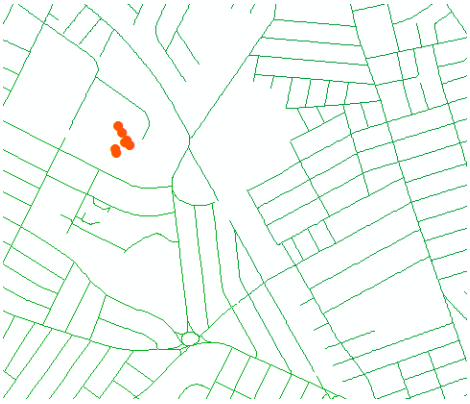
Tufts GIS Center

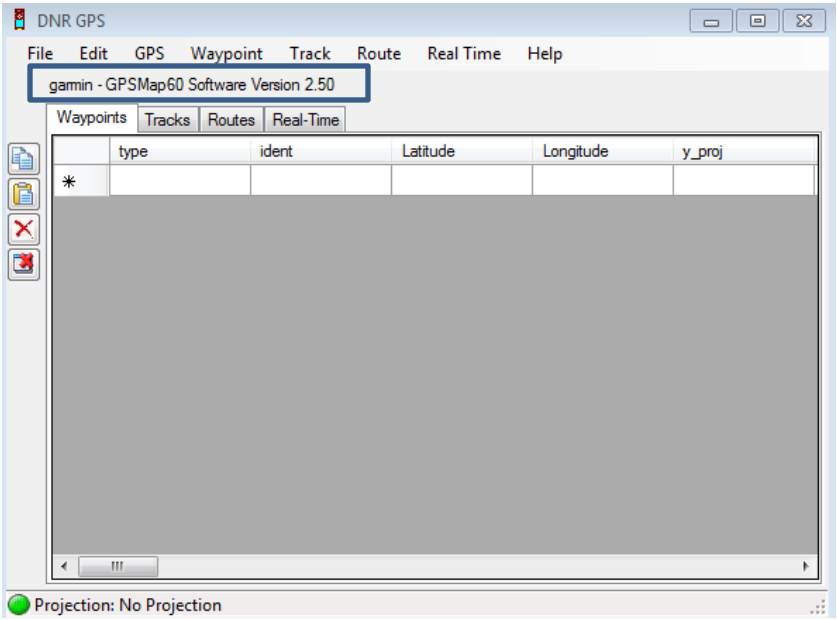
Downloading Data with DNR-GPS and Importing into Google Earth and Google Maps



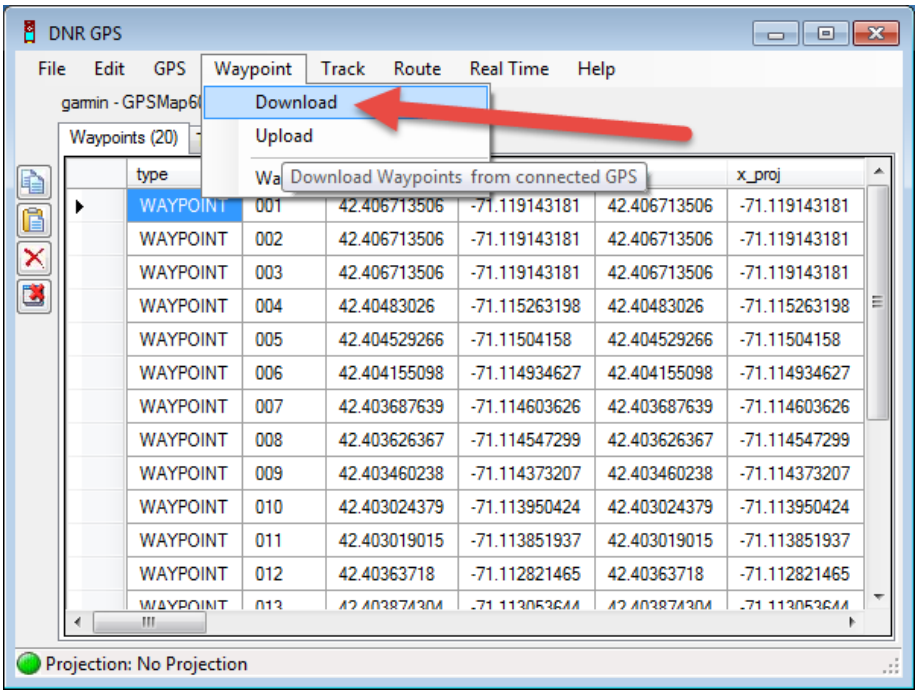
Written by Carolyn Talmadge - 10/8/14

Downloading GPS Waypoints

1. Make sure the GPS unit is turned on
2. Plug the unit into the computer using either serial port cable or USB cable.
3. Open DNR-GPS.
4. The name of your GPS unit should appear in the title bar of the DNR Garmin Window. If it does not, select **GPS →Auto Connect to GPS**. If this still does not work, you can connect manually in the GPS menu by choosing USB if using a USB cable, and Port 1 if using a serial port cable.



