

Paper for Consideration by SCUFN**Update on the progress to the GEBCO Gazetteer made with Actions and Decisions from SCUFN29**

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| 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-29, as well as on progressing other actions from SCUFN-29 |
| Related Documents: | SCUFN29-07.1A |
| Related Projects: | N/A |

Introduction / Background

1. The SCUFN Gazetteer has been unavailable for editing, due to maintenance problems, from October 2016 to end of June 2017. This resulted in members of SCUFN being unable to enter data and information into the Gazetteer.
2. The main causes for the problems were the indirect result of system security changes and upgrades required by NCEI:
 - NCEI software developers were required to upgrade the underlying Grails web framework on which the Gazetteer depends to be Java 8 compliant.
 - An NCEI mandate required all applications to be switched from HTTP to HTTPS by 12/31/16. In September 2016, the Gazetteer was identified as not being HTTPS compliant. Changes to the Gazetteer's embedded JavaScript map were made to accommodate HTTPS support and an updated version of the GEBCO_2014 basemap were also made. The Gazetteer was switched over to be https-only on Nov. 30th.
2. The resulting issues encountered by members of SCUFN included:
 - The inability for the Gazetteer website (<https://www.ngdc.noaa.gov/gazetteer/>) to load.
 - The "Id data by drawing a rectangle" button no longer returned any selected features.
 - The editing capability in the application became non-functional. Further, on the Gazetteer Administration Page, the fields "Privileged Users" and "Feature Types" could not be accessed, instead an error message "The requested resource is not available" was displayed.
 - There was also an inability to delete a feature.

Analysis/Discussion

3. A timeline is presented below describing the approach in addressing the above-described issues:
 - Due to a lack of dedicated staff to address these issues, in April 2017, one developer was assigned a small amount of time to look into the Gazetteer. To narrow down the current issues that were being experienced, a few users were requested to test the Gazetteer on various systems and to record: the operating system, the browser type and version, and whether or not it worked. The two main issues described above were confirmed:

1. The Gazetteer was not consistently loading all of its web page resources resulting in it hanging on startup. Considerable effort was immediately put into addressing the problem, however, a clear solution could not be identified.
 2. The errors in the rectangular search and edit features were confirmed to likely due to the Grails upgrade.
- In May 2017, two issues were successfully addressed:
 1. Spatial index filter/query
 2. The "search" in the SW corner of the application (which was tied to the search results filter)
 - In June 2017, a testing request was sent out to the entire SCUFN team and the results were recorded to see if patterns could be determined.
 - In August 2017, a senior programmer was hired and time was allotted to focus a few weeks on the Gazetteer. Funding previously provided to make enhancements to the Gazetteer, were now being repurposed to (1) restore all previous functionality in the new security environment and (2) improve the application's stability and maintainability.
 - The majority of the changes made involved the back-end application, which supports the user interface (UI). This application was entirely replaced with a newer version. Additionally, several UI libraries that the Gazetteer leverages were updated to their latest versions. At a high level, the following functionalities were added or restored:
 - All administrator capabilities for add/edit/update/delete of Feature Types, Meetings, Contacts, Users
 - Diacritical character now works for new entries
 - Shapefile upload issues were resolved
 - Meeting years no longer reset to 1975 on edit
 - Browser and OS-specific issues resolved. No current issues seen or identified by stakeholders in newest application
 - Issues from the "Wish-List of Improvements to the GEBCO Gazetteer" that were contained in Doc. SCUFN29/07.1A were also addressed:
 - Minimum depth on features expanded to allow positive entries up to 100M
 - It should also be noted that it's possible that several other issues may have been resolved in the course of the rewrite and migration of the application.
 - A test application was set up, additional user testing requested, and user testing completed by the end of August.
 - Work is currently underway (September 2017) to push the improved application to production (i.e.: make it "live").

Recommendations

It is recommended that:

4. A discussion take place among SCUFN members about the long term challenges in maintaining and updating the Gazetteer and whether or not NOAA's NCEI is best equipped to continue to host the application.
5. Since the Gazetteer is considered "Software as a Service", NCEI base funding (which includes

software developer time) cannot be used to maintain the application (i.e.: routine maintenance and issues that result due to mandated upgrades).

6. NCEI would be honored to continue to host the Gazetteer, however committed funding (a minimum of 50K/year) would be required to:

- Perform annual maintenance and upgrades (when necessary)
- Implement a limited number of requested enhancements

Justification and Impacts

7. If committed funding is not provided (whether to NCEI or to another organization), future issues are certain to happen again at some point (though the application should be stable for the foreseeable future).

Action required of SCUFN

8. SCUFN is invited to:

- a. note this paper;
- b. consider the recommendations made in sections 4, 5, and 6 and the impacts in section 7.