

Expected Behavior and Known Limitations

Core functionality is available for EGIS web services; however, some unique behaviors persist. Here are expected behaviors and known issues.

EGIS

July 24, 2024

Known Limitations

No Download

At this time, EGIS services do NOT offer users the ability to download raw data. The ArcGIS Image Services provide Analysis-Ready-Data as a service, allowing users to perform functions and analytics to the underlying data without requiring the download of files. To access to the full NASA Earth observation repository for data download, please visit [Earthdata Search](#).

Active Development

EGIS is regularly onboarding collections and publishing new services, please visit the Gallery to see the full list of publicly available content. NASA's Earth observations include ~50,000 collections of over 100 petabytes of data, it is important to note that EGIS does not currently provide geospatial services for the complete repository.

Sign In

EGIS is currently providing free and open access to our publicly available content; no accounts are required. Sign-in options to EGIS

are limited to internal NASA use only and are not available for general use. This limitation will also prevent users from saving or printing web maps, however the services can be used in other clients, tools, and web mapping platforms.

Additional NASA Resources

- [Getting Started with Image Services Wiki](#)
- [Getting Started with Image Services StoryMap](#)
- [Earthdata GIS Pathfinder](#)

Image Service Compatibility Matrix

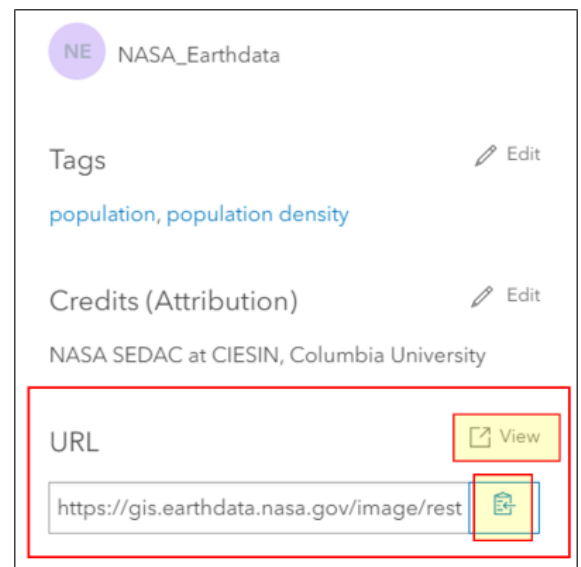
	Commercial	Free	
Capability	ArcGIS Pro	ArcGIS Online	QGIS
Load	100%	100%	100%
Project	100%	100%	81%
OOTB Symbology	100%	100%	66%
Temporal	100%	100%	13%
Multidimensional	100%	100%	33%
Query	100%	100%	50%
Raster Functions	100%	100%	75%
Export	100%	100%	60%

Image Service Compatibility Matrix. Scores are based on a subset of NASA Earthdata image services (n=21) that were fully or partially compliant in compatibility areas. Sources include EGIS and non-EGIS image services. Out Of The Box is abridged to OOTB.

Access Direct URL or REST endpoint

To use EGIS content outside of the web map viewer, access the "URL" at the bottom right of the content item page. This is the REST endpoint from which you can view or copy the URL to then bring into your tool, application, or client of choice.

Access in ArcGIS Pro



Click "Open via Pro" to initiate an item download. When you attempt to open the downloaded item (.pitemx) in ArcGIS Pro you will most likely receive an error. This is a known bug with a workaround.

Specifically, errors occur when you try to open an item from Portal A while logged into Portal B in ArcGIS Pro.

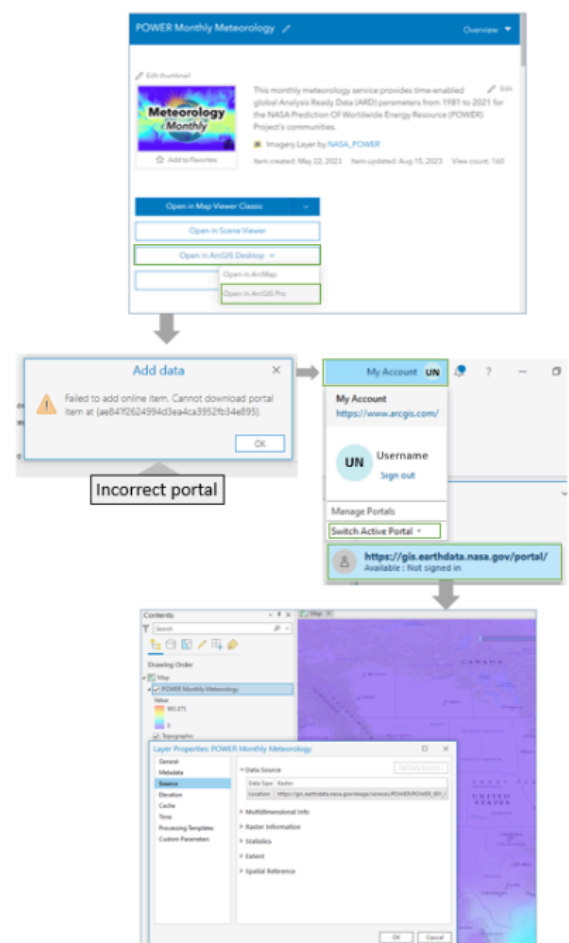
As a workaround, switch the active portal to the content's home (Portal A). You do not need to have an EGIS Portal account or sign in to set your active portal to EGIS. Open the .pitemx file again.

