

Quick Start Guide – TerraSync and GPS PhotoLink

Alaska Regional Office - GIS Team Cheatsheet

Created 11/01/2008; Last Modified 2/2/2009

Pre-Field

Digital Camera Setup: Set Camera Date/Time to match GPS Time as closely as possible

1. Bring additional batteries
2. Clear all photos from camera
3. Set resolution to at least 2MB
4. Turn off Date/Time Stamp on camera, also known as Watermark on some cameras
5. Verify Almanac on GPS receiver is less than a week old.
6. Make sure GPS receiver is tracking satellites
7. Display GPS Time in TerraSync/Status/UTC Time page
8. Calculate local time for your camera – account for time zone, 12-hour clock
9. Set correct time on camera

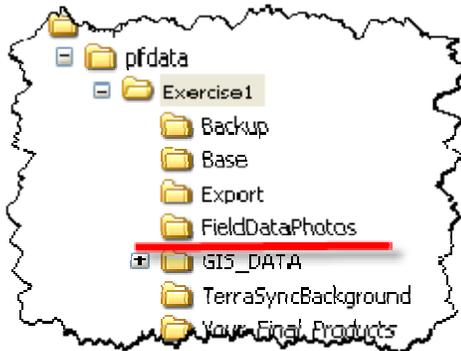
Example: November 4th in Fairbanks a user would subtract 9 hours: 20:51:02 - 9 = 11:51:02 am



Local Time Zone	GMT Offset	2008	2009
Alaska Daylight Saving	Subtract 8 hours from UTC	Begins March 9	Begins March 8
Alaska Standard	Subtract 9 hours from UTC	Begins November 2	Begins November 1

File Management Setup

Make sure FieldDataFolder is in your Exercise1 project folder.



Don't have a photo file management system? Click this [link](#) to download a directory to store your photos.

Field

Photograph UTC Time on the GPS Receiver

CAUTION: Never change camera time after taking the picture of the GPS time

1. Make sure GPS receiver is tracking satellites
2. Display GPS Time – in TerraSync/Status/UTC
3. Photograph UTC Time - review the photo to ensure you can see time to the nearest second.



TIP For Collecting GPS Positions and Photographing Features (Point and Shoot): Always begin collecting GPS positions (Point) before photographing (Shoot) the feature.

First: Collecting PhotoPt feature – Single or Two-Person Team

1. Select the feature, place GPS antenna over feature, select **PhotoPt**, tap **Create**.
2. Comment field - enter name of feature, max 30 characters, shows in watermark
3. Internal field - enter description, max 100 characters, does not show in watermark
4. Direction field - enter cardinal direction (N, NE, S, etc.) facing when taking the picture, does NOT show in watermark
5. Photographer field – enter information
6. Close feature

Second: Photographing feature — Single Person Team

1. Stand back from the feature
2. Photograph feature
3. Review photo, delete, retake if needed.

Second: Photographing feature — Two-Person Team

After person collecting positions collects at least one position, photographer takes picture.

Post-Field

Download Photos and File Management

1. Connect computer to the camera or to the camera memory card.
2. Use Windows Explorer, browse to the photos in your camera or on the card, copy them.
3. Still using Windows Explorer, browse to **FieldDataPhotos** directory, paste photos
4. Review photos – discard poor quality photos and remove unrelated photos

CAUTION: do not edit any photos.

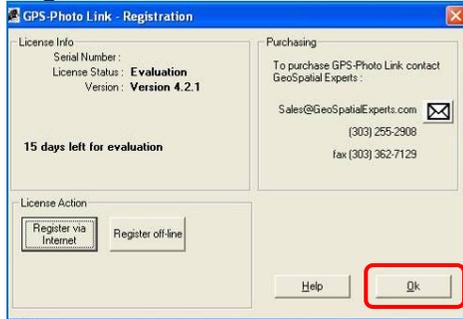
5. Disconnect camera/card, delete photos from camera/card to prep for the next field trip.

