

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

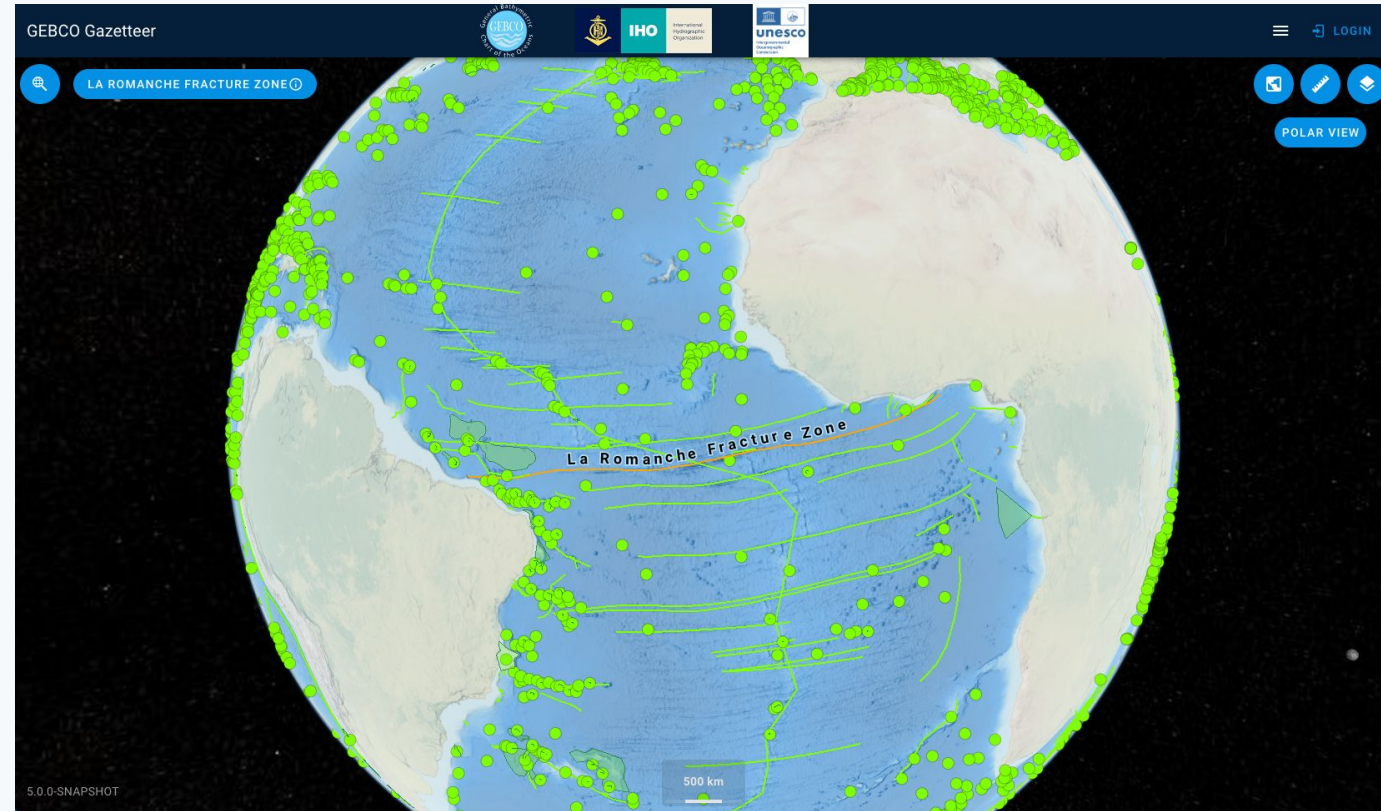
**Chris Slater**  
Lead Software Engineer  
NOAA NCEI/CIRES  
*chris.slater@noaa.gov*

**Jennifer Jencks**  
Director  
IHO Data Center for Digital Bathymetry  
*jennifer.jencks@noaa.gov*



# 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



# Gazetteer v4 Updates



# GAZ-393: Gazetteer v4 - PENDING state update

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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



