

The Index to Marine and Lacustrine Geological Samples

Community access to common information on sample collections

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Oregon State University Marine and Geology Repository
April 25th – 27th 2017, Corvallis, Oregon



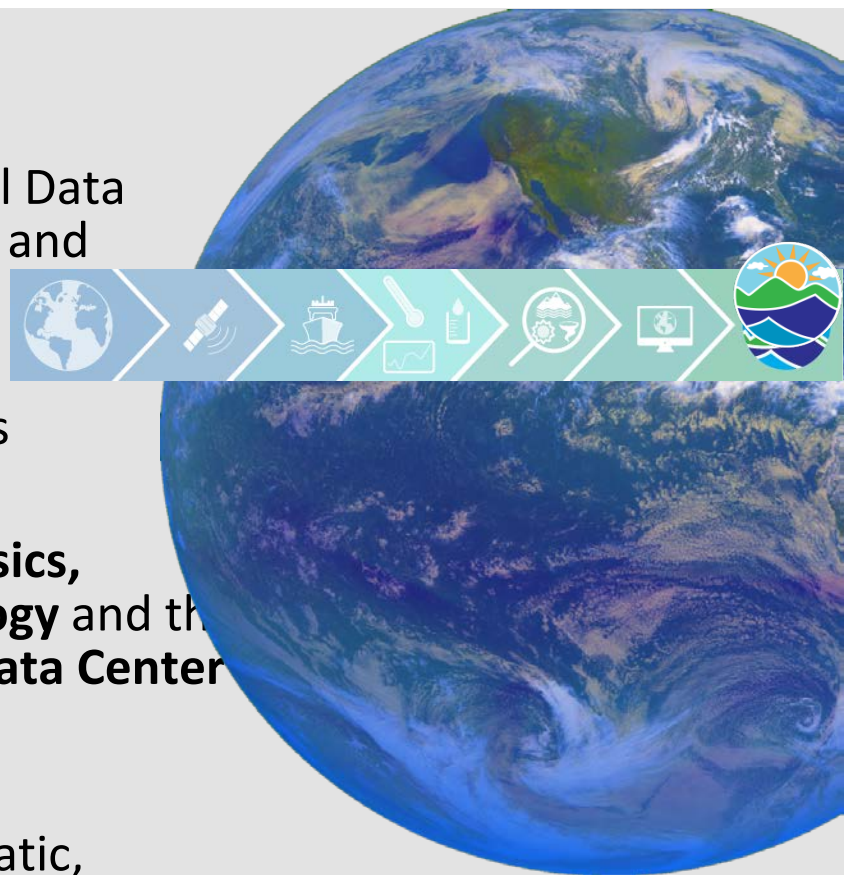
Data discoverability

1. Where do geological repositories fit in Rolling Deck to Repository (R2R)?
 - Bob Arko's talk
2. Moving sample collections and repositories into the digital age
 - Where we are and where we are going or should go?
3. Is there a need for common data portals: How to improve online discovery?
 - IMLGS is one portal for marine and lacustrine sample information (metadata and in some cases data)



NGDC to NCEI

- In early 2015, NOAA's data centers merged
- This includes the former National Geophysical Data Center, National Oceanographic Data Center, and National Climatic Data Center
- Enhance integration across science disciplines
- Includes the **World Data Centers for Geophysics, Oceanography, Paleoclimate, and Meteorology** and the **International Hydrographic Organization's Data Center for Digital Bathymetry**
- Build upon the full spectrum of weather/climatic, oceanographic, coastal, and geophysical products and services that the National Data Centers previously delivered





National Centers for Environmental Information (NCEI)

- Responsible for hosting and providing access to one of the most significant archives on Earth, with comprehensive oceanic, atmospheric, and geophysical data
- From the depths of the ocean to the surface of the sun and from million-year-old sediment records to near real-time satellite images