Portal URL for EGIS Items:

<https://gis.earthdata.nasa.gov/portal/home>

How to Switch Your Active Portal:

- Click the Sign In menu in the upper corner of ArcGIS Pro
- Click Manage Portals
- If the EGIS Portal is Not Registered:
 - Click Add Portal



Workflow for changing portal status to properly add .pitemx files from EGIS.

- Enter the EGIS Portal URL
- Save Registration
- If the EGIS Portal is Already Registered:
 - Click Switch to designate as Active Portal



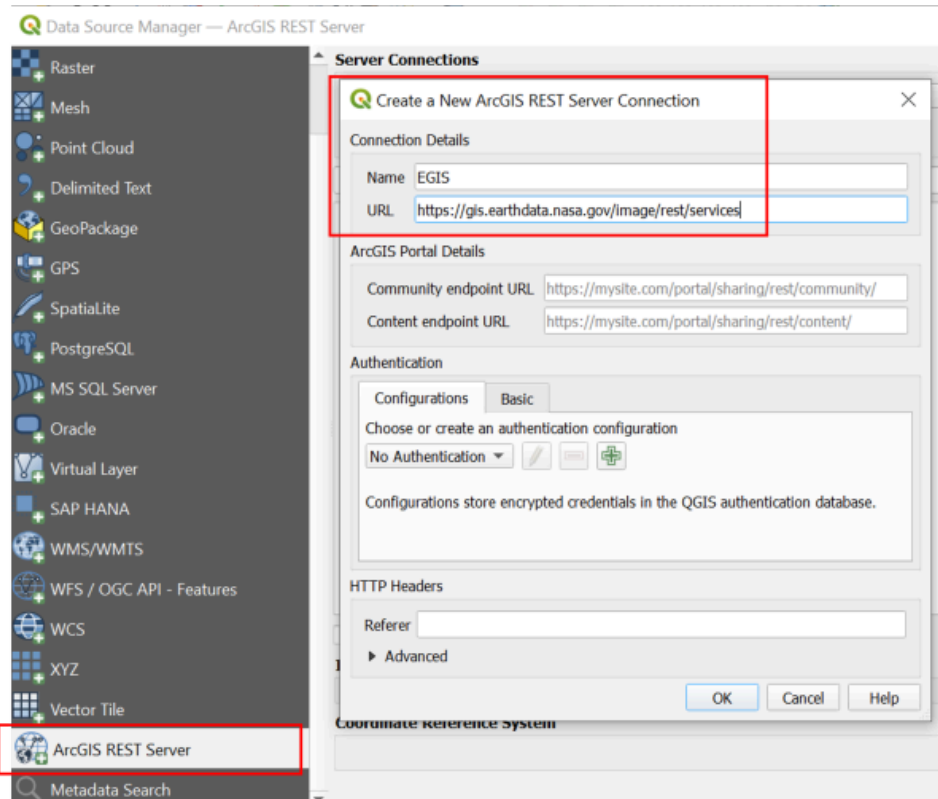
QGIS Accessibility and Functionality

All EGIS services are usable within QGIS as both OGC (WMS, WCS, WFS) and REST endpoints. Some functionality limitations exist, they are documented below and in more detail on [this wiki page](#) (hyperlink, Earthdata Login required).

Endpoint Access in QGIS

When leveraging QGIS to access and use EGIS services, we recommend using the Data Source Manager to create a new ArcGIS REST Server connection.

