
Web Services for Mapping

Note: The links (requests) may not work or be restricted to authorized users. Additional instructions are given in other resources of this module.

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Web Services for Mapping

- Web Services...
 - Provide a standardized method ...
 - of communication
 - between web-accessible applications
 - This is especially important ...
 - to mapping applications
 - that use the Internet to share data

Web Services for Mapping

- Mapping web services ...
 - follow some common communication protocols
 - however,
 - they are maintained independent of the web services in general
 - hence,
 - they are different from the general services a web developer may be familiar with

Web Services for Mapping

- All about ...
 - Sharing geo-information through maps
- They fill two roles...
 1. Accessing remote data sources as **consumer**
 2. Serving up or sharing data as a **provider**

Web Services for Mapping

- Easy to use...
 - They don't require to know
 - a bunch of details about how requests are made or sent
 - Accessing a remote server ...
 - Requires some specific knowledge about the data source
 - Data layers, data format
 - Sharing your own data ...
 - Requires a few additions to the application so that others can access the data

OGC Specifications

- Open Geospatial Consortium
 - Develops the specifications { WMS, WFS, WCS, WMC, SLD, GML }
 - To standardize the ways of sharing data

OGC Specifications

- Requests sent via URL...
 - parameters are included in the URL after a question mark (?), each separated by ampersands (&)
 - eg., “GET” method
 - Example URL:
`http://atlas.gc.ca/cgi-bin/atlaswms_en?`
`REQUEST=GetCapabilities`
 - Response can be ...
 - an XML document (GetCapabilities, GetFeature) or
 - an image (GetMap)

OGC Specifications

- Requests sent via URL...
 - Typical requests ...
 - **GetCapabilities**
 - What do you offer ?
 - **GetMap**
 - Give me the map as an image
 - **GetFeatures**
 - Give me the map features (as objects)
 - **GetFeatureInfo**
 - Give me the attribute values of a feature

OGC Specifications

- Web Map Service (WMS)
 - provides a way to send **map images** over the Web
 - **GetMap** request ...
 - Requesting a map from remote sources that have a WMS available
 - a set of parameters and options must be defined (regarding the map content and look)

OGC Specifications

- Web Map Service (WMS)



*This service is
unavailable*



WMS Global Mosaic, Blue Marble background

This is the home site of the WMS Global Mosaic, a high resolution global image mosaic of the earth, produced from more than 8200 individual Landsat scenes. Each scene requires more than 500MB of storage, or about one standard CD. These images have been collected during 1999-2003. The highest resolution image has a ground relative resolution of 15 meters, or 50 foot. The mosaic contains all nine spectral bands of the Landsat7 ETM+ instrument. Together with the associated Web Map Service Server, the mosaic is known as the [WMS Global Mosaic](#). An FGDC metadata compliant record, with more information about this dataset is available here: [Metadata Link](#). The base dataset can be downloaded from [download site](#) A mirror download site is available at [Telascience](#). WMS The Web Map Service (WMS) server providing access to the WMS Global Mosaic and other datasets is accessed via this base URL: <http://wms.jpl.nasa.gov/wms.cgi>. The WMS server capabilities, an XML encapsulated document describing the datasets and the server are can be retrieved via a [Capabilities Request](#).

OGC Specifications

- Web Map Service (WMS)
 - GetCapabilities request ...

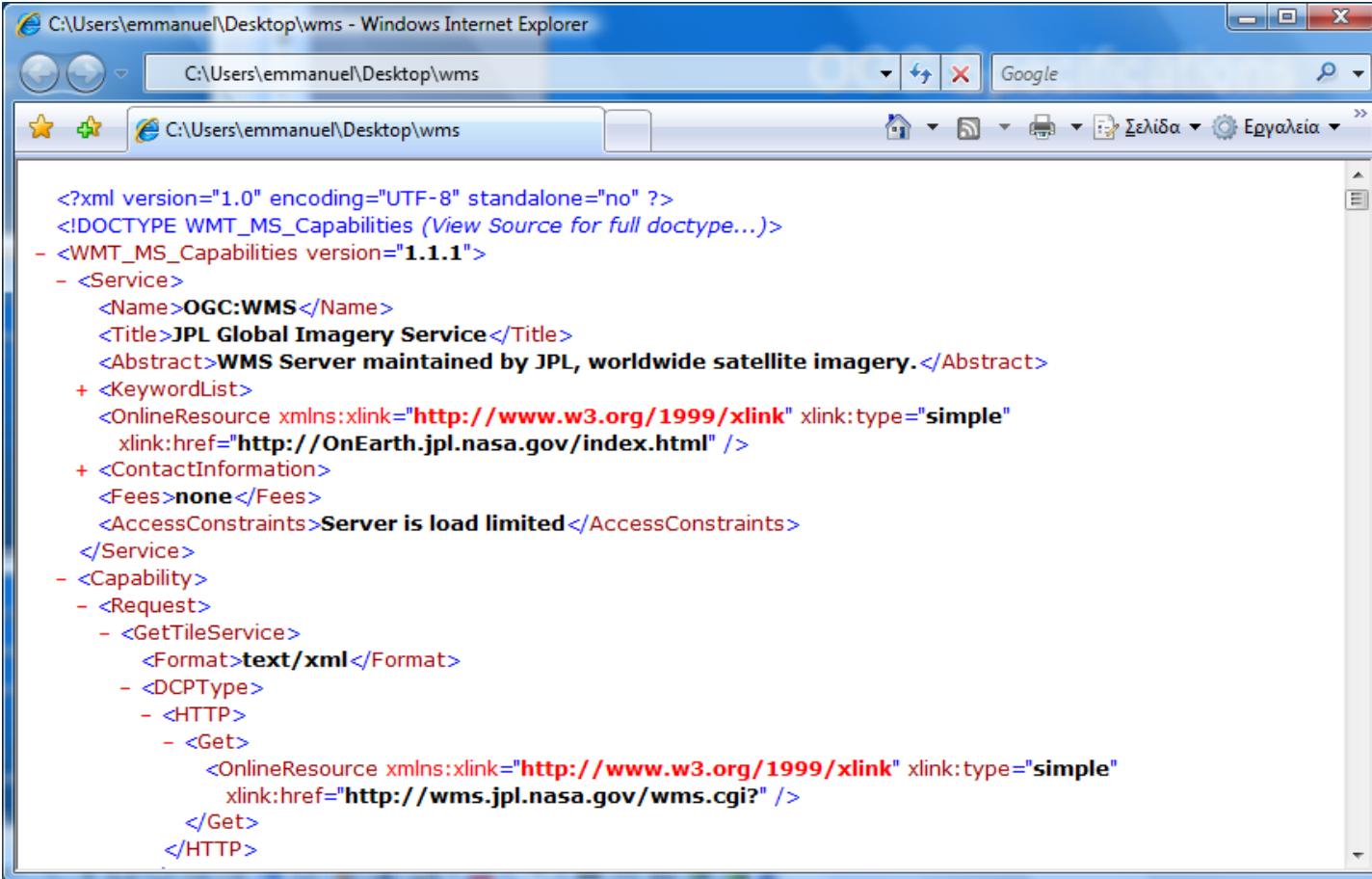
*This service is
unavailable*

[http://wms.jpl.nasa.gov/wms.cgi?
request=GetCapabilities](http://wms.jpl.nasa.gov/wms.cgi?request=GetCapabilities)

- *What do you offer ???*

OGC Specifications

- Web Map Service (WMS)
 - GetCapabilities request ...

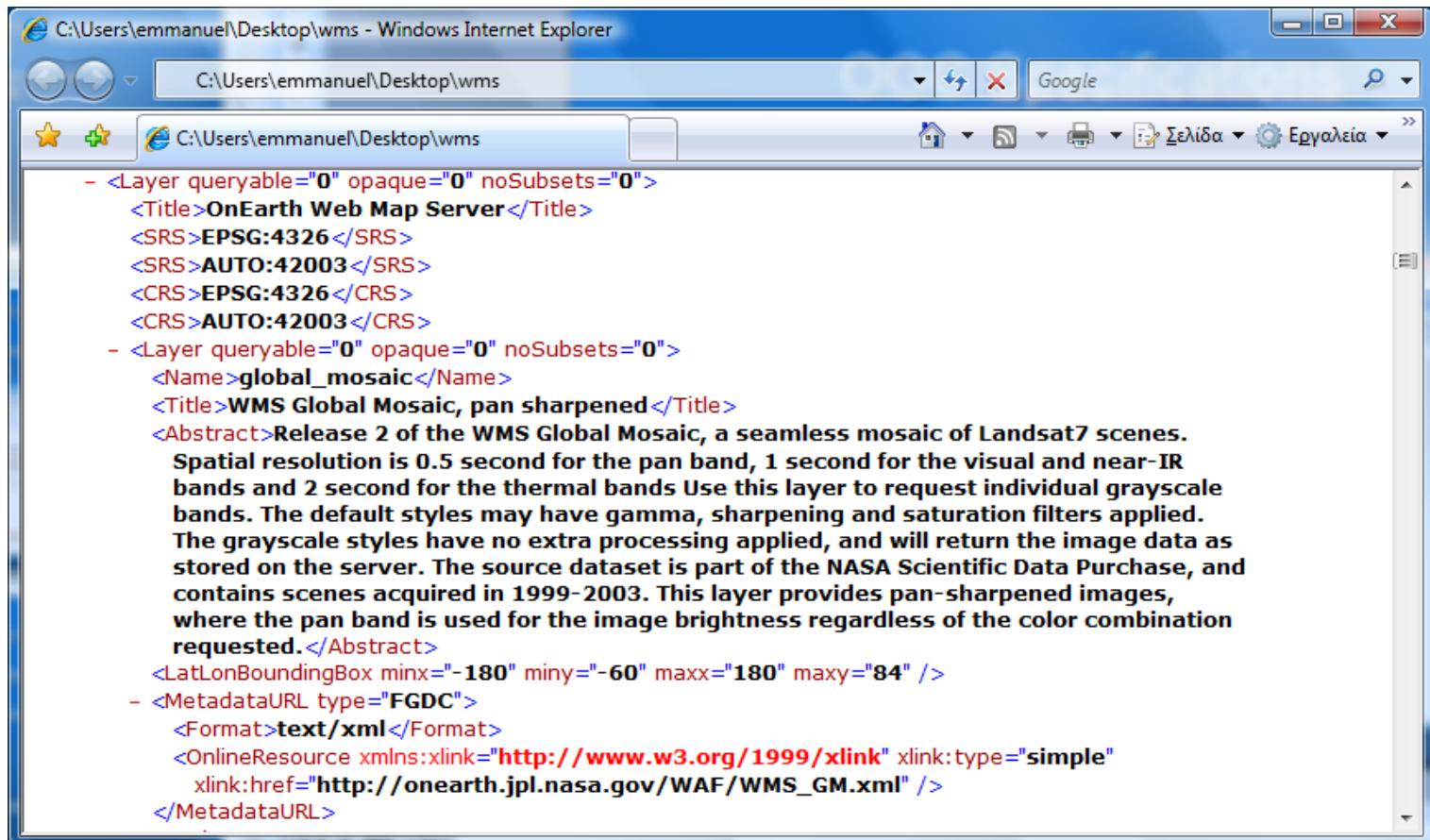


The screenshot shows a Windows Internet Explorer window displaying an XML document. The title bar reads "C:\Users\emmanuel\Desktop\wms - Windows Internet Explorer". The address bar shows the local file path "C:\Users\emmanuel\Desktop\wms". The XML content is a WMT_MS_Capabilities document, version 1.1.1, for the JPL Global Imagery Service. It includes details about the service, its contact information, fees, access constraints, and a GetTileService request definition.

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<!DOCTYPE WMT_MS_Capabilities (View Source for full doctype...)>
- <WMT_MS_Capabilities version="1.1.1">
  - <Service>
    <Name>OGC:WMS</Name>
    <Title>JPL Global Imagery Service</Title>
    <Abstract>WMS Server maintained by JPL, worldwide satellite imagery.</Abstract>
    + <KeywordList>
      <OnlineResource xmlns:xlink="http://www.w3.org/1999/xlink" xlink:type="simple"
        xlink:href="http://OnEarth.jpl.nasa.gov/index.html" />
    + <ContactInformation>
      <Fees>none</Fees>
      <AccessConstraints>Server is load limited</AccessConstraints>
    </Service>
  - <Capability>
    - <Request>
      - <GetTileService>
        <Format>text/xml</Format>
        - <DCPType>
          - <HTTP>
            - <Get>
              <OnlineResource xmlns:xlink="http://www.w3.org/1999/xlink" xlink:type="simple"
                xlink:href="http://wms.jpl.nasa.gov/wms.cgi?" />
            </Get>
          </HTTP>
        </DCPType>
      </GetTileService>
    </Request>
  </Capability>
</WMT_MS_Capabilities>
```

OGC Specifications

- Web Map Service (WMS)
 - GetCapabilities request ...

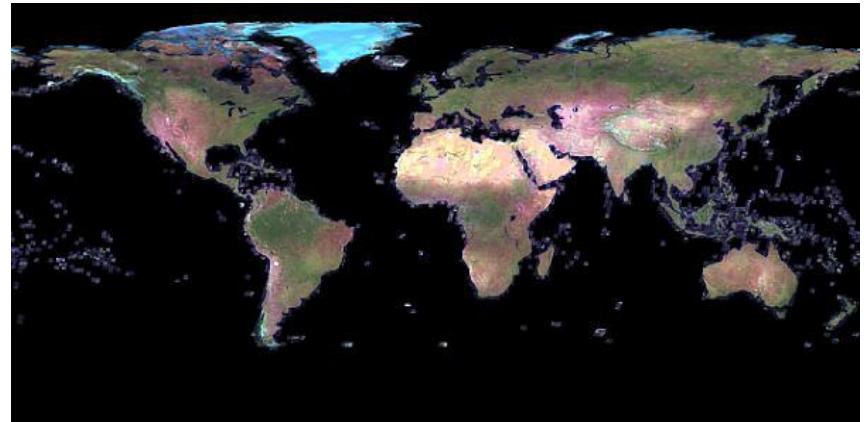


OGC Specifications

- Web Map Service (WMS)
 - GetMap request ...

```
http://wms.jpl.nasa.gov/wms.cgi?  
request=GetMap  
&service=WMS  
&version=1.1.1  
&srs=EPSG:4326  
&format=image/jpeg  
&styles=  
&bbox=-180,-90,180,90  
&width=600  
&height=300  
&layers=global_mosaic
```

*This service is
unavailable*

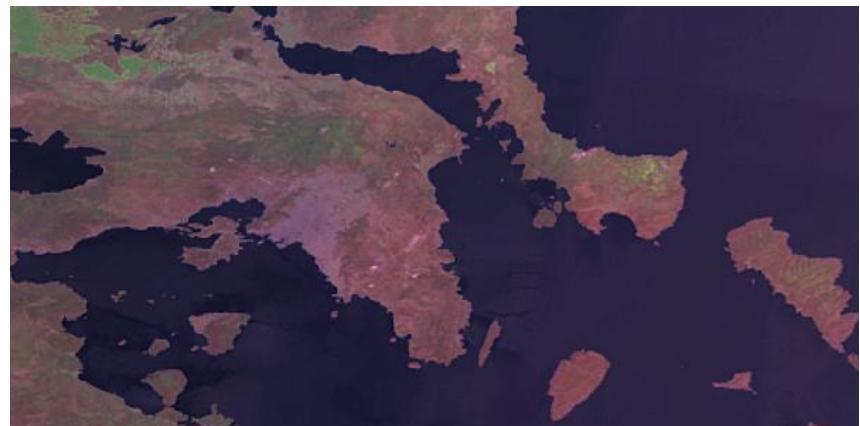


OGC Specifications

- Web Map Service (WMS)
 - GetMap request ...

