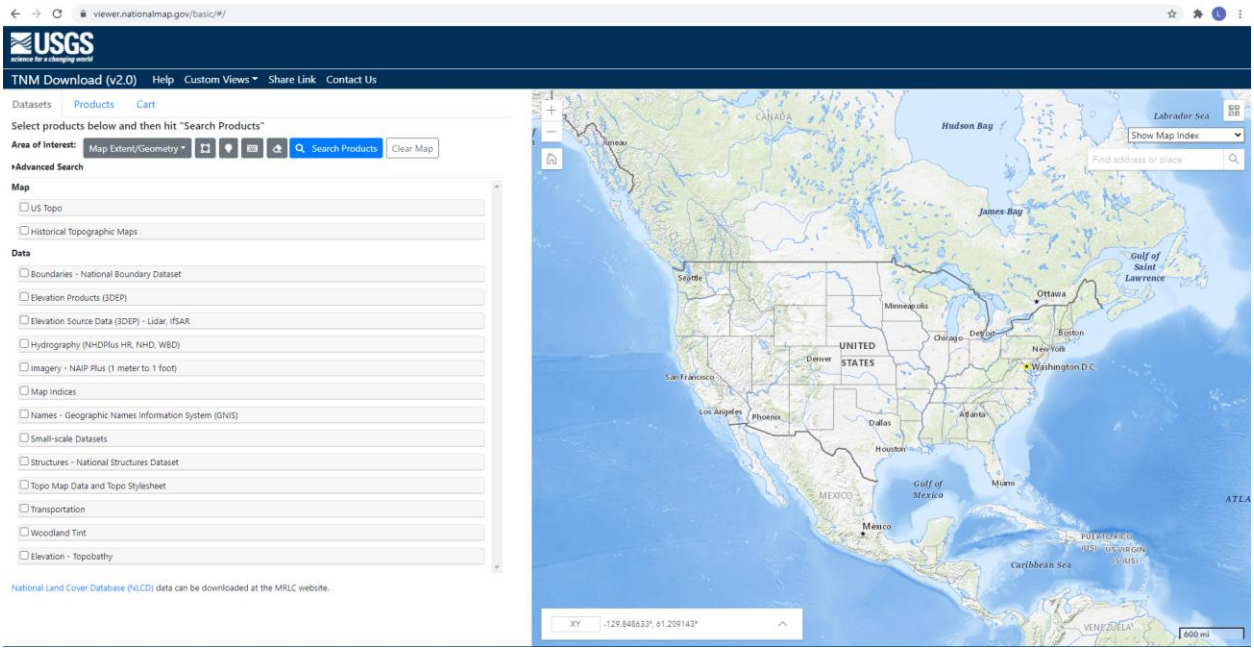
How to download USGS Digital Elevation Data

Tutorial Summary:

