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Garmin Etrex Vista and Legend Tutorial

Knowing how operate basic global positioning system (GPS) units is becoming a critical skill in natural resources and remote sensing. This tutorial will take you through the use and application of two basic, but common Garmin GPS units.

Memory and Mapping Specs

Garmin Etrex Vista

Garmin Etrex Legend



Basemap:	yes	yes
Preloaded maps:	no	no
Ability to add maps:	yes	yes
Built-in memory:	24 MB	8 MB
Accepts data cards:	no	no
Waypoints/favorites/locations:	1000	1000
Routes:	20	20
Track log:	10,000 points, 20 saved tracks	10,000 points, 10 saved tracks

Unit Operation and Interface:



Power/Backlight: Lower Right Button. Press and hold till unit turns on

Click Stick: Toggle button on the front of the unit. Toggle between choices on the screen (up, down, left, right,)

Page/Quit: Top button on the right hand side of the unit. Flip through active pages

Find: Lower button on left side of the unit.

Zoom In/Out: Upper button on the right side of the unit.

Pages Icon: Choose a page to flip to

Page Menu Icon: Options for the displayed page

Setup

From the main menu page, use the click stick and press the setup icon. In the setup window, you should be able to toggle different options within this page. You can select these icons and set them accordingly. Use the Page/Quit button to back out of these pages

Here are some settings you might want to check or change.



Time: *Format:* 12 Hour: *Time Zone:* U.S. Mountain
Daylight Savings : Auto

Units: *Position Format:* UTM UPS

Map Datum WGS 84 (lat, long etc..)

Distance/Speed: Statute

Elevation: (meters/feet)

Display: Change screen themes and backlight setup

Heading: Change your heading themes

Display: degrees:

North Reference: True

System: *GPS:* Normal

WAAS: Enabled

Battery: Alkaline

Language: English

Fixing a Position

Turn the GPS unit on outside because it will not acquire satellites indoors. On the satellite page there will be a sky-plot image showing satellite location and some bars indicating satellite strength. Three satellites acquired will produce a 2D fix and four satellites will produce a 3D fix.

WAAS Correction: Provides for better accuracy (little Ds will show up on top of the bars)

Top of the screen: Shows accuracy assessment (Try for under 20 meters)



Marking (Saving) a Waypoint



Hold the click down until the Mark Waypoint Page appears. (Access from Main Menu)

Type of waypoint: the first option you will have is to designate the type of waypoint (city, favorite etc.)

Name your waypoint: Toggle to the waypoint number with the click stick and press (next to the flag). On the edit page you can name your waypoint by toggling the click stick. Once you have your waypoint named press OK.

On your mark page, toggle down with the click stick to the OK button and press OK.

Manual Key-in of a Coordinate Pair into a Waypoint

To navigate to given coordinate, push the Mark icon on the Main Menu Page

Using the click stick, toggle to the coordinate section window and manually key in the known coordinates. You can also change your elevation and other features. Once you have entered the coordinates press OK at the bottom of the screen.

Example: 13N T 04930846 (UTM zone 13 T followed by easting that starts with a 0)
 4491527 (northing)

Note: Make sure to set your projection to your desired projected coordinate system.
(WGS 84, NAD 83)

Navigation

To navigate to an entered waypoint, select the Find button then select waypoint. This can also be activated from the main menu. Toggle to the desired waypoint and select. You will go to the map page.



Map page: You will now see a line to the direction of your selected waypoint

Compass Page: There will be a compass directional arrow and fields (like distance to destination, speed etc.). Move in the direction of the arrow. Once you are going in the correct direction, the arrow should be pointing up. You will know you are going the right way if the distance to destination (above the compass) is decreasing.



Trip Computer Page



The *Trip Computer* page shows information that is continually logged when your GPS unit is on and has acquired satellites. Want to know how far you walked or how much elevation gain? Check the trip computer.

The *Altimeter* page shows a chart on elevation gained and lost.