```
http://wms.jpl.nasa.gov/wms.cgi?  
request=GetMap  
&service=WMS  
&version=1.1.1  
&srs=EPSG:4326  
&format=image/jpeg  
&styles=  
&bbox=23,37.5,25,38.5  
&width=600  
&height=300  
&layers=global_mosaic
```

*This service is
unavailable*



<http://www.geobase.ca/geobase/en/wms/index.html>

The screenshot shows a web browser window titled "GeoBase - GeoBase Web M". The address bar contains the URL "www.geobase.ca/geobase/en/wms/index.html". The page itself is the "GeoBase Web Mapping Service (WMS)" page. At the top, there's a navigation bar with links for Home, About, Partners, GeoBase in Action, News, Events, and Français. A "Data" menu is also present. The main content area features a large orange "GeoBase" logo with a magnifying glass icon. To its right is the tagline "Building on common ground". Below the logo, there's a section titled "GeoBase Web Mapping Service (WMS)" with a small orange icon. A "Notice" box contains text about WMS assumptions and usage instructions. Another box below it discusses service access conditions. Further down, sections for "Links for the GeoBase WMS" and "GeoBase requests" are visible, along with a note about OGC support.

GeoBase Building on common ground

Home | About | Partners | GeoBase in Action | News | Events | Français | Data

GeoBase Web Mapping Service (WMS)

GeoBase Portal offers an access to its data layers through a Web Mapping Service (WMS) in accordance with the Open Geospatial Consortium (OGC) specifications. (<http://www.opengeospatial.org/>).

Notice

GeoBase assumes that users know what a WMS is and how to operate it, and that they are aware of the capacities and limits of the technology behind this type of service. The information presented is not intended to increase awareness of or describe Web Map Services. GeoBase does not provide support for users who want to learn about this technology. Users can find several information and training sources on this subject on the Internet, such as the OGC site and the [online training](#) site for the Canadian Geospatial Data Infrastructure (CGDI) on the GeoConnections website.

You will need a Geographic Information System (GIS) or a Web application compatible with OGC standards to use this map service. Several resources can be found by searching the Web using a search engine (e.g., Quantum GIS, Gaia (The Carbon Project), OGC-compatible visualization software by Intergraph and the UDig application by Refractions).

In your GIS or Web application, it is necessary to seek a function or a command allowing the addition of a map service and where you will normally have to copy the URL of our service.

By using this service, developers will have access to our most current GeoBase data for rendering customized maps. Our OGC-compliant WMS technology is provided free of charge and is subject to conditions described in [GEOBASE UNRESTRICTED USE LICENCE AGREEMENT](#).

Links for the GeoBase WMS

The GeoBase WMS is available in both official languages through a separate URL for each language. Based on the address used, the GeoBase WMS will produce a map with textual elements (labels and annotations, not including toponyms) in the language selected.

URLs for the GeoBase WMS by official language:

- English: http://ows.geobase.ca/wms/geobase_en
- French: http://ows.geobase.ca/wms/geobase_fr

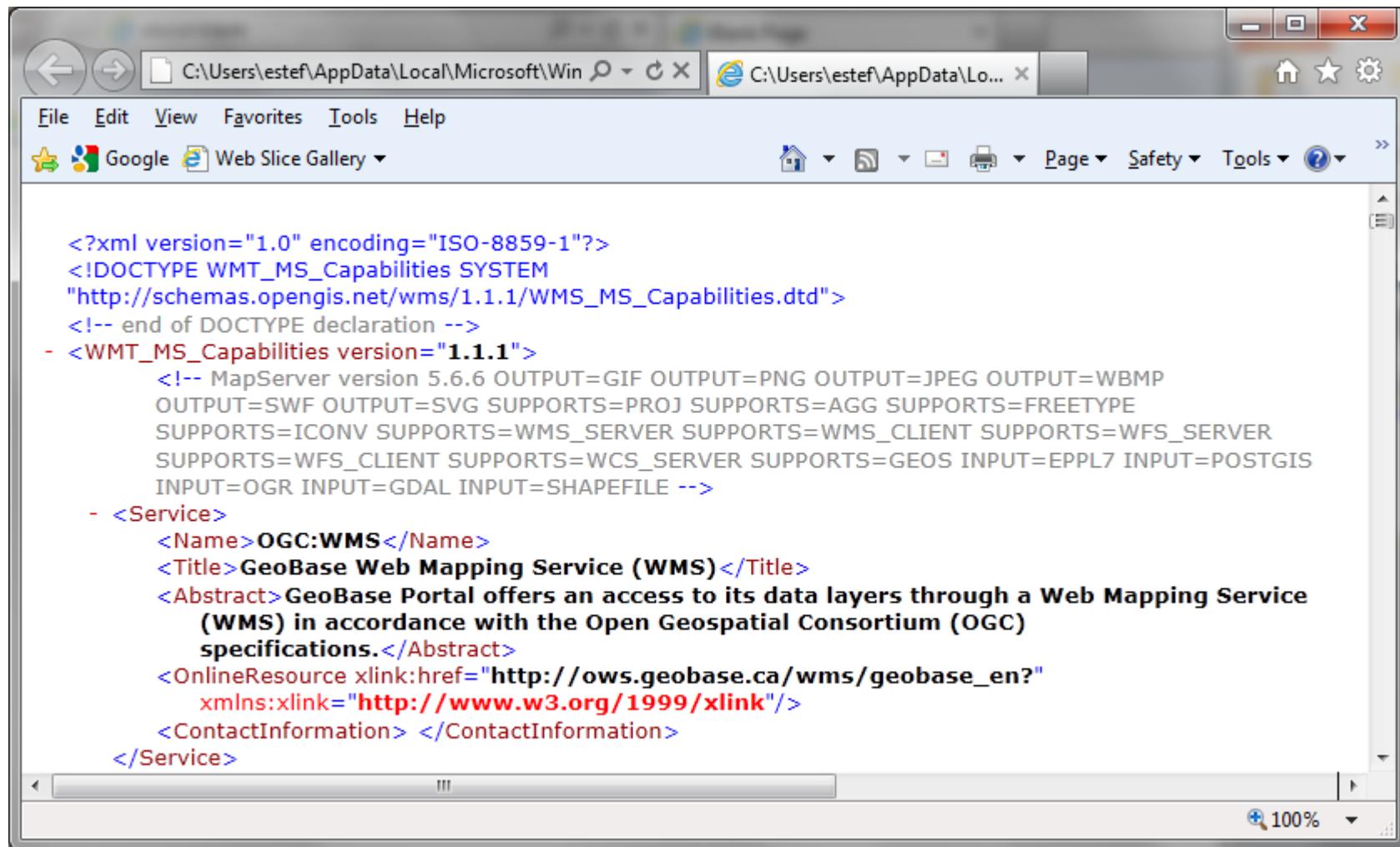
GeoBase requests

The GeoBase WMS adequately supports mandatory operations (*GetCapabilities* and *GetMap*) as defined in the [OGC WMS standard](#), version 1.1.1. If available, the other operations do not guarantee any results.

This service is unavailable

http://ows.geobase.ca/wms/geobase_en?
service=wms
&request=GetCapabilities
&version=1.1.1

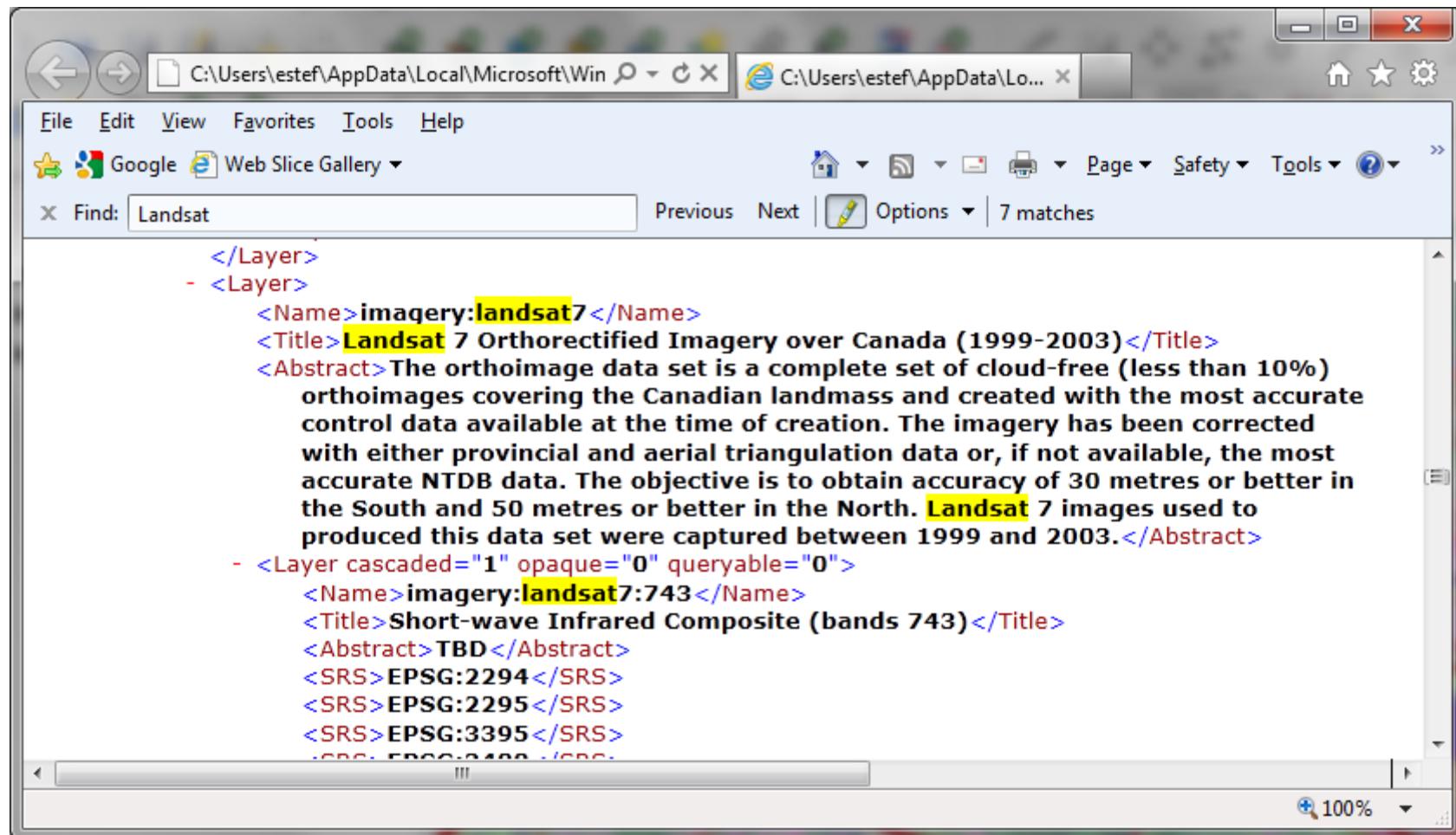
This service is unavailable



http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetCapabilities&version=1.1.1

[http://ows.geobase.ca/wms/geobase_en?
service=wms
&request=GetCapabilities
&version=1.1.1](http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetCapabilities&version=1.1.1)

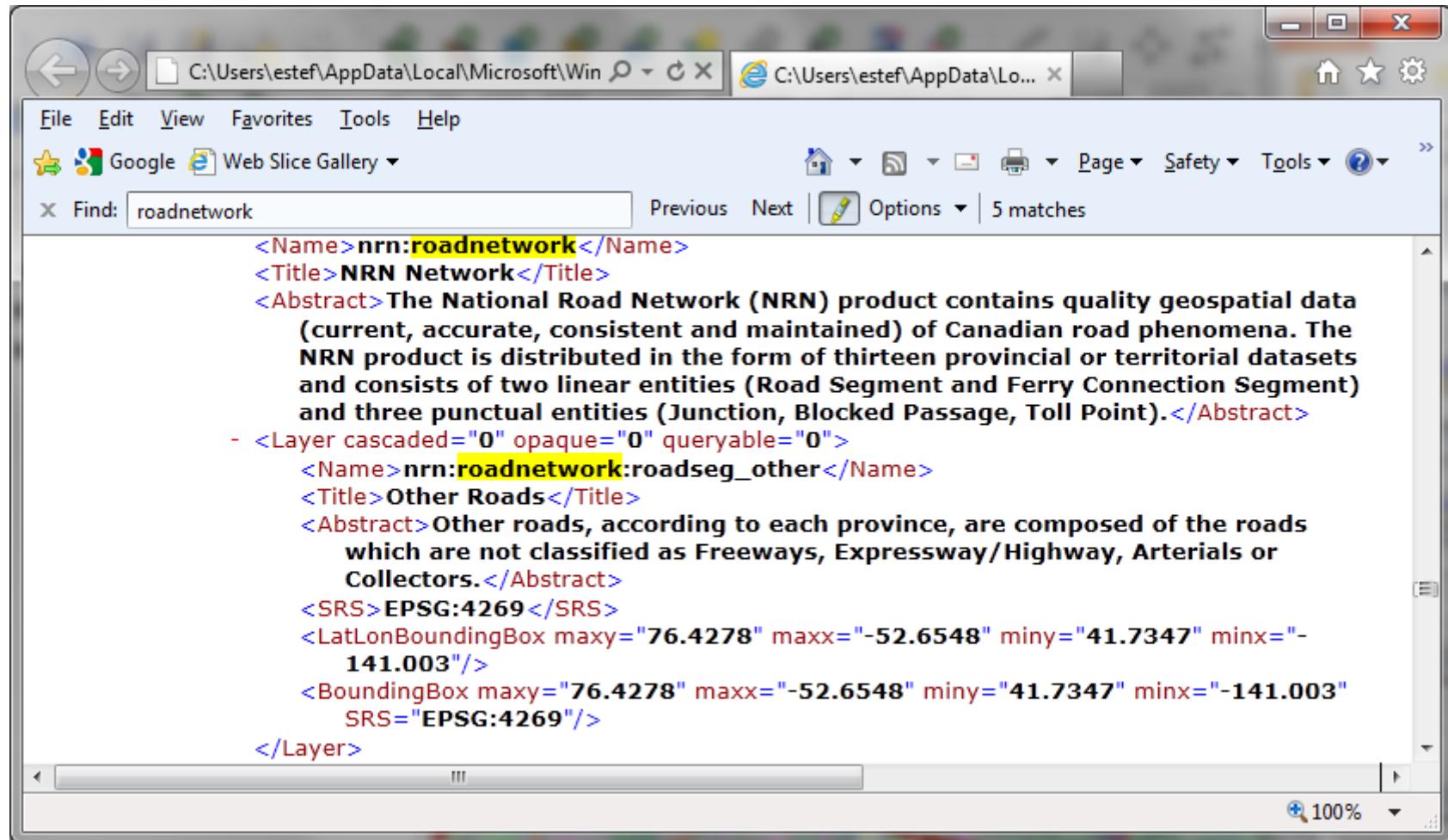
*This service is
unavailable*



http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetCapabilities&version=1.1.1

http://ows.geobase.ca/wms/geobase_en?
service=wms
&request=GetCapabilities
&version=1.1.1

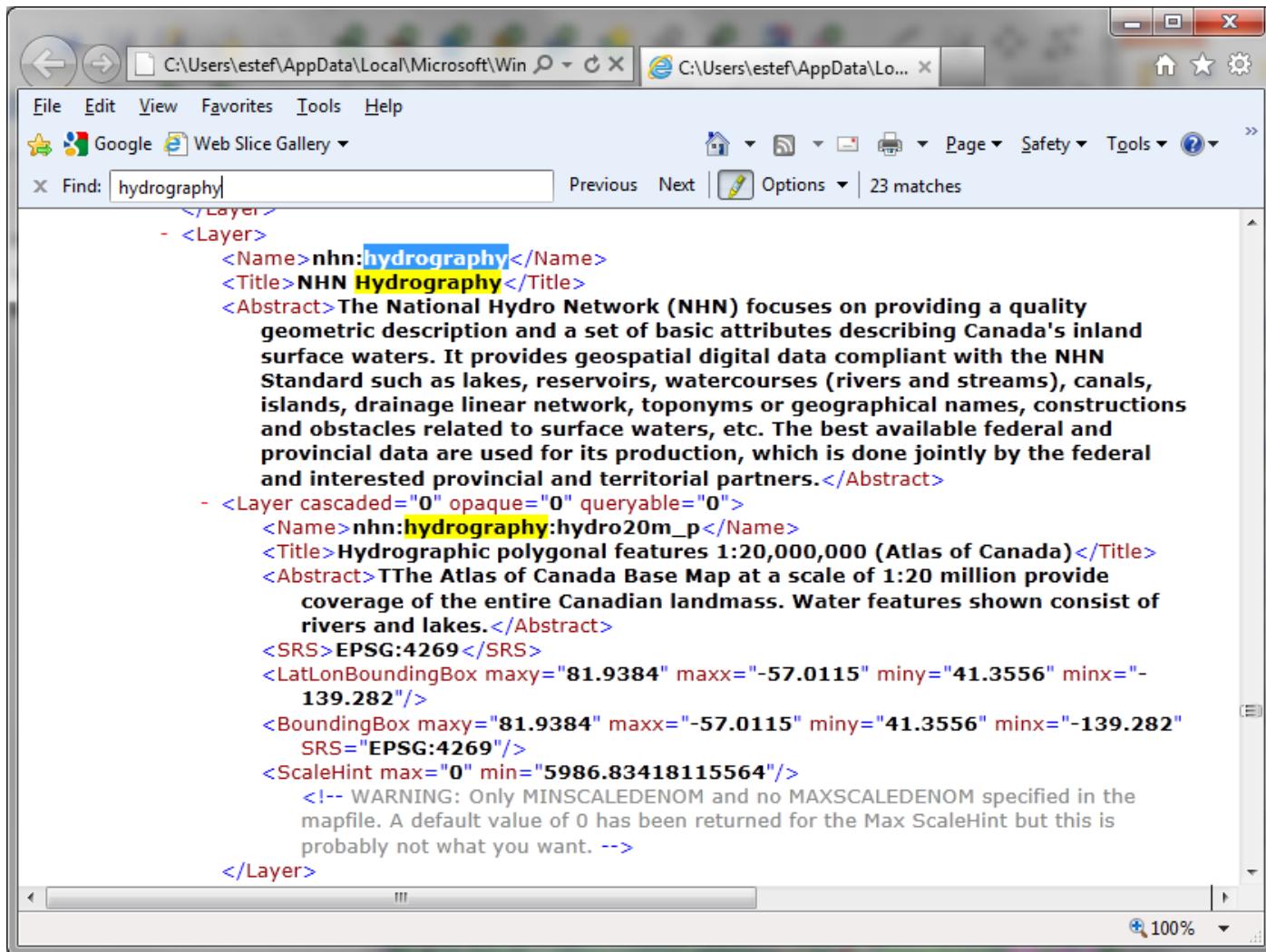
This service is unavailable



http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetCapabilities&version=1.1.1

http://ows.geobase.ca/wms/geobase_en?
service=wms
&request=GetCapabilities
&version=1.1.1

This service is unavailable



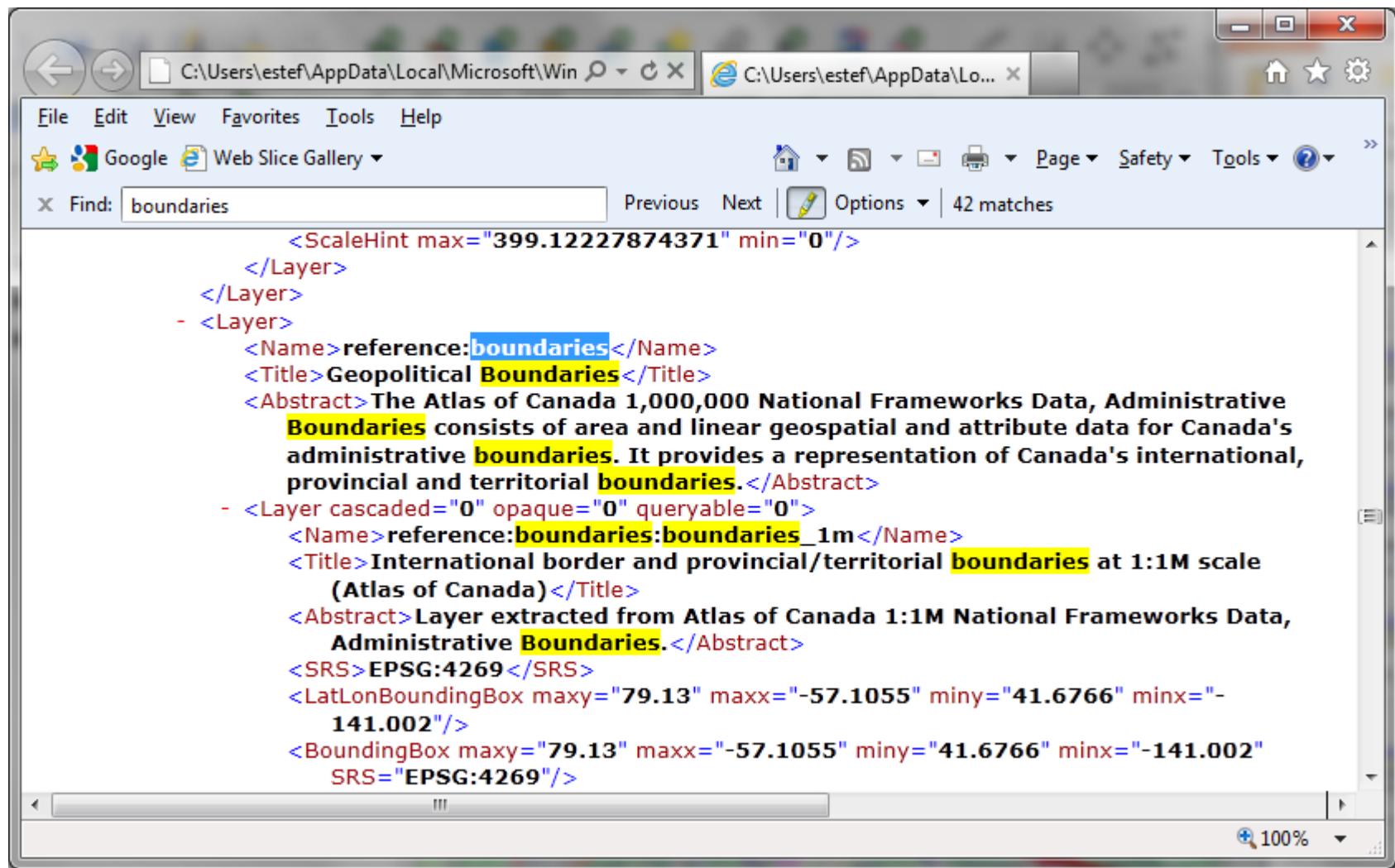
The screenshot shows a Microsoft Internet Explorer window with the address bar set to "C:\Users\estef\AppData\Local\Microsoft\Win...". The search bar contains the text "hydrography". The main content area displays the XML structure of the WMS GetCapabilities response. The XML highlights several key layers:

```
</Layer>
- <Layer>
  <Name>nhn:hydrography</Name>
  <Title>NHN Hydrography</Title>
  <Abstract>The National Hydro Network (NHN) focuses on providing a quality geometric description and a set of basic attributes describing Canada's inland surface waters. It provides geospatial digital data compliant with the NHN Standard such as lakes, reservoirs, watercourses (rivers and streams), canals, islands, drainage linear network, toponyms or geographical names, constructions and obstacles related to surface waters, etc. The best available federal and provincial data are used for its production, which is done jointly by the federal and interested provincial and territorial partners.</Abstract>
- <Layer cascaded="0" opaque="0" queryable="0">
  <Name>nhn:hydrography:hydro20m_p</Name>
  <Title>Hydrographic polygonal features 1:20,000,000 (Atlas of Canada)</Title>
  <Abstract>The Atlas of Canada Base Map at a scale of 1:20 million provide coverage of the entire Canadian landmass. Water features shown consist of rivers and lakes.</Abstract>
  <SRS>EPSG:4269</SRS>
  <LatLonBoundingBox maxy="81.9384" maxx="-57.0115" miny="41.3556" minx="-139.282"/>
  <BoundingBox maxy="81.9384" maxx="-57.0115" miny="41.3556" minx="-139.282" SRS="EPSG:4269"/>
  <ScaleHint max="0" min="5986.83418115564"/>
  <!-- WARNING: Only MINSCALEDENOM and no MAXSCALEDENOM specified in the mapfile. A default value of 0 has been returned for the Max ScaleHint but this is probably not what you want. -->
</Layer>
```

http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetCapabilities&version=1.1.1

http://ows.geobase.ca/wms/geobase_en?
service=wms
&request=GetCapabilities
&version=1.1.1

This service is unavailable



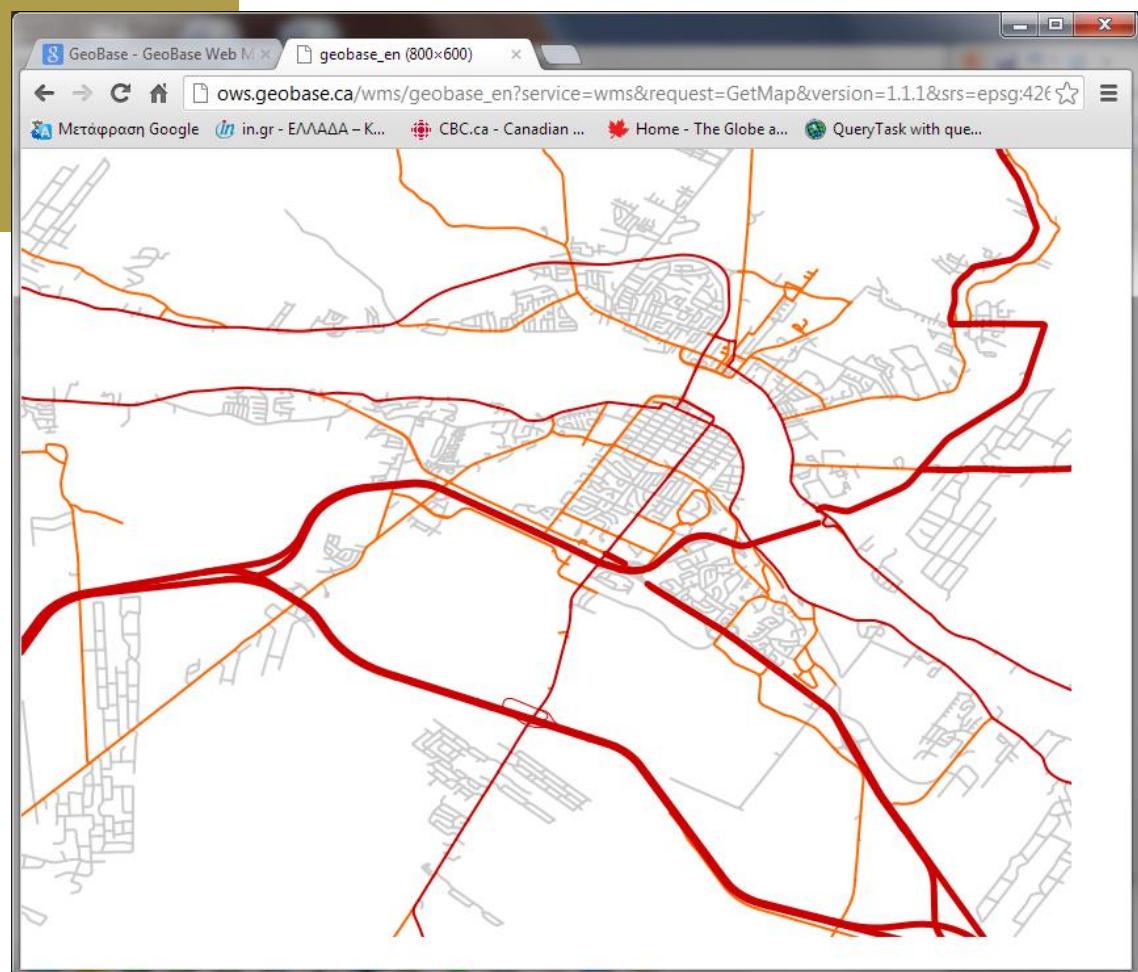
The screenshot shows a Microsoft Internet Explorer window with the address bar set to C:\Users\estef\AppData\Local\Microsoft\Win. The main content area displays the XML structure of the WMS GetCapabilities response. A search bar at the top of the content area contains the text "boundaries". The XML code is color-coded for syntax highlighting, with several terms highlighted in yellow: "boundaries", "Geopolitical Boundaries", "Administrative Boundaries", "international, provincial and territorial boundaries", "International border and provincial/territorial boundaries", "1:1M scale (Atlas of Canada)", "Administrative Boundaries", "EPSG:4269", "LatLonBoundingBox", "maxy=79.13", "maxx=-57.1055", "miny=41.6766", "minx=-141.002", and "BoundingBox". The XML content describes a layer named "reference:boundaries" which provides geospatial and attribute data for Canada's administrative boundaries, including international, provincial, and territorial boundaries. It also describes a cascaded layer "reference:boundaries:boundaries_1m" which provides international border and provincial/territorial boundaries at 1:1M scale from the "Atlas of Canada". The layer uses EPSG:4269 coordinate system and has a bounding box spanning approximately 79.13 degrees North to 41.6766 degrees South, -57.1055 degrees West to -141.002 degrees East.

