

Uploading of Points of Interest in GPX formats

1. GPX

GPX or *GPS eXchange Format* is an *XML* schema for transferring *GPS* data between applications and Internet Web services. They can be used to describe Waypoints, tracks, or routes.

The main advantages of GPX are the following:

- Allows exchange between more programs for Windows, MacOs, Linux, Palm and PocketPc.
- It can be converted into any format using a Web page or application.
- It is based on the XML standard, so many programs that are used could normally read GPX files.
- It allows the development of new features to use data from GPS receivers.

There is no specific program for GPX transfer, but there are several programs that can be used:

- *Garmin BaseCamp* (<https://www.garmin.com/es-ES/software/basecamp/>),
- *GPS TrackMaker* (<https://www.gpsu.co.uk/index.html/>),
- *GPSUtility* (<http://www.gpsu.co.uk/download.html>),
- *GPSBabel* (<http://www.gpsbabel.org/>),
- *GARtrip* (<http://www.gartrip.de/>),
- *GPSMapEdit* (www.geopainting.com/en/),
- *EasyGPS* (<http://www.easygps.com/>).

In this case, we will describe the steps for transferring *GPX* files using *Garmin BaseCamp* and *GPS TrackMaker*.

2. *Garmin BaseCamp Software*

Garmin BaseCamp is free software that, among other features, allows planning and managing trips, organising user data and transferring information between the user's computer and compatible devices.

The devices that are compatible with *Garmin BaseCamp* are the Garmin devices. However, *Garmin BaseCamp* is not compatible with the following Garmin devices:

- eTrex and eTrex H.
- eTrex Vista, Legend, Venture, Mariner, Summit and Camo.
- Foretrex 101 and 201.
- Geko 201 and 301.
- Rino 110, 120 and 130.
- GPS 72 and 76.
- GPSMAP 76 and 76S.

- GPS12, 12MAP, 12CX and 12XL.
- GPS II, II+, III, III+ and V.

Garmin BaseCamp is available for different operating systems: Windows and MacOS. It can be downloaded directly from the web:

https://www.garmin.com/support/download_details.jsp?id=4435

The installation of the program is very simple. All you have to do is download the executable file and install the program.

The program has undergone successive updates until its last version, dated May 2018.