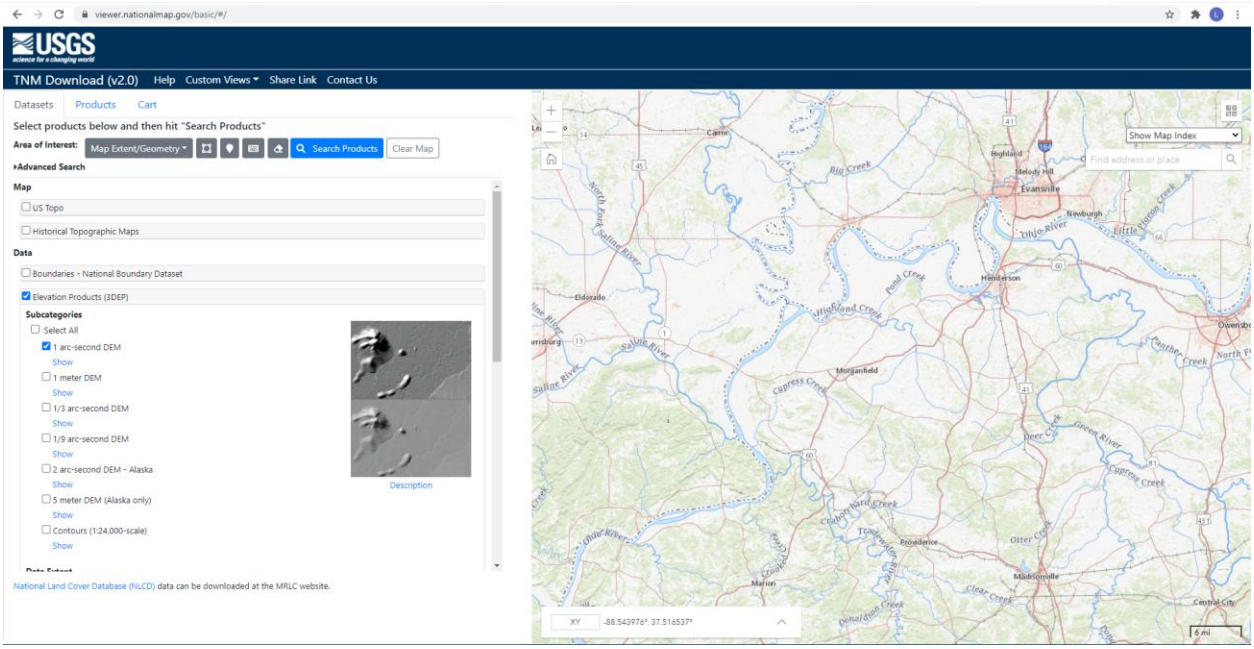
Learn how to download USGS digital elevation data and extract area for Continuum modeling using QGIS. Continuum is limited to a topography file size of 53M data points and the data downloaded from the USGS is provided in 1°x1° blocks which are too large to import into Continuum.

