WALKTHROUGH 1
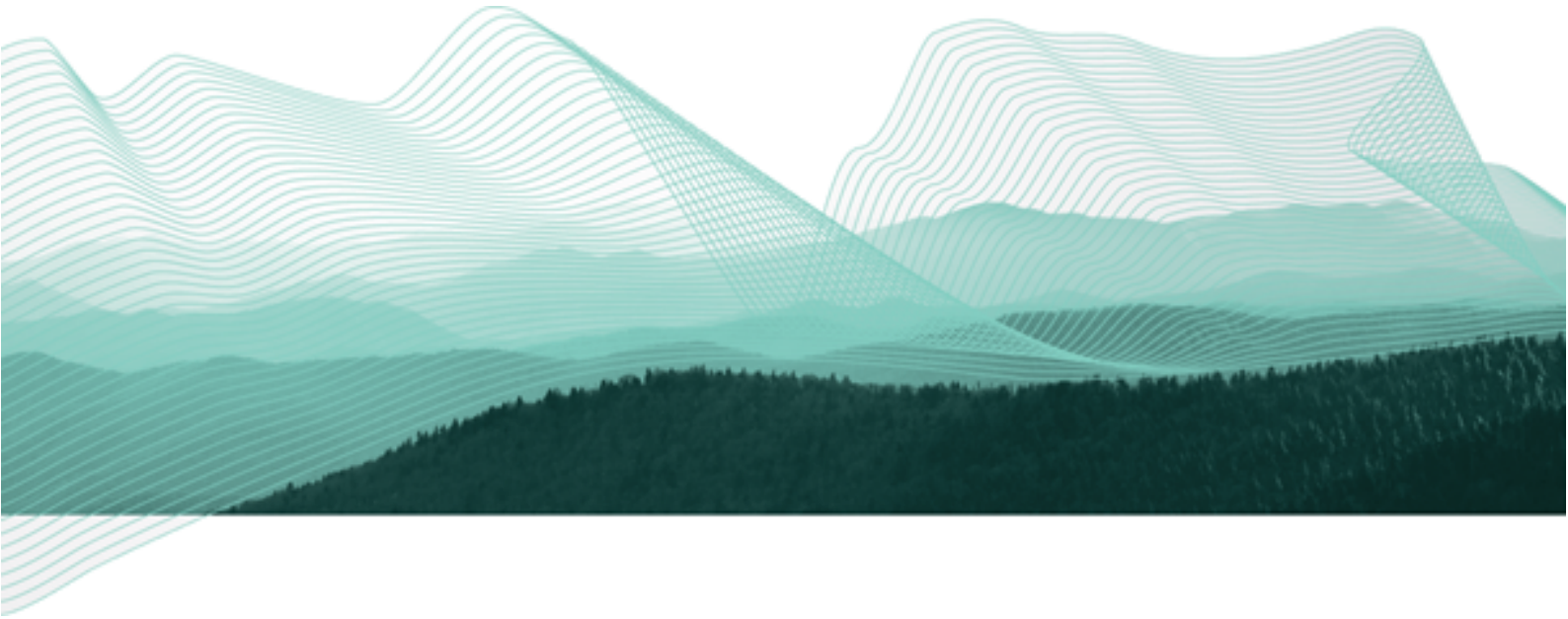
uDig Install and Introduction

08 June 2008

Refractions
RESEARCH

THE GEOSPATIAL EXPERTS

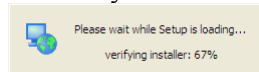# TABLE OF CONTENTS

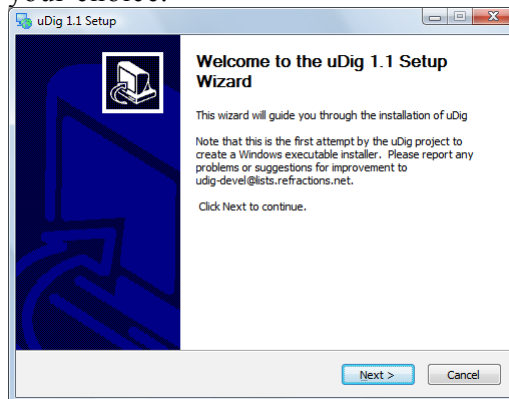# 1 INSTALLING AND RUNNING THE UDIG APPLICATION

In this section, you will install and run the Eclipse Application, which will be used for viewing map information.

Windows install:

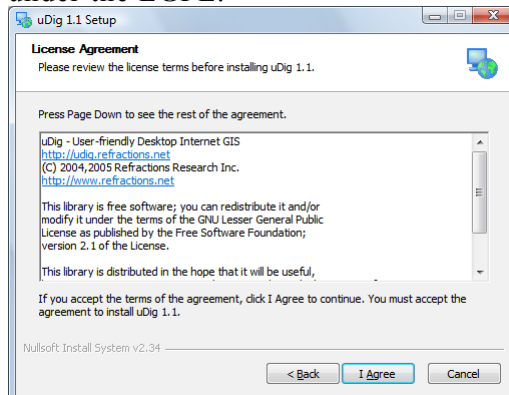1. Double-click the installer udig1.1.exe (located in the same directory as this walkthrough)

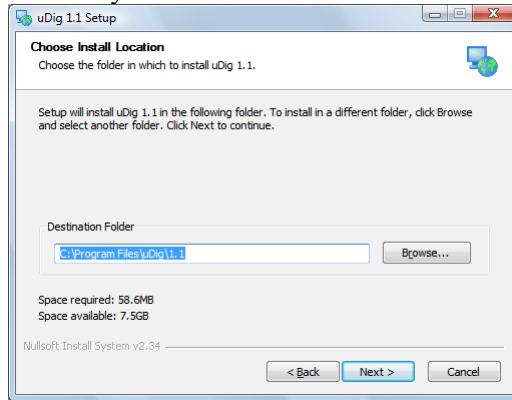

2. The installer will allow you to install uDig into the directory of your choice.
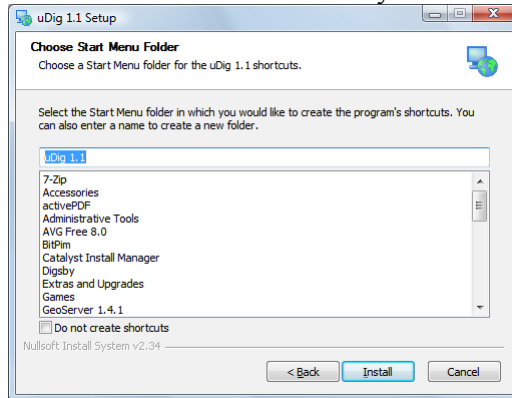

3. Agree to the **License Agreement** – uDig is made available under the LGPL.
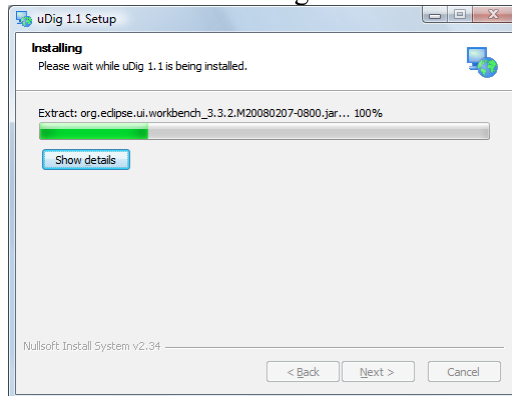

4. By default uDig will be installed into your Program Files
   directory.

5. Shortcuts will be created in your start menu.

6. Please wait while uDig is installed.

7. Congratulations you have installed uDig
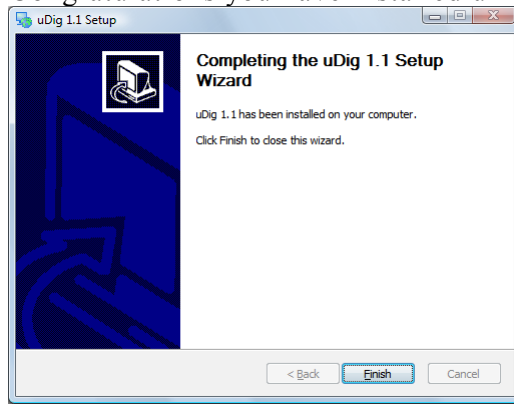
2 WELCOME

1. After completing the installation, run the uDig application from the Windows **Start->Programs** menu

2. Initially you are presented with the welcome screen.

3. The welcome screen contains a link to the **Getting Started** tutorial from the online documentation.
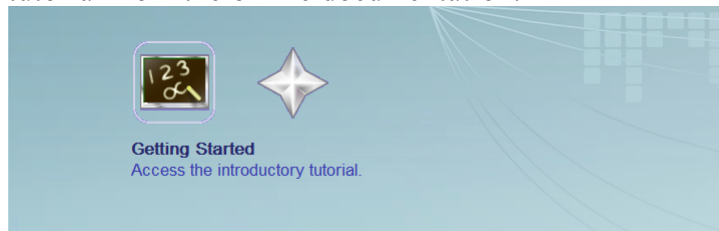
    We cover the use of the online documentation in the next section

