify trends. 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. AOV is a companion application to the Arctic Research Mapping Application (armap.org), which is focused on discovery-level project information.

Search “CAFF”



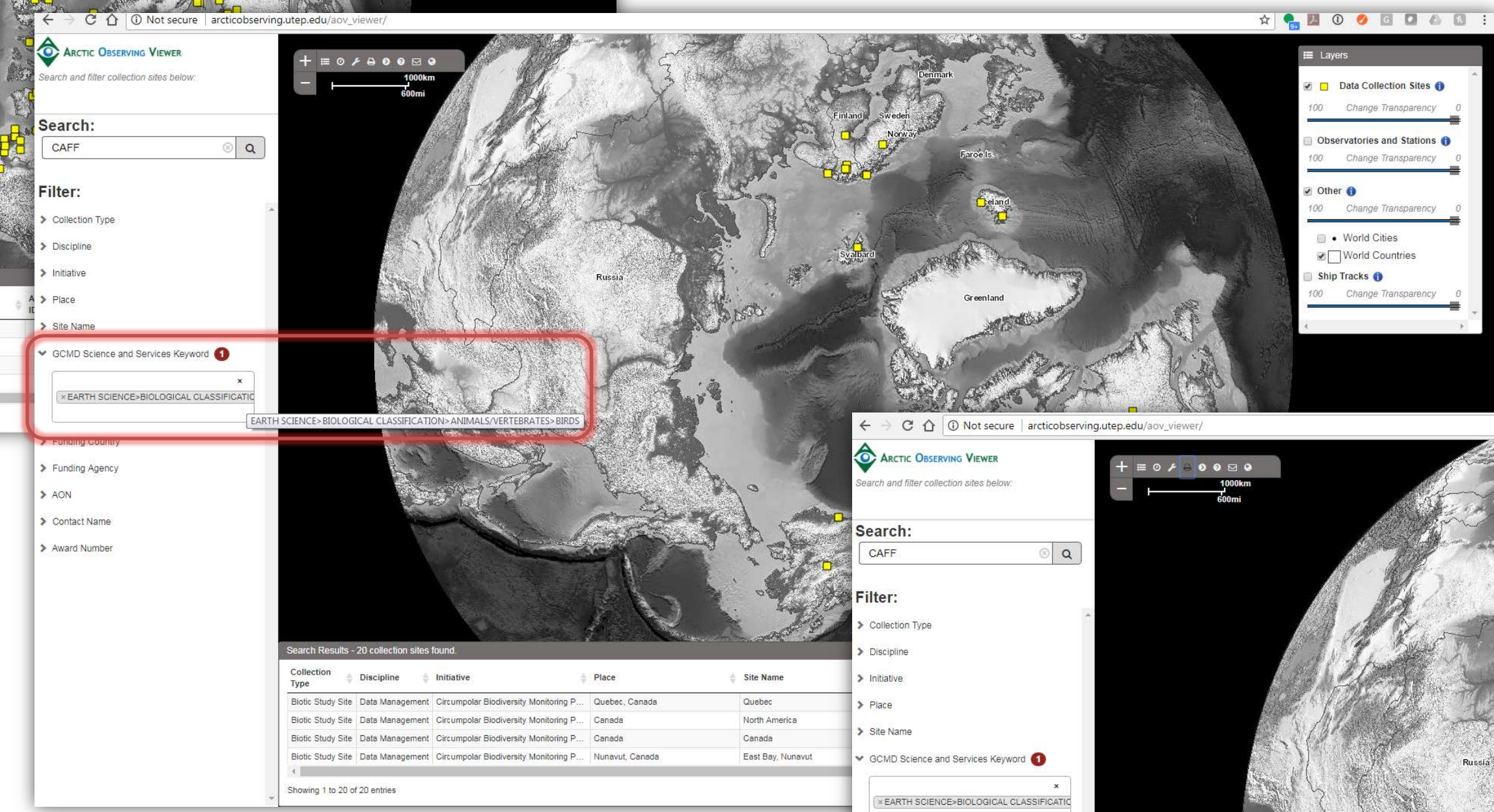
Enter any text you like to “Search” for related data collection sites.

