

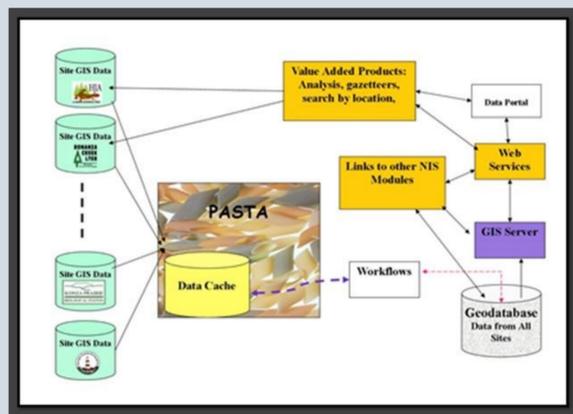
# ILTER GeoNIS: workflows to create web mapping services from Ecological Metadata Language (EML) documents

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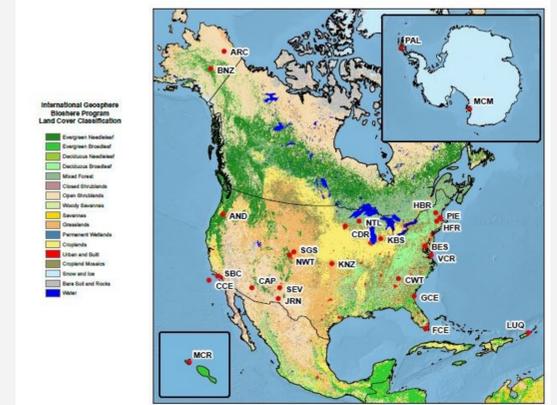
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The GeoNIS project processes, stores, and displays geospatial data collected by the Long Term Ecological Research Network (ILTER), as part of the Network Information System. The program searches for and downloads spatial data from the Provenance Aware Synthesis Tracking Architecture (PASTA). The tools discover data, read metadata file (XML), unpack zip files, perform quality checks, load vector/raster data into SDE, augment metadata, update map documents (for map services), refresh map and image services, and update the database with tracking and progress information. The workflow Data discovery tools will run on a schedule, then trigger appropriate workflows when they find spatial data by using the tags in metadata xml file to locate spatial data. The GeoNIS will store only the most recent data, according to the PASTA version number.

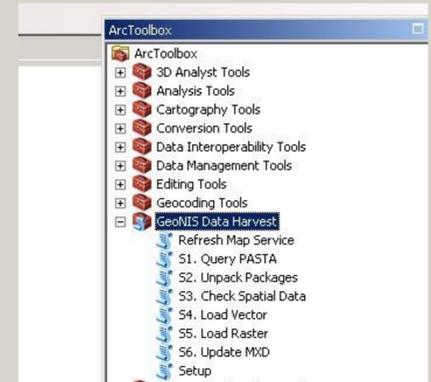


### Goals of the GeoNIS Project

1. Provide web mapping services for site level spatial data from a centralized service.
2. Support sites that do not have web mapping capability.
3. Provide support (geographic framework) to cross site synthesis efforts.
4. Provide data quality checks for site geo-spatial data.
5. Automate processes to work with PASTA in the NIS framework.



Distribution of LTER sites



There are several Python scripts with an ArcGIS toolbox framework. These tools break down the workflow into logical steps. The scripts can be strung together into an automated workflow or they can be used separately. The scripts can be found on GitHub using search on **pasta2geonis**.

The project uses ArcGIS Server 10.1 with PostgreSQL database software (SDE), XSL stylesheets, Python scripts, and the ArcGIS Javascript API.

Toggle layers on and off.

List of LTER Sites.

Study site locations from Virginia Coastal Reserve LTER Site. The yellow line is the site boundary.

The data are quality checked and inserted into a geodatabase. There are testing and production workflows and tools. The data are then added to the appropriate map service and made available via ArcGIS Server map and image REST services.

ArcGIS REST Service Directory

VectorData/knz\_layers (MapServer)

View Footprint In: ArcGIS.com Map

Service Description: GEONIS services for vector data

Map Name: Layers

Layers:

- GIS502 (0)
- GIS502 (1)
- GIS502 (2)
- GIS502 (3)
- GIS502 (4)
- GIS502 (5)
- GIS502 (6)
- GIS502 (7)
- GIS502 (8)
- GIS502 (9)
- GIS502 (10)
- GIS502 (11)

The image data are inserted into a mosaic dataset.

An integrated web map, with toggle-able vector and raster layers, is included for each LTER site. Detailed reports are also available for each data package, which are accessible from the 'packages' menu.

The JavaScript API application is available at [geonis.lternet.edu](http://geonis.lternet.edu).

GeoNIS report, metadata, and download link.

View of data from ArcGIS On-line. Bathymetry for Trout Lake from North Temperate Lakes LTER Site

Future development include moving to production mode, where the workflow is triggered to check for spatial data (located in the EML tags <spatialraster> and <spatialvector>) on a pre-determined schedule (nightly or weekly), and providing sites with the option to have the quality checks occur prior to loading EML file into PASTA.



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This project is a collaborative effort between several LTER sites, the LTER Network Office, and the National Science Foundation.