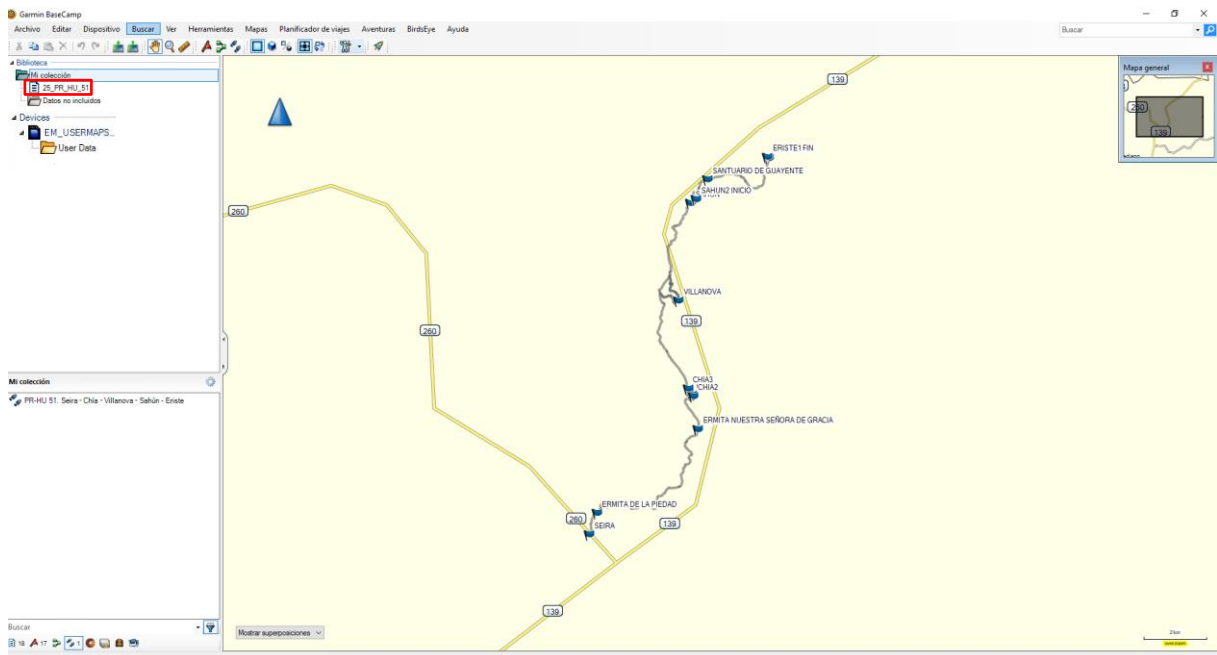
2.1. Using *Garmin BaseCamp*

Files of points of interest in GPX format are available for download from the Turgalicia website. This format will be applied to the *Garmin BaseCamp* program, following the process described below.

2.1.1. Installation of the GPS device

After downloading and installing the program, the user must connect the GPS to his computer by means of a USB cable.

When the user opens the *Garmin BaseCamp* program, they can search for routes or tracks (in the program's side menu) that they wish to add to their Garmin device.



2.1.2. Uploading of points of interest in the program

1. Importing the GPX file into *Garmin BaseCamp*. To include the GPX points in the program, the user can drag the GPX file over the top of the side menu located (by default) on the left side of the software.

Another alternative is to go to the top menu: File, Import to "My Collection". The user will search on his computer the directory where the GPX file is located (*Garmin BaseCamp* supports formats *.gpx, *.fit, *.gdb, *.kml, *.kmz, *.jpg, *.jpge, *.loc and *.tcx).

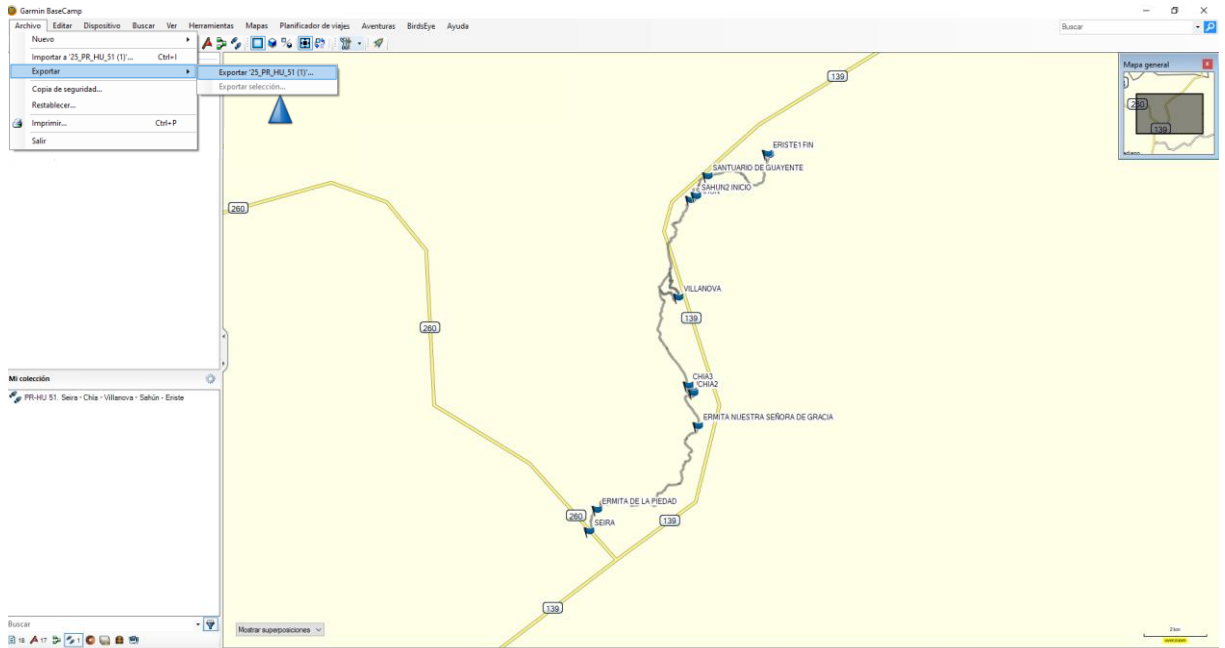
2. The file will be added to the side menu of the software.

