Report by NOAA/NCEI on maintenance of the GEBCO Gazetteer (NOAA) & interoperability with SCUFN Operational Web Services
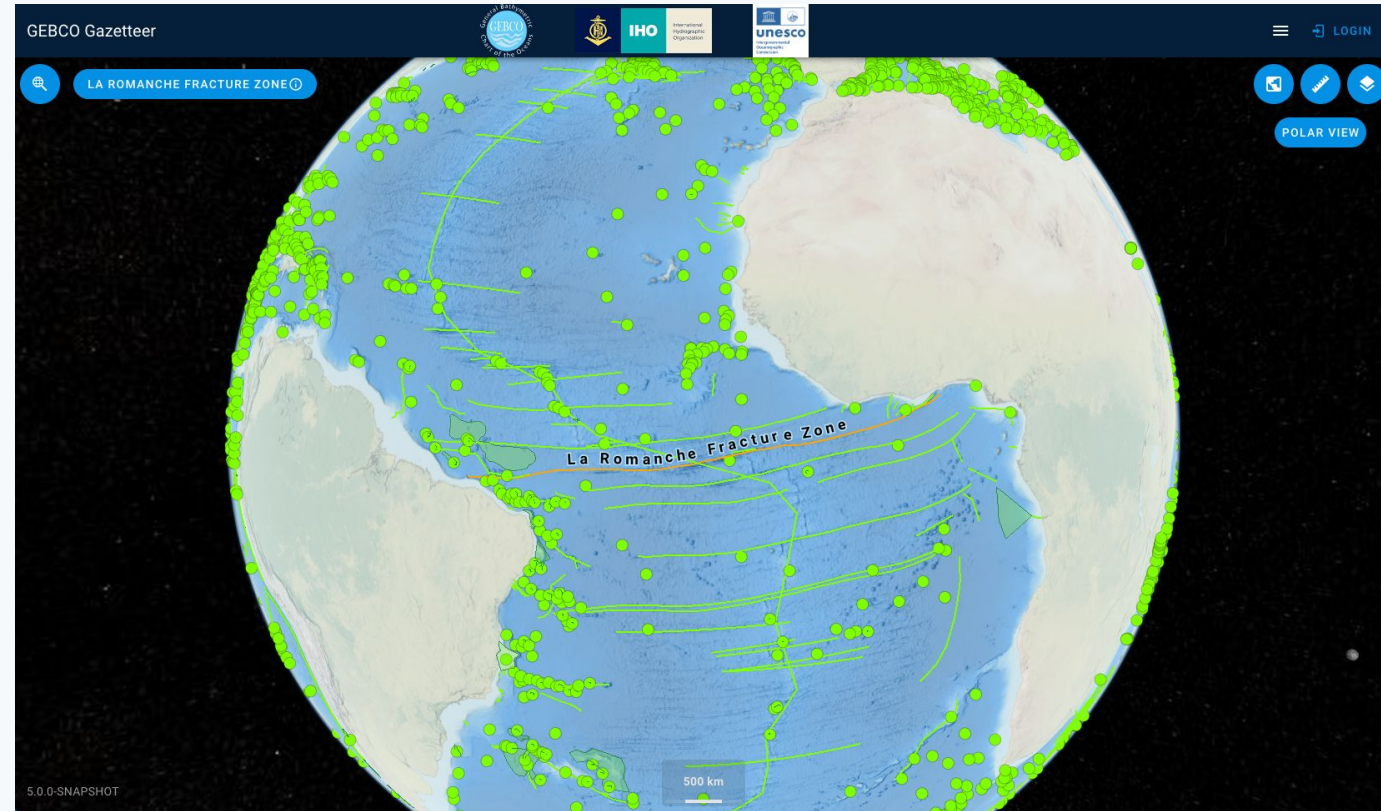## SCUFN 36-07.2B

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Introduction

1. The NCEI/DCDB software development team began addressing recent Gazetteer issues and enhancement requests in April 2022

2. Updates were made to Gazetteer v4.3.7, addressing 3 enhancements

3. Test environment created for GEBCO Gazetteer and KHOA OWS interoperation

4. Gazetteer v5.0.0 is feature-complete, released for testing

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ngdc.noaa.gov/gazetteer/

Gazetteer v4 Updates

GAZ-393: Gazetteer v4 - PENDING state update

The behavior for editing a feature in the PENDING state has changed.

Previous Behavior:

Users other than the owner were allowed to edit a feature in the PENDING state

New Behavior:

 Only the owner or an administrator can edit a feature in the PENDING state

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GAZ-386: Gazetteer v4 - Export results include depth, relief & dimension

Feature export now includes minimum depth, maximum depth, total relief, and dimension

