Member Node Description: IGBFRED

Version 1.0 4/29/20196/14/2012 Authors

General

Name of resource:	Freshwater Research and Environmental Database (FRED)
URL(s):	https://fred.igb-berlin.de/
Institutional affiliation(s):	Leibniz-Institut of Freshwater Ecology and Inland Fisheries
Primary geographic location:	Berlin, Germany
Project Director & contact info:	Rita Adrian, adrian@igb-berlin.de
Technical Contact & contact info:	Daniel Langenhaun, langenhaun@igb-berlin.de Simone Frenzel, frenzel@igb-berlin.de
Age of resource:	ongoing
Funding support:	IGB
Proposed Unique Identifier:	urn:node:igbfred

Content

Content description/collection policy (1 paragraph, domain and spatial/temporal coverage, uniqueness of content, exclusions, as applicable):
The Freshwater Research and Environmental Database is the central data repository for IGB. It is where we store and share environmental data from observations of lakes, rivers, peatlands and other freshwater habitats. In FRED you can find continuous data collected over several decades from our long-term research programme at the lakes Müggelsee, Stechlinsee, Arendsee and the river Spree, as well as environmental data derived from short-term projects in aquatic ecosystems. All data include detailed metadata descriptions in text form to allow reuse of the data. The database can be searched for a range of aspects, such as ecosystem types or abiotic and biotic variables. Data use, where not freely accessible, shall be granted after consulting with the contact person given in the database, and is subject to the IGB Data Policy.

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

- Data files
- Metadata files
- Description from web form input stored in SQL database
- Data series created from data files

This could be stored in an uniquely identified container FRED data package .

Data and metadata availability (rights, licensing, restrictions):
Metadata from web form entries are always displayed open access.
For each data or metadata file an open access or restricted mode could be set. Open access files will be displayed with a download option. Access restricted files can be request via contact information link each data package.

Within a data package the user can set permissions :
to single persons or a (working-)group:

- Read permission (to see also the restricted files)
- Writing permission (to edit the content)
- Set permission to (to give permissions to other users)
- Set contact (to choose the persons who should be named as contacts)

Licenses to choose:

- Open data
- Creative Commons

“All rights reserved" reference to the IGB Data Policy. This is also the default value.

Option for embargo (yes/no, duration):
yes – Manually controllable. The user can set files open access and restricted by a click.

Size of holdings (number and size of datasets, mean and median granules (files) per dataset):
Approximately 400 data packages have been saved so far. The size of the data package differs in size, ranging from 0 to 20 data files / data series.
File size mean: 1.7 MB
File size median: 288 KB
Data package size mean: 5.8 MB
Data package size median: 416 KB

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:
In 2018 the system where used by +20 users from the IGB.
14 external users are registered.
The downloads are not logged.

User interactions

How does a user contribute data? (what can be deposited, how are data prepared, are specific software required, documentation/support available)
In order to store data in FRED, the user needs to have an account. To store and describe the data, the user creates a data package.
In this data package the data can be described with metadata via web forms. Additionally a metadata file can be uploaded as pdf. The data files can be uploaded in the formats csv, ods or xlsx via an upload form.
The user can parse the data into the SQL database. In the case of parsing, and during the input to the web forms, annotations will be given for more detailed description.
The user can set permissions and licenses to use the data.
From the web form input EML-files are generated.

How does a user acquire / access data?

The data files or data series files can be downloaded at the page if open access.
Access to restricted data via the given contact information.
All parsed data file are available as data series files as csv files.
Data files are in the same format as they where uploaded. Allowed MIME-types are csv, ods and xlsx.

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

For all users:
Support contact options are integrated on website.
For logged in users:
FRED has a support area with manuals in German and English.
Tool tips are available for all form inputs.

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

The user uploads the data file into a data packages.
The data package have to be create and described before the user can upload data files. All uploads and further information are linked to the data package via unique ids .

Technical characteristics and policies

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

FRED is a web based portal build on the following technology and services:

- PHP web application
- Postgres 10 database,
- Apache2 Server with SSL
- LDAP authentication for users of the IGB
- Registration process for external user
- Metadata inputs
- Annotation Service for Inputs
- Data parser
- DOI Service
- Search based on the “Lakebase Semantic Service” (Annotation based, REST Service)
- Sorting possibility by study sites, parameters, sample locations and sample type
- Map view with all study site

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

- Uptime around 99,9%
- Hardware refresh:
  - Reboot on demand
  - Maintenance of the hardware every 3 months
  - Replacement of the hardware every 5 years

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

- Automated daily SQL dump (full dump schema and data) on the web server.
- Daily backups of the whole server to disk
- Off site backup mirror

User authentication technology (incl. level of create/modify/delete access by users):
Users internal to the IGB are managed by LDAP.

External users can register at the Sign up page.
The registration request is reviewed by a FRED admin and an activation email is sent to the e-mail of the user to be registered. The activation email contains a link with which the future users activates their FRED account. After this confirmation, the user can log in. Passwords can be reset by the user using a similar process.

Personal data can be edited at the users profile page .

Data identifier system and data citation policy, if available:
FRED-data-package-id.
DOI with versioning.

Metadata standards (including provenance):
EML will be implemented.

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?
Not applicable

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?
Software tools: The Usage of FRED and FRED-Trainings
The expertise of our data manager / software developer stuff.