Guidance for Data Inclusion in NOAA Ocean Exploration ArcGIS Online Geospatial Services

Who is this guidance for?

This document is intended for NOAA Ocean Exploration funded data collected by Notice of Funding Opportunity (NOFO) grantees and NOAA Ocean Exploration partners. The NOAA National Centers for Environmental Information (NCEI) provides data management guidance and support to NOAA Ocean Exploration data, including enhanced data visualization. The team maintains authoritative geospatial data services within the NOAA GeoPlatform - an instance of ArcGIS Online (AGOL) - and subsequent map viewers. NOAA GeoPlatform is a cloud-based mapping and analysis tool that enhances data visualization, discovery, access, interoperability, and reusability. This document provides guidance on how to include data within the NOAA GeoPlatform (AGOL) group: NOAA Ocean Exploration (NCEI) Data. Geospatial services within this group are continually being created and updated with new content and data. A majority of services found within this group were developed using data collected by NOAA Ship *Okeanos Explorer* and remotely operated vehicle (ROV) *Deep Discoverer* due to the consistency of those data. Services may be grouped as follows:

Expedition Services
➤ Ship Tracks – displays ocean exploration cruises, includes data access
➤ All Points – displays ocean exploration cruises without ship track data, includes data access

Submersible Services
➤ Dive Locations – displays dive sites for global to regional scales, includes data access
➤ Dive Tracks – displays dive tracks for 2D and 3D visualizations, includes data access
➤ Dive Samples – displays sample collection sites, includes access to end repository
➤ Entry/Exit Points – displays where submersible entered/exited the water and began/ended benthic exploration

Bathymetry Services
➤ Coverage * – displays areas mapped
➤ Grids * – 2D visualizations of bathymetry data
➤ Tiles * – 3D visualization of bathymetry data that render faster than the gridded services

* Currently limited to *Okeanos Explorer* data

Ocean Exploration and Research

Can the NOAA GeoPlatform support near-real-time data?

Yes. NOAA Ocean Exploration prioritizes live interactions with shore-side scientists and the public through the use of telepresence technologies. In response, NCEI supports near-real-time ship tracking capabilities for NOAA Ship *Okeanos Explorer* through the GeoPlatform.

Near-Real-Time Services
- Ship Position * – displays current ship position, depth, and meteorological readings
- Ship Track * – displays ship track of current ocean exploration cruise
- Daily Bathymetry * – displays provisional bathymetry products from current cruise
- ROV Position ** - displays current location and depth of ROV *Deep Discoverer* in 2D and 3D
- ROV Dive Track ** - displays current dive track for ROV *Deep Discoverer* in 2D and 3D

* Currently limited to *Okeanos Explorer* data
** Currently under development
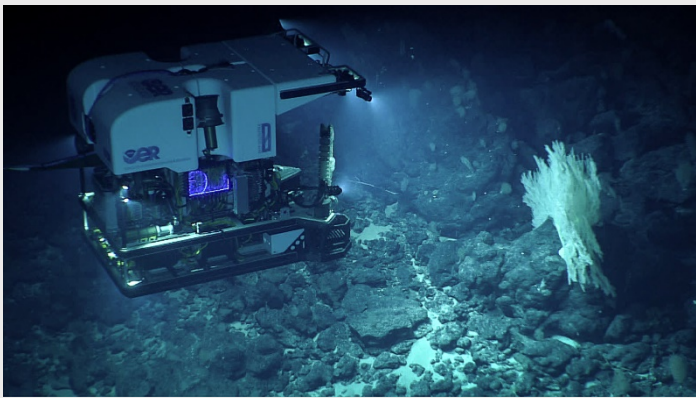
Guidance for Inclusion in Expedition Services

NOAA Ocean Exploration data archived at NCEI shall be made discoverable through the NOAA GeoPlatform if 1) the data are archived at NCEI and 2) the necessary geospatial data are delivered with those archived data.

