

Lab 5: Basic GPS Operation (Campus version)

What You'll Learn: This lab will introduce you to Global Positioning System (GPS) data collection, data transfer. Use Garmin eTrex 20 to collect, transfer and export data using DNR Garmin Software and then use ArcGIS Pro to create a final map.

Data L:\FNRM3131\Lab5 or L:\FNRM5131\Lab5 or Class Web site
Campus_ UTM, Zone 15 NAD83, meters.

What You'll Produce: You will create a map of the campus area where you collected GPS data, displaying your collected data points. (Remember to add, title, name, north arrow, legend, etc.).

Background

Note: This optional Lab will be with worth 5 extra credit points.

The Lab instructor will pass out Garmin e-Trex 20 instruments for you to use during this exercise. Please turn them in when the lab period is over.

BASIC PROCESS (step by step details are shown later)

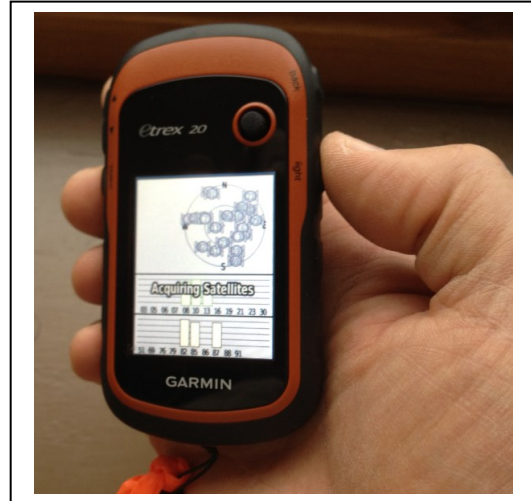
- Learn simple basics (in classroom) as to how to turn on GPS instrument and collect a data point (also referred to as "Waypoints").
- Outside locate at least 5 of the 10 indicated points (in the old athletic field, south of the Gym; see illustration at end of the document)
- Collect Data at least 5 of the 10 points, all 10 if you wish. Name the points if you wish, the GPS instrument will number them as you proceed.
- Back in classroom – Transfer the GPS data to your computer, using the DNR Garmin software.
- Save the data file as a Shapefile to your drive (L:\home).
- Using ArcGIS Pro, map your data on top of a recent image of campus provided within the Lab 5 data folder
- Export your map as a .pdf file and submit it via the Canvas class site.

Each GPS instrument should also have a white card attached with simple instructions.

When you have collected data from at least 5 points, turn the instrument off and go back to the Skok 35 lab.

A data cable will be provided for you to transfer your data to the computer.

The data cable plugs in to the USB port on the computer and the other end plugs into the back of the Garmin e-Trex 20. See below.

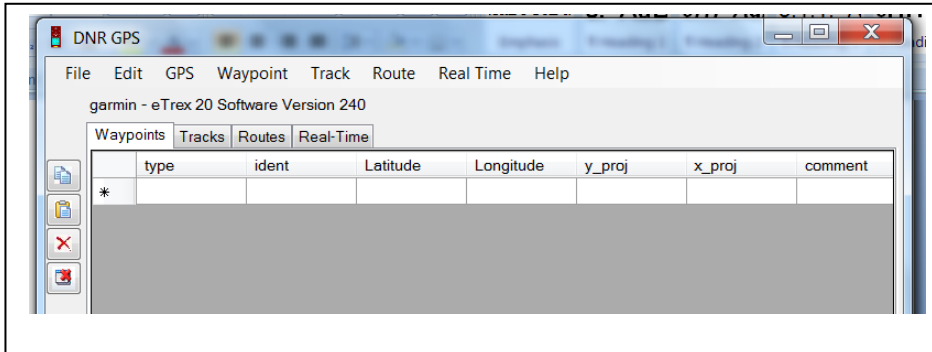


Once “cabled up”, the unit will power up automatically and enter UBS mode. On the lab computer locate DRNGPS within the CFANS programs (Start Menu) and start the program.

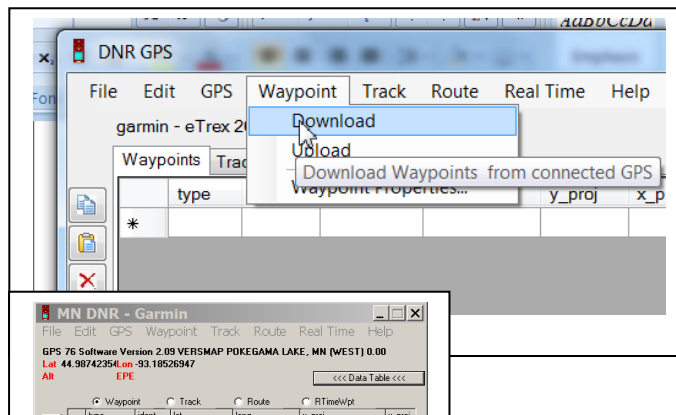


Answer Yes to the RUN question prompt.