```
<ScaleHint max="399.12227874371" min="0"/>
</Layer>
</Layer>
- <Layer>
  <Name>reference:boundaries</Name>
  <Title>Geopolitical Boundaries</Title>
  <Abstract>The Atlas of Canada 1,000,000 National Frameworks Data, Administrative Boundaries consists of area and linear geospatial and attribute data for Canada's administrative boundaries. It provides a representation of Canada's international, provincial and territorial boundaries.</Abstract>
  - <Layer cascaded="0" opaque="0" queryable="0">
    <Name>reference:boundaries:boundaries_1m</Name>
    <Title>International border and provincial/territorial boundaries at 1:1M scale (Atlas of Canada)</Title>
    <Abstract>Layer extracted from Atlas of Canada 1:1M National Frameworks Data, Administrative Boundaries.</Abstract>
    <SRS>EPSG:4269</SRS>
    <LatLonBoundingBox maxy="79.13" maxx="-57.1055" miny="41.6766" minx="-141.002"/>
    <BoundingBox maxy="79.13" maxx="-57.1055" miny="41.6766" minx="-141.002" SRS="EPSG:4269"/>
```

http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetCapabilities&version=1.1.1

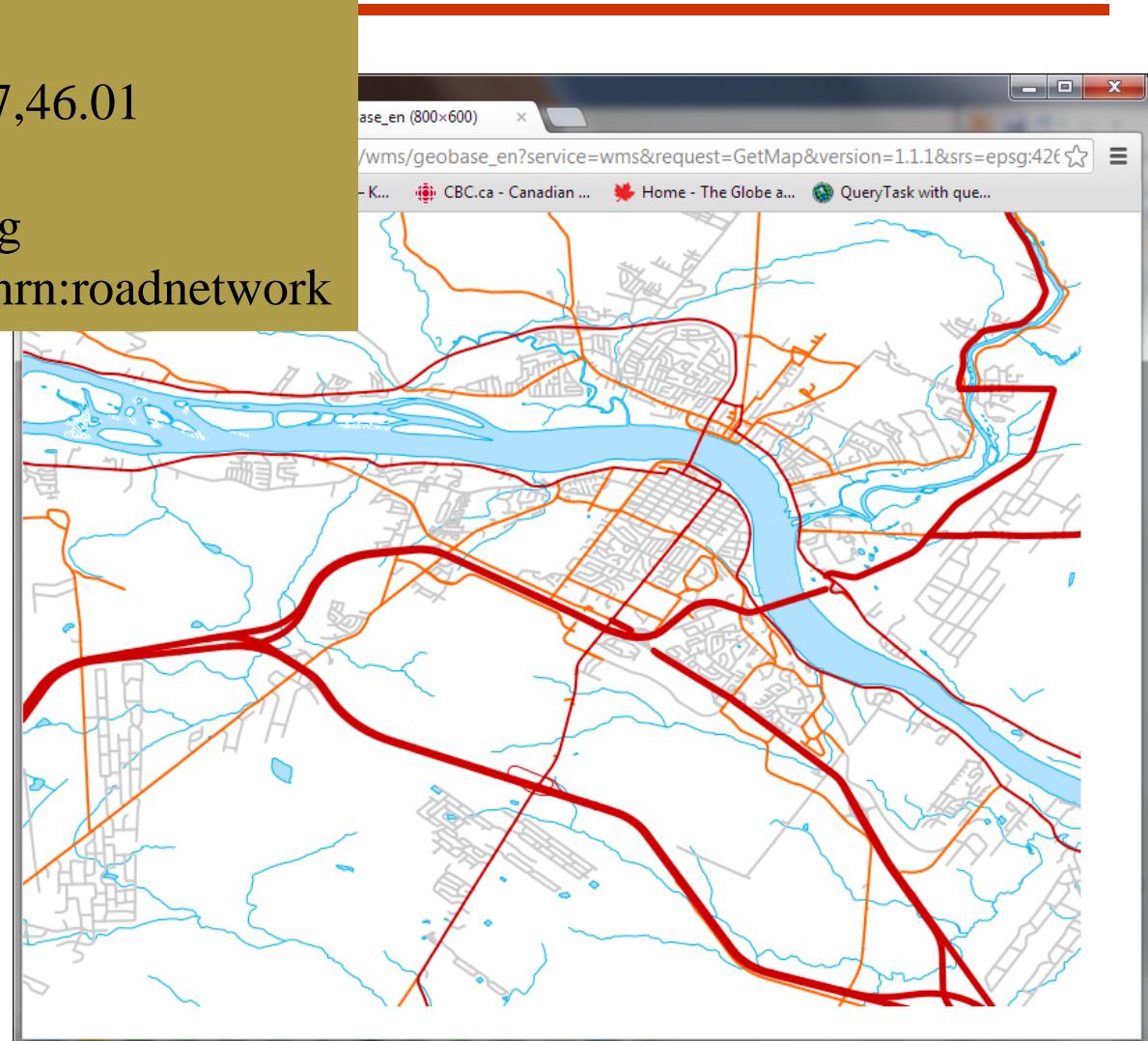
[http://ows.geobase.ca/wms/geobase_en?
service=wms
&request=GetMap
&version=1.1.1
&srs=epsg:4269
&bbox=-66.77,45.87,-66.57,46.01
&width=800&height=600
&style=&format=image/png
&layers=nrn:roadnetwork](http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetMap&version=1.1.1&srs=epsg:4269&bbox=-66.77,45.87,-66.57,46.01&width=800&height=600&style=&format=image/png&layers=nrn:roadnetwork)

*This service is
unavailable*



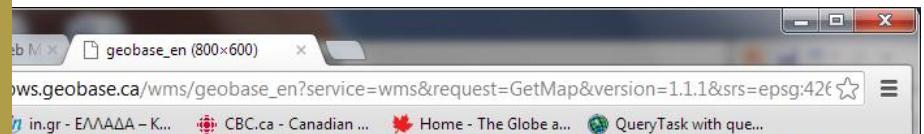
```
http://ows.geobase.ca/wms/geobase_en?  
service=wms  
&request=GetMap  
&version=1.1.1  
&srs=epsg:4269  
&bbox=-66.77,45.87,-66.57,46.01  
&width=800&height=600  
&style=&format=image/png  
&layers=nhn:hydrography,nrn:roadnetwork
```

This service is unavailable



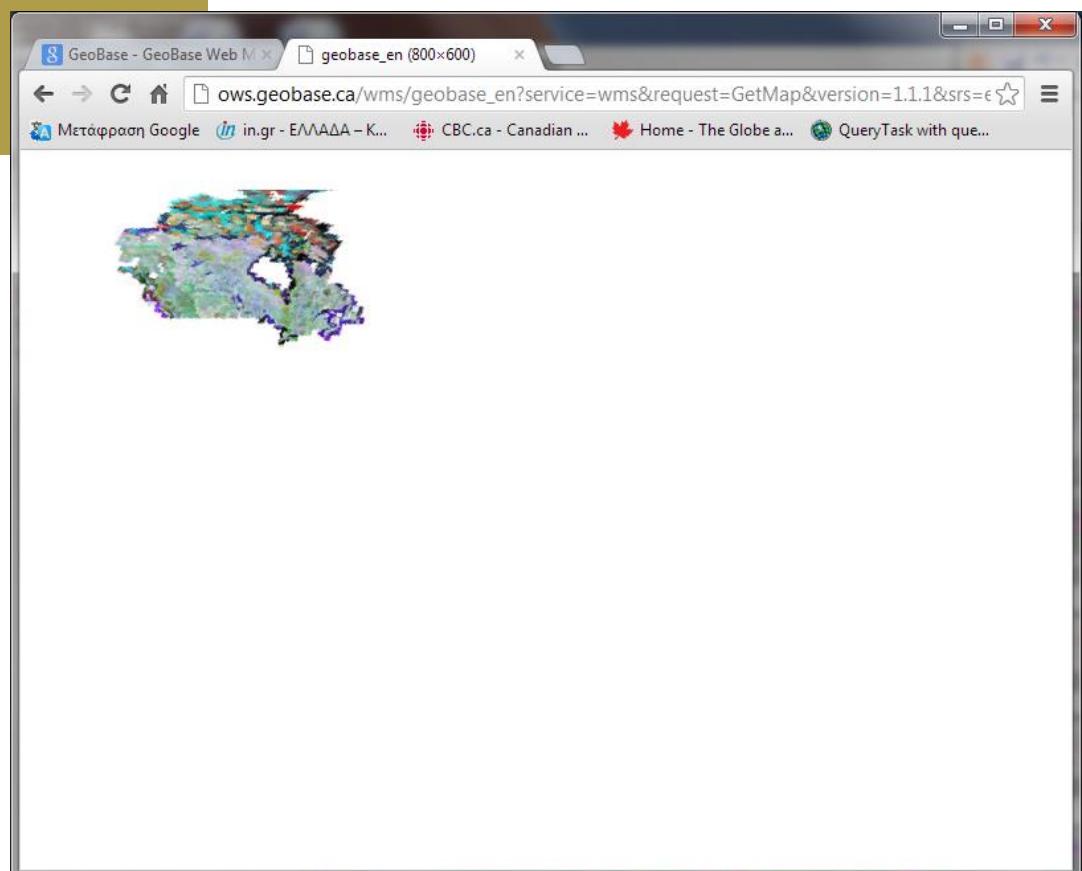
[http://ows.geobase.ca/wms/geobase_en?
service=wms
&request=GetMap
&version=1.1.1
&srs=epsg:4269
&bbox=-66.77,45.87,-66.57,46.01
&width=800&height=600
&style=&format=image/png
&layers=imagery:Landsat7](http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetMap&version=1.1.1&srs=epsg:4269&bbox=-66.77,45.87,-66.57,46.01&width=800&height=600&style=&format=image/png&layers=imagery:Landsat7)

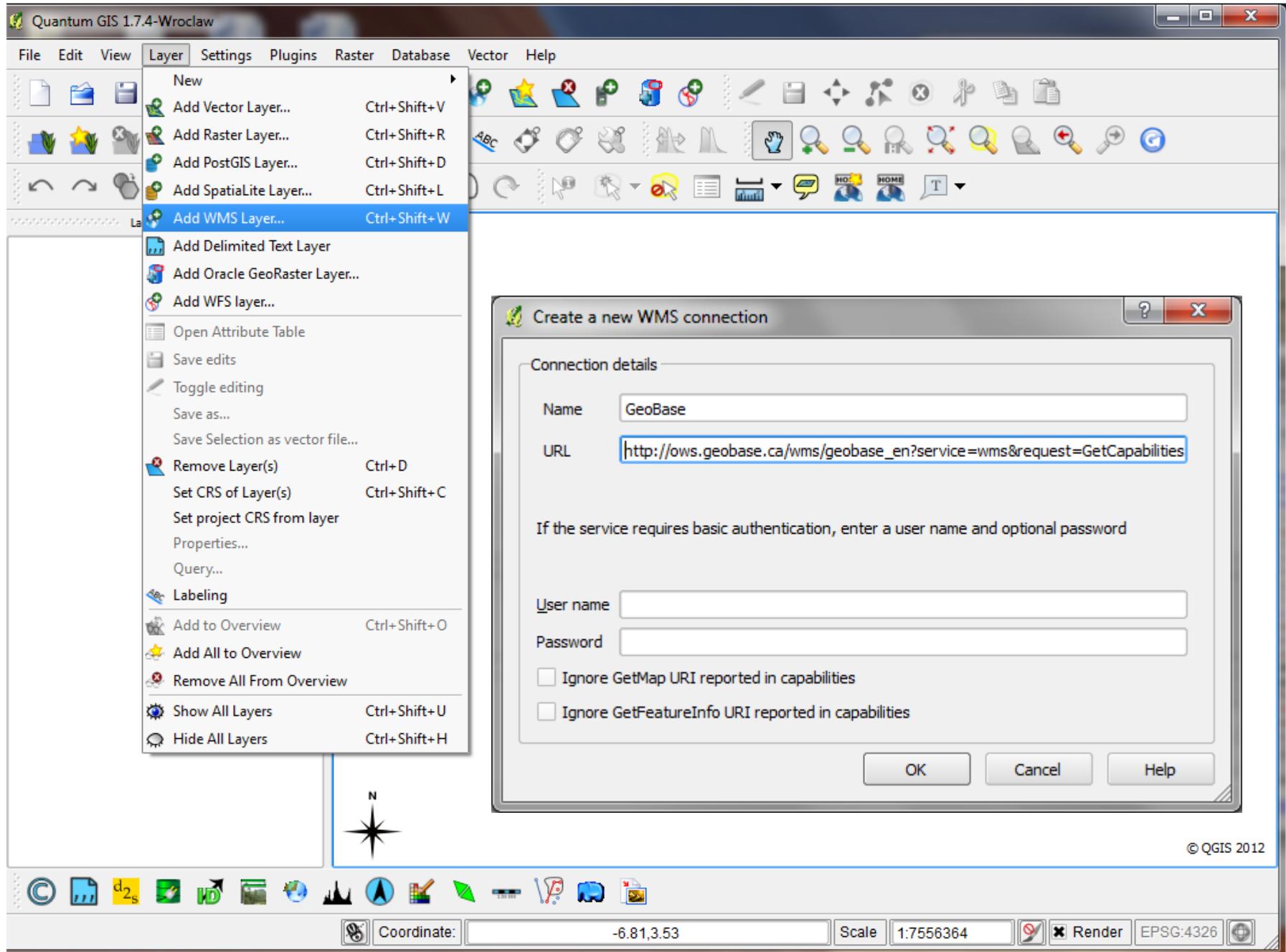
*This service is
unavailable*