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

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

- 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: ▼

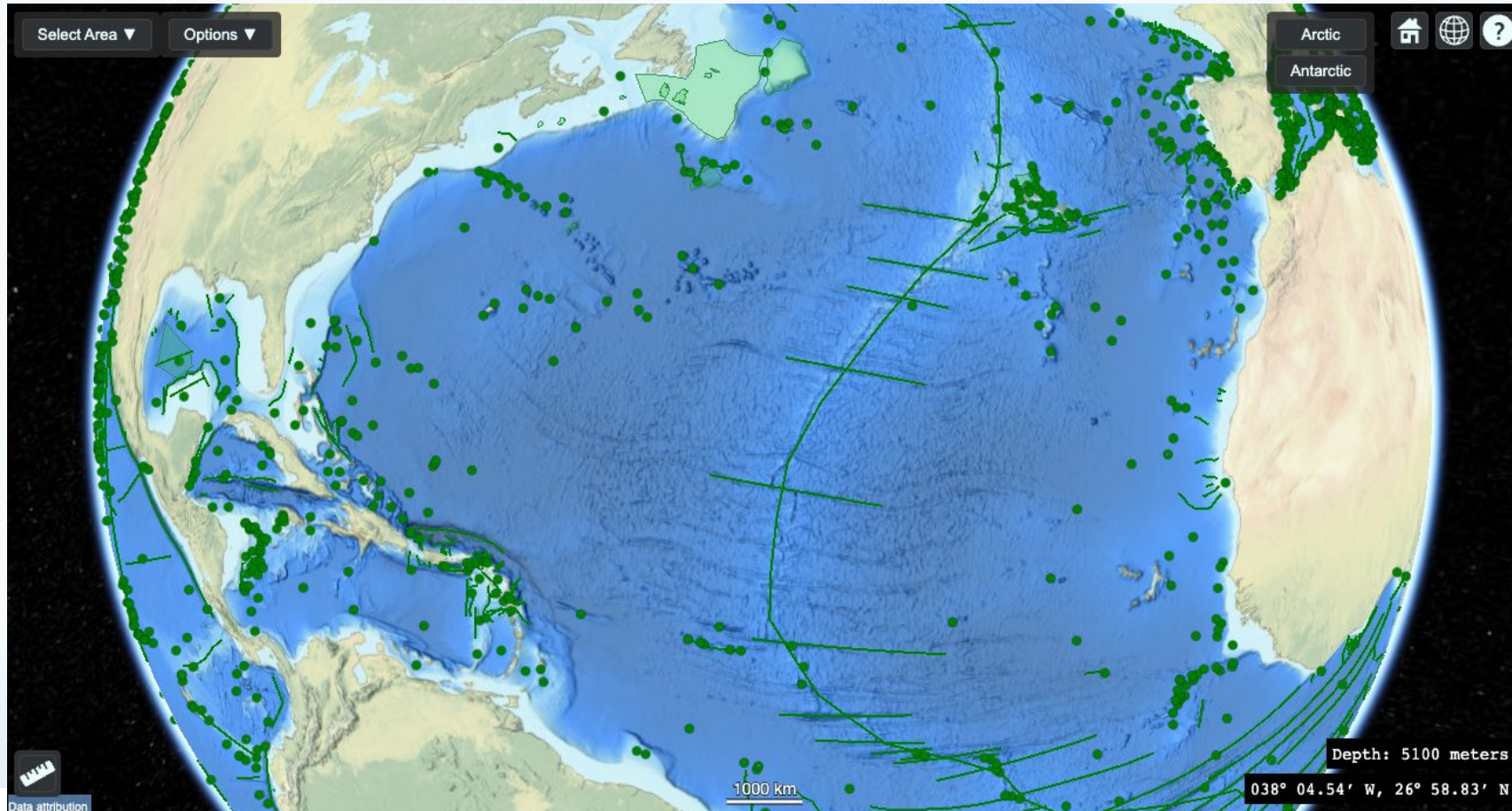
Gazetteer Version: 4.3.7

Specific Term	Generic Term	Associated Meeting	Year of Proposal	Year of Discovery	Coordinates	Status	Min Depth	Max Depth	Total Relief	Dimension
Adelaide Bank	Seamount	SCUFN-15	2001		POINT (-155.193333 -16.808333)	APPROVED				
Adieu Canyon	Seamount	SCUFN-15	2001		POINT (-153.07 -18.37333)	APPROVED				
Admiralty Guyot	Seamount	SCUFN-15	2001		POINT (-152.45333 -18.635)	APPROVED				
Admiralty Trough	Seamount	SCUFN-15	2001		POINT (-152.53167 -18.53333)	APPROVED				
Admiralty Rise	Seamount	SCUFN-15	2001		POINT (-152.38 -18.42833)	APPROVED				
Admiralty Basin	Seamount	SCUFN-15	2001		POINT (-152.38 -18.42833)	APPROVED				
Admiralty Canyon	Seamount	SCUFN-15	2001		POINT (-147.46 -19.59667)	APPROVED				
Admiralty Seamount	Seamount	SCUFN-15	2001		POINT (-154.075 -17.81333)	APPROVED				
Admiralty Trough	Seamount	SCUFN-15	2001		POINT (-152.24 -18.75833)	APPROVED				
Admiralty Rise	Seamount	SCUFN-15	2001		POINT (-154.83167 -17.49167)	APPROVED				
Admiralty Basin	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 -45.9842)	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 -17.2133, -39.2133 -17.2133, -39.1217 -16.745))	APPROVED	18	3835	3817	~ 220 km x 245 km
Abrolhos	Ridge				LINestring (-37.99704 -17.08823, -37.59249 -17.01168, -36.90249 -17.01168, -36.90249 -17.01168, -37.99704 -17.08823)	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, -119.59667 13.40099, -119.59667 13.25816, -119.8385 13.25816))	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				



# 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

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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

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

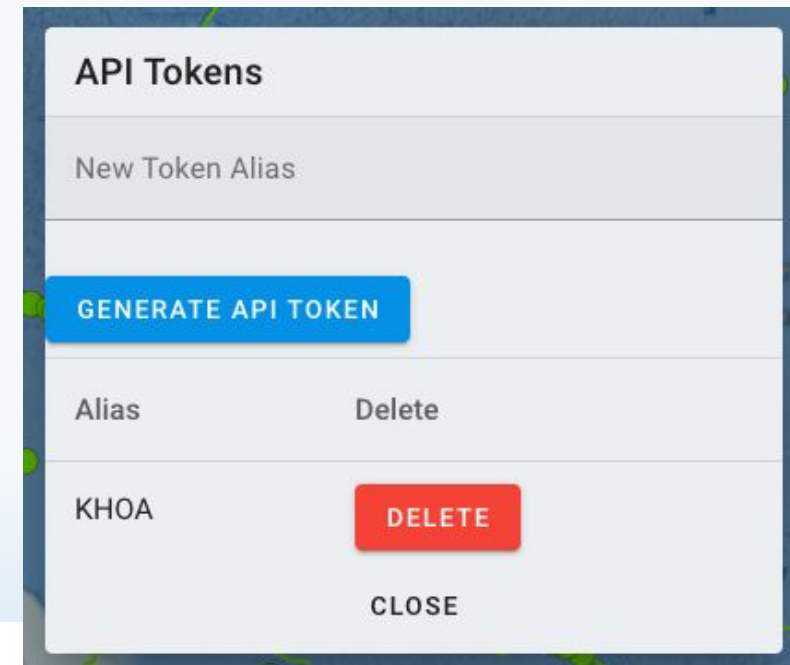


# GAZ-406: Gazetteer v5 - KHOA test API Token

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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

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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.