- Click Layer
- Click Data Source Manager
- Navigate to ArcGIS REST Server Connection
- Create a New Server Connection
 - Give your layer a name (we recommend using the EGIS Portal Name for the Server (EGIS Image, EGIS Feature, Etc.))
 - Add the REST endpoint
 - Click OK
- Connect to a Server
 - Select the Server from the drop down box
 - Click Connect
 - Click the service you would like to add
 - Click Add



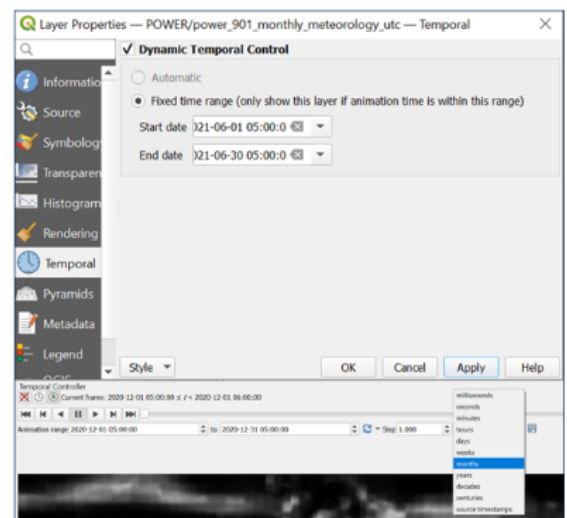
Connecting to EGIS via ArcGIS REST Server in QGIS

ArcGIS ImageServer Connector Plugin in QGIS

While the ArcGIS ImageServer Connector plugin is also available and provides additional functionality with EGIS Image Services, the plugin was built by the Swedish Agency for Marine and Water Management and is no longer actively supported. The last update was in August 2019.

Temporal Capabilities in QGIS

EGIS image services generally do not show temporal slices, even with troubleshooting, no matter which import methodology used (ArcGIS REST, WMS/WMTS, or plugins). Dynamic temporal control or using the temporal controller do not yield intended results. Some service WMS capabilities may provide workarounds while enhancements are underway.

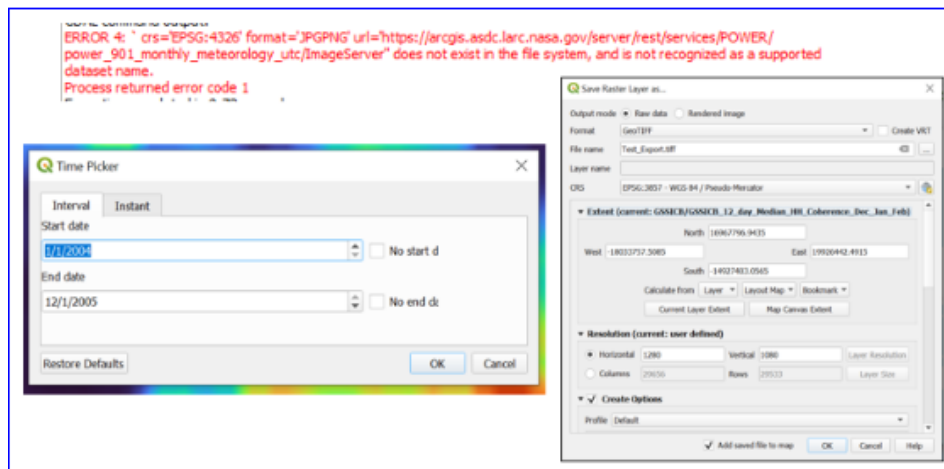


Raster Processing in QGIS

If using the ArcGIS REST Connection import method, most geoprocessing tools fail as the functions are not built to handle services and are therefore looking for a local file to run the analytics on.

Above; top (temporal settings) and bottom (temporal controller): common troubleshooting tests performed in efforts to enable time.

Raster processing was successful when using the ImageServer Connector plugin Import method.



Error encountered when performing geoprocessing (top); details required to successfully test an image service (bottom).