```
http://ows.geobase.ca/wms/geobase_en?  
service=wms  
&request=GetMap  
&version=1.1.1  
&srs=epsg:4269  
&bbox=-180,-90,180,90  
&width=800&height=600  
&style=&format=image/png  
&layers=imagery:Landsat7
```

*This service is
unavailable*





Quantum GIS 1.7.4-Wroclaw

Add Layer(s) from a Server

File Edit View Layer Settings Plugins Raster Database Vector Help

Layers Layer Order Tilesets Server Search

GeoBase

Connect New Edit Delete Load Save Add default servers

ID	Name	Title	Abstract
0	WMS-GeoBase	Data Collection...	The data available are: Administrative Boundaries (Aboriginal Lands, Cana...
1	elevation:cded2...	Canadian Digit...	The Canadian Digital Elevation Data (CDED) consists of an ordered array o...
10	elevation:cded5...	Canadian Digit...	The Canadian Digital Elevation Data (CDED) consists of an ordered array o...
21	landcover:csc2...	Land Cover, Cir...	Land Cover information is the result of vectorization of raster thematic da...
73	imagery:landsat7	Landsat 7 Ortho...	The orthoimage data set is a complete set of cloud-free (less than 10%) or...
75	reference:bathy...	Reference: bathy...	Shows the depths (bathymetry) of the waters in and around Canada.
77	reference:land...	Canadian and F...	Canadian and Foreign landmass at 1:1M scale (Atlas of Canada)
82	reference:boun...	Geopolitical Bo...	The Atlas of Canada 1,000,000 National Frameworks Data, Administrative ...
85	reference:nts	Index of the Nat...	Topographic maps produced by Natural Resources Canada conform to th...
92	reference:hydro	Hydrography	This group covers drainage (coastlines, rivers, lakes) for the Canadian land...
101	reference:roads	Road Network	This group covers the road network (primary and secondary highways, se...
105	reference:place...	Populated place...	Populated Places data set shows a selection of named populated places s...

Image encoding

PNG PNG24 JPEG GIF TIFF

Options

Layer name Change ...

Add Close Help

115989 of 115989 bytes of capabilities downloaded.

GIS 2012

C Coordinate: -6.81,3.53 Scale 1:7556364 Render EPSG:4326

Quantum GIS 1.7.4-Wroclaw

Add Layer(s) from a Server

Layers **Layer Order** **Tilesets** **Server Search**

GeoBase

Connect **New** **Edit** **Delete** **Load** **Save** **Add default servers**

ID	Name	Title	Abstract
0	WMS-GeoBase	Data Collections from GeoBase	The data available are: Administrative Boundaries (Abor...
1	elevation:cded250k	Canadian Digital Elevation Data, 1:250,000	The Canadian Digital Elevation Data (CDED) consists of ...
10	elevation:cded50k	Canadian Digital Elevation Data, 1:50,000	The Canadian Digital Elevation Data (CDED) consists of ...
21	landcover:csc2000	Land Cover, Circa 2000	Land Cover information is the result of vectorization of ...
73	imagery:landsat7	Landsat 7 Orthorectified Imagery over Canada (1999-2003)	The orthoimage data set is a complete set of cloud-free...
75	reference:bathymetry	Reference: bathymetry	Shows the depths (bathymetry) of the waters in and ar...
77	reference:landmass	Canadian and Foreign Landmass	Canadian and Foreign landmass at 1:1M scale (Atlas of ...
82	reference:boundaries	Geopolitical Boundaries	The Atlas of Canada 1,000,000 National Frameworks Da...
85	reference:nts	Index of the National Topographic System of Canada	Topographic maps produced by Natural Resources Can...
92	reference:hydro	Hydrography	This group covers drainage (coastlines, rivers, lakes) for...
101	reference:roads	Road Network	This group covers the road network (primary and seco...
105	reference:placenames	Populated places in Canada	Populated Places data set shows a selection of named p...
110	boundaries:geopolitical	Canadian Geopolitical Boundaries	Canadian Geopolitical Boundaries contains the internat...
114	boundaries:aboriginal	Aboriginal Lands	Aboriginal Lands including Indian Reserves, Land Clai...
119	boundaries:municipal	Municipal Boundaries	Municipal Boundaries data product consists of a series ...
124	nrr:roadnetwork	NRN Network	The National Road Network (NRN) product contains qu...
129	nrr:streetnames	NRN Street Names	Street Names of National Road Network
134	nrr:addressrange	NRN Address Range	Address Ranges of National Road Network
140	nhn:hydrography	NHN Hydrography	The National Hydro Network (NHN) focuses on providi...
159	nhn:network	NHN Network	A network flowing through naturally occurring or constr...
168	nhn:drainageareas	Boundaries of Drainage Areas	Canadian territory subdivision used to manage and dist...
176	nhn:toponyms	NHN Toponyms	A feature delineating the extent, in whole or in part, of ...

115989 of 115989 bytes of capabilities downloaded.

Add Close Help

GIS 2012

Coordinate: -6.81,3.53 Scale: 1:7556364 Render: EPSG:4326

Quantum GIS 1.7.4-Wroclaw

Add Layer(s) from a Server

Layers Layer Order Tilesets Server Search

GeoBase

Connect New Edit Delete Load Save Add default servers

ID	Name	Title	Abstract
0	WMS-GeoBase	Data Collections from GeoBase	The data available are: Administrative Boundaries (Abor...
1	elevation:cded250k	Canadian Digital Elevation Data, 1:250,000	The Canadian Digital Elevation Data (CDED) consists of ...
10	elevation:cded50k	Canadian Digital Elevation Data, 1:50,000	The Canadian Digital Elevation Data (CDED) consists of ...
21	landcover:csc2000	Land Cover, Circa 2000	Land Cover information is the result of vectorization of ...
73	imagery:landsat7	Landsat 7 Orthorectified Imagery over Canada (1999-2003)	The orthoimage data set is a complete set of cloud-free...
75	reference:bathymetry	Reference: bathymetry	Shows the depths (bathymetry) of the waters in and ar...
77	reference:landmass	Canadian and Foreign landmass	Canadian and Foreign landmass at 1:1M scale (Atlas of ...
82	reference:boundaries	Geopolitical Boundaries	The Atlas of Canada 1,000,000 National Frameworks Da...
85	reference:ents	Index of the National Topographic System of Canada	Topographic maps produced by Natural Resources Can...
92	reference:hydro	Hydrography	This group covers drainage (coastlines, rivers, lakes) for...
101	reference:roads	Road Network	This group covers the road network (primary and seco...
105	reference:placenames	Populated places in Canada	Populated Places data set shows a selection of named p...
110	boundaries:geopolitical	Canadian Geopolitical Boundaries	Canadian Geopolitical Boundaries contains the internat...
114	boundaries:aboriginal	Aboriginal Lands	Aboriginal Lands including Indian Reserves, Land Clai...
119	boundaries:municipal	Municipal Boundaries	Municipal Boundaries data product consists of a series ...
124	nrr:roadnetwork	NRN Network	The National Road Network (NRN) product contains qu...
129	nrr:streetnames	NRN Street Names	Street Names of National Road Network
134	nrr:addressrange	NRN Address Range	Address Ranges of National Road Network
140	nhn:hydrography	NHN Hydrography	The National Hydro Network (NHN) focuses on providi...
159	nhn:network	NHN Network	A network flowing through naturally occurring or constr...
168	nhn:drainageareas	Boundaries of Drainage Areas	Canadian territory subdivision used to manage and dist...
176	nhn:toponyms	NHN Toponyms	A feature delineating the extent, in whole or in part, of ...

Save connections to file

Image encoding

PNG PNG24 JPEG GIF TIFF

Coordinate Reference System (66 available)

Layer name: imagery:landsat7

WGS 84 Change ...

Add Close Help

1 Layer(s) selected

Quantum GIS 1.7.4-Wroclaw

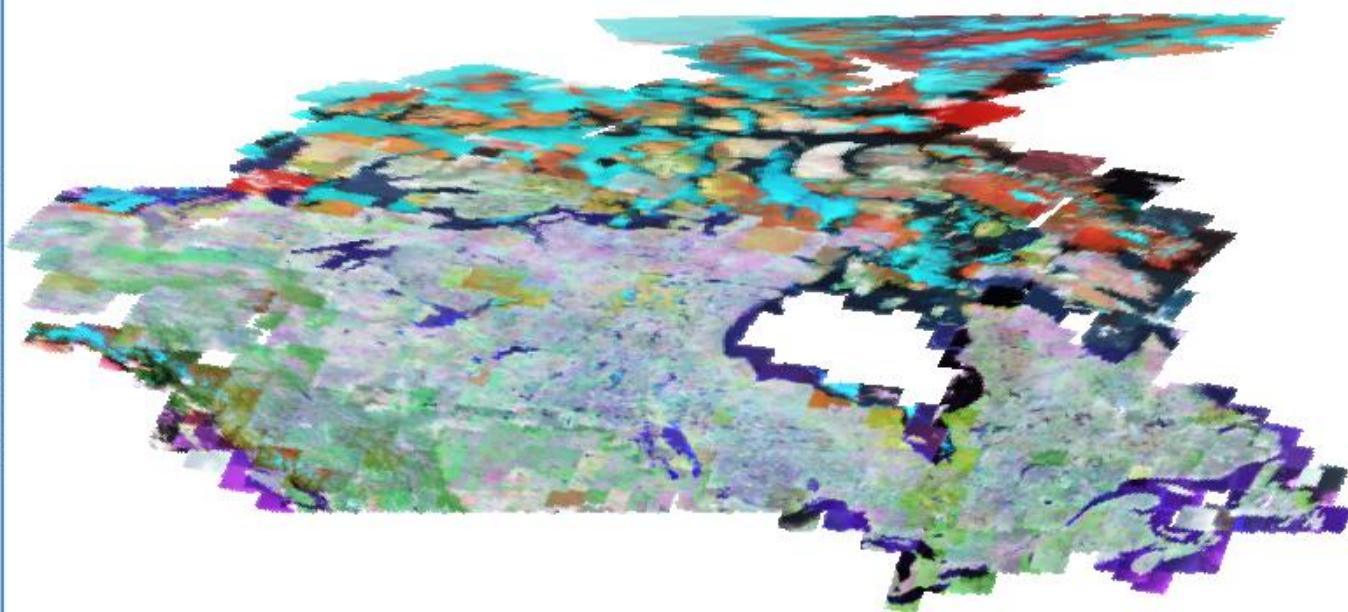
File Edit View Layer Settings Plugins Raster Database Vector Help



Layers

imagery:landsat7

0 30 degrees



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416768 of 416768 bytes of map downloaded.



Coordinate:

-66.7,46.0

Scale

1:16606858



Render

EPSG:4326

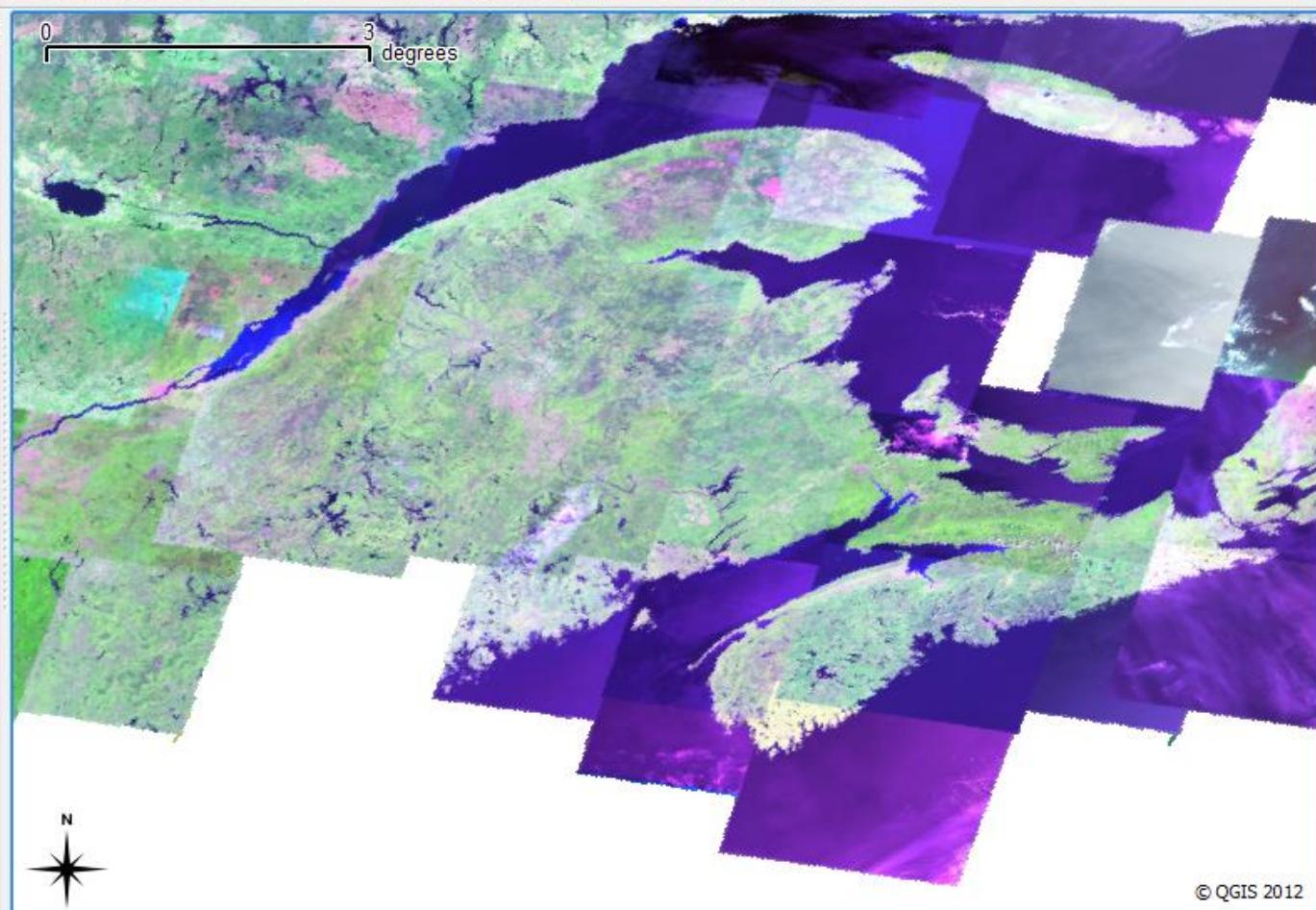


File Edit View Layer Settings Plugins Raster Database Vector Help



Layers

imageries:landsat7



769393 of 769393 bytes of map downloaded.

Coordinate: -66.23,46.74 Scale: 1:3168347 Render: EPSG:4326

Quantum GIS 1.7.4-Wroclaw

File Edit View Layer Settings Plugins Raster Database Vector Help



Layers

imagery:landsat7



918877 of 918877 bytes of map downloaded.

Coordinate:

-66.6585,45.9922

Scale 1:27117

Render

EPSG:4326

Add Layer(s) from a Server

Layers Layer Order Tilesets Server Search

GeoBase

Connect New Edit Delete Load Save Add default servers

ID	Name	Title	Abstract
0	WMS-GeoBase	Data Collection...	The data available are: Administrative Boundaries (Aboriginal Lands, Canadian Geopolitical Boundaries an...
1	elevation:cded2...	Canadian Digit...	The Canadian Digital Elevation Data (CDED) consists of an ordered array of ground elevations at regularly ...
10	elevation:cded5...	Canadian Digit...	The Canadian Digital Elevation Data (CDED) consists of an ordered array of ground elevations at regularly ...
21	landcover:csc2...	Land Cover, Cir...	Land Cover information is the result of vectorization of raster thematic data originating from classified La...
73	imagery:landsat7	Landsat 7 Ortho...	The orthoimage data set is a complete set of cloud-free (less than 10%) orthoimages covering the Canadi...
75	reference:bathy...	Reference: bathy...	Shows the depths (bathymetry) of the waters in and around Canada.
77	reference:land...	Canadian and F...	Canadian and Foreign landmass at 1:1M scale (Atlas of Canada)
82	reference:boun...	Geopolitical Bo...	The Atlas of Canada 1,000,000 National Frameworks Data, Administrative Boundaries consists of area and ...
85	reference:nts	Index of the Nat...	Topographic maps produced by Natural Resources Canada conform to the National Topographic System ...
92	reference:hydro	Hydrography	This group covers drainage (coastlines, rivers, lakes) for the Canadian landmass.
101	reference:roads	Road Network	This group covers the road network (primary and secondary highways, selected ferry routes) for the Cana...
105	reference:place...	Populated place...	Populated Places data set shows a selection of named populated places suitable for use at various scales. ...
110	boundaries:geo...	Canadian Geop...	Canadian Geopolitical Boundaries contains the international, inter-provincial and territorial boundaries, as...
114	boundaries:abo...	Aboriginal Lands	Aboriginal Lands including Indian Reserves, Land Claim settlement and other Indian Lands.
119	boundaries:mu...	Municipal Boun...	Municipal Boundaries data product consists of a series of municipal features, each defined as a bounded ...
124	nrn:roadnetwork	NRN Network	The National Road Network (NRN) product contains quality geospatial data (current, accurate, consistent...)
129	nrn:streetnames	NRN Street Na...	Street Names of National Road Network
134	nrn:addressrange	NRN Address R...	Address Range
140	nhn:hydrography	NHN Hydrogra...	The National Hydro Network (NHN) focuses on providing a quality geometric description and a set of ba...
159	nhn:network	NHN Network	A network flowing through naturally occurring or constructed bodies of water.
168	nhn:drainageare...	Boundaries of D...	Canadian territory subdivision used to manage and distribute NHN data. NHN Work Units limits general...
176	nhn:toponyms	NHN Toponyms	A feature delineating the extent, in whole or in part, of a toponymic phenomenon for which the geometr...

Image encoding

PNG PNG24 JPEG GIF TIFF

Coordinate Reference System (66 available)

Layer name: nrn:roadnetwork

WGS 84 Change ...

Add Close Help

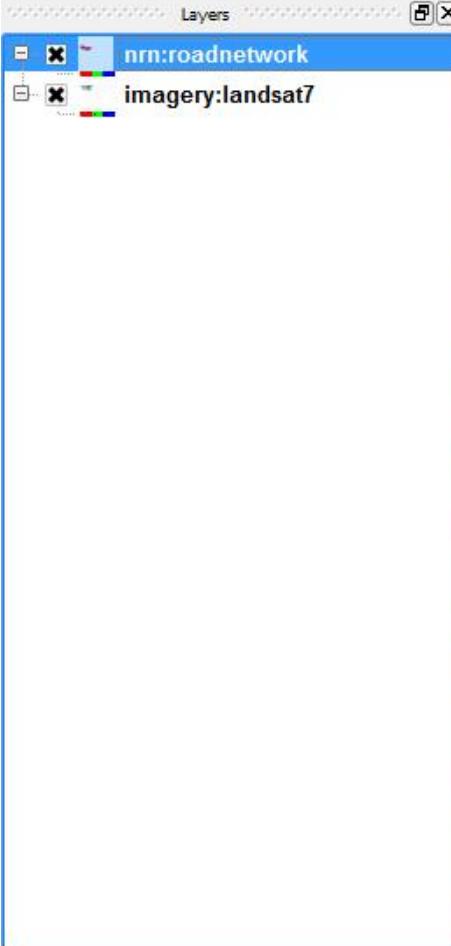
1 Layer(s) selected



Quantum GIS 1.7.4-Wroclaw



File Edit View Layer Settings Plugins Raster Database Vector Help



Coordinate:

-66.6945,45.9779

Scale 1:27117

Render

EPSG:4326



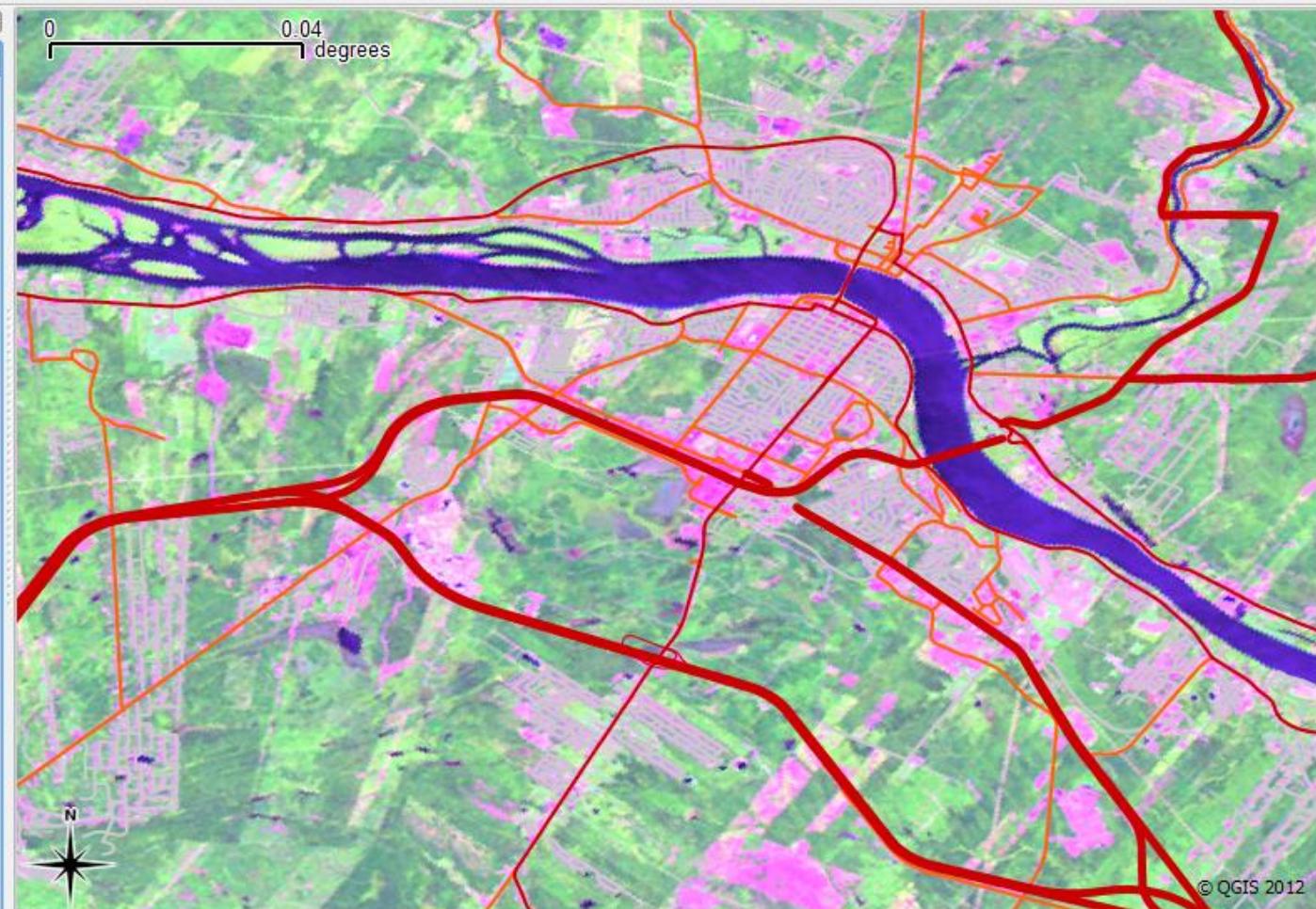
Quantum GIS 1.7.4-Wroclaw

File Edit View Layer Settings Plugins Raster Database Vector Help



Layers

- nrn:roadnetwork
- imagery:landsat7



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95934 of 59534 bytes of map downloaded.



Coordinate:

-66.7734,46.0066

Scale 1:54254

Render

EPSG:4326



Add Layer(s) from a Server

File

Layers **Layer Order** **Tilesets** **Server Search**

GeoBase

Connect **New** **Edit** **Delete** **Load** **Save** **Add default servers**

ID	Name	Title	Abstract
0	WMS-GeoBase	Data Collections from GeoBase	The data available are: Administrative Boundaries (Aboriginal Lands, Canadian Geopolitic...
1	elevation:cded2...	Canadian Digital Elevation Data,...	The Canadian Digital Elevation Data (CDED) consists of an ordered array of ground elevati...
10	elevation:cded5...	Canadian Digital Elevation Data,...	The Canadian Digital Elevation Data (CDED) consists of an ordered array of ground elevati...
21	landcover:csc2...	Land Cover, Circa 2000	Land Cover information is the result of vectorization of raster thematic data originating fr...
73	imagery:landsat7	Landsat 7 Orthorectified Imager...	The orthoimage data set is a complete set of cloud-free (less than 10%) orthoimages cov...
75	reference:bathy...	Reference: bathymetry	Shows the depths (bathymetry) of the waters in and around Canada.
77	reference:land...	Canadian and Foreign Landmass	Canadian and Foreign landmass at 1:1M scale (Atlas of Canada)
82	reference:boun...	Geopolitical Boundaries	The Atlas of Canada 1,000,000 National Frameworks Data, Administrative Boundaries con...
85	reference:nts	Index of the National Topograp...	Topographic maps produced by Natural Resources Canada conform to the National Topo...
92	reference:hydro	Hydrography	This group covers drainage (coastlines, rivers, lakes) for the Canadian landmass.
101	reference:roads	Road Network	This group covers the road network (primary and secondary highways, selected ferry rou...
105	reference:place...	Populated places in Canada	Populated Places data set shows a selection of named populated places suitable for use a...
110	boundaries:geo...	Canadian Geopolitical Boundaries	Canadian Geopolitical Boundaries contains the international, inter-provincial and territor...
114	boundaries:abo...	Aboriginal Lands	Aboriginal Lands including Indian Reserves, Land Claim settlement and other Indian Lands.
119	boundaries:muni...	Municipal Boundaries	Municipal Boundaries data product consists of a series of municipal features, each define...
124	nrn:roadnetwork	NRN Network	The National Road Network (NRN) product contains quality geospatial data (current, acc...
129	nrn:streetname	Save connections to file	Street Names of National Road Network
134	nrn:addressrange	NRN Address Range	Address Ranges of National Road Network
140	nhn:hydrography	NHN Hydrography	The National Hydro Network (NHN) focuses on providing a quality geometric descrip...
159	nhn:network	NHN Network	A network flowing through naturally occurring or constructed bodies of water.
168	nhn:drainageare...	Boundaries of Drainage Areas	Canadian territory subdivision used to manage and distribute NHN data. NHN Work Unit...
176	nhn:toponyms	NHN Toponyms	A feature delineating the extent, in whole or in part, of a toponymic phenomenon for whi...

Image encoding

PNG PNG24 JPEG GIF TIFF

Coordinate Reference System (66 available)

Layer name:

WGS 84

1 Layer(s) selected

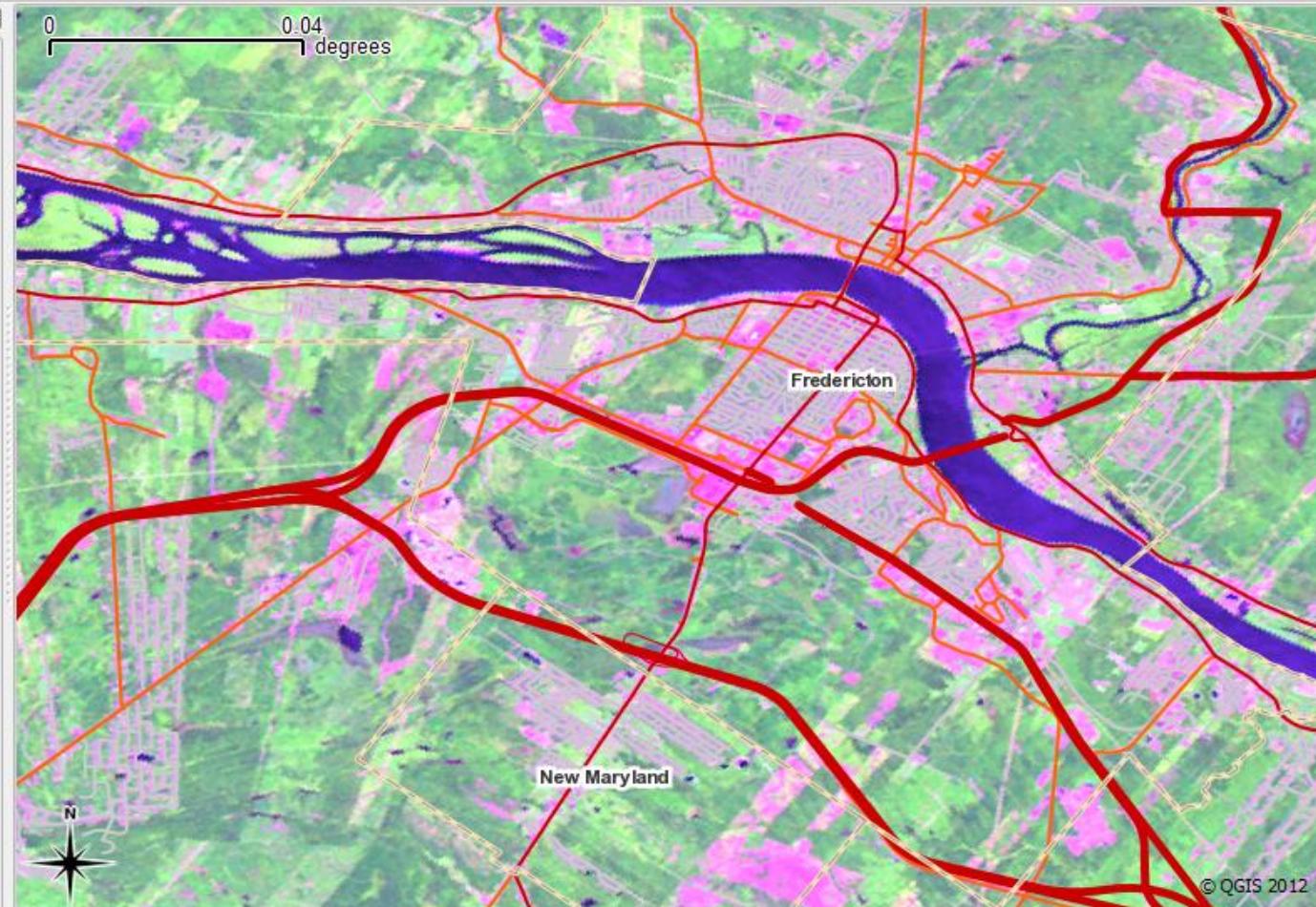
59534

File Edit View Settings Plugins Raster Database Vector Help



Layers

- boundaries:municipal
- nrn:roadnetwork
- imagery:landsat7



Coordinate:

-66.7713,46.0032

Scale

1:54254



Render

EPSG:4326





File Edit View Tools Add Help

▼ Search

ex: pizza near NYC

Get Directions H

▼ Places

- My Places
- Temporary Places



▼ Layers Earth Gallery »

- Primary Database
 - Borders and Labels
 - Places
 - Photos
 - Roads
 - 3D Buildings
 - Ocean
 - Weather
 - Gallery
 - Global Awareness
 - More

Folder Ctrl+Shift+N

Placemark Ctrl+Shift+P

Path Ctrl+Shift+T

Polygon Ctrl+Shift+G

Model Ctrl+Shift+M

Tour

Photo

Image Overlay Ctrl+Shift+O

Network Link



Sign in

Google Earth - New Image Overlay

Name: Untitled Image Overlay

Link:

Browse...

Transparency:

Clear

Opaque

Description View Altitude Refresh Location

Time-Based Refresh

When: Once 0 hrs 0 mins 4 secs

View-Based Refresh

When: Never 0 hrs 0 mins 4 secs

View Bound Scale: 0.75

WMS Parameters

OK

Cancel

gle earth

15.81 km

Google Earth

File Edit View Tools Add Help

Google Earth - Web Mapping Service Parameters

WMS Server: <http://demo.cubewerx.com/demo/cubeserv/cubeserv.cgi>

Move layers you want to see from left to right side. Order layers such that transparent layers follow opaque layers in the "Selected Layers" list.

Opaque Layers

Selected Layers

WMS Capability fetch failed.

Add ->

Transparent Layers

Move Up

Move Down

OK Cancel

Google Earth - Enter WMS Server URL

URL

http://ows.geobase.ca/wms/geobase_en?service=wms&request=GetCapabilities&version=1.1.1

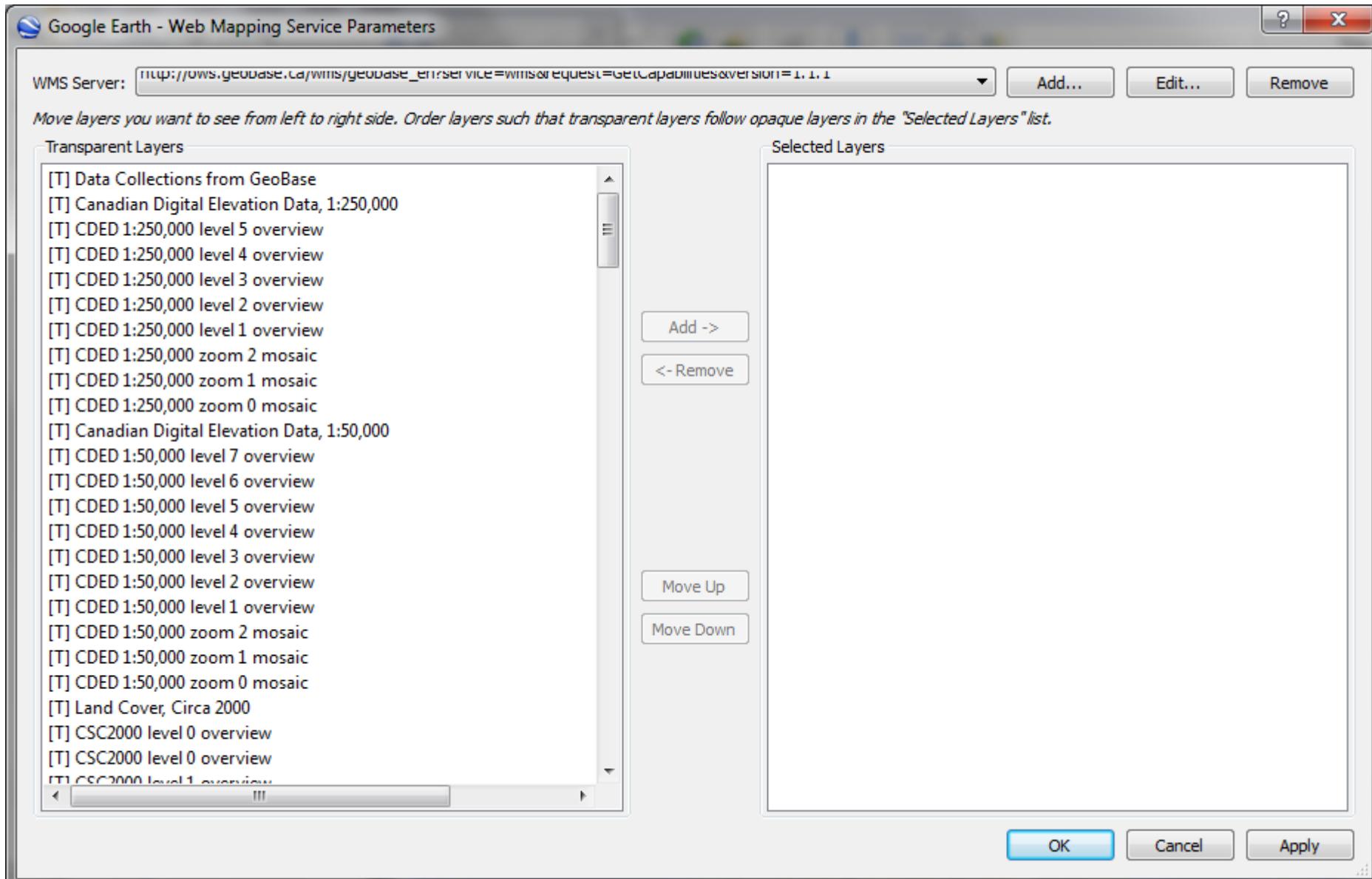
OK Cancel

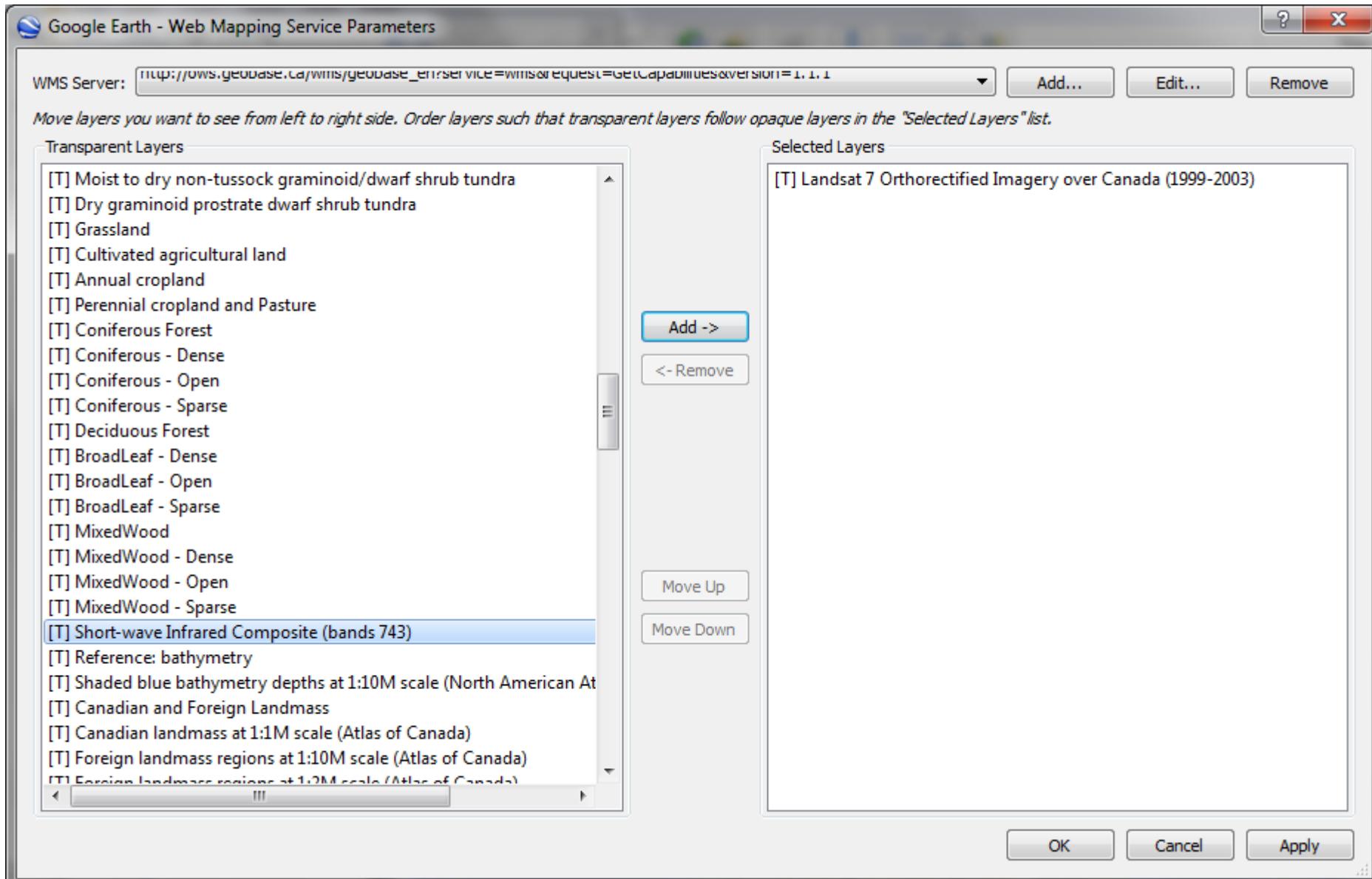
OK Cancel Apply

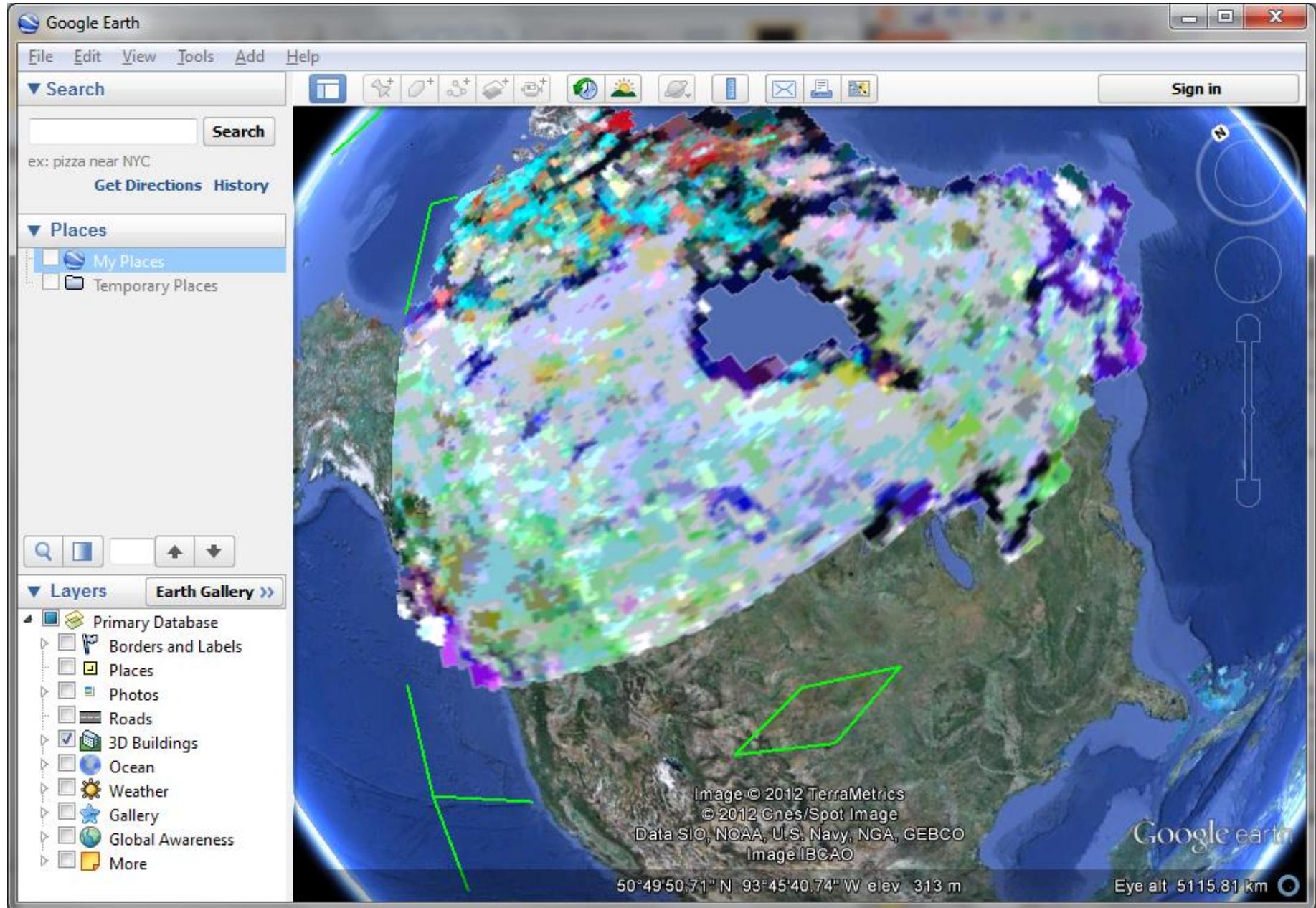
More

OK Cancel

5115.81 km







OGC Specifications

- Web Feature Service (WFS)
 - the actual **feature data** is returned to the client (in GML)
 - WMS (vs) WFS
 - WMS returns a map image
 - WFS returns geographic features (geometries and thematic data)

OGC Specifications

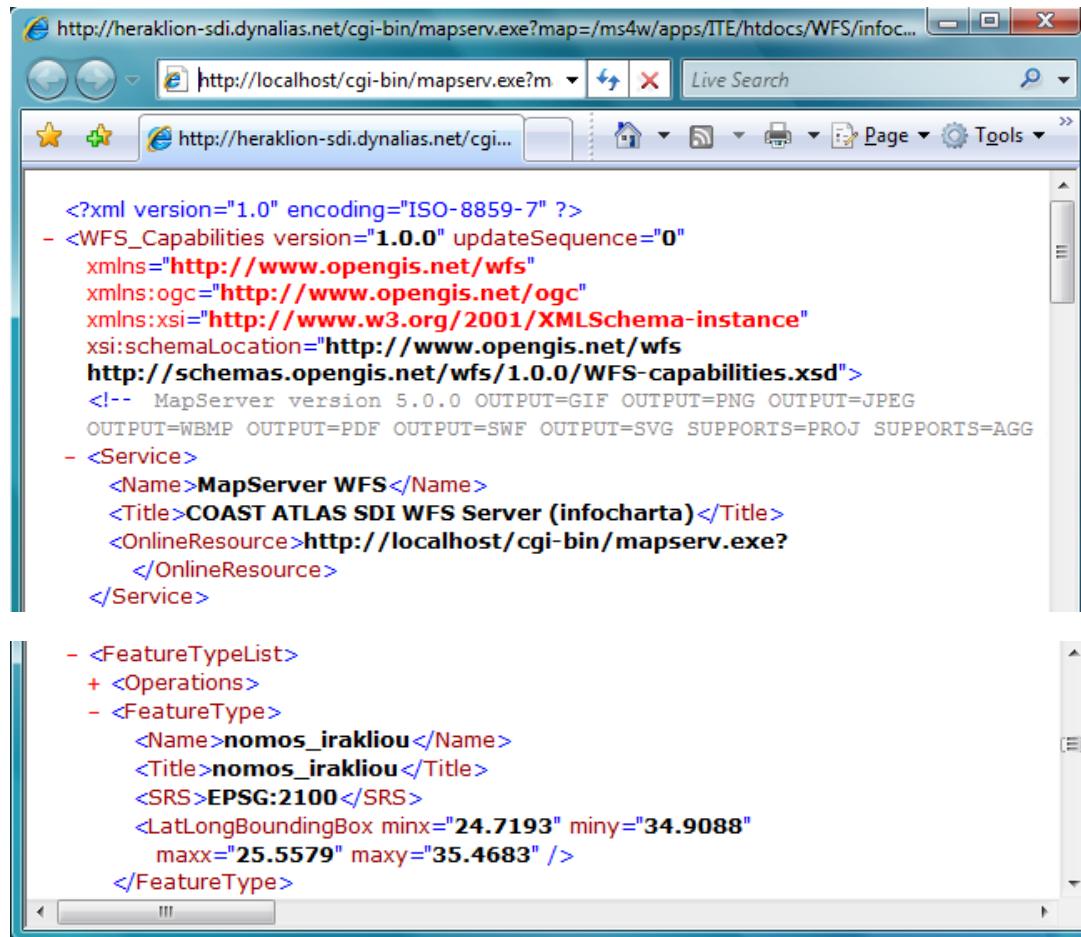
- Web Feature Service (WFS)