1) Go to USGS' National Map viewer: https://viewer.nationalmap.gov/basic/#/

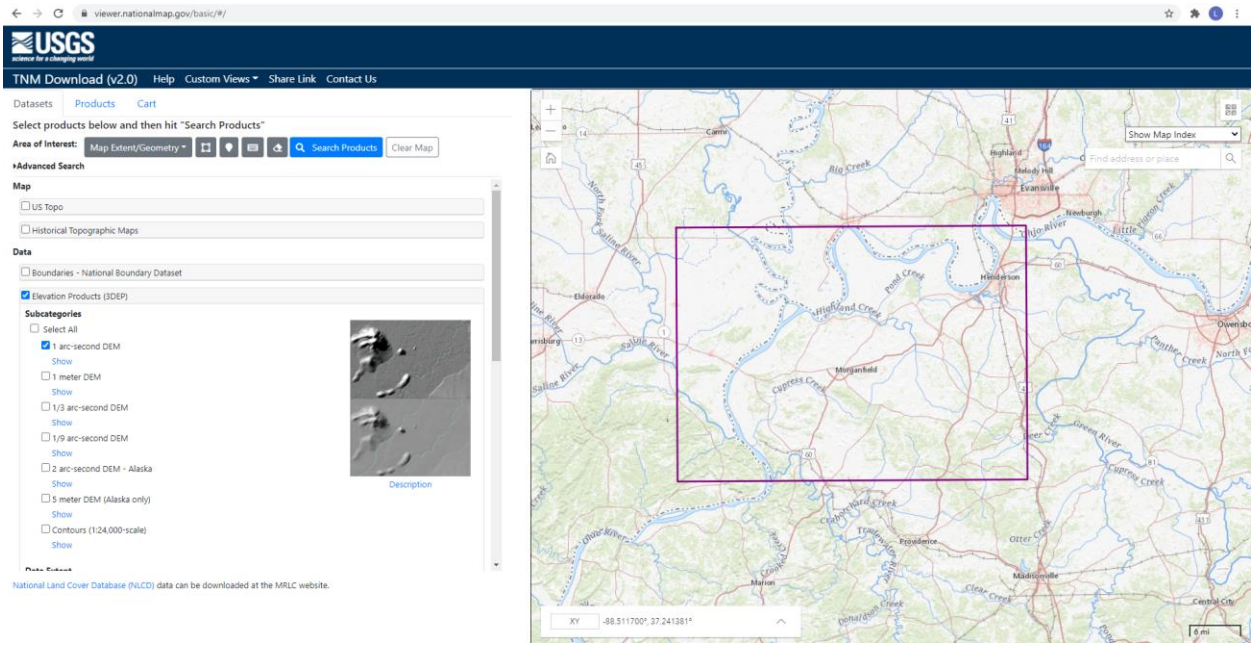


2) Select Elevation Products (3DEP). Select 1 arc-second DEM and unselect 1/3 arc-second DEM.
3) Zoom to area of interest
    - Note that Continuum requires a 12 km buffer of topography and land cover data around every met site and turbine location that is