Using Web Mapping Services for Data Access

Many data sources are available through GIS Servers. These instructions outline the required steps for connecting to a web mapping service (WMS) using Natural Resources Canada’s Toporama Map service as an example.

**Finding a Web Mapping Service (WMS)**

When searching for GIS data you may come across resources listed as WMS (web map services). A link will be provided but what do you do with it?

1. Copy the WMS link from the web browser (for this example copy http://wms.ess-ws.nrcan.gc.ca/wms/toporama_en?VERSION=1.1.1&request=GetCapabilities&service=wms)

   **Toporama** (Canadian topographic themes 1:50k – 1:250k)

2. Run ArcMap and open the Catalog window, if necessary.
3. Double-click the GIS Servers connections and double-click Add WMS Server.
4. Paste the URL in the first box. HINT: hit Ctrl-V on the keyboard.
5. Click Get Layers to connect and see a listing of available layers.

6. Click OK.

7. There is a new connection available under GIS Servers in ArcCatalog.

8. Click the plus sign to expand the available folders and layer services.

9. You can drag a single layer onto the map or add all layers by dragging a directory. Drag the Toporama directory to the map.
NOTE: Depending on the WMS, layers may have visibility restrictions based on scale. Others may have layers turned off in the initial view. Zoom and pan to explore.

NOTE: If prompted with a warning about the Geographic Coordinate System, click OK.

Access to data layers hosted on a GIS Server such as described here requires an internet connection. Although you can save a map document with the server data visible, you will have to re-establish the network connection the next time you open the map.

Most public web mapping services also offer the raw data files. Email maplib@brocku.ca for assistance.

Below is a sample of the Toporama data layers zoomed to the Short Hills area near Brock.

Some of our favourite servers are:

**Toporama** (Canadian topographic themes 1:50k – 1:250k) [http://wms.ess-ws.nrcan.gc.ca/wms/toporama_en](http://wms.ess-ws.nrcan.gc.ca/wms/toporama_en)

**GeoBase** (National Scale 1:1million – 1:5 million) [http://ows.geobase.ca/wms/geobase_en](http://ows.geobase.ca/wms/geobase_en)

**Canada Base Map (CBM)** [http://geogratis.gc.ca/maps/CBMT?service=wms&version=1.1.1&request=GetCapabilities](http://geogratis.gc.ca/maps/CBMT?service=wms&version=1.1.1&request=GetCapabilities)

**Niagara Peninsula Conservation Authority Large Scale Water Resources** (1:2k – 1:5k) [http://gis.npca.ca/WaterResources/wms](http://gis.npca.ca/WaterResources/wms)


**ArcGIS Online Imagery Services** [http://imagery.arcgisonline.com/arcgis/services](http://imagery.arcgisonline.com/arcgis/services)