```
http://localhost/cgi-bin/mapserv.exe?  
map=/ms4w/apps/ITE/htdocs/WFS/infocharta.map&  
SERVICE=WFS&  
VERSION=1.0.0&  
REQUEST=GetCapabilities
```

– *What do you offer ???*

OGC Specifications

- Web Feature Service (WFS)



The screenshot shows a Microsoft Internet Explorer window displaying an XML document. The URL in the address bar is `http://heraklion-sdi.dynalias.net/cgi-bin/mapserv.exe?map=/ms4w/apps/ITE/htdocs/WFS/infocharta`. The XML content is a WFS Capabilities document:

```
<?xml version="1.0" encoding="ISO-8859-7" ?>
- <WFS_Capabilities version="1.0.0" updateSequence="0"
  xmlns="http://www.opengis.net/wfs"
  xmlns:ogc="http://www.opengis.net/ogc"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.opengis.net/wfs
    http://schemas.opengis.net/wfs/1.0.0/WFS-capabilities.xsd">
  <!-- MapServer version 5.0.0 OUTPUT=GIF OUTPUT=PNG OUTPUT=JPEG
  OUTPUT=WBMP OUTPUT=PDF OUTPUT=SWF OUTPUT=SVG SUPPORTS=PROJ SUPPORTS=AGG
  -->
- <Service>
  <Name>MapServer WFS</Name>
  <Title>COAST ATLAS SDI WFS Server (infocharta)</Title>
  <OnlineResource>http://localhost/cgi-bin/mapserv.exe?
    </OnlineResource>
</Service>

- <FeatureTypeList>
  + <Operations>
    - <FeatureType>
      <Name>nemos_irakliou</Name>
      <Title>nemos_irakliou</Title>
      <SRS>EPSG:2100</SRS>
      <LatLongBoundingBox minx="24.7193" miny="34.9088"
        maxx="25.5579" maxy="35.4683" />
    </FeatureType>
```

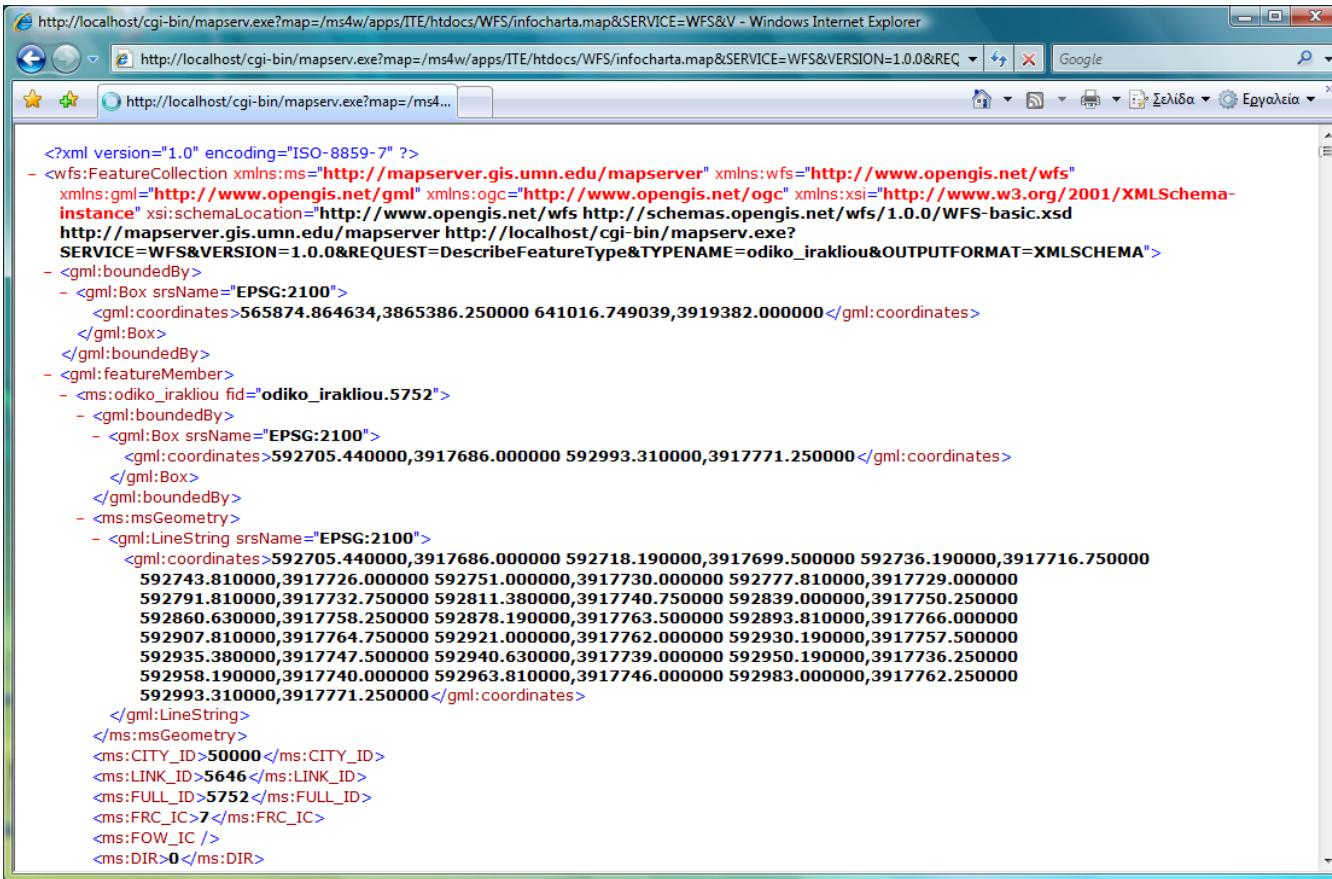
OGC Specifications

- The Web Feature Service (WFS)...
 - GetFeature request

```
http://localhost/cgi-bin/mapserv.exe?  
map=/ms4w/apps/ITE/htdocs/WFS/infocharta.map&  
SERVICE=WFS&VERSION=1.0.0&  
REQUEST=GetFeature&  
typename=odiko_irakliou (road network)
```

OGC Specifications

- The Web Feature Service (WFS)...
 - GetFeature request



The screenshot shows a Windows Internet Explorer window with the URL `http://localhost/cgi-bin/mapserv.exe?map=/ms4w/apps/ITE/htdocs/WFS/infocharta.map&SERVICE=WFS&V`. The page content displays an XML document representing a feature collection. The XML includes elements for feature members, each with a bounding box defined by a `gml:Box` element and a geometry defined by a `gml:LineString` element.