modeled. It is recommended to use Google Earth to determine the required extent of the topography and land cover data.

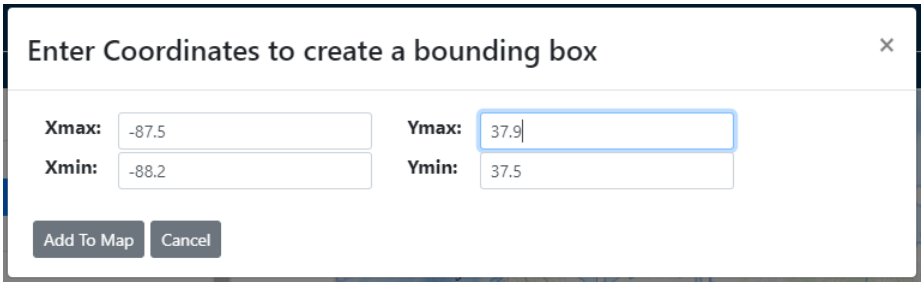
How to download USGS Digital Elevation Data



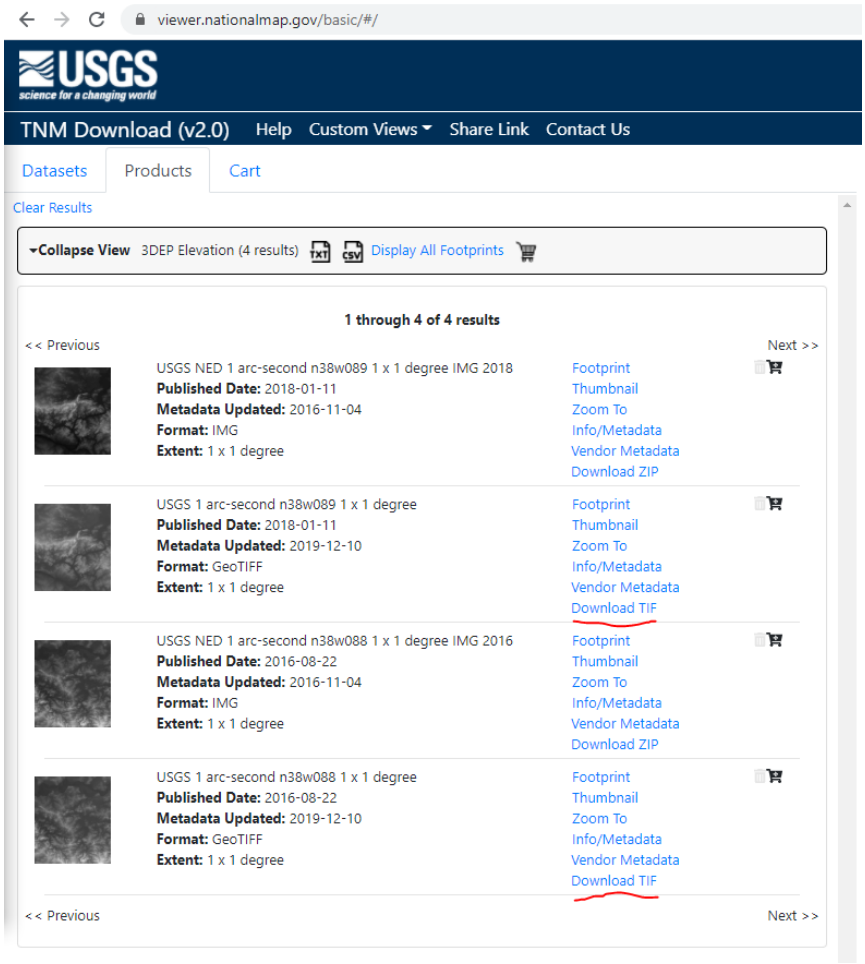
4) Select 'Draw Bounding Box'  and draw box on map of approximate area of interest or enter exact latitude and longitude by selecting 