2.1.3. Transferring the GPX file to the GPS device

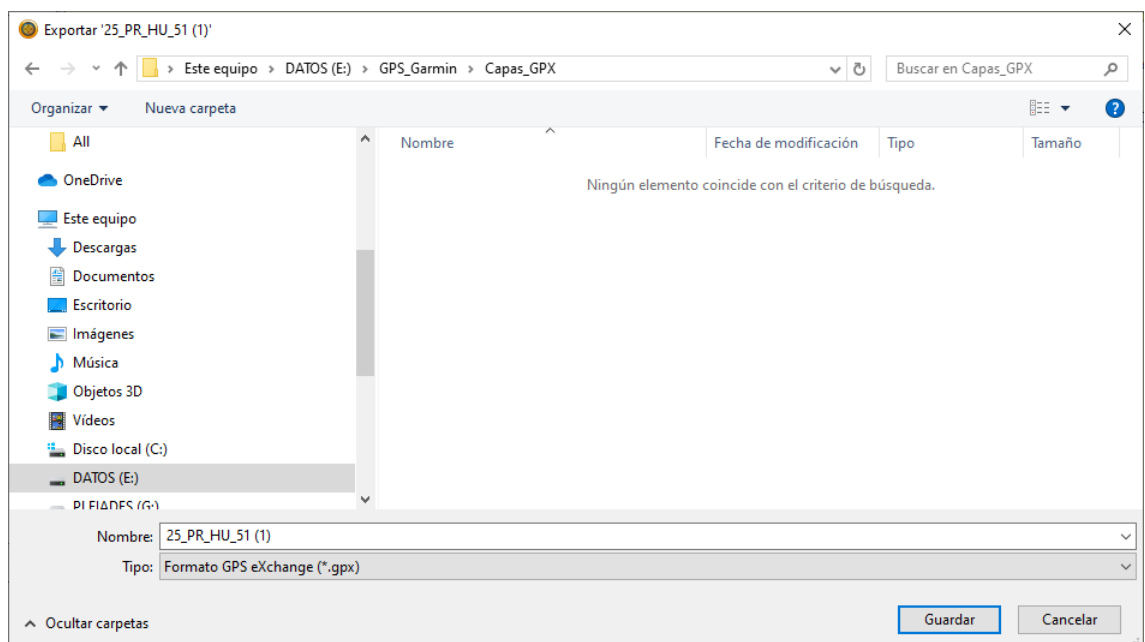
This task will be done in two ways:

1. Having the GPS device connected to the user's computer, in the control panel on the left, more specifically in the top panel of it, the user must click on My Collection or in the list that contains the layer you want to transfer and then select the file to be transferred.

On the top toolbar: File, Export, Export Selection...