cific Term	Generic Term	Associated Meeting	Year of Proposal	Year of Discovery	Coordinates	Status	Min Depth	Max Depth	Total Relief	Dimension
re	Seamount	SCUFN-15	2001		POINT (-155.193333 -16.808333)	APPROVED				
apiti	Seamount	SCUFN-15	2001		POINT (-153.07 -18.37333)	APPROVED				
a'e	Seamount	SCUFN-15	2001		POINT (-152.45333 -18.635)	APPROVED				
	Seamount	SCUFN-15	2001		POINT (-152.53167 -18.53333)	APPROVED				
	Seamount	SCUFN-15	2001		POINT (-152.38 -18.42833)	APPROVED				
ahi	Seamount	SCUFN-15	2001		POINT (-147.46 -19.59667)	APPROVED				
'o Mata	Seamount	SCUFN-15	2001		POINT (-154.075 -17.81333)	APPROVED				
'Otaha	Seamount	SCUFN-15	2001		POINT (-152.24 -18.75833)	APPROVED				
'Oti'a	Seamount	SCUFN-15	2001		POINT (-154.83167 -17.49167)	APPROVED				
'Otu'eroa	Seamount	SCUFN-15	2001		POINT (-152.74833 -18.22)	APPROVED				
A.R.A. San Juan	Canyon	SCUFN-32	2019	2007	LINESTRING (-59.9046 -45.9794, -59.8883 -45.9842, -59.841 -45.	APPROVED	850	1100	250	17 km long; 800 to 1500 m wide; and 100 m deep on average.
Abbott	Seamount				POINT (174.3 31.8)	APPROVED				
Abraham	Canyon				POINT (172.333333 52.616667)	APPROVED				
Abrolhos	Shelf	SCUFN-22	2009		POLYGON ((-39.1217 -16.745, -39.1533 -16.7833, -39.2133 -17.2	APPROVED	18	3835	3817	~ 220 km x 245 km
Abrolhos	Ridge				LINESTRING (-37.99704 -17.08823, -37.59249 -17.01168, -36.902	APPROVED				
Abubacer	Ridge				POINT (-1.65 36.8)	APPROVED				
Aby	Canyon	SCUFN-14			LINESTRING (-3.883333 3.9, -3.433333 4.6)	APPROVED				
Acapulco	Seamounts	SCUFN-22	2009	1988	POLYGON ((-119.8385 13.25816, -119.63251 13.40099, -119.596	APPROVED	650	2350	1700	Diameter at the base of 34 km, 18 km and 20 km, respectively.
Aceste	Seamount				POINT (11.516667 38.416667)	APPROVED				

Açu Canyon
Adak Canyon
Adams Seamount
Adana Trough
Adare Basin
Adare Trough
Adelaide Bank
Adieu Canyon
Admiralteystvo Rise
Admiralteystvo Trough
Admiralty Guyot

Export results as: ▼

Gazetteer Version: 4.3.7

GAZ-388: Gazetteer v4 - Update GEBCO base map

The base map was updated to "GEBCO_basemap_NCEI_wgs84" which will be dynamically updated
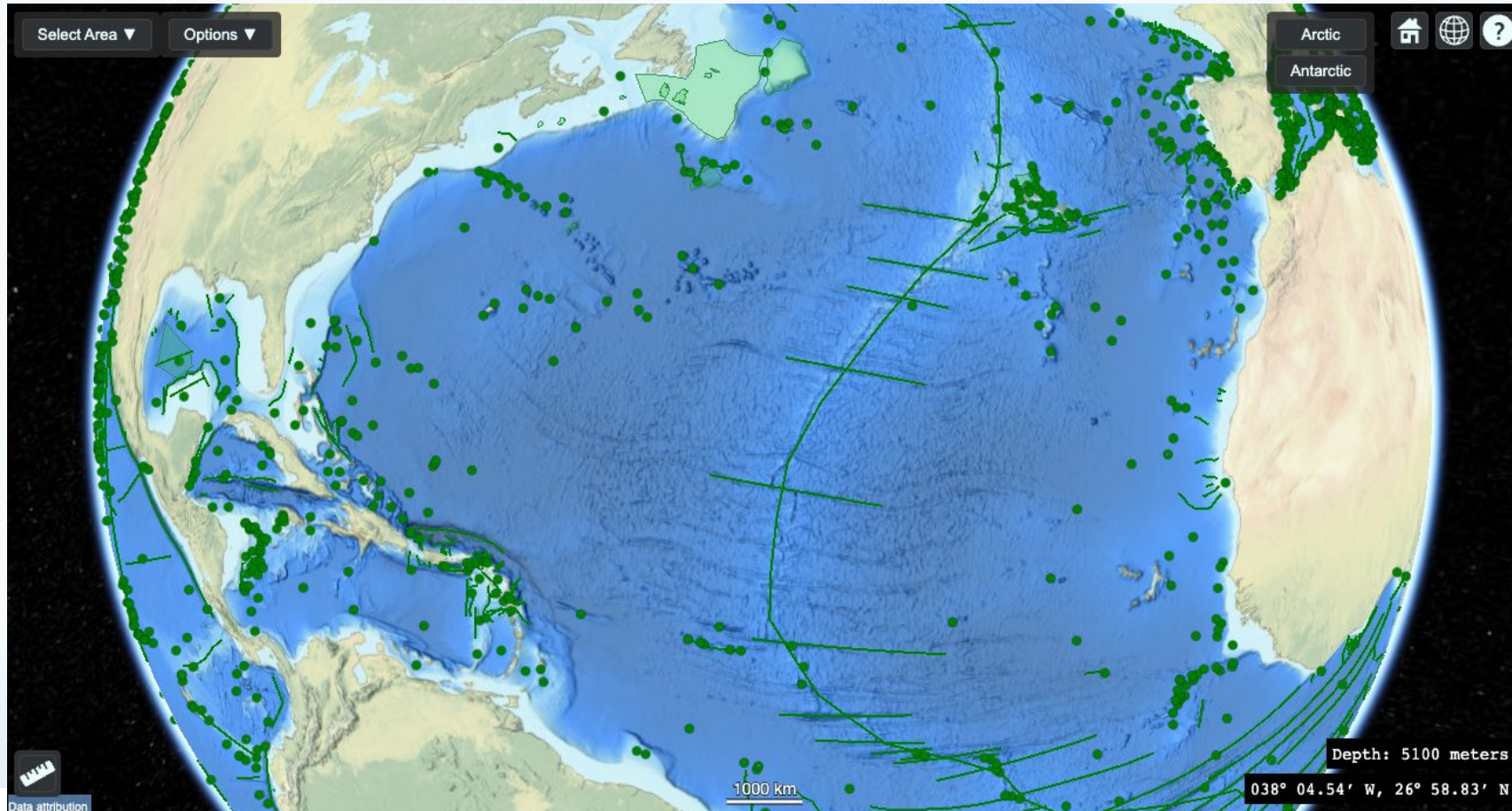
Gazetteer v5 Updates