View Details



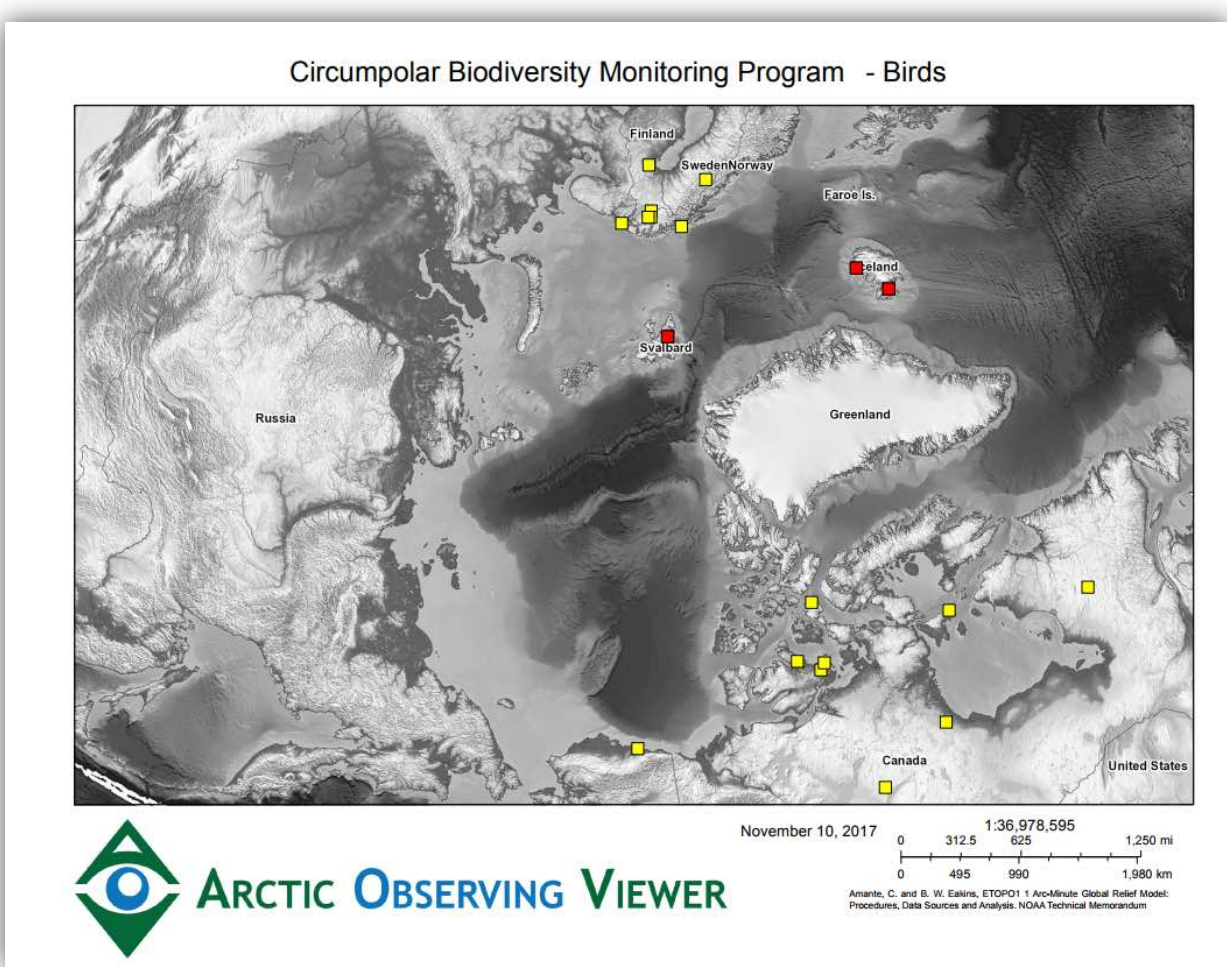
Click on a yellow square to see details about that data collection site in a “Pop up”.