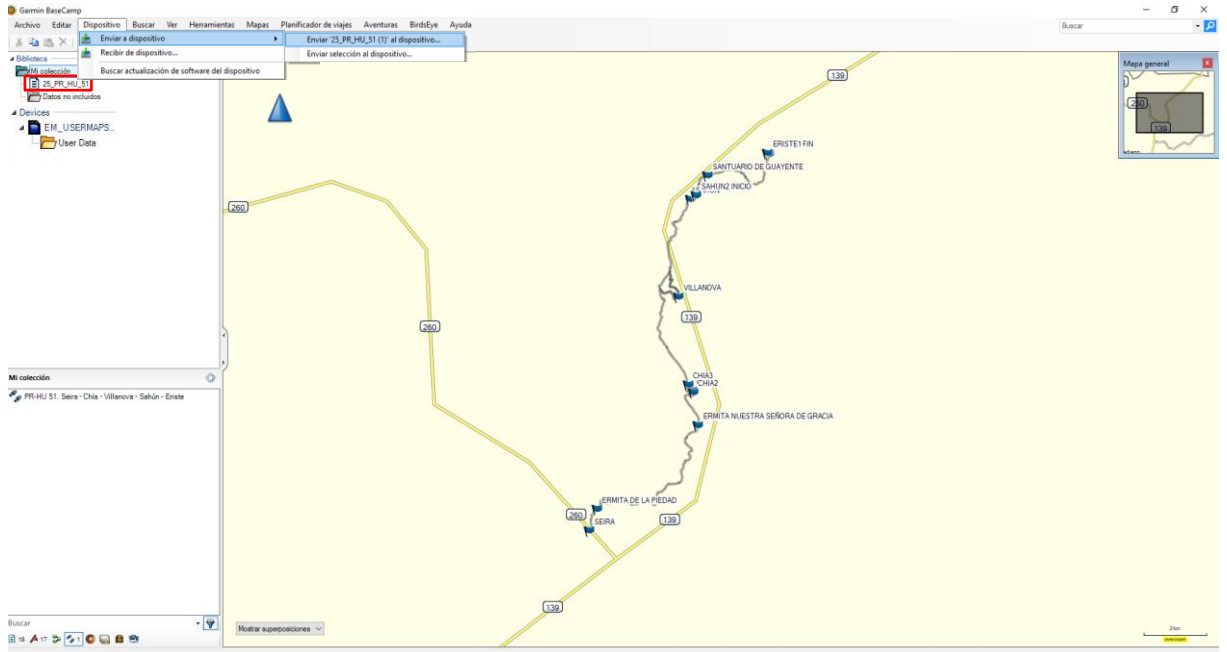



In the export window, the location where the file is to be saved will be chosen, and a file name will be indicated. The GPS eXchange format (*.gpx) must be set.



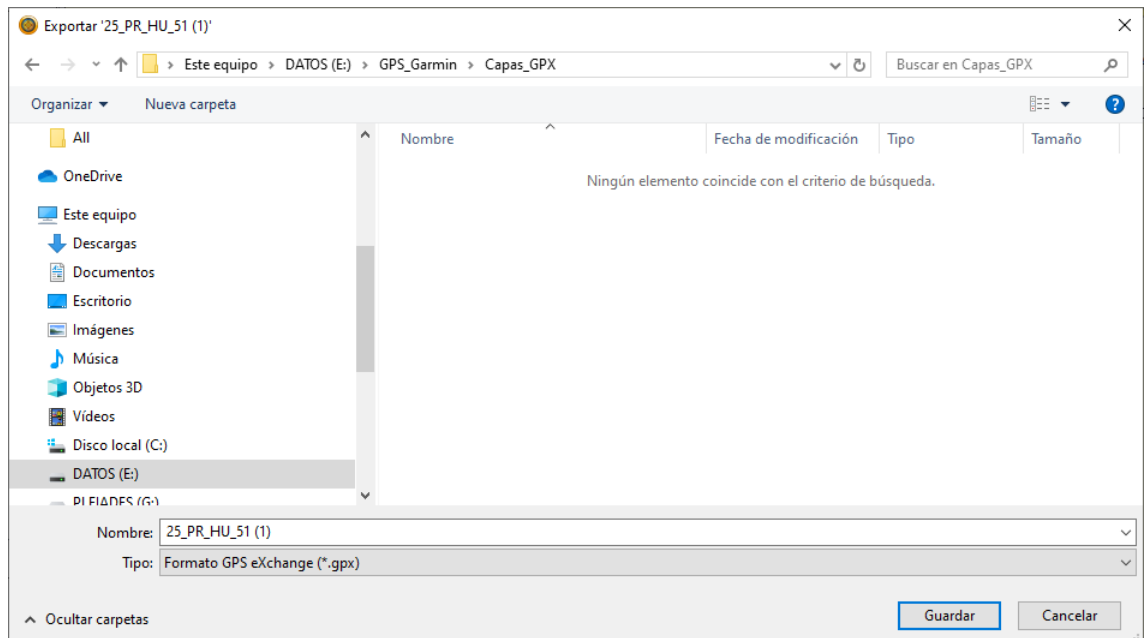
2. With the layer selected, go to the top toolbar: Device, Send to Device, Send "Selected Layer Name" to the device...