GAZ-394: Gazetteer v5 - Project restructuring

The Gazetteer v5 code base and deployment artifacts were restructured to better support application deployment at NOAA / NCEI

1. Single project code base $\Rightarrow$ Easier to maintain

2. Single application module $\Rightarrow$ Less resources to deploy

GAZ-413: Gazetteer v5 - KHOA test environment

Restructured application and database were deployed to https://ccog.colorado.edu/gazetteer5 to allow for testing between KHOA OWS and the GEBCO Gazetteer

GAZ-406: Gazetteer v5 - KHOA test API Token

Functionality was added to Gazetteer v5 to support use of an API token, a secret authentication identifier

An API authentication token was generated in the GEBCO Gazetteer test environment and given to KHOA OWS software developers to test the new API
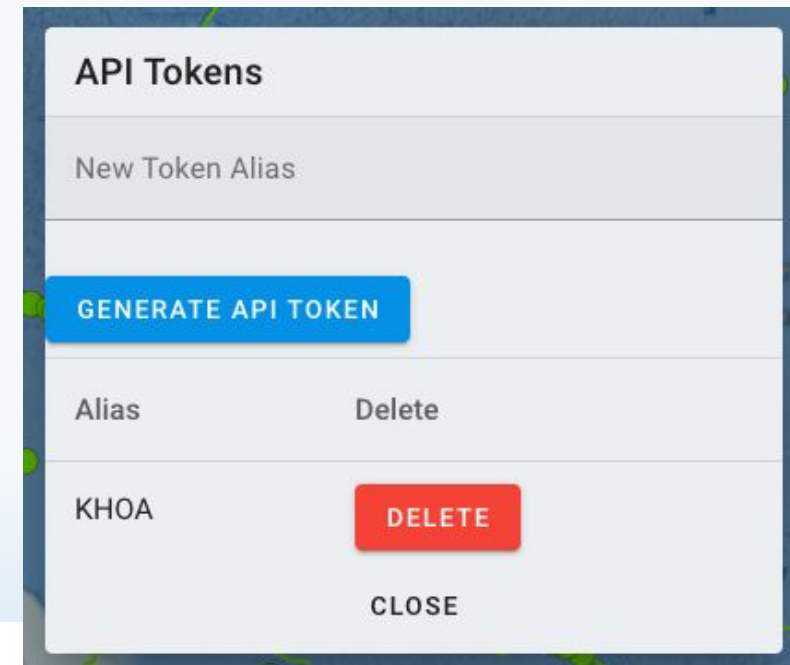
GAZ-396: Gazetteer v5 feature state API PATCH endpoints

New feature API endpoints were added to support the PATCH action for feature state changes.

Allows for only the state of a feature to be changed between:

- APPROVED
- PENDING
- READY
- DELETED
- EDIT

User authority rules for changing state can be configured separately from feature edit rules.
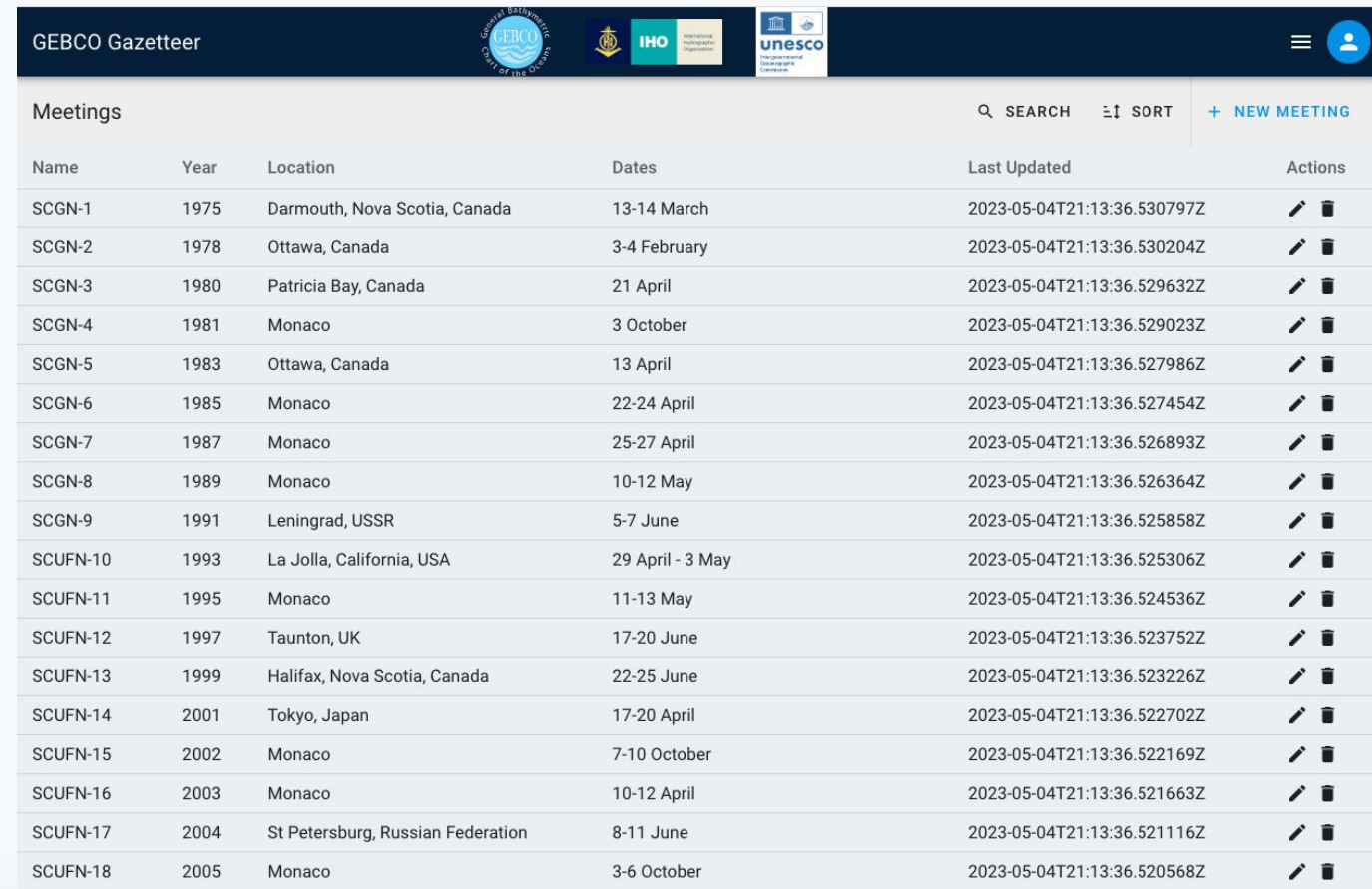
GAZ-434: Gazetteer v5 API administrator endpoints