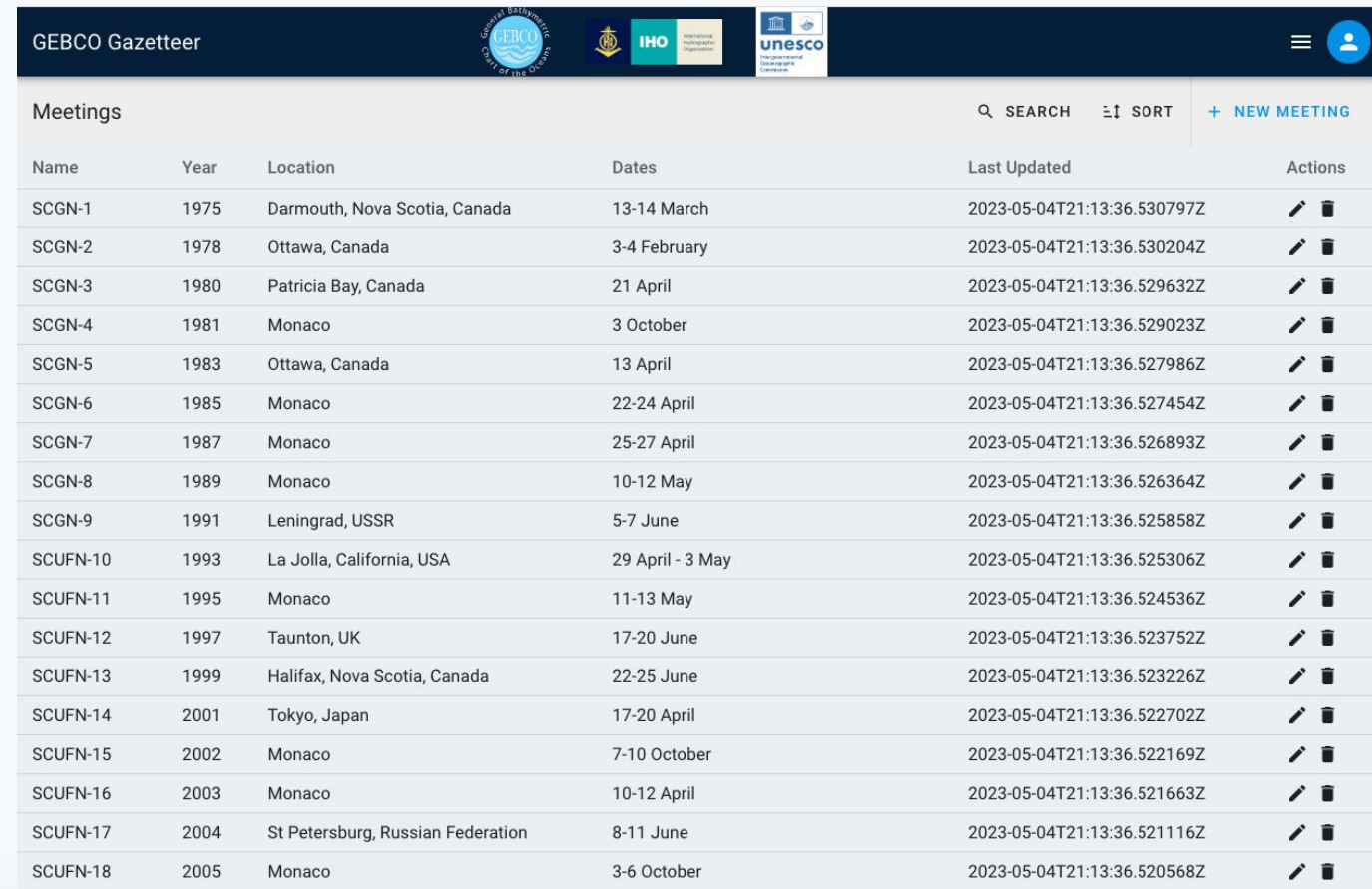


# GAZ-434: Gazetteer v5 API administrator endpoints





































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

- Users
- Meetings
- Contacts
- Generic Terms

This API powers the user interface



The screenshot displays the GEBCO Gazetteer web application. The header includes the GEBCO logo, the IHO logo, and the UNESCO logo. The main content area is titled "Meetings" and features a table with columns for Name, Year, Location, Dates, Last Updated, and Actions. The table lists 18 meetings, with the first 9 labeled SCGN and the last 9 labeled SCUFN. Each row includes edit and delete icons in the Actions column.

