

Member Node Description: NCEI (National Centers for Environmental Information) Oceanographic Data Archive

Version 1.0 3/31/2016 Kenneth S. Casey

General

Name of resource: National Centers for Environmental Information (NCEI)
URL(s): <https://www.ncei.noaa.gov/>
Institutional affiliation(s): National Oceanic and Atmospheric Administration
Primary geographic location: Silver Spring, MD, USA
Project Director & contact info: Kenneth S. Casey, Kenneth.Casey@noaa.gov
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Age of resource: Since 1960
Funding support: Government entity with annual base allocations
Proposed Unique Identifier: urn:node:NCEI

Content

Content description/collection policy (1 paragraph, domain and spatial/temporal coverage, uniqueness of content, exclusions, as applicable):

NCEI is the merger of the former National Oceanographic Data Center (NODC), National Climatic Data Center (NCDC), and National Geophysical Data Center (NGDC). It serves as the Nation's archive for oceanographic, atmospheric, climatic, geophysical, and space-weather data. NCEI archives data from national and international partners, and its holdings include a wide range of data types from all corners of the world and from the bottom of the ocean to the surface of the sun. NCEI's partnership with DataONE is focusing initially on its oceanographic holdings stewarded by the former NODC in Silver Spring, MD.

Types of data (complex objects, text, image, video, audio, other):

Data of virtually every imaginable type are part of the NCEI oceanographic data archive, including data collected and generated by video, model, satellite, laboratory, and in situ platforms.

Data and metadata availability (rights, licensing, restrictions):

Very nearly all of NCEI's ocean data and metadata holdings are freely and openly available without restriction. Some small number of datasets are not publicly available according to NOAA agreements.

Option for embargo (yes/no, duration):

Yes. In response to the federal mandate, Increasing Public Access to Research Results (PARR), the [NOAA PARR Plan](#) gives NOAA-funded external projects up to two-years to make their data available. For NOAA-collected data, the NOAA Data Access Procedural Directive (<https://nosc.noaa.gov/EDMC/PD.DA.php>) allows for a delay of up to one year for "Access to data requiring manual data collection, processing, or quality control." However, in many cases data collected directly by NOAA are available in near-real time.

Size of holdings (number and size of datasets, mean and median granules (files) per dataset):

NCEI's oceanographic holdings in the Silver Spring archive facility currently include 29369 data collections and 170 Terabytes. More data enter the archive every day. The number of granules per collection varies widely, from just one to tens of millions.

Please describe recent usage statistics, if known, including information on annual data product downloads, annual number of users, annual number of data products used in publications:
During calendar year 2015, NCEI served 195 TB of data to hundreds of thousands of users.

User interactions

How does a user contribute data? (what can be deposited, how are data prepared, are specific software required, documentation/support available)

Users can contribute data to the NCEI ocean archive via two primary methods. For recurring data submissions, an automated data stream can be established. For single, discrete submissions, the preferred method is to use the Send2NCEI application at <https://www.nodc.noaa.gov/s2n/>. In either case, ISO 19115-2 metadata will be generated with inputs from the Data Producer. All data submitted are appraised following standard procedures before inclusion in the archive, following the NOAA Procedural For Scientific Records Appraisal and Archive Approval at [https://nosc.noaa.gov/EDMC/documents/NOAA Procedure document final 12-16-1.pdf](https://nosc.noaa.gov/EDMC/documents/NOAA_Procedure_document_final_12-16-1.pdf).

How does a user acquire / access data?

The NCEI oceanographic data holdings are all online on spinning disk-based services. All data are available via at least FTP and HTTP. Some datasets, depending on the level of standardization of their file formats and embedded metadata, are also available via a THREDDS Data Server, Live Access Server, ArcGIS Server, and an OPeNDAP Hyrax Server. The data and available services for each collection are all discoverable via a Geoportal Server at <http://data.nodc.noaa.gov/geoportal>.

What user support services are available (both for depositing and accessing/using data)?

NCEI maintains a user support staff to support both data submitters and data users.

How does the resource curate data at the time of deposit?