Gazetteer v5 API now supports creating, reading, updating, and deleting non-feature data.

- Users
- Meetings
- Contacts
- Generic Terms

This API powers the user interface

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GAZ-449: Gazetteer v5 API fine-grained access control

Gazetteer v5 allows permissions to be assigned to users for every action available in the API, not just global editor or admin roles.

This is a required feature for KHOA OWS and GEBCO Gazetteer interoperability.

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GAZ-435: Gazetteer v5 modernized user interface framework

Gazetteer v5 uses a single user interface framework, Vue.js + Typescript.

Updates to the UI are now easier and less prone to errors.

A single front end technology makes the UI more coherent.

GAZ-457: Gazetteer v5 UI refresh - material design

Gazetteer v5 uses Google Material Design styling.

The same styling is used for Google web applications.
The Gazetteer v5 user experience was inspired by Google Maps
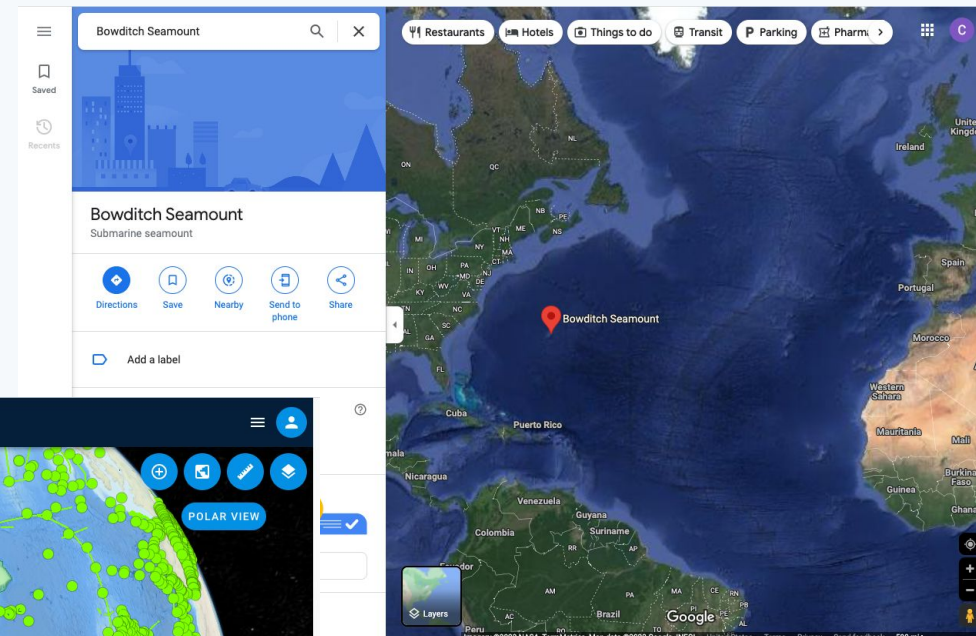
GAZ-436: Gazetteer v5 test environment database refresh

Improvements were made to make refreshing the Gazetteer v5 test database at https://ccog.colorado.edu/gazetteer5 simpler and faster.

This allows for updates made to the production Gazetteer database to be added to the test database more frequently.

This also allows for easier software developer testing during development cycles.
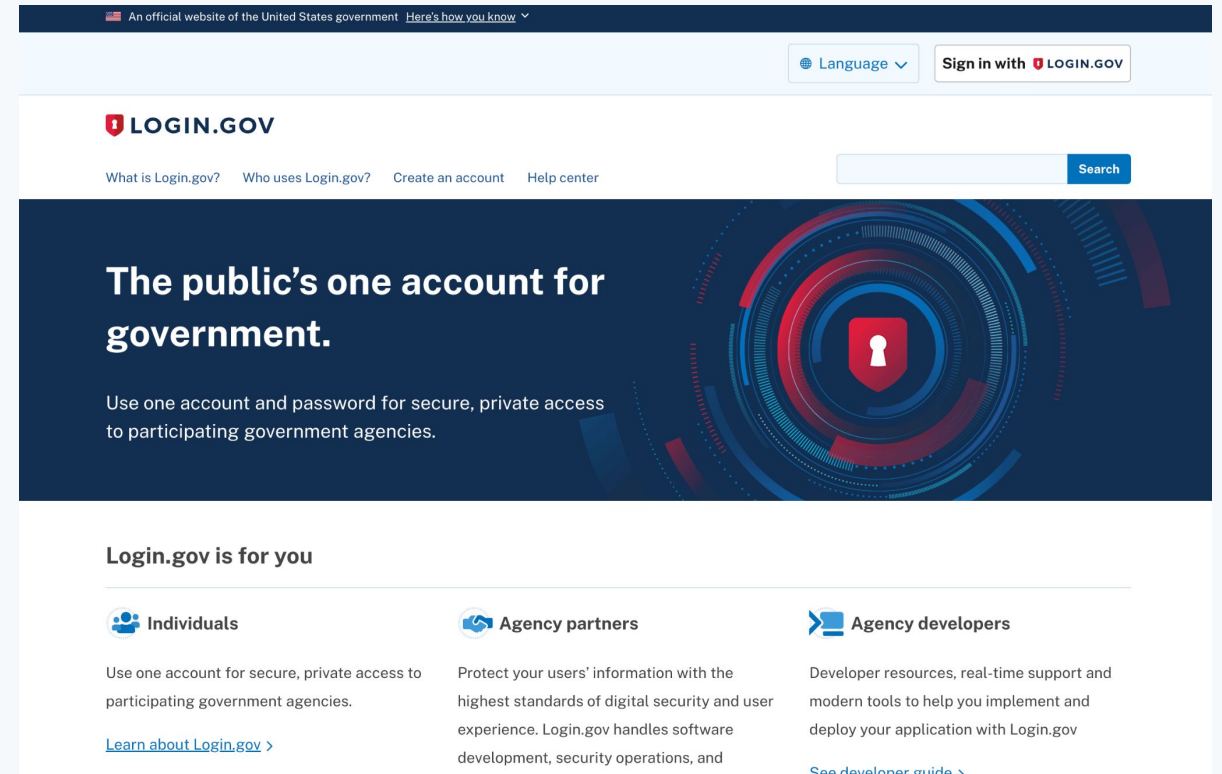
GAZ-445: Gazetteer v5 OIDC authentication