```
<?xml version="1.0" encoding="ISO-8859-7" ?>
- <wfs:FeatureCollection xmlns:ms="http://mapserver.gis.umn.edu/mapserver" xmlns:wfs="http://www.opengis.net/wfs"
  xmlns:gml="http://www.opengis.net/gml" xmlns:ogc="http://www.opengis.net/ogc" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.opengis.net/wfs http://schemas.opengis.net/wfs/1.0.0/WFS-basic.xsd
  http://mapserver.gis.umn.edu/mapserver http://localhost/cgi-bin/mapserv.exe?
  SERVICE=WFS&VERSION=1.0.0&REQUEST=DescribeFeatureType&TYPENAME=odiko_irakliou&OUTPUTFORMAT=XMLSCHEMA">
- <gml:boundedBy>
- <gml:Box srsName="EPSG:2100">
  <gml:coordinates>565874.864634,3865386.250000 641016.749039,3919382.000000</gml:coordinates>
</gml:Box>
</gml:boundedBy>
- <gml:featureMember>
- <ms:odiko_irakliou fid="odiko_irakliou.5752">
- <gml:boundedBy>
- <gml:Box srsName="EPSG:2100">
  <gml:coordinates>592705.440000,3917686.000000 592993.310000,3917771.250000</gml:coordinates>
</gml:Box>
</gml:boundedBy>
- <ms:msGeometry>
- <gml:LineString srsName="EPSG:2100">
  <gml:coordinates>592705.440000,3917686.000000 592718.190000,3917699.500000 592736.190000,3917716.750000
  592743.810000,3917726.000000 592751.000000,3917730.000000 592777.810000,3917729.000000
  592791.810000,3917732.750000 592811.380000,3917740.750000 592839.000000,3917750.250000
  592860.630000,3917758.250000 592878.190000,3917763.500000 592893.810000,3917766.000000
  592907.810000,3917764.750000 592921.000000,3917762.000000 592930.190000,3917757.500000
  592935.380000,3917747.500000 592940.630000,3917739.000000 592950.190000,3917736.250000
  592958.190000,3917740.000000 592963.810000,3917746.000000 592983.000000,3917762.250000
  592993.310000,3917771.250000</gml:coordinates>
</gml:LineString>
</ms:msGeometry>
<ms:CITY_ID>50000</ms:CITY_ID>
<ms:LINK_ID>5646</ms:LINK_ID>
<ms:FULL_ID>5752</ms:FULL_ID>
<ms:FRC_IC>7</ms:FRC_IC>
<ms:FOW_IC />
<ms:DIR>0</ms:DIR>
```

[http://map.ns.ec.gc.ca/envdat/map.aspx
?service=WFS
&version=1.0.0
&request=GetCapabilities](http://map.ns.ec.gc.ca/envdat/map.aspx?service=WFS&version=1.0.0&request=GetCapabilities)



The screenshot shows a Microsoft Internet Explorer window displaying the WFS GetCapabilities XML response. The XML content includes the OGC WFS schema location, version information, and details about the service, such as its name, title, abstract, keywords, and online resource.

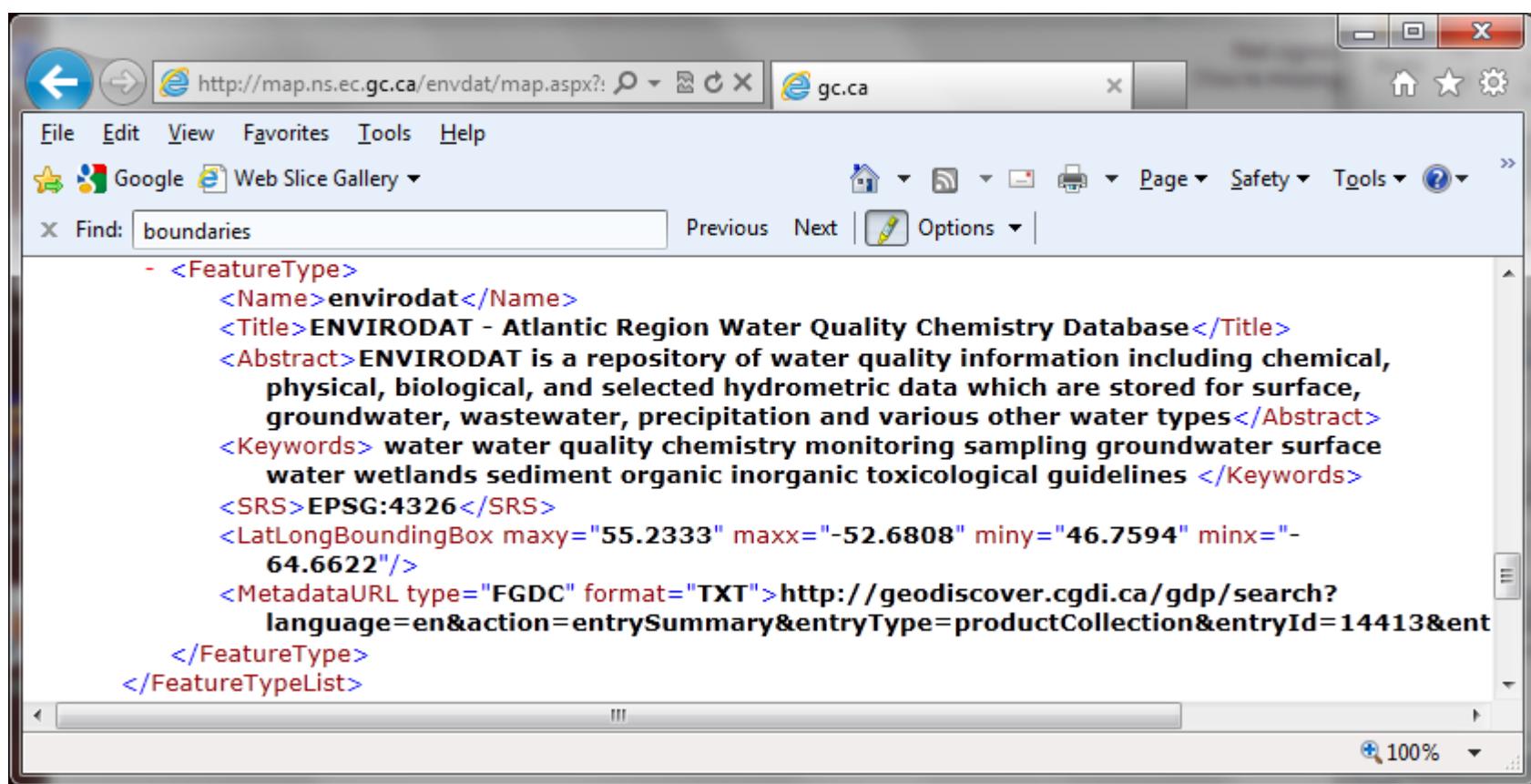
```
<?xml version="1.0" encoding="ISO-8859-1"?>
- <WFS_Capabilities version="1.0.0" xsi:schemaLocation="http://www.opengis.net/wfs
http://schemas.opengis.net/wfs/1.0.0/WFS-capabilities.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ogc="http://www.opengis.net/ogc" xmlns="http://www.opengis.net/wfs"
updateSequence="0">
    <!-- MapServer version 4.8.3 OUTPUT=GIF OUTPUT=PNG OUTPUT=JPEG OUTPUT=WBMP
OUTPUT=PDF OUTPUT=SWF OUTPUT=SVG SUPPORTS=PROJ SUPPORTS=FREETYPE
SUPPORTS=WMS_SERVER SUPPORTS=WMS_CLIENT SUPPORTS=WFS_SERVER
SUPPORTS=WFS_CLIENT SUPPORTS=WCS_SERVER SUPPORTS=THREADS SUPPORTS=GEOS
INPUT=JPEG INPUT=POSTGIS INPUT=OGRE INPUT=GDAL INPUT=SHAPEFILE DEBUG=MSDEBUG -->
- <Service>
    <Name>MapServer WFS</Name>
    <Title>Newfoundland and Labrador Water Quality Stations</Title>
    <Abstract>ENVIRODAT is a repository of water quality information including chemical,
physical, biological, and selected hydrometric data which are stored for surface,
groundwater, wastewater, precipitation and various other water types</Abstract>
    <Keywords> water water quality chemistry monitoring sampling groundwater surface water
wetlands sediment organic inorganic toxicological guidelines </Keywords>
    <OnlineResource>http://map.ns.ec.gc.ca/envirodat</OnlineResource>
    <Fees>none</Fees>
    <AccessConstraints>none</AccessConstraints>
</Service>
- ....
```

<http://map.ns.ec.gc.ca/envdat/map.aspx?service=WFS&version=1.0.0&request=GetCapabilities>

This service is unavailable

[http://map.ns.ec.gc.ca/envdat/map.aspx
?service=WFS
&version=1.0.0
&request=GetCapabilities](http://map.ns.ec.gc.ca/envdat/map.aspx?service=WFS&version=1.0.0&request=GetCapabilities)

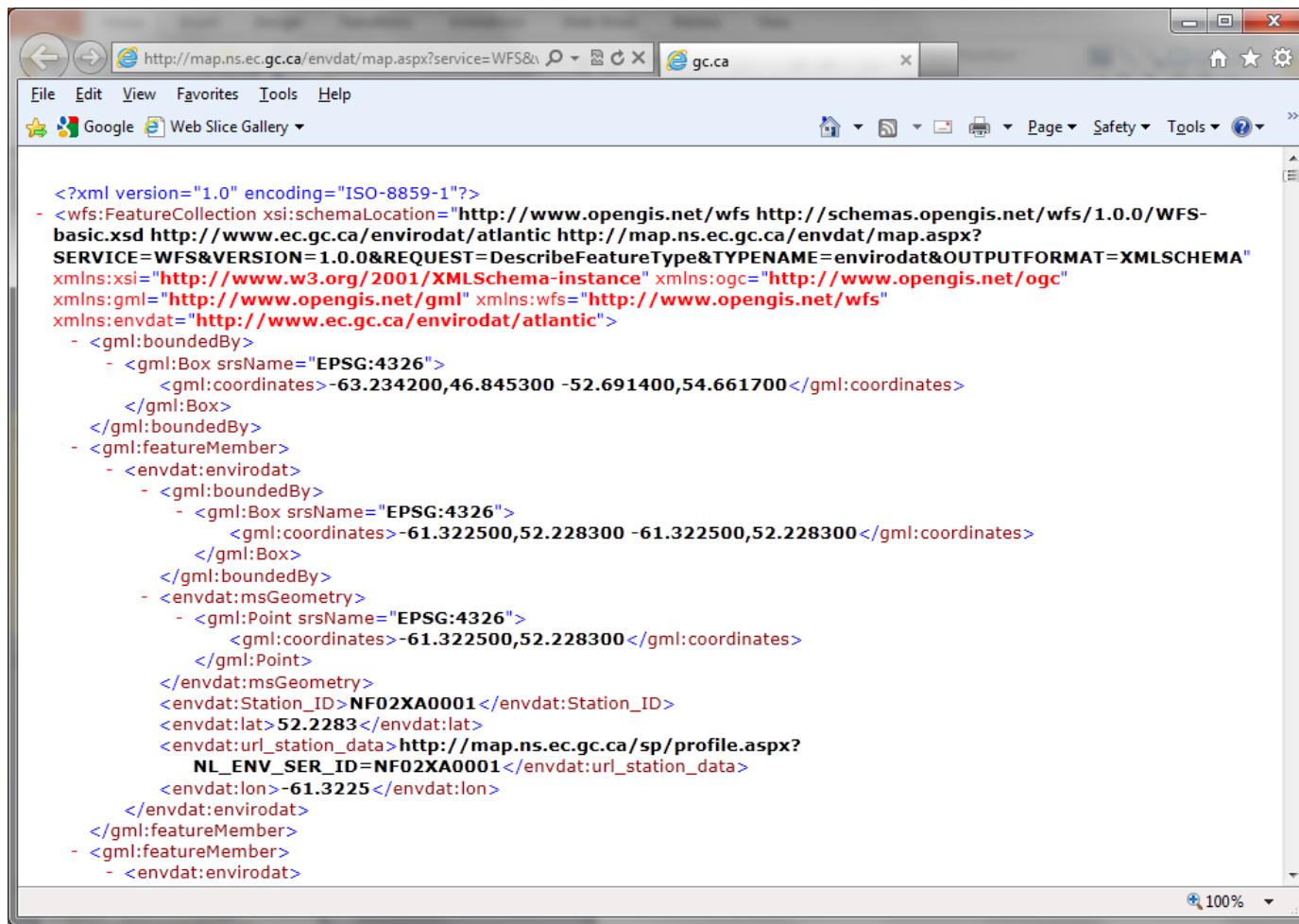
This service is unavailable



<http://map.ns.ec.gc.ca/envdat/map.aspx?service=WFS&version=1.0.0&request=GetCapabilities>

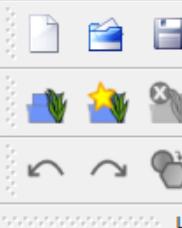
[http://map.ns.ec.gc.ca/envdat/map.aspx
?service=WFS
&version=1.0.0
&request=GetFeature
&typename=envirodat](http://map.ns.ec.gc.ca/envdat/map.aspx?service=WFS&version=1.0.0&request=GetFeature&typename=envirodat)

This service is unavailable

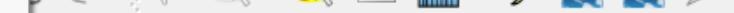


<http://map.ns.ec.gc.ca/envdat/map.aspx?service=WFS&version=1.0.0&request=GetFeature&typename=envirodat>

File Edit View Layer Settings Plugins Raster Database Vector Help



- New
- Add Vector Layer... Ctrl+Shift+V
- Add Raster Layer... Ctrl+Shift+R
- Add PostGIS Layer... Ctrl+Shift+D
- Add Spatialite Layer... Ctrl+Shift+L
- Add WMS Layer... Ctrl+Shift+W
- Add Delimited Text Layer
- Add Oracle GeoRaster Layer...
- Add WFS layer...**
- Open Attribute Table
- Save edits
- Toggle editing
- Save as...
- Save Selection as vector file...
- Remove Layer(s) Ctrl+D
- Set CRS of Layer(s) Ctrl+Shift+C
- Set project CRS from layer
- Properties...
- Query...
- Labeling**
- Add to Overview Ctrl+Shift+O
- Add All to Overview
- Remove All From Overview**
- Show All Layers Ctrl+Shift+U
- Hide All Layers Ctrl+Shift+H



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Coordinate:

-66.7731,45.9889

Scale 1:54254

Render

EPSG:4326



File Edit View

Layer Settings Plugins Raster Database Vector Help

New

Add Vector Layer...

Ctrl+Shift+V

Add Raster Layer...

Ctrl+Shift+R

Add PostGIS Layer...

Ctrl+Shift+D

Add Spatialite Layer...

Ctrl+Shift+L

Add WMS Layer...

Ctrl+Shift+W

Add Delimited Text...

Add Oracle GeoR...

Add WFS layer...

Open Attribute Ta...

Save edits

Toggle editing

Save as...

Save Selection as

Remove Layer(s)

Set CRS of Layer(s)

Set project CRS fr...

Properties...

Query...

Labeling

Add to Overview

Add All to Overvi...

Remove All From

Show All Layers

Hide All Layers

Ctrl+Shift+H



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Create a new WFS connection

Connection details

Name URL

If the service requires basic authentication, enter a user name and optional password

User name Password Ignore GetMap URI reported in capabilities Ignore GetFeatureInfo URI reported in capabilities

OK

Cancel

Help



Coordinate:

-66.7731,45.9889

Scale 1:54254



Render

EPSG:4326



File Edit View Layer Settings Plugins Raster Database Vector Help



New
Add Vect...
Add Rast...
Add Pos...
Add Spa...
Add WM...
Add Del...
Add Ora...
Add WP...
Open At...
Save edit...
Toggle e...
Save as...
Save Sel...
Remove...
Set CRS...
Set proj...
Properties...
Query...
Labeling...
Add to C...
Add All t...
Remove...
Show Al...
Hide All...

Add WFS Layer from a Server

Server connections

Newfoundland Water Quality

Connect New Edit Delete Load Save

Title	Name	Abstract
ENVIRODAT...	envirodat	ENVIRODAT is a repository of water quality information including ...

Coordinate reference system

EPSG:4326 Change ...

Only request features overlapping the current view extent

OK Cancel Help

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Coordinate:

-66.7731,45.9889

Scale 1:54254



Render

EPSG:4326



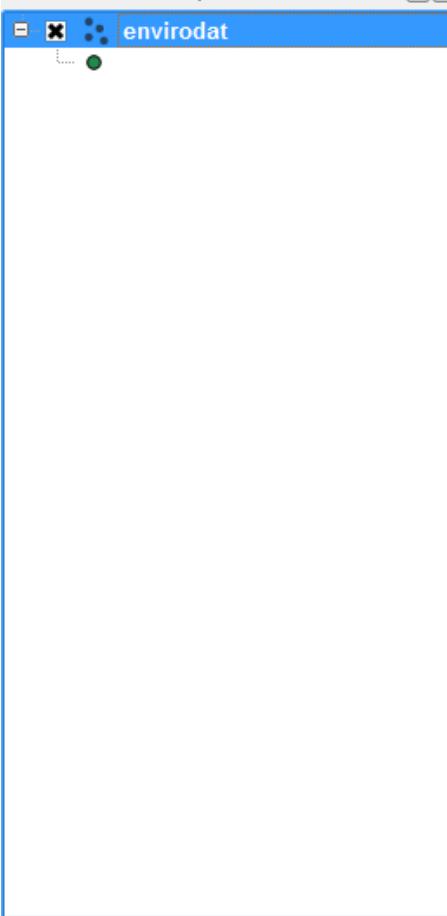
Quantum GIS 1.7.4-Wroclaw

- □ X

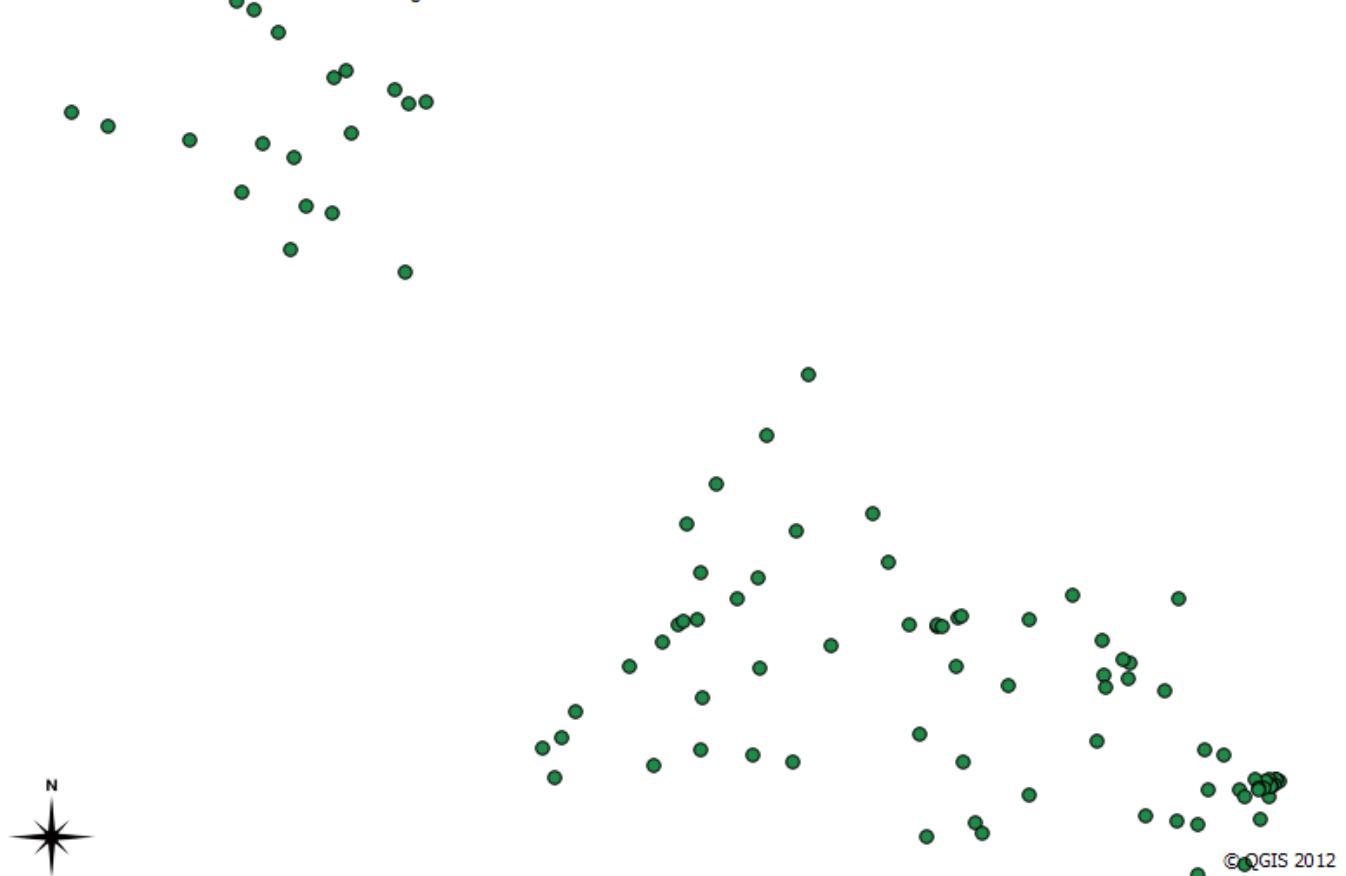
File Edit View Layer Settings Plugins Raster Database Vector Help



Layers



0 3 degrees



-63.89,46.65 : -52.04,54.86



Coordinate:

-56.79,54.86

Scale

1:2786565



Render

EPSG:4326



Quantum GIS 1.7.4-Wroclaw

- □ X

File Edit View Layer Settings Plugins Raster Database Vector Help



Layers

 envirodat

0 3 degrees



Attribute table - envirodat :: 0 / 106 feature(s) selected

	Station_ID	lat	url_station_data	lon
0	NF02XA0001	52.2283	http://map.ns.e...	-61.3225
1	NF02XA0029	52.0328	http://map.ns.e...	-60.3111
2	NF02YA0001	51.1381	http://map.ns.e...	-56.7917
3	NF02YC0001	50.6072	http://map.ns.e...	-57.1506
4	NF02YE0004	50.1817	http://map.ns.e...	-57.6036
5	NF02YE0005	49.8303	http://map.ns.e...	-57.8564
6	NF02YG0001	49.7694	http://map.ns.e...	-56.9042
7	NF02YH0018	49.4019	http://map.ns.e...	-57.7303
8	NF02YJ0004	48.7975	http://map.ns.e...	-58.0619
9	NF02YJ0006	48.5756	http://map.ns.e...	-58.3633
10	NF02YK0022	49.1661	http://map.ns.e...	-57.4156
11	NF02YL0011	49.3483	http://map.ns.e...	-57.2353
12	NF02YL0012	48.9836	http://map.ns.e...	-57.7611
13	NF02YL0013	48.9444	http://map.ns.e...	-57.9367
14	NF02YL0029	48.9744	http://map.ns.e...	-57.8839

 Show selected only Search selected only Case sensitive

Advanced search

?

-63.89,46.65 :

 Render

EPSG:4326



© QGIS 2012

File Edit View Layer Settings Plugins Raster Database Vector Help



Layers

envirodat

0 3 degrees



Attribute	Value
0	envirodat
(Actions)	
(Derived)	
Station_ID	NF02XA0029
lat	52.0328
lon	-60.3111
url_station_data	http://map.ns.ec.gc.ca/sp/profile.aspx?NL_ENV_SER_ID=NF02XA0029

Close

Help



Coordinate:

-60.27,52.00

Scale 1:2786565

Render

EPSG:4326



Environment Canada X

www.canal.gov.nl.ca/sp/profile.asp?nl_env_ser_id=NF02XA0029&envirodat=NF02XA0029 星星图标

Μετάφραση Google in.gr - ΕΛΛΑΣΑ - K... CBC.ca - Canadian ... Home - The Globe a... QueryTask with que...

Environment and Conservation
Government of Newfoundland and Labrador - Canada

Newfoundland Labrador

CANAL

Station Profile

View Bacteria

View WQI

View Fact Sheet

Real Time Data

Environment Canada's Water Quality Database

Extract Data

View Chemistry

Information for station: NF02XA0029

Description:	Lac Fourmont
Latitude:	62.0328
Longitude:	-80.3111

Additional Information	Link
Extract Data	http://map.ns.ec.gc.ca/envirodat/root/main/en/extraction_page_e.asp?stations=NF02XA0029
Metadata XML	http://map.ns.ec.gc.ca/envirodat/xml/NF02XA0029.xml
Station Profile	http://www.canal.gov.nl.ca/canal/root/main/station_details_e.asp?envirodat=NF02XA0029
View Chemistry	http://map.ns.ec.gc.ca/envirodat/root/main/en/station_list_e.asp?stations=NF02XA0029
View WQI	http://www.canal.gov.nl.ca/canal/root/main/wqi_plot_e.asp?envirodat=NF02XA0029

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Environment Canada

www.canal.gov.nl.ca/sp/profile.asp?nl_env_ser_id=NF02XA0029&envirodat=NF02XA00

Μετάφραση Google in.gr - ΕΛΛΑΣΑ - K... CBC.ca - Canadian ... Home - The Globe a... QueryTask with que...

Environment and Conservation

Government of Newfoundland and Labrador - Canada

Newfoundland Labrador

CANAL

Information for station: NF02XA0029

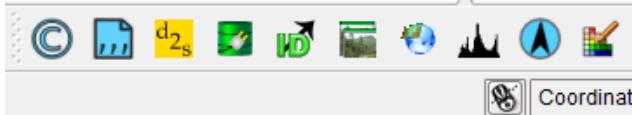
Description:	Lac des Bois
Latitude:	52.0000
Longitude:	-80.0000

Additional Information

- Extract Data
- Metadata XML
- Station Profile
- View Chemistry
- View WQI

Water Quality Index CCME 1.0 (index score)

Category	Rank
Overall	Fair
Drinking	Marginal
Aquatic	Fair



Environment Canada

www.canal.gov.nl.ca/canal/root/main/wqi_plot_e.asp?envirodat=NF02XA0029

Μετάφραση Google in.gr - ΕΛΛΑΣΑ - K... CBC.ca - Canadian ... Home - The Globe a... QueryTask with que...

Water Quality Index CCME 1.0 (index score)

Category	Rank
Overall	Fair
Drinking	Marginal
Aquatic	Fair

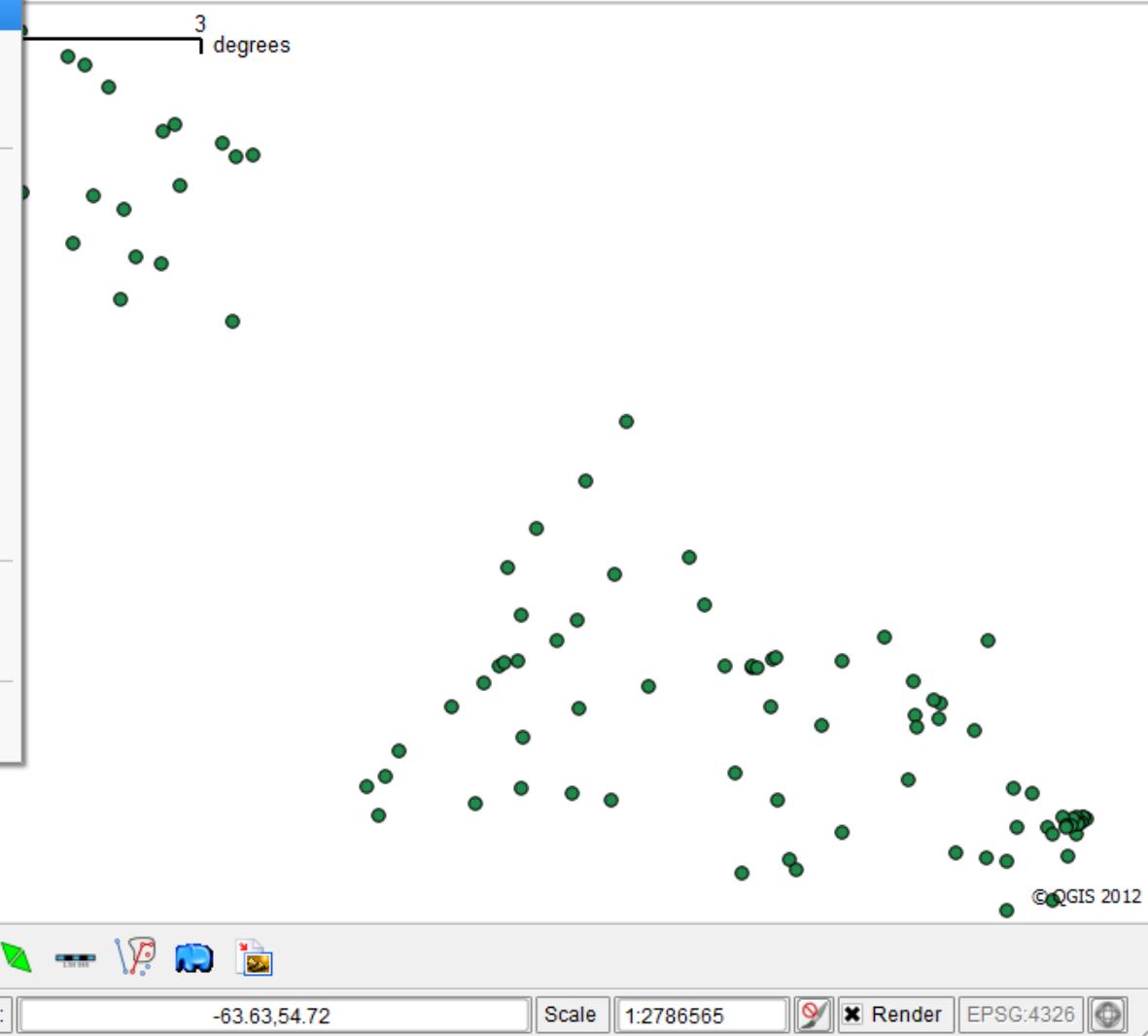
Overall Rank: Fair

Drinking Rank: Marginal

Aquatic Rank: Fair

File Edit View Layer Settings Plugins Raster Database Vector Help

- New
- Add Vector Layer... Ctrl+Shift+V
- Add Raster Layer... Ctrl+Shift+R
- Add PostGIS Layer... Ctrl+Shift+D
- Add Spatialite Layer... Ctrl+Shift+L
- Add WMS Layer... Ctrl+Shift+W
- Add Delimited Text Layer
- Add Oracle GeoRaster Layer...
- Add WFS layer...
- Open Attribute Table
- Save edits
- Toggle editing
- Save as...
- Save Selection as vector file...
- Remove Layer(s) Ctrl+D
- Set CRS of Layer(s) Ctrl+Shift+C
- Set project CRS from layer
- Properties...
- Query...
- Labeling
- Add to Overview Ctrl+Shift+O
- Add All to Overview
- Remove All From Overview
- Show All Layers Ctrl+Shift+U
- Hide All Layers Ctrl+Shift+H



Add Layer(s) from a Server

Layers Layer Order Tilesets Server Search

GeoBase

Connect New Edit Delete Load Save Add default servers

ID	Name	Title	Abstract
0	WMS-GeoBase	Data Collection...	The data available are: Administrative Boundaries (Aboriginal Lands, Canadian Geopolitica...
+ 1	elevation:cded250k	Canadian Digit...	The Canadian Digital Elevation Data (CDED) consists of an ordered array of ground elevati...
+ 10	elevation:cded50k	Canadian Digit...	The Canadian Digital Elevation Data (CDED) consists of an ordered array of ground elevati...
+ 21	landcover:csc2000	Land Cover, Cir...	Land Cover information is the result of vectorization of raster thematic data originating fr...
+ 73	imagery:landsat7	Landsat 7 Ortho...	The orthoimage data set is a complete set of cloud-free (less than 10%) orthoimages cove...
+ 75	reference:bathymetry	Reference: bath...	Shows the depths (bathymetry) of the waters in and around Canada.
+ 77	reference:landmass	Canadian and F...	Canadian and Foreign landmass at 1:1M scale (Atlas of Canada)
+ 82	reference:boundaries	Geopolitical Bo...	The Atlas of Canada 1,000,000 National Frameworks Data, Administrative Boundaries cons...
+ 85	reference:nts	Index of the Nat...	Topographic maps produced by Natural Resources Canada conform to the National Topo...
+ 92	reference:hydro	Hydrography	This group covers drainage (coastlines, rivers, lakes) for the Canadian landmass.
+ 101	reference:roads	Road Network	This group covers the road network (primary and secondary highways, selected ferry rout...
+ 105	reference:placenames	Populated place...	Populated Places data set shows a selection of named populated places suitable for use at ...
+ 110	boundaries:geopolitical	Canadian Geop...	Canadian Geopolitical Boundaries contains the international, inter-provincial and territoria...
+ 114	boundaries:aboriginal	Aboriginal Lands	Aboriginal Lands including Indian Reserves, Land Claim settlement and other Indian Lands.
+ 119	boundaries:municipal	Municipal Boun...	Municipal Boundaries data product consists of a series of municipal features, each define...
+ 124	nrr:roadnetwork	NRN Network	The National Road Network (NRN) product contains quality geospatial data (current, accu...
+ 129	nrr:streetnames	NRN Street Na...	Street Names of National Road Network
+ 134	nrr:addressrange	NRN Address R...	Address Ranges of National Road Network
+ 140	nhn:hydrography	NHN Hydrogra...	The National Hydro Network (NHN) focuses on providing a quality geometric description ...
+ 159	nhn:network	NHN Network	A network flowing through naturally occurring or constructed bodies of water.
+ 168	nhn:drainageareas	Boundaries of D...	Canadian territory subdivision used to manage and distribute NHN data. NHN Work Units...
+ 176	nhn:toponyms	NHN Toponyms	A feature delineating the extent, in whole or in part, of a toponymic phenomenon for whi...

Image encoding

PNG PNG24 JPEG GIF TIFF

Coordinate Reference System (66 available)

Layer name: reference:placenames/boundaries:geopolitical

WGS 84

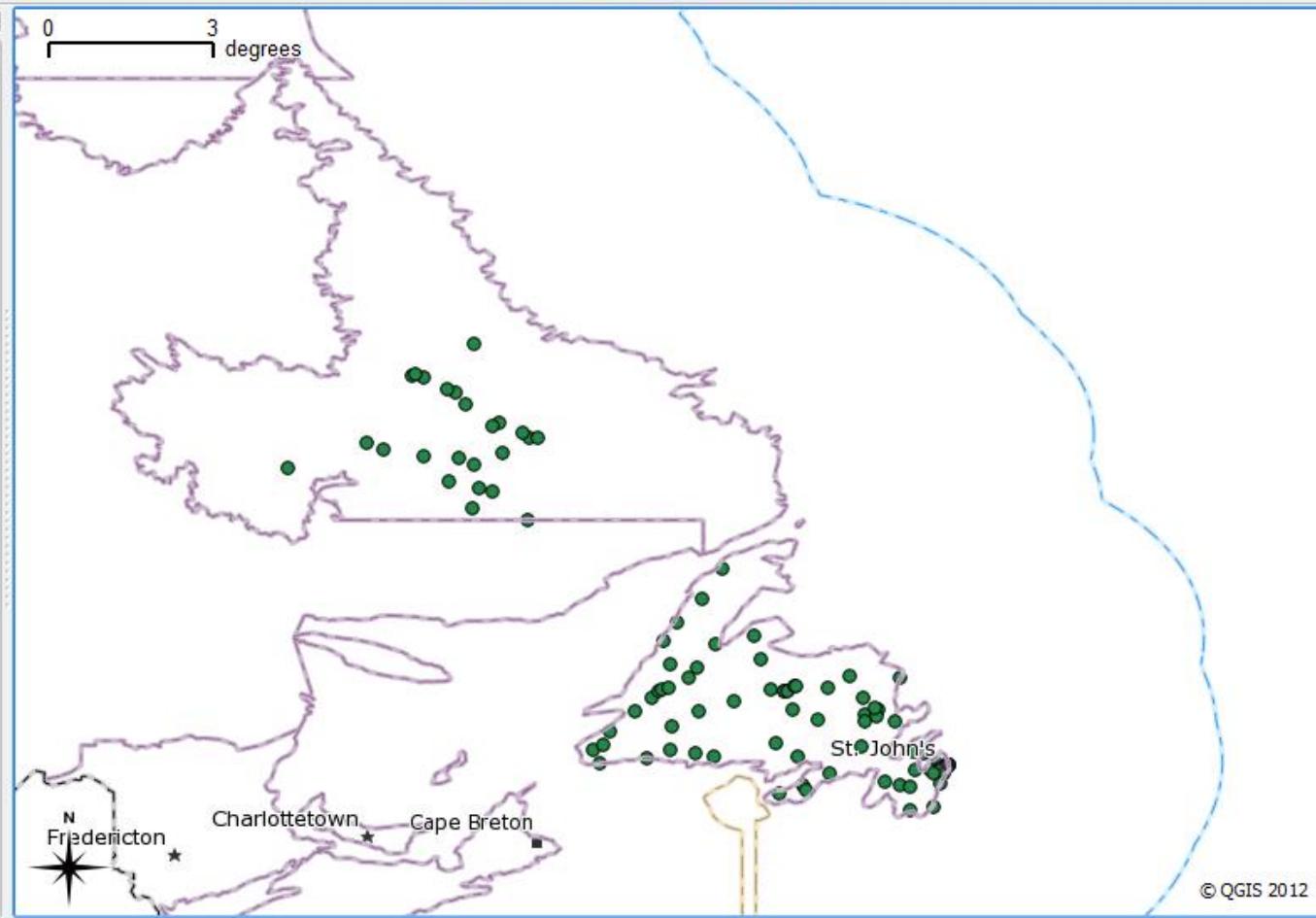
Add Close Help

2 Layer(s) selected

File Edit View Layer Settings Plugins Raster Database Vector Help



- Layers
- reference:placenames/bou...
 - envirodat



Coordinate:

-68.50,51.21

Scale 1:5247110

Render

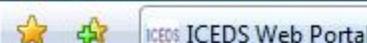
EPSG:4326

Fredericton SDI

- WMS and WFS Server

<http://gaia.gge.unb.ca:8080/gge5403/labs/5/WMSService.html>

<http://gaia.gge.unb.ca:8080/gge5403/labs/5/WFSService.html>



ICEDS - Integrated CEOS European Data Server

Welcome to the Integrated CEOS European Data Server (ICEDS)

A demonstration service provided by University College London and ESYS plc, funded by the British National Space Centre, serving global and continental-scale, full-resolution geographic information, particularly for Europe and Africa.

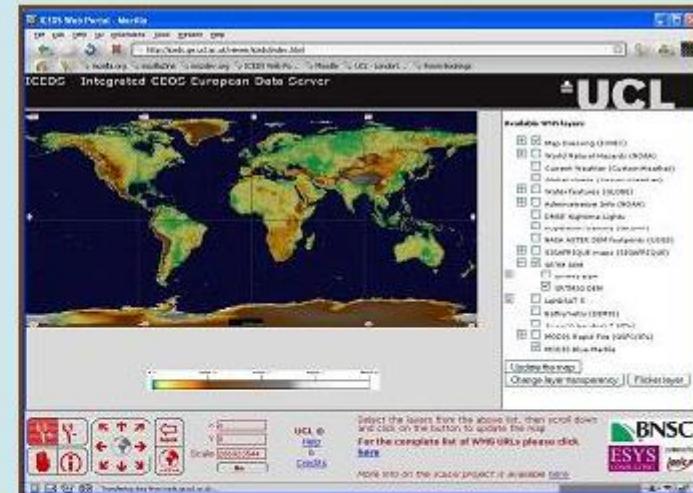
Introduction

ESYS plc and the Department of Geomatic Engineering at University College London (UCL) have been funded by the British National Space Centre (BNSC) to develop a web GIS service to serve global geographic data derived from remote sensing datasets. Funding was provided as part of the BNSC International Co-operation Programme 2 (ICP-2).

Particular aims of the project have been to:

1. use Open Geospatial Consortium (OGC, formerly OpenGIS Consortium) technologies for map and data serving;
2. serve datasets for Europe and Africa, particularly Landsat TM and Shuttle Radar Topography Mission (SRTM) digital elevation model (DEM) data;
3. provide a website giving access to the served data;
4. provide software scripts, etc., and a document reporting the data processing and software set-up methods developed during the project.

ICEDS Web GIS service



There are three methods for accessing the ICEDS service:

1. through a Web interface, allowing you to browse the datasets held on ICEDS and served through Web Map Services (WMS, OGC map portability services);

ICEDS Server

- RAID Server
 - 1.7TB capacity; dual Athlon MP 2400+ processors; 1 Gb of RAM
- Mandrake Linux 9
- Apache Web Server
 - Tomcat servlet container
- UMN MapServer (ver 4.4.1) (OSGeo)
- Ionic RedSpider web mapping s/w
 - Commercial package

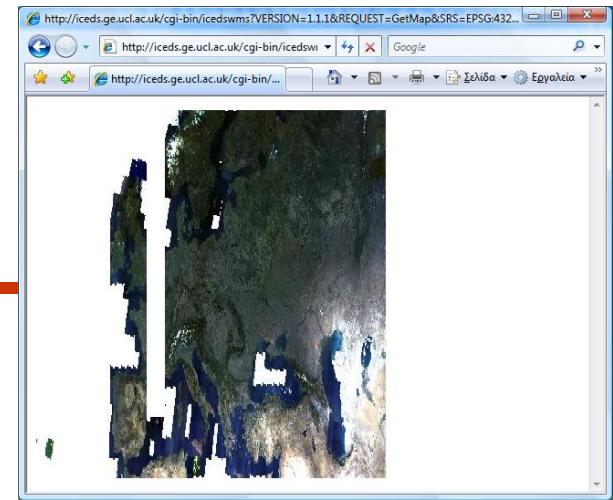
ICEDS Server

- Purely OGC-based services
 - Hence separation of client and server(s)
- ICEDS client ...
 - based on Ionic's GAF client
 - HTML + Javascript only
- Good browser compatibility...
 - PC & Mac IE, Mozilla/Firefox/Seamonkey, Mac Safari

ICEDS Server

- Typical WMS request

