



SWAtHC 2020

Seabed 2030 - SWAtHC Coordination

Vicki Ferrini, PhD | March 5, 2020

<http://bit.ly/SWAtHC2020>

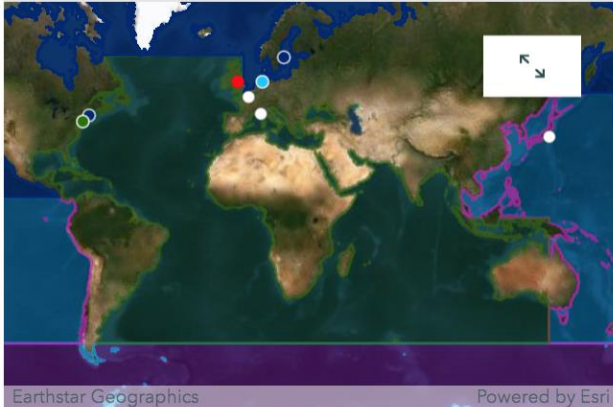
The Nippon Foundation - GEBCO Seabed 2030 Project

The Nippon Foundation - GEBCO Seabed 2030 Project is a collaborative project to inspire the complete mapping of the world's ocean by 2030 and to compile all bathymetric data into the freely-available GEBCO Ocean Map.

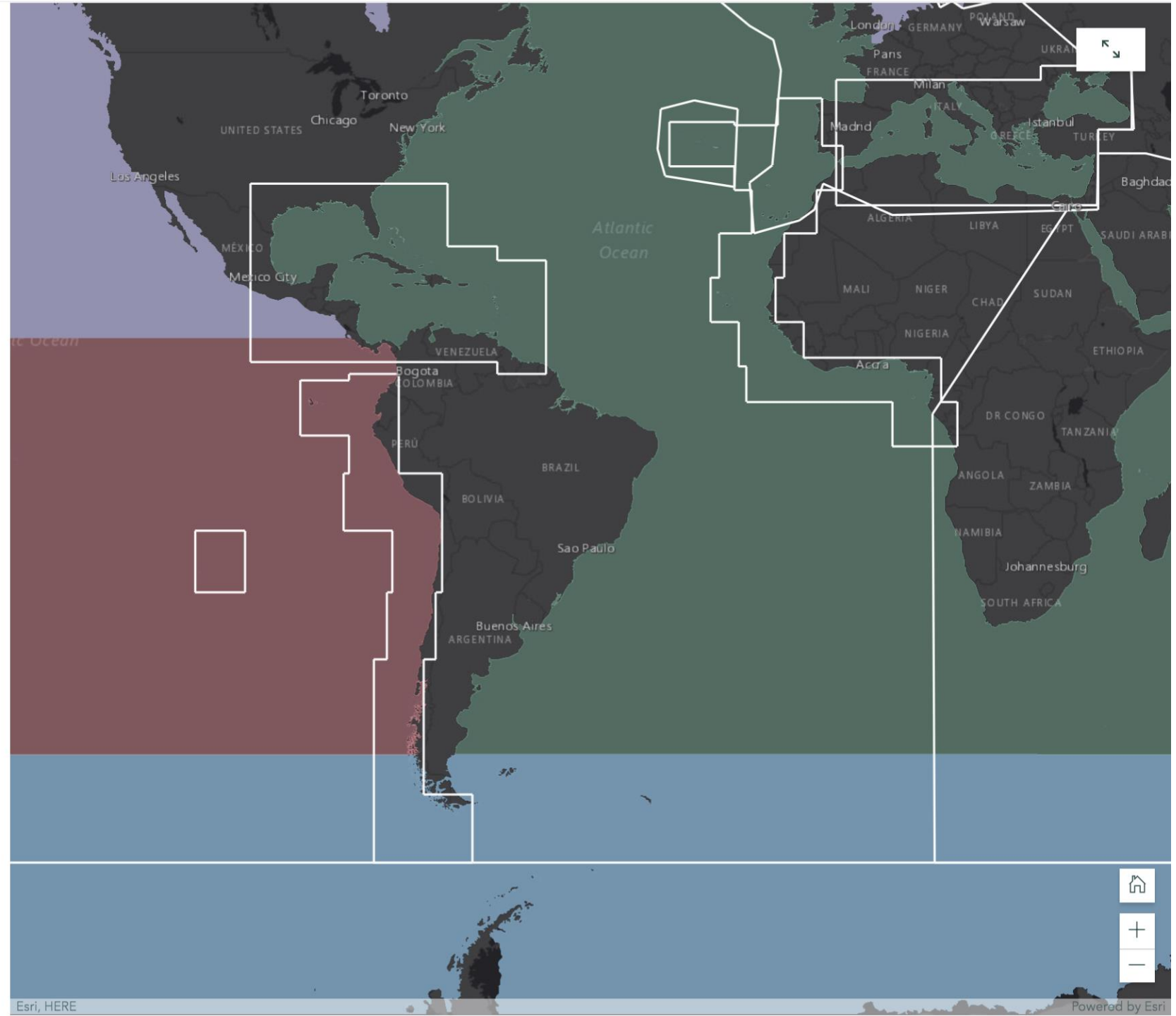
Seabed 2030 aspires to empower the world to make policy decisions, use the ocean sustainably, and undertake scientific research that is informed by a detailed understanding of the global ocean floor.

Regional Approach

To achieve its goals, Seabed 2030 has established several *Regional Data Assembly and Coordination Centers (RDACCs)* responsible for coordinating with stakeholders and existing data compilation efforts, providing information about data gaps, and assembling regional data products that are integrated into GEBCO global products. A *Global Data Assembly and Coordination Center (GDACC)* assembles and disseminates global [GEBCO products](#).



Seabed 2030 Regional & Global Centers





IHO

International
Hydrographic
Organization

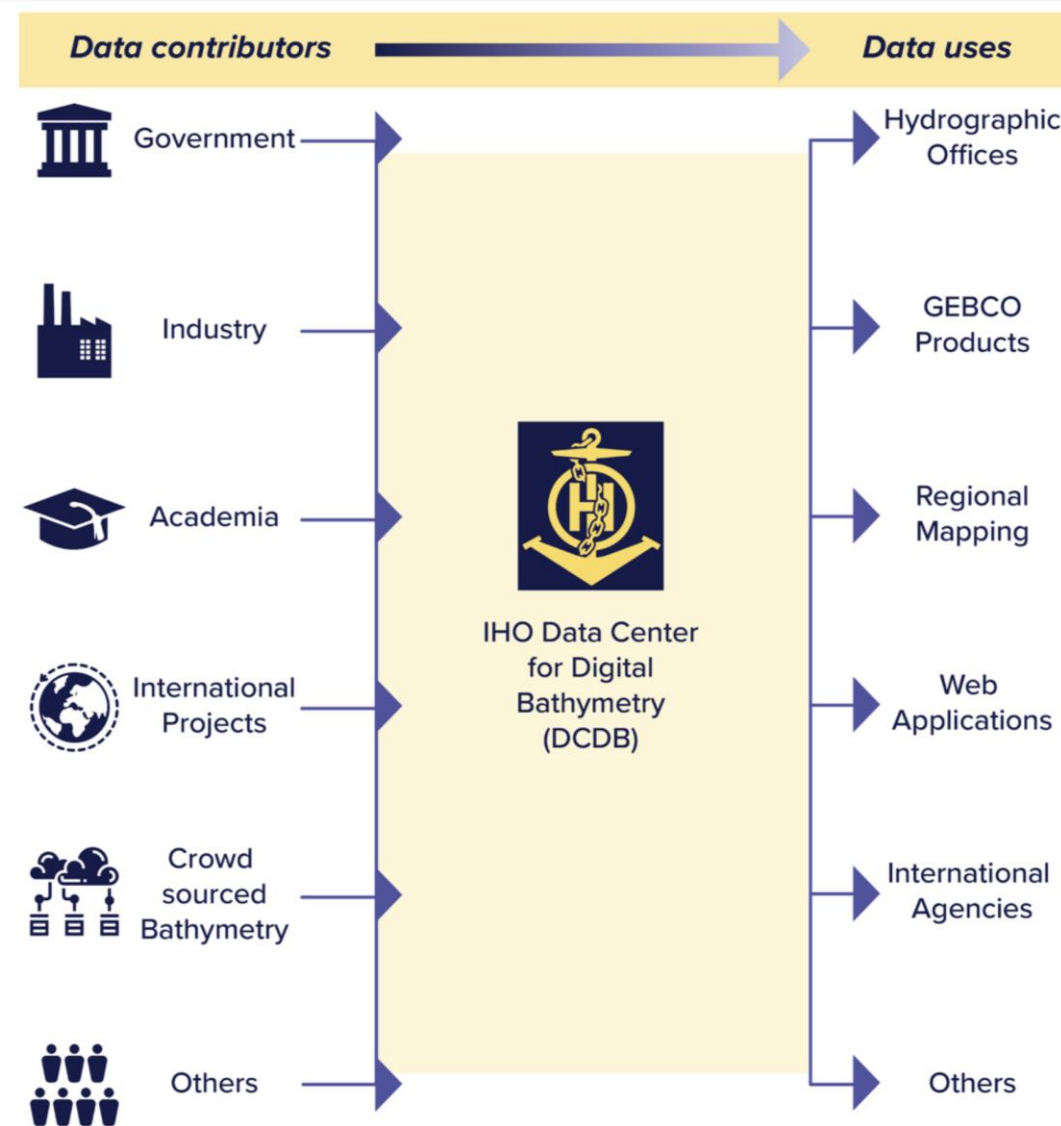
International Hydrographic Organization
Organisation Hydrographique Internationale