Exporting to Local Files in QGIS

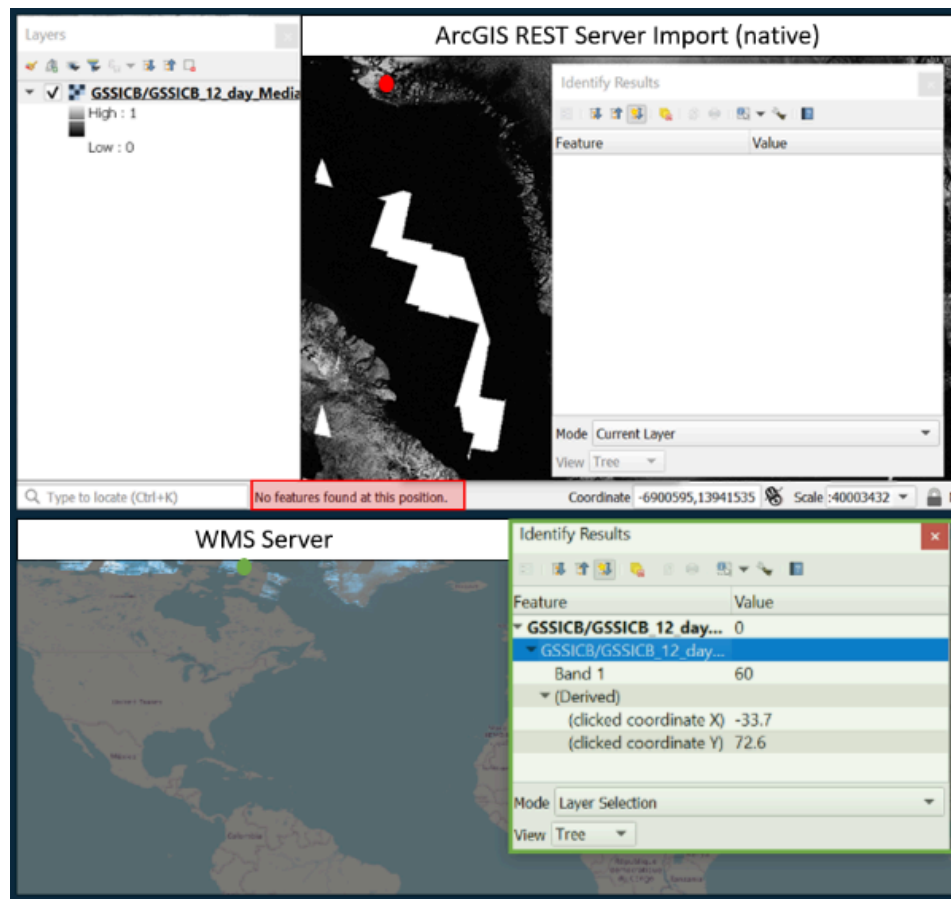
Any sort of data export is only successful as a shapefile when dimensions are specified and the .vrt file is not included.

OGC Formats in QGIS

Most services imported traditionally have the same issues as observed above with temporal selections. This includes when using the standard time argument. However, using a query that references custom dimensions, like the one below, allows you to acquire individual slices

https://gis.earthdata.nasa.gov/image/services/POWER/POWER_901_ANNUAL_METEOROLOGY.UTC/ImageServer/WMSServer?

service=WMS&VERSION=1.3.0&REQUEST=GetMap&BBOX=-90,-180,90,179&CRS=EPSG:4326&allowTemporalUpdates=TRUE&temporalSource=provider&WIDTH=636&HEIGHT=320&LAYERS=T2M&STYLES=&dim_StdTime=2020-12-30T10:58:48&FORMAT=image/png&TRANSPARENT=TRUE



Some services perform identify functions more successfully when imported as a WMS over an ArcGIS server.

Querying Data in QGIS

Performing an identify function when importing from native ArcGIS REST services often returns no data; producing “No features found in this position” messages. Plugins may work around this issue and some WMS services permit querying.

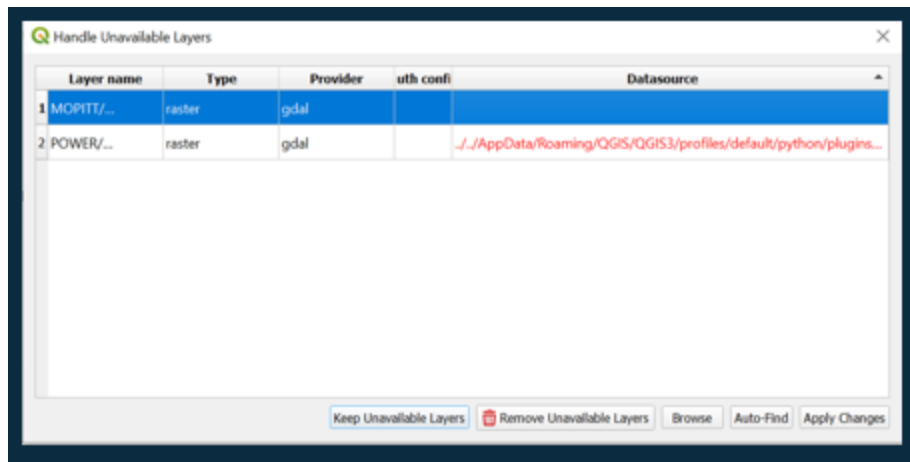
Querying Data in QGIS Workaround and Caveats

You may have more query success using the ArcGIS ImageServer Connector plugin, which while no longer being updated, may be

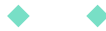
helpful on some services when trying to provide query capabilities.

The plugin creates a temporary local .tif file for each service in a given session in QGIS. The temporary file will often allow for data queries. However, because it is temporary you will likely have to reinitiate connections with every new working session.

You will know when you need to reinitiate a connection when the error below appears.



Error encountered when trying to load a layer from a previous session using the ArcGIS ImageServer Connector plugin



Next Steps

EGIS is committed to supporting open science and allowing our data to be freely and openly available to the public. We are actively working with technology providers to improve functionality of our services. Our goal is to encourage support, interoperability, and enhancements in both Open Source and Commercial Off The Shelf (COTS) domains. We plan to include new enhancements as they are made available.