Revealing the Past, Interpreting the Present, and Informing the Future

Commitment to Long-term Data Stewardship



*We're in it for the long haul,
preserving data for your great-grandchildren*

Stewardship in Service of Science



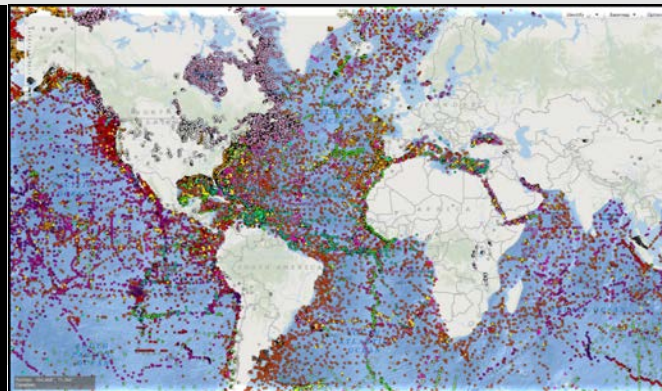
The IMLGS

The Index to Marine and Lacustrine Geological Samples (IMLGS) is, at its core, community access to common information on sample collections.

- The IMLGS is a community designed and maintained resource enabling researchers to locate and request sea floor and lakebed geologic samples archived by partner institutions.
- The Index is based on core concepts of community oversight, common vocabularies, consistent metadata and a shared interface.
- The Curators Consortium, now international in scope, meets at partner institutions biennially to share ideas and discuss best practices.
- NCEI serves the group by providing database access and maintenance, a list server, digitizing support (resource dependent) and long-term archival of sample metadata, data and imagery

What is in the Index?

- Over three decades, participating curators have performed the laborious task of creating and contributing metadata for over 209,000 sea floor and lake-bed cores, grabs, and dredges archived in their collections.
- Some partners use the Index for primary web access to their collections while others use it to increase exposure of more in-depth institutional systems.
- The IMLGS has a persistent URL/Digital Object Identifier (DOI), as well as DOIs assigned to partner collections for citation and to provide a persistent link to curator collections.





How Can You Access the IMLGS?

- Curator Home page with access to both text and map based interfaces:
<https://www.ngdc.noaa.gov/mgg/curator/curator.html>

The screenshot shows the NOAA National Centers for Environmental Information (NCEI) website. The main heading is "Index to Marine and Lacustrine Geological Samples (IMLGS)" with the DOI: 10.7289/V5H41PB8. Below the heading, it states "Access to rock and sediment cores, dredges, and grabs from the ocean floor and lakebeds" and provides the URL (http://seabedsamples.org). The page includes a map of the world showing sample locations, a search bar, and a list of sample repositories. On the right side, there is a sidebar with "Curatorial Resources" including Meetings and Minutes, List Server, Database Additions, Database Contents and Vocabularies, Data Entry Resources, and ISO Metadata Record. At the bottom right, there is a section for "Project L-19" of the NOAA Climate Database Modernization Program (CDMP).

NOAA NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA > NESDIS > NCEI (formerly NGDC) > Marine Geology and Geophysics > Marine Geology > IMLGS

Sea Floor and Lakebed Geosample Data Find Geosamples (IMLGS) Searches and Web Services

Index to Marine and Lacustrine Geological Samples (IMLGS)

doi:10.7289/V5H41PB8

Access to rock and sediment cores, dredges, and grabs from the ocean floor and lakebeds

(<http://seabedsamples.org>)

What is the IMLGS?

The Index to Marine and Lacustrine Geological Samples is a tool to help scientists locate and obtain geologic material from sea floor and lakebed cores, grabs, and dredges archived by participating institutions around the world.

Sample material is available directly from each repository. Before proposing research on any sample, please contact the curator for sample condition and availability.

Data Credits:

Data are prepared by the partner sample repositories whose collections are searchable through the IMLGS. [The Curators' Consortium](#) guides the database, maintained on behalf of the group by NOAA, since 1977.

Some U.S. repositories receive funding from NSF to prepare data for the Index. For more information, see the NSF Division of Ocean Sciences [Data and Sample Policy](#).

How to Cite:

Curators of Marine and Lacustrine Geological Samples Consortium. *The Index to Marine and Lacustrine Geological Samples (IMLGS)*. NOAA National Centers for Environmental Information. doi:10.7289/V5H41PB8 [date of access].

More about the IMLGS

Search for Samples
Interactive Map
Web Feature Service Capabilities
ArcGIS Services Available
Web Map Service Capabilities
Linked Data version at R2R
October 2014 KMZ created by
G.R.I.D. ARNDAL NEW!