IHO Data Center for Digital Bathymetry (DCDB)

The IHO DCDB is the recognized IHO repository for all ocean bathymetric data.

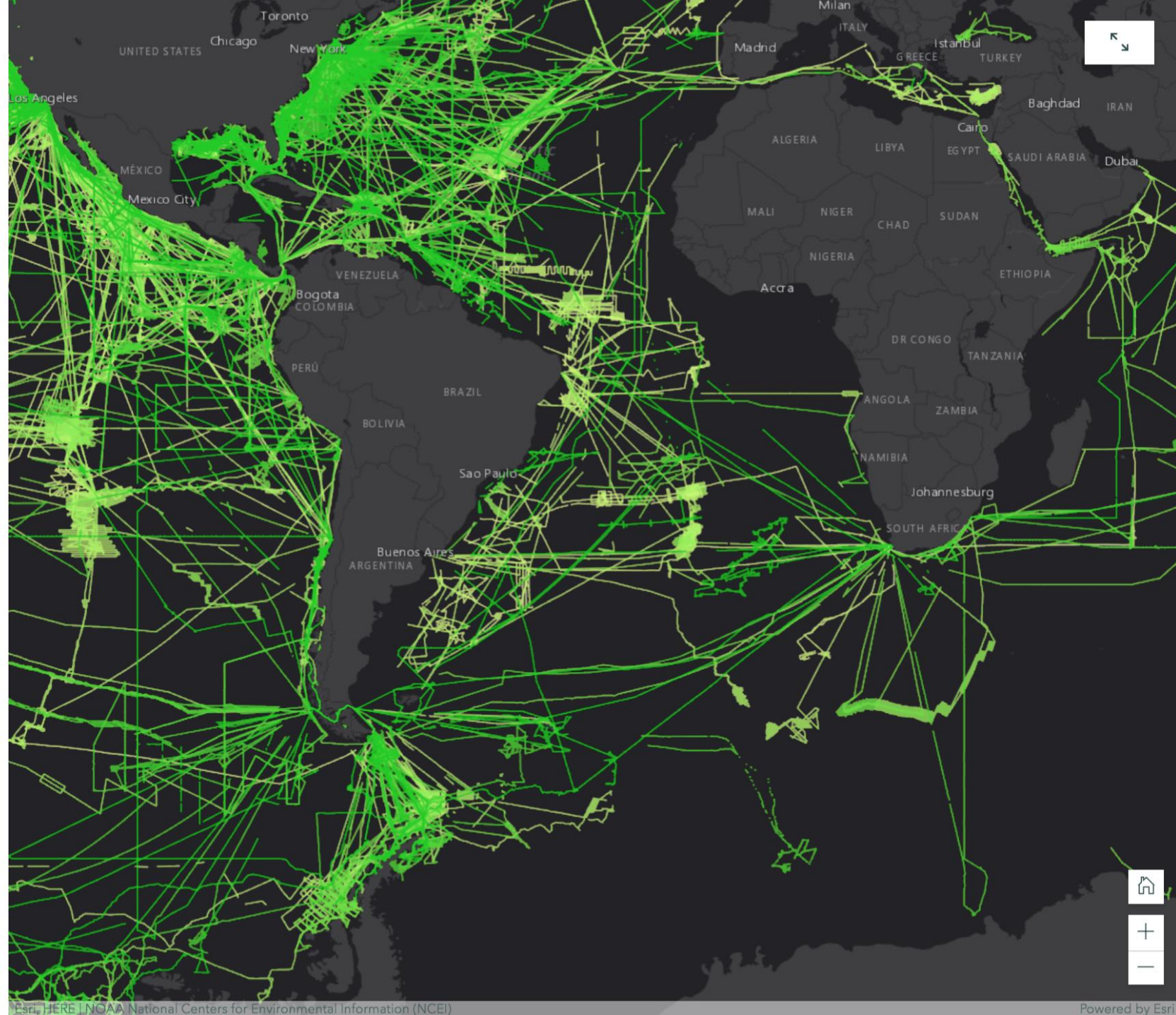
The DCDB works closely with the Seabed 2030 Project to provide long-term preservation, discovery and access of source bathymetry data.



Multibeam at IHO DCDB

The interactive map to the right shows the extent of multibeam data that has been archived at the DCDB. As new data are contributed and made available, this trackline map is automatically updated.