Expeditions with ship tracks will be included within the Ship Tracks service while expeditions without ship tracks will be included within the Points service. Ship tracks, when available, are preferred as they are more representative to where data were actually collected.

Expedition ship tracks or coordinate pairs shall be submitted as a zipped shapefile, zipped geo-database, or CSV file. Attributes for the expedition ship track polyline(s) or point(s) shall include: cruise ID, cruise name, vessel name, project principals, cruise dates, cruise summary, and mission group (if applicable). Provide links to any relevant expedition websites or end data repositories as well. These attributes are necessary for the AGOL pop-ups (*see figure below*). If submitting data as a CSV file, include the coordinate system in which the data were collected.
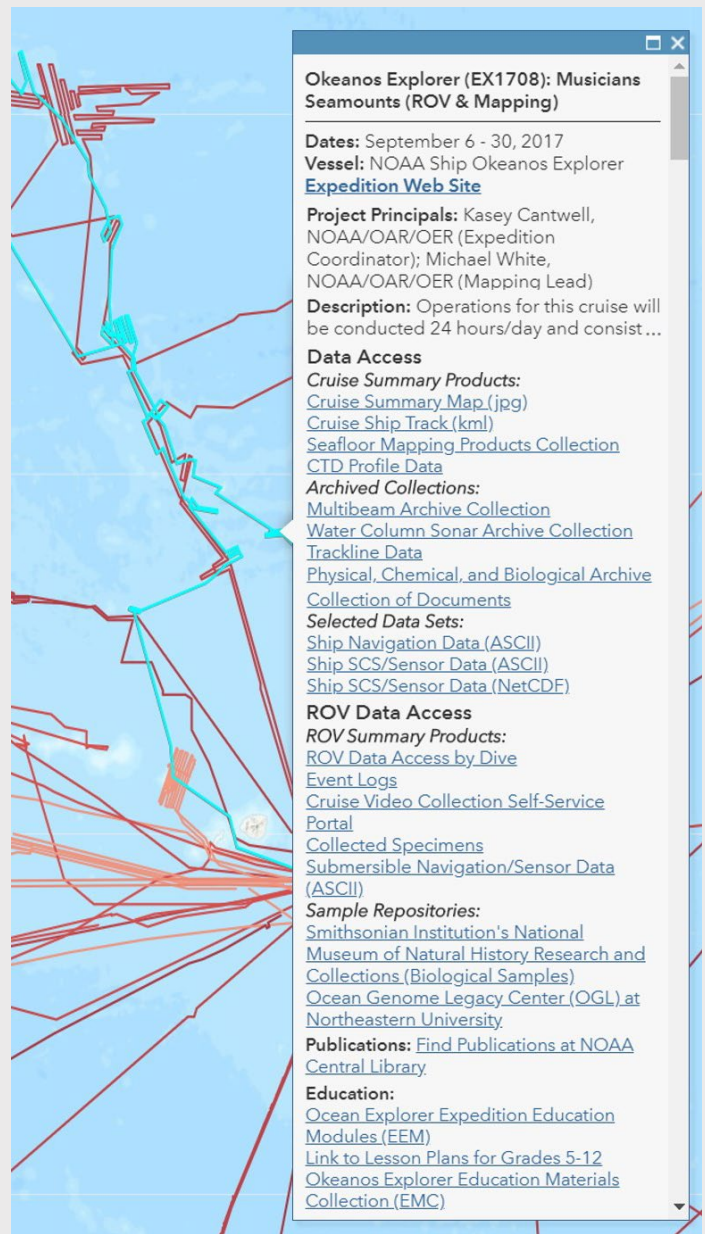
The NOAA Ocean Exploration Ship Tracks service conveniently provides users with relevant information and data access.