```
http://iceds.ge.ucl.ac.uk/cgi-bin/icedswms?  
VERSION=1.1.1&  
REQUEST=GetMap&  
SRS=EPSG:4326&  
BBOX=-30,35,112.86,65&  
WIDTH=600&HEIGHT=420&  
LAYERS=LANDSAT5&  
FORMAT=image/jpeg&BGCOLOR=0xffffffff&  
TRANSPARENT=TRUE&  
EXCEPTIONS=application/vnd.ogc.se_inimage
```

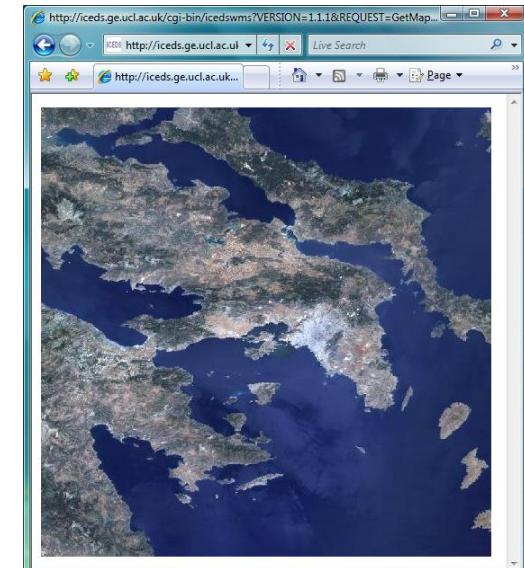


*This service is
unavailable*

ICEDS

http://iceds.ge.ucl.ac.uk/cgi-bin/icedswms?
version=1.1.1&
request=GetMap&
srs=EPSG:4326&
bbox=22.5,37,24.5,39&
width=600&height=420&
layers=LANDSAT5&
format=image/jpeg&BGCOLOR=0xffffffff&
transparent=TRUE&
exceptions=application/vnd.ogc.se_inimage

*This service is
unavailable*



ICEDS Web Portal - Windows Internet Explorer

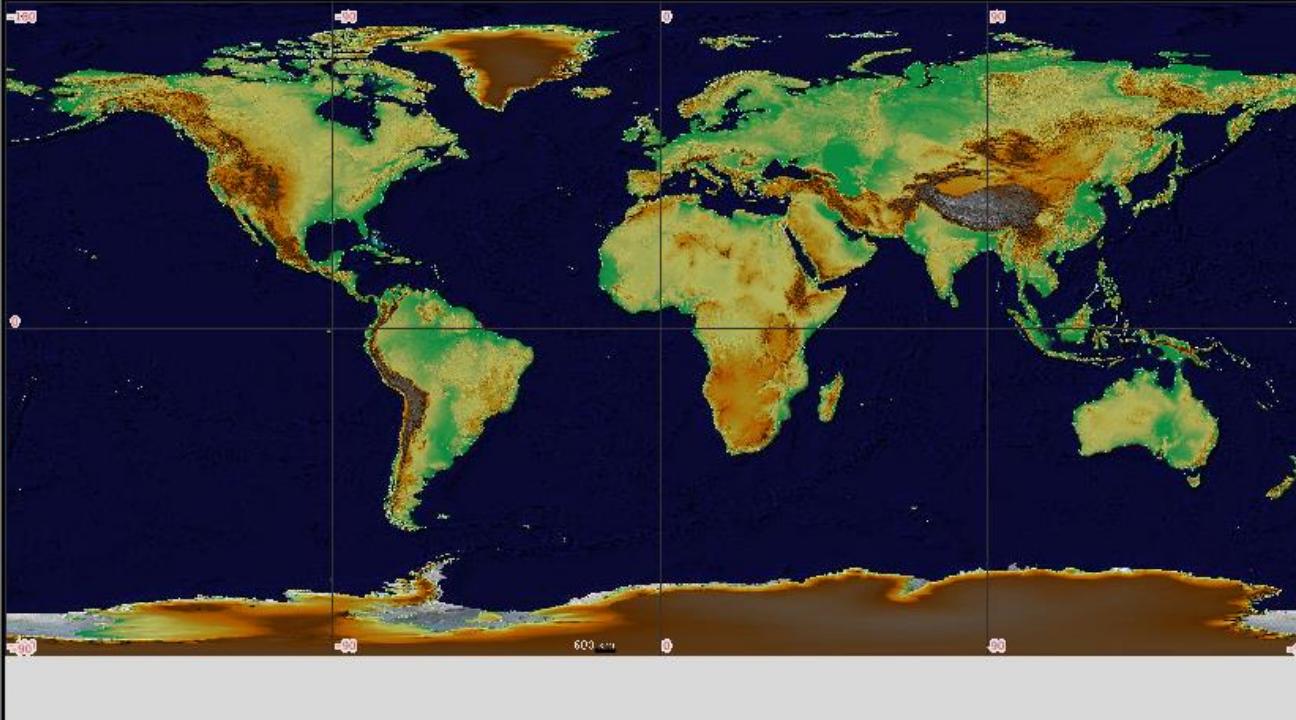
ICEDS http://iceds.ge.ucl.ac.uk/viewer/iceds/index.html

Google Σελίδα Εργασία >>

ICEDS ICEDS Web Portal

ICEDS - Integrated CEOS European Data Server

UCL



Available WMS layers

- Map Dressing (IONIC)
- Current Weather (CustomWeather)
- Global clouds (CustomWeather)
- GOES satellite imagery (Iowa State Uni.)
- World Natural Hazards (NOAA)
- MODIS Rapid Fire (UMD FIRMS)
- Water features (GLOBE)
- Administrative Info (NOAA)
- SRTM water bodies mask
- DMSP Nighttime Lights
- USGS ASTER DEM footprints
- African geological maps (SIGAFRIQUE)
- ASTER 1 Three Gorges
- SRTM Version 3 sample
- Global Population of the World v3 (CIESIN)
- SRTM terrain
 - SRTM3 DEM Version 2
 - SRTM3 DEM Version 1
 - SRTM30 DEM
 - Bathymetry (DEMIS)
 - LANDSAT 5
- OpenStreet global imagery (TDL)

Select the layers from the above list, then scroll down and click on the button to update the map

For the complete list of WMS URLs please click [here](#)

More info on the ICEDS project is available [here](#)

X 0 Y 0 Scale 170863817 Go

UCL © Help, Credits and Feedback

back reset

Bathymetry (DEMIS) LANDSAT 5 OpenStreet global imagery (TDL)

BNSC
ESYS CONSULTING powered by ionic

ICEDS Web Portal - Windows Internet Explorer

ICEDS http://iceds.ge.ucl.ac.uk/viewer/iceds/index.html

ICEDS ICEDS Web Portal

ICEDS - Integrated CEOS European Data Server

UCL



Available WMS layers

- Map Dressing (IONIC)
- Current Weather (CustomWeather)
- Global clouds (CustomWeather)
- GOES satellite imagery (Iowa State Uni.)
- World Natural Hazards (NOAA)
- MODIS Rapid Fire (UMD FIRMS)
- Water features (GLOBE)
- Administrative Info (NOAA)
- SRTM water bodies mask
- DMSP Nighttime Lights
- USGS ASTER DEM footprints
- African geological maps (SIGAFRIQUE)
- ASTER 1 Three Gorges
- SRTM Version 3 sample
- Global Population of the World v3 (CIESIN)
- SRTM terrain
 - SRTM3 DEM Version 2
 - SRTM3 DEM Version 1
 - SRTM30 DEM
- Bathymetry (DEMIS)
- LANDSAT 5
- Oceanopt global imagery (1D)

Select the layers from the above list, then scroll down and click on the button to update the map

For the complete list of WMS URLs please click [here](#)

More info on the ICEDS project is available [here](#)

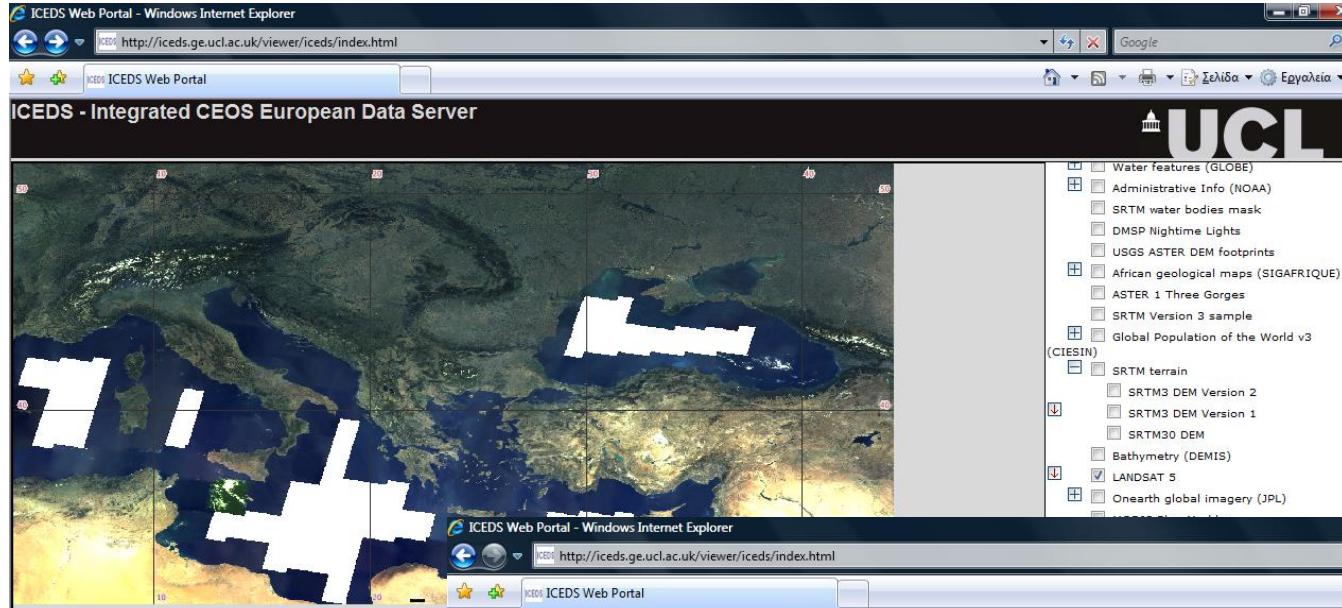
X 24.07
Y 37.51
Scale 12351601
Go

UCL ©
[Help](#), [Credits](#) and [Feedback](#)

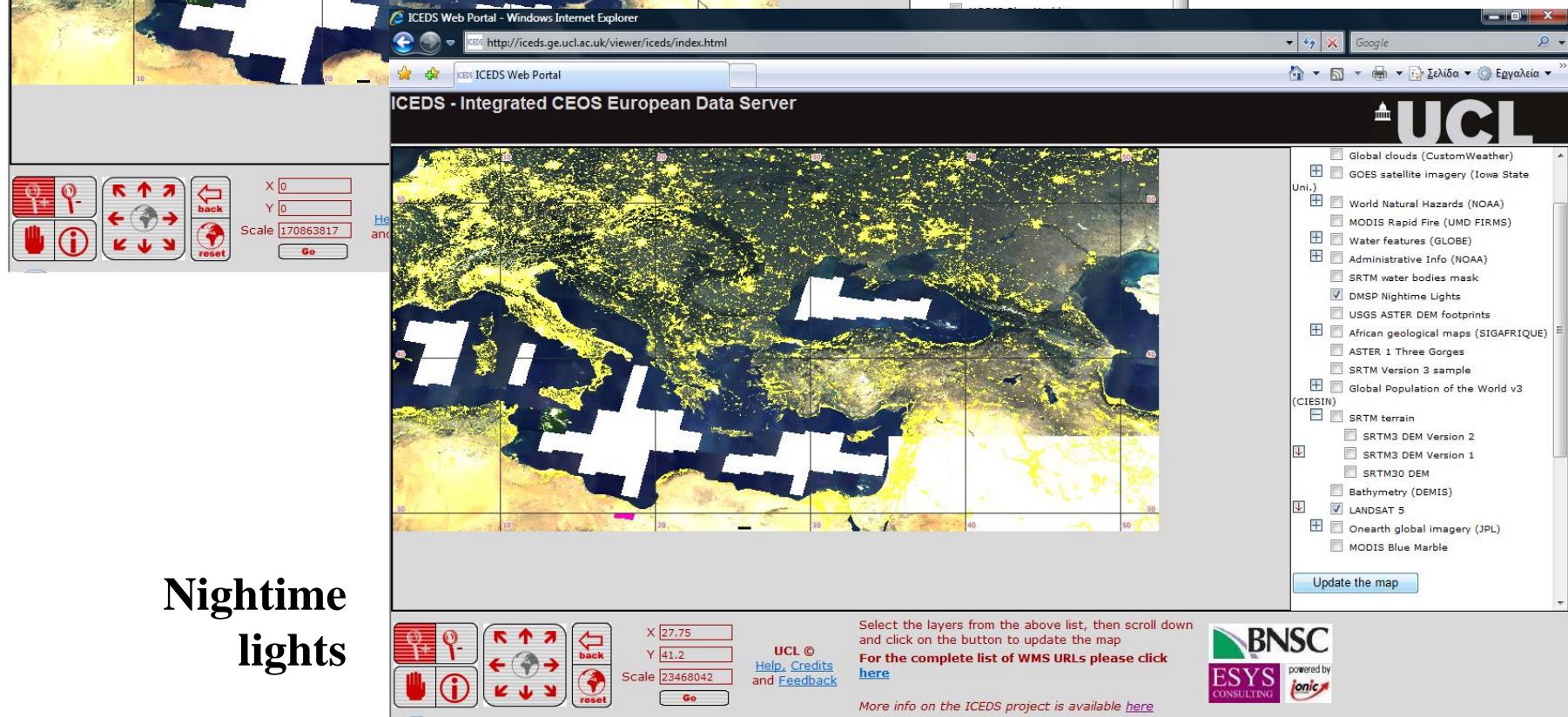
BNSC
ESYS CONSULTING powered by **ionic**

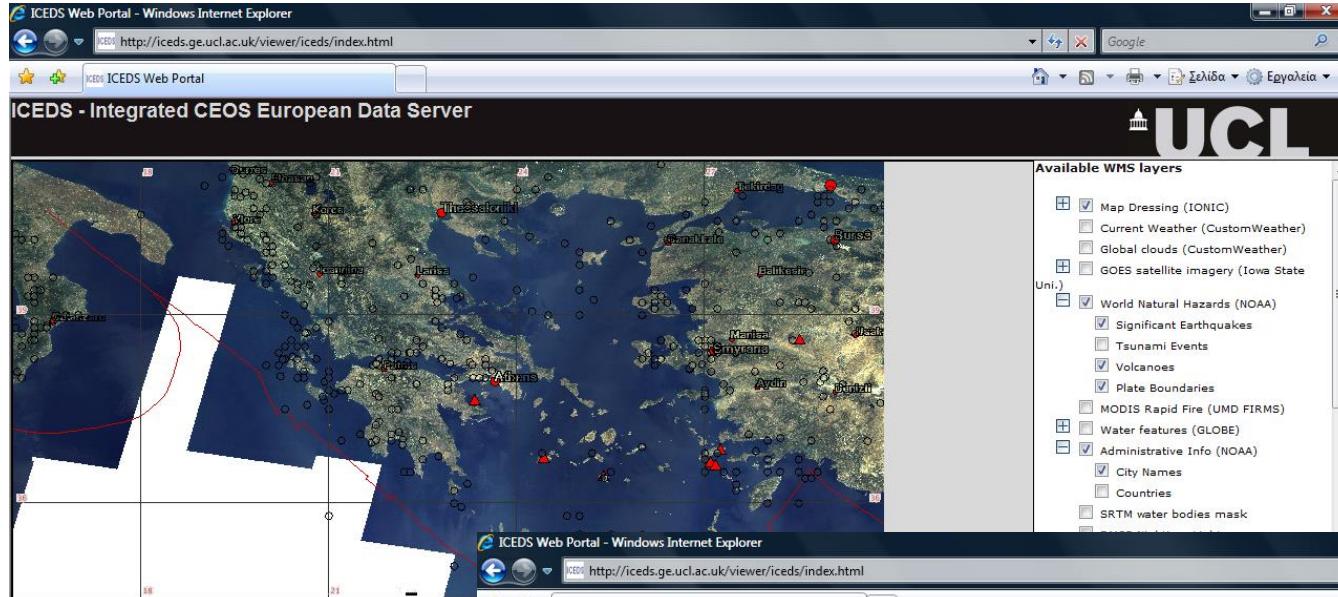
ICEDS Web Portal

Σελίδα Εργαλεία >



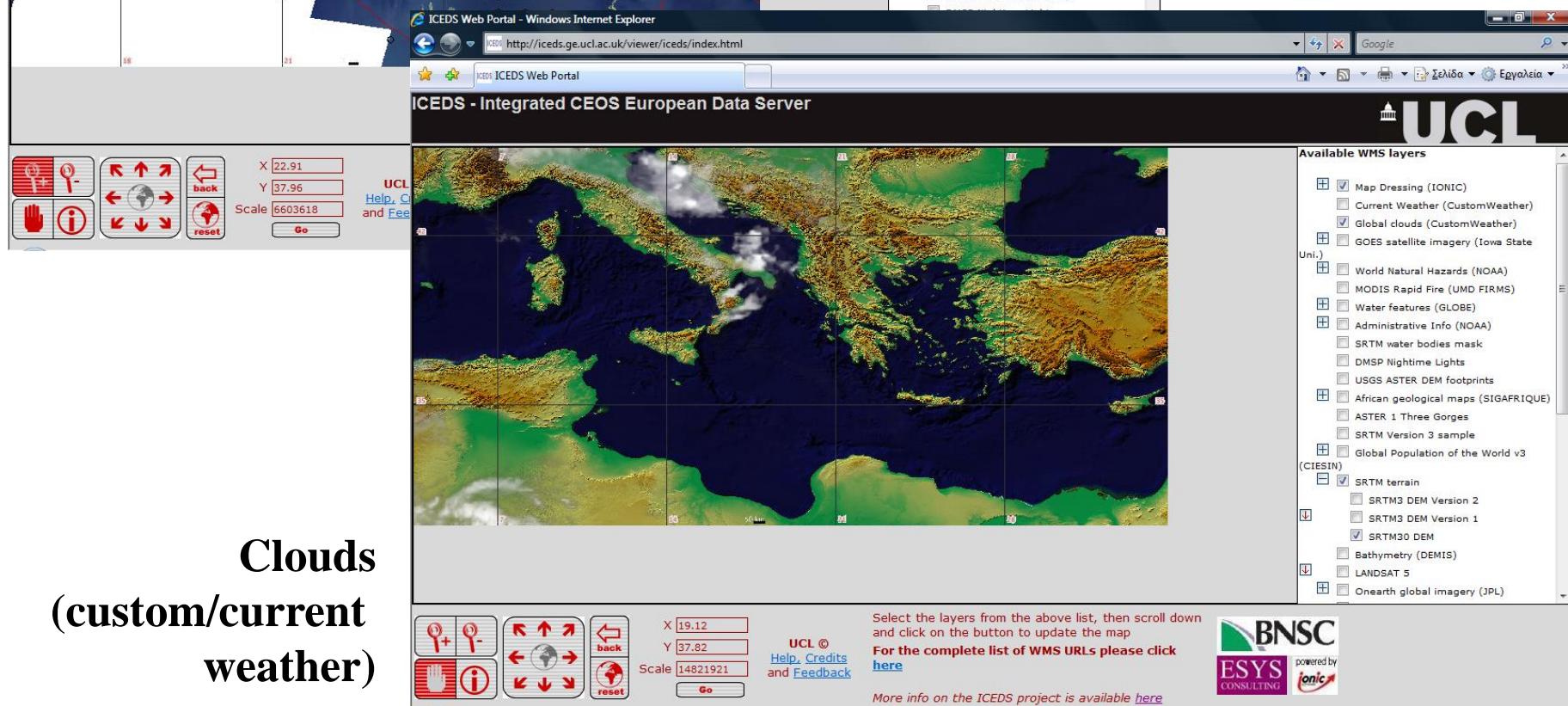
Landsat images





Natural Hazards

(earthquakes, Volvanos, plates)



ICEDS Web Portal - Windows Internet Explorer

ICEDS http://iceds.ge.ucl.ac.uk/viewer/iceds/index.html

ICEDS - Integrated CEOS European Data Server

Vouliagméní Vouliagméní

GR 37.8166667 23.7833333 PPL
GR 37.8333333 21.6 PPL

X 23.85 Y 38.01 Scale 1160752 Go

UCL © Help, Credits and Feedback

Please wait for your search results

Select the layers from the above list, then scroll down and click on the button to update the map
For the complete list of WMS URLs please click here

More info on the ICEDS project is available [here](#)

Bathymetry (DEMIS)
LANDSAT 5
Onearth global imagery (JPL)
MODIS Blue Marble

Update the map

Select a layer effect Properties

Vouliagmeni Find Location

All Feature Types
Populated Places
Administrative

BNSC
ESYS CONSULTING powered by ionic

ICEDS Web Portal - Windows Internet Explorer

ICEDS Web Portal http://iceds.ge.ucl.ac.uk/viewer/iceds/index.html

ICEDS - Integrated CEOS European Data Server

CIESIN SRTM terrain
SRTM DEM Version 2
SRTM DEM Version 1
SRTM30 DEM
Bathymetry (DEMIS)
LANDSAT 5
Onearth global imagery (JPL)
MODIS Blue Marble

Update the map

Select a layer effect Properties

Vouliagmeni Find Location

All Feature Types
Populated Places
Administrative

BNSC
ESYS CONSULTING powered by ionic

Please wait for your search results

Select the layers from the above list, then scroll down and click on the button to update the map
For the complete list of WMS URLs please click here

More info on the ICEDS project is available [here](#)

Bathymetry (DEMIS)
LANDSAT 5
Onearth global imagery (JPL)
MODIS Blue Marble

Update the map

Select a layer effect Properties

Vouliagmeni Find Location

All Feature Types
Populated Places
Administrative

BNSC
ESYS CONSULTING powered by ionic

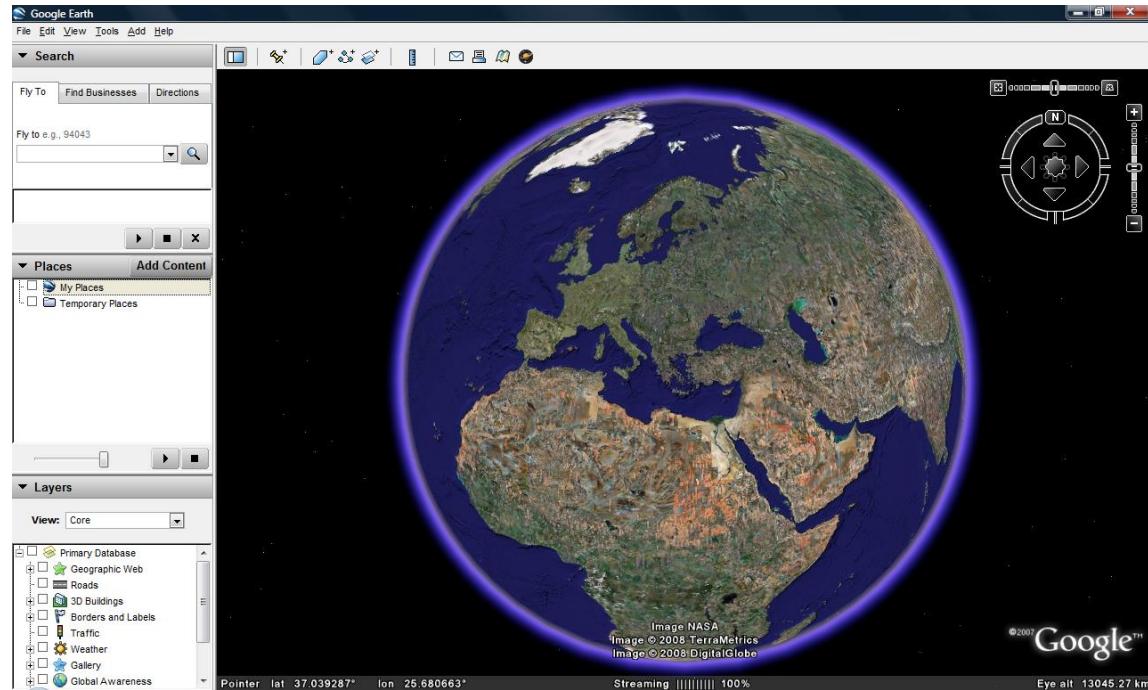
A red circle highlights the "Populated Places" dropdown menu in the right sidebar.

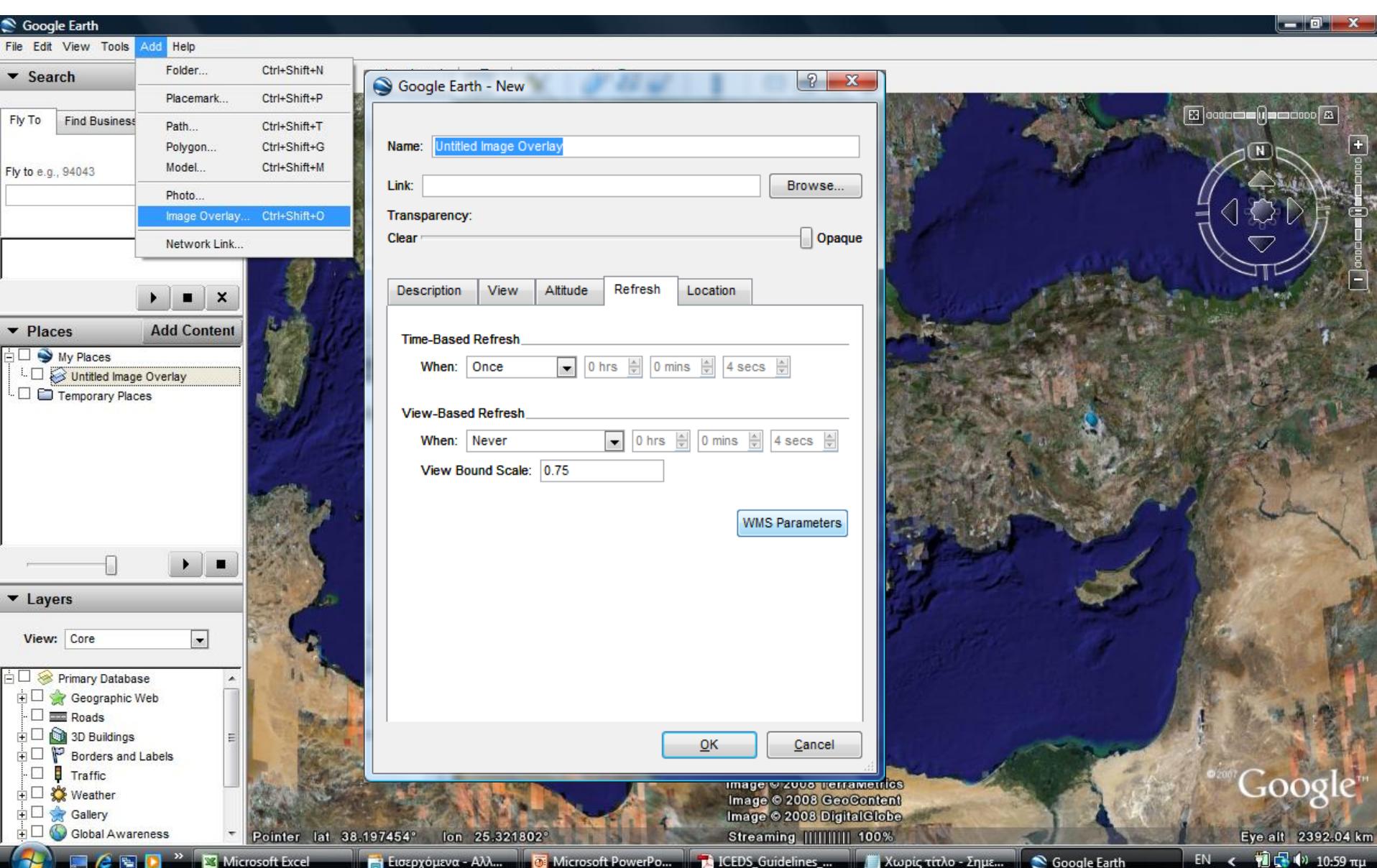
The gazetteer tool

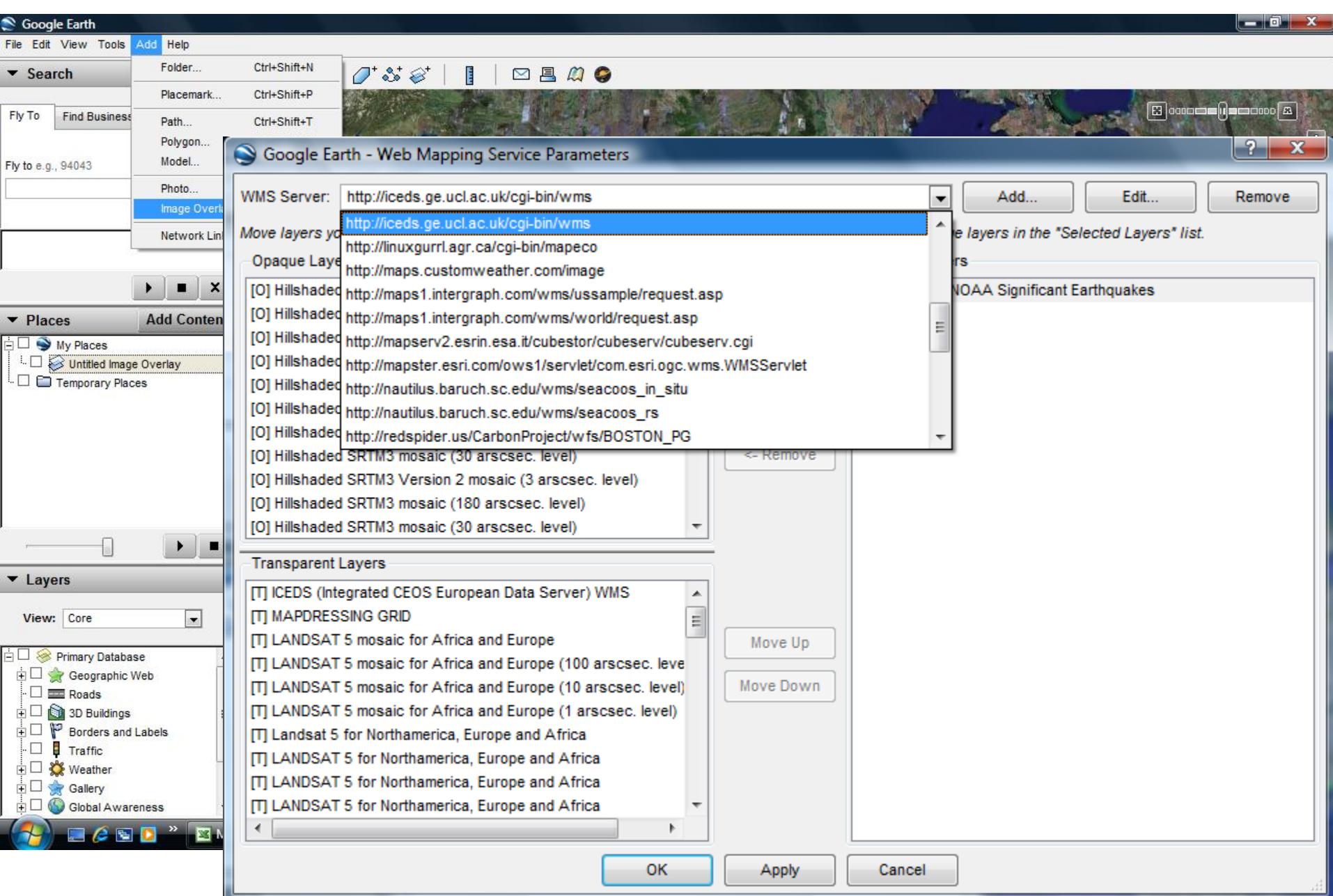
ICEDS Server & GE

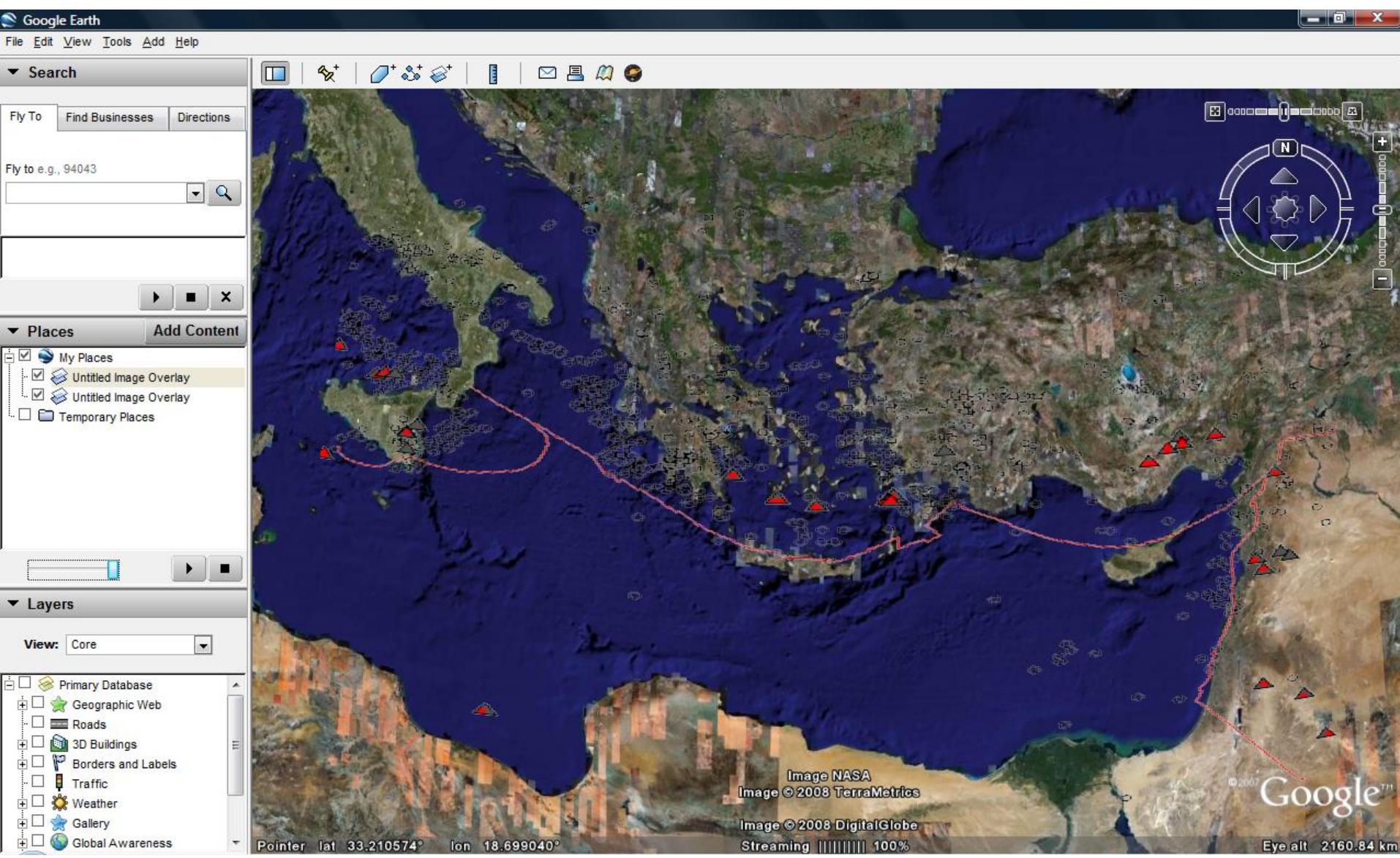
- Add ICEDS layers to Google Earth

Add >
Image Overlay >
WMS Layer









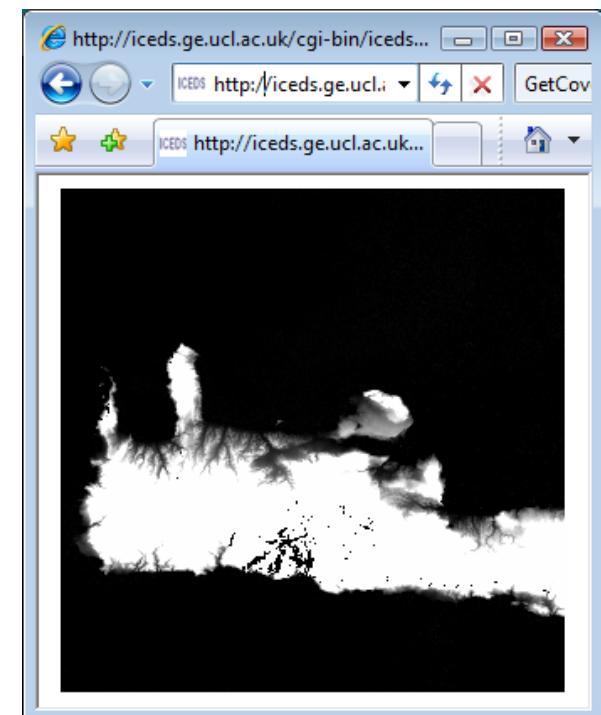
Earthquakes, Volcanos and Plate Boundaries

WCS

*This service is
unavailable*

