

## Advanced Activities: Photo2GPS & Google Earth

Virginia Geospatial Extension Program

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### Photo2GPS

- A free software program that associates GPS track files with digital photographs
- Created by the Geospatial Extension Educator at the University of Connecticut
- Can be downloaded from <http://clear.uconn.edu/geospatial/GPSResources.htm>

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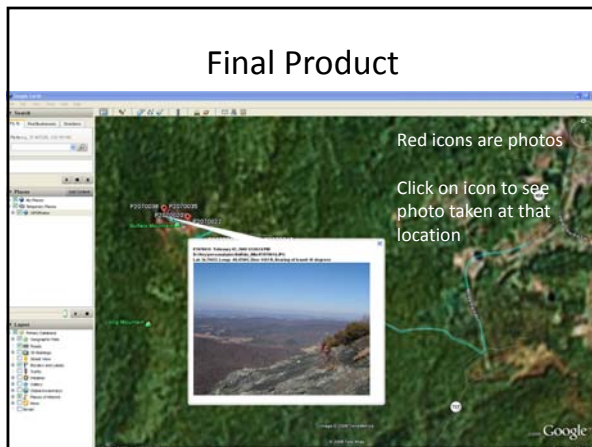
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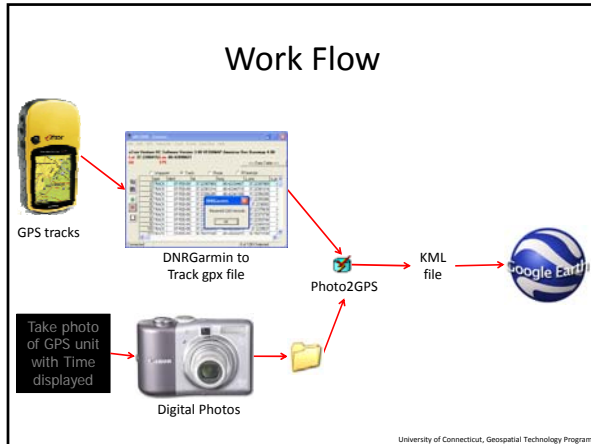
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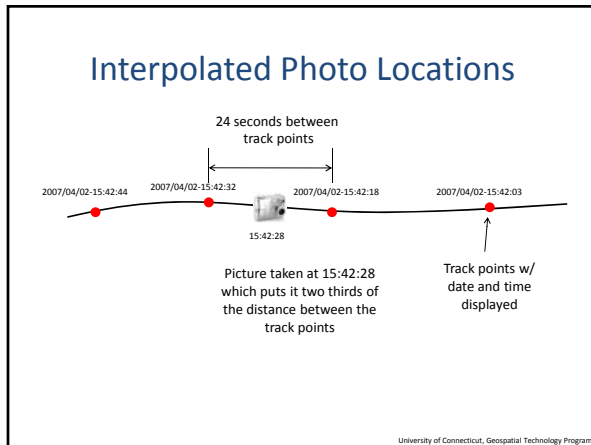
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### Steps to Use Photo2GPS

1. Take a close-up picture of the GPS unit that shows the GPS time
  - ❖ Make sure it is in focus
  - ❖ Use the “flower” or macro setting on your digital camera
  - ❖ If the final product will be on the web, use the smallest photo resolution setting
2. Make sure the GPS unit time is set for 24 hours (instead of 12) & the time zone is appropriate for your location

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### Steps to Use Photo2GPS Cont.

3. On the GPS- Clear the track log, **MAKE sure TRACKS ARE TURNED ON** – record a new track while taking pictures
  - ❖ The digital camera & GPS unit do not have to be set to the same time, Photo2GPS will synchronize the times!
4. Go out, photograph the GPS unit & your community assets
5. On your computer– Create a Project folder and create a “Photos” & “Output” folder within the Project folder



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### Downloading Tracks

5. Using DNR Garmin, download your tracks to the project folder & save in a gpx file format
  - ❖ See DNR Garmin Handbook for Educators - <http://www.cnr.vt.edu/gep/tools.html>
  - i. Turn GPS unit on
  - ii. Connect GPS unit to computer
    - i. The computer should recognize GPS unit – if not need to download GPS driver from support website (for a Garmin unit this would be <http://www8.garmin.com/support/blosp.jsp>)
  - iii. Start DNR Garmin software
    - i. If you cannot connect:
      - i. Using serial port connection - Go to GPS menu select “Set Port” (usually Port1), select “Set Baud Rate” (set to 9600) & select “Auto Connect to GPS”
      - ii. Using USB connection – Go to GPS menu select “Set Port” (set to USB)

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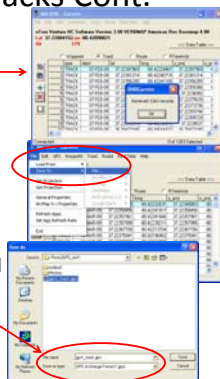
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### Downloading GPS Tracks Cont.