Gazetteer v5 uses Open ID Connect and a central authentication service to authenticate users.

In production, Login.gov will be used and will allow users to manage their own credentials and password changes.

GAZ-431: Gazetteer v5 remove outdated base maps

Many of the map layers in Gazetteer v4 have become unmaintained.

These have been removed.

Only the GEBCO base layers are available
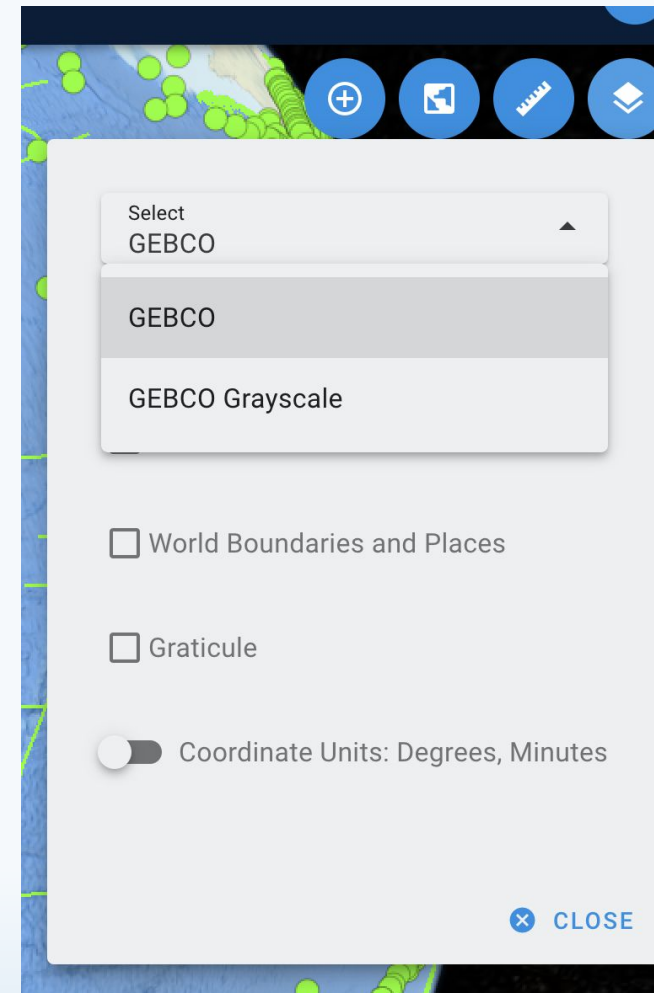
GAZ-458: Gazetteer v5 fix zooming issue with UN map labels

In Gazetteer v4, zooming in with the UN place labels would display a placeholder UN logo.