4. The welcome screen contains a link to the **Official Website**

Official Website
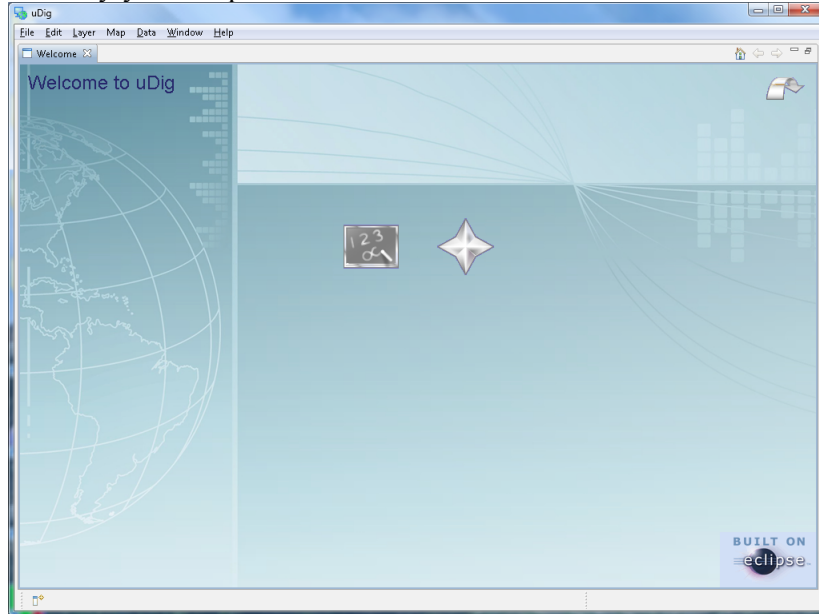Check out the official uDig website.
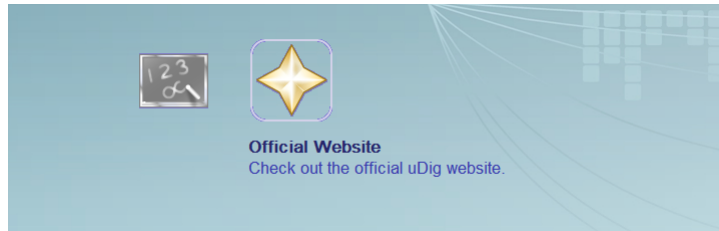
5. To continue click on the **Workbench** arrow in the top right corner of the uDig welcome screen.

Workbench
Close this screen to begin using uDig.

You can return to the welcome screen at any time using the Help menu.
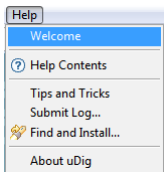
3 ONLINE DOCUMENTATION AND TUTORIALS

In this section you will open up the online tutorial, and access reference information.

You can access the tutorials directly by pressing "Getting Started" on the welcome screen.
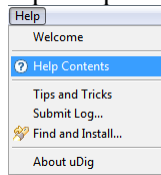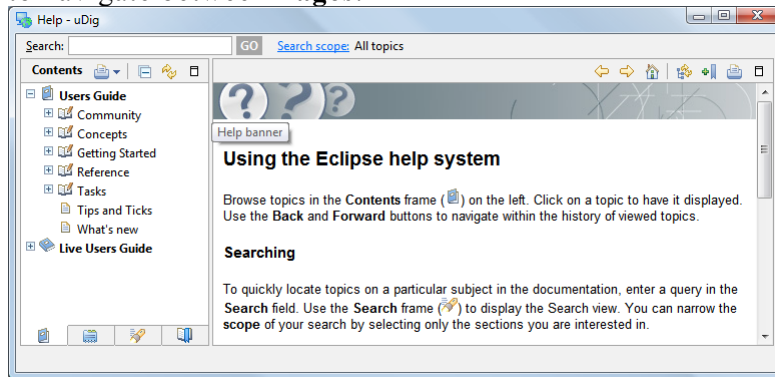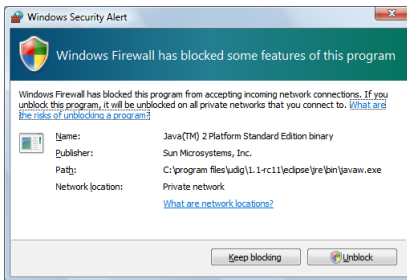
1. Open up the **Help menu** and select **Help Contents**

2. This will bring up the online help system; the help system is a web application that makes use of a **Contents** view to allow you to navigate between **Pages**.

If you have the windows firewall enabled you will need to allow the help application to startup.

   Refresh / Show Current Topic
   Can be used to find your place in the table of contents

   Show in Table of Contents
   Can be used to find your place in the table of contents

3. The Contents view organizes Pages into Books. The following books are included with the uDig application

   - **User Guide**

   - **Live User Guide** – live access to the uDig web site

     Additional books may be available depending on the community plug-ins you have installed.

3.1 HELP CATEGORIES

You can access additional reference information in the following categories:

- Getting Started

uDig User Guide	This section contains tutorials that will help users to familiarize themselves with UDIG and its user interface.
⊞ 📖 Getting Started	
⊞ 📖 Concepts	At this time there is one tutorial available:
⊞ 📖 Tasks	
⊞ 📖 Reference	
⊞ 📖 FAQ	

- Concepts

uDig User Guide	High-Level description of ideas, architecture. Provides background information to understand what is going on.
⊞ 📖 Getting Started	
⊞ 📖 Concepts	
⊞ 📖 Tasks	● Related concepts
⊞ 📖 Reference	
⊞ 📖 FAQ	

- Tasks

uDig User Guide	Task descriptions are step by step instructions for performing specific actions and tasks in the Workbench. For example, the Tasks section contains step by step instructions for connecting to a Web Map Server, and for adding a layer into a Map.
⊞ 📖 Getting Started	
⊞ 📖 Concepts	
⊞ 📖 Tasks	
⊞ 📖 Reference	● Related tasks
⊞ 📖 FAQ	

- Reference

uDig User Guide	● Related reference
⊞ 📖 Getting Started	
⊞ 📖 Concepts	
⊞ 📖 Tasks	- Views and editors
⊞ 📖 Reference	- Menus
⊞ 📖 FAQ	- Toolbars
	- Preferences

4 THE WORKBENCH

Before we start playing with maps, let's take a look at the default layout of the uDig workbench and what some of the key components are.

Shown below is a typical session of uDig with the Map, Projects, Layers, and Catalog views labeled. These views will be described further as we demonstrate their uses.
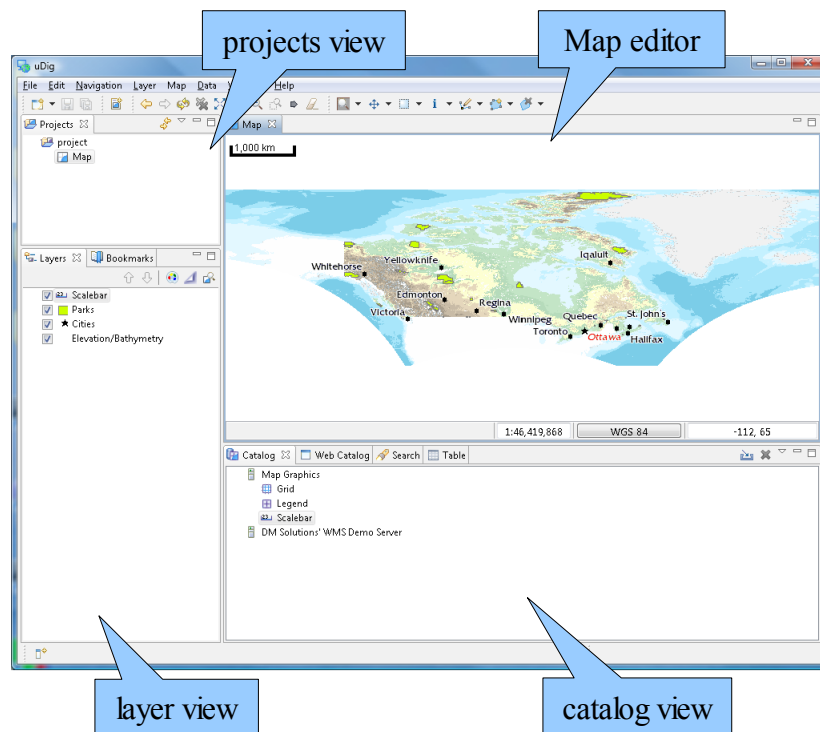
5 CONNECTING TO A WEB MAP SERVER

In this section you will learn how to drag and drop a Web Map Server (WMS) link into uDig for the purpose of viewing its layers.

1. There are many ways to load map data into uDig, including drag and drop. To drag a Web Map Server (WMS) link into uDig, open up a web browser.