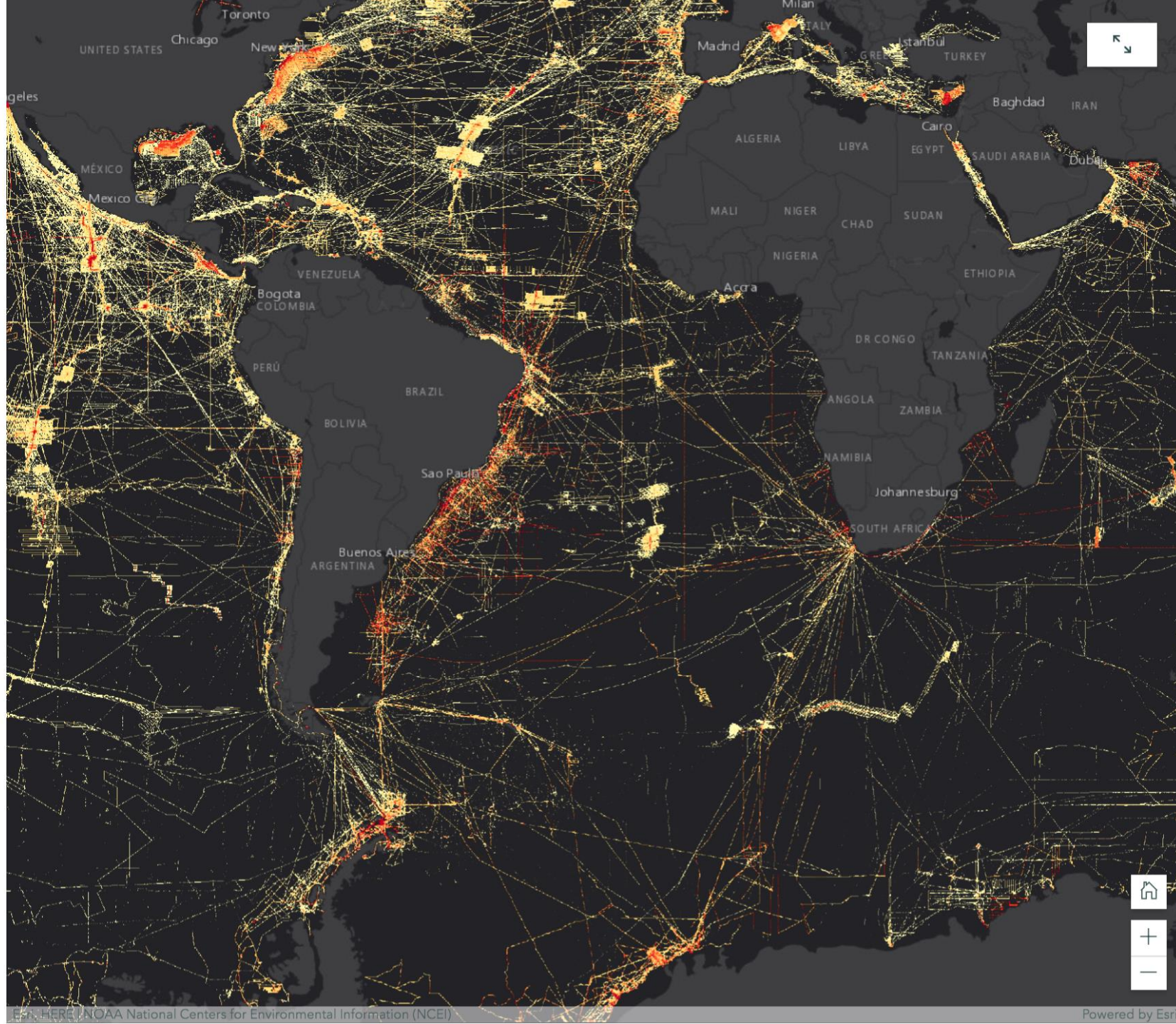
Most multibeam data contributed to the IHO DCDB, and represented by these tracklines, are raw and unprocessed swath files. Cleaning the data to ensure that it is of adequate quality for integration into regional and global data products takes time and is handled by many people working on projects around the world.



Singlebeam at IHO DCDB

Singlebeam data hosted at the DCDB are also global in extent and are represented in the interactive map to the right.

Although the coverage map of singlebeam data looks extensive, the narrow footprint makes it a relatively small component of data coverage in global products.



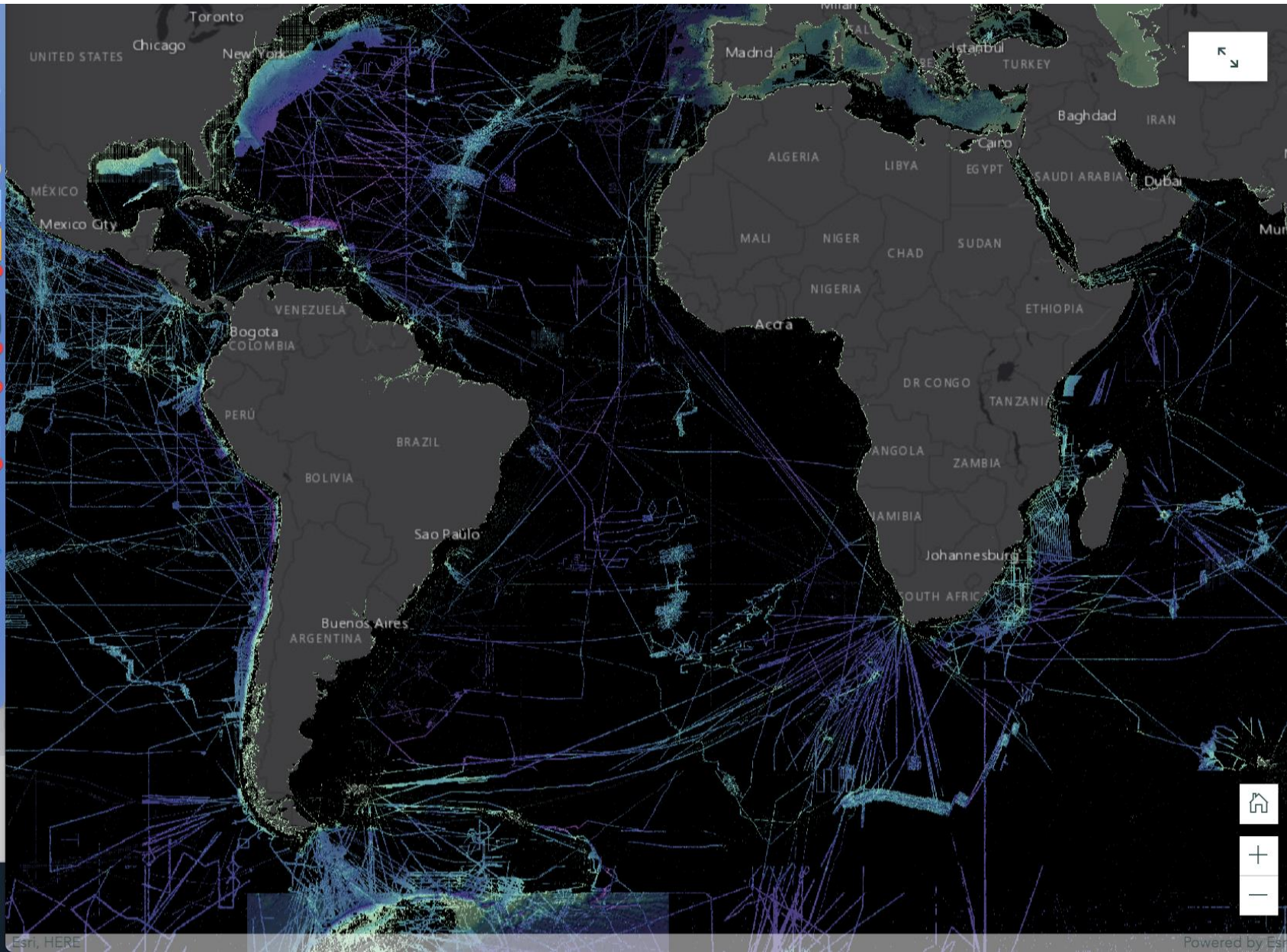
Crowdsourced bathymetry (CSB) at DCDB

CSB data is the collection of depth measurements from vessels, using standard navigation instruments, while engaged in routine maritime operations. While CSB data may not meet accuracy requirements for charting areas of critical under-keel clearance, it holds potential for a myriad of other uses.

CSB is valuable data with scientific, commercial and research value at no cost to the public sector.