Filter “Birds”

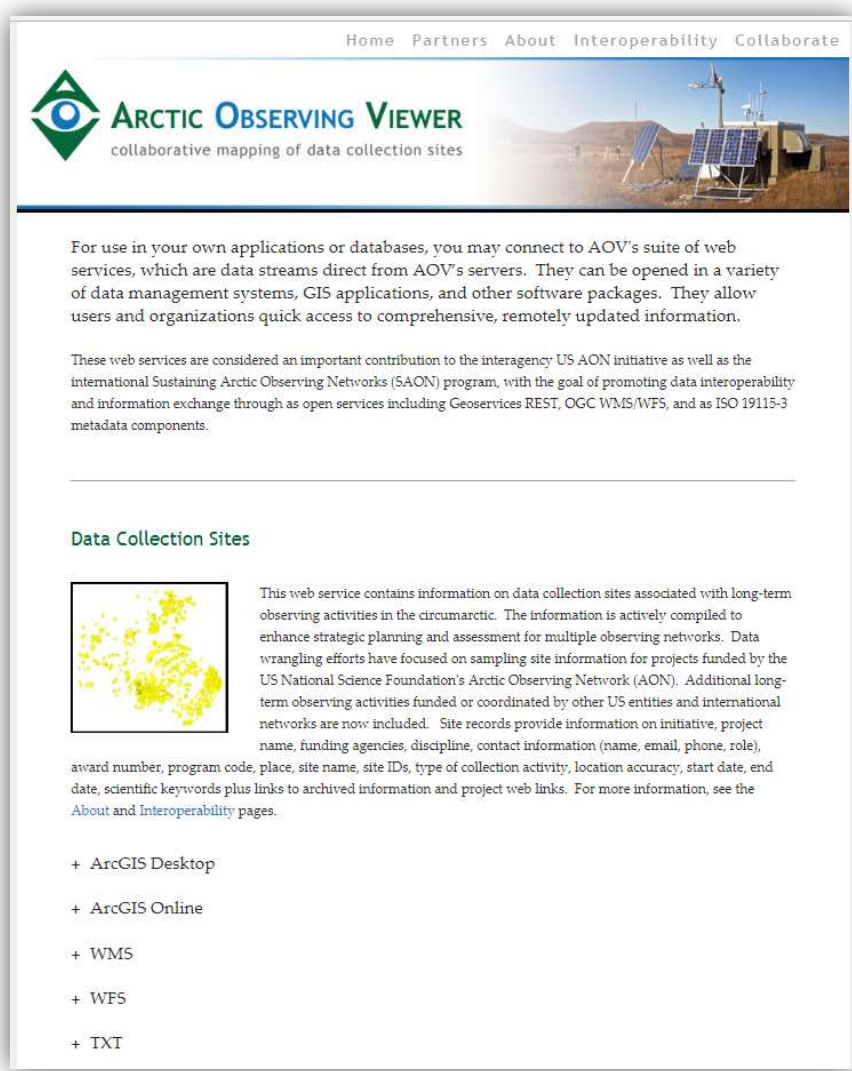


“Filter” by clicking on the “>” symbols and select parameters of interest to browse sites or refine search results.