The user will then select the GPS device to which the layer is to be transferred.



This option can also be applied from the icon (Send to  Device).

In the window that opens next, the user will choose the location to save the file, indicate a file name, and the GPS eXchange format (*.gpx) will be selected.



2.1.4. Displaying points of interest

Once the process is complete, the GPS device can be disconnected from the user's computer. Once the GPS is switched on, the information points will already be included in the device.

3. GPS TrackMaker Software

GPS TrackMaker is a Windows operating system-compatible application that enables two-way communication between GPS receivers and the user's computer.

GPS TrackMaker is compatible with Garmin, Magellan, Lowrance/Eagle, GPS MLR, GPS Brunton/Silva, or GTM Tracker.

It also supports GPX formats, being able to export and import Tracklogs, Routes and Waypoints. This software is free and can be downloaded for free at the following URL:
<https://www.trackmaker.com/main/en/download-gps-software-free>

3.1. Use of GPS TrackMaker

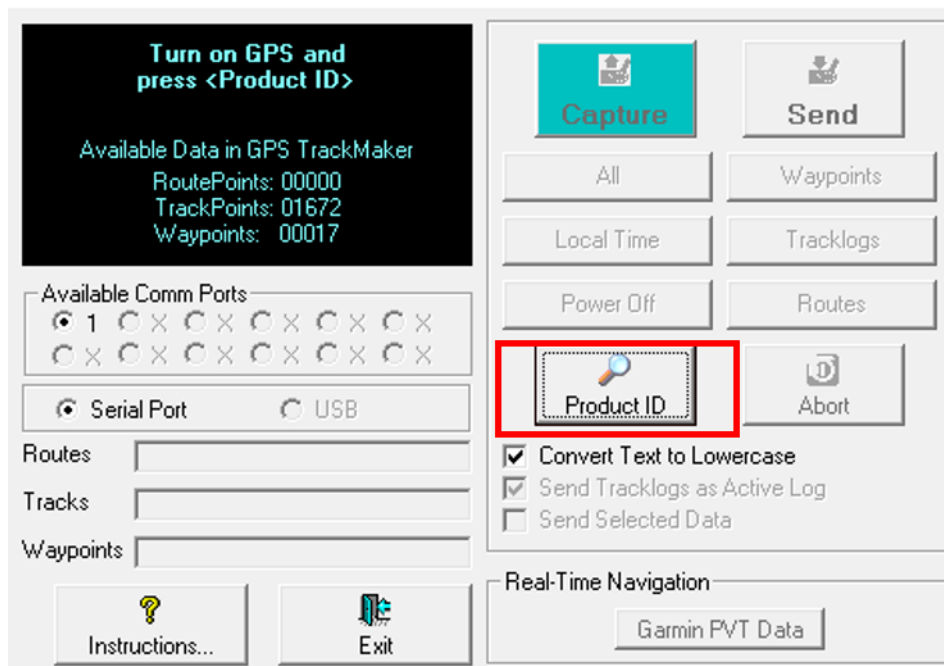
Files of points of interest in GPX format are available for download from the Turgalicia website. This format will be applied to the *GPS TrackMaker* program following the process described in the following sections.