NCEI adheres to the tenets of the ISO standard for digital archives, known as the Open Archival Information System (OAIS) Reference Model. Metadata are generated and reviewed for accuracy, and data are maintained within archival storage systems including remote, offsite backups.

Technical characteristics and policies

Software platform description, incl. data search and access API(s):

Vocabularies:

<http://www.nodc.noaa.gov/cgi-bin/OAS/prd/text/query>

Discovery Services:

- Both collections and granules are supported by the Geoportal REST API and web interface
 - Collections: <http://data.nodc.noaa.gov/geoportal>
 - Granules: <http://www.nodc.noaa.gov/geoportal/>
- Both are available through CSW:
 - Collections: <http://data.nodc.noaa.gov/geoportal/csw/discovery?Request=GetCapabilities&Service=CSW&Version=2.0.2>
 - Granules: <http://www.nodc.noaa.gov/geoportal/csw/discovery?Request=GetCapabilities&Service=CSW&Version=2.0.2>
- Both are available through OpenSearch:
 - Collections: <http://data.nodc.noaa.gov/geoportal/openSearchDescription>

- Granules: <http://www.nodc.noaa.gov/geoportal/openSearchDescription>
- Collections are also available via OAI-PMH: <http://data.nodc.noaa.gov/cgi-bin/oai-pmh?verb=ListIdentifiers&metadataPrefix=iso19139>

Data Access Services:

- HTTP: <http://data.nodc.noaa.gov>
- FTP: <ftp://ftp.nodc.noaa.gov>
- Live Access Server: <http://data.nodc.noaa.gov/las>
- ArcGIS Server: <http://data.nodc.noaa.gov/arcgis/rest/services/>
- OPeNDAP Hyrax (DAP): <http://data.nodc.noaa.gov/opendap>
- THREDDS Data Server (DAP, WMS, WCS, etc.): <http://data.nodc.noaa.gov/thredds>

Service reliability (including recent uptime statistics, frequency of hardware refresh, if known):

Hardware refresh occurs on 5-year cycles approximately and uptime availability is approximately 99%.

Preservation reliability (including replication/backup, integrity checks, format migration, disaster planning):

As a national archive center, NCEI’s oceanographic archive systems and staff perform all of those functions. Not all datasets undergo format migration, however, and a copy of the original format is maintained even when new versions are archived. Extensive Continuity of Operations (COOP) plans are maintained and exercised routinely, and data are backed up to geographically remote systems and those backups are exercised.

User authentication technology (incl. level of create/modify/delete access by users):

Users wishing to submit their data via Send2NCEI must create an account but no authentication is required to discover and access data. Once data are archived external users can not modify or delete the data in any way, though they may submit updates which go through similar archive review and approval processes as the original submission. Internal archive managers can add data and create new versions of archived data, but archived data can not be deleted or modified without going through an extensive process.

Data identifier system and data citation policy, if available:

NCEI is the official minter of DOIs for NOAA, and it follows the NOAA Procedural Directive for Data Citation available at: <https://nosc.noaa.gov/EDMC/PD.DC.php>

Metadata standards (including provenance):

While NCEI deals with numerous metadata standards for environmental data on ingest, following the NOAA Procedure For Data Documentation (<https://nosc.noaa.gov/EDMC/PD.DD.php>) the principal metadata standard supported is ISO 19115-2. NCEI has not adopted a provenance standard in any widespread way.

Capacity/services to DataONE

At what functional tier will you initially be operating? (see <http://bit.ly/MNFactSheet> for definitions)

- Tier 1: Read only, public content
- Tier 2: Read only with access control
- Tier 3: Read/write using client tools
- Tier 4: Able to operate as a replication target

If you can host data from other member nodes, what storage capacity is available?

NCEI will not be hosting data from other member nodes.

Can you provide computing capacity to the broader network? If so, please describe.

No.

Other Services

What other services or resources (such as expertise, software development capacity, educational/training resources, or software tools) can be provided of benefit to the broader network?

No additional services are currently planned for provision to the DataONE network.