```
http://iceds.ge.ucl.ac.uk/cgi-bin/icedswcs  
?service=WCS  
&request=GetCapabilities
```

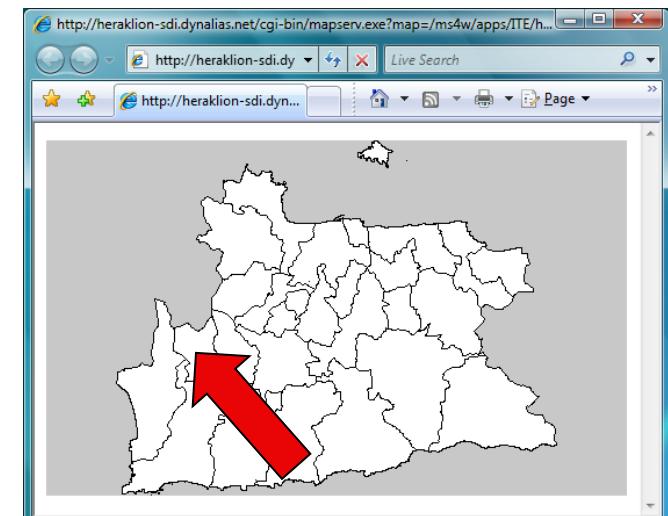
```
http://iceds.ge.ucl.ac.uk/cgi-bin/icedswcs  
?service=WCS  
&request=GetCoverage  
&version=1.0.0  
&crs=EPSG:2100  
&bbox=23.5,34,24.5,36  
&format=image/png  
&styles=  
&width=300  
&height=300  
&coverage=srtm
```



GetFeatureInfo

This service is unavailable

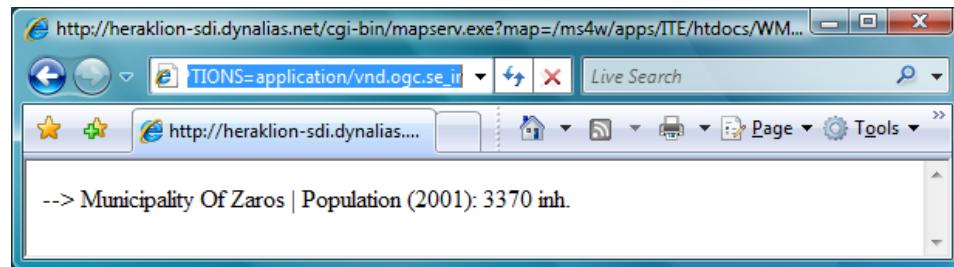
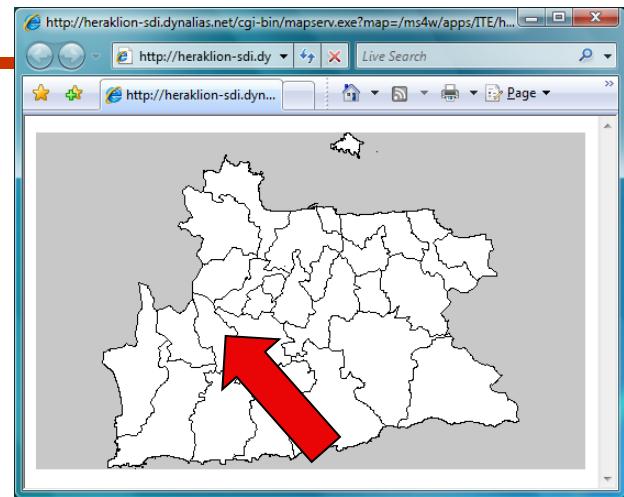
```
http://gaiadb.gge.unb.ca/cgi-bin/mapserv.exe  
?map=/ms4w/apps/ITE/htdocs/WMS/infocharta.ol.map  
&request=GetMap  
&service=WMS  
&version=1.1.1  
&srs=EPSG:2100  
&format=image/png  
&styles=  
&bbox=553530,3864020,653540,3925230  
&width=500  
&height=306  
&layers=nomos_irakliou,dhmoi_irakliou
```



GetFeatureInfo

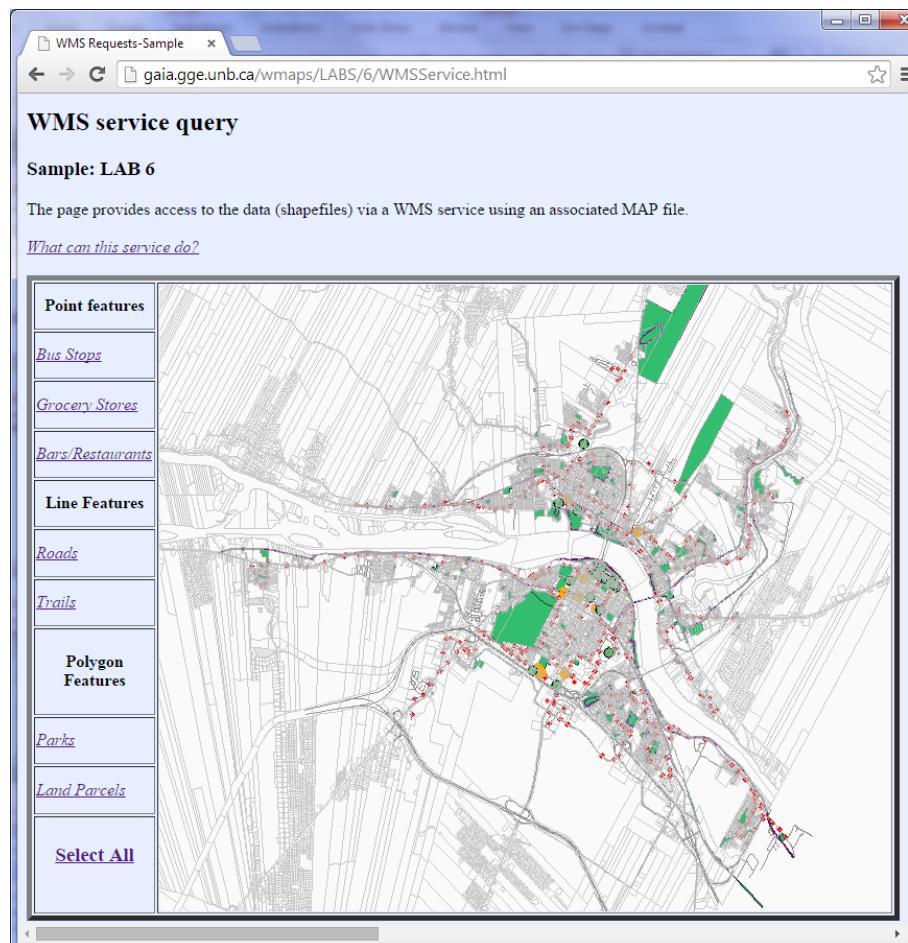
This service is unavailable

```
http://gaiadb.gge.unb.ca/cgi-bin/mapserv.exe  
?map=/ms4w/apps/ITE/htdocs/WMS/infocharta_ol.map  
&SERVICE=WMS  
&VERSION=1.1.1  
&request=GetFeatureInfo  
&layers=dhmoi_irakliou  
&styles=  
&SRS=EPSG:2100  
&bbox=553530,3864020,653540,3925230  
&width=500  
&height=306  
&encoding=iso-8859-7  
&format=image/png  
&x=150  
&y=200  
&query_layers=dhmoi_irakliou  
&INFO_FORMAT=text/html&EXCEPTIONS=application/vnd.ogc.se_inimage
```



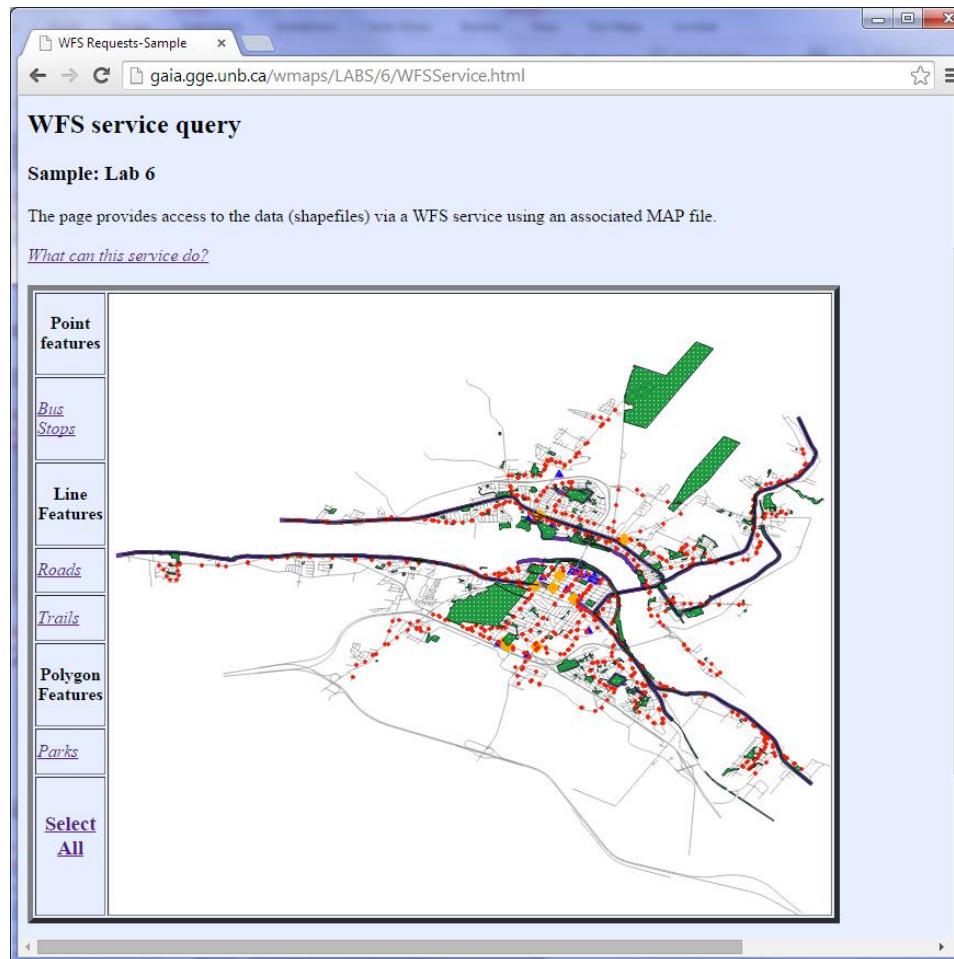
Example Requests - WMS

- <http://gaia.gge.unb.ca:8080/gge5403/labs/5/WMSService.html>



Example Requests - WFS

<http://gaia.gge.unb.ca:8080/gge5403/labs/5/WFSService.html>



References

- OGC – Open Geospatial Consortium, <http://www.opengeospatial.org/>
- OSGeo – Open Source Geospatial Foundation, <http://www.osgeo.org/>
- Ticheler, J., 2007. What are SDI, OpenSDI and GeoFOSS? *GeoNetwork OpenSource Community Website*, <http://geonetwork-opensource.org/documentation/faq/foss-sdi-and-opensdi> [accessed in November 2007]
- W3C – World Wide Web Consortium, <http://www.w3.org/>
- WCS – Web Coverage Server, <http://www.opengeospatial.org/standards/wcs>
- WFS – Web Feature Service, <http://www.opengeospatial.org/standards/wfs>