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Lab 6 Addenda – Using Google Earth to Import GPS Point Data From A Garmin Receiver

There are many options for transferring GPS points and tracks from a recreational-grade (Garmin e-Trex, Map60CXS, etc.) receiver, Google Earth among them. Google Earth uses a WGS84 datum and imports points with in that coordinate system. To do so:

- 1. Turn on the GPS receiver and cable it to a USB port on the desktop computer;
- 2. Open Google Earth or Google Earth Pro, find the "Tools" drop-down menu at the top of the screen and select "GPS";
- 3. GPS points stored in the receiver are automatically downloaded to "Temporary Places" in the Table of Contents. Check to be sure they are all there;
- 4. In the Google Earth Table of Contents, right-click on the "garmin GPS Device" file, select "Save Place As..." and save the data to a KMZ file at a location where it can be retrieved.

To bring the GPS data into ArcMap:

- Open ArcToolbox from within ArcMap, find the "KML to Layer tool" (Conversion Tools>From KML) and read the tool help. This tool will convert a KML or KMZ file into a feature class and layer file. More specifically, it creates a feature class within a feature dataset (with a GCS_WGS84 spatial reference) in a new Geodatabase at your specified location, preserving the original symbology;
- 2. Run the tool; the new feature dataset will automatically be added to the ArcMap Table of Contents.

To discover the coordinates of the GPS points:

- 1. Open the attribute table of the newly created feature class;
- 2. From the "Table Options" drop-down menu select "Add Field..." and create a new field (Name: Lat_, Type: Double).
- 3. Check the Spatial Reference of the Data Frame and note it;
- 4. Right-click on the new field heading "Lat_", select "Calculate Geometry..." and change (or accept) the Property (Y-coordinate in this case), choose a Coordinate System (in this case we are calculating the Latitude in DD so will use the coordinate system of the data source, GCS_WGS84) and set the units to Degrees. This will populate the new field with the latitude of each point.
- 5. Repeat steps 2 and 4 to calculate Longitude, and to calculate UTM NAD83 Eastings and Northings (by using the Data Frame coordinate system instead of the coordinate system of the data source) for the points.

To export the GPS point Attribute Table as a Text file readable by Excel:

- 1. Open the attribute table and select "Export..." from the "Table Options" drop-down menu;
- 2. Choose an output table location AND change the "Save as Type:";
- 3. Open the exported table by opening Excel first, then browsing to its location.