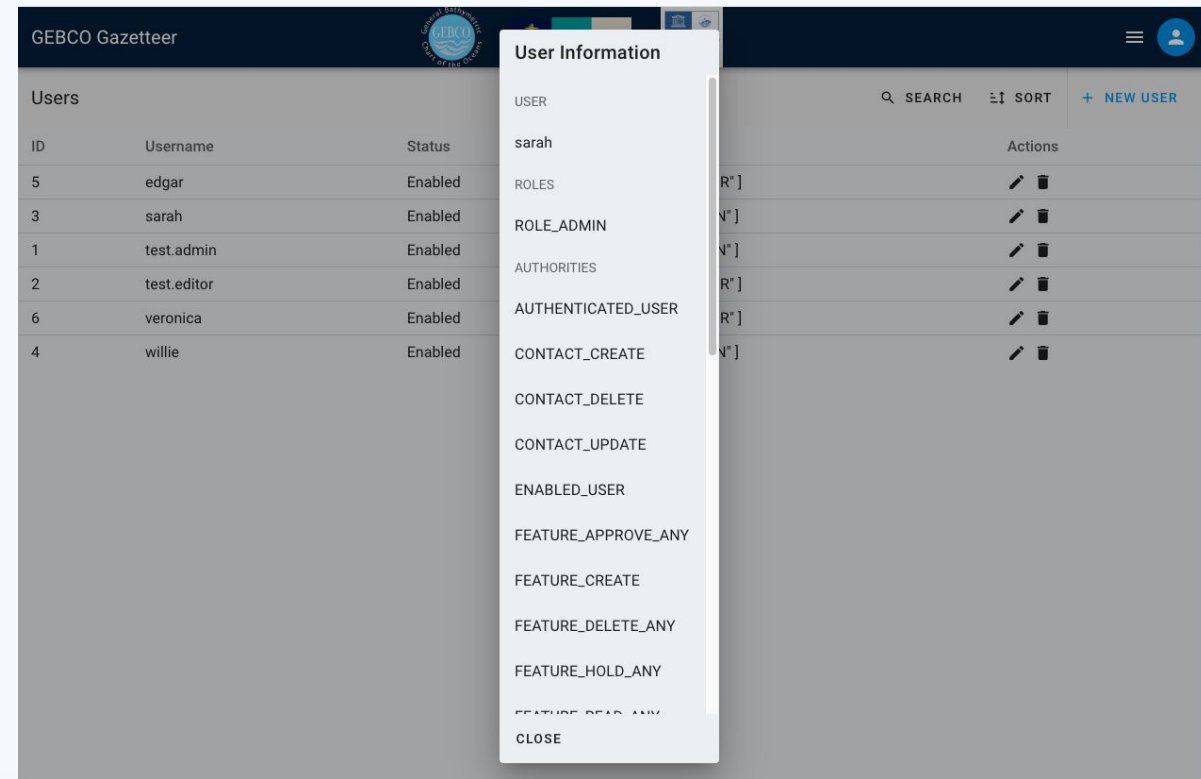
Name	Year	Location	Dates	Last Updated	Actions
SCGN-1	1975	Darmouth, Nova Scotia, Canada	13-14 March	2023-05-04T21:13:36.530797Z	 
SCGN-2	1978	Ottawa, Canada	3-4 February	2023-05-04T21:13:36.530204Z	 
SCGN-3	1980	Patricia Bay, Canada	21 April	2023-05-04T21:13:36.529632Z	 
SCGN-4	1981	Monaco	3 October	2023-05-04T21:13:36.529023Z	 
SCGN-5	1983	Ottawa, Canada	13 April	2023-05-04T21:13:36.527986Z	 
SCGN-6	1985	Monaco	22-24 April	2023-05-04T21:13:36.527454Z	 
SCGN-7	1987	Monaco	25-27 April	2023-05-04T21:13:36.526893Z	 
SCGN-8	1989	Monaco	10-12 May	2023-05-04T21:13:36.526364Z	 
SCGN-9	1991	Leningrad, USSR	5-7 June	2023-05-04T21:13:36.525858Z	 
SCUFN-10	1993	La Jolla, California, USA	29 April - 3 May	2023-05-04T21:13:36.525306Z	 
SCUFN-11	1995	Monaco	11-13 May	2023-05-04T21:13:36.524536Z	 
SCUFN-12	1997	Taunton, UK	17-20 June	2023-05-04T21:13:36.523752Z	 
SCUFN-13	1999	Halifax, Nova Scotia, Canada	22-25 June	2023-05-04T21:13:36.523226Z	 
SCUFN-14	2001	Tokyo, Japan	17-20 April	2023-05-04T21:13:36.522702Z	 
SCUFN-15	2002	Monaco	7-10 October	2023-05-04T21:13:36.522169Z	 
SCUFN-16	2003	Monaco	10-12 April	2023-05-04T21:13:36.521663Z	 
SCUFN-17	2004	St Petersburg, Russian Federation	8-11 June	2023-05-04T21:13:36.521116Z	 
SCUFN-18	2005	Monaco	3-6 October	2023-05-04T21:13:36.520568Z	 



# 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.



The screenshot displays the GEBCO Gazetteer user management interface. On the left, a table lists users with columns for ID, Username, and Status. On the right, a dropdown menu titled 'User Information' is open, showing a list of permissions for the selected user 'sarah'.

ID	Username	Status
5	edgar	Enabled
3	sarah	Enabled
1	test.admin	Enabled
2	test.editor	Enabled
6	veronica	Enabled
4	willie	Enabled

**User Information**

- USER
- sarah
- ROLES
- ROLE\_ADMIN
- AUTHORITIES
- AUTHENTICATED\_USER
- CONTACT\_CREATE
- CONTACT\_DELETE
- CONTACT\_UPDATE
- ENABLED\_USER
- FEATURE\_APPROVE\_ANY
- FEATURE\_CREATE
- FEATURE\_DELETE\_ANY
- FEATURE\_HOLD\_ANY
- FEATURE\_READ\_ANY
- CLOSE



# GAZ-435: Gazetteer v5 modernized user interface framework

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

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

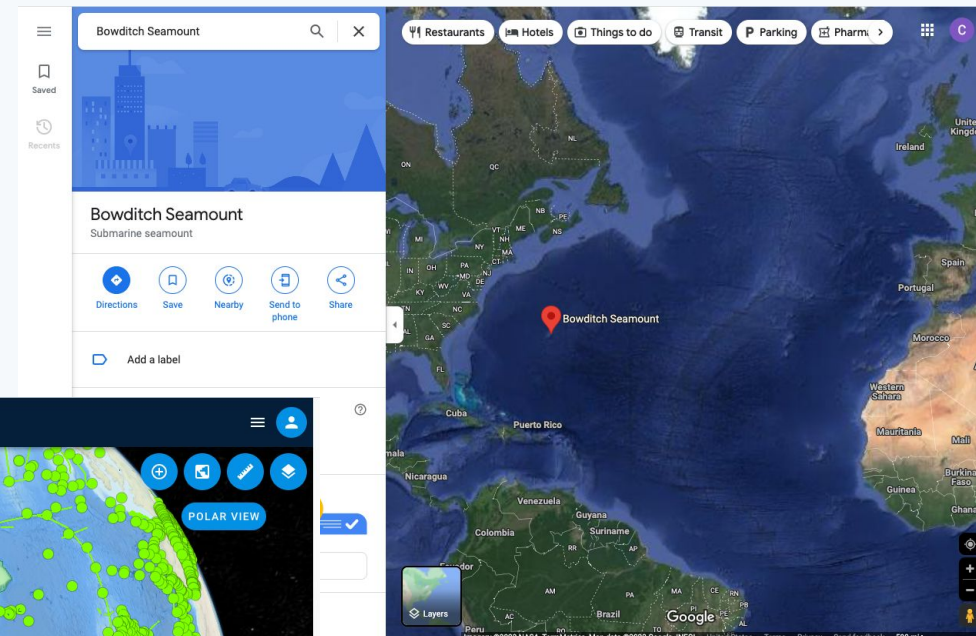
A single front end technology makes the UI more coherent.