3.1.1. Installation of the GPS device

The installation of the program is very simple. Once installed, it will require the GPS to be connected to the user's computer with a USB cable.

The first step to start the communication between the program and the GPS is to inform the software which GPS model is connected to the computer. To do this, the user has to click on the "Product ID" button.

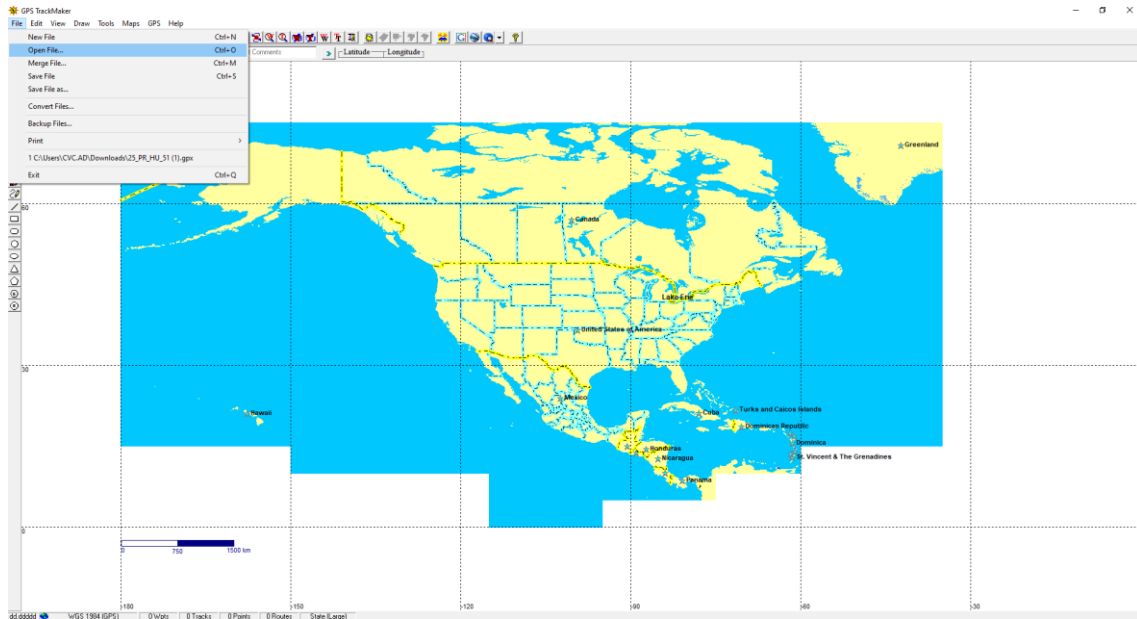
Garmin Interface



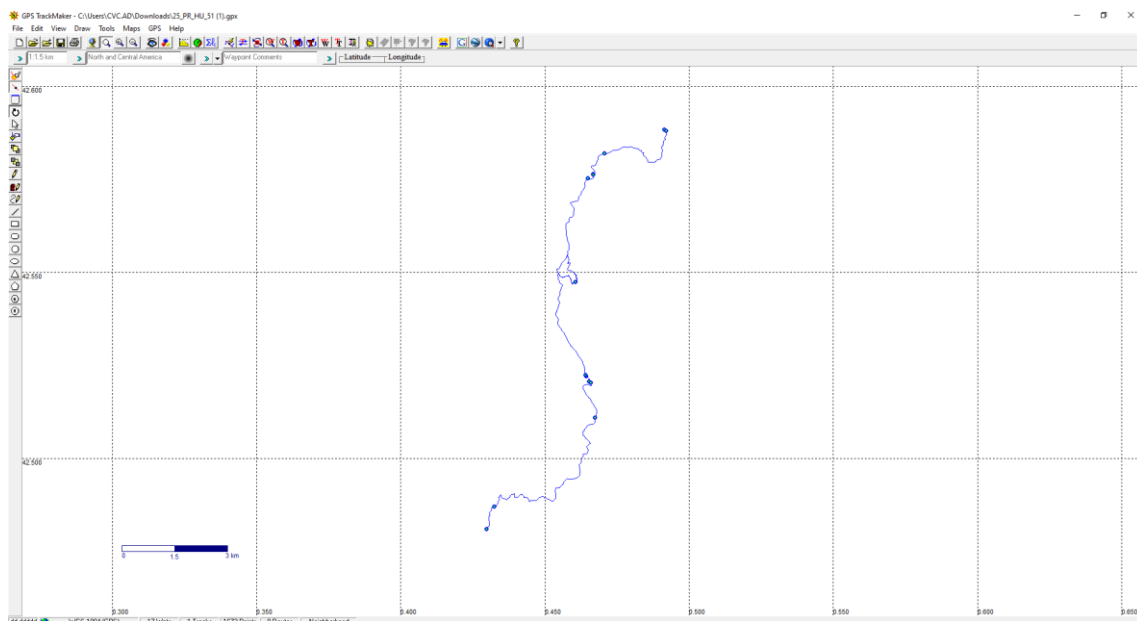
If the communication has been established correctly, the program will indicate the connected GPS model and from this moment it will be possible to send or receive data.