Antarctic Marine Geology Research Facility
BOSCORF
BPCRC Polar Rock Repository
BPCRC Sediment Repository

Curatorial Resources
Meetings and Minutes
List Server
Database Additions
Database Contents and Vocabularies
Data Entry Resources
ISO Metadata Record

Project L-19 of the NOAA Climate Database Modernization Program (CDMP) was a 2005 to 2011 partnership with several repositories to digitize analog data from their collections.

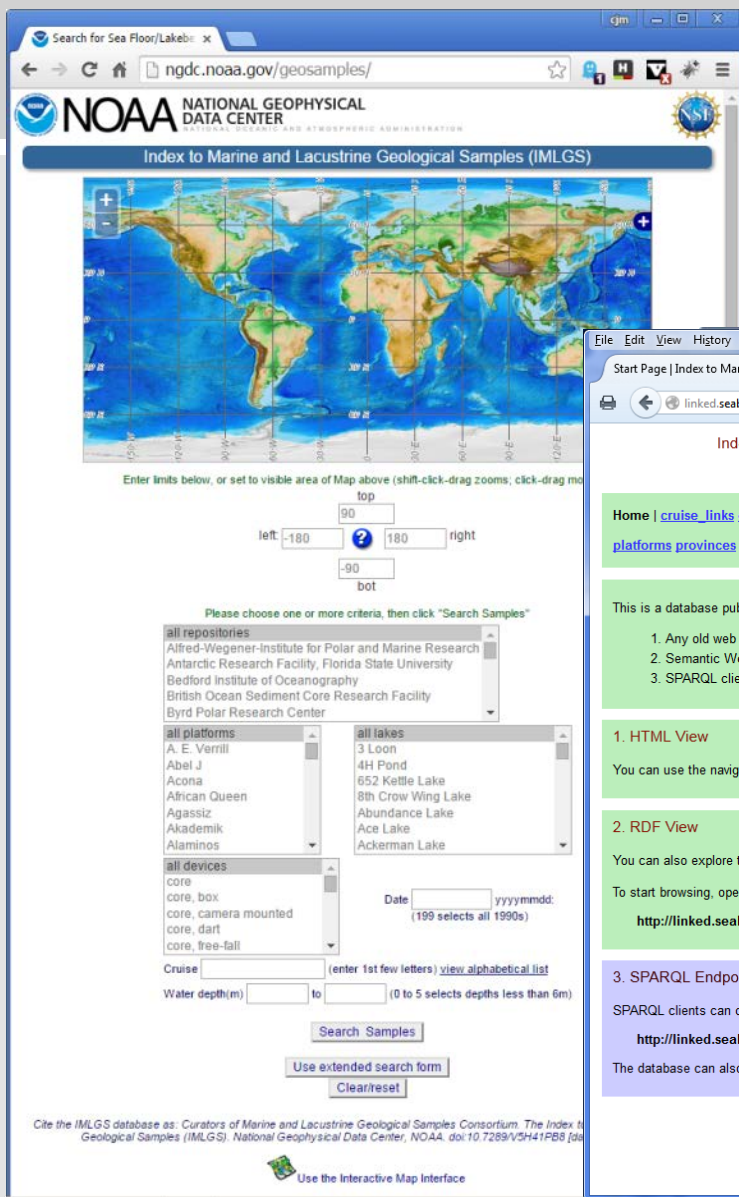
32,673 core photos, 9,177 core x-rays, 34,614 seabed photos, and 34,388 pages of descriptive reports and logs were digitized and are available via the [Index to Marine and Lacustrine Geological Samples](#) and/or the institution, and preserved in the NOAA long-



Web Services

- Geospatially-enabled relational database
- ArcGIS Interactive Map:
- ArcGIS REST Services
 - <http://maps.ngdc.noaa.gov/arcgis/rest/services/>
 - ✓ Supported Internet Protocols: JSON, SOAP, WMS, WFS
 - ✓ Supported interfaces: REST, SOAP, SiteMap, Geo SiteMap
 - ✓ Supported operations: Export Map, Identify, Find, Return Updates
- Metadata Catalogs: Geoportal, GCMD, Data.gov
- Linked Data interface maintained by the Rolling Deck to Repository R2R

The IMLGS has a persistent URL/Digital Object Identifier (DOI)