# 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

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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.

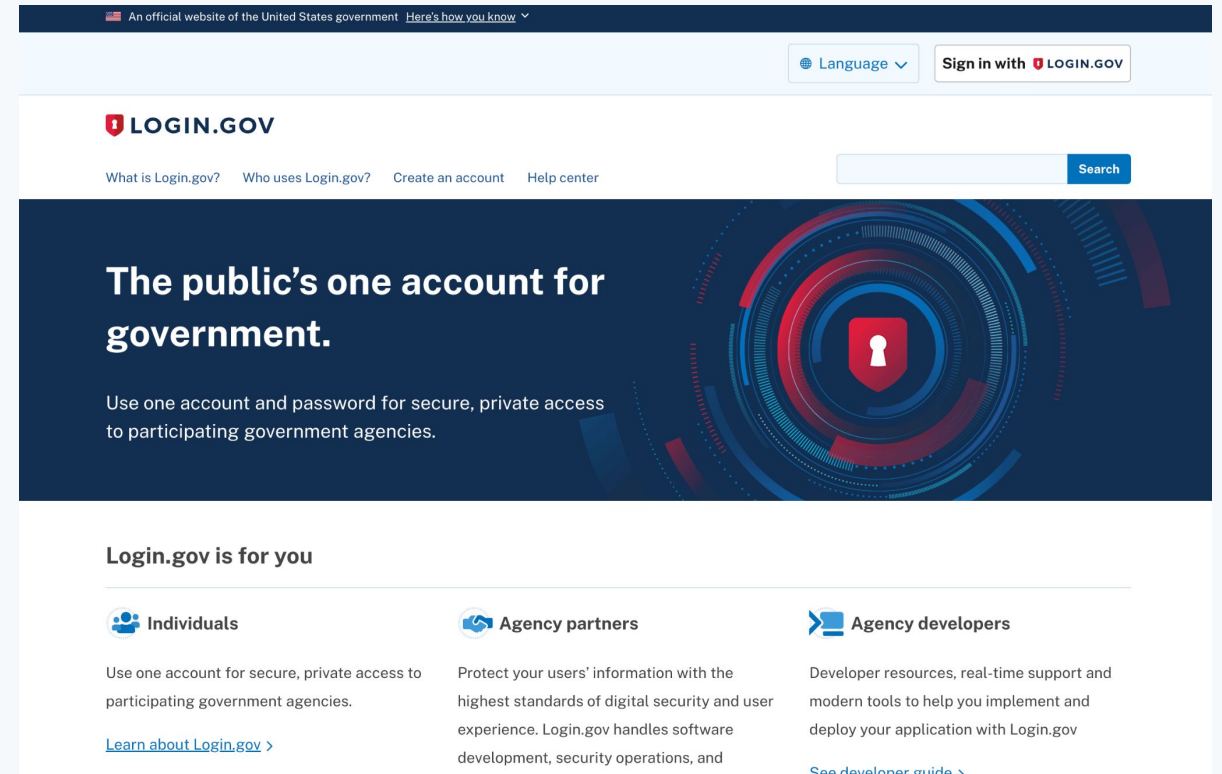




# GAZ-445: Gazetteer v5 OIDC authentication

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.



The screenshot shows the Login.gov website homepage. At the top, there is a dark blue header with the text "An official website of the United States government" and a link "Here's how you know". Below this, there is a navigation bar with a "Language" dropdown menu and a "Sign in with LOGIN.GOV" button. The main content area features the Login.gov logo and a search bar. A large banner with a dark blue background and a red shield icon with a white keyhole in the center contains the text "The public's one account for government." and "Use one account and password for secure, private access to participating government agencies." Below the banner, there is a section titled "Login.gov is for you" with three columns: "Individuals" (with a person icon), "Agency partners" (with a gear icon), and "Agency developers" (with a code icon). Each column contains a brief description and a link to learn more.

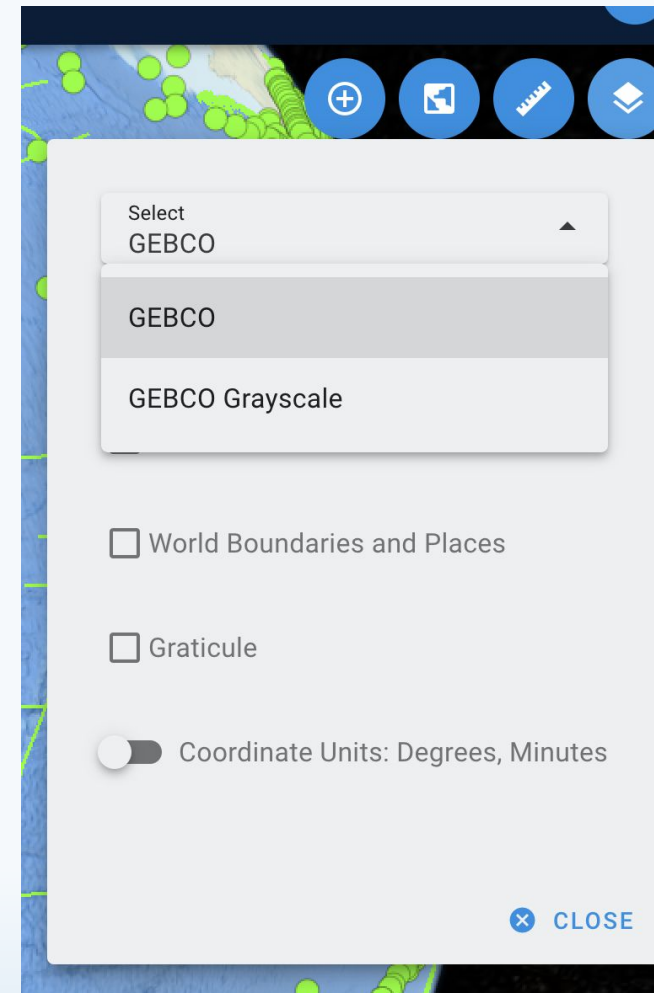


# GAZ-431: Gazetteer v5 remove outdated base maps

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

These have been removed.