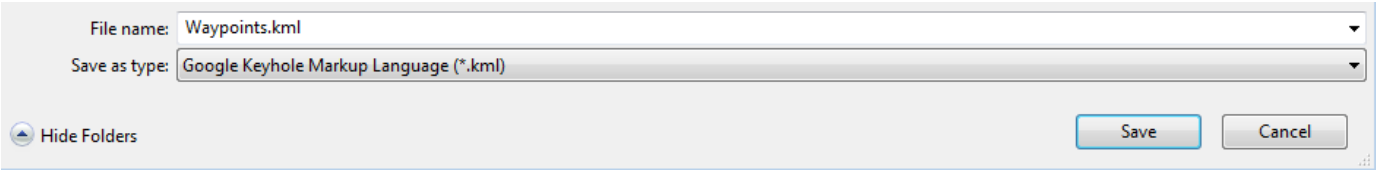
5. Click **Waypoint** then **Download.** The points you took will appear as a list.



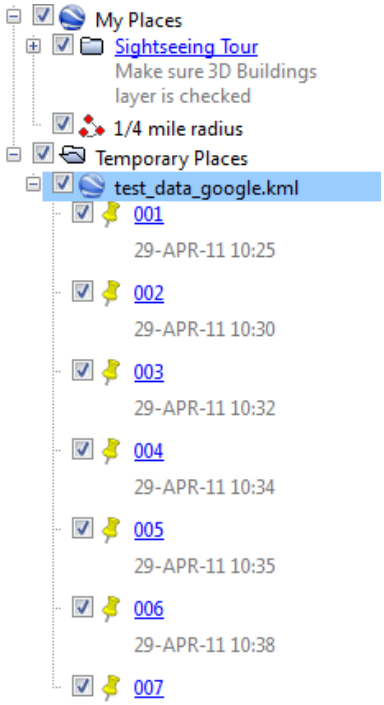
Exporting waypoints into Google Earth – Without Field Data Collection Sheet

You can import your GPS points directly into Google Earth. This process does not include any extra information that you might have collected in your field data collection sheet. It only includes information gathered by the GPS unit.

1. In the DNR-GPS program, save your waypoints to a Google Earth-appropriate format by going to **File → Save to → File.**
2. Navigate to your H: drive or thumb/flash drive, name the file and choose the *Google Keyhole Markup Language (*.kml*) as the **Save as Type**, and click **Save.**



3. Open Google Earth
4. Go to **File** and then **Open** and navigate to the file you just saved.
5. The points should appear in the left hand bar under "Temporary Places".

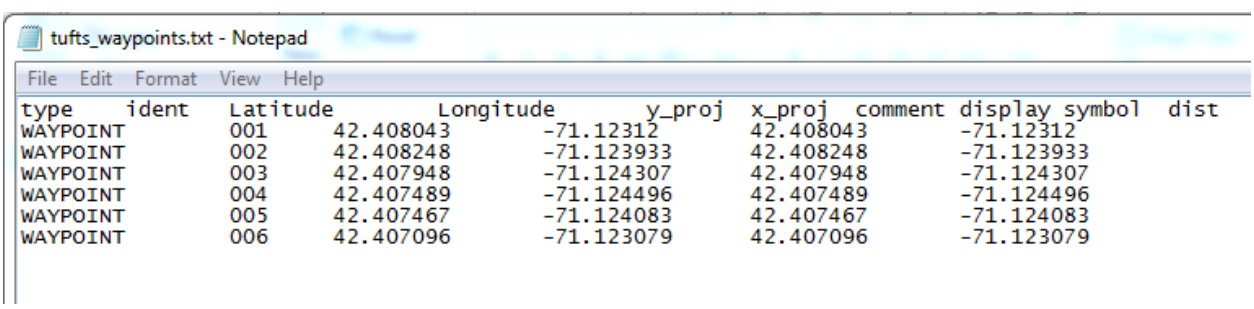


6. To save your "Temporary Places," right click on **Temporary Places** and choose **Save Places As**, or **Save to My Places**.

Creating a Tabular File and Combining your Field Data Collection Sheet

You can save the GPS data as a Tabular file and combine it with your field data collection sheet in an excel file. This can then be used to important into Google Maps or into ArcMap using Add XY Data.

1. In the DNR-GPS program, click **File → Save to → File.**
2. Navigate to your H-drive or thumb/flash drive, give the file a name, this time choosing text file (tab-delimited)(*.txt) as the **Save as Type**, and click **Save.**
    a. This is what the tab-delimited file looks like if you double click on it. However, we need to open it in Excel in order to add information that you collected with your field data collection sheet.