2. Please connect to the Walkthrough 1 page with your web browser:

    - http://udig.refractions.net/confluence/display/EN/Walkthrough+1

3. Click and drag the DM Solutions WMS link from the web page onto the Layers View on the left, and drop it there.
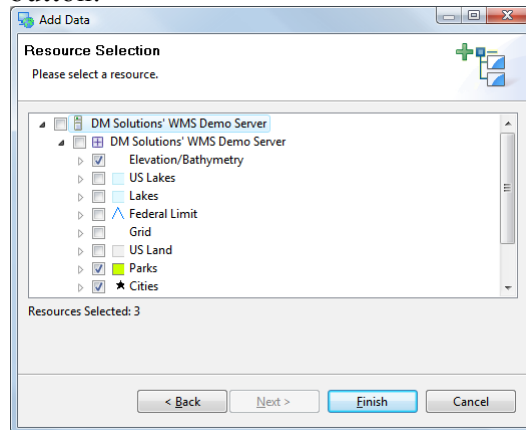
If working with your windows maximized:
1) Drag from the web browser
2) Hover on the uDig application in the windows task bar
*3) Drop into the Map area.*
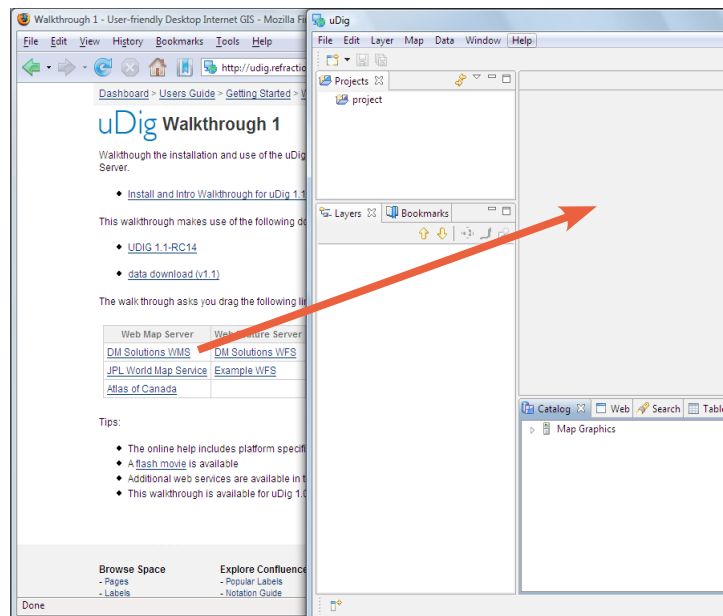
4. The **Add Layers** a wizard will appear asking you what layers from this WMS you want to show in your map. Select **Elevation/Bathymetry, Parks, Cities** and press the **Finish** button.
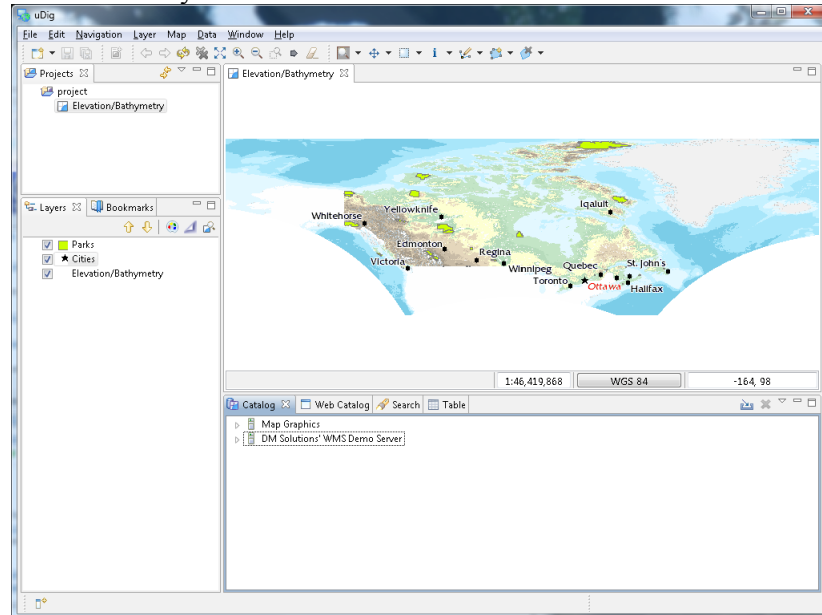

5. The map layers will now **render** in the Map view. Notice the bottom right corner of the uDig Application will display a **processing notice** while it is requesting and drawing the layers.

You can press on the button next to the progress monitor to watch detailed information (and cancel) rendering requests.

rendering progress
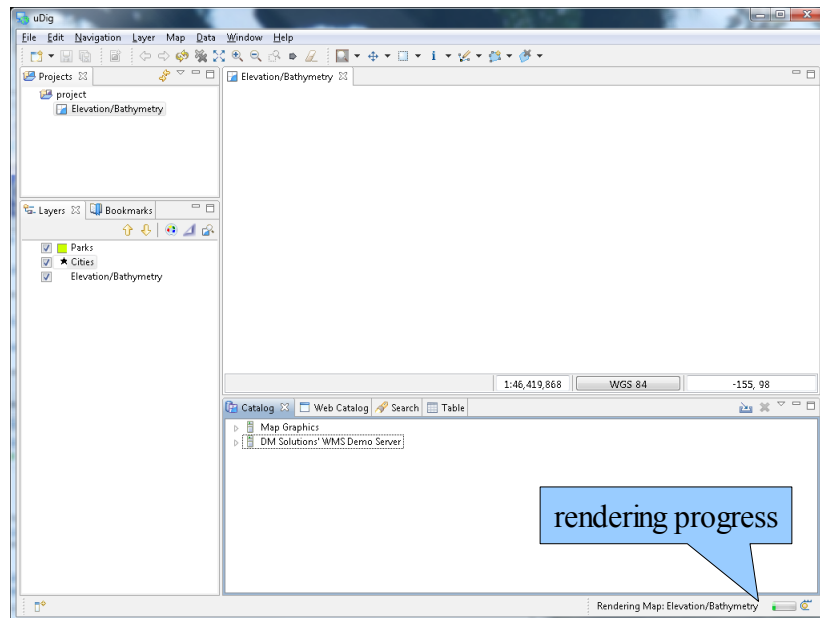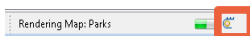
6. When the layers are done rendering, the **Map** view will display the visible layers

7. Now that you have some data on screen try the following tools:

   - 🔍 Zoom Tool: (keyboard short cut Z)
     Click or drag the left button to zoom in, or right button to zoom out.

   - ✛ Pan Tool: (keyboard short cut P)
     Click and drag to move the display.

   - ⤢ Extent Tool: Press to show all

8. The **Layers** view shows the order in which layers are drawn. Please select the **Cities** layer and press the **Move up** button from the Layer view toolbar.
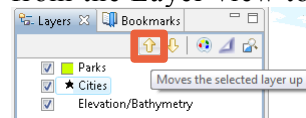


9. The order is now changed.

When using the zoom or pan tools the mouse scroll wheel can be used to zoom in and out quickly.
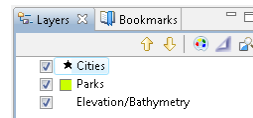
You can also drag layers up and down in the layer view to change the order.
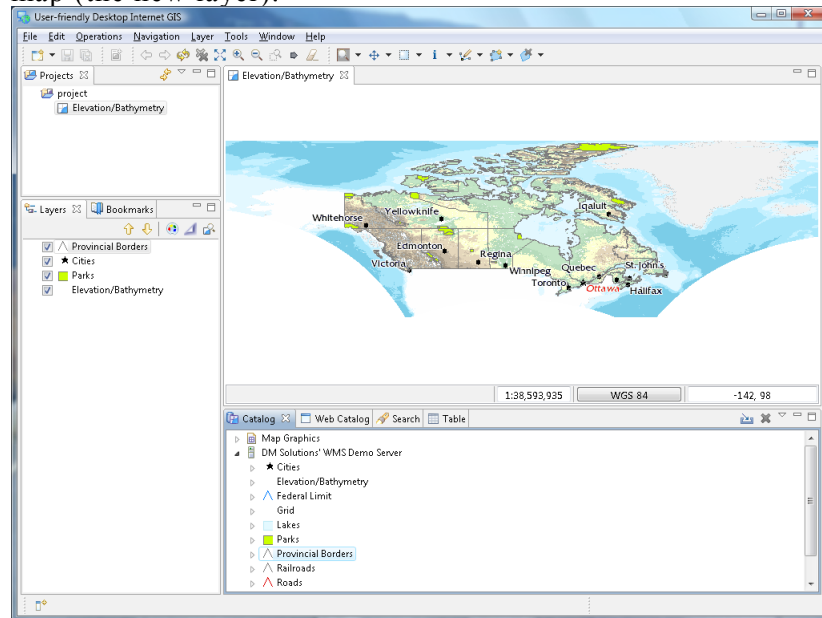
6 ADDING LAYERS FROM THE CATALOG VIEW

In this section you will learn how to add additional layers to your map from a previously connected data source (the DM Solutions WMS).

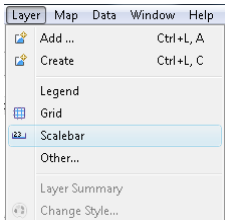Adding a Layer from a previously connected WMS:

1. In the **Catalog** view of uDig (center bottom), expand the connection you have to **DM Solutions' WMS Demo Server**. Right-click on the **Provincial Borders** layer and select **Add to Current Map**.
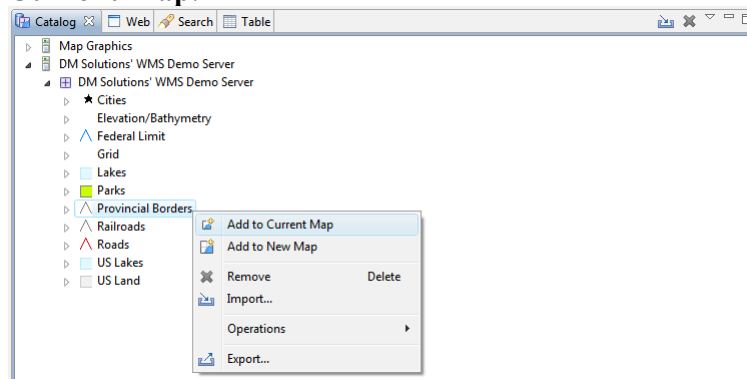
2. The new layer will appear in the **Layers** view, and it will automatically start to render. When it finishes rendering, you should see black lines representing the provincial borders on the map (the new layer).