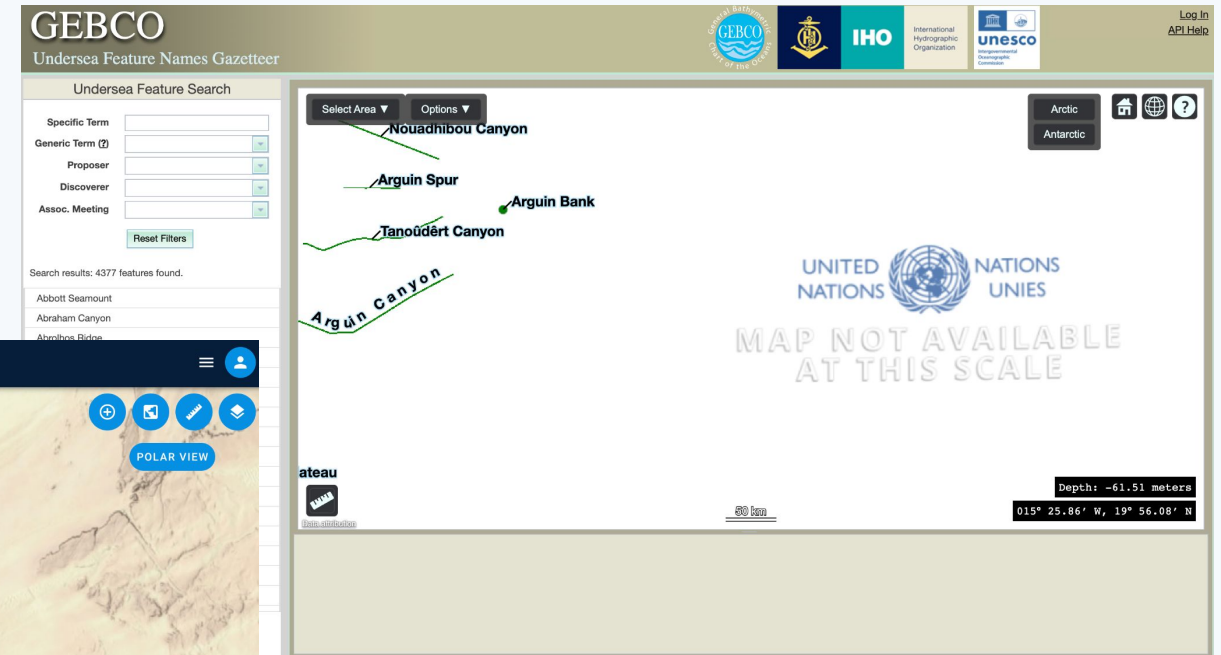
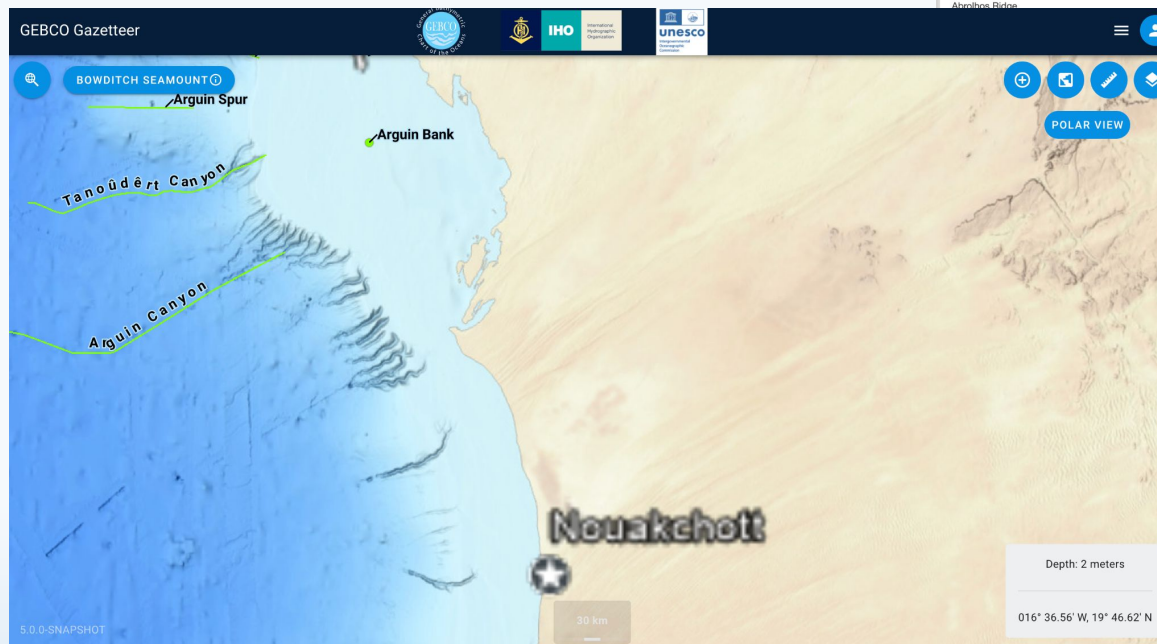
Only the GEBCO base layers are available