GPS-Photo Link Software

1. On the desktop computer, open **GPS-Photo Link**.



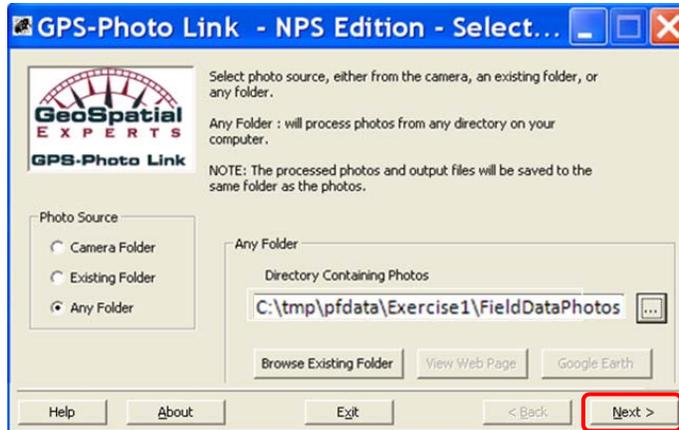
2. **Registration Window** - Click **OK** to use the Evaluation Version.



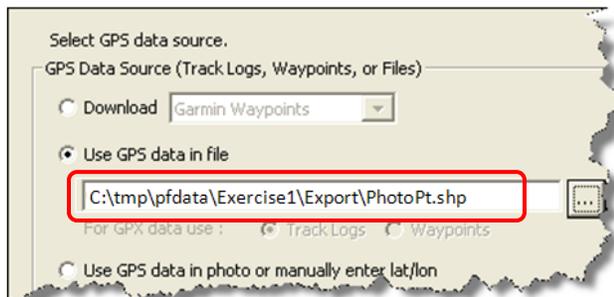
3. **Introduction Window** - Click **Next**



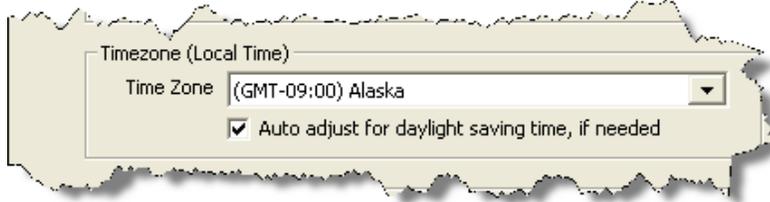
4. **Select Photos Window** –
- In Photo Source Section, select **Any Folder**
 - In Directory Containing Photos field, browse to the **FieldDataPhotos** directory
 - Click **Next**.



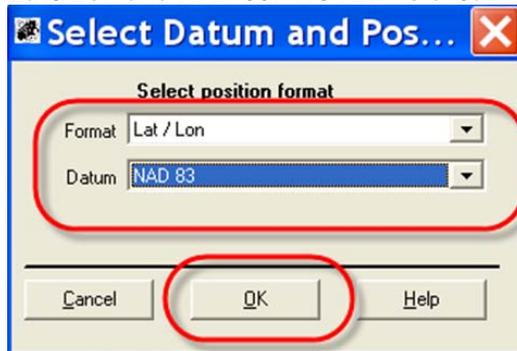
5. **GPS Data Window** –
- In Select GPS data source section, click radial button for **Use GPS data in file**
 - Browse to **PhotoPt.shp** in the Exercise1 Export folder



