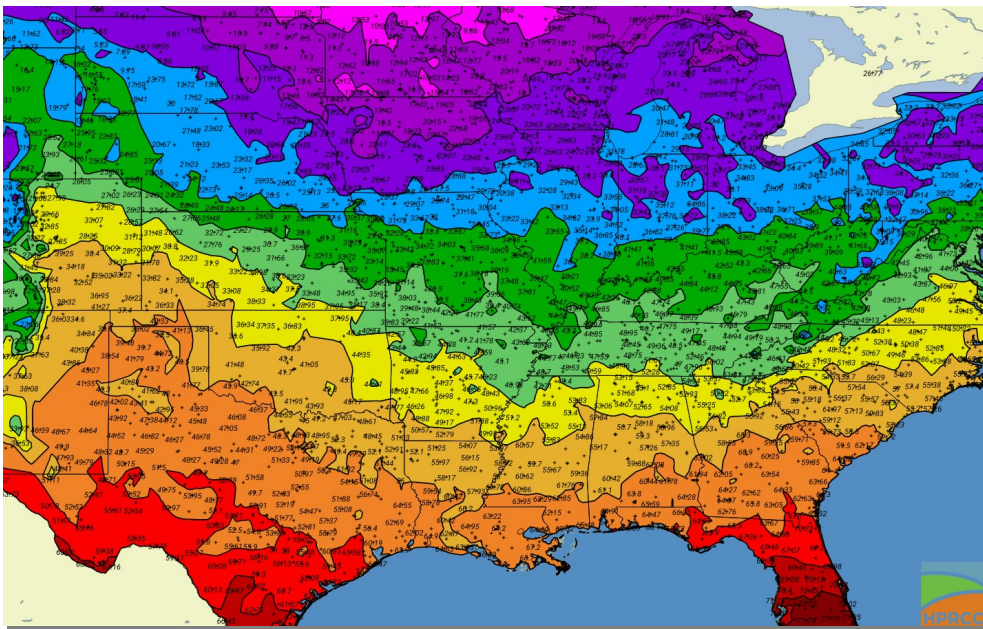




HPRCC GIS Webserver

Accessing GIS products at the High Plains Regional Climate Center is now easier than ever! The new HPRCC GeoServer enables users to connect directly to shapefile data without the hassle of manually downloading the latest datasets. This tutorial will show you how to connect to the GeoServer with ESRI ArcGIS and the open source QGIS.



Example of GIS Product Capabilities

WMS and WFS

Web Map Service (WMS) protocols will load image tiles of the shapefile into your GIS platform. This is how services like Google Maps operate. WMS will allow you to see HPRCC products how they were meant to be seen, but without interacting directly with the data. This is great for data with discrete styling, like contoured maps.

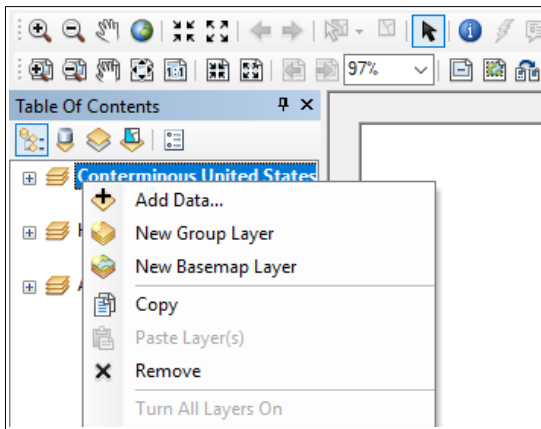
Web Feature Service (WFS) protocols will load the raw data into ArcMap for you to interact with. You will be able to interact with each feature value, but the user is responsible for setting any styles. This works great for point data, where you need the reported values. In order to use WFS in ArcGIS, you will need the Data Interoperability extension. The WFS tutorial includes information on how to enable the extension.



