

# Uploading Data to a GPS unit using ExpertGPS

by, Michael Thorne and Joseph Domin  
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The following tutorial shows how to upload data to a GPS unit using GPX files and ExpertGPS.

ExpertGPS is available at: <http://www.expertgps.com/>.

This example uses a GPX file for the Eastern Half of Arizona's Superstition Wilderness available at: <http://web.utah.edu/thorne/superstitions.html>

A popular hike in the Superstition Wilderness is the hike to Reavis Falls. Although the trail to Reavis Falls is well marked, the trail itself is not an official USFS trail, and does not show up on any map. This example shows how to upload the data for this hike to your gps unit.

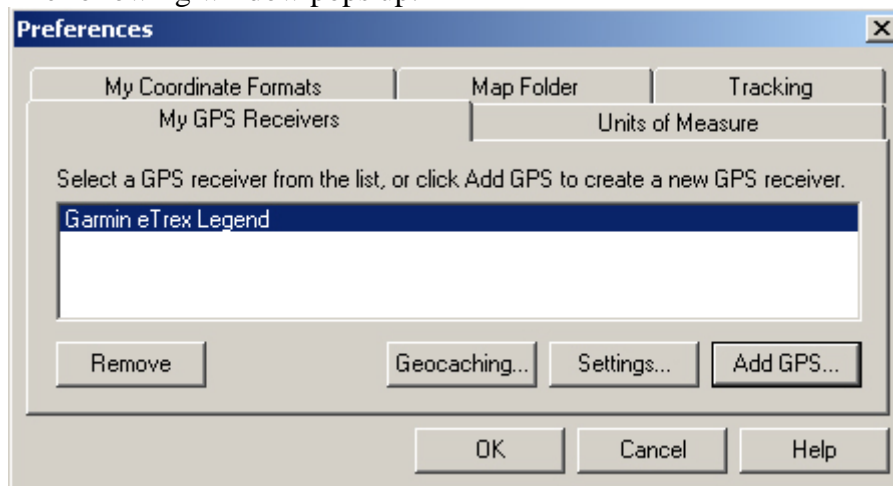
## Connecting GPS to ExpertGPS

### 1. Launch ExpertGPS

**2. Connect GPS.** Turn on your GPS and connect it to your computer.

**3. Add GPS.** If you have not already done this, first you need to configure ExpertGPS for the type of GPS unit you have. Select **Edit > Preferences**

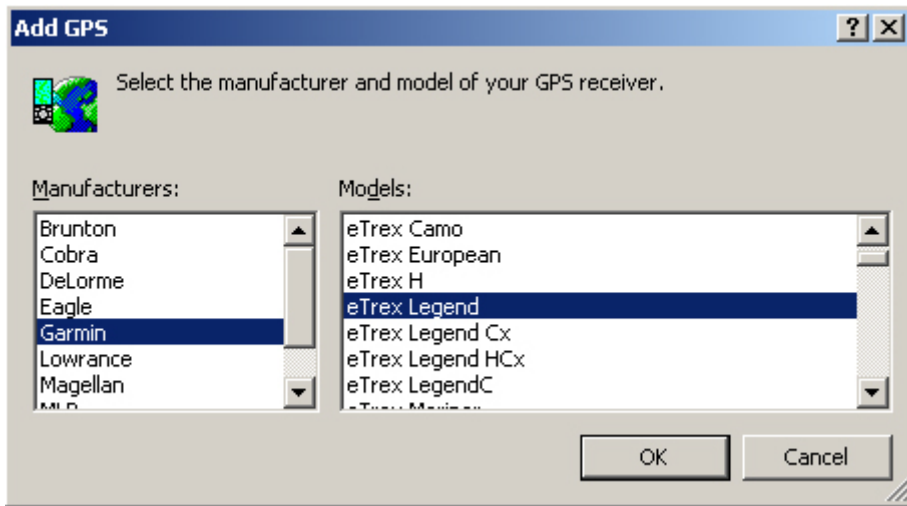
The following window pops up:



