Paper for Consideration by SCUFN

Report by NOAA/NCEI on Improvements Made to the GEBCO Gazetteer

Submitted by:	Director of the IHO Data Centre for Digital Bathymetry
Executive Summary:	This document reports on the maintenance and enhancements made to the GEBCO Gazetteer application (including interface and underlying database) from all decisions and actions that were agreed at SCUFN-32, as well as on progressing other actions from SCUFN-32
Related Documents:	SCUFN32-07.1A, SCUFN33-07.1A, SCUFN33-07.3A
Related Projects:	N/A

Introduction / Background

1. NOAA NCEI has hired a third software developer since SCUFN32. The software development team, led by Chris Slater, began addressing Gazetteer issues and enhancement requests in March, 2020.

2. The updates made to Gazetteer v4.1.3 have now addressed all issues listed in SCUFN32-07.1A.

3. The GEBCO Undersea Features Name Gazetteer can be accessed here: ngdc.noaa.gov/gazetteer/

Analysis/Discussion

4. SCUFN32-07.1A identified 23 areas of improvement for the previous version of the Gazetteer. Three additional requests for improvement were made via email in 2019. Most requests were implemented in 2019 and the remaining were completed in 2020. Gazetteer v4.1.3 addresses all requested enhancements.

5. In 2020, the following SCUFN32-07.1A items were addressed:

- Issue A-14: *Editor name.*
    - o The Editor name should be shown under "Editor" for all status, whether APPROVED, PENDING, EDIT or READY.
- Issue A-16: *Display of Information – Associated Meeting.*
    - o The ability to enter up to three associated meetings, shown on same line, in order to trace back the history of a name if needed.
- Issue A-17: *Display of Depth on the Chart Background.*
    - o Add depth display in meters as an option, that is, Long, Lat, Depth, using the GEBCO gridded bathymetry database.
- Issue B-3: *Feature Type List.*
    - o If, during the editing of a feature type, one clicks on the "return" key to start a new line, this change is not reflected in the updated text on display.
- Issue B-5: *Feature Types List.*

- o When the description of a Feature Type is not provided because reference is made to another Feature Type, there should be a hyperlink from the relevant word to the actual description for that Feature Type.
- Issue B-6: *Feature Types List.*
  - o The following "Note" should be included at the top of each page: "NOTE: Terms written in CAPITALS in the definitions are themselves defined elsewhere in the list."

6. The following enhancements were also made to the Gazetteer with the goal of improving the user experience for both SCUFN and the general public.

- The addition of an innovative new 3D Earth map to display undersea features. This WebGL powered globe provides a more natural way of navigating and viewing the Earth's features.
- The addition of NOAA NCEI's Multibeam Bathymetry Mosaic ArcGIS image service to the Gazetteer. The service provides a color shaded relief visualization of gridded multibeam data from the entire NCEI/DCDB archive.

7. The software development team plans to begin work on version 5.0 in Spring, 2021. Work to be addressed includes:

- Completing and unifying the REST API in the application
- Adding new REST endpoints to be used with the Beta-Gazetteer
- Adding OAuth authentication
- Adding REST API documentation for use by ROK KHOA's developers when developing the Beta-Gazetteer - GEBCO Gazetteer integration
- Supporting ROK KHOA's developers as they develop their side of the Beta-Gazetteer - GEBCO Gazetteer integration
- Updating the user interface to a modern and more maintainable framework, Vue.js

8. The REST API in v5.0 of GEBCO Gazetteer will be designed in a way that should allow the Beta-Gazetteer and the GEBCO Gazetteer to evolve independently.

- Future changes to the API will be backwards compatible.
- Any future enhancements to the API will consist of new fields and endpoints which will be optional.
- No fields or endpoints will be removed and the functionality of fields from one Gazetteer version to the next will remain consistent.
- The API will also be versioned independently of the actual Gazetteer version.
  - o Should major changes be needed in the API, a new version will be created and the older API version will be deprecated, but maintained, for some period of time.
  - o The exact period of time will be determined at a future date.

Recommendations

It is recommended that:

9. SCUFN Members continue to test the improvements made to date and notify the IHO DCDB of any issues.

10. SCUFN members provide support and feedback when needed during development of the GEBCO Gazetteer and KHOA Beta-Gazetteer integration.

Justification and Impacts

11. It should be understood that continued improvements and enhancements of the Gazetteer will remain incremental. Annual funding of 40K/year has been secured and will be used to:

- o   Perform annual maintenance and upgrades (when necessary)
- o   Implement a limited number of requested enhancements
- o   Progress the development of the GEBCO Gazetteer and KHOA Beta-Gazetteer integration

Actions required of SCUFN

12. SCUFN is invited to:
a. note this paper;
b. consider the Recommendations and Impacts listed.