Print a Map



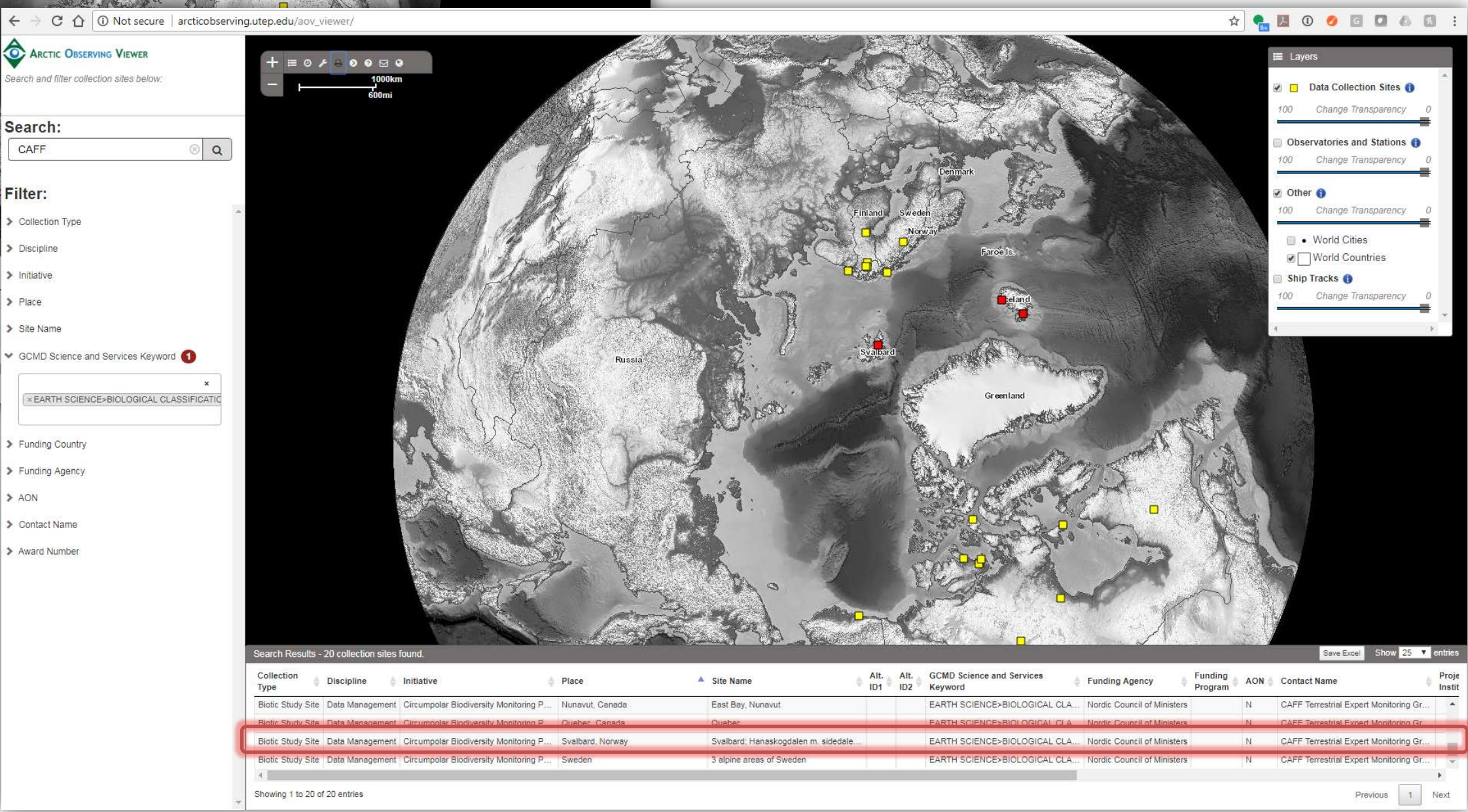
Use the “Search Results” table to browse and highlight sites (in red) by clicking on rows in the table.



