

Data Help Desk Participants: Our Data Repositories and (Meta)data Aggregators

Presenting: Arctic Data Center, CUAHSI, DataONE, Environmental Data Initiative, iDigBio, NEON, NEON Biorepository, Neotoma

#datahelpdesk

Ecological Society of America 2020

Career Central

August 3-6, 2020

<http://bit.ly/datahelpesa2020>



Universities Allied for Water Research

DataONE



Integrated Digitized Biocollections



neon
Operated by Battelle



NEOTOMA PALEOECOLOGY DATABASE



 @ARCTICDATACTR

ARCTICDATA.IO
NSF Award #:
1546024

NSF ARCTIC Data Center

 **5,988**
DATA SETS

 **742K+**
DATA FILES

 **52TB+**
TOTAL SIZE

 **2,564**
CREATORS

 **16,162**
USERS

 **1.6M**
FILE DOWNLOADS



Data Archive



Data Discovery
Portal



Tools and
Infrastructure



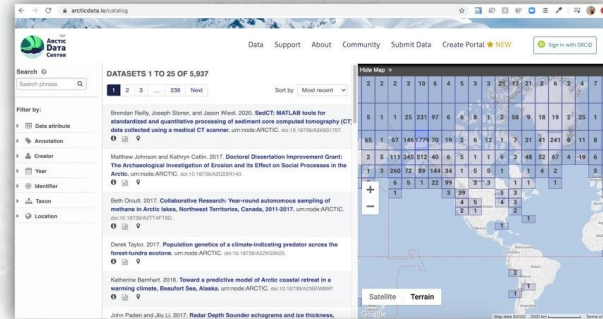
Support Services



Training and
Outreach



Data Rescue





CUAHSI

universities allied for water research

Consortium of Universities for the Advancement of Hydrologic Science, Inc.



Discover hydrologic data and models at hydroshare.org and data.cuahsi.org



Collaborate in HydroShare and privately share data



Publish Data with a DOI



Web tools for research and classroom applications



Fulfill your Data Management Plan with Support from CUAHSI Staff

CUAHSI Data Services provides access to data, models, and open source tools to facilitate water research and education



140

Member organizations



3,610,931

Time series data sets at data.cuahsi.org



20 GB

Free data storage per user at HydroShare.org



Twitter

[@cuahsi](https://twitter.com/cuahsi)



Data Help

help@cuahsi.org



CUAHSI DataONE
Universities Allied for Water Research



GBIF



iDigBio
Integrated Digital Collections



neon
Operated by Battelle



NEOTOMA PALEOECOLOGY DATABASE

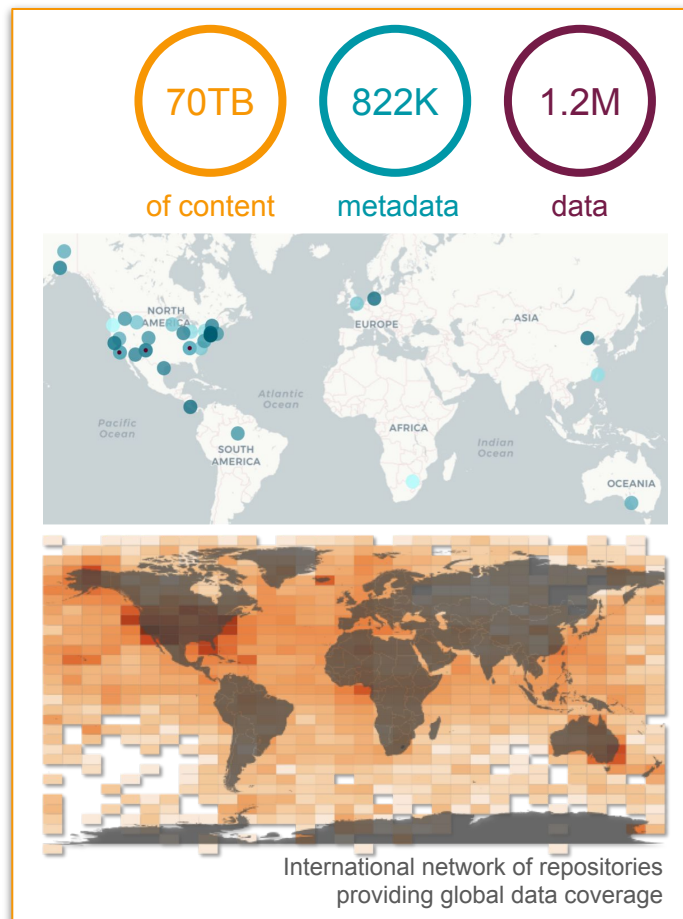
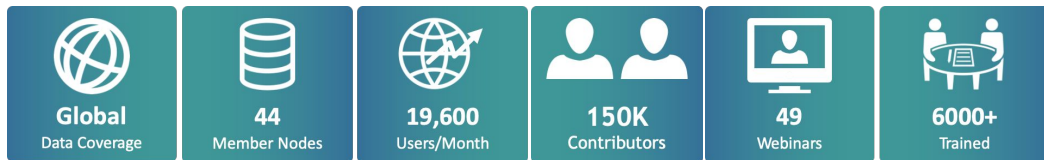