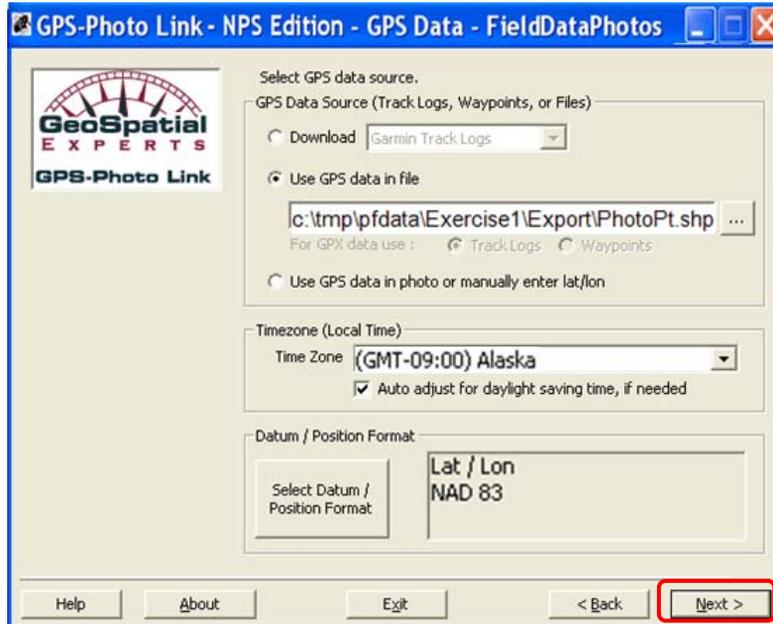
- c. In Timezone (Local Time) section, select **(GMT-09:00) Alaska**. Check **Auto adjust for daylight saving time, if needed**. (The software will automatically compensate to GMT-0800 when Daylight Savings Time kicks in).



- d. Click the **Select Datum / Position Format** Button, and from the dropdown menus select **Lat / Lon** and **NAD 83**. NOTE: As of Jan 2009, this step does no datum shift.

