

## Virginia Geospatial Extension Program

# USA PhotoMaps: a User Guide for Natural Resource Professionals and Educators

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### Background

USAPhotoMaps requires that you know how to operate a GPS unit and organize and collect field data associated with a GPS unit. This free software package enables you to download GPS waypoints (or tracks) from your GPS receiver onto your computer and to superimpose the collected data on top of aerial photographs.

USAPhotoMaps prompts you for a single waypoint (for reference purposes). The software then “goes out” onto the Internet (i.e. Terraserver), finds the appropriate digital image associated with the user-defined waypoint, and downloads this digital photograph onto the your computer. You can then superimpose collected waypoints onto the image or digitize new waypoints on the image and download them onto your GPS receiver. The software can also provide topographic maps as a background reference.

You should be aware of USAPhotoMaps’ limitations. It only accesses aerial photography from Terraserver, which is primarily an archive of USGS imagery. These aerial photographs are a bit dated (the majority of the photographs for Virginia date back to the mid 1990s). None of Virginia’s high-resolution Base Mapping Imagery (VBMP) is accessible through this software.

### Getting Started

Before you can actually get started using USAPhotoMaps, you need to do a few things.

1. Install USAPhotoMaps software on your computer.

([www.jdmcox.com/](http://www.jdmcox.com/))

- a. Set up USAPhotoMaps software.
- b. Reboot your computer (not always necessary, but it may make a difference).

2. Collect GPS waypoints, tracks, etc.

Head out into the field and have some fun. Refer to *The Garmin eTrex Legend: An Introductory Handbook for Natural Resource Educators*.

3. Download GPS Data onto a digital aerial photographic map.

This involves 2 steps:

Step 1: “Initializing, downloading, and opening” the digital photographs.

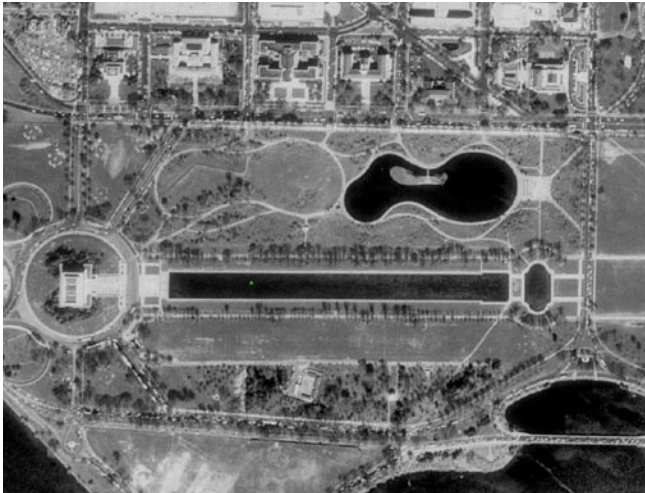
Step 2: Downloading your GPS points on top of a digital aerial photograph. (This is what the software is all about!)

This manual will walk you through the two steps listed above. Note that this handbook is based on USAPhotoMaps version 2.76. Later versions of the software may support different menus or capabilities.

# Step 1:

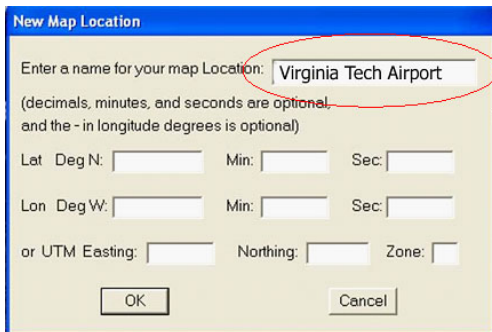
A. Log on to your computer.

B. Start the USAPhotoMaps program. You should see a window like this appear on your computer screen (the program defaults to an aerial photograph of Washington, D.C.):

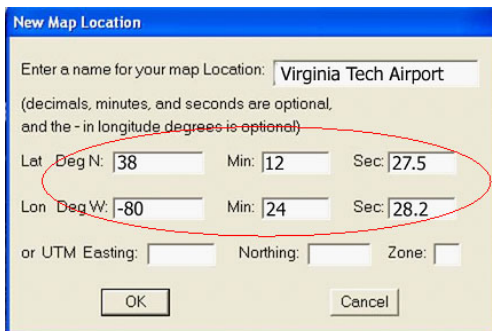


C. To begin, select the “File Menu” and select “New Map Location.” The dialogue box (below) appears. It prompts you for some basic information so that it can find the appropriate aerial photographs.

1. Enter a name for your map.

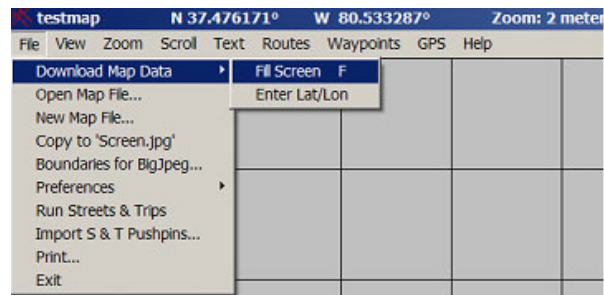


2. Now you need to enter the initial latitude and longitude coordinates from your GPS (a waypoint coordinate from your GPS).