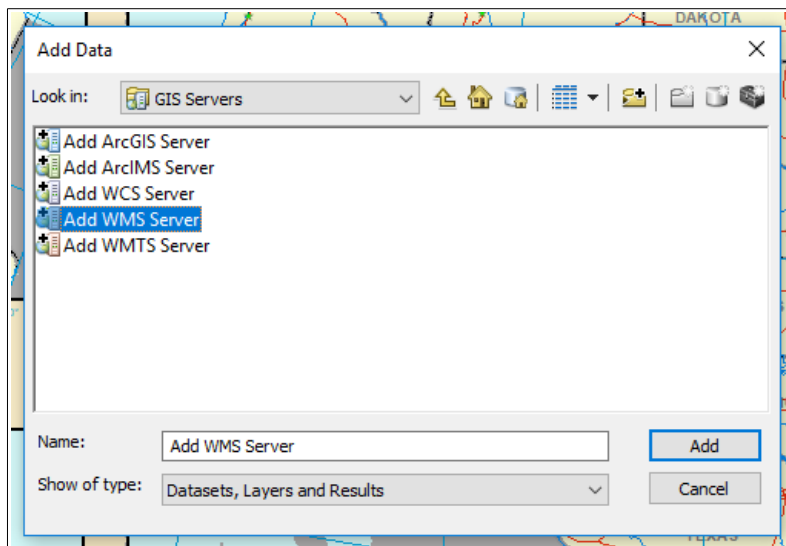
HPRCC GIS Webserver

Adding WMS Layers to ArcMap

1. Open ArcMap.
2. Right click in Layers and click “Add Data...” .



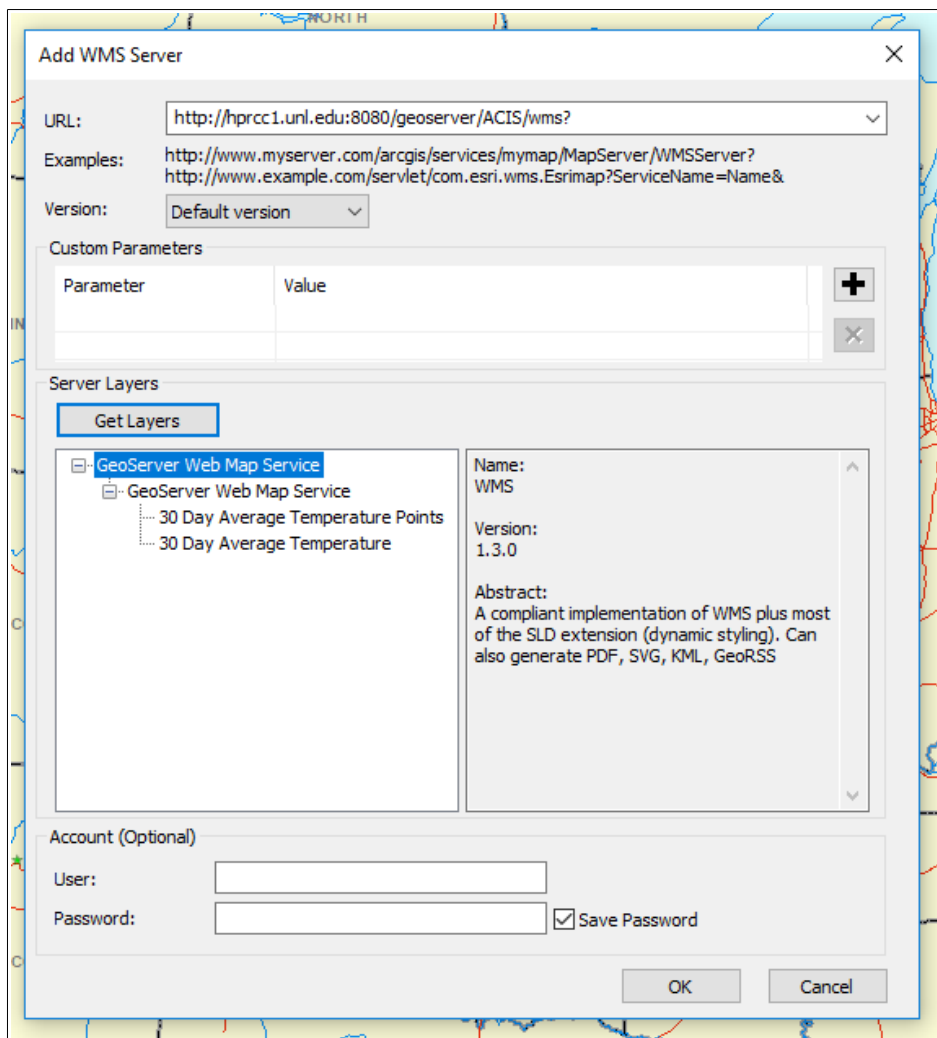
3. In the Add Data dialog, click the “Look in” dropdown box and select GIS Servers.
4. Double click “Add WMS Server”.