**Figure 1** – The Preferences window

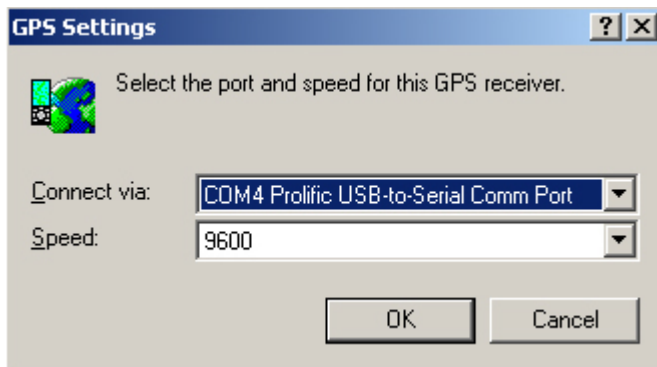
The above window already shows that I have a Garmin eTrex Legend configured for ExpertGPS. If I did not have any GPS units configured the white space in the above window would be blank. To add a GPS unit perform the following steps.

Select the **My GPS Receivers** tab as shown above. Now click on **Add GPS...** The following window will pop up.



**Figure 2** – The Add GPS window

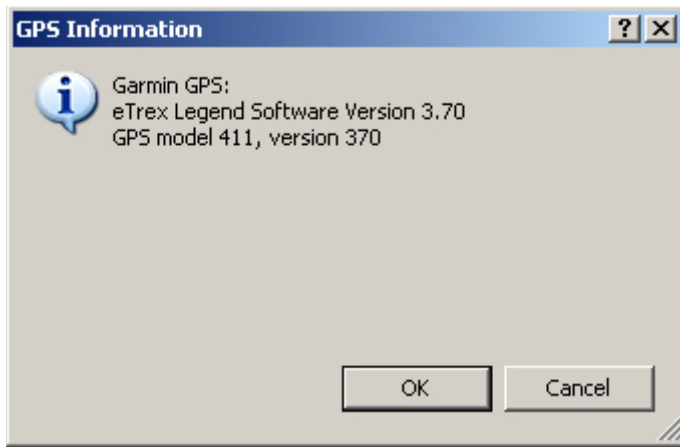
I have a Garmin etrex Legend, So I make the selections as shown above. Once you've selected your type, click on **OK**. The following window will pop up:



**Figure 3** – The GPS Settings window

Select the settings for your GPS unit. You may need to consult the instructions for your personal GPS unit to determine the correct settings. Now click **OK** on the **GPS Settings** window, and then click **OK** on the **Preferences** window to exit the setup.

**4. Verify GPS is connected** Select **GPS > Display GPS Information...** If your GPS is correctly connected and talking to ExpertGPS you will see a window similar to this one:



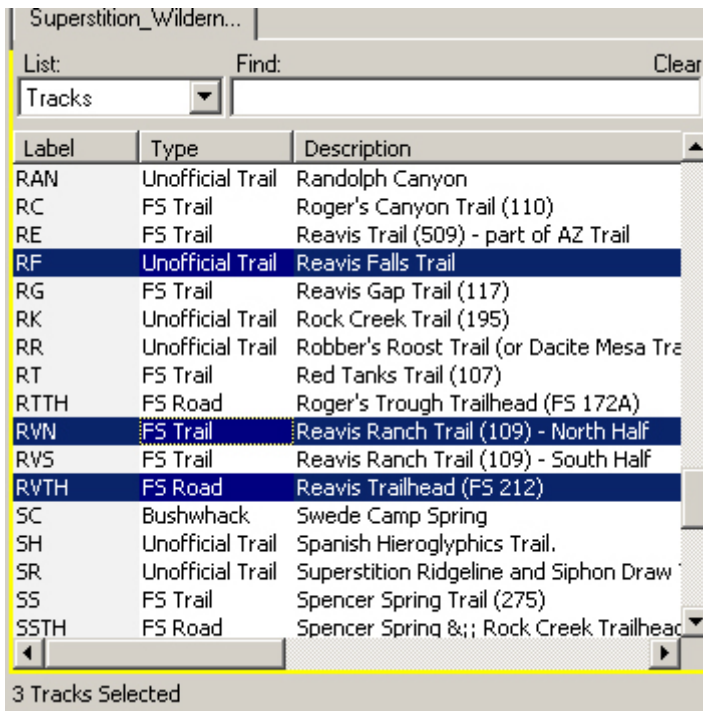
**Figure 4** – The GPS Information window

## Uploading Tracks & Waypoints - Easy

Each GPS unit allows a set number of points per track file. Commonly this number is 500, but varies from unit to unit. Because 500 is the most common limit we provide a file: `Superstition_Wilderness_500pts_v1.0.gpx` that has a maximum of 500 track points per track. If your GPS unit has a smaller limit, read through the following section and at the end of this file we suggest two options.