3.1.2. Uploading of the GPX information

To import GPX data from our computer, you must press on: File --> Open File and select the file to be incorporated into the program.

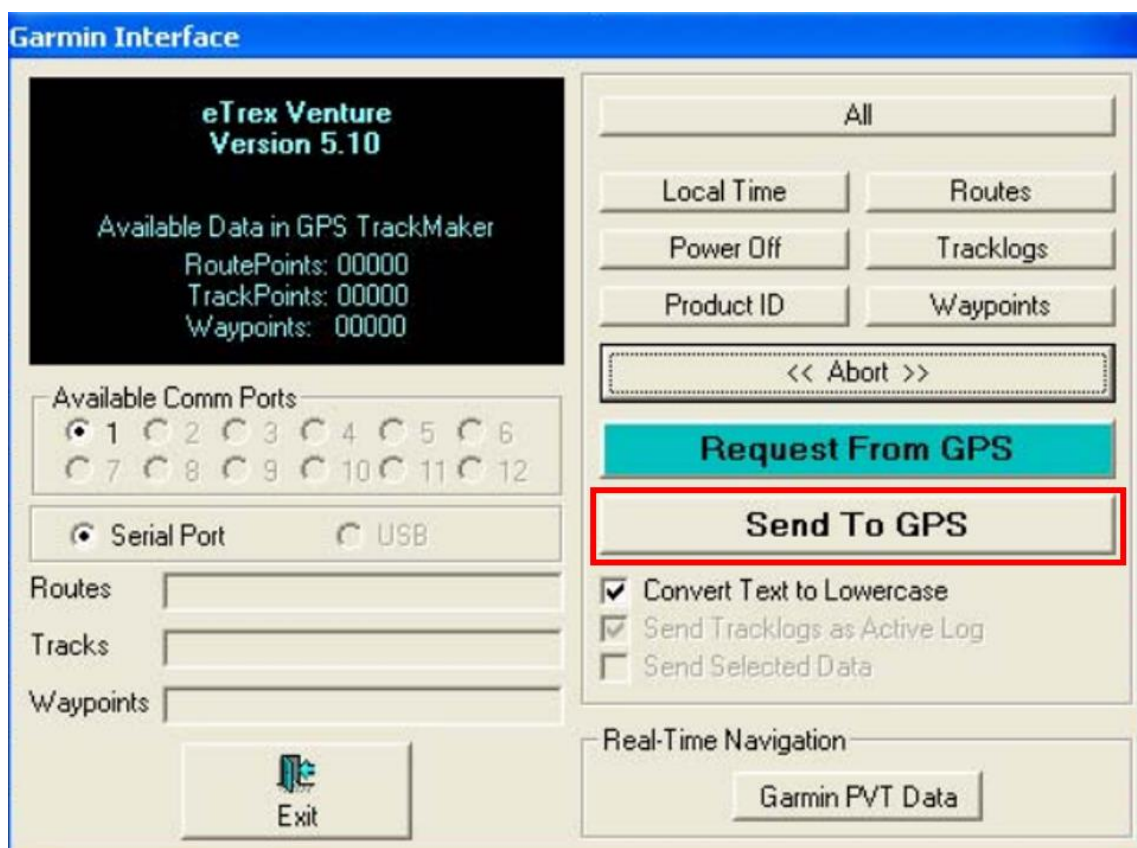
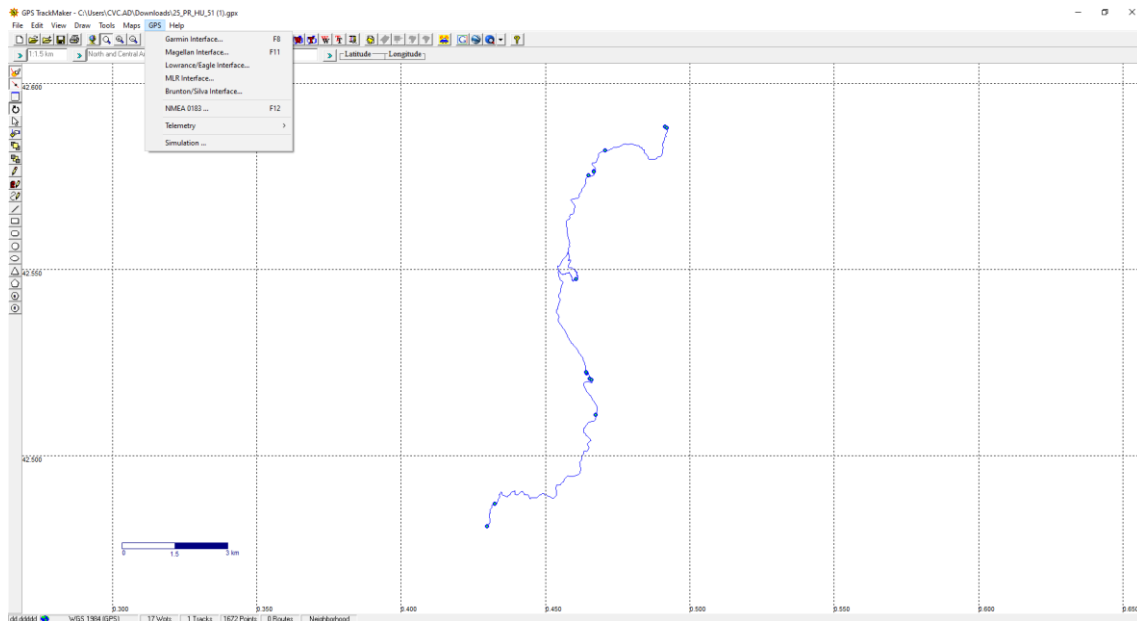


Once the file has been opened, it will be displayed on the screen:



3.1.3. Transfer of the information to the GPS device

The transfer of the file to the GPS device must be done in the main menu, in GPS, and then choose the model to which the program is connected, as shown in the following image.



The data will be sent to the GPS device by pressing the “Send To GPS” button and then the user has to choose one of the following three options:

- Waypoints.
- Tracklogs.

- Routes.

The user will also have the option to click on the “Send All Data” button. The program also makes it possible to send the selected data by checking the "Send Selected Data" option.

4. *GPSBabel Software*

GPSBabel is a free software that, among other functions, allows to convert *waypoints*, *tracks* and routes between GPS receivers and mapping programs such as Google Earth or Basecamp.

GPSBabel is compatible with a multitude of devices, such as Garmin, Magellan, or NaviGPS, allowing to work with the data exported in a multitude of programs. The program is compatible with Windows, MAC and Linux.

GPSBabel does not convert, transfer or manipulate maps. It only processes data that can be placed (or not) on a map.