- iv. Once your connected, download Tracks > Go to the Track menu, select Download
- v. To save the track > Go to the File menu, select “Save To”, select “File”
- vi. A new window will open, browse to your project folder you created previously & save the GPS track **\*\*Change the “Save as type” to “GPS eXchange Format (\*.gpx)”**



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### Steps to Use Photo2GPS Cont.

- Download pictures & save in the "Photos" Folder
  - ❖ Copy the photos from the camera, DO NOT use the software program (that may come with your camera) to transfer the photos. This changes the <Date Modified> field so that it's different from the <Date Picture Taken> field
  - ❖ Do not do any photo altering – photos can be altered AFTER using Photo2GPS
  - ❖ Photo2GPS reads the <Date Modified> field




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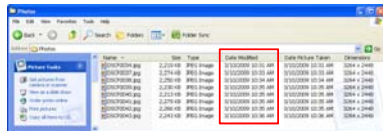
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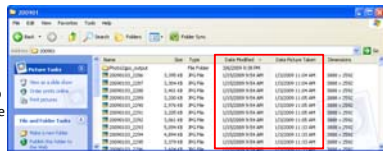
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### Trouble Shooting...

**This is correct!**  
Make sure that the date modified / time is the correct time that the photos were taken (in the <Date Modified> field)...



**This will cause problems!**  
In this example, the date modified date/time for all photos are all the same. This suggests that the user either:  
1. Used a software program to transfer the photos from the camera to the computer  
2. Altered the photos later using Photoshop, etc.




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### Start the Photo2GPS Program



Double-click the Photo2GPS desktop shortcut or navigate to your C drive & open Photo2GPS folder

Click the "Set photo directory..." button



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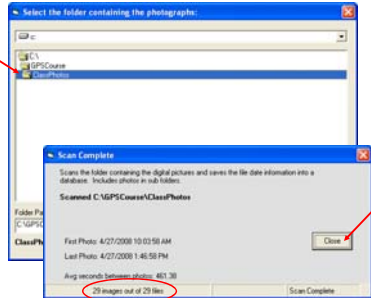
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### Scan the Image Folder

Navigate to the folder where you downloaded your digital pictures.

Click the Select Folder button.

A message window will appear indicating that the scan has been completed.



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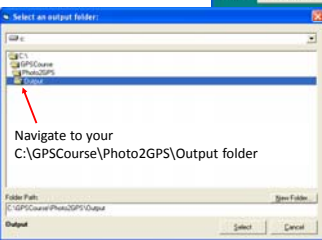
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### Specify Output Folder

Click the "Set Output Folder..." button  
\*This is where final outputs will be stored



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### Select the GPS Track to be Associated with your Digital Photos

Click the "Select GPS file..." button



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### Select the GPS Track

1 Click the Browse Button

2 Navigate to the folder with the track file

3 Highlight the appropriate file

4 Click Select Button

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### Adjust GPS Receiver Time to Match Digital Camera Time

Click the "Set Time Adjust..." button.