3. The catalog also comes equipped with a built in service called "Map Graphic". Select **Map Graphic > Scalebar** in the Catalog view and drag this layer onto the Map

*Map Graphics are also available directly from the Layer menu.*
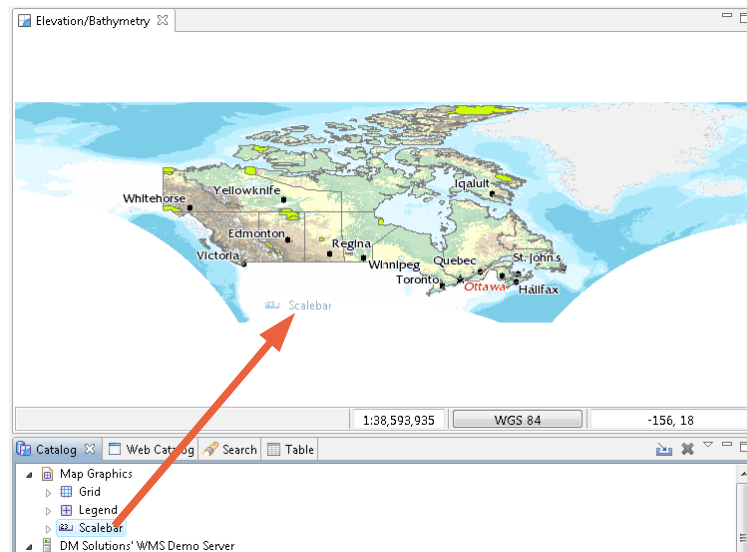
7 ADDING A LAYER FROM POSTGIS

This section shows how you can add a Layer from a PostGIS table. PostGIS is an extension to the popular open source PostgreSQL database. uDig handles other databases like Oracle and DB2 in a similar manner:
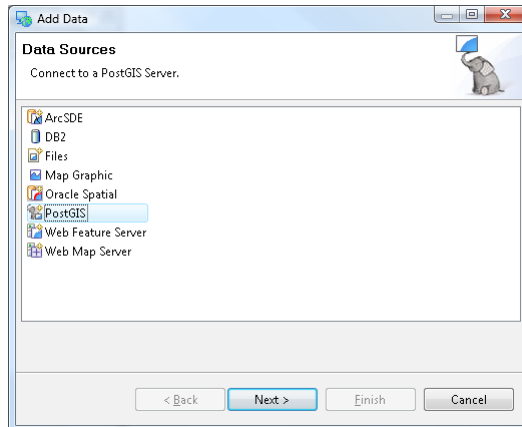
1. In the File menu, select **New -> New Map**.
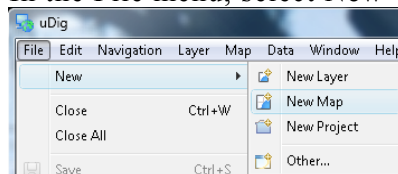
2. In the **Projects** view, right-click on **Map** and select **Add**.
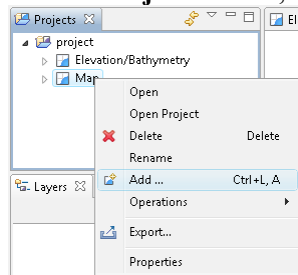
3. Select **PostGIS** as the data source and click **Next**.

4. Enter the following connection information:

    Host: www.refractions.net
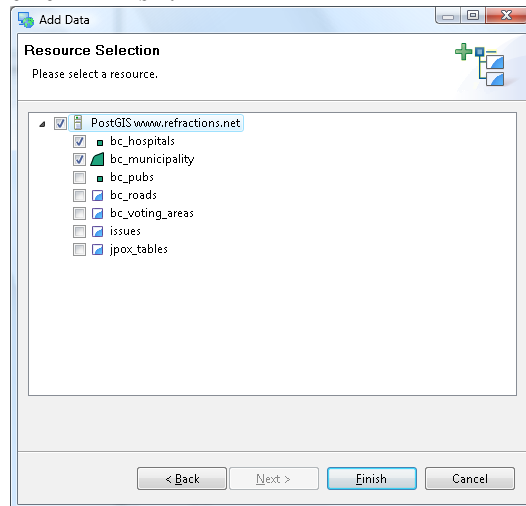   **Port:** 5432
    Username: demo
    Password: demo
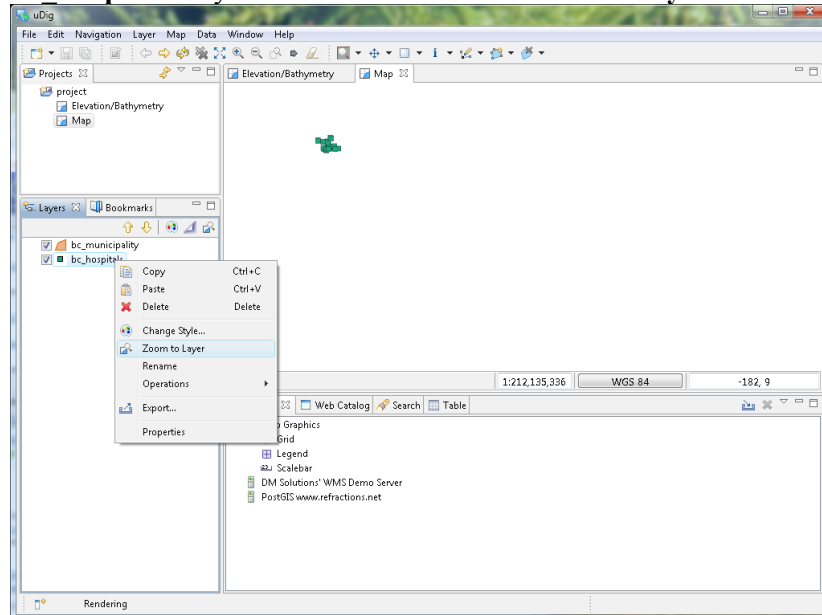   **Database:** demo-bc

5. Once the connection information is entered press **Next**.

6. Select only the **bc_hospitals** and **bc_municipality** data, and click **Finish**.
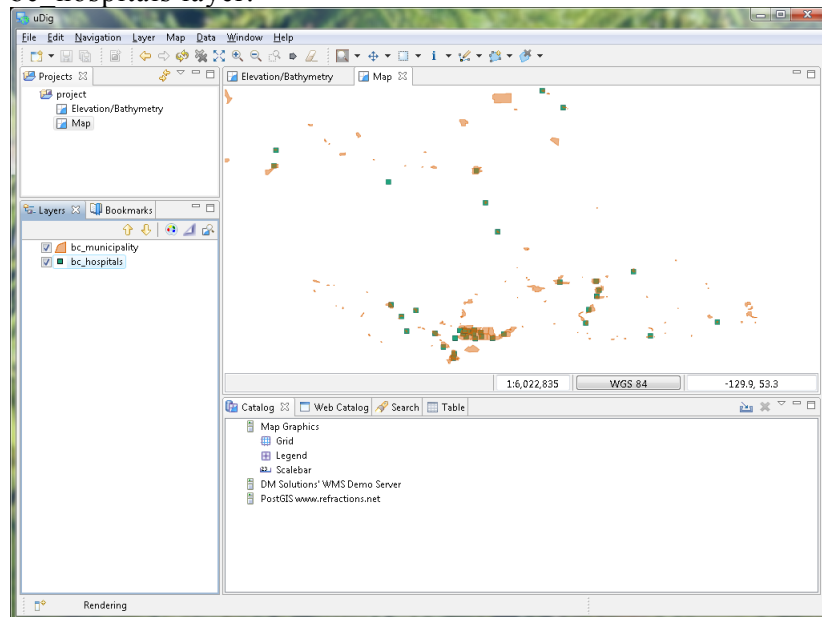

7. It may take a short while to fully render since you are zoomed out so far.

8. Head on over the the **Layer** view and right click on **bc_hospitals** layer in order to choose **Zoom to Layer**


9. The map will now zoom in to show the extent of the bc_hospitals layer.

Zoom to Layer is very useful when adding new layers that happen to be off screen or not visible at the current scale.

10. You can return to your previous position in the world by selecting Back in the Navigation menu.

You can also select Back on the tool bar, a history of your position is kept similar to a web browser.
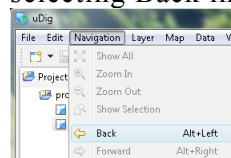
# 8 WORKING WITH FILES

You can work directly with files from the file system:

1. Please connect to the Walkthrough 1 page with your web browser:

    - http://udig.refractions.net/confluence/display/EN/Walkthrough+1

2. Click on the data "data download" link and save the zip file to your local computer.
    At the time of writing the file was:

    - http://udig.refractions.net/docs/data-v1_1.zip

3. Unzip the download to create your **data** directory. The **7-Zip** application is recommended.

4. Drag and Drop the file **bc_border.shp** onto your open **Map**
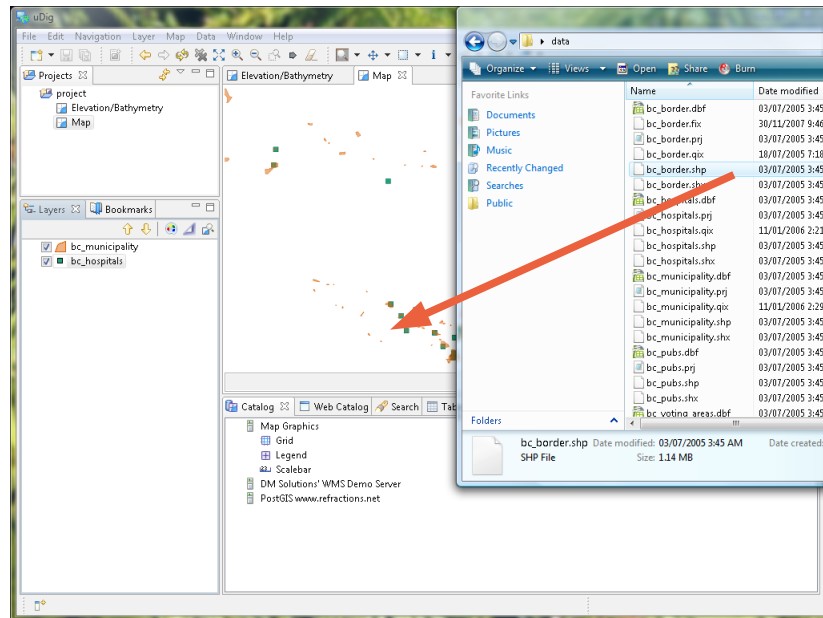
5. This provides a bit of context for your PostGIS layers. When working with uDig you will often find yourself combining information from several different sources.
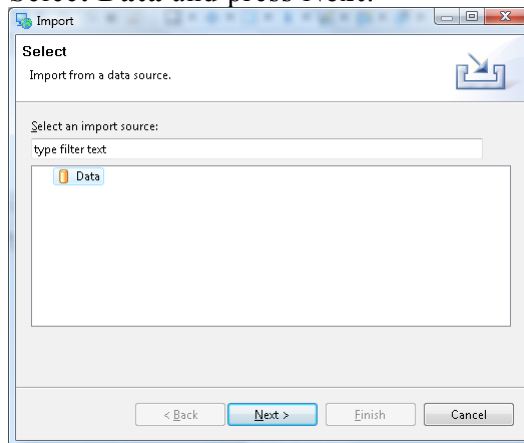
9 IMPORT DIRECTLY TO THE CATALOG