- Latitude is associated with either north or south. Longitude is associated with either east or west.
- Enter these values in the dialog box. Note: In the United States, Longitude Degree Values should have a negative sign in front of them as shown in the example. Your values will differ from the values in the example *but your longitudinal degree value must be negative* if you are in the U.S.

3. Press the <OK> button at the bottom of the New Map Location dialogue box. Your coordinates have now been stored. The software is ready to go searching for an aerial photograph for you to display.
4. Select the “File Menu” > “Download Map Data” > “Fill Screen” (see figure below), or you can press the “f” key on your keyboard.

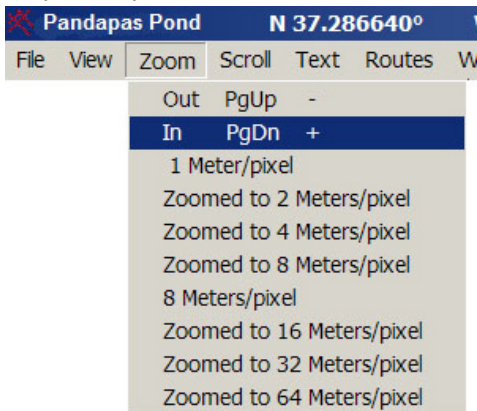


5. Your map should draw in the window. This could take some time if you have a slow Internet connection.

Note: your image should look different from the image below. The image below is from Pandapas Pond, Virginia. Your image should be from the area where you were conducting your fieldwork.



- Zoom into your map if you can by going to the “Zoom” menu > “In” (you can also just hit the “+” key on your keyboard).



## Step 2:

### Downloading your GPS points on top of the digital photographs

*Note: These instructions are for Garmin GPS receivers. If you are working with a different brand or model, you should refer to the “official” instructions for USA-PhotoMaps located in the Program Files/USAPhotoMaps/gps-help.txt document that was installed on your computer when you downloaded the USAPhotoMaps software.*

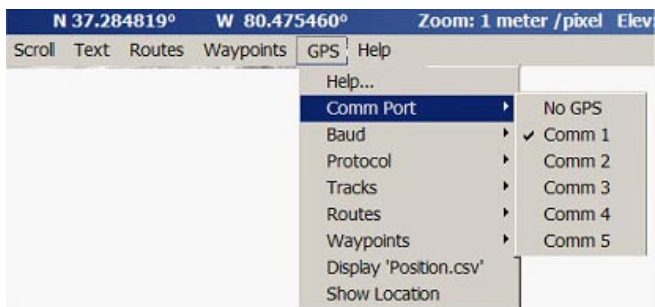
The Baud rate in USAPhotoMaps has to match the Baud rate of your GPS receiver.

- Make sure that the GPS unit is configured to communicate properly with the USAPhotoMaps software program.

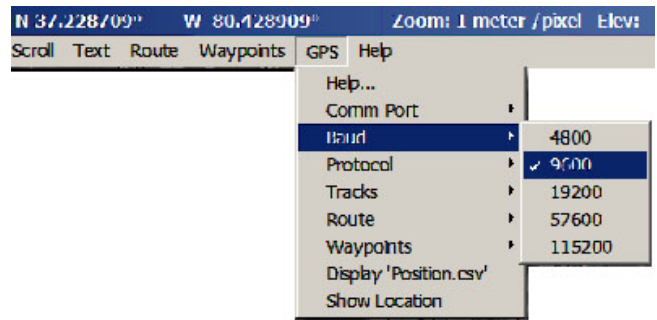
- Attach the cable to your GPS receiver and to the serial port of your computer (it is probably the only port where the cable will fit properly).

- Turn on your Garmin GPS receiver.

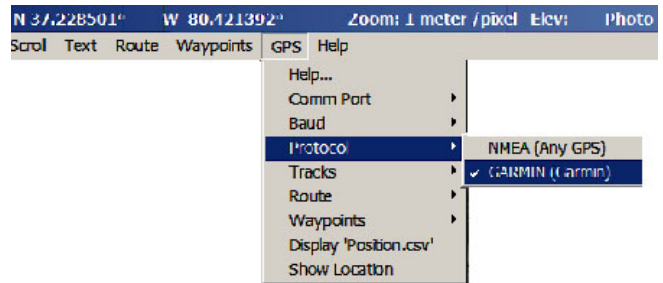
- In USAPhotoMaps software, make sure that the communications port is set to “1.” Open the “GPS” > “Comm Port” > “Comm 1.”



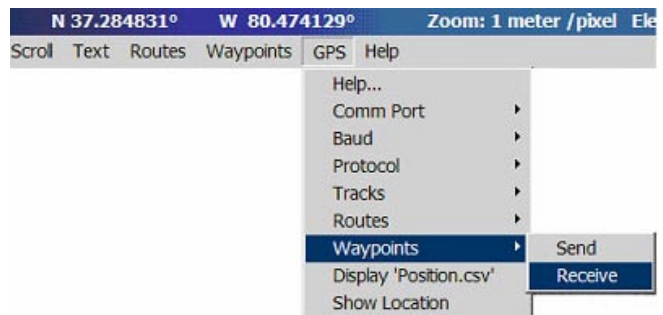
- Make sure that the Baud rate is set to 9600. Open the “GPS Menu” > “Baud” > “9600.”