GEBCO 2019

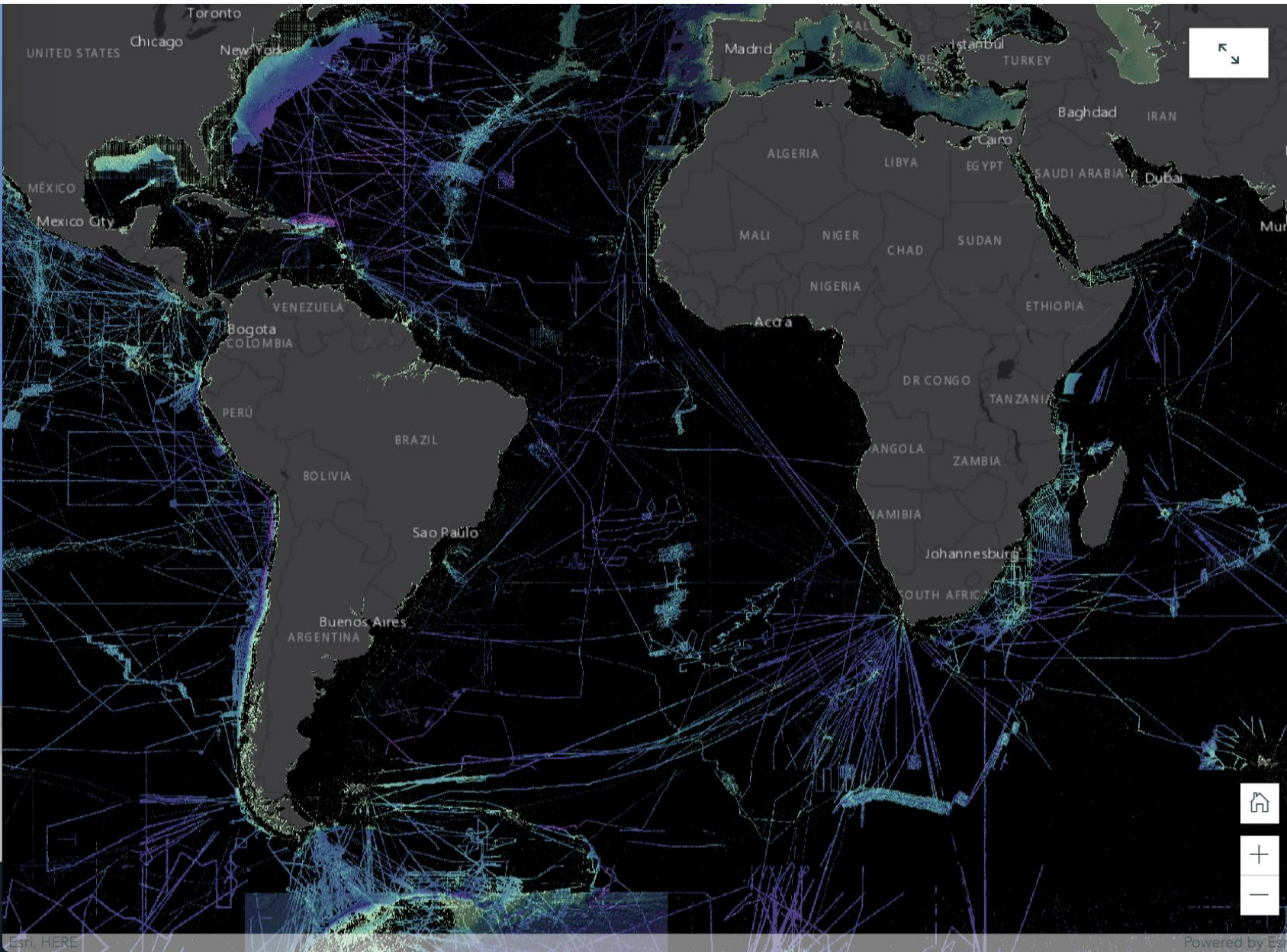


GEBCO 2019 global data products were released in April 2019 at 15 arc-second resolution and including data from more than 40 nations.

The interactive map to the left is a representation of the GEBCO 2019 global ocean map with areas that lack bathymetric observations covered in black. These black regions correspond to the 85% of the map where elevation values are based on predicted bathymetry from satellite altimetry data. The map was derived directly from GEBCO Type Identifier (TID) Grid which identifies the type of data used to define each grid cell in the GEBCO grid.

Compared to the GEBCO 2014 release, in which 6% of the seafloor map was supported by bathymetric observations, 15% of the ocean in the the GEBCO 2019 global product is supported by observed bathymetry data.

GEBCO 2019

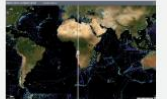


GEBCO 2019 more than doubles global coverage of bathymetry data to 15% when compared to GEBCO 2014.

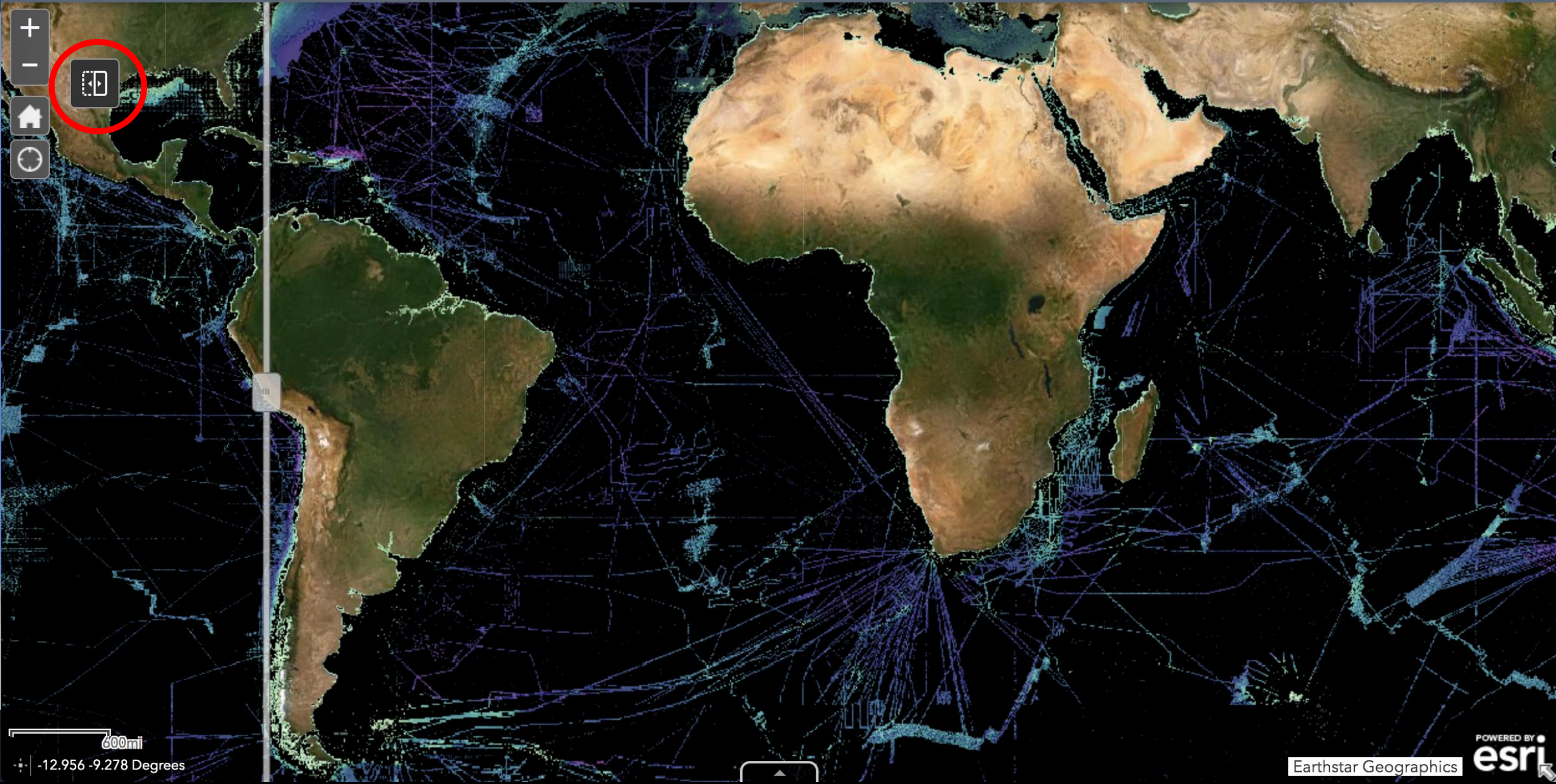
GEBCO 2019 vs GEBCO 2014

An interactive web app enables direct comparison of the coverage of GEBCO...