You should see this screen:



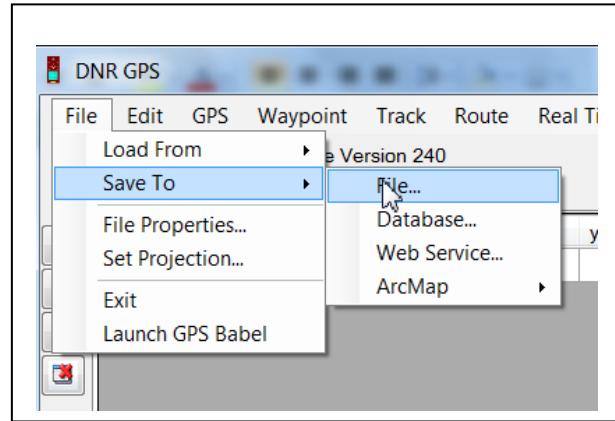
Next select Waypoint and select Download



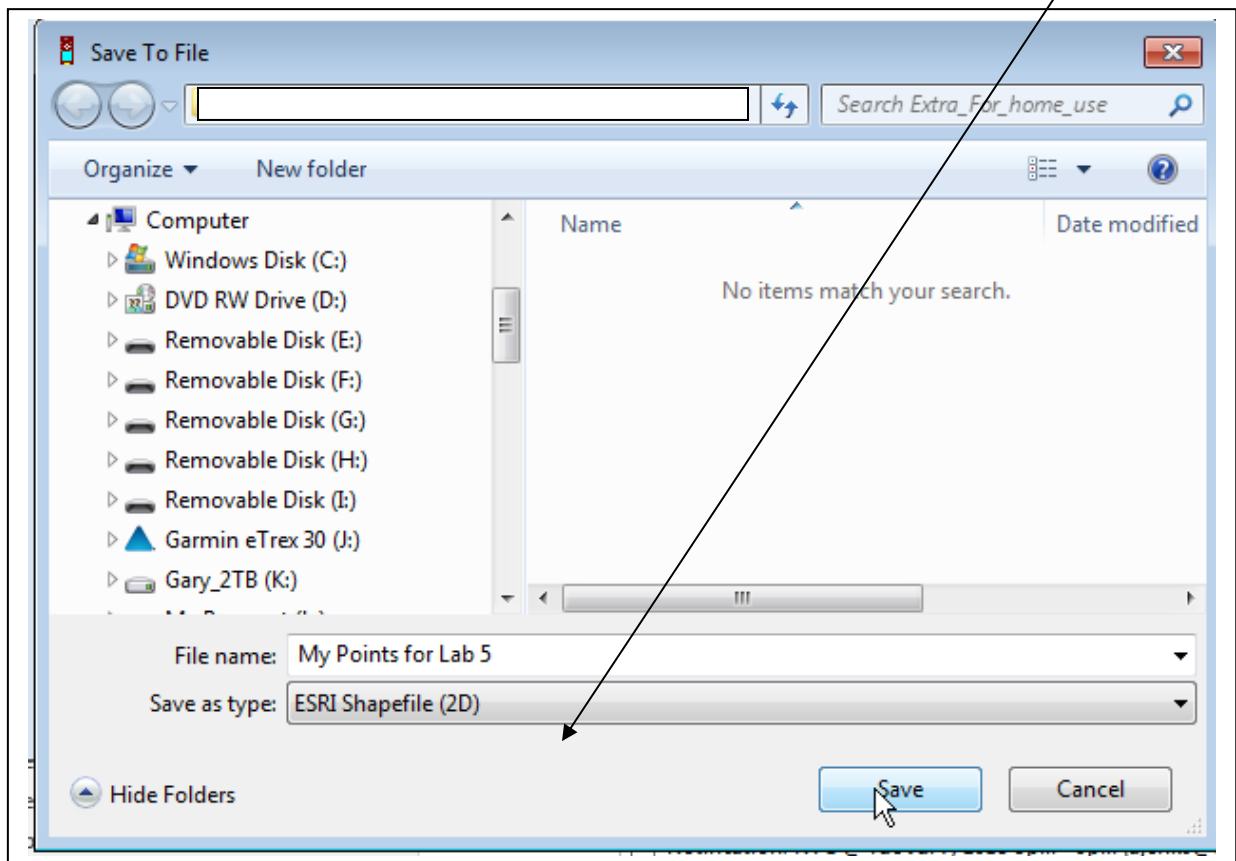
This transfers your points to the computer. You will get a message about the number of points. Select, OK.