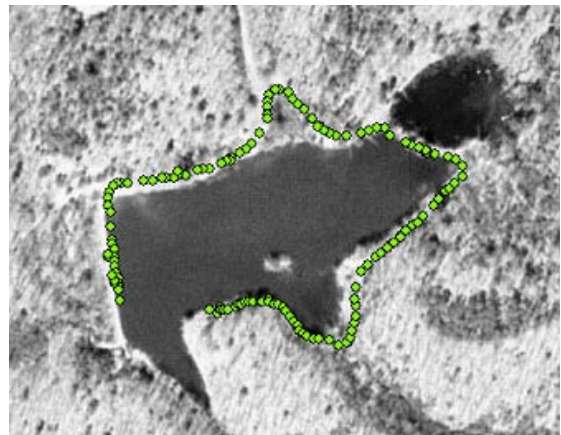
- Under the “GPS Menu” > “Protocol,” make sure that “Garmin” is selected.



- Now you are ready to receive your waypoints! Open the “GPS Menu” > “Waypoints” > “Receive.” If you get an error message, then let the computer sit idle for a couple of minutes, and try receiving the waypoints again

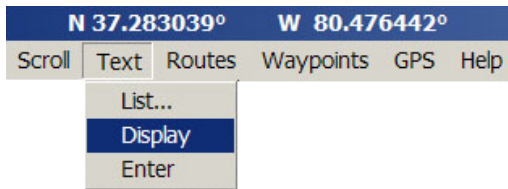


- You should end up with a map that looks something like this (each dot will represent a waypoint).





G. To identify the actual identification numbers of each waypoint while scrolling across your aerial photograph, go to the “Text Menu” > “Display.”

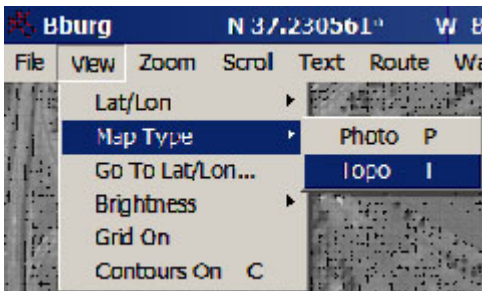


This will “turn on” the identification numbers of each waypoint when you scroll over them. Use your data logging sheets to determine if these positions are correct or not.

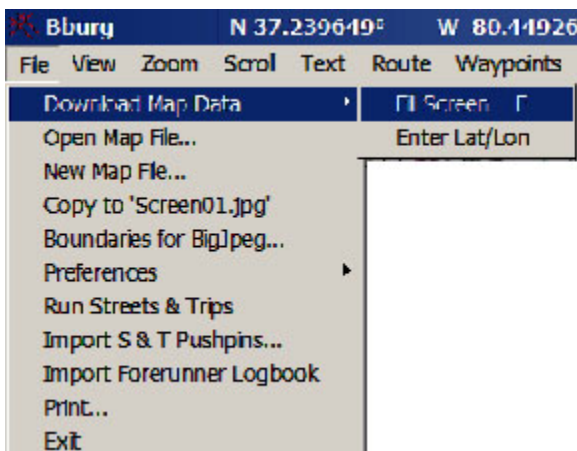
### Tricks and Additional Hints

In addition to adding aerial photography as a “back-drop,” USAPhotoMaps can also be used to bring up topographic maps in the background of your waypoints and routes.

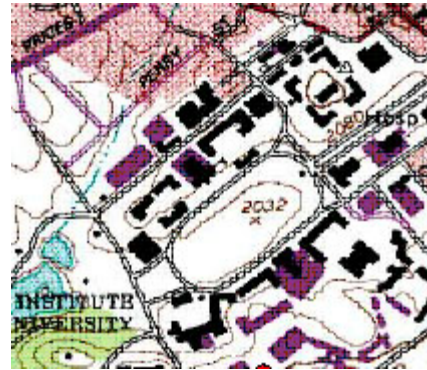
1. Under the “View Menu” > “Map Type” >”Topo.”



2. If the topographic map does not draw, then go to the “File Menu” > “Download Map Data” > “Fill Screen” (or simply press the “f” key on your keyboard).



A topographic map should appear in the display window, and your waypoints/routes should draw on top of the topographic map!



*Note: Keep in mind that GPSU “reads your data” directly from the connected GPS receiver. GPSU does not actually download the GPS data to the local hard drive. If you need to archive GPS data, use another program such as GPS Utility (freeware) or DNRGarmin (freeware). More information about these two software programs is available from the Virginia Geospatial Extension Program: [www.cnr.vt.edu/gep/tools.html](http://www.cnr.vt.edu/gep/tools.html)*

### Acknowledgements

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