HPRCC GIS Webserver

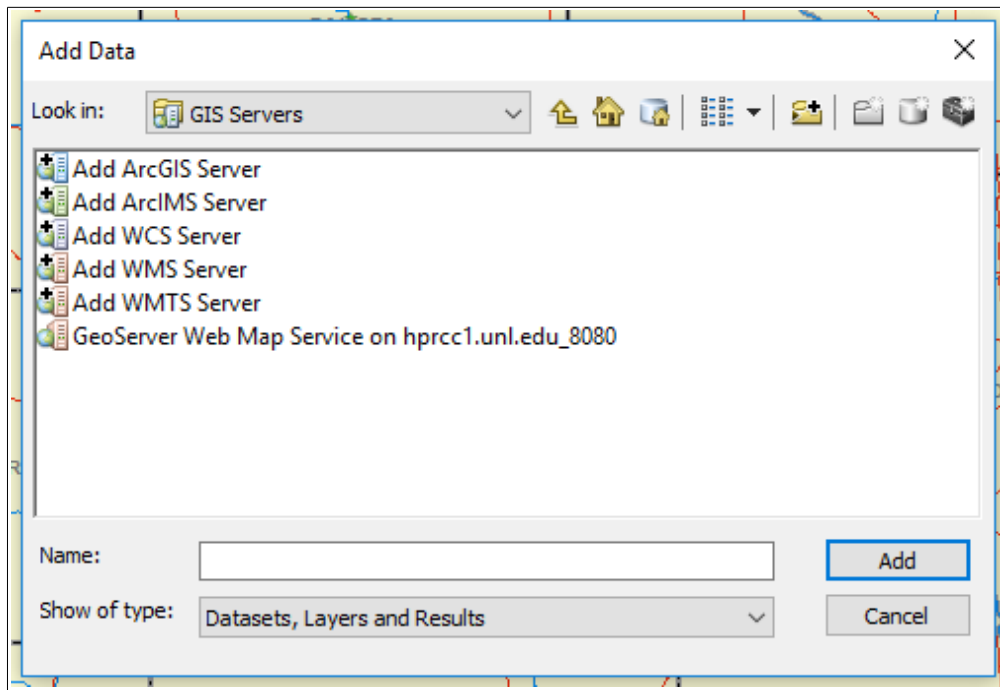
5. In the Add WMS Server dialog, enter <http://hprcc1.unl.edu:8080/geoserver/ACIS/wms> into the URL text box.
6. Click the “Get Layers” button. You should see a tree below the button full of HPRCC products. Click Ok





HPRCC GIS Webserver

7. You should see a new server added to the Add Data dialog. You may change the server name by highlighting the server and clicking once on the name.