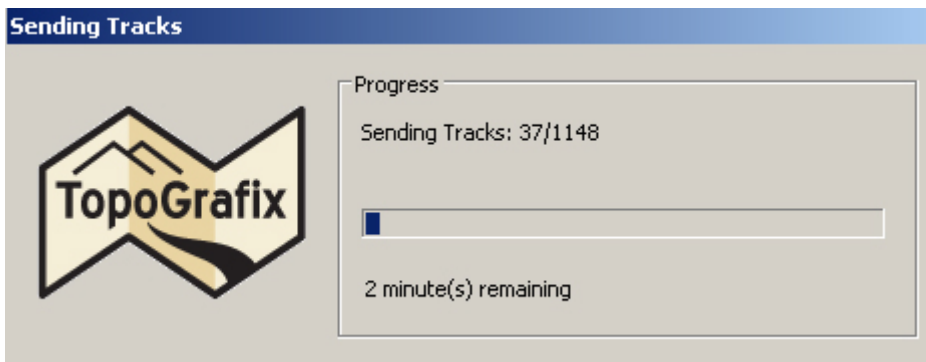
**1. Open File** Open up the GPX file of the Superstition Wilderness (`Superstition_Wilderness_500pts_v1.0.gpx`) with Expert GPS. This file is configured to contain the entire Superstition Wilderness with a maximum of 500 track points per trail. Make sure that you have enabled map retrieval by clicking on **Map > Enable Internet Map Image Retrieval**. Also, be sure that the **View > Show Topo Map** option is selected.

**2. Select Tracks** We first need to determine which tracks we want to upload. To center the map on the Reavis Falls Trail see the section on Centering Map on Trail in the Printing Maps Tutorial. To reach the Reavis Falls we decide we want to start at the Reavis Trailhead (**RVTH**), following the northern half of the Reavis Ranch Trail (**RVN**), to the Reavis Falls Trail (**RF**). Multiple tracks can be selected in the list window to the left of the screen. First select **RF**. Then **Ctrl + select RVN**, and then **Ctrl + select RVTH** (see figure below).



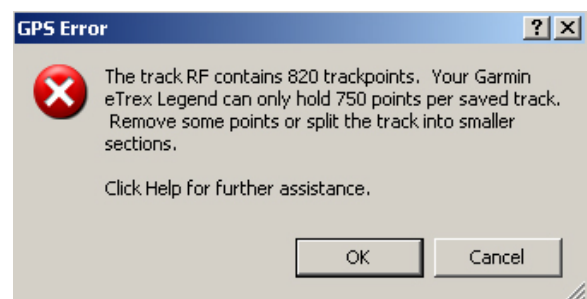
**Figure 5** – Selecting trails in the List window

**3. Send Selected Tracks** These tracks can now be sent to your GPS unit by selecting **GPS > Send Selected to GPS...** The tracks should now transfer to your GPS. As this happens you will see a window as follows showing you the status of the upload.



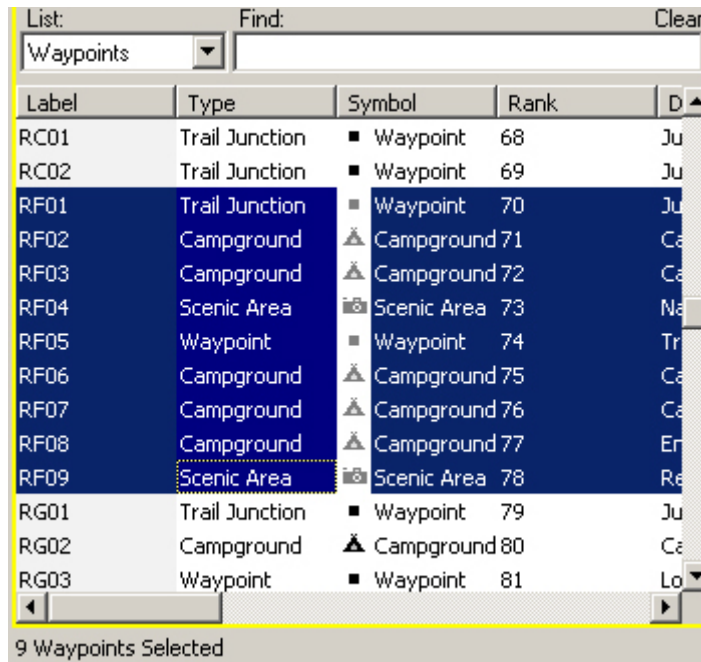
**Figure 6** – Successfully uploading tracks