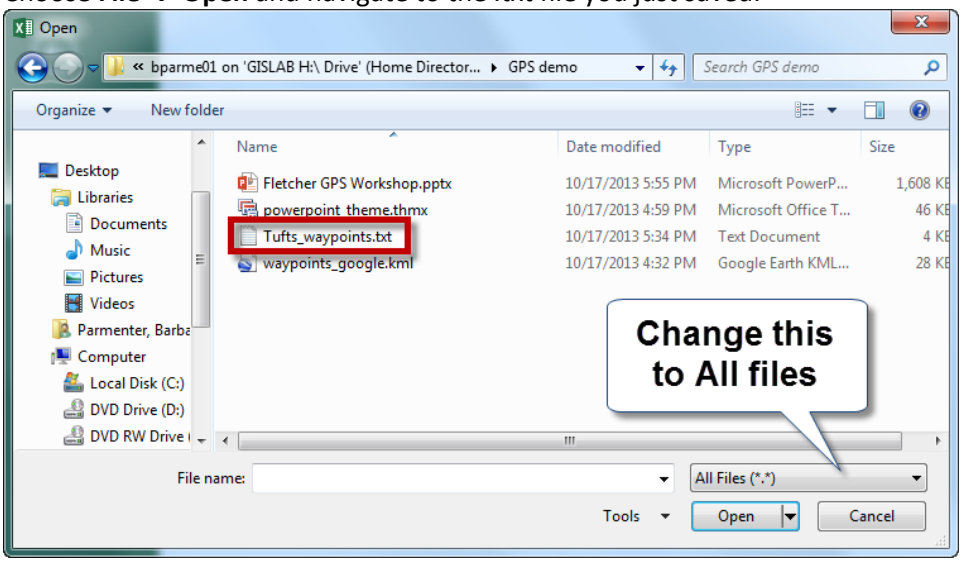
tufts_waypoints.txt - Notepad

File Edit Format View Help

type	ident	Latitude	Longitude	y_proj	x_proj	comment	display	symbol	dist
WAYPOINT	001	42.408043	-71.12312	42.408043	-71.12312				
WAYPOINT	002	42.408248	-71.123933	42.408248	-71.123933				
WAYPOINT	003	42.407948	-71.124307	42.407948	-71.124307				
WAYPOINT	004	42.407489	-71.124496	42.407489	-71.124496				
WAYPOINT	005	42.407467	-71.124083	42.407467	-71.124083				
WAYPOINT	006	42.407096	-71.123079	42.407096	-71.123079				

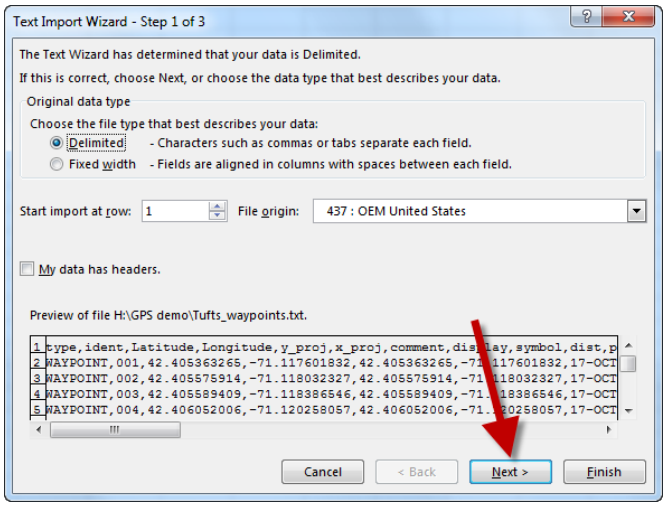
3. Open a blank Excel file.

4. Choose **File → Open** and navigate to the .txt file you just saved.

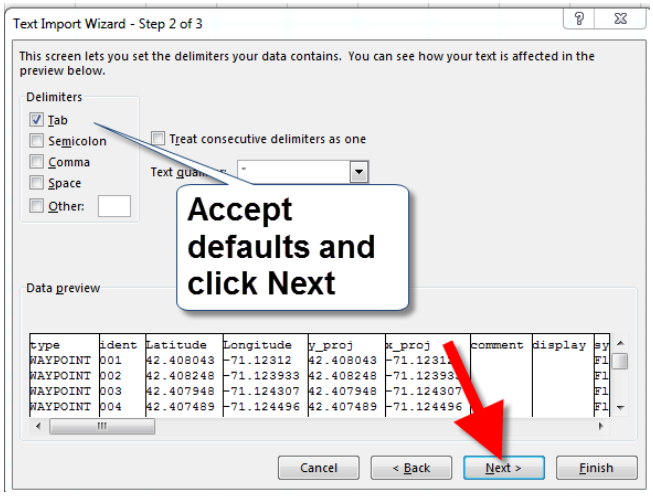


5. Click Open.

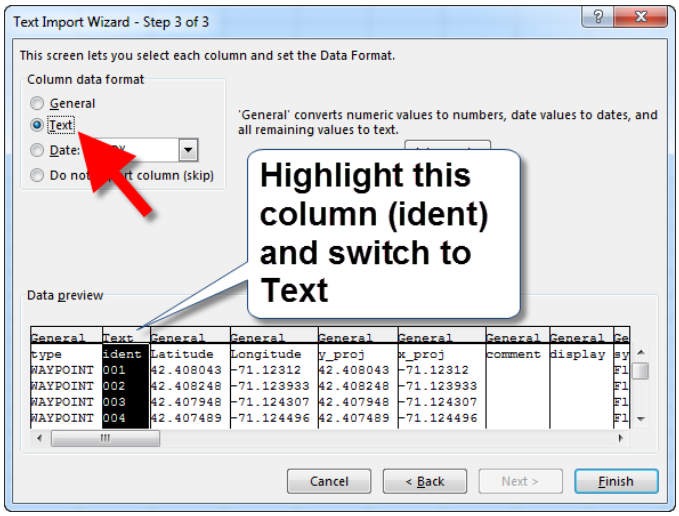
6. In Step 1 of Text import wizard, select *Delimited.*



