

Big Picture Steps to Collecting and Mapping GPS Data

1. Install Garmin GPS Software

- a. Put the CD in computer
- b. Select Trip & Waypoint Manager and then Next
- c. Click in the box beside “I accept the Software License Agreement” and then Next
- d. Finally, click the Install button
- e. Wait until it finishes and click Finish
- f. Now click Next in the lower right corner
- g. On the next screen click Done in the lower right corner

2. Install DNR Software

- a. Double click on dnrgarminsetup53 file
- b. Click Next
- c. Click in the dot beside “I accept the terms in the license agreement” and click the Next button
- d. Click the Next button
- e. and accept all the defaults

3. Plug GPS into the computer and let the computer “find” the GPS

- a. In the first window, select Yes, the time only and then Next
- b. Select Install the software automatically (Recommended) and then select Next
- c. Let the computer work for a moment (it might say Garmin USB GPS on the screen)
- d. Click Finish

4. Set-up your GPS (first-time only or if you need to change something)

- a. Main Menu [enter]
 - i. Setup [enter]
 1. System [push enter using the Toggle button]
 - a. Click enter/toggle on the GPS and select Normal
 - b. Move down to WAAS/EGNOS and select Enabled
 - c. Nothing else changes
 - d. Click the QUIT/PAGE key (upper key on right side)
 2. Toggle to Map [push enter using the Toggle button]
 - a. Toggle to the right or left until you see Map Setup – General at the top
 - b. Toggle down to Orientation and select North Up
 - c. Nothing else changes
 - d. Click the QUIT/PAGE key (upper key on right side)
 3. Toggle to Time [push enter using the Toggle button]
 - a. Toggle down to Time Zone and scroll by toggling to Hong Kong
 - b. Nothing else changes
 - c. Click the QUIT/PAGE key (upper key on right side)
 4. Toggle to Units [push enter using the Toggle button]
 - a. Toggle down to Position Format and scroll then select hddd.ddddd°
 - b. Toggle down to Map Datum and select WGS 84
 - c. Toggle down to Distance and select Metric
 - d. Toggle down to Elevation and select Meters (m/min)
 - e. Toggle down to Depth and select Meters
 - f. Nothing else changes
 - g. Click the QUIT/PAGE key (upper key on right side)

5. Collect GPS waypoints

- a. Navigate back to the Main Menu page (click the QUIT/PAGE key (upper key on right side) as many times as necessary to get back to the Main Menu page.
- b. Select the icon for Mark [push enter using the Toggle button]
- c. To accept the waypoint with the default information, highlight OK.

- d. To change any information, select the appropriate field, and press ENTER to open the on-screen keypad. After entering and confirming your changes, select OK.
- e. To average a location for a certain number of collections, select AVG on the Mark Waypoint page. The Average page will be displayed and you should monitor the Measurement Count field and move to SAVE when you have collected enough readings.

6. Another option for collecting Waypoints

- a. When your location is displayed on the Map page (on Color LCD Display)
 - i. Press and hold the ROCKER until the Map Waypoint page appears. A default three-digit name and symbol are assigned to the new point.
 - ii. To accept the waypoint with the default information, highlight OK.
 - iii. To change any information, select the appropriate field, and press ENTER to open the on-screen keypad. After entering and confirming your changes, select OK.
 - iv. To average a location for a certain number of collections, select AVG on the Mark Waypoint page. The Average page will be displayed and you should monitor the Measurement Count field and move to SAVE when you have collected enough readings.

7. Save your Tracks

- a. Navigate back to the Main Menu page (click the QUIT/PAGE key (upper key on right side) as many times as necessary to get back to the Main Menu page.
- b. The Tracks feature creates an electronic bread crumb trail or “track log” on the Map page as you travel. The track log contains information about points along its path.
- c. The track log starts recording as soon as the unit gets a location fix. The percentage of memory used by the current track log appears at the top of the Tracks page.
- d. To save the entire track log:
 - i. See page 17 in the Owner’s Manual
- e. To save a portion of the track log
 - i. See page 18 in the Owner’s Manual

8. Download Waypoints using DNR Software

- a. Turn GPS on
- b. Connect GPS to computer
- c. Start DNR Software by double clicking
- d. Make sure the lower left corner of the MN DNR Garmin window says Connected. If it is not connected, either:
 - i. Change the port by selecting GPS at the top window then select Set Port, and then choose a port that is not in use. Try the USB port first. Continue this until you find the correct port.
 - ii. Move the USB plug to another port on the computer
- e. Select File then Set Projection. Make sure the projection is set to None (button at the bottom) then select OK. This will allow your data to be exported in Latitude and Longitude.
- f. Select Waypoint from the menu bar at the top and then select Download.
- g. Highlight the Waypoints that you want to download and then select File . . . Save to . . . File
 - i. On the Save as page, navigate to your folder for saving data
 - ii. At the bottom of the Save as window in the text box noted as Save as Type: click the drop down arrowhead and select ArcView shapefile (unprojected).
 - iii. Type in a descriptive name in the File Name text box.

9. Download Tracks using DNR Software

- a. Connect GPS to computer (if it is not already connected, if it is connected skip to Step e)
- b. Turn GPS on
- c. Start DNR Software by double clicking
- d. Make sure the lower left corner of the MN DNR Garmin window says Connected. If it is not connected, either:
 - i. Change the port by selecting GPS at the top window then select Set Port, and then choose a port that is not in use. Continue this until you find the correct port.
 - ii. Move the USB plug to another port on the computer

- e. Select File then Set Projection. Make sure the projection is set to None (button at the bottom) then select OK. This will allow your data to be exported in Latitude and Longitude.
- f. Select Track from the menu bar at the top and then select Download.
- g. Highlight the Tracks that you want to download and then select File . . . Save to . . . File
 - i. On the Save as page, navigate to your folder for saving data
 - ii. At the bottom of the Save as window in the text box noted as Save as Type: click the drop down arrowhead and select ArcView shapefile (unprojected).
 - iii. Type in a descriptive name in the File Name text box.

10. Adding Fields (Attributes, Data) to your GPS data file

- a. Start Excel
- b. Open .dbf file named the same thing as your waypoint file
- c. Add categories and input your data

11. Open AEJEE

12. Add your data files