If the track has more points than your GPS unit will accept you will see an error message like as shown on the right. If this happens see the section on too many trackpoints below.



**Figure 7** – Error: Too many track points

**4. Select Waypoints** We also want to send the waypoints for the Reavis Falls Trail to our GPS unit. To get to the waypoints choose **Waypoints** on the list menu. Here we want to send all of the waypoints associated with the Reavis Falls Trail. Select the waypoint **RF01**. Then the get all of the waypoints press **Shift + RF09**. This will select all of the waypoints as shown below.



**Figure 8** – Selecting waypoints

**5. Send Selected** Now select **GPS > Send Selected to GPS...**

**6. Confirm upload** On your GPS unit now confirm that the upload is complete. Consult the documentation for your personal GPS unit for help.

## Too Many trackpoints?

Most GPS units have a limit of a maximum of 500 points per track. Yet, some units only allow a smaller number of points per track. If this is the case what do I do?

Notice that the track file for the Reavis Falls Trail contains 500 points. Let's assume I am using a GPS unit that only allows 250 points per track. I have two options:

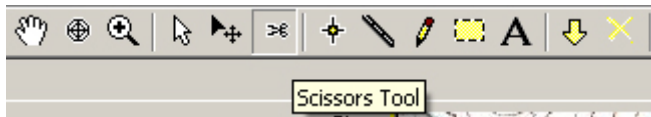
### Option 1 – Simplify Track

Select the track **RF** in the **List** window. Now select **Right Click > Simplify Track**. Notice that the number of track points in the RF trail has been reduced to 260. This is still larger than the 250 track points my GPS unit can store. So, I can simplify the track again by selecting **Right Click > Simplify Track** again. Now the number of tracks is

reduced to 174 points, and I can upload the track to my GPS unit. However, simplifying the track reduces the number of track points and reduces the quality of the track file. In most cases this is not a problem, and the reduced number of points still provides an accurate depiction of the trail.

## Option 2 – Splitting the Track

If you don't want to reduce the quality of the track file by simplifying it, the other option is to split it into multiple tracks and then upload each of the split track files. The easiest way to do this is to use the Scissors Tool.



**Figure 9** – The Scissors Tool

First select the track **RF**. Now select the **Scissors Tool**. With the scissors tool click somewhere along the track (in the Map Window) where you want to split the track. Notice, you now have two tracks named RF. The location I selected to split the track file shows 351 track points for one and 149 track points for the other.

 A screenshot of the 'Superstition\_Wildern...' track list window. It shows a table of tracks with columns for Label, Type, Description, Name, Number, Total Distance, and Number of Trackpoints. Two tracks named 'RF' are selected, representing the split of a previous track.
 

Label	Type	Description	Name	Number	Total Distance	Number of Trackpoints
WS	FS Trail	Whiskey Spring Trail (2...	WS	1	2.03 mi	445
WT	FS Trail	Woodbury Trail (114)	WT	1	2.18 mi	221
WTH	FS Road	Woodbury Trailhead (F...	WTH	1	15.42 mi	500
RF	Unofficial Trail	Reavis Falls Trail	RF	1	2.21 mi	351
RF	Unofficial Trail	Reavis Falls Trail	RF	1	0.87 mi	149

2 Tracks Selected

**Figure 10** – Splitting tracks leaves two tracks with the same name.

So, I may want to split the longer track again to get it down to 250 points.

Now, before I upload the tracks I need to change the Name, since all split tracks have the name RF. If I were to upload these tracks to the GPS unit now I would just end up with one track. So change the name of each track to something unique. For each track select **Right Click > Edit Track**. Now change the **Name** field to something like RF1, RF2, etc.