7. In Step 2, accept the defaults and click next.



8. In Step 3, highlight the "Ident" column and select *text.*



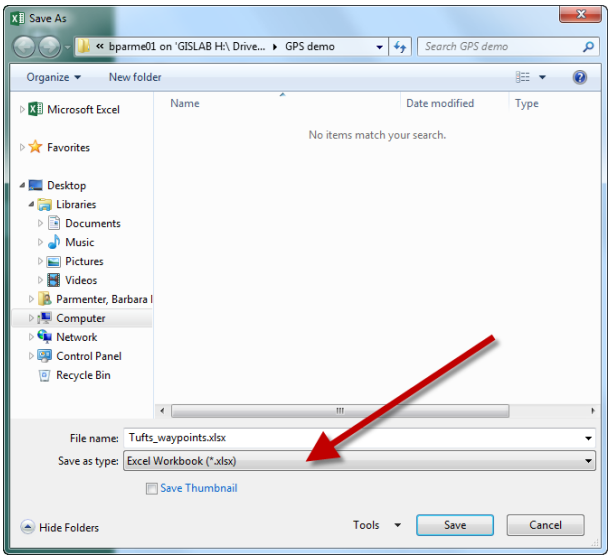
9. Press *Finish.*

10. Delete all unnecessary columns in the excel table. Note: Make sure to keep the IDENT (waypoint ID) column and your Latitude and Longitude columns!

type	ident	Latitude	Longitude	y_proj	x_proj	comment	altitude	ltime	desc
WAYPOIN	001	42.40536	-71.1176	42.40536	-71.1176	10/17/2013 15:50	45.78821	10/17/2013 11:50	10/17/2013 15:50
WAYPOIN	002	42.40558	-71.118	42.40558	-71.118	10/17/2013 15:51	49.87378	10/17/2013 11:51	10/17/2013 15:51
WAYPOIN	003	42.40559	-71.1184	42.40559	-71.1184	10/17/2013 15:51	51.07532	10/17/2013 11:51	10/17/2013 15:51
WAYPOIN	004	42.40605	-71.1203	42.40605	-71.1203	10/17/2013 15:55	54.43994	10/17/2013 11:55	10/17/2013 15:55
WAYPOIN	005	42.40609	-71.1204	42.40609	-71.1204	10/17/2013 15:56	55.16089	10/17/2013 11:56	10/17/2013 15:56
WAYPOIN	006	42.4074	-71.1219	42.4074	-71.1219	10/17/2013 16:23	54.6803	10/17/2013 12:23	10/17/2013 16:23
WAYPOIN	007	42.40741	-71.1219	42.40741	-71.1219	10/17/2013 16:23	46.98987	10/17/2013 12:23	10/17/2013 16:23
WAYPOIN	008	42.40749	-71.122	42.40749	-71.122	10/17/2013 16:24	43.62512	10/17/2013 12:24	10/17/2013 16:24
WAYPOIN	009	42.40755	-71.1222	42.40755	-71.1222	10/17/2013 16:24	40.50098	10/17/2013 12:24	10/17/2013 16:24
WAYPOIN	010	42.40755	-71.1221	42.40755	-71.1221	10/17/2013 16:26	41.22192	10/17/2013 12:26	10/17/2013 16:26
WAYPOIN	011	42.40755	-71.1221	42.40755	-71.1221	10/17/2013 16:26	41.46216	10/17/2013 12:26	10/17/2013 16:26
WAYPOIN	012	42.40755	-71.1221	42.40755	-71.1221	10/17/2013 16:26	40.98157	10/17/2013 12:26	10/17/2013 16:26
WAYPOIN	013	42.40652	-71.1194	42.40652	-71.1194	10/17/2013 17:12	45.54785	10/17/2013 13:12	10/17/2013 17:12

You can decide what to delete – just make sure to keep the IDENT (waypoint ID) column and your Latitude and longitude columns. Maybe time as well!

11. Save your file as an Excel (.xlsx) file.



12. Add the information from your field collection data sheet and save again. Make sure to properly match your information with the correct waypoint.