Earlier we learned how to work with content from the Catalog view, in this section we will import content directly into the catalog.
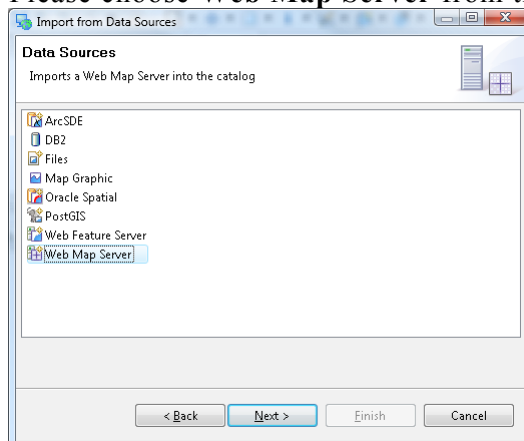
1. On the **Catalog View** please press the Import button:
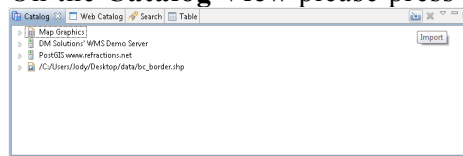
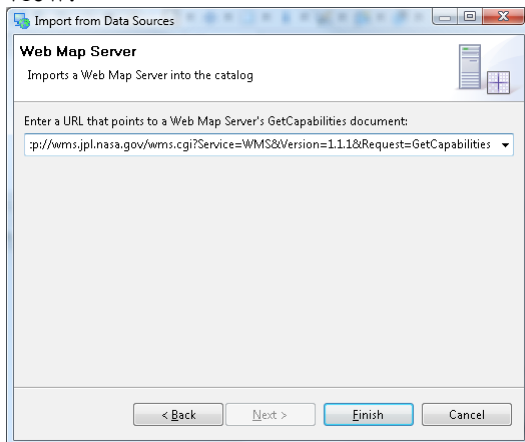2. Select **Data** and press **Next**.

3. Please choose **Web Map Server** from the list and press **Next**.

4. This time we are going to import the JPL World Map Service from the following Capabilities document:

   - http://wms.jpl.nasa.gov/wms.cgi?Service=WMS&Version=1.1.1&Request=GetCapabilities

5. Press **Finish** to import the Web Map Server into the Catalog view.

6. Now that we have imported the WMS into the catalog we can add it to our Map. Please Drag and Drop the **Blue Marble, Global MODIS derived image** layer directly onto **Map2**
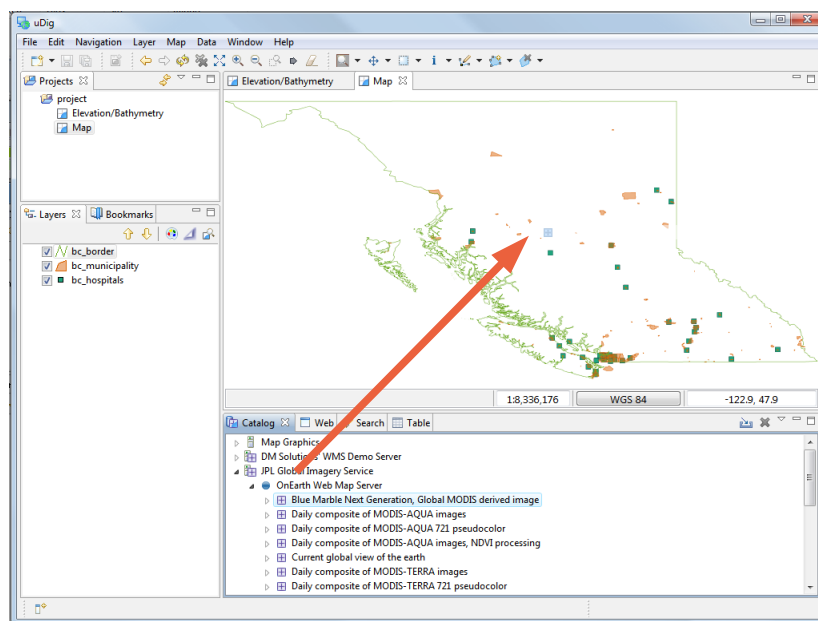
7. Earlier we used the the layer view to reorder using the up and down buttons, this time we will drag the layers into the right order. Select the **Blue Marble** layer in the layer view and drag it to the bottom of the list.

10THEMED DATA

Some data contains attributes we may use to thematically style a layer. In this section we will create a "Styled Layer Descriptor" (SLD) with the uDig **SLD Editor** in order to interpret these attributes:

1. In the **Catalog** view of uDig (center bottom), under the "*JPL Global Imagery Service*" tree, right click on "**Blue Marble Next Generation, Global MODIS derived image**" and select **Add to New Map**.
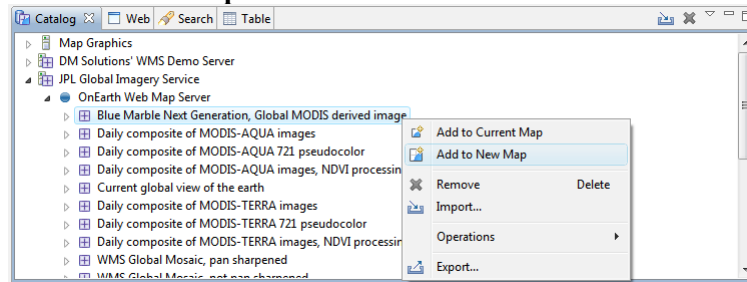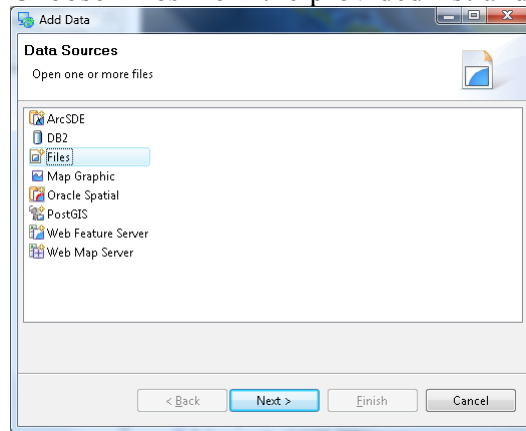

2. That new map has an awfully long name, select in the project view, and right click to choose **Rename**.
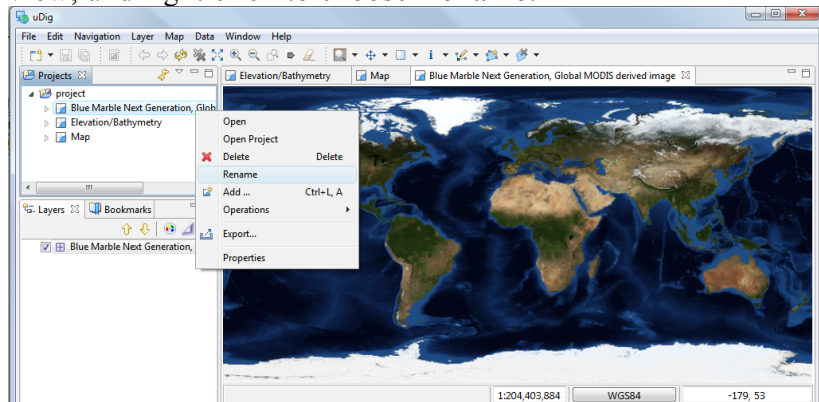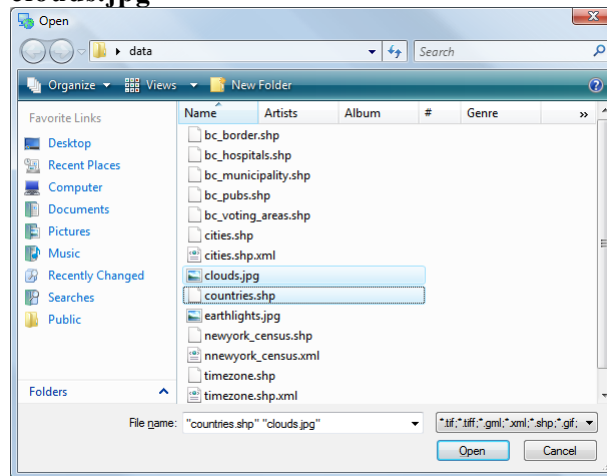

3. Enter the name "Blue Marble" and press **OK**.
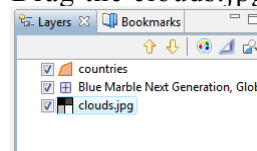
4. In the **Layer** menu, select **Add…**

5. Choose **Files** from the provided list and press Next:

6. Select the following files from the data directory:
countries.shp
clouds.jpg

7. Press Open and **both** layers will be added and rendered with a default style.

8. Drag the clouds.jpg layer to the bottom of the layer view.

9. The default style for the **countries** layer is slightly transparent so you can still see the pretty WMS layer underneath.