Altimeter Page (Vista Only)



Track Logs

Track Log Setup

On the track log page you can access the setup by pushing the click stick. There will be three options:

Wrap when full (overwrites oldest information)

Record method (Time, Distance, Auto)

Interval (Interval for record method)

Track logs may be used to track your route or to mark boundary perimeters. You can access the tracks page through the main menu page. A track will be logged as soon as the page is toggled to. Allow the unit access to the satellites as you walk. Attaching the device to the outside of a pack is a good bet. Once you are finished with your track, turn the toggle to off on the tracks page and save the track. This will be a similar process as saving a waypoint.

Important Notes:

Make sure to clear the track log before starting a new track.

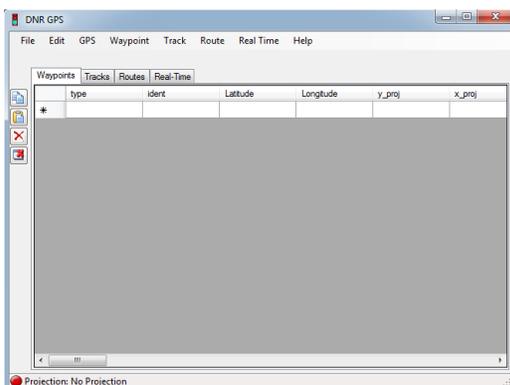
Turn off the track log when standing still, as your track will tend to bounce around if it is left on. By only recording a track while moving, the GPS will produce a cleaner map line. Your track can be picked up again once you start moving by turning the toggle back to the “on” position.

Turn your track log toggle to the “off” position when you are finished with the track.

DNR GPS

DNR GPS is designed to upload GPS waypoints and tracks to save as ArcView shapefiles. This program is developed from Minnesota Department of Natural Resources, and can be accessed for free on Google.

Downloading and Saving Waypoints

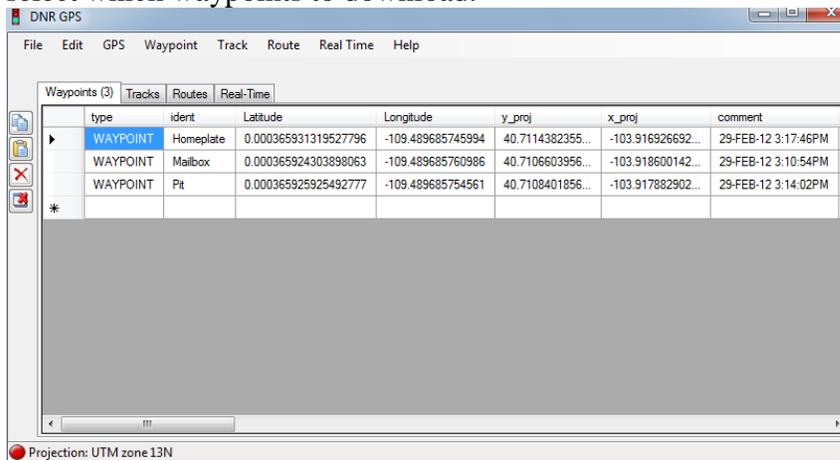


Connect the Garmin GPS unit to the computer using a download cable. Turn the unit on and have the DNR program open. Go to GPS at the top of screen and select find GPS. The program should be able to find the GPS unit if all the proper drivers are installed. You can also set the port.

Set Projection: You will need to set the desired projection (UTM NAD 83, WGS 84 etc.
File>Set Projection>Datum >NAD 83.

Waypoint Properties: You will be able to select what properties to download.
Suggested checked boxes: **Waypoint> Waypoint Properties> type, ident, lat, long, y_proj, x_proj and altitude.**

Waypoint>Download: This will download all the checked boxes. You will be able to select which waypoints to download.



Saving a Waypoint to a File

Shapefile: (point) select File> Save to> selected file: (browse to selected folder)
Change “save as type” to “ArcView shapefile” (Projected) (shp.).

Text file: select File>Save to> Selected File (browse to selected folder)
Change to “text” (mypoints.txt).

Saving track logs: Track logs and routes can be saved in similar fashion as vector lines and polygons.

When saving a track log, you will be saving in blocks of waypoints. Highlight the block you want to save.