**Making data more discoverable,
accessible and usable**

Features include:

- Faceted Data Search and Discovery
- Provenance Capture and Display
- Data Science Training and Resources
- Metadata Quality Reporting
- Data Level Metrics
- Integrated DataONE Community

... with new services being announced NEXT WEEK!!!



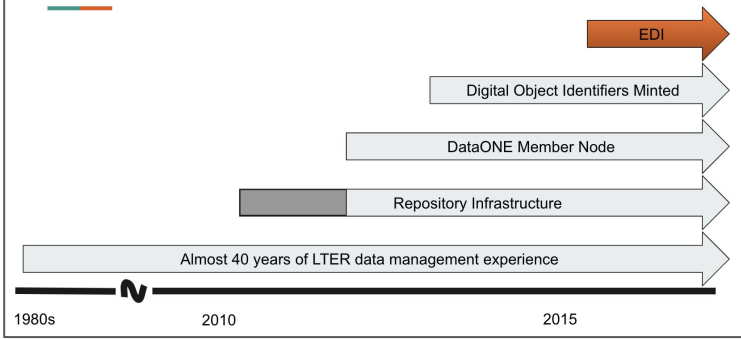


Environmental Data Initiative

<https://environmentaldatainitiative.org/>

Data Archive
Community Building
Ecosystem Science

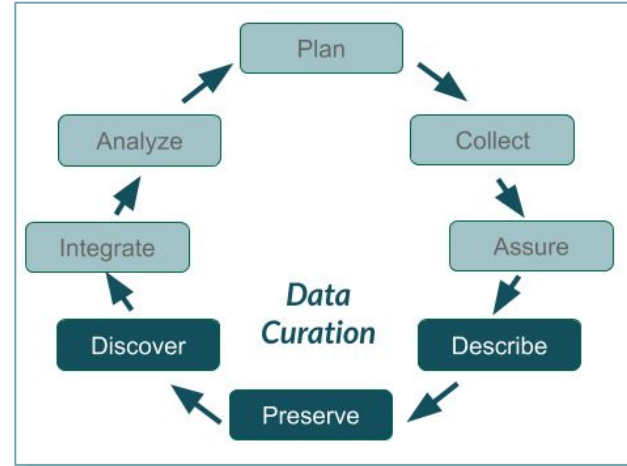
History - we are standing on the shoulders of giants



*EDI Activities:
Maintain a data archive*

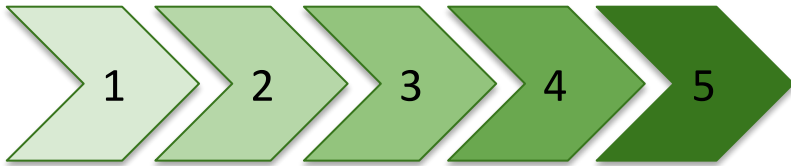
Train research groups in data curation and mgt.