10. Right click on the **countries** layer and select **Change Style**
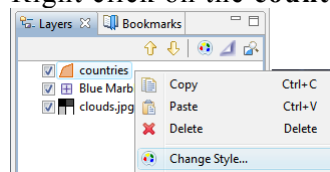
11. The Style Editor is arranged into a series of pages, you can use the **Simple** style page to add labels to the countries **layer.**

- Check the box next to Label

- Choose **"CNTRY_NAME"** from the list.

You can experiment with other settings, use the Set Font button to change to a lighter color that will show up against the WMS layer.
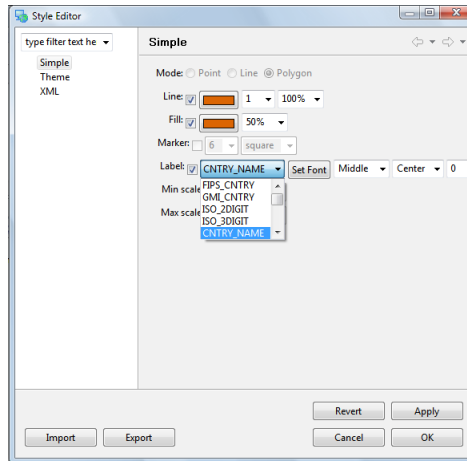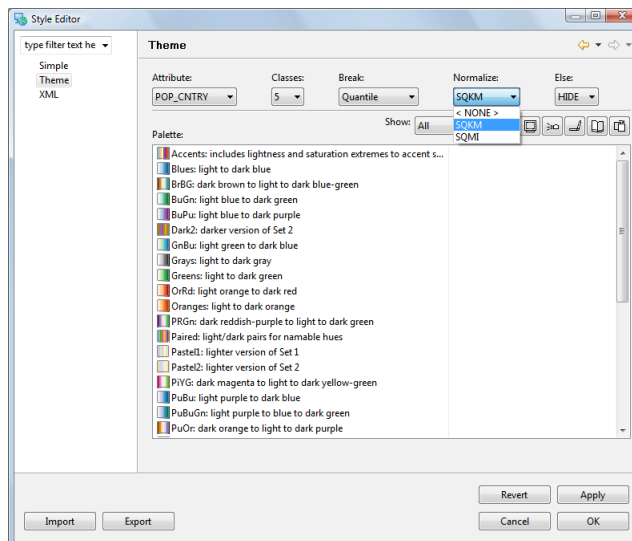

12. You can press the **Apply** button to see what your map will look like with labels.

13. Please switch to the **Theme** style page and select the following options:

These options will color the countries layer by population density.

- Attribute: POP_CNTRY

- Normalize: SQKM

14. Filter the available colour palettes to show a subset of those available:

- Changing from show "**All**" to show "**Sequential**"

- Press the **Colour-blind, LCD** and **CRT** buttons

- Select the "**light orange to dark red**" palette

These options show palettes which are a ramp of color suitable for viewing by color blind people on either an LCD or CRT monitor.
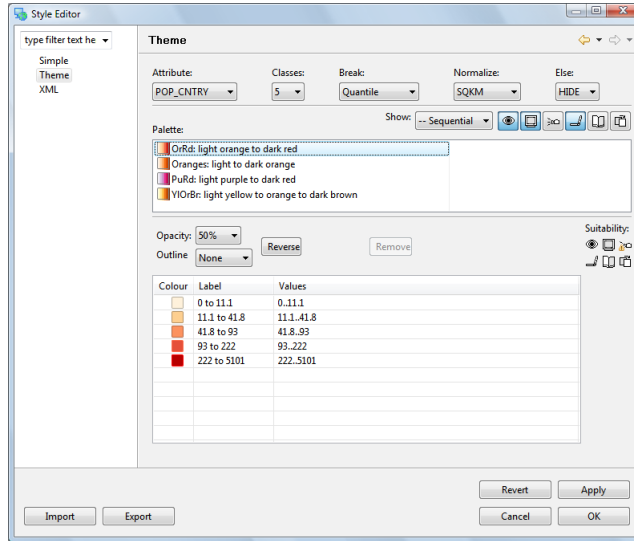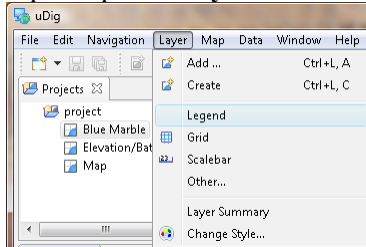

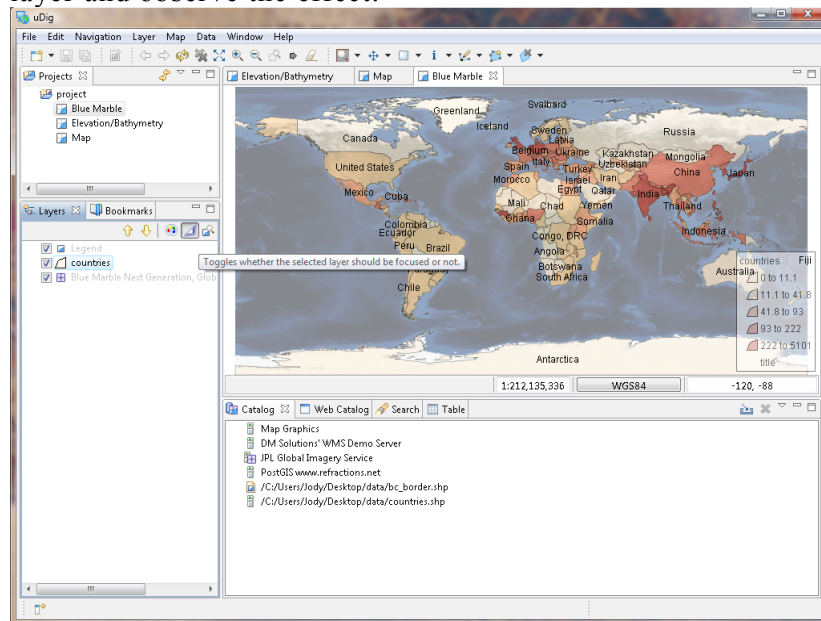15. Press the **OK** button
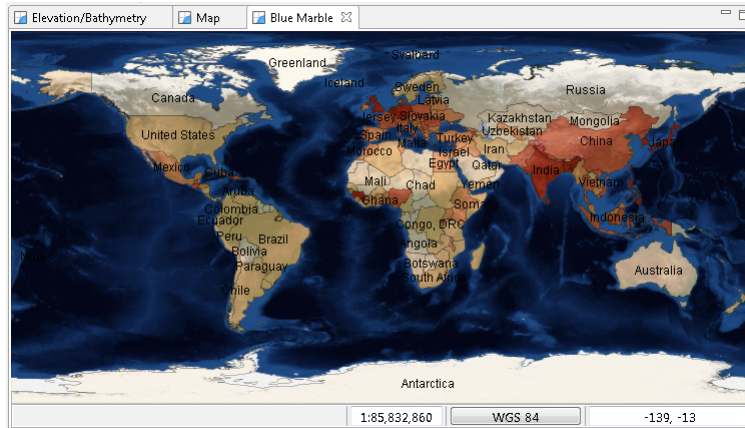
16. Open up the **Layer** menu and choose **Legend**

17. Press the ◢ **Mylar** button in the **Layers View**. Select each layer and observe the effect.
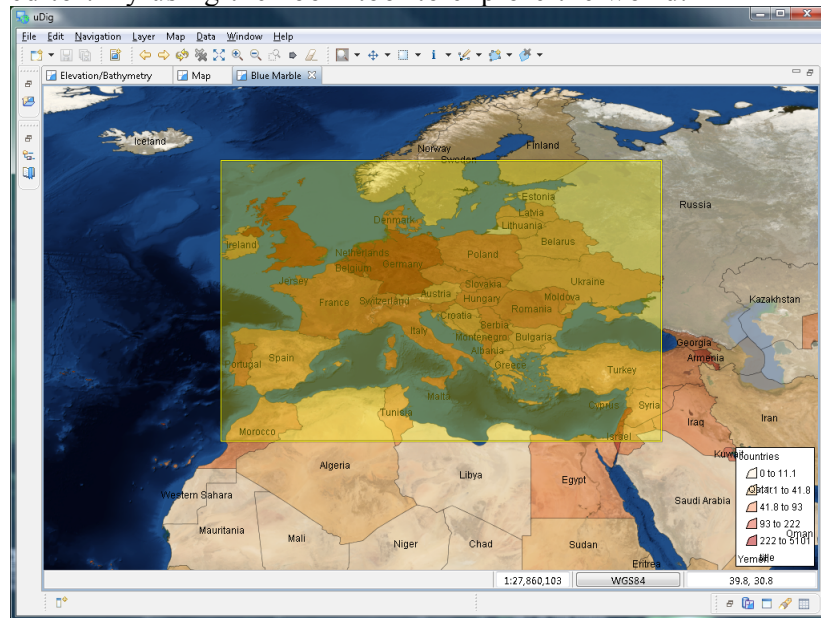
18. Double click on the **Blue Marble** map tab to maximize the editor.Try using the zoom tool to explore the world.

