Examining open-source web GIS methods for public dissemination of Arctic seafloor mapping data

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Web-mapping technology has shown tremendous growth in the last decade. The ease-of-use of online GIS software such as ESRI webGIS or Google Maps has encouraged many organizations to publish their geospatial data to a web mapping interface. With respect to the field of ocean mapping, this has been a breakthrough towards public accessibility. There are, at present, multiple web portals available for displaying bathymetry, backscatter, and other types of hydrospatial data; however, datasets are often sporadically available from various sources rather than condensed into a single comprehensive repository. While for many Southern regions and for global coverage, a single repository could quickly become overwhelmed with data, for areas with sparse coverage, such as the Canadian Arctic, all hydrospatial data sources should be considered. Current ocean web-mapping portals also often implement terminology and tools that may surpass the understanding of a layperson without offering guidance.

This presentation will explore the utility of open-source web GIS software with respect to public consumption of hydrospatial data. Technical methods for expanding basic web-mapping functionality will be explored - in particular: geoJSON objects, spatial analysis tools, and querying of third-party data sources. An example web portal for the specific use case of Arctic seabed mapping datasets will be presented to demonstrate how a federated web GIS portal can increase the public ease-of-access to this information, and provide guidance on data quality and coverage in sparse environments. Due to the GEBCO-Nippon Foundation's Seabed 2030 project, public interest in achieving global seabed coverage is high. It could be further encouraged by using strategic web map portals focusing on layperson's accessibility.