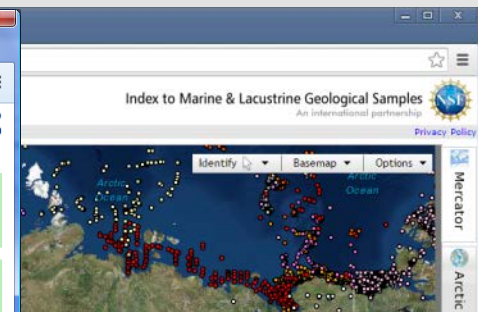
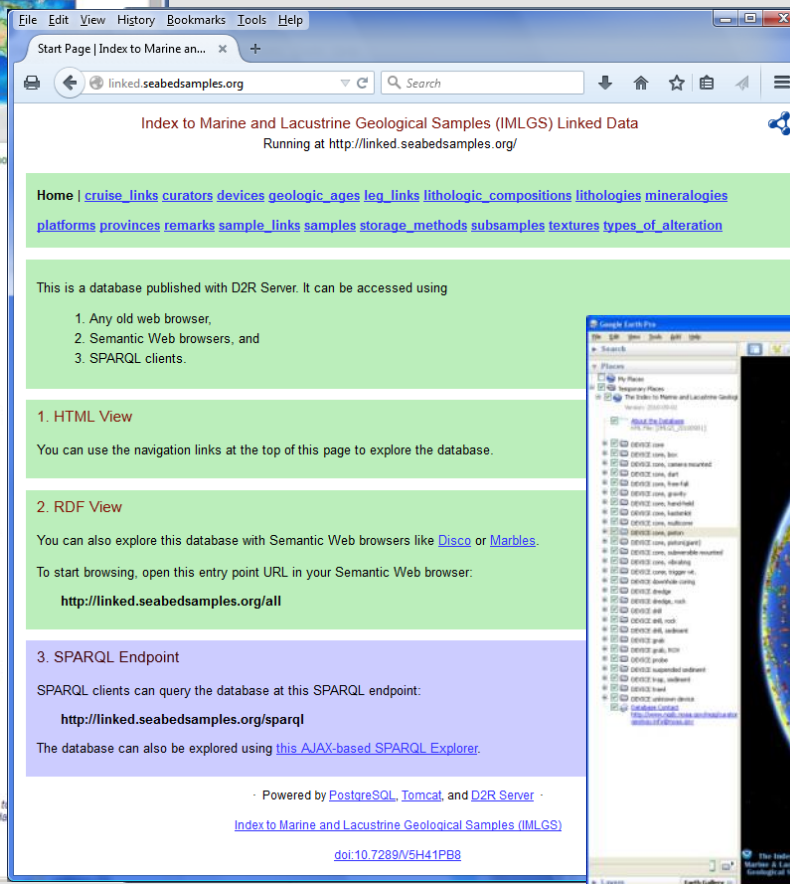


✓ JSP Text/Forms Web Interface

✓ ArcGIS REST Services & Interactive Map

✓ Linked Data Interface maintained by R2R (need to fix)

✓ GRID Arendal annual GoogleEarth KMZ





Since the

Meeting

- Carla Moore
- Minted DOIs for each agency dataset
- A complete inventory of sample data in the IMLGS for each repository was sent out at the end of 2015
- Data management for IMLGS and IODP archive in the hands of Kelly Stroker and Jennifer Jencks
- No sustained funding plan currently in place since Carla's retirement
- IMLGS is a priority NOAA/NESDIS dataset

40 years!



Since the April 2015 Curators Meeting

6,918 Cores, Grabs, Dredges & Drill Holes added/in review

Repository	# Samples/Holes Added
ARF/FSU	308
BOSCORF	271
BPCRR	2,776
ECS	2
France	2
IODP	44
LacCore	419
LDEO	208
OSU/OER	68
OSU	107
SIO	1
SOEST	743
URI	450
USGS	1,453
WHOI	62

Index to Marine and Lacustrine Geological Samples (IMLGS)