<https://columbia.maps.arcgis.com>



In the coming year, the Seabed 2030 Project will be working to compute % complete for Regional Hydrographic Commission (RHC) areas. This information will be made available and added to map interfaces to help document progress.

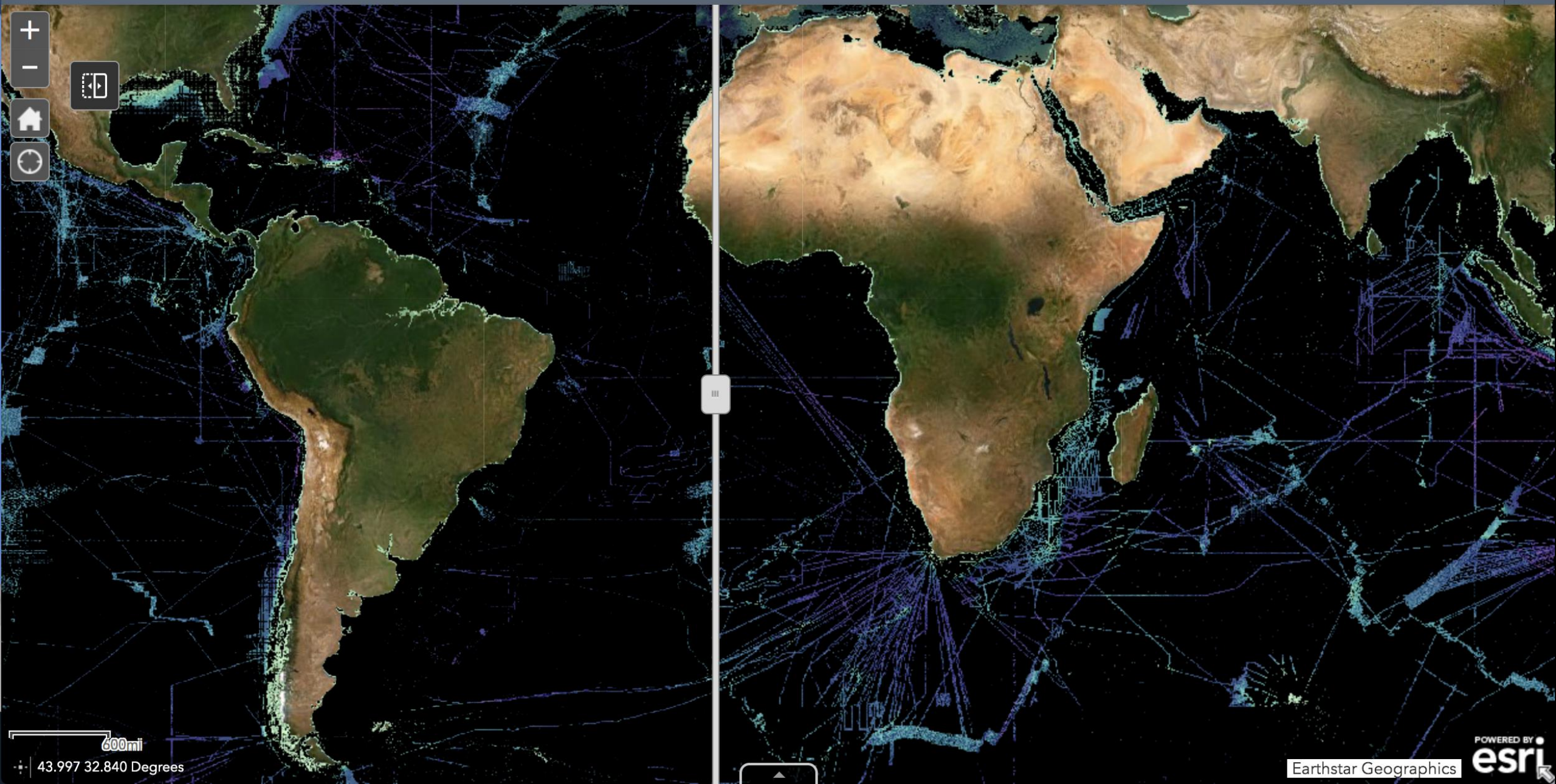


600mi

-12.956 -9.278 Degrees

Earthstar Geographics

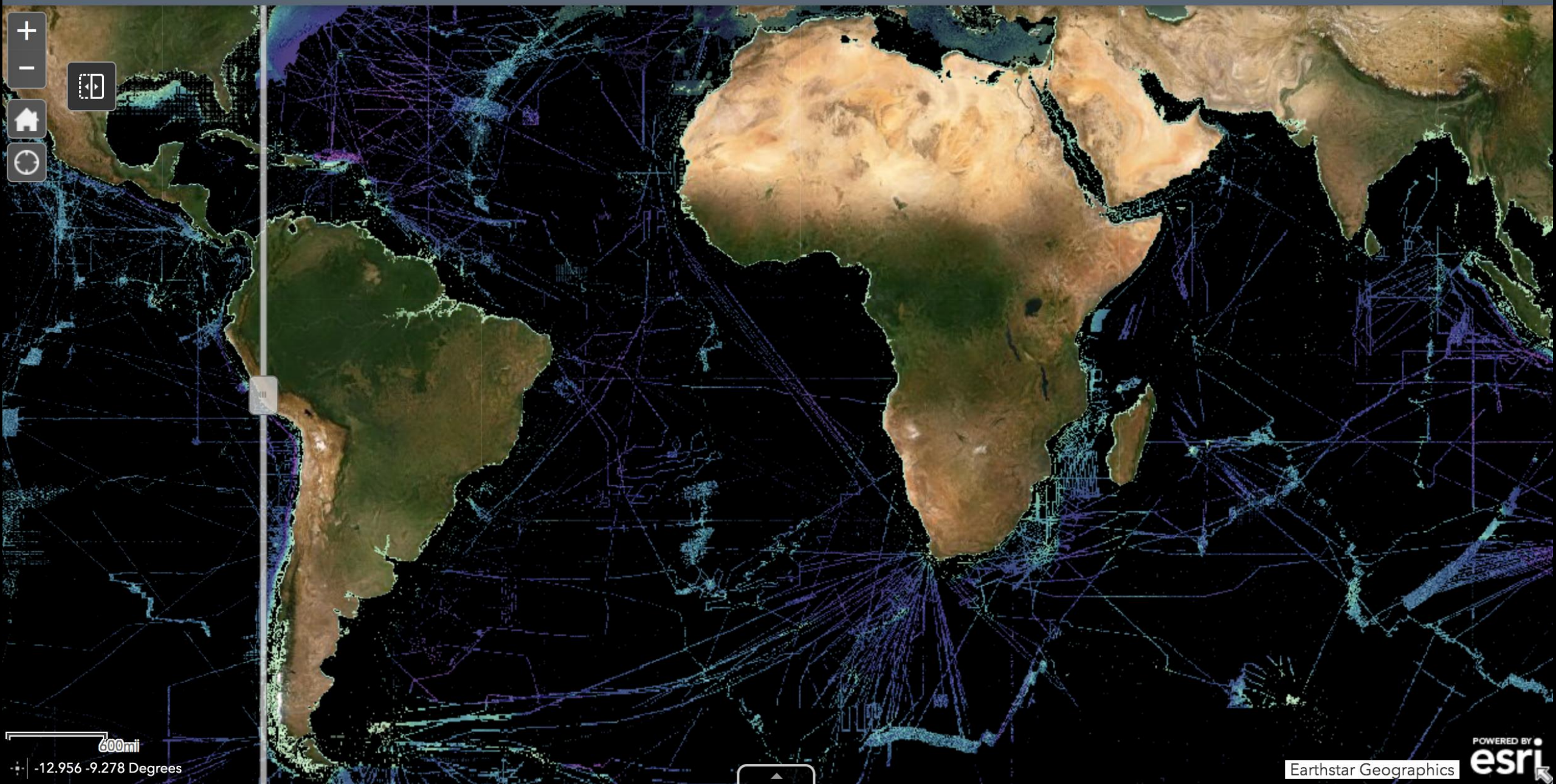
POWERED BY
esri



600mi
43.997 32.840 Degrees

Earthstar Geographics

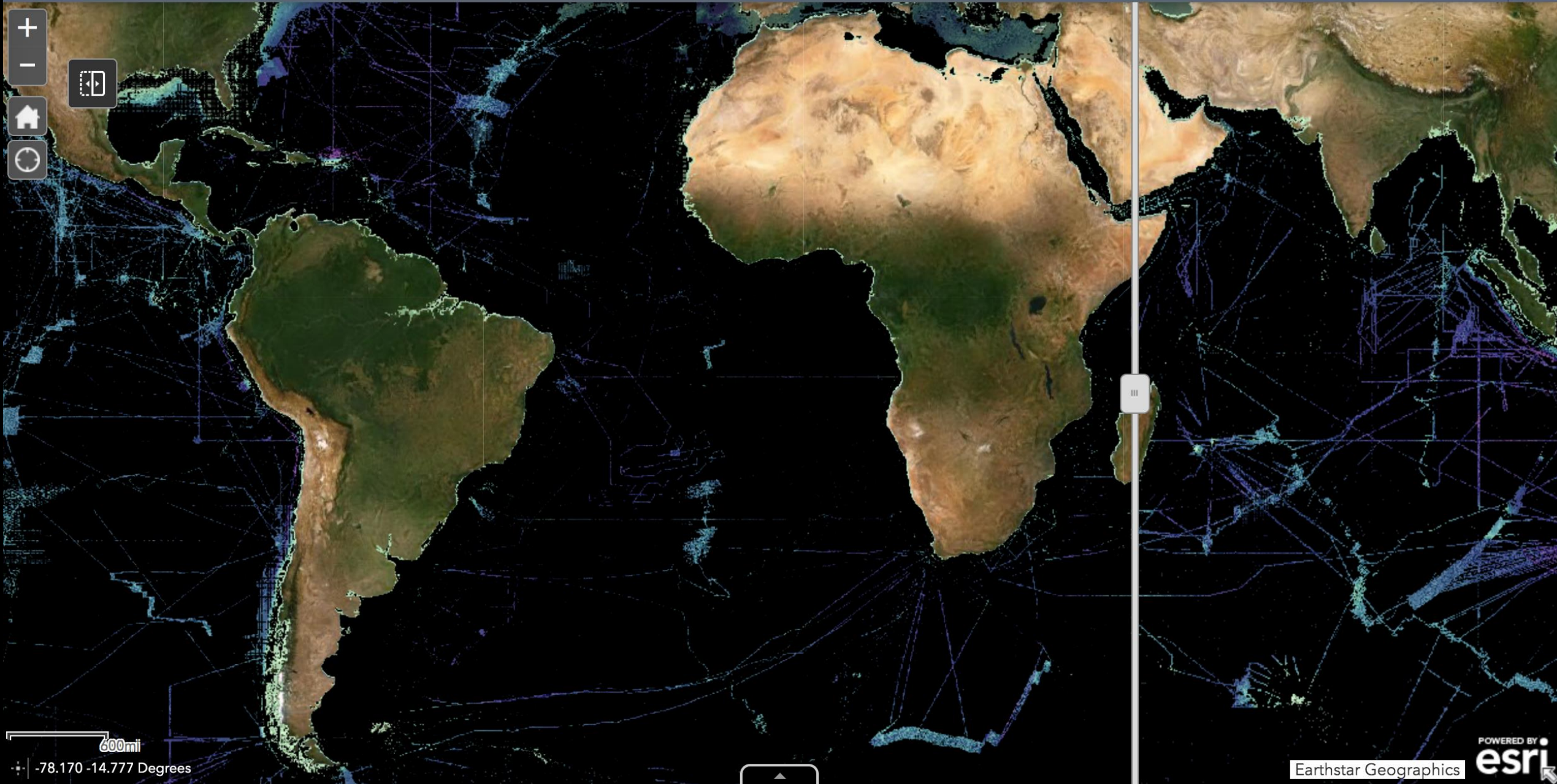




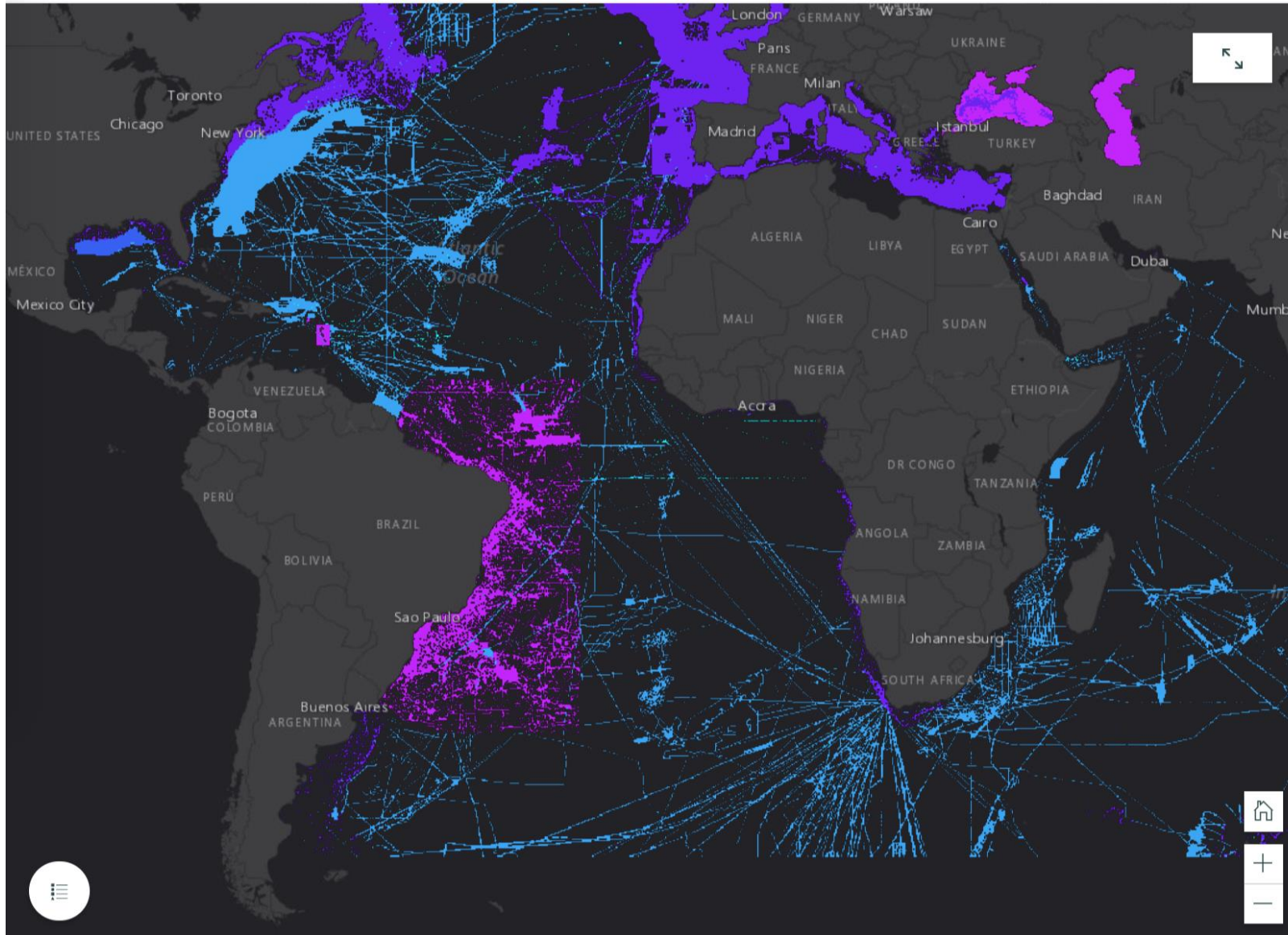
600mi
-12.956 -9.278 Degrees

Earthstar Geographics

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esri



GEBCO 2020 Coverage for Atlantic/Indian

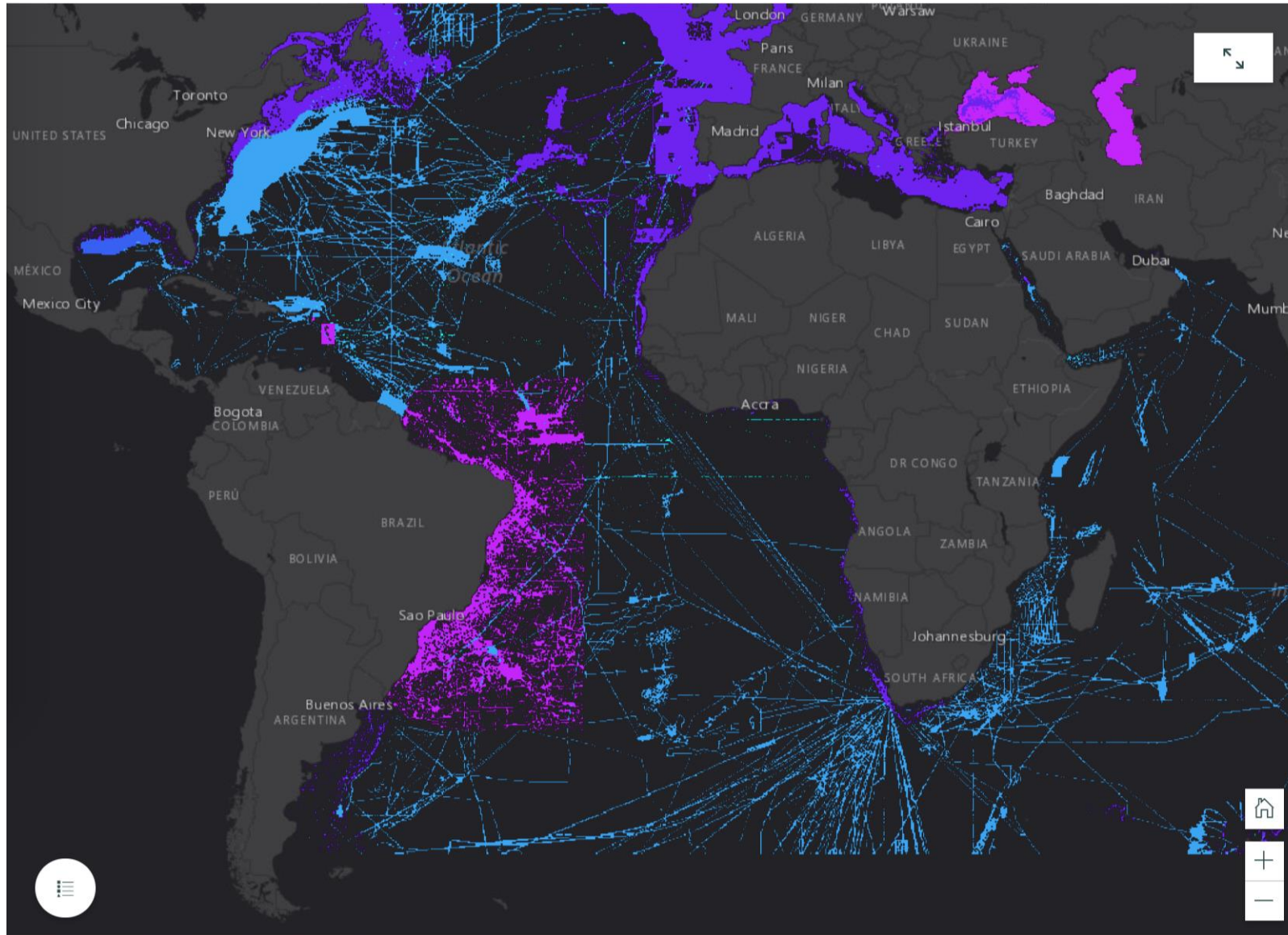


Data Coverage for the Atlantic/Indian Region

The GEBCO 2020 grid (15-arc second resolution) is scheduled for release in April 2020. Once it is released, a new global mask layer like the