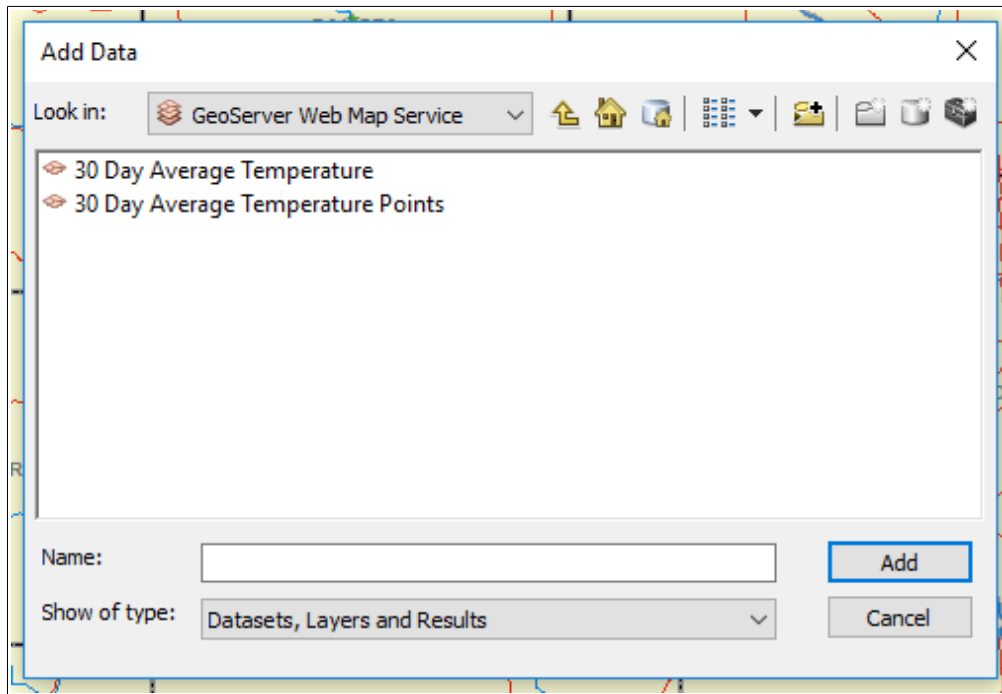
8. Double click the new server.

9. Double click GeoServer Web Map Service.



HPRCC GIS Webserver

10. Select the product you wish to add a layer for.



11. You should now see the new layer listed in your Table of Contents. If you click the 'plus' symbol next to the product name you will see the key for the layer.

Adding WFS Layers to ArcMap

WFS requires the Data Interoperability extension to be installed. To verify that you have a license for this extension, open ArcGIS Administrator, and look under Availability. If you have a license, it will say Yes under the Authorized column. If it says No under the Installed Column, you will need the ArcGIS installation CD to install it.

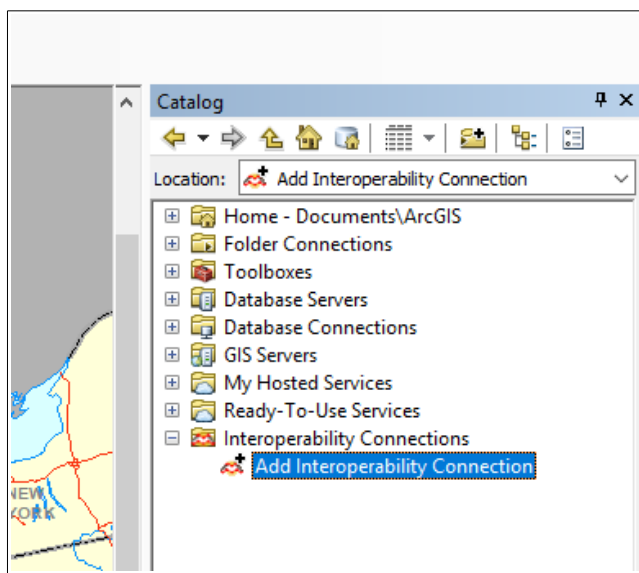


HPRCC GIS Webserver

To install the extension, insert the installation CD and run the auto installer. When the installer opens, click the Modify button. Expand the extensions menu and then select the extension you'd like to install. Check 'Entire feature will be installed on local hard drive' for each extension you need to install (you may need a license). Your individual site installation method may differ, consult the individual managing your ArcGIS license for information about installing the extension.

Once you have installed the Data Interoperability extension, it will need to be activated. Open ArcMap and navigate to Tools → Extensions (In some versions it may be Customize → Extensions), to ensure Data Interoperability is checked. Once complete, you will be ready to add a WFS data source!