# 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.



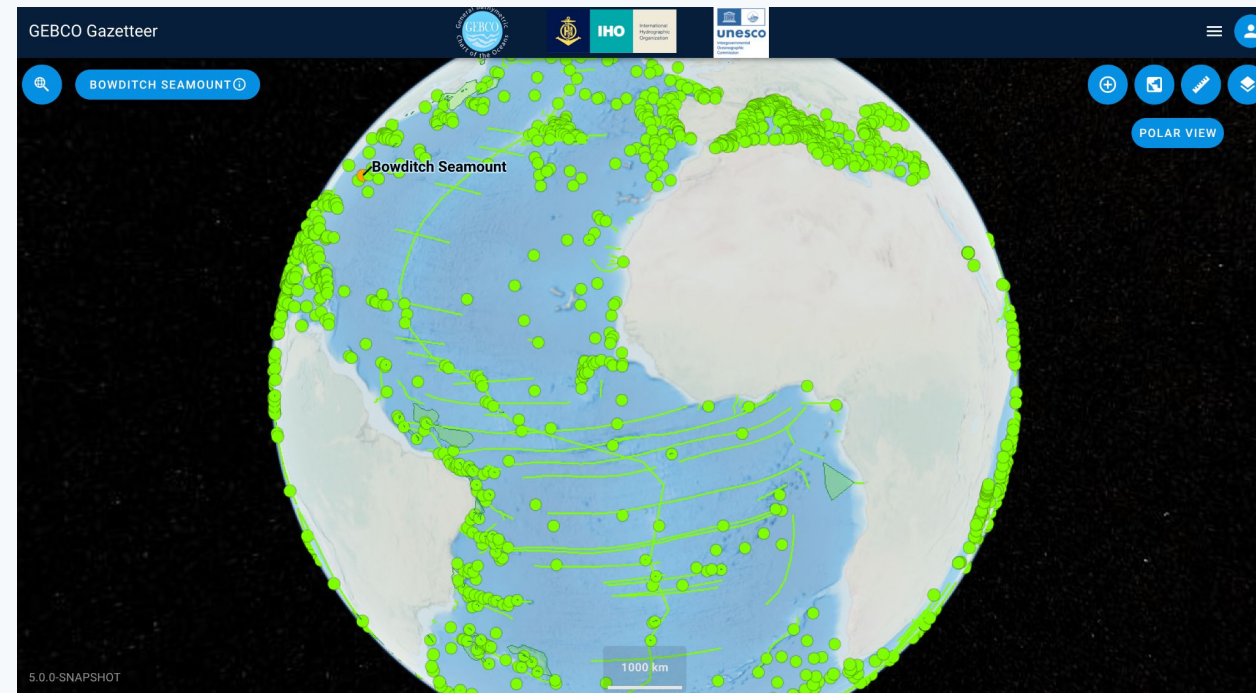
# GAZ-456: Gazetteer v5 Cesium globe update

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.



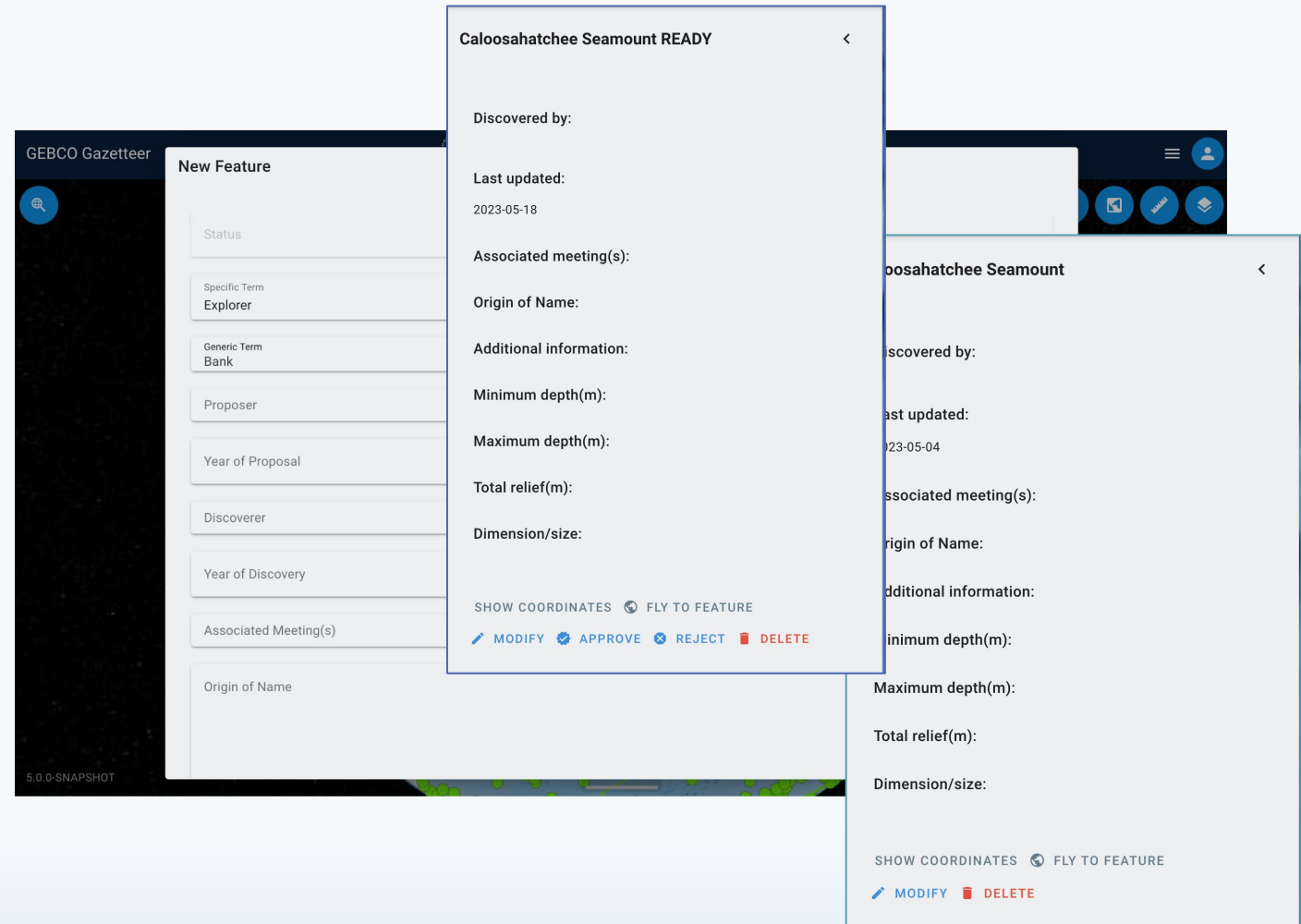
# GAZ-470: Gazetteer v5 UI Feature approval workflow

