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Geospatial Data Management Interview Series: Interview with Alicia Urquidi Diaz, Scholars Geoportal

Editor: Sarah Zhang

Introduction

Originally launched in 2012, the [Scholars GeoPortal](#) is a geospatial data platform designed for academic use. As a service of Scholars Portal, the GeoPortal is developed and maintained by the [Ontario Council of University Libraries \(OCUL\)](#). It offers researchers a web-based tool to search for datasets, interact with map-based features, and download GIS data. The GeoPortal is currently undergoing redevelopment, with the new version expected to be released in Fall 2026. I had the pleasure of interviewing Alicia Urquidi Diaz, a member of the Data Services team at Scholars Portal.

Question: Could you describe the motivations behind the redevelopment project and outline the key tasks involved?

Alicia: The core technologies that make up the GeoPortal have always been regularly maintained, tested and updated. But after more than 13 years, our infrastructure was due for a major system architecture upgrade and front-end redesign. When we launched in 2012, the GeoPortal represented something really innovative! It was a tool built by the OCUL community, and designed for university students and researchers to search, preview, manipulate and download geospatial datasets on many topics of interest, like land use, transportation, points of interest (e.g. airports, golf courses, schools), and historical data. We won the Ontario Library and Information Technology Association (OLITA) Award for Technical Innovation at



the time, and through the years we've maintained steady growth, both in terms of unique users, and of the volume of data being viewed and downloaded by our users.

In a sense, the project is Scholars Portal's response to changes in the needs of GeoPortal users, and to new developments in web and GIS technology over the past decade. We are investing in better ways to deliver the same services that our core user group needs and values, and we are also improving and expanding the GeoPortal features to address end users' emerging needs.

The project involves both a redevelopment and a data migration. This is an enormous task! It means that our team of developers at Scholars Portal is renewing every bit of software in the GeoPortal stack: from the file servers to our geodatabases and ArcGIS REST servers, from the data publishing tools to the metadata middleware, from the metadata editor to the user interface. Much of the work involves some custom development as well: the front-end is being completely rebuilt on Angular, and the new metadata editor for the GeoPortal will be on the open source Dataverse repository, which we are also developing to better support geospatial metadata.

The migration itself is complex too. We are basically trying to move all our data holdings (all files and metadata, and all administrative databases) into a different vessel without losing the interconnections.

So maintaining good coordination and communication flows between different project areas has been critical. It's a lot of moving parts. We share information and check in with each other's progress on a weekly basis because that's the only way to ensure that everyone on the project team has all the information they need to make decisions.

Question: Could you share a few highlights of the redevelopment that you find particularly exciting or innovative?

Alicia: I'd say one of the main highlights in the new GeoPortal will be a much-improved experience browsing and exploring data in featured collections. We have so much valuable data, and the new front end is going to let us showcase those collections so that users can find and explore their contents more intuitively. We're



introducing landing pages for featured collections, for example. We are also planning for new features to view and explore historical datasets (like Canadian topographic maps, aerial imagery, or census boundary data) and more easily spot changes over time using map visualization, temporal sliders, and side-by-side comparison screens. Of course, this requires high quality metadata, so we are also investing in thorough quality assurance and quality control (QA/QC) to power these front-end features.

One of our longstanding goals is to make it easy for OCUL institutions to add their local collections to be found through the GeoPortal, and we will be able to achieve this goal through a Dataverse/Borealis integration. As part of the project, we will migrate our metadata catalogue to a hosted collection in Borealis, the Canadian Dataverse Repository. This entails a new expansion of the geospatial metadata block, which we are developing to support ISO 19115 metadata. It also involves building a suite of metadata importers, crosswalks and translators between different metadata schemas, including ISO 19115-3 XML.

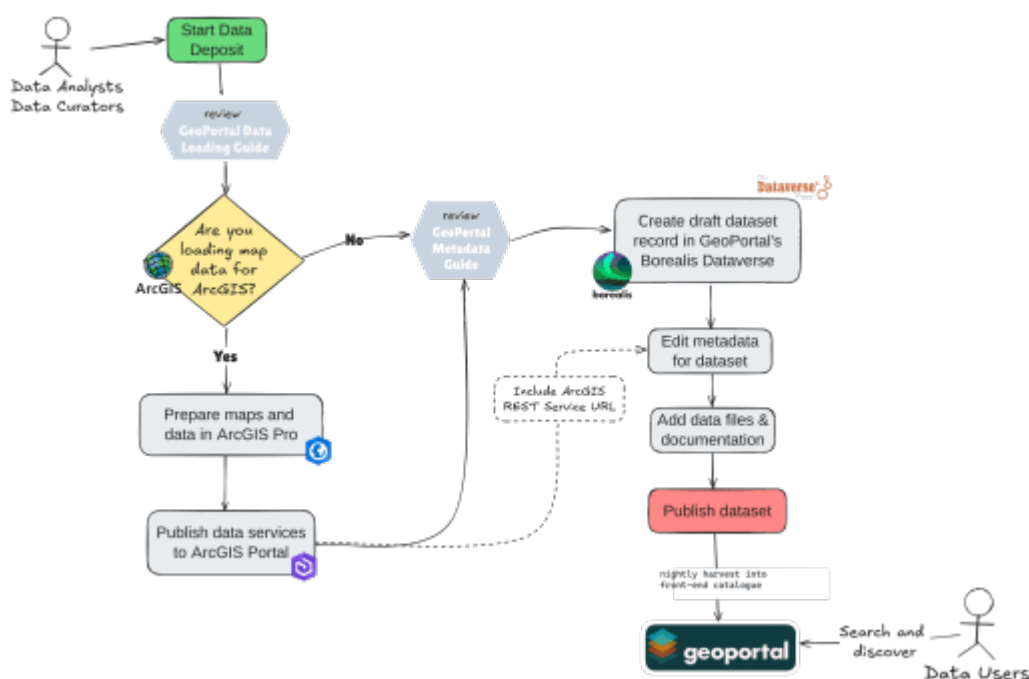


Figure 1. Dataset publishing workflow for the new Scholars GeoPortal



Question: How does the new platform enhance user experience, and what functionalities are now available that were not possible with the previous system?