Collaborate/leverage other work in environmental data management



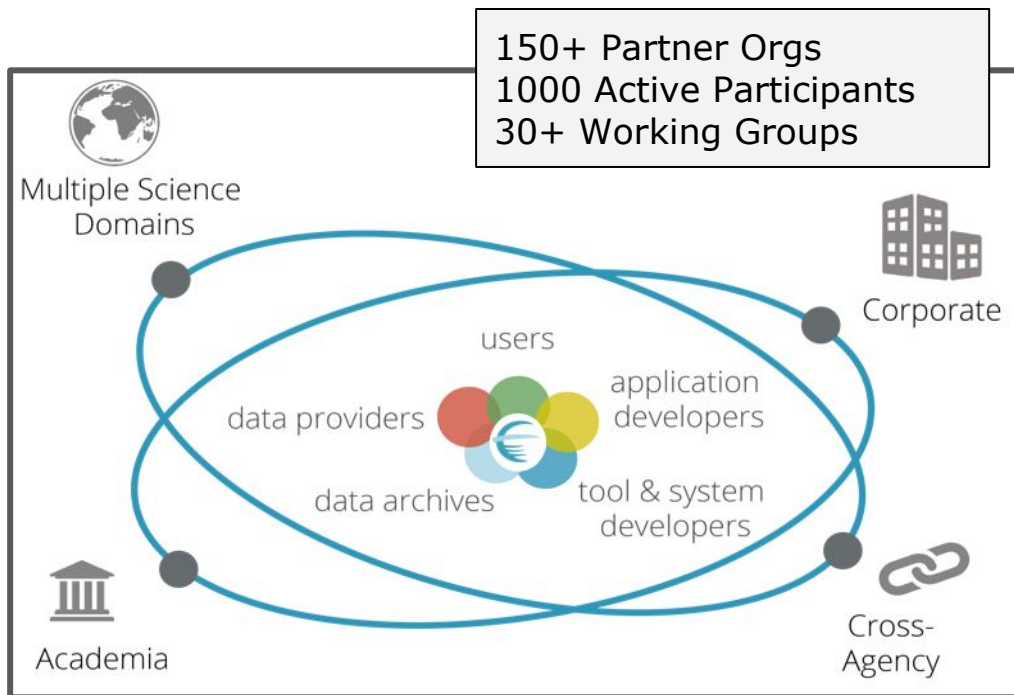
Data Contributor

1. Contact, plan
2. Assemble, organize
3. Prepare metadata
4. Upload
5. Access citation, DOI, published data



- A. Long-term, secure storage
- B. Discovery, access, cited, revisions
- C. Automated data checking
- D. Conforms to industry standards
- E. Workflows for data access & use
- F. Feedback to improve local practice





DISCOVER

Find people and tools to make your data findable, accessible, interoperable, and reusable.



COLLABORATE

Join-in or create a new collaboration area around your Earth science data challenges.



INNOVATE

Utilize small-grant funding to build or expand Earth data technologies.



NETWORK


Extend your network. Build connections across federal agencies, the private sector, and academia.