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

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

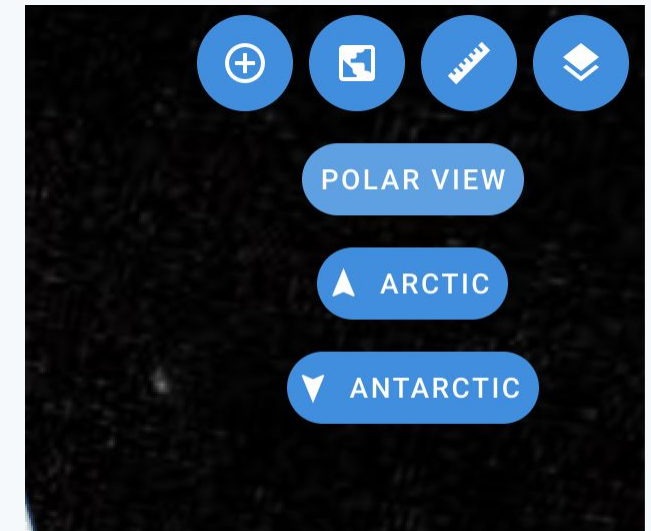
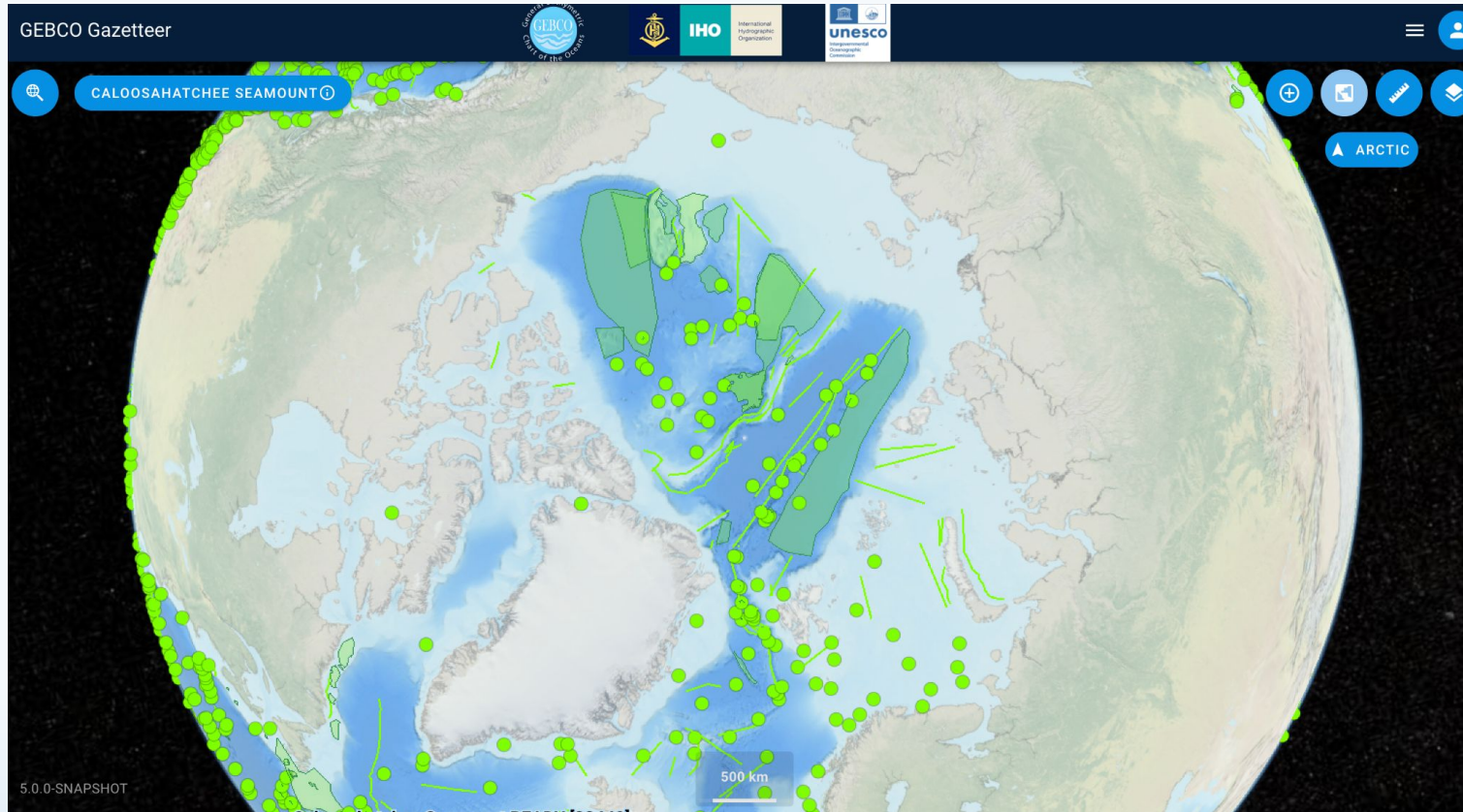
This is the same API that will be used by the KHOA OWS + GEBCO Gazetteer interoperability initiative.

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.



# Gazetteer v5 Production Deployment

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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>.



# Recommendations

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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

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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



# Actions required of SCUFN

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SCUFN is invited to:

- a. note this paper;
- b. consider the Recommendations and Impacts listed.