Gazetteer v5 allows zooming to any level with UN place labels enabled.
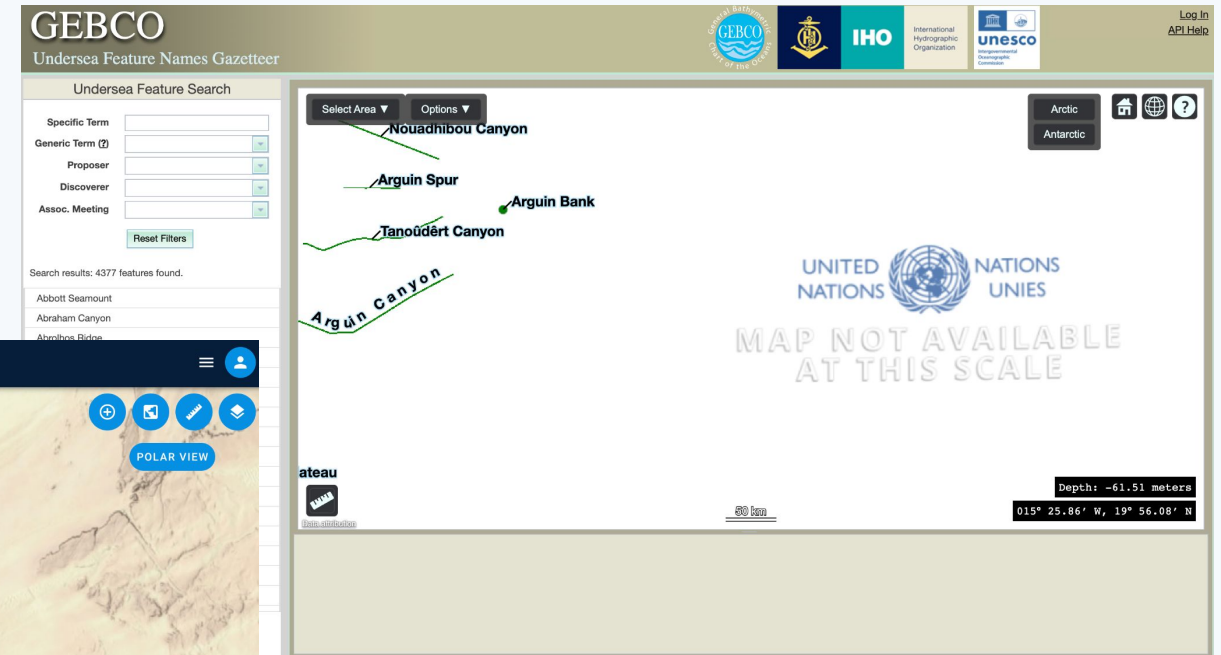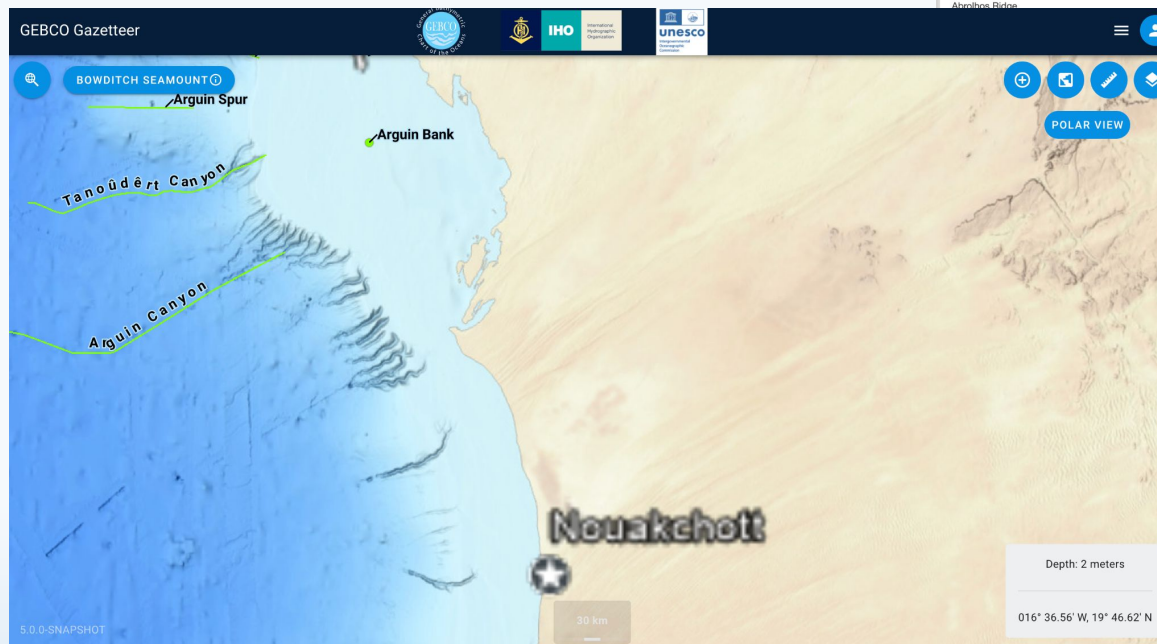
GAZ-456: Gazetteer v5 Cesium globe update

Cesium is the library used to power the map in the Gazetteer.

Gazetteer v5 now uses Cesium v1.102.0.

Additionally a custom adapter was created to make interaction with the map reactive with the new Vue.js framework.

Making development updates to the map is now easier and less error prone.

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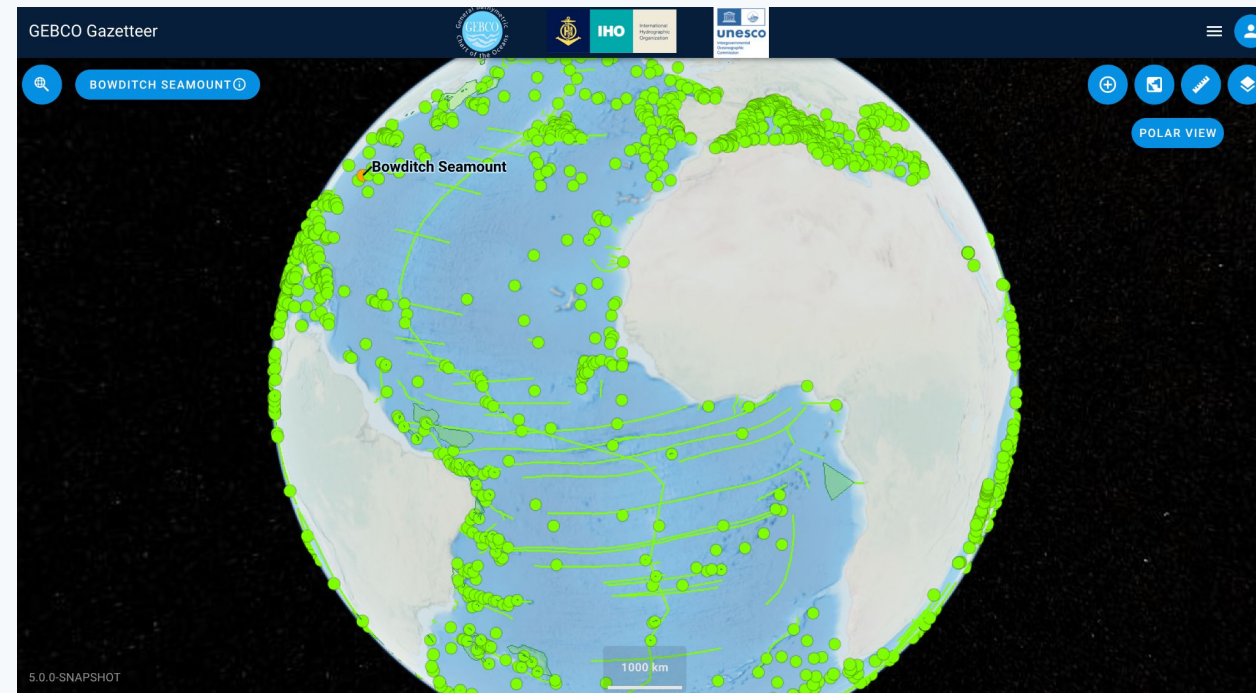
GAZ-470: Gazetteer v5 UI Feature approval workflow