	A	B	C	D	E	F	G	H
1	type	ident	Latitude	Longitude	y_proj	x_proj	time	altitude
2	bus stop	001	42.40536	-71.1176	42.40536	-71.1176	10/17/2013 15:50	45.78821
3	fire hydrant	002	42.40558	-71.118	42.40558	-71.118	10/17/2013 15:51	49.87378
4	crosswalk	003	42.40559	-71.1184	42.40559	-71.1184	10/17/2013 15:51	51.07532
5	street corner	004	42.40605	-71.1203	42.40605	-71.1203	10/17/2013 15:55	54.43994
6	crosswalk	005	42.40609	-71.1204	42.40609	-71.1204	10/17/2013 15:56	55.16089
7	tennis court bench one	006	42.4074	-71.1219	42.4074	-71.1219	10/17/2013 16:23	54.6803
8	tennis court bench one	007	42.40741	-71.1219	42.40741	-71.1219	10/17/2013 16:23	46.98987
9	tennis court bench two	008	42.40749	-71.122	42.40749	-71.122	10/17/2013 16:24	43.62512
10	tennis court bench two	009	42.40755	-71.1222	42.40755	-71.1222	10/17/2013 16:24	40.50098
11	messing around	010	42.40755	-71.1221	42.40755	-71.1221	10/17/2013 16:26	41.22192
12	messing around	011	42.40755	-71.1221	42.40755	-71.1221	10/17/2013 16:26	41.46216
13	messing around	012	42.40755	-71.1221	42.40755	-71.1221	10/17/2013 16:26	40.98157
14	messing around	013	42.40652	-71.1194	42.40652	-71.1194	10/17/2013 17:12	45.54785
15								

13. Save your file once again and close excel.

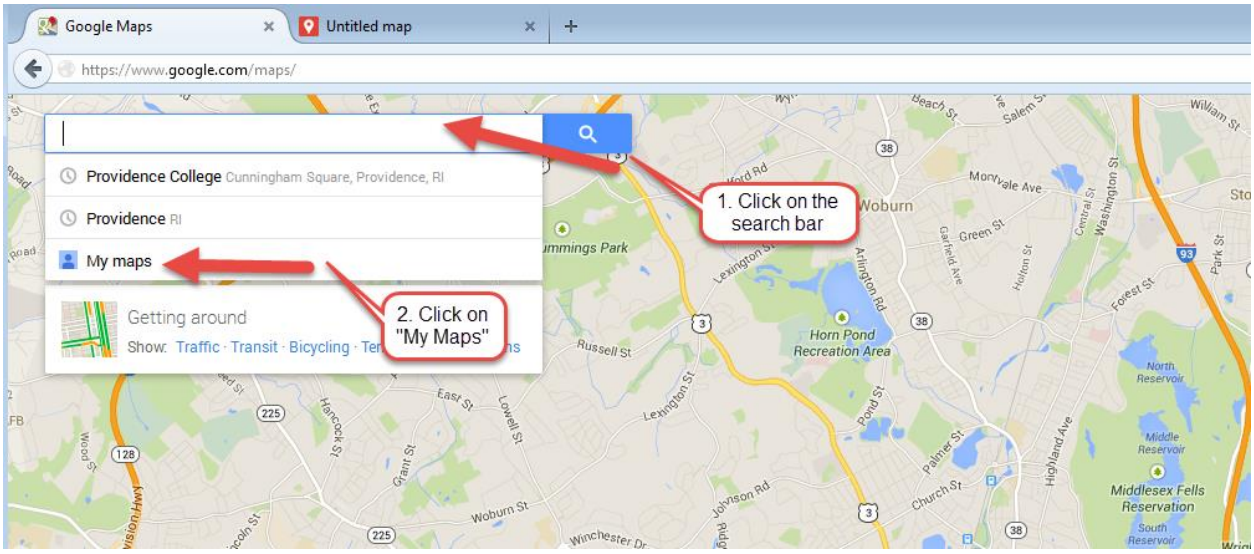
    Note: You will now use this Excel sheet to import your data into Google Maps. You can also directly input this data into ArcMap using the Add XY data function. Directions on how to this can be found in the Downloading GPS Data with DNR-GPS and Importing it into ArcMap document.