one in the previous map will be generated and made available. Until then, this interactive map highlights the extent of bathymetric data coverage included in the *Atlantic and Indian Oceans Regional Center (AIORC)* compilation. It is being made available now to help inform new data acquisition and to better understand the extent of data that has been integrated to date.

This map shows the TID values of bathymetric data types by using different colors to represent different TID values.

GEBCO 2020 Coverage for Atlantic/Indian



The values shown here correspond to the following (see map legend for more details):

- 10: Direct measurement: Singlebeam
- 11: Direct measurement: Multibeam
- 12: Direct measurement: Seismic
- 15: Direct measurement: Lidar
- 17: Direct measurement: Combination of direct measurement methods
- 70: Unknown: Pre-generated grid - depth value is taken from a pre-generated grid that is based on mixed source direct and indirect data types, e.g. single beam, multibeam, interpolation etc.

Note that detailed metadata for areas shown in pink are still being refined and the precise extent of coverage in those regions is not considered to be final.

The Importance of Type Identifier (TID)

The concept of TID was introduced with the GEBCO 2019 products and is meant to help distinguish nodes in the GEBCO grid that are supported by observations from those that are based on prediction or interpolation. This is important for clearly distinguishing regions of the seafloor have been "mapped," and for creating simple visualizations that highlight the areas that have not been mapped.

Previously, the Source Identifier (SID) was used as a means of providing attribution and provenance to data sources. Given the complexity of attribution and provenance, this information will now be handled through a dedicated metadata service that is currently under development.