Gazetteer v5 feature approval workflow was added to the new user interface.

This is powered by the new features added to the API.

This is the same API that will be used by the KHOA OWS + GEBCO Gazetteer interoperability initiative.

Using this same API in the UI serves as a test and example of how KHOA OWS will interact with the GEBCO Gazetteer.
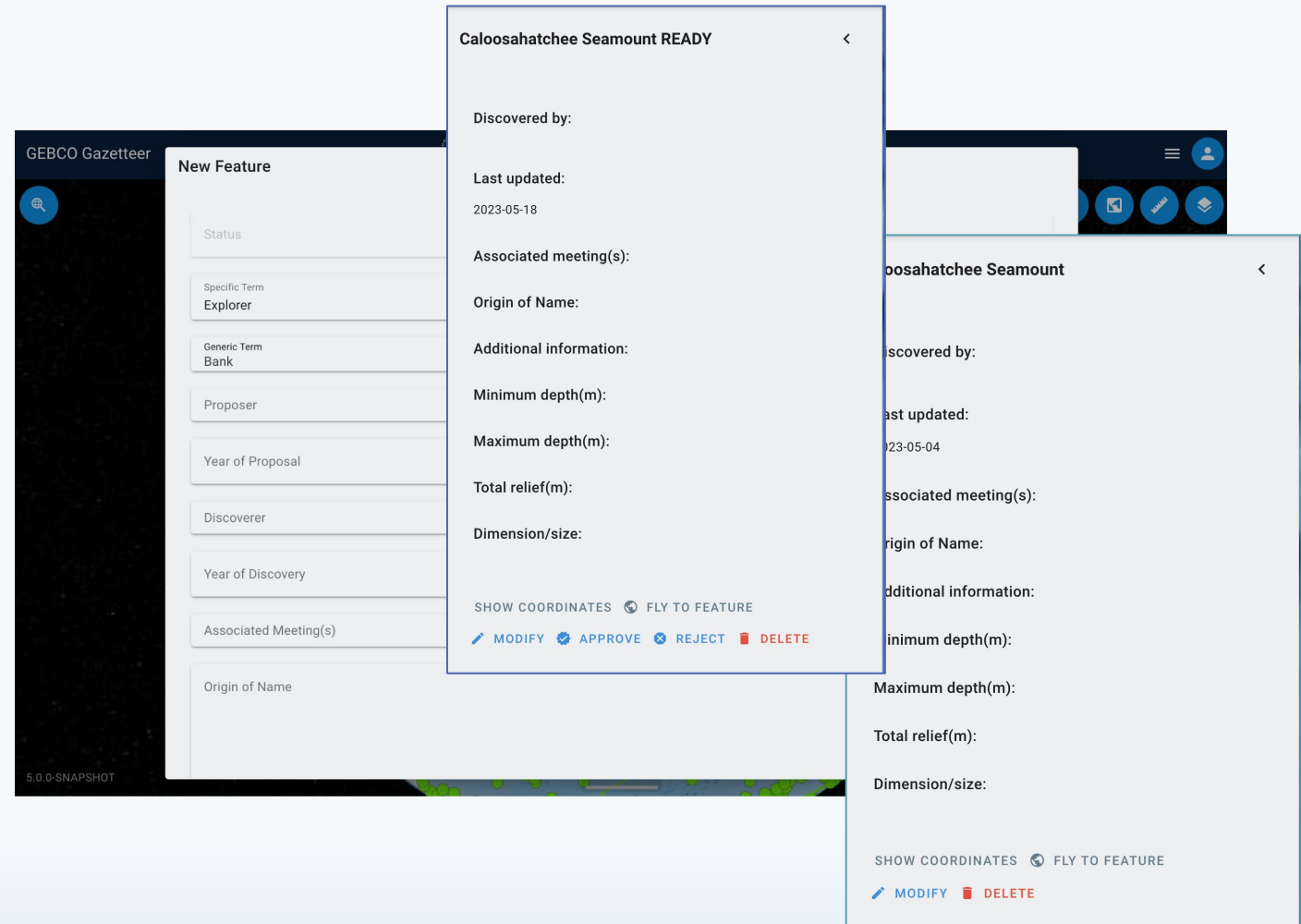
GAZ-486: Gazetteer v5 UI polar views

Polar views in Gazetteer v4 and new Google Material Design controls were added to v5.