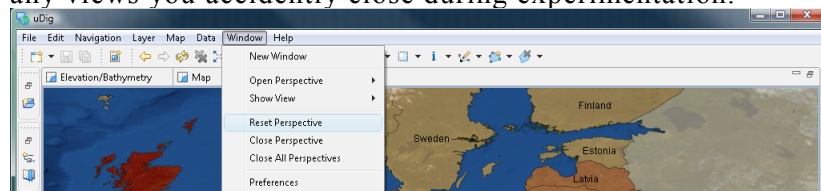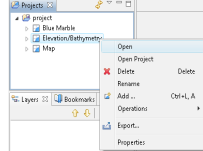19. Double click on the Map tab to restore the previous size. You can use **Reset Perspective** from the **Window** menu to restore any views you accidently close during experimentation.
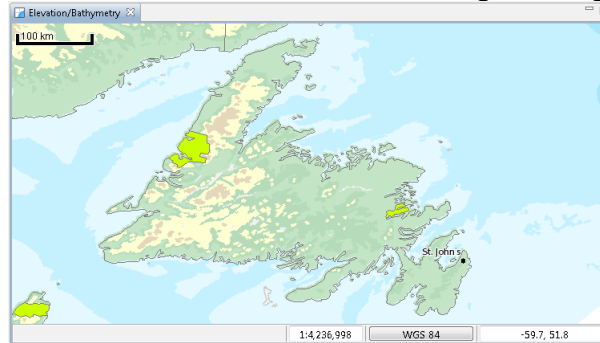
11INFORMATION REQUEST

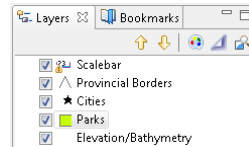In this section, you will learn how to use the Information Tool.

1. Let us open up our first map again, which was labeled **Elevation/Bathymetry**
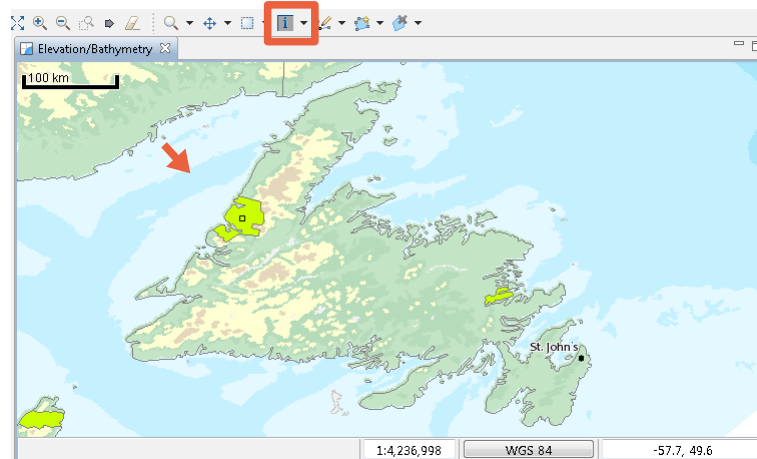
2. Let's **zoom** to somewhere interesting, like a green park.
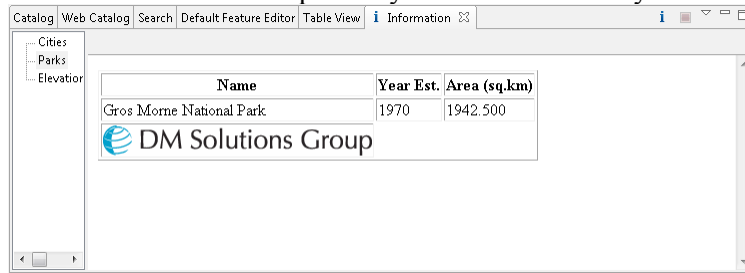

3. Select the **Parks** layer in the layer view

4. Change to the **Info Tool** in the tool bar, and click on a Park.

5. The **Information View** is brought into focus, showing information about the park layer at the location you clicked.


6. You can switch to requesting information on another layer on the **left pane**. Available information, if any, is displayed on the **right pane**.

7. Not all Web Map Servers support the "GetFeatureInfo" operation; as such information may not be available for all layers. The application uses a normal browser to display HTML content; you can drag the view out of the workbench if you find you need more elbowroom.
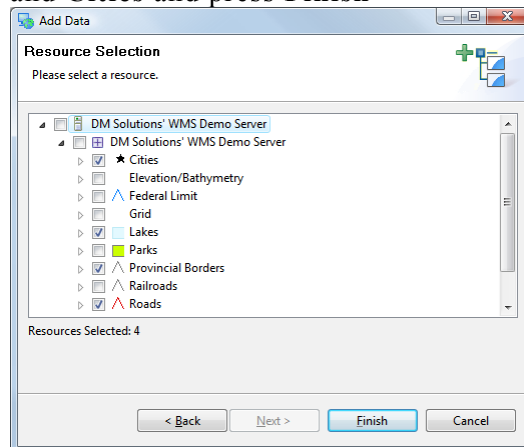
12WEB CATALOG

In this section you will learn how to use the web catalog:

1. Create a **New Map**, and press the tab for the **Web Catalog** view (located along the bottom of the window near Catalog).

2. Click on the WMS link for **dm solutions**.
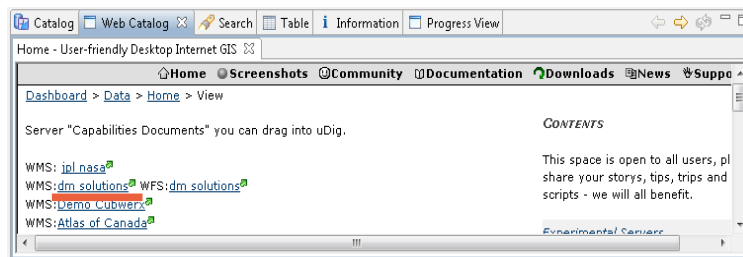
3. The Add Layer wizard will open (uDig can recognize links to spatial content). Choose the **Parks, Provincial Border, Roads** and **Cities** and press **Finish**


You can use the Web Catalog with your own website for easy spatial visualization.
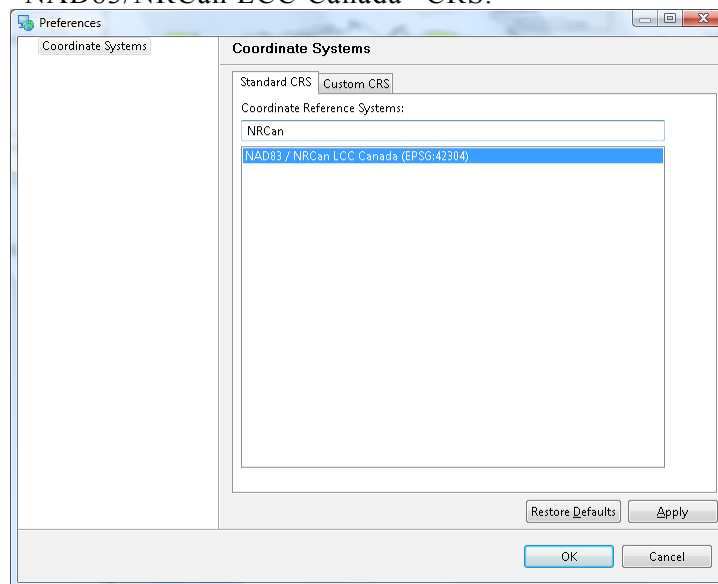
13RE-PROJECTION

Since the world is not flat, maps are projected in a Co-ordinate Reference System (CRS). We will now make 2 identical maps, perform a re-projection on one, and compare.

1. Please use the Zoom and Pan tools to navigate to British Columbia (on the west side of North America). Press the button at bottom of **Map 3** marked "**WGS 84**".
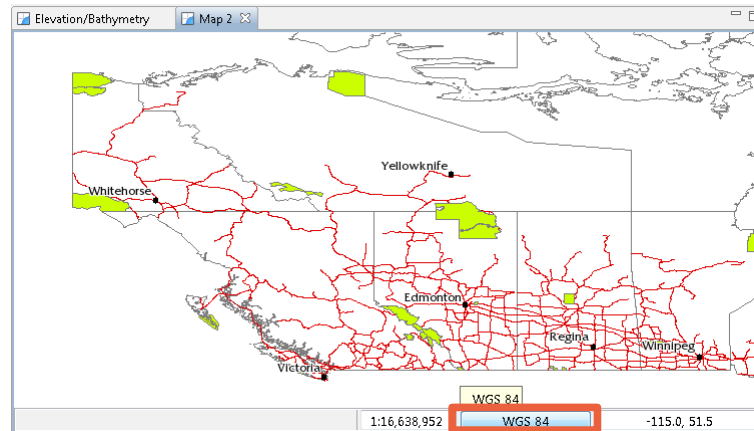

2. This brings up the a preference page allowing you to change the Coordinate Reference System for your map. Please enter in **42304** and press enter to re-project the map to the "NAD83/NRCan LCC Canada" CRS.
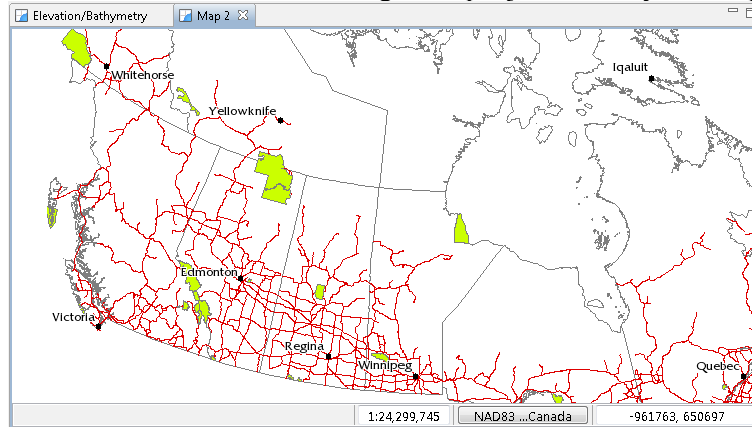
You can also search by name, try typing in "NAD83" to list matching projections