Importing your Excel Table into Google Maps

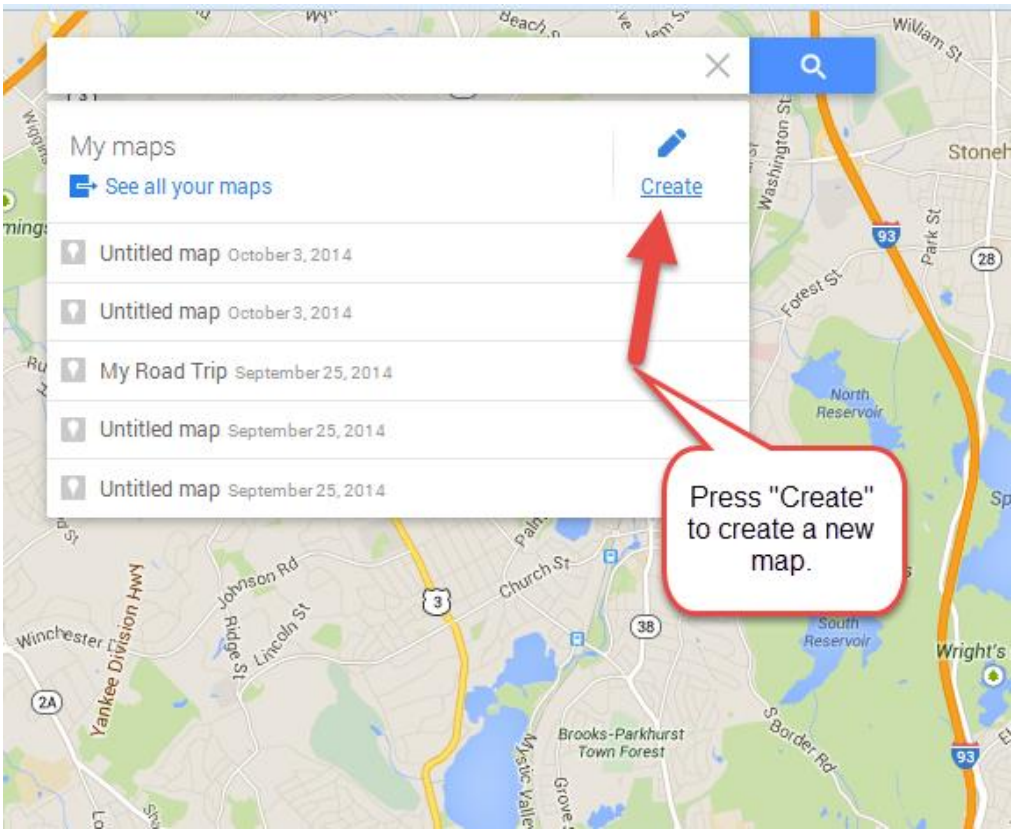
This step shows you how to import your Excel table with your field data from the previous step into Google maps.

Note: You must have a google account to complete this step.

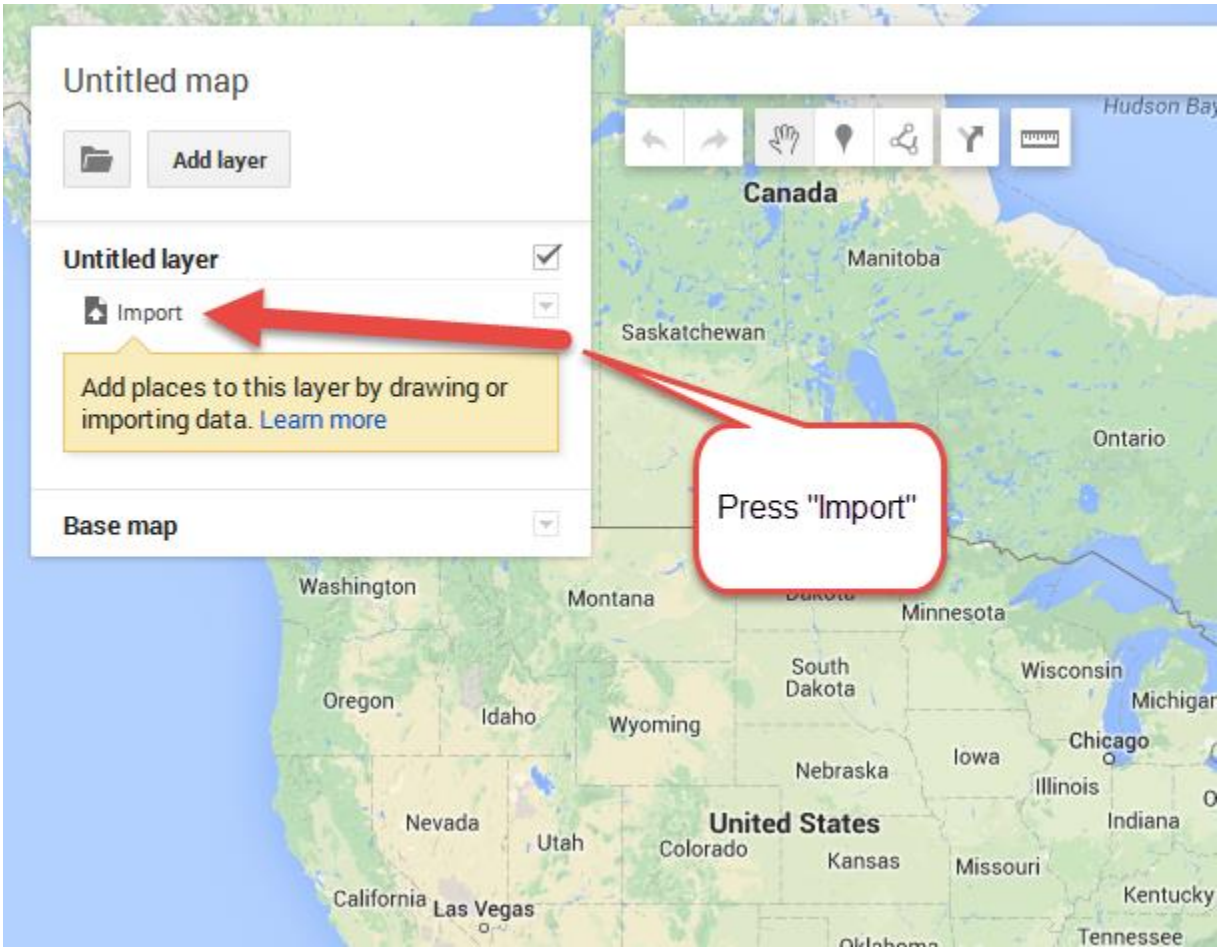
1. If you have a gmail or google account, go to https://www.google.com/maps/ and sign in with your username.
2. Click on the search bar and then click on "My Maps"