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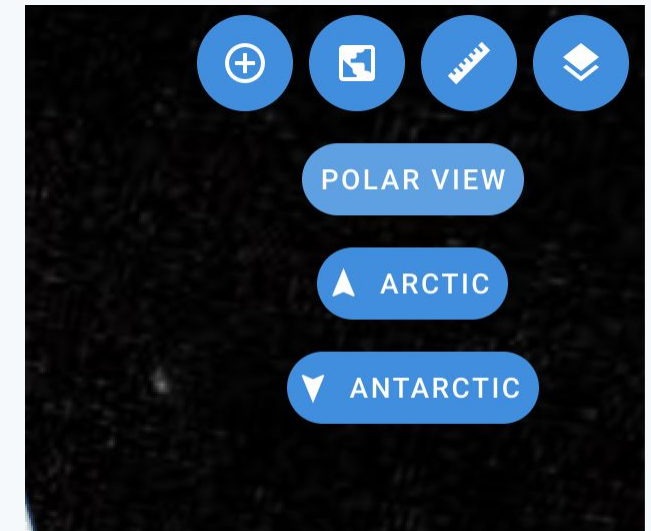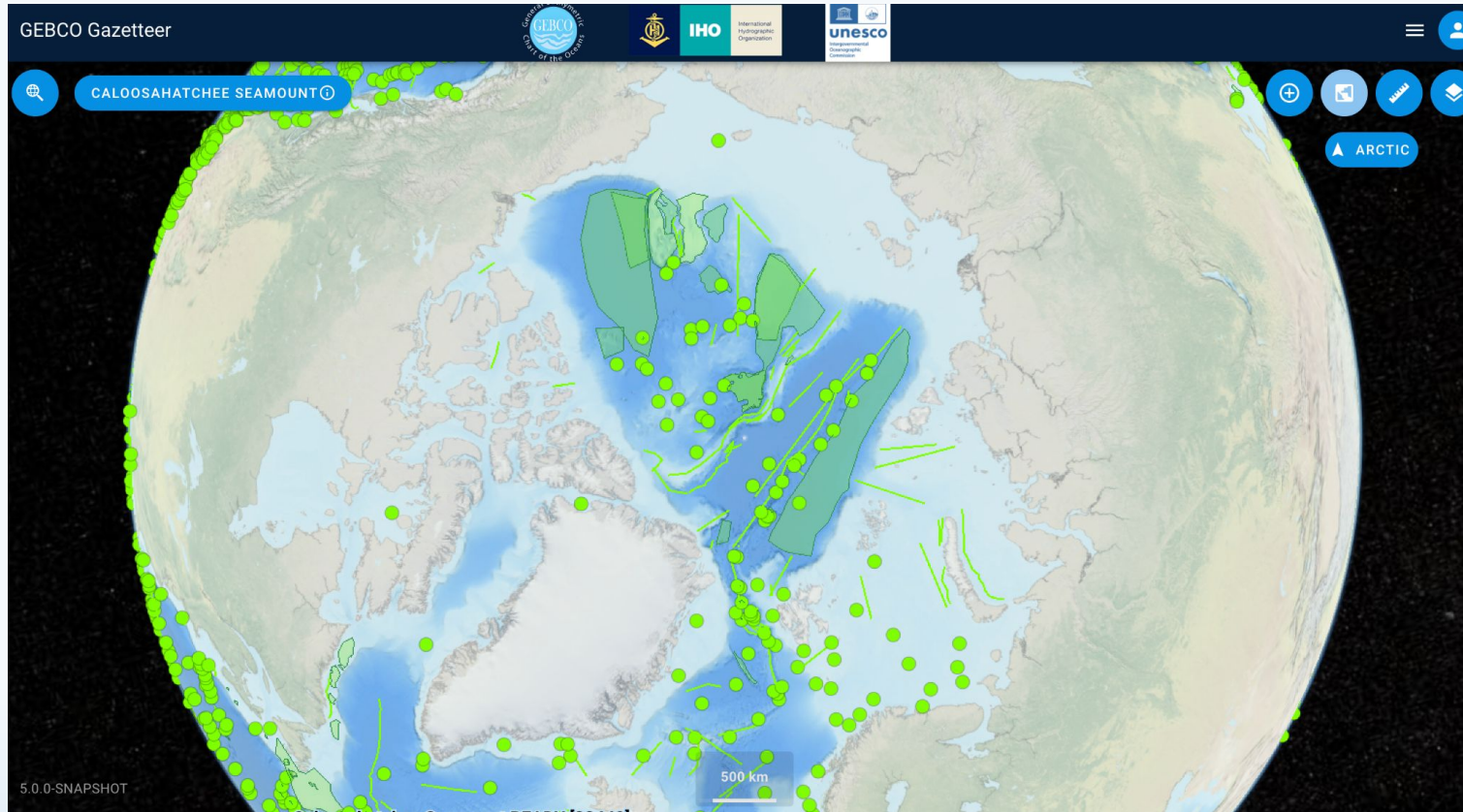
Gazetteer v5 Production Deployment

Feedback on necessary enhancements for v5.0 continues to be collected.

Two test environments are currently being used to evaluate Gazetteer v5.0: a NOAA internal deployment for testing authentication with Login.gov, and https://ccog.colorado.edu/gazetteer5 for SCUFN and KHOA testing.

As enhancements are added to the Gazetteer, these test environments will be updated for review. Once all issues are resolved to the satisfaction of SCUFN, v5.0 will be made live at https://ngdc.noaa.gov/gazetteer.

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Recommendations

1. SCUFN Members test Gazetteer v5 and notify the IHO DCDB of any issues.

2. SCUFN members provide support and feedback when needed during development of the GEBCO Gazetteer and KHOA OWS integration.

3. KHOA OWS developers continue to test with the Gazetteer v5 test environment and let GEBCO Gazetteer developers know of any issues, changes, or questions.

4. SCUFN Members let GEBCO Gazetteer developers know when upgrade to Gazetteer v5 is appropriate.

Justification & Impacts

It should be understood that continued improvements and enhancements of the Gazetteer will remain incremental.

Annual funding will continue to be used to:

   a.   Perform annual maintenance and upgrades (when necessary)

   b.   Implement a limited number of requested enhancements

   c.   Progress the development of the GEBCO Gazetteer and KHOA Beta-Gazetteer interoperation

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Actions required of SCUFN

SCUFN is invited to:

  a.   note this paper;

  b.   consider the Recommendations and Impacts listed.

Please contact Chris Slater with requests and feedback
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