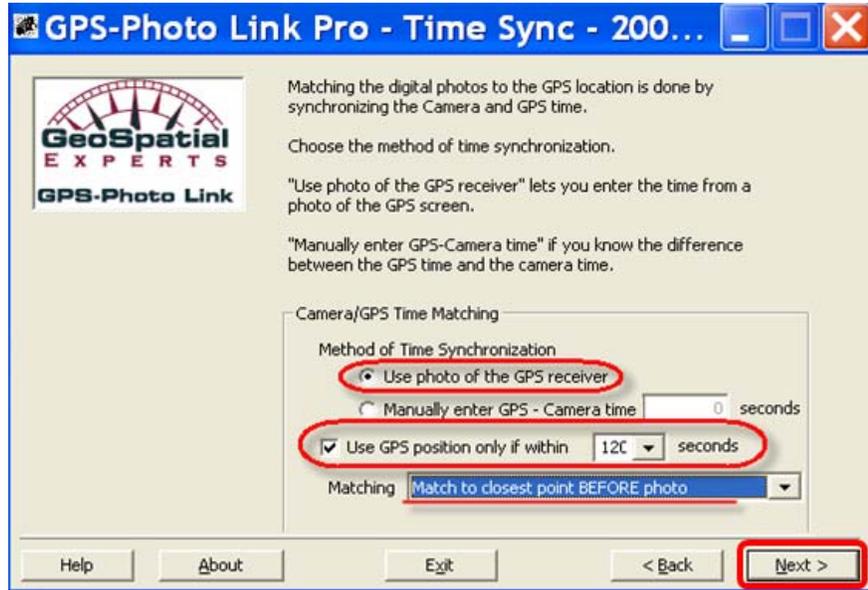


- e. This is how the GPS Data window should look. Click **Next**



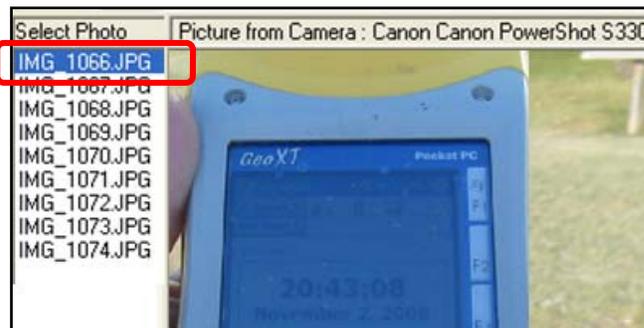
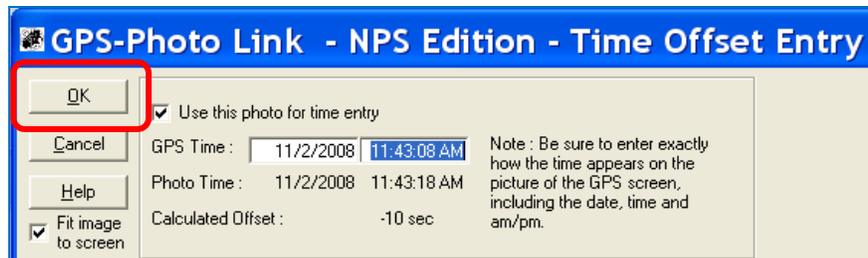
6. Time Sync Window –

- a. Under Method of Time Synchronization, select radial button **Use photo of the GPS receiver**
- b. Check the box **Use GPS position only if within**, from dropdown menu select **120** seconds
- c. In Matching field, from dropdown menu, select **Match to closest point BEFORE photo**
- d. Click **Next**



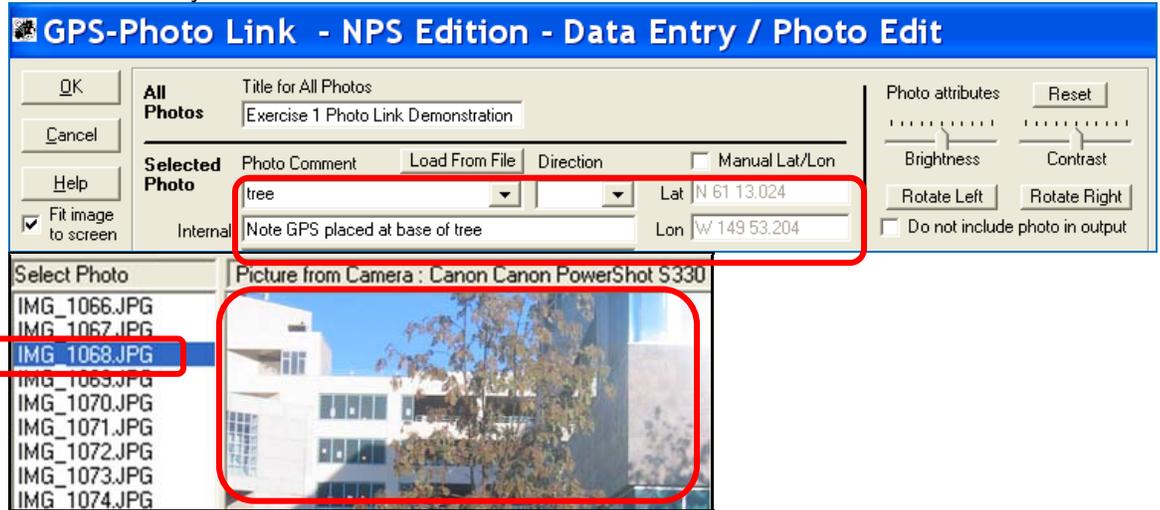
7. Time Offset Window –

- a. In the Select Photo section, highlight the photo of the GPS datalogger showing UTC time.
- b. Check the box for **Use this photo for time entry**
- c. In the GPS Time fields, enter the GPS date and time shown in the photo of the GPS datalogger, **adjusted for your time zone and the 12-hour clock**.
- d. Click **OK**



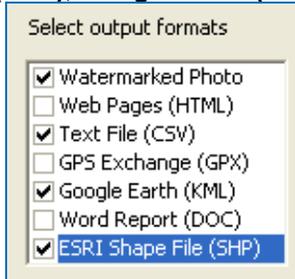
8. **Data Entry / Photo Edit** Window –

- a. In Title for all Photos field, enter a title, will appear in the watermark
- b. For the **Selected Photo** section:
 - Photo Comment** and **Internal** are populated automatically, fields may be edited.
 - Direction** – if not populated, may be edited.
 - Lat** and **Lon** are populated automatically.
 - Photo Attributes** section may be edited.
- c. Click **OK** when you have finished