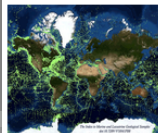


image of sea floor sample locations

The Index to Marine and Lacustrine Geological Samples (IMLGS) describes and provides access to sea floor and lakebed rock and sediment samples curated by participating institutional and government repositories in the U.S., Canada, the United Kingdom, and Germany. Material from most samples may be requested from the responsible Curator for scientific research, using contact information provided in IMLGS data listings. Each curatorial facility prepares data on their own collection for the IMLGS. Minimum information includes platform, cruise, sample id, sampling device, and latitude/longitude. Water depth, collection date, storage method, and principal investigator are usually included. Core dimensions and depth to top and

[Show More](#)

Dataset Citation

cite as: Curators of Marine and Lacustrine Geological Samples Consortium: Index to Marine and Lacustrine Geological Samples (IMLGS). National Geophysical Data Center, NOAA.
doi:10.7289/V5H41PB8 [access date]

Dataset Identifier(s)

DOI:10.7289/V5H41PB8

[Access](#) [Documentation](#) [Description](#) [Coverage](#) [Keywords](#) [Constraints](#) [Lineage](#)

Search and Download

[Web forms interface \(download\)](#)

Text interface to search and download data from the database and access related links.

[Map viewer \(download\)](#)

ArcGIS interactive map interface to search and download data from the database and access related links.

[Linked data interface \(search\)](#)

Offsite Linked Data interface (RDF graph) for Semantic Web access to the database, offered via the National Geophysical Data Center (NGDC) server.

[Web Map Service \(WMS\) \(display\)](#)

Web Map Service Getcapabilities, how to use WMS to display sample locations.

[Web Feature Service \(WFS\) \(download\)](#)

Web Feature Service Getcapabilities, how to use WFS to query the database.

[KMZ file \(display\)](#)

Compressed Keyhole Markup Language (KMZ) file produced annually by Grid-Arendal. Includes data download from NGDC.

Distribution Formats

- Data are also available in other custom formats, including shapefiles on request.
- ASCII (Version: UTF-8)
- WMS (Version: 1.3.0)
- WFS (Version: 1.1.0)
- KMZ (Version: 2.1)

[Access](#) [Documentation](#) [Description](#) [Coverage](#) [Keywords](#) [Constraints](#) [Lineage](#)

Originator	Curators of Marine and Lacustrine Geological Samples Consortium
Originator	Antarctic Marine Geology Research Facility, Florida State University
Originator	International Ocean Discovery Program, IODP, ODP, and DSDP archives
Originator	Lamont-Doherty Earth Observatory, Columbia University
Originator	National Lacustrine Core Repository, University of Minnesota
Originator	Oregon State University, College of Ocean and Atmospheric Sciences
Originator	Scripps Institution of Oceanography, University of California-San Diego
Originator	University of Rhode Island, Graduate School of Oceanography
Originator	U.S. Geological Survey East Coast Repository
Originator	U.S. Geological Survey West Coast Repository
Originator	U.S. Geological Survey St. Petersburg Repository
Originator	Woods Hole Oceanographic Institution
Originator	British Ocean Sediment Core Research Facility, Southampton Oceanography Centre
Originator	Geological Survey of Canada, Atlantic (GSC A) National Marine Geoscience Collection
Originator	Byrd Polar Research Center Sediment Core Repository, Ohio State University
Originator	School of Ocean and Earth Science and Technology, University of Hawaii
Originator	Rosenstiel School of Marine and Atmospheric Sciences, University of Miami
Originator	Curator, University of Texas Institute for Geophysics (currently inactive)
Originator	University of Wisconsin-Madison Department of Geology and Geophysics (currently inactive)
Originator	Alfred-Wegener-Institute for Polar and Marine Research (currently inactive)
Originator	Leibniz-Institute for Marine Sciences IFM-GEOMAR (currently inactive)
Originator	University of Southern California Department of Geology and Geophysics (currently inactive)

Persistent URL:

<http://dx.doi.org/doi:10.7289/V5H41PB8>



DOI for each Repository Collection

Secure | https://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.ngdc.mgg.geology:archived-data_LDEO-sample-repository

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Home Access Data Submit Data Public Outreach About Search NCEI Data

Home > Data > > Metadata > gov.noaa.ngdc.mgg.geology:archived-data_LDEO-sample-repository

Archive of Geosample Data and Information from the Columbia University Lamont-Doherty Earth Observatory (LDEO) Lamont-Doherty Core Repository (LDCR)

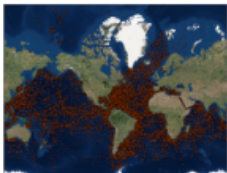


image of sea floor sample locations

The Lamont-Doherty Core Repository (LDCR), operated by the Lamont-Doherty Earth Observatory (LDEO) of Columbia University is a partner in the Index to Marine and Lacustrine Geological Samples (IMLGS) database, contributing information to the IMLGS to help researchers discover geological samples curated in their facility.