*Note: If you don't go outside, use the file on
 \Lab5\extra_for_home_use\GPS_Points_if_you_don't_go_outside.txt.
 Use File → Load From to bring this data into the DNR
 Garmin. Then continue with the File Save below*

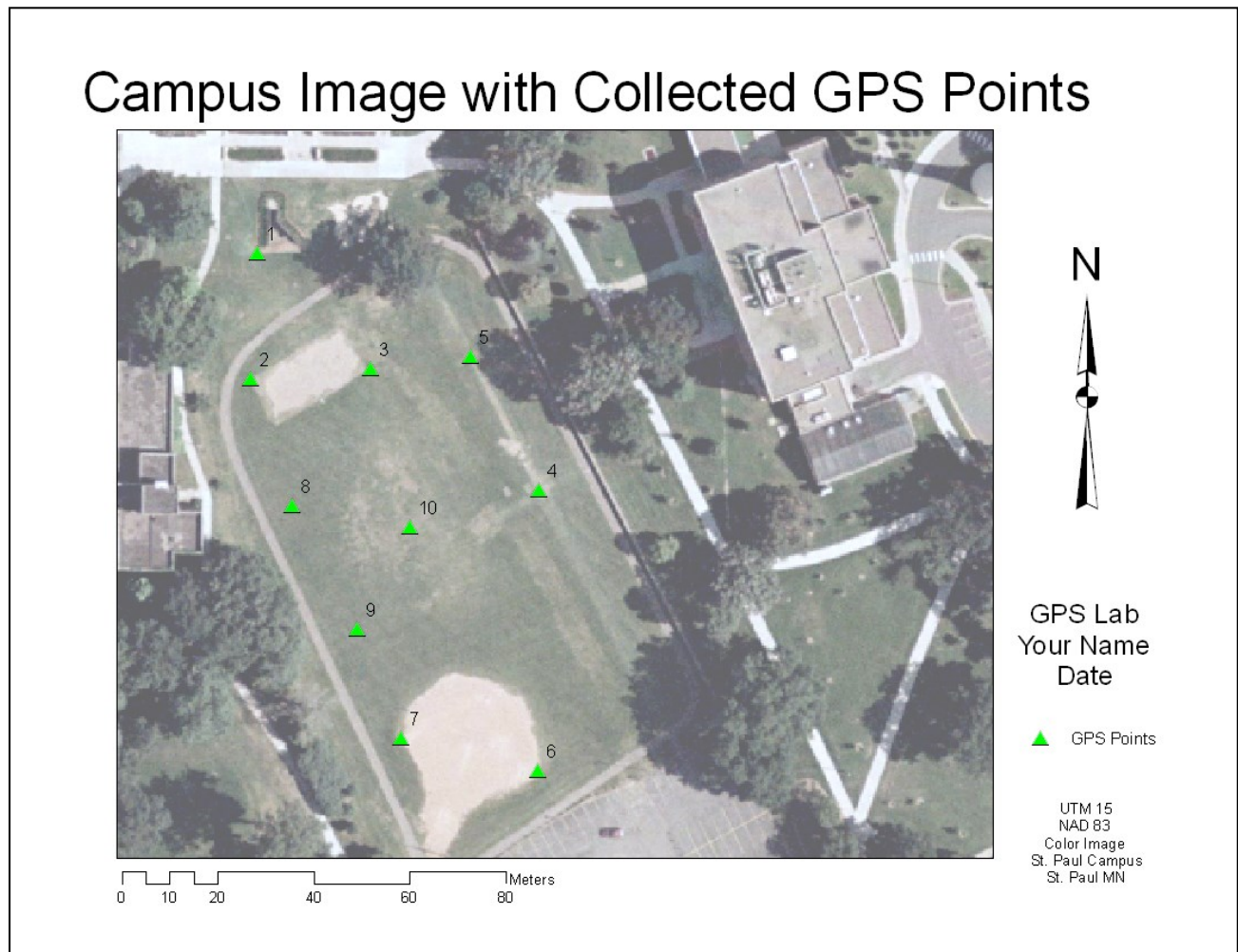
Next, select File → Save to → File



Select your (L:\home) drive and change the Save as Type “ESRI Shapefile (2D)”



- Close DRN GPS, turn off the GPS unit and open ArcGIS Pro.
 - Use new empty map and add the `\Lab5\Campus_UTM.img`.
 - Then add your GPS data file.
 - To add labels to your map use Properties of your GPS layer. Use the Labels tab and select "Label features in the layer" and use IDENT as the Label Field.
 - In Layout, add your Title, North Arrow, Scale bar, and Legend.
 - Share the Layout as a .pdf and submit via the Canvas class site.
- Example below:



Export as a .pdf. Remember to have an overall title, your name, and legend, and one scale bar.