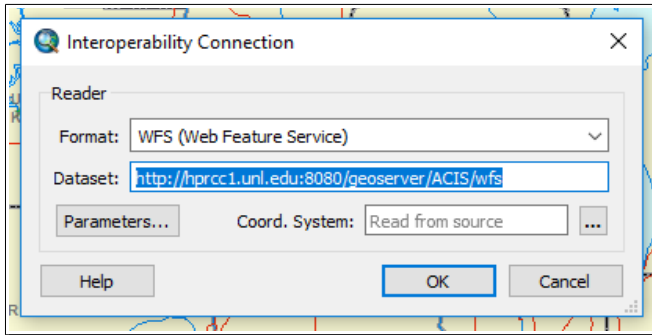
1. At the top of ArcMap window, click on Windows → Catalog .
2. You should now see the Catalog pane at the right of your screen. Expand the Interoperability Connections folder.
3. Double click on Add Interoperability Connection. The Interoperability Connection dialog should appear.





HPRCC GIS Webserver

4. Open the Format dropdown and select More Formats...

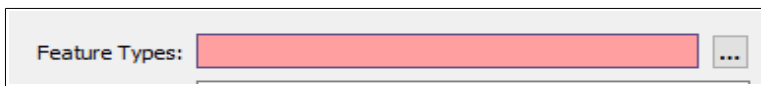


5. In the new window, select WFS (Web Feature Service) and click OK.

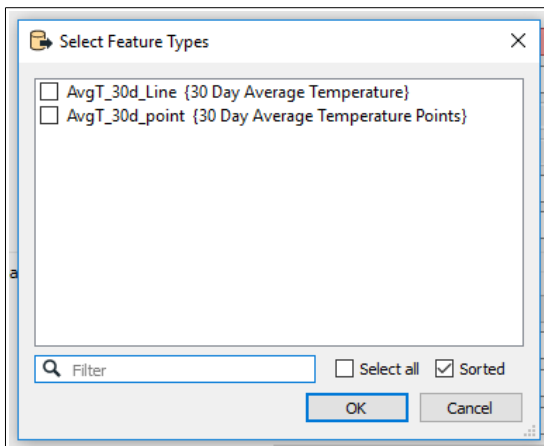
6. In the Dataset box type: <http://hprcc1.unl.edu:8080/geoserver/ACIS/wfs>

7. Click the "Parameters..." button

8. Click the ... button next to Feature Types



9. Select any products you wish to regularly use through WFS, or just select them all, and click Ok.



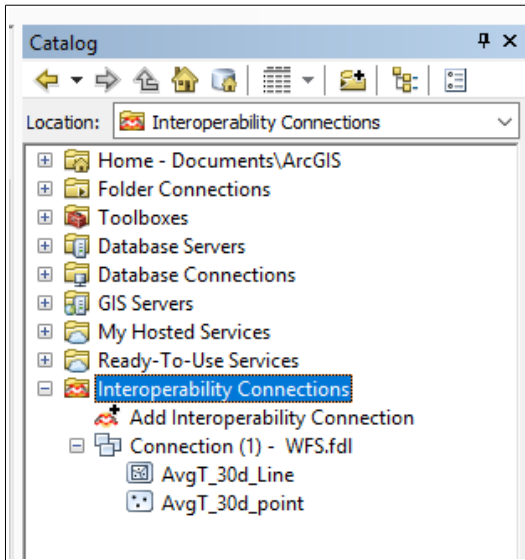


HPRCC GIS Webserver

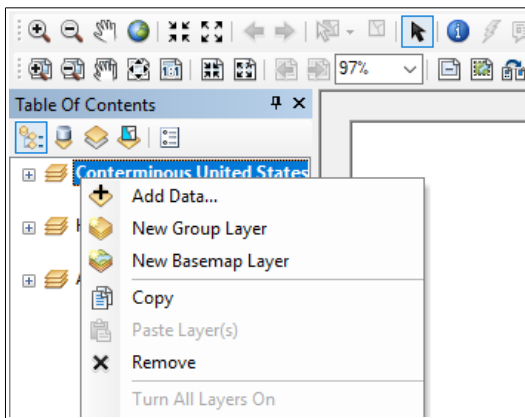
10. Click Ok in the WFS Parameters window.

