NANOOS Observing Assets

Observing Asset Inventory

1. Fixed-location, non-federal assets in IOOS template

NANOOS has in place an automated daily process to transform the NANOOS SOS station SensorML IOOS metadata for fixed-location, non-federal assets into an updated inventory that is served via GeoServer and is therefore accessible via multiple standard geospatial web services and encoding formats, including OGC WMS and OGC WFS. This "layer" ("typeName" in WFS), *sos:nanoos_sos_stations*, is available at http://data.nanoos.org/geoserver/ including the following endpoints:

- *OGC WFS GetCapabilities*, showing data-access metadata for the layer: http://data.nanoos.org/geoserver/sos/ows?service=wfs&version=1.1.0&request=GetCapabilities
- Access in CSV format via OGC WFS: http://data.nanoos.org/geoserver/sos/ows?service=WFS&version=1.0.0&request=GetFeature&typeName=sos:nanoos_sos_stations&outputFormat=csv
- *OGC WMS GetCapabilities*, showing view-access metadata for the layer: http://data.nanoos.org/geoserver/sos/ows?service=wms&version=1.3.0&request=GetCapabilities

The corresponding NANOOS Observing Asset Inventory spreadsheet generated from the above WFS CSV request in December 2016 for the NANOOS annual report can be accessed as the file *NANOOS_RA_observing_asset_inventory_2016-12-01.xlsx*

2. More comprehensive asset inventory, in custom NANOOS (NVS) templates

A live, dynamic, up-to-date inventory of NANOOS-integrated observing assets, both those funded by NANOOS and those funded by other parties but served through our system, is part of the NANOOS Visualization System (NVS). NANOOS also provides asset inventories that are not limited to non-federal assets and include additional metadata from the NVS metadata store:

- An inventory of fixed-location stations updated daily and available via the same GeoServer web services described above, except under the layer/ typeName *nvs:nvs_stations*, using the base url http://data.nanoos.org/geoserver/sos/nvs/ows
- An inventory for all NVS asset types (including in situ, remote sensing and model assets) can be accessed from the "Asset List" section in the NVS Data Explorer at http://nvs.nanoos.org/Explorer?section=Asset%20List . It displays a subset of all the metadata information found on the NVS database, but the downloadable CSV file ("Download Asset List" button) includes additional attributes, such as latitude & longitude. Note the "History" column on the right which displays complete asset status history via the "Show" link. Asset offline status is indicated by a grayed-out asset icon on the left. The same inventory is also available for download as a simple link at

http://nvs.nanoos.org/services/download_asset_list.php. A complete history of asset updates is available via the NVS Asset History Web App at http://nvs.nanoos.org/AssetHistory, as well as via the History tab on an individual asset's pop-up window on NVS.

- HTTP GET web services with JSON-encoded responses provide asset inventory and history information. These web services are documented elsewhere.

Gliders

Data from NANOOS gliders currently in operation are submitted to the national IOOS Glider DAC (https://gliders.ioos.us) using previously defined DAC standards. In addition many previous deployments from active as well as currently inactive gliders have also been submitted to the Glider DAC (note that these submissions have been under different "providers"). These are available via Glider DAC applications and inventories, particularly the Glider DAC ERDDAP server at https://data.ioos.us/gliders/erddap/search/index.html?searchFor=NANOOS

High Frequency (HF) Radar

All HF Radar data and metadata are submitted to the national IOOS HF Radar DAC using previously defined DAC standards. For inventory information see the DAC web sites at http://hfradar.ndbc.noaa.gov/ and http://cordc.ucsd.edu/projects/mapping/maps/