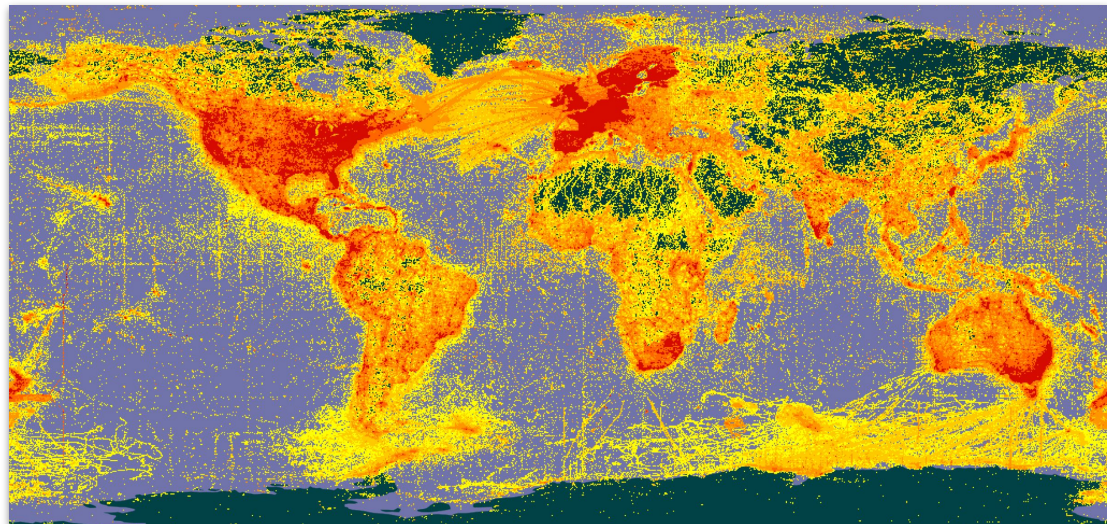
Free and open access to information about all types of life on Earth

- Which species or organism?
- Where and when was it found?
- What is the evidence?

International network and research infrastructure that provides free and open access to biodiversity data

Funded by participating national governments that have signed voluntary memorandum of understanding

58 countries
 **38** organizations
 **1,442** data publishers



GBIF Secretariat is ICSU-WDS CoreTrustSeal certified



20+ GBIF network members serve as trusted data hosting centres, serving national and thematic data and offering

- Consistent maintenance and administration of GBIF IPT
- Demonstrated track record of hosting data
- Capacity to provide help desk support

www.gbif.org



CUAHSI DataONE
Universities Allied for Water Research



GBIF **iDigBio**
Integrated Digital Biodiversity Collections



neon
Operated by Battelle



NEOTOMA PALEOECOLOGY DATABASE





Advancing the Digitization of Biodiversity Collections

iDigBio Hub and Thematic (Museum) Collection Networks

1,832 recordsets

121.4 million specimen records

31.8 million specimen images

Frog: Florida Museum of Natural History, UF:Herp:100788, MorphoSource S3392; Map: iDigBio.org

www.idigbio.org – social media @idigbio

Cyberinfrastructure

Data publishing for natural history collections
Data quality control review
Data access via user-friendly web portal interface
Data access programmatically via APIs

Research Use

Collaborative development of tools and products using iDigBio data
Publications exemplifying and community training on best practices for data use

Digitization, Workforce Development, and Citizen Science

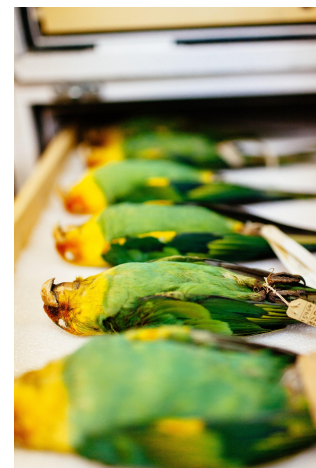
Workflows for digitizing historic specimens and for born-digital new specimens
Trainings related to equipment, digitization skills, and data literacy
Products and events to integrate citizen science in digitization workflows

Education, Outreach, Diversity, & Inclusion

K-16 course materials featuring specimens
Mentoring for EODI activities organized by natural history collections
Multi-pronged efforts to broaden representation in biology

Community Coordination

Digital Data in Biodiversity Research Conference (annually in June)
Biodiversity Summit (annually in September)
Alignment with similar international initiatives, e.g. GBIF