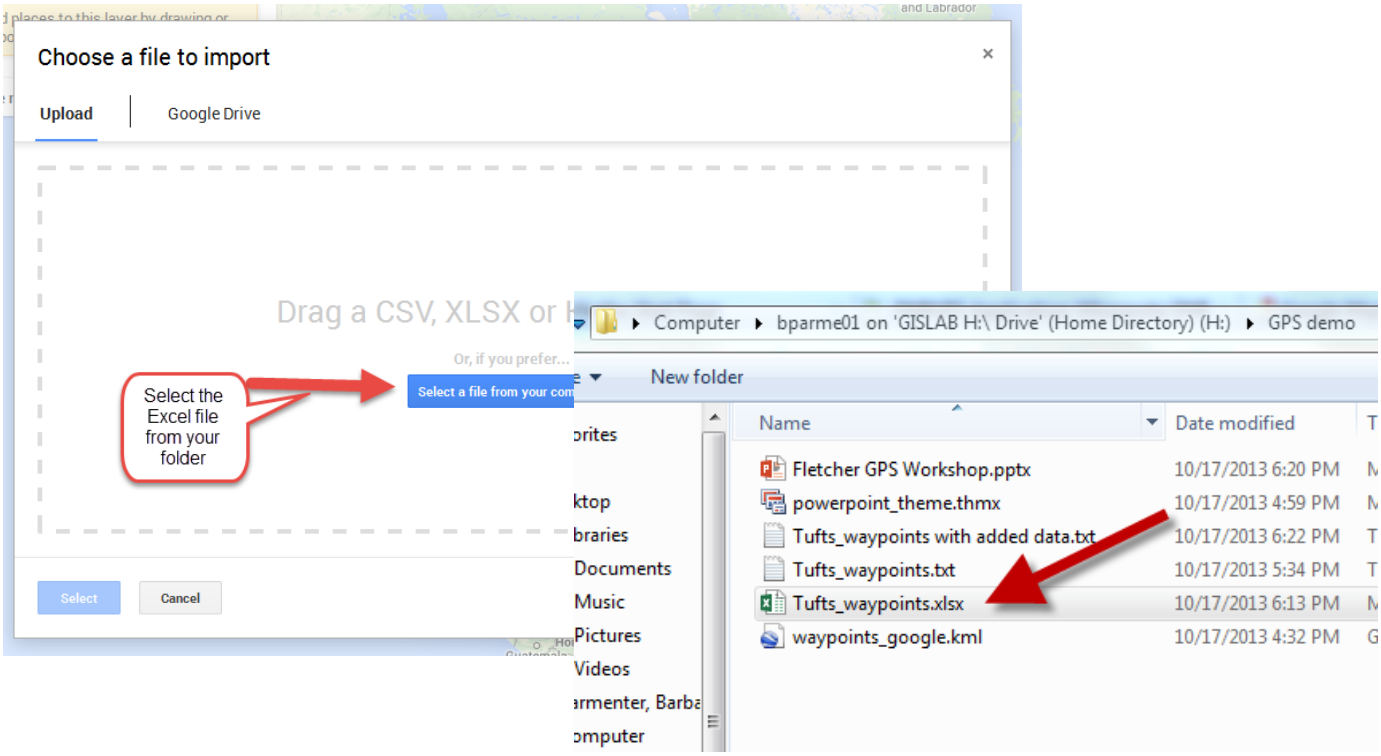
3. Press “Create” to create a new map.



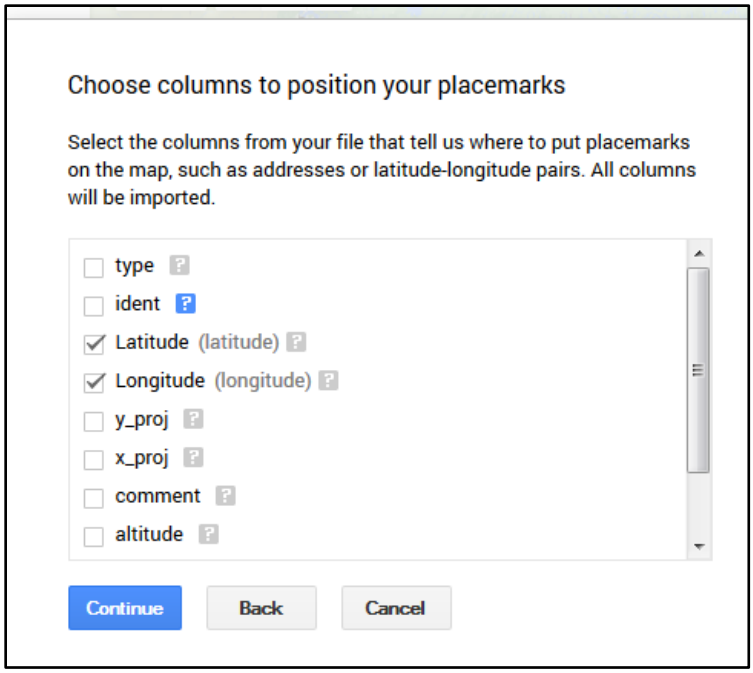
4. Select “import” to import your Excel table with all the data.