How to download USGS Digital Elevation Data

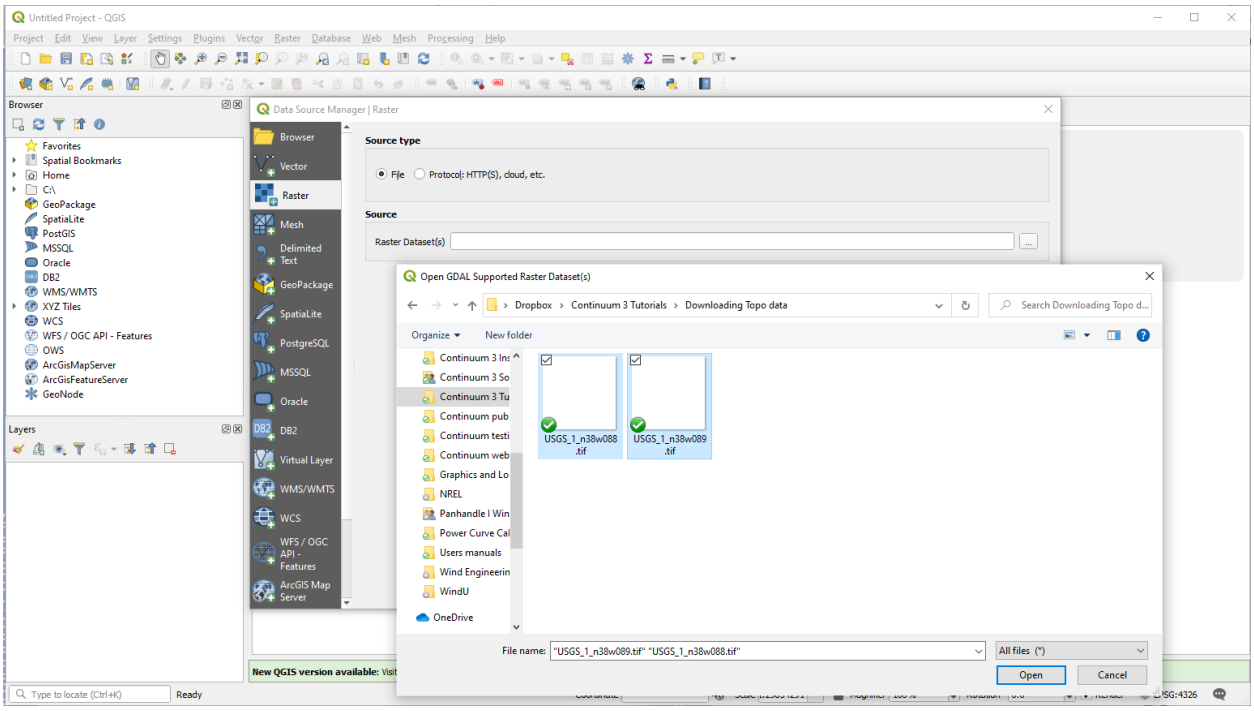


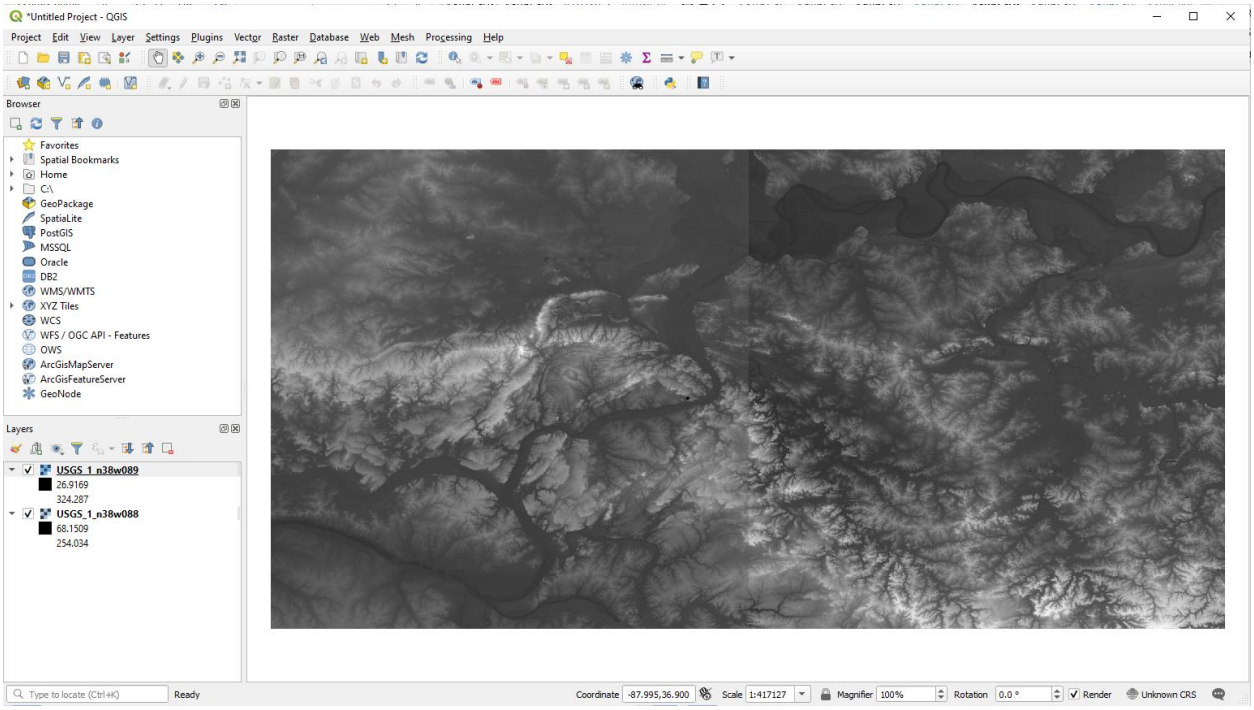
5) Click 'Search Products'.
    - This will produce a list of the 1x1 degree tiles that overlap with the specified bounding box
6) Download all of the listed GeoTIFF files



7) Open QGIS
8) Import all GeoTIFF files by clicking Layer -> Add Layer -> Add Raster Layer