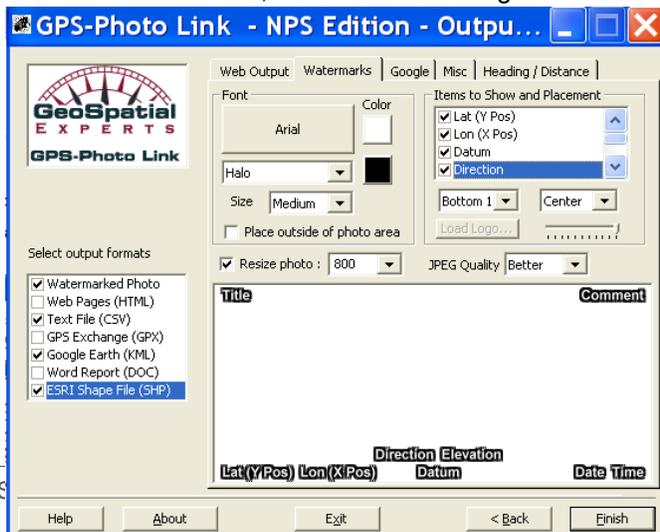


9. **Output Options** Window –

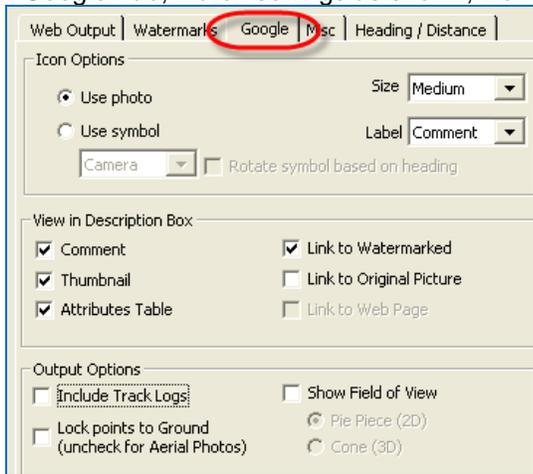
- a. In Select output formats section, check the boxes for **Watermarked Photo**, **Text File (CSV)**, **Google Earth (KML)** and **ESRI Shape File (SHP)**



- b. In the Watermark Tab, match all the settings as shown. We prefer white as font color.

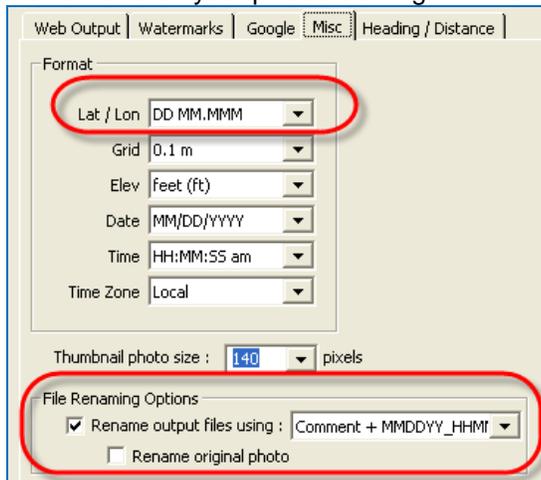


c. In Google Tab, match settings as shown, works for standard free version of Google Earth.



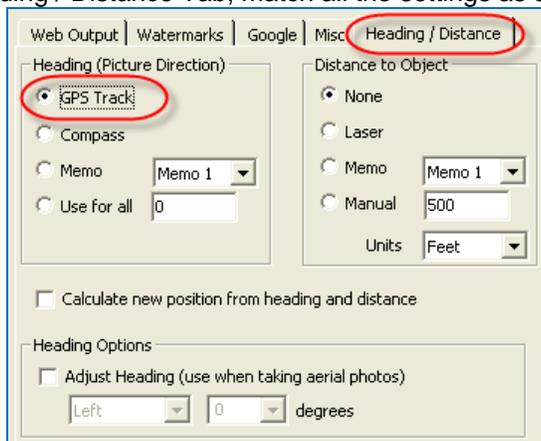
d. In the Misc Tab, match all the settings as shown.