Ocean Exploration and Research

ROV Deep Discoverer

Guidance for Inclusion in Submersible Services

NOAA Ocean Exploration funded grantees and partners may also provide crewed or uncrewed vehicle information for 2D and 3D data visualizations (e.g., AUVs, ROVs, HOVs, gliders, submersibles, etc.).

At a minimum, provide coordinates of dive site locations as a zipped shapefile, zipped geodatabase, or CSV file. Attributes for dive site(s) shall include: cruise ID, cruise name, vessel name, vehicle name, dive ID, dive date, maximum depth, dive duration, and dive summary. Provide links to any relevant expedition websites or end data repositories as well. If submitting data as a CSV file, include the coordinate system in which the data were collected.

Currently, NCEI only provides dive track visualization for ROV *Deep Discoverer*. If location and depth values were continuously collected throughout the dive(s) in which you would like to visualize, please inquire about dive track services. Depth values are required for 3D visualizations; otherwise, dive tracks will only be displayed as 2D along the surface or seafloor.

Guidance for Inclusion in Bathymetry Services

All multibeam bathymetry data archived at NCEI are included within the NCEI Bathymetric Data Viewer. NOAA Ship *Okeanos Explorer* is currently the only vessel with vessel-specific bathymetry services.
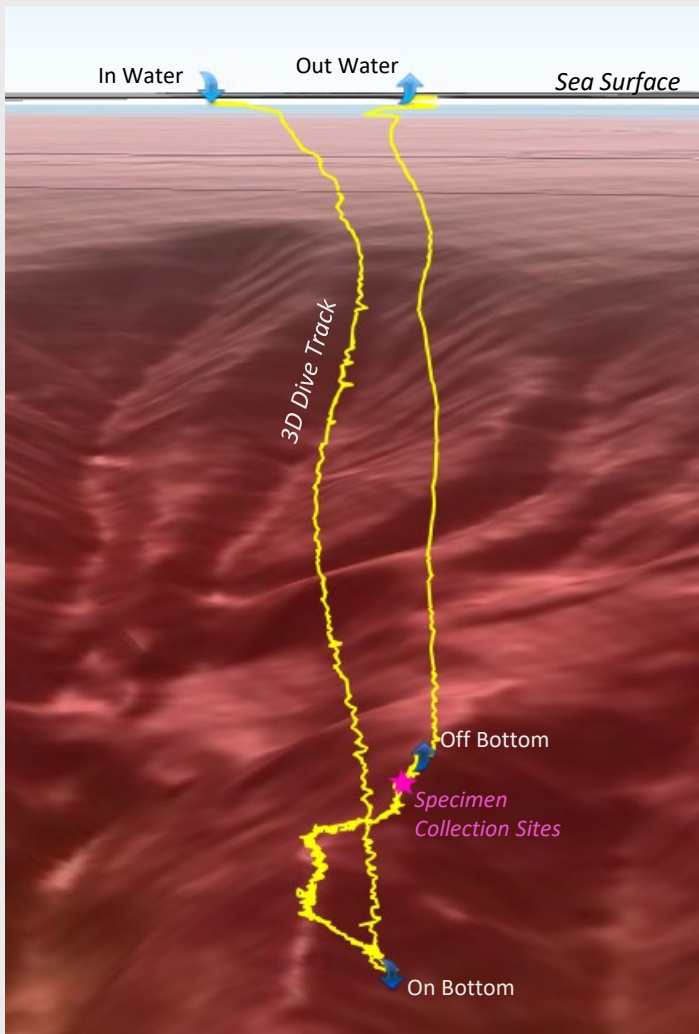
Navigation data that include *x, y, z* values can support 3D displays. ROV *Deep Discoverer*'s 3D dive track, specimen sites, and entry/exit points are displayed above over the 3D tiled bathymetry services.

SUBMITTING YOUR DATA

Contact NCEI via OER.info.mgmt@noaa.gov for geospatial inquiries and inclusion within the NOAA Ocean Exploration AGOL services.

6/30/2021

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