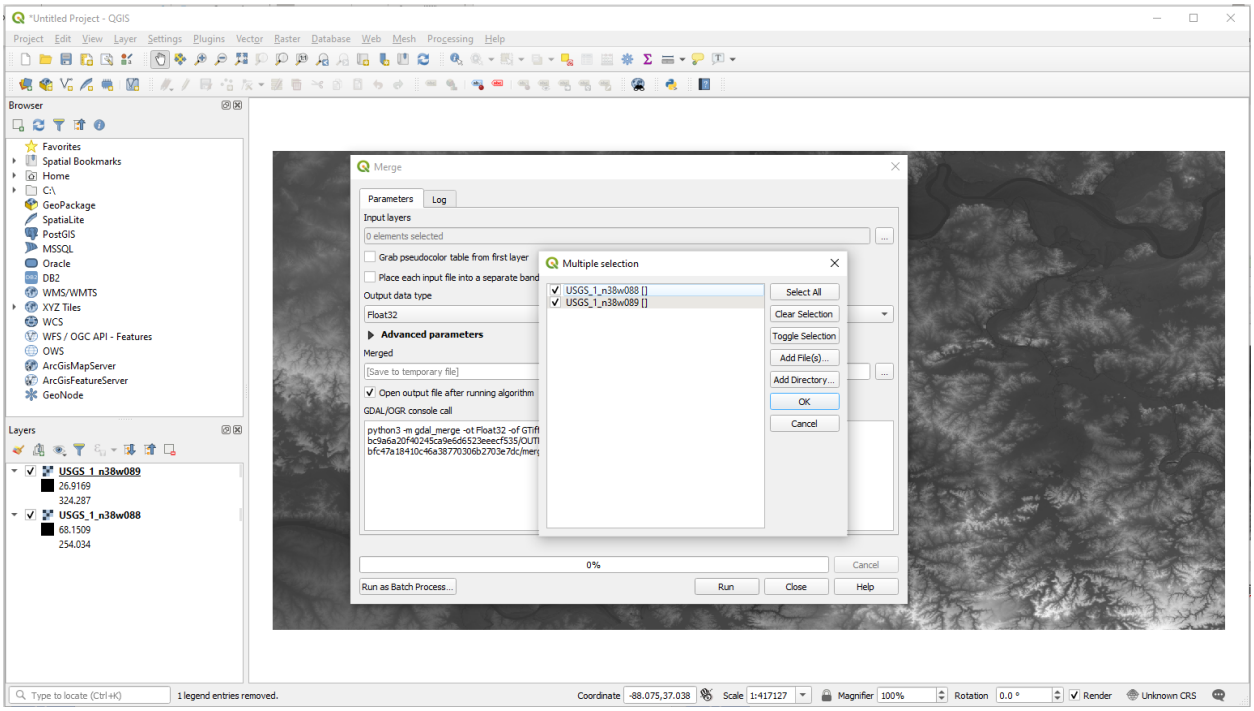
How to download USGS Digital Elevation Data





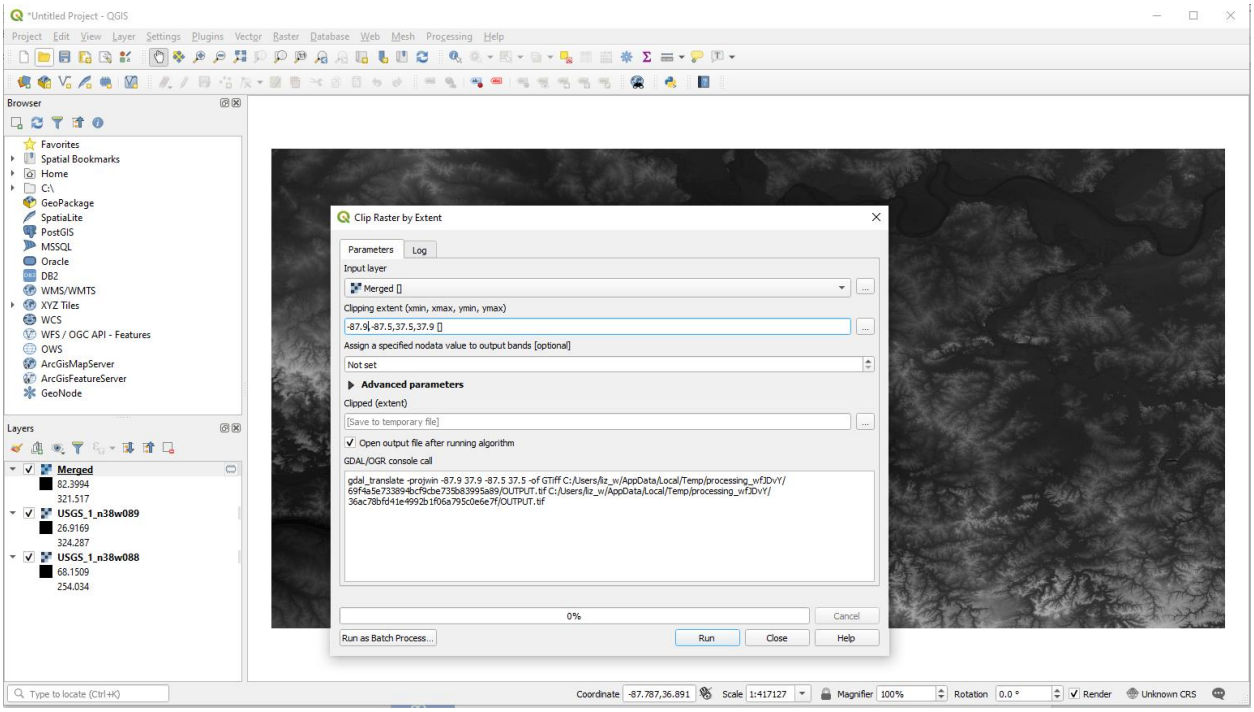
9) Merge the GeoTiff files into one raster (if you have more than one GeoTiff). Raster -> Miscellaneous -> Merge
   - Click on the three dots beside Input Layer and select all GeoTiffs
   - Click Run