Alicia: We're really invested in developing a user interface that feels modern, intuitive, responsive, and accessible. I mentioned above the improvements in navigation, data browsing and exploring. One other thing we'd like to improve is the search & discovery experience. That will involve designing a map catalogue that balances keyword and category search/browse paradigms with map-based displays and spatial searches. And it involves optimizing the metadata to support more exact filtering and faceting, and spatially accurate visualization for better data discovery.

Another example is how we're improving data access overall. Right now we're investigating how to use a Globus integration to streamline large data transfers through the GeoPortal. This is especially important for aerial imagery, where our users are often requesting data in volumes that the current GeoPortal cannot support. We're also looking to enhance GeoPortal data service interoperability with ArcGIS as well as other open GIS technologies and standards (like OpenGeoMetadata, OGC standards and GeoBlacklight-based systems). And like other Scholars Portal services, the new GeoPortal's web interface will implement standardized accessibility structures, colour choices, and navigation features.

Question: Your team is working on geospatial metadata enhancement. What advantages does the inclusion of ISO 19115 metadata fields bring?

Alicia: Metadata sometimes gets overlooked because it's so often hidden, but none of the GeoPortal front-end features would be possible without robust, good quality metadata. So the project team is improving metadata in three ways: We're quality-checking existing metadata (QA/QC), we're adding more-and more detailed-metadata (enrichment), and we are updating the GeoPortal's metadata profile, including changes to the XML implementation format.



Buttle Lake (East) British Columbia [1949]

Version 2.1.1

Department of National Defense, 1949, "Buttle Lake (East) British Columbia [1949]", <https://doi.org/10.80240/DEV/JR2GEF>

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Description This is a georeferenced raster image of a printed paper map of the Buttle Lake, British Columbia region (Sheet No. 092F12), published in 1949. It is the first edition in a series of maps, which show both natural and man-made features such as relief, spot heights, administrative boundaries, secondary and side roads, railways, trails, wooded areas, waterways including lakes, rivers, streams and rapids, bridges, buildings, mills, power lines, terrain, and land formations. This map was printed in 1949 and the information on the map is current as of 1947.

Subject Earth and Environmental Sciences

Keyword 092F12a, Topographical Maps, Carte topographique

Related Publication Is Supplemented By: Historical Topographic Maps Info Page <https://geo.scholarsportal.info/topomaps/topomaps50s>

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Citation Metadata

Geospatial Metadata

Geographic Bounding Box	Longitude (W): -126.0 Longitude (E): -125.5 Latitude (N): 49.75 Latitude (S): 49.5
Type of Geospatial Data Resource	dataset
Resource Reference Date	1949 (publication)
Process Step Description	Original maps were digitally scanned by McGill Libraries in partnership with Canadiana.org, and georeferenced by the University of Toronto Libraries and Eastview Corporation.
Reference System Information	NAD27 / UTM zone 10N (26710) (EPSG v. 2.1(3.0.1))
Spatial Resolution	50000 (equivalentScale)
Spatial Representation Type	grid
Distribution Link	Access dataset URL, http://datarepository.org/dataaccess (HTTP)
Number of Dimensions	2
Axis Dimension Properties	column 6208 4 (meter) row 7574 4 (meter)

Export Metadata

- DataCite
- Schema.org JSON-LD
- DOI Codebook v2
- QAI_ORE
- DOI PDF Codebook
- OpenAIRE
- ISO-19115-3**
- Dublin Core
- Crossant
- DOI HTML Codebook
- JSON

Figure 2. A future version of Dataverse will feature expanded support for geospatial metadata fields, with a new geospatial metadata block and an ISO 19551-3 XML metadata export tool.

The GeoPortal metadata catalogue has always been based on ISO geospatial metadata (until now, the North American Profile (NAP) of ISO 19115 and ISO 19139). With this migration, we will upgrade to the most recent (2014/2023) version of the ISO 19115-1 schema and its XML implementation (also known as ISO 19115-3). This new version introduces a more modular and extensible metadata structure, and a number of changes that make the schema more functional for us, particularly for distribution linkages and additional documentation. This is an international standard that is widely supported by geospatial communities, infrastructures and tools, but it's also very detailed, which improves the common trade-off between granularity and interoperability. So we're really excited to integrate with Dataverse, which



offers more workflow support for managing and publishing geospatial metadata than the current ArcGIS tools. As Dataverse is already hosted by Scholars Portal, as the Borealis service, this provides mutual benefits for both services and supports greater sustainability for our new infrastructure.

Thank you so much, Alicia! We appreciate you giving us a glimpse into this exciting project and sharing insights into its complex structure!

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