The partner repository also sends related data, documents, and imagery to NCEI for long-term archive, but the originating institution is the definitive source of information related to their sample collection.

The LDCR contains one of the world's most unique and important collection of scientific samples from the deep sea. Sediment cores from every major ocean and sea are archived at the Core Repository. Materials available through the NCEI archive (other than core metadata) are core photos and descriptions, both of which were done at the time a core was opened; information/photos of what a core is like now are available upon request. If you would like to request material from LDCR holdings or want to know what other services are offered (grain size, coulometry, MST, etc.), please check the LDCR website for more information.

[Show Less](#)

[Dataset Citation](#)

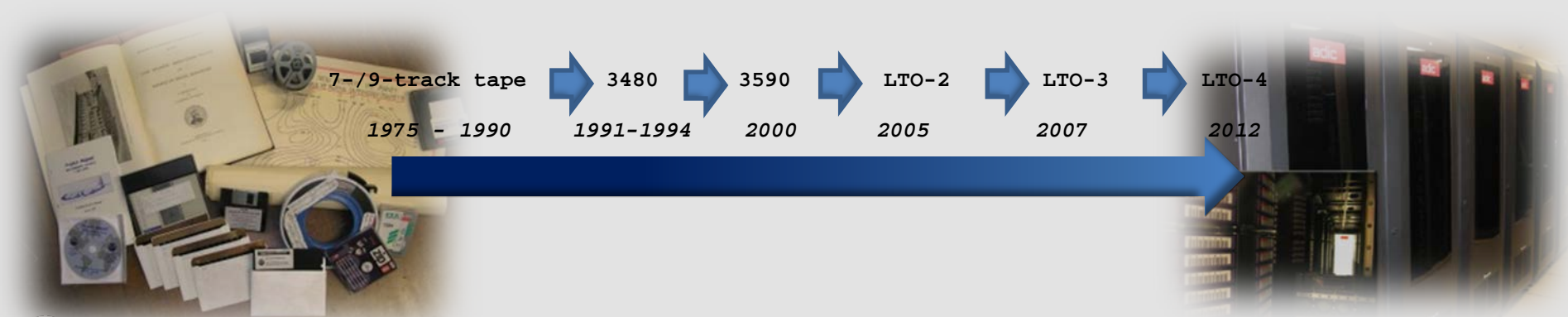
cite as: Lamont-Doherty Core Repository (LDCR): Archive of LDCR geosample data and information. NOAA National Centers for Environmental Information.
doi:10.7289/V5M61H7G [date of access].

[Dataset Identifier\(s\)](#)

[ISO 19115-2 Metadata](#)

Geosample Deep (Offline) Archive

- ✓ 12TB, >1.3M files
 - ✓ NARA standards/OAIS framework
 - ✓ ISO standard documentation
 - ✓ Periodic migration to new archive media
 - ✓ DOIs: 16 assigned (e.g., IMLGS, DSDP, ODP, IODP archives)
- ❖ *In progress: API / Public access to all 12TB of geosample data in the offline archive*



International Scientific Drilling, 1967-Present (DSDP, ODP, IODP)

[illegible]

Large Volume Data

- High-resolution Core Photographs
- ~20 Data types as text files
- ISO metadata (hole/datatype)
- For years, the community has wanted API access to files in the archive
- We are in the process of setting this up through NEXT (NCEI Extract System)
- We will work on all geology after SOD



Goals and Future Work

1. An up to date IMLGS database
2. Public access to all geosample files in the offline archive via an API
3. More filtering options for the ArcGIS map viewer
4. Adding all IGSNs for more samples in the IMLGS and coordinating with SESAR
5. A completed Submission Agreement between IEDA & NCEI, resulting in improved interoperability between SESAR and the IMLGS

Most important:

1. What do curators want? I would like to hear from you!



Questions/comments?

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