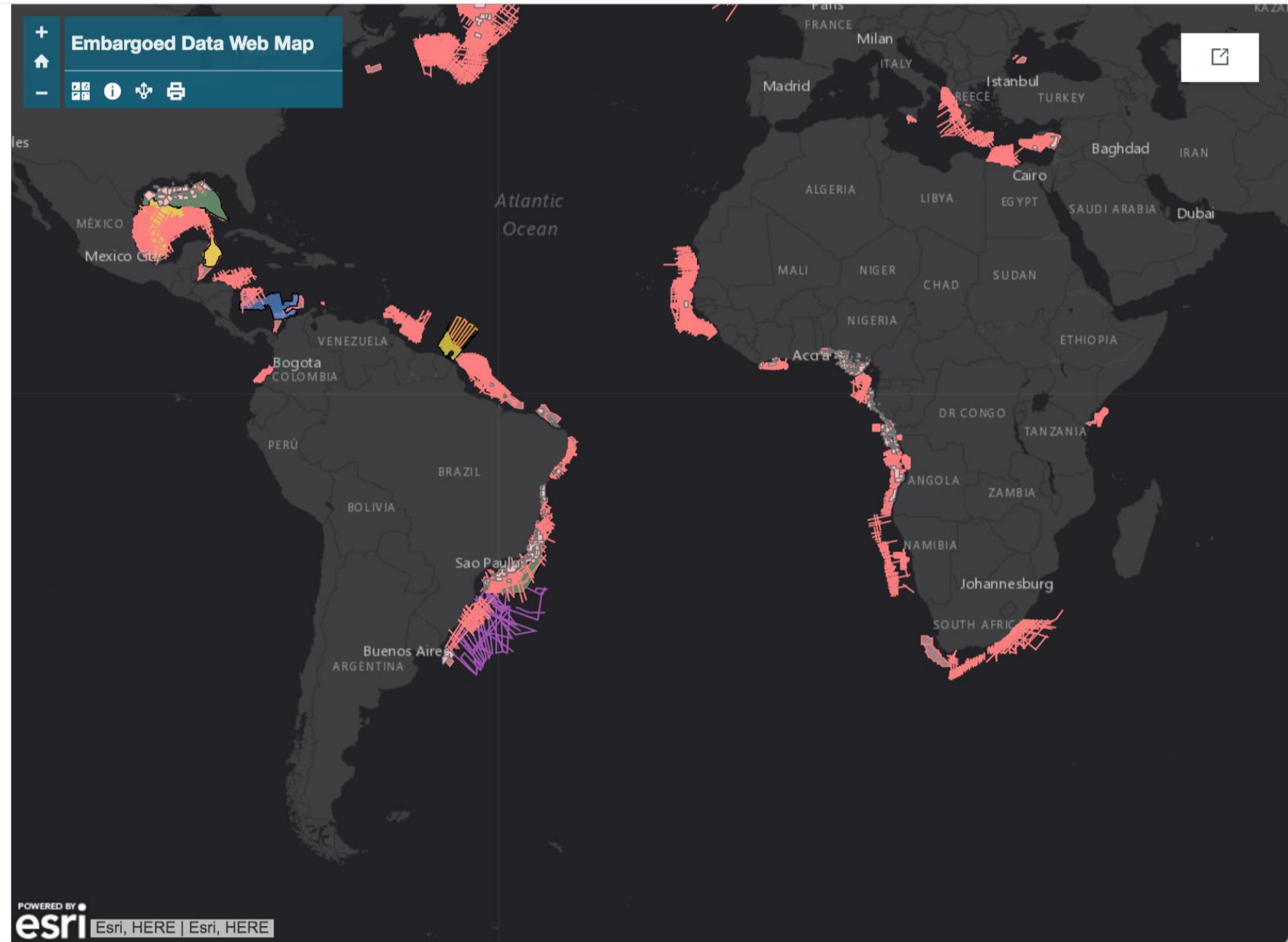
For composite grids that combine multiple sources of data it is very important that TID information be supplied to accompany the gridded data. This is especially true for grids that include predicted bathymetry and interpolated areas so we can accurately distinguish "mapped" areas of the seafloor from areas that have not yet been mapped.

For more information about the TID codes, please visit the [GEBCO website](#) or contact one of the Seabed 2030 Regional or Global Centers.

New Data Sources

*There are many more **existing** data sources that have not yet been contributed*

Even if bathymetry data cannot be shared, sharing polygons that show the extent of existing data can be important in helping to plan new surveys. The interactive map to the right shows the known extent of embargoed data from one survey company as well as UNCLOS data that is known to exist. While these data are known to exist, they have not yet been made available.

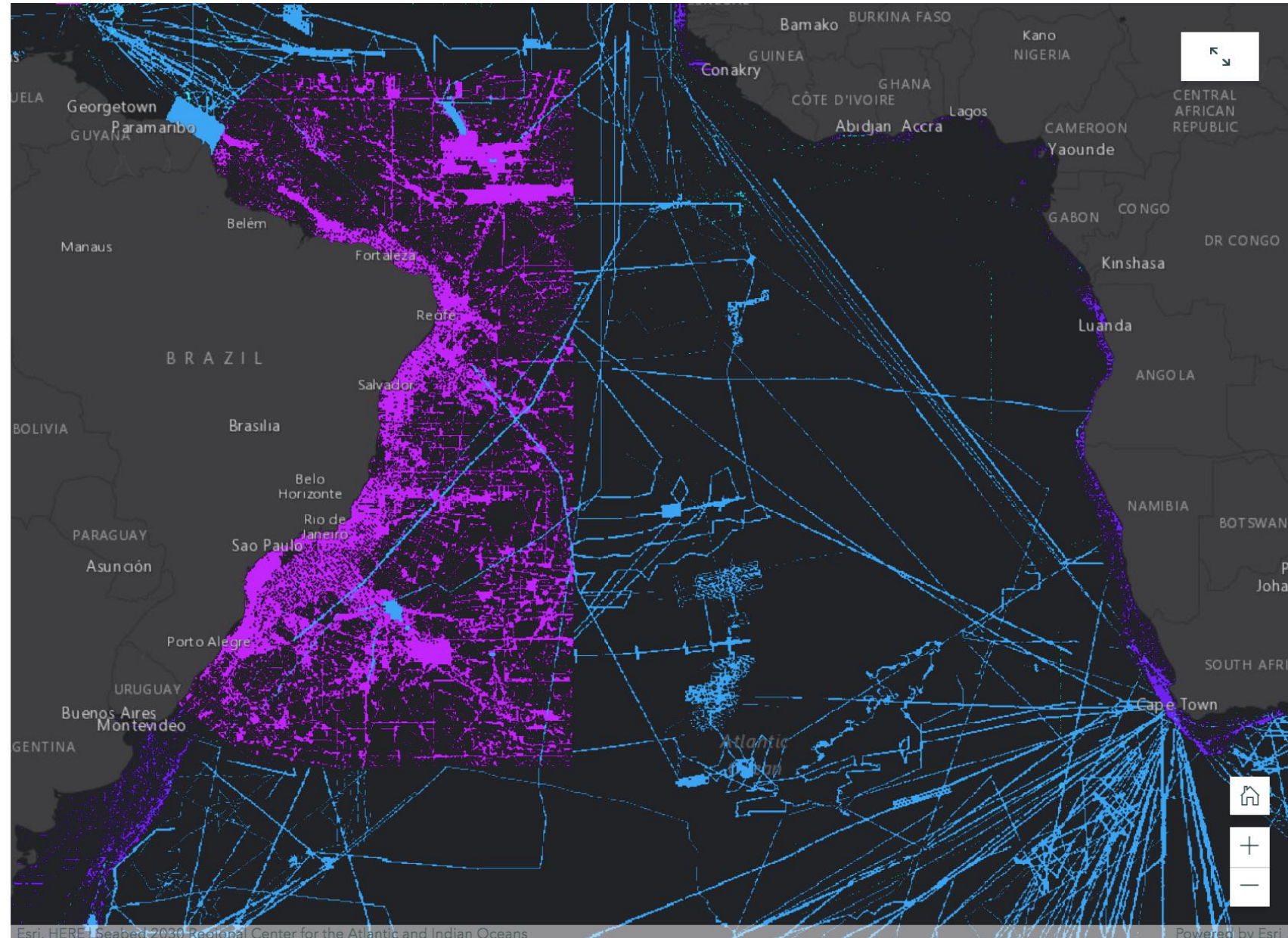


Working together to Map the Gaps

The interactive map shows our best current knowledge about existing data in the region. It includes representation of the extent of data included in GEBCO 2030, data that is publicly available and has not yet been integrated, and data that exists but is embargoed and not yet available for integration.

Get Involved!

- Contribute data and geospatial information about data coverage to IHO DCDB
- Coordinate upcoming data acquisition within the region through the SWAtHC
- Contact the Seabed 2030 Regional Center for the Atlantic and Indian Oceans



Working together to Map the Gaps

For more information:

www.gebco.net

www.seabed2030.org

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