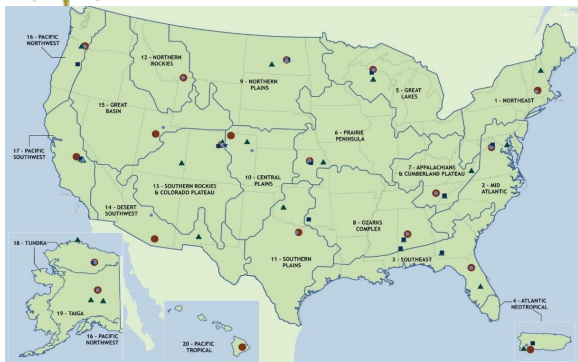




neon
Operated by Battelle

National Ecological Observatory Network

Open data to understand our ecosystems



81 FIELD SITES
47 terrestrial, 34 aquatic

180 DATA PRODUCTS

100K SAMPLES/SPECIMENS
Per year



Automated instruments

Micrometeorology (including C/H₂O/energy fluxes), surface and groundwater, and soil



Observational sampling

Aquatic & terrestrial organisms, soils & sediments, biogeochemistry, geomorphology, etc.



Airborne remote sensing

Camera, hyperspectral, LiDAR imagery

NEON serves as infrastructure for the community to conduct continental-scale research and experiments



All NEON data, protocols and samples are openly available via the data portal and biorepository

Quick set up mobile sensor arrays and airborne remote sensing surveys available upon request

Resources and programs focused on engaging students, educators and the general public

For access to data, samples, field protocols, and assignable assets, visit <https://neonscience.org>



DataONE
Universities Allied for Water Research



iDigBio
Integrated Digital Collections



neon
Operated by Battelle



NEOTOMA PALEOECOLOGY DATABASE



Neotoma Paleocology DB

Mission: Support global-change research by providing an open, community-curated repository for multiple kinds of paleoecological data



@neotomadb

www.neotomadb.org



Williams, Grimm et al. 2018 *Quat. Res.*

Neotoma DB









Key Characteristics

- Open Data
- Community Curated -> High-Quality Data
- Standardized Variable Names & Taxonomy
- Flexible data models for sites, proxies, cores, etc.

Software Services

- Neotoma Explorer (map-based GUI)
- *neotoma* R package (Goring et al. 2015)
- APIs
- Tilia (Data Curation)



	Primary Activity	Primary Research Domain	Geographic Domain	Ask us about...
	Support interdisciplinary water science	environmental hydrologic science	United States	Where to find hydrology data and collaborators
	Aggregate search/delivery across many repositories	Earth, environmental, social science	global	How can [<i>my favorite repository</i>] become a node
	Archive/deliver data	Any	Arctic	NSF requirements, how to submit data
	Archive/deliver data	Environmental science, ecology	global	ILTER; archiving for field stations, researchers, labs
	Distributed network & global data infrastructure	biodiversity	global	Publishing records, citing and tracking data uses
	Aggregate digitized biological & paleo specimen data	vouchered specimen collections, biodiversity	global	How to digitize, query data; foster data use
	Monitoring network	Environmental science	United States	How to download NEON data
	Share, curate, and store paleoecological data	Paleoecology & Global Change Science	global	How to view, access, steward, & contribute data

ESA 2020 Data Help Desk

Find us online [LINK]

Amber Budden, @aebudden, @DataONEorg, aebudden@nceas.ucsb.edu

Christine Laney, @cmlaney, @NEON_sci, claney@battelleecology.org

Deborah Paul, @idbdeb, @idigbio, dpaul@fsu.edu

Erica Krimmel, @ekrimmel, @iDigBio, ekrimmel@fsu.edu

Erin McLean, @ArcticDataCtr, mclean@nceas.ucsb.edu

Jeanette Clark, @sjeanetteclark, @ArcticDataCtr, jclark@nceas.ucsb.edu

Julia Masterman, @cuahsi, jmasterman@cuahsi.org

Kelsey Yule, @kmyule, biorepo.neonscience.org, kmyule@asu.edu

Kristin Vanderbilt, @vanderbik, @EDIgotdata, krvander@fiu.edu

Kyle Copas, @kylecopas, @GBIF, kcopas@gbif.org

Marie Faust, @NEON_sci, faust@battelleecology.org

Margaret O'Brien @obrienmobb, @EDIgotdata, margaret.obrien@ucsb.edu