How to download USGS Digital Elevation Data

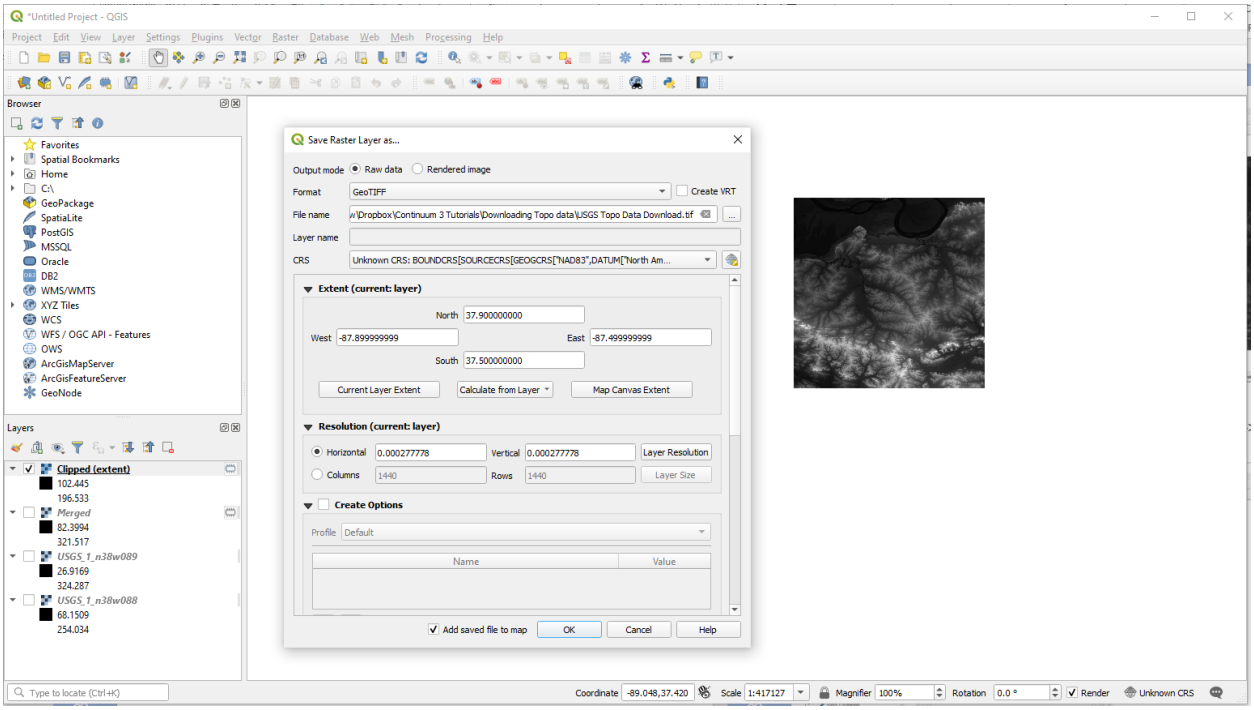


10) Extract modeled area by clicking Raster -> Extraction -> Clip Raster by Extent
    - Next to 'Clipping extent', click the three dots and select 'Select Extent on Canvas' to draw bounding box
    - Edit the latitude and longitude values to match the coordinates of modeled area
    - Click Run
    - When finished, click close