Use appropriate Units for Elevation. File renaming is an excellent option that enhances organization of your photos on output. Comment+MMDDYY_HHMMSS will make a unique file name for all your photos starting with the information placed in comment field.



The Alaska NPS standard for display of all coordinates for communication is Lat/Long Degrees Minutes Decimal Minutes. See this [doc](#) for more info.

e. In the Heading / Distance Tab, match all the settings as shown, works when moving towards photo.



- f. In the Output Options window, click **Finish**

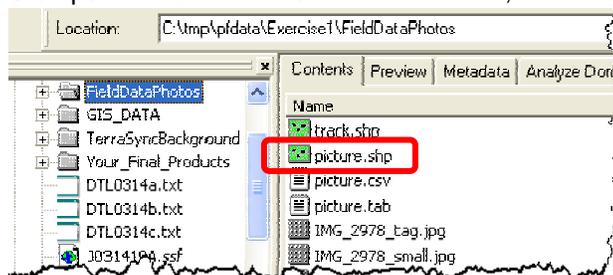


10. **Done Processing** Window – the final screen shows how many photos were linked to GPS

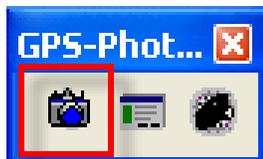


View Output in ArcGIS

1. Open ArcMap
2. Select the Exercise1.mxd that was saved at the end of Exercise 1
3. In the active data frame, click the Add button, browse to the folder storing the photos, C:\tmp\Pfd\data\Exercise1\FieldDataPhotos , and select **picture.shp**



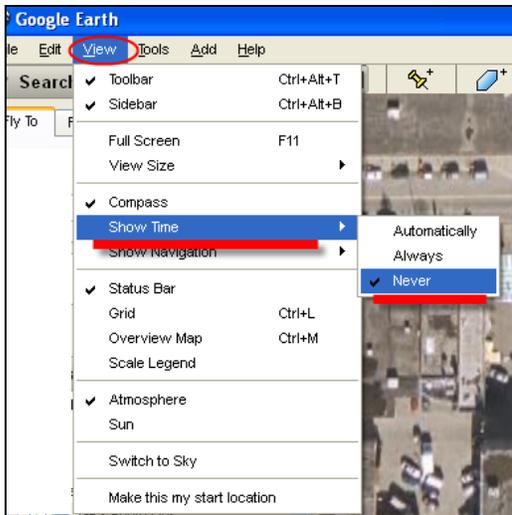
4. Activate the GPS PhotoLink Toolbar, by clicking **View / Toolbars / GPS-Photo Link**.
5. Click the **camera icon** and hover over a **Picture** feature.



6. Clicking on the Picture hotlinks or hyperlinks to the watermarked geo-tagged photo

View Output in Google Earth (free download)

- In the FieldDataPhoto folder, double-click on **picture.kml**.
See photo properly in Google Earth, turn off Show Time bar, **View / Show Time / Never**.



Links:

GPS PhotoLink Support page including FAQ's. <http://www.geospatialexperts.com/Support.php>

National Park Service Photo and GPS page. Dedicated to all things Geotagging. This site also includes data dictionaries and file management directory structures to enhance your field data photo collection. <http://165.83.62.205/rgr/akgis/index.cfm?action=dsp&topic=gps&item=photo>

Revision History

Date Modified	Revised By	Changes Made
November 1, 2008	Dayle Sherba	Original
January 16, 2009	Dayle Sherba/Joel Cusick	Further consolidation – matching with Trimble training guides for class.
February 2, 2009	Joel Cusick	Added link to DM standard,