

How I created these Maps:

1 Raw Data:

1.1 <http://seamless.usgs.gov/>

1.1.1 Source of Elevation Data

1.1.1.1 Data is a 3-D raster format is is mostly interpreted from the USGS 24k topo maps. This data is can be converted to 2-D vector for contour lines. There is some minor detail loss in the conversion.

1.1.1.2 I Use the typically use the 10m DEM (24k topo equiv.) Unless 3m data exist (more accurate then USGS 24k stuff)

1.1.2 Source of Tree canopy data

1.1.2.1 Data is a raster file that is 30m resolution with a darker intensity meaning a denser forest.

1.2 <http://nhdgeo.usgs.gov/viewer.htm>

1.2.1 This site is a good source of water related info (rivers, lakes, glaciers, etc)

1.2.2 High resolution data is at least 24k topo quality with many areas that exceed that for drainages. Lake data is also good.

1.2.3 Glacier data is mixed. I choose to edit most of it.

1.3 <http://edc2.usgs.gov/geodata/index.php>

1.3.1 This is another source of USGS Vector data.

1.3.2 Most of the 24k type data exist for only the urban areas.

1.4 <http://www.fs.fed.us/r6/r6nf.htm>

1.4.1 This is another source of data that is redundant of some of the above data.

1.4.2 Some USFS districts also have some useful trail data.

1.5 <http://pugetsoundlidar.ess.washington.edu/>

1.5.1 This site contains high resolution terrain data from LIDAR surveys

1.5.2 Resolution is about 2-3m

1.5.3 Data covers limited areas, but this database is growing.

1.6 <http://www.oregongeology.com/sub/projects/olc/>

1.6.1 another potential source of LIDAR data when it is available.

1.7 <http://www.census.gov/geo/www/tiger/tiger2006se/tgr2006se.html>

1.7.1 US Government TIGER database that contains OK Road data.

1.8 Terraserver

1.8.1 Good source of the scanned USGS Topographic maps and aerial photos for any data missed above.

1.8.2 There are other sources, but this location is faster because the data is compressed.

1.9 Guide books (*Oregon High*, etc)

1.9.1 Since I am creating maps for mountaineering, I wanted to make routes (indicated as trails) to the summits.

1.9.2 Using such sources are vulnerable to the interpretation the the map designer (too bad).

1.10 Independent GPS users.

1.10.1 Routes made with GPS data is usually better then any of the above sources and is used when available.

2 Editor Software:

2.1 Global Mapper (www.globalmapper.com)

2.1.1 This Software is capable of importing almost any GIS data type including data form all of the sources above (Garmin GPS data may need conversion using vendor supplied software).

2.1.2 Terraserver data can automatically overlay (when hooked the the Internet) for

- reference of some detail missed above (trails, glacier areas and ID, roadway corrections, etc)
- 2.1.3 I also use this program to generate PDF maps by outputting a TIFF file and arranging a key using OpenOffice Draw and outputting as a PDF
 - 2.1.4 This program can export any vector data into a Google Earth KMZ file.
 - 2.1.5 This program can also export data in the Polish Format (MP) that represents the source code in creating Garmin (IMG) files. Raster files are not compatible (3-D data or Tree Data)
 - 2.2 GPSMapEdit (<http://www.geopainting.com/en/>)
 - 2.2.1 Used to finalize a MP file before converting to IMG (remove any extra points, configure layers, etc)
 - 2.2.2 Good front end to CGPSMapper
 - 2.3 CGPSMapper (<http://www.cgpsmapper.com/>)
 - 2.3.1 Used to convert MP to IMG Garmin Files
 - 2.3.2 Software uses command lines, but GPSMapEdit as a front end is easier.
 - 2.3.3 I use the Freeware because:
 - 2.3.3.1 It is free and the conditions of the software does not conflict with my intent.
 - 2.3.3.2 The physical limitations (lack of auto routing, POI data) do not interfere with the my intent with the data needed in my GPS (in other words, it displays trails, contour lines, water data, road locations, campsites, or any feature that is useful in wilderness travel).
 - 2.4 SendMap (<http://www.cgpsmapper.com/>) -Yes, same as above
 - 2.4.1 Used upload Garmin IMG files into the GPS.
 - 2.4.2 It is possible to load into the Garmin Mapsouce software, but why? The link below can tell you.
- 3 <http://home.cinci.rr.com/creek/garmin.htm>
- 3.1 This is good site to instruct on how to create a custom Garmin map for free. It is a good place to start if you want to learn how use all that data.
 - 3.2 There are some limitations (some of the above data may not import, but the basic stuff like contour and water data will work) and that is why I use Global Mapper.
 - 3.3 The instructions there can also show how to load into Garmin Mapsource in case want to print your work, because that is the only way to print for free.