ARCTIC OBSERVING VIEWER

collaborative mapping of data collection sites

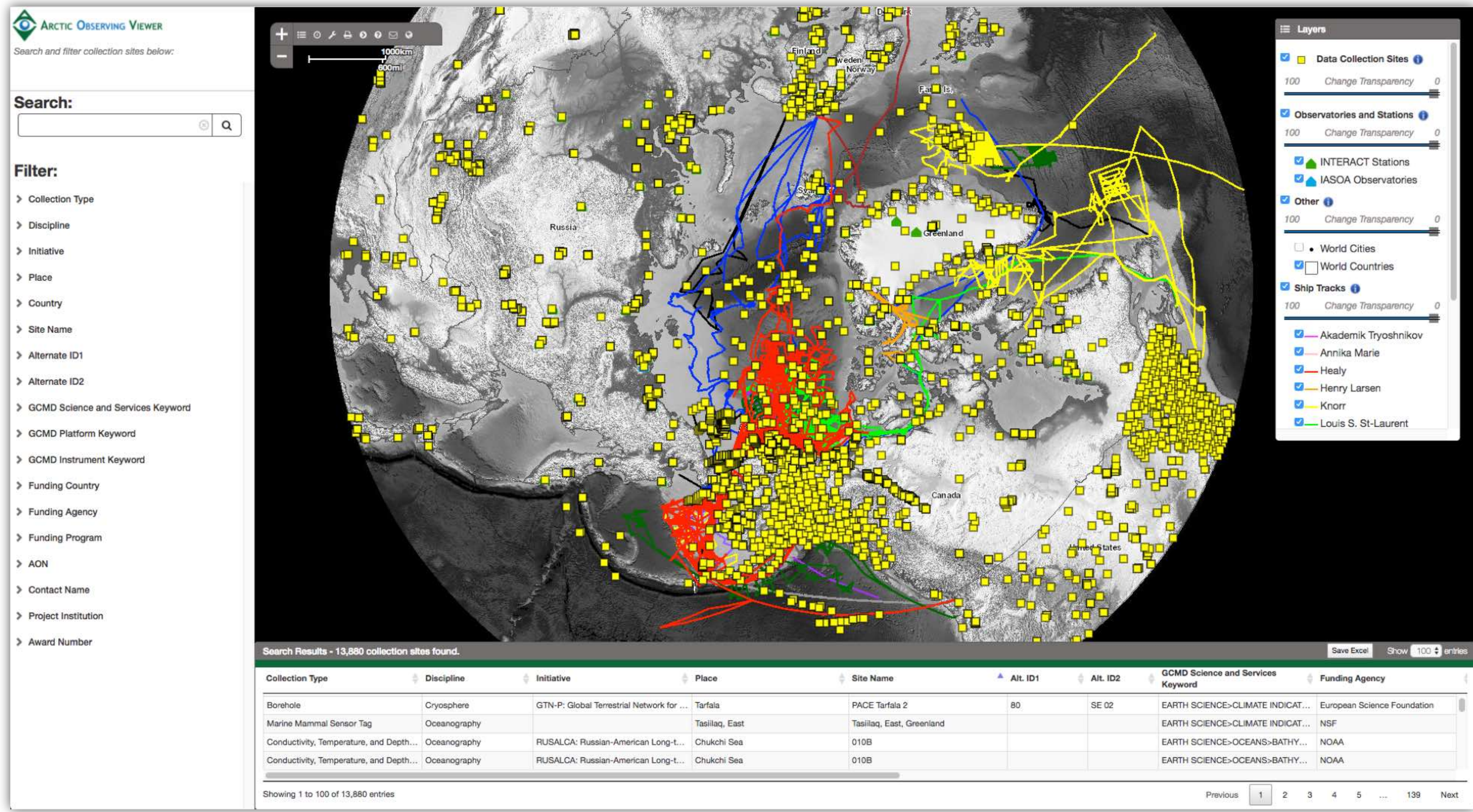
Highlight



Use Interoperable Web Services

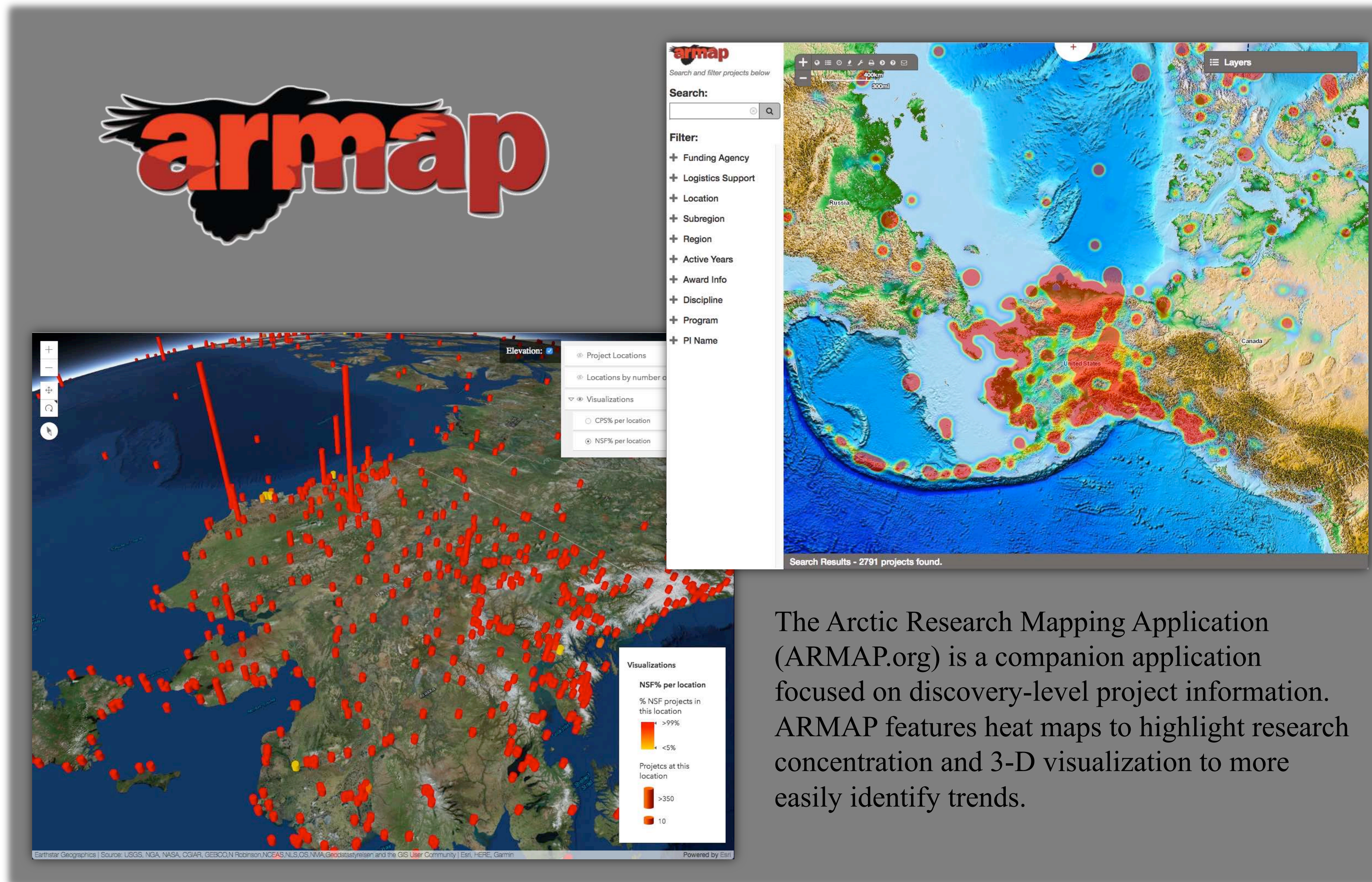
ArcticObservingViewer.org

IN51A-0001



The Viewer displays over 13,000 observation sites spanning multiple networks, disciplines, and funding agencies. It now provides more powerful and intuitive Search and Filter tools. Or use the time slider to see observing activities through time. You can also print maps, save details to Excel, or use interoperable web services in your own applications.

Assess status. Coordinate Logistics.
Identify co-location of activities, large facilities, and resources.
Find overlap. Fill gaps. Clarify directions.



The Arctic Research Mapping Application (ARMAP.org) is a companion application focused on discovery-level project information. ARMAP features heat maps to highlight research concentration and 3-D visualization to more easily identify trends.