11. Click Ok in the Interoperability Connection window.

12. You should now see a new connection under Interoperability Connections in the Catalog pane. You may rename the connection by right clicking on it and selecting Rename. You are now ready to add a layer to your map.



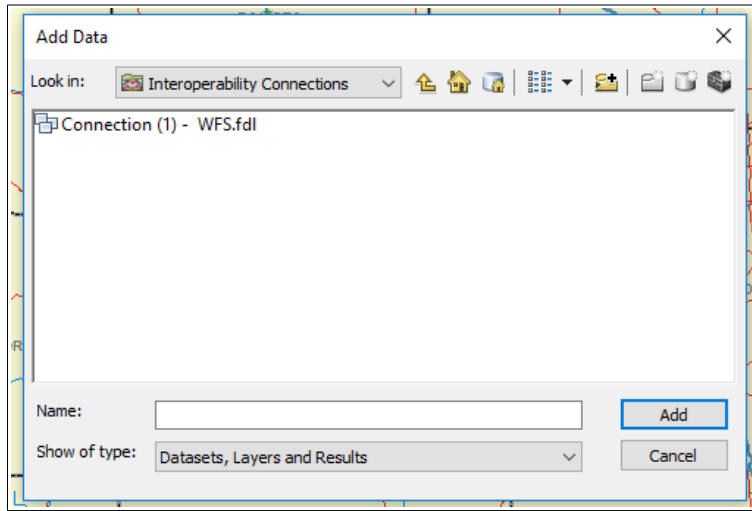
13. Right click in a Layer and select Add Data.





HPRCC GIS Webserver

14. In the drop down at the top of the dialog, select Interoperability Connections.
15. Select the connection you made earlier and click Add.



16. All of the layers you picked earlier should now be in your map.



HPRCC GIS Webserver

Adding WMS Layers to QGIS

1. Open QGIS and a basic map.
2. On the left panel, select Add WMS/WMTS Layer. Or go to Layer → Add Layer→ Add WMS/WMTS Layer.
3. In the new window, click the “New” button. You are now adding a new WMS connection.
4. In the Create a new WMS connection dialog, type <http://hprcc1.unl.edu:8080/geoserver/ACIS/wms> into the URL textbox. Type a name for this connection into the “Name” box. Press OK.
5. Click the Connect button. You should now see a list of products available. Select the layers you wish to add and press the Add button.

Adding WFS Layers to QGIS

1. Open QGIS and a basic map.
2. On the left panel, select Add WFS Layer. Or go to Layer → Add Layer→ Add WFS Layer.
3. In the new window, click the New button. You are now adding a new WFS connection.
4. In the Create a new WFS connection dialog, type <http://hprcc1.unl.edu:8080/geoserver/ACIS/wfs> into the URL textbox. Type a name for this connection into the Name box. Press OK.
5. Click the Connect button. You should now see a list of products available. Select the layers you wish to add and press the Add button.



HPRCC GIS Webserver

Common Problems

Here are a few tips to solve common problems with the shapefile service:

ArcMap sees the WFS layer, but won't load it!

This problem is most likely caused by the max feature count setting. This can be adjusted by re-adding the WFS service and changing this setting to a very high number. You can also create several smaller WFS service groups containing subsets of layers.

Departure maps/SPI aren't displaying high values!

This is most likely a rendering order issue caused by the diverging scale. To fix this in ArcMap:

1. Open the layer properties
2. Select 'Display'
3. Enter the Display Expression as ABS(level)

In QGIS:

1. Open the layer properties
2. Select the Style tab
3. Expand the 'Layer rendering' control group at the bottom of the window
4. Select Control feature rendering order and enter abs(level), Ascending, NULLs last