3. You can have a look at the formal definition of "EPSG:42304" by switching to the "Custom CRS" tab
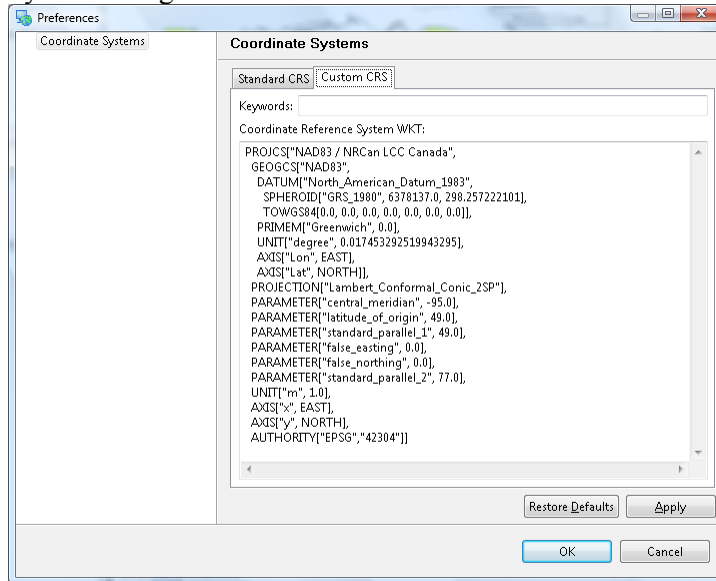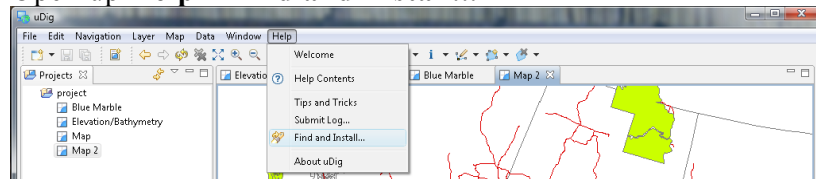

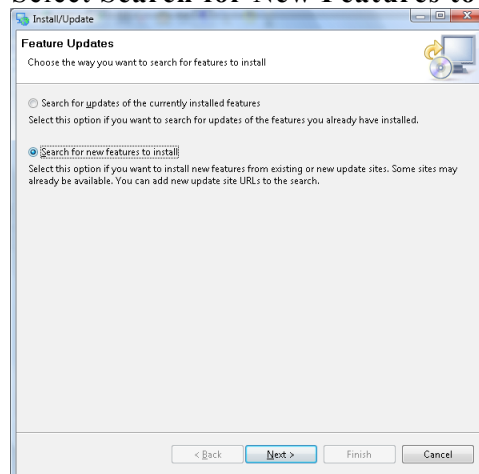4. Press the **OK** button to change the projection of your map.

14COMMUNITY

One of the nice things about uDig is ease of which you can download additional plug ins provided by the developer community.
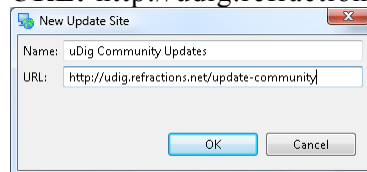
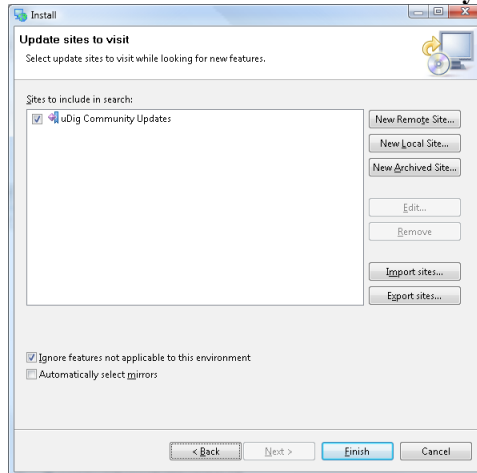1. Open up **Help > Find and Install...**

2. Select **Search for New Features to Install** and press **Next**

3. Press the **New Remote Site** button and provide the following:
   Name: uDig Community Updates
   URL: http://udig.refractions.net/update-community

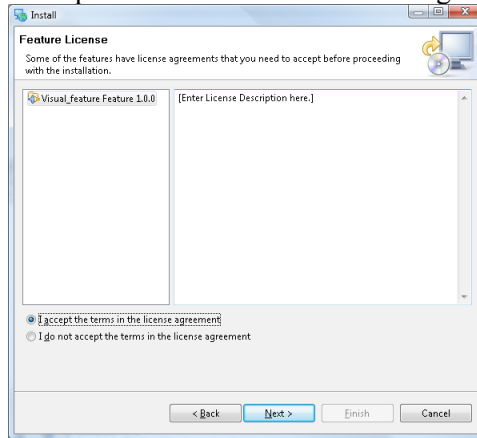4. Place a check mark for **Community Updates** and press **Finish**

5. Please wait while we check the update site for new features.

6. When we have a complete list you will see a screen similar to the following
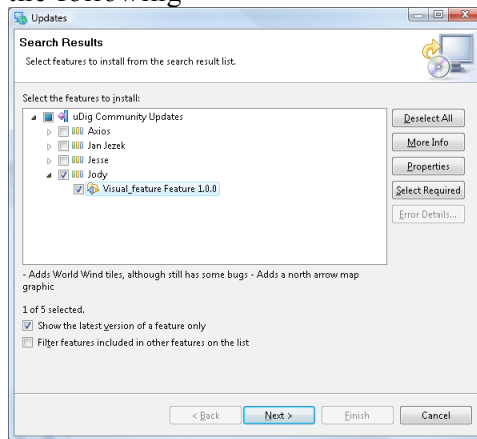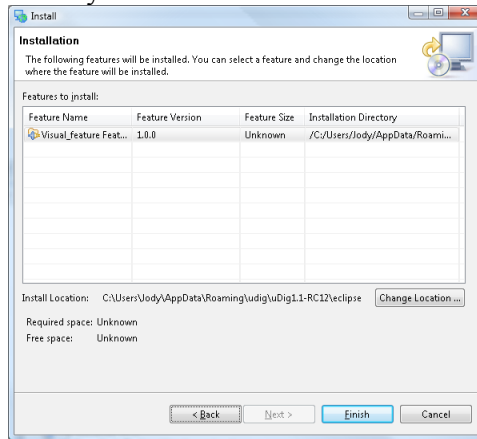
7. Please place a check next to Visual feature Feature 1.0.0 from the list and press **Next**.
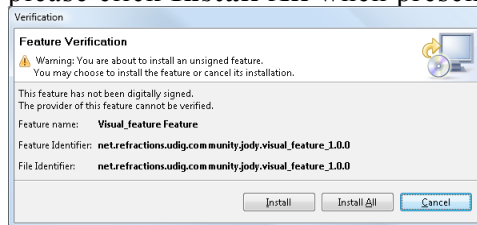
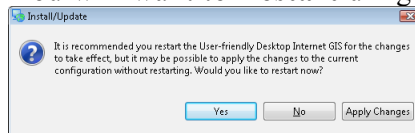8. Accept the terms of the license agreement and press **Next**.

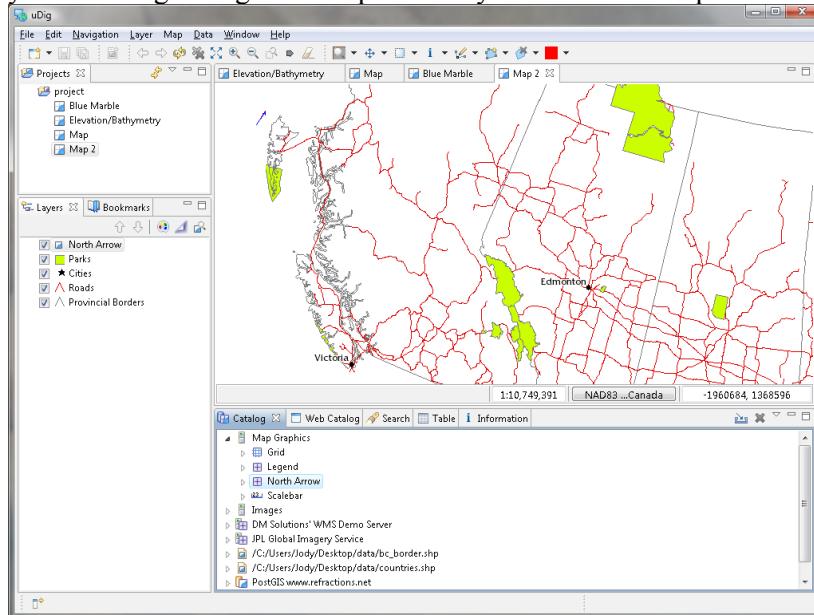9. Finally confirm the installation location and press **Finish**.

10. Many of the community features have not been formally signed, please click **Install All** when presented with a warning.

11. You will want to **Restart** uDig when presented the opportunity.

12. You now have a new **North Arrow** Map graphic available in your catalog. Drag and drop it onto your **Parks** 2 map.

13. You may of noticed an ugly red square in the tool bar, select this "tool" and your "North Arrow" layer and you can position the arrow on the Map.

14. Community contributions range from small map graphics like this to custom editors and additional spatial formats.

15 FINISHED ALREADY?

If you finish early here are some challenges.

- There is more data available in the data directory - have a look !

- Try right-clicking on a Layer – there is plenty to do (try the operations menu).

- Does your organization publish any spatial information on the web?

- Try out the navigation tools such as Zoom and Pan (the Navigation menu lets you go back to previous locations like a web browser).

- Advanced: Open the **Style Editor**, have a look at the **Advanced** (**XML**) page and see what you make of it.

Perhaps you have an idea for the tool you always wanted?