

Taking your GPS data and importing it into ArcGIS

First, a few basics...

- You want to use a .csv file format in your spreadsheet software of choice, the CSV stands for Comma Separated Value. * I think ArcExplorer uses .txt file extension?
- Most GPS data will be in Degrees/Minutes/Seconds or DMS format, we want to convert our GPS data in to Decimal Degrees or DD format.
- OBJECTID (OID)
- Database Tables (.dbf)
- DO NOT use SPACES, rather use an underscore “_” Many GIS programs disapprove of the use of spaces!
- Map projections: The state of Indiana is UTM State Plane Zone 16. Many GPS devices will default to WGS 1984 for the coordinate system, but it is important that you check prior to data collection and make note of it.

Set Up Your Data

- Convert your coordinates into an x,y table format (lat,long)
- It is important that you know the coordinate system of the x,y data

There are a few options for x,y coordinate conversion...

- Latitude and Longitude outside of GIS are often expressed in degrees, minutes, seconds. These must be converted, using a spreadsheet software such as MS Excel, into Decimal Degrees.
- This can be done using a formula in the spreadsheet software:
$$X \text{ in decimal degrees} = \text{degrees} + \text{minutes}/60 + \text{seconds}/3600$$
- Depending on which GIS software you are using, and which version, a “convert coordinate notation” tool may be present. If you are using ArcGIS desktop 10 you can find this under “Data Management”. If not, a quick search using the “Help” option may reveal some helpful instructions.
- For large data sets there are many web based conversion tools available. One great conversion site is found at <http://www.earthpoint.us> and there is a “batch conversion” tool available. Others can be found by using a google search for “lat long or DMS to DD convertor.”
- Format the spreadsheet cell in “Number” format, then choose the proper amount of decimal places in regards to your GPS coordinates

Importing Data

- Layers added from x,y points are called “event layers”
- Click the “Add Data” button. Then choose the spreadsheet file with your GPS data. (this can also be done using Tools > Add XY Data
- Right click the Table Name and choose “Display XY Data”
- Set the “X” field to the Longitude and the “Y” field to the Latitude

- Click on “Edit” to specify a coordinate system. This will be the coordinate system used at the time of data collection. The coordinate system can be changed afterward in the GIS program by using a “Projection and Transformation” tool.

Creating the Shapefile

- Right click on the Layer that you have just created and select “Export Data”
- Choose the coordinate system “this layer’s source data”
- Browse to where the file is to be saved, click OK
- A dialog box will pop up asking if you would like to add the exported data as a layer to the map. Click YES
- The new layer will now be visible and you can remove the temporary event layer of the spreadsheet.
- To view the attribute table (similar to a spreadsheet) for the shapefile or newly created layer, simply right click on the name and choose “view attribute table” from the menu.