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### Calculate Time Offset

1 Navigate to the Photos folder

2 Click on the photo of the GPS time and type the time in the box

3 Click the Calc Time Diff button and then click the Close button

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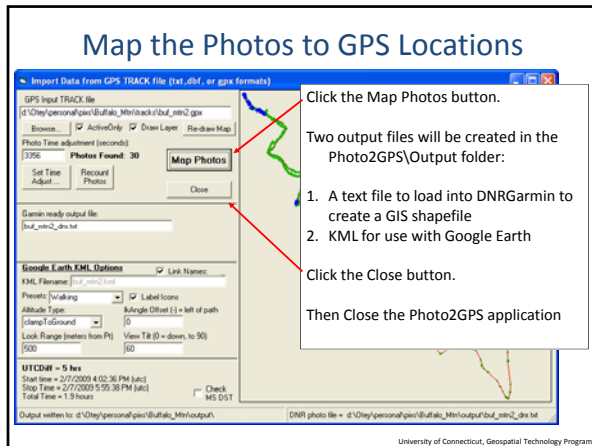
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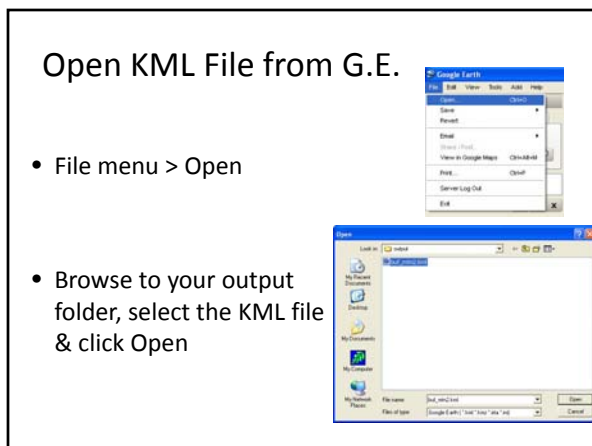
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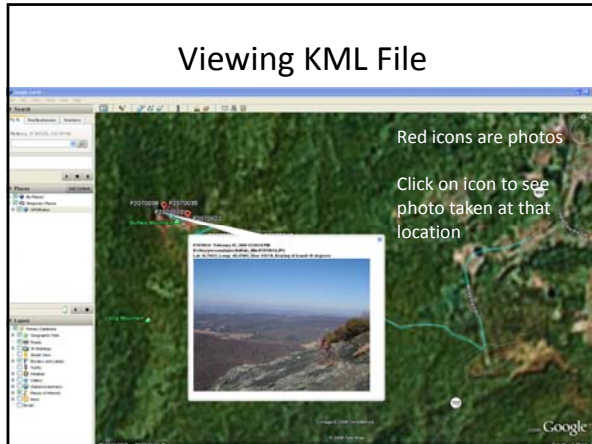
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### Google Earth Quirk

- If for some reason you do not see your photos when you select an icon, not to worry there is a work around.
- Go to the File menu > Select "Save", then "Save Place as"
- Save file as a KMZ in a location you can find
- Now close Google Earth
- Double click on the .kmz file you just created. Your photos should show up now
- Continue with customization using KMZ instead of your KML...

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### To Customize/Package KML & Photos for Distribution

- Open the KML file open in Google Earth
- To customize the Photos, right click on the photo icon & select Properties

- Click in the appropriate area/tab to change the attribute (Name, icon, description, etc)

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### KML Customization Cont.

- You can turn off the track so only the photos & their locations are shown
  - Under the Places menu on the left, expand GPSPHOTOS under Temporary Places
  - Uncheck the GPSPHOTOS layer
- Once all changes have been made, the file needs to be saved & packed for distribution
- Select the File menu, then “Save”, then “Save Place as”



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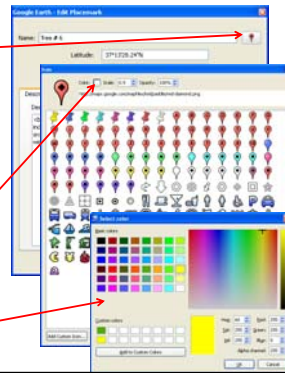
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### To Change the Photo Icon

- Click on Photo Icon
- Icon window will open, Choose desired icon
- Can change color of any icon
  - Click on Color
  - Select desired hue



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### Customized KML file



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### KML Customization Cont.

- Once all changes have been made, the file **needs to be saved & packed for distribution**
- Select the File menu, Select “Save”, then “Save Place as”
- Save file as a KMZ
  - this packages the photos & KML file together so they can be easily disseminated (emails, websites, etc.)

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### KML Customization Cont.

- You can now post this KMZ file on a website to be downloaded or email/mail the file to other people
  - KMZ file size is largely dependent on the photo size
  - Potential users need to install Google Earth to view the KMZ file

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### What can you do with this?

- Can email KMZ file to other users
- Post KMZ file to group website
- Inventory community assets such as Champion Trees, gardens, arboretums, historic sites, etc

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## Any Questions?

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