How to download USGS Digital Elevation Data



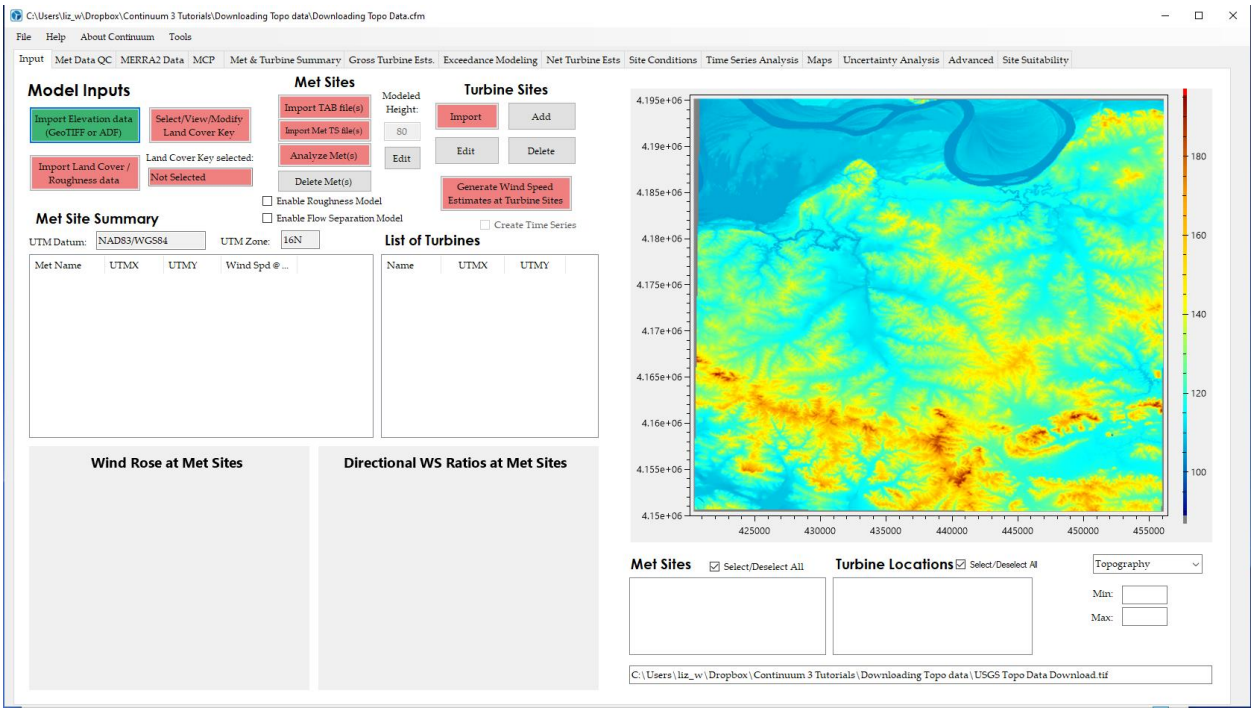
11) Right-click on 'Clipped' raster and export to GeoTIFF file (Export -> Save As). Enter file name and click OK



Continuum 3 Tutorials

How to download USGS Digital Elevation Data

12) Import into Continuum. Click "Import Elevation data". Select Datum NAD83 (default in QGIS) and enter UTM zone (check Google Earth if unsure)



Continuum 3 Tutorials

Created: 12/10/2020

continuum® Wind Flow Model