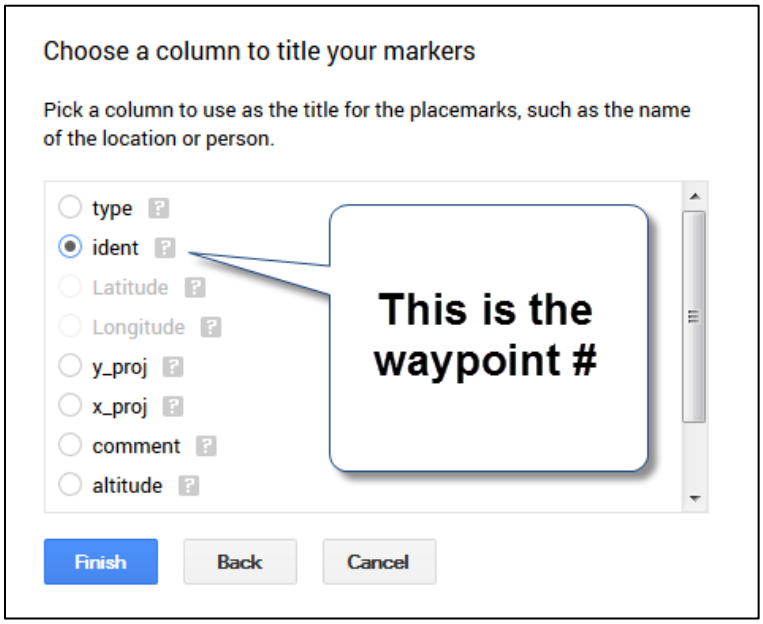
5. Navigate to where you saved your Excel file and select it.



6. Choose columns to **Position your placemarkers** – This will be your latitude and longitude. Press Continue.

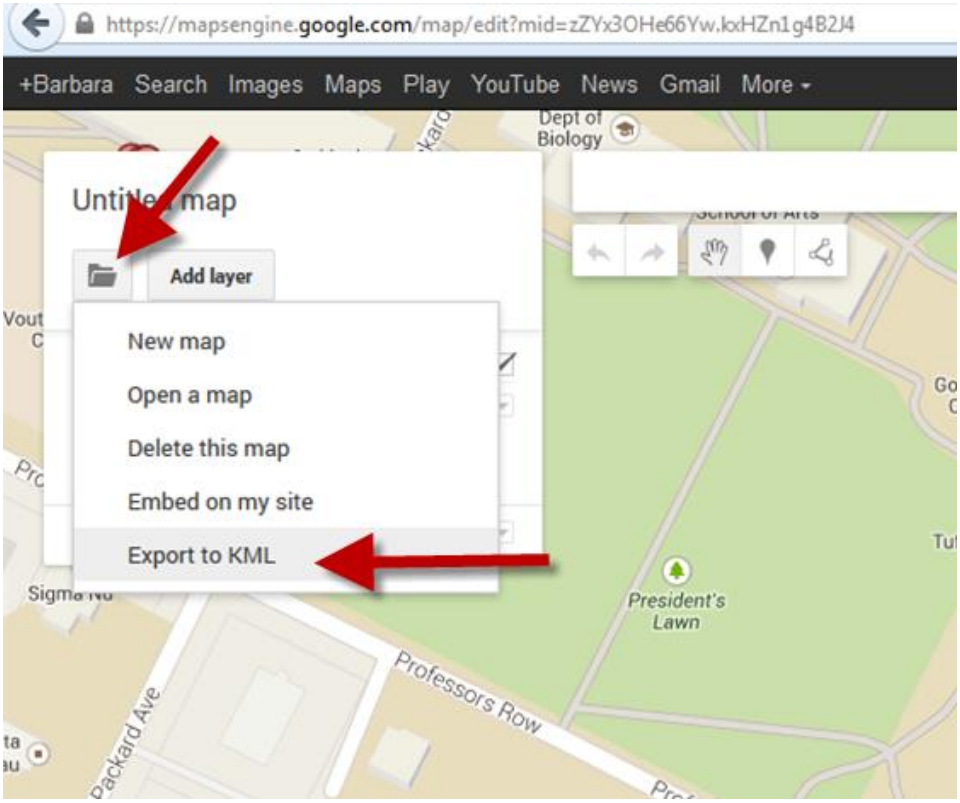


7. Choose a coumn to title your markers. This will be your Ident Number (or Waypoint Number). Press Finish.



8. Now your points should display in Google Maps. If you click each point individually, it will pull up all the information from the GPS unit and your data collection sheet.

9. You can export these points that include your data collection to use in Google Earth. To do so, press the folder button and select *Export to KML.* Save your file with a new name.



10. To view in google earth, follow the steps from part I of this tutorial.