

Member Node Description: National Ecological Observatory Network (NEON)

Version 1.0 7/2/2016 Christine Laney

General

Name of resource: National Ecological Observatory Network (NEON)
URL(s): <http://www.neonscience.org>
Institutional affiliation(s): NA
Primary geographic location: Boulder, Colorado, USA
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Age of resource: Since 2016
Funding support: NSF Awards EF-1029808, EF-1246537, EF-1138160, EF-0752017
Proposed Unique Identifier: urn:node:NEON

Content

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

NEON is a continental-scale ecological observation facility sponsored by the National Science Foundation that gathers and synthesizes data on the impacts of climate change, land use change and invasive species on natural resources and biodiversity. The NEON observatory is designed to collect high-quality, standardized data from **81 field sites (47 terrestrial and 34 aquatic)** across the U.S. (including Alaska, Hawaii and Puerto Rico). Data collection methods are standardized across sites and include **in situ instrument measurements, field sampling and airborne remote sensing**. Field sites are **strategically selected** to represent different regions of vegetation, landforms, climate, and ecosystem performance. NEON data and resources are freely available to enable users to tackle scientific questions at scales not accessible to previous generations of ecologists. NEON is in construction until the end of 2017; data products will be added incrementally.

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

When NEON is in operations (2018 and on), images, hyperspectral data, LiDAR, tabular data files, and genomic sequence files will be available.

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

NEON Data Usage and Citation Policy
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Option for embargo (yes/no, duration):

Data and metadata are continuously updated on the NEON data portal but metadata updates will be available to DataONE at least every 6 months.

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

45 data products are currently available from NEON but only the observational and instrumental data products are currently available on NEON's data portal. Remote sensing data products are currently only available by request. Data products will be added incrementally throughout the next 1.5 years.

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:

For the period of Oct 1, 2015 to June 15, 2016 (all metrics that are available):

Number of data portal views: 26,393

Number of users: 6,290

Number of queries: 2,357

Number of data package downloads: 1,586

We do not currently track publications using NEON data.

User interactions

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

Users cannot contribute data at this time.

How does a user acquire / access data?

Users can currently access and download data from the NEON Data Portal (<http://data.neonscience.org>). A public API will be available in the future.

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

Data products can be downloaded as data packages containing data files, metadata, and a readme file. At this time, instrumented and observational data are delivered as well-documented CSV files, while remote sensing data are delivered primarily as HDF5.

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

NA

Technical characteristics and policies

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

Liferay 6.2 web application server

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

99%

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

Full backups of database and application servers

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

Liferay authentication, but users can only download data and cannot modify it.

Data identifier system and data citation policy, if available:

Data queries are assigned unique, internal identification strings when a user requests one. Each EML document delivered to DataONE describes the data available for one data product at one site over the entire date range available. These are identified using NEON.DOM.SITE.DPL.DPNUM.V where DOM = Domain number (e.g., D01), SITE = the 4-letter code for a NEON site, DPL = data product level (e.g., DP1), DPNUM = a five digit number that uniquely identifies each data product, and V = DataONE version.

Metadata standards (including provenance):

Provenance may be traced through a series of documents provided with data packages. For observational data, these include protocols, algorithm theoretical basis documents (ATBDs), and readme files. For instrumented data, these include sensor command, control, and configuration documents (C3), As-Built documents (for sensor deployment information at each site), ATBDs, and readme files. Each of these data products also includes one EML file per data product per site. Remote sensing data are documented within HDF5 files.

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?

NA

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?

Educational tutorials are provided free of charge at <http://www.neondataskills.org>.