

SEAN Sea otter monitoring SOP 6: Flight post-processing: downloading and naming digital images and capturing GPS tracklog

Revision History Log:

Previous SOP version	Effective Date	Revised By	Changes Made	New SOP version
-	September 2018	Jamie Womble	Initial version	1.0

Summary

Digital images from aerial surveys are downloaded to computers using Windows Explorer and renamed in bulk using the ACDSee software tool. The tracklog from the GPS device is downloaded separately using the MapSource application. These become the basis for creating geo-referenced data photos in SOP 7.

This SOP is invoked under two circumstances during the course of a survey effort. The first is performed immediately after completing each flight in order to demonstrate that the data collected is of proper quality and not suffering from issues caused by, say, equipment malfunctions. This, followed by attempting geocoding (SOP 7), has its data flow illustrated in Figure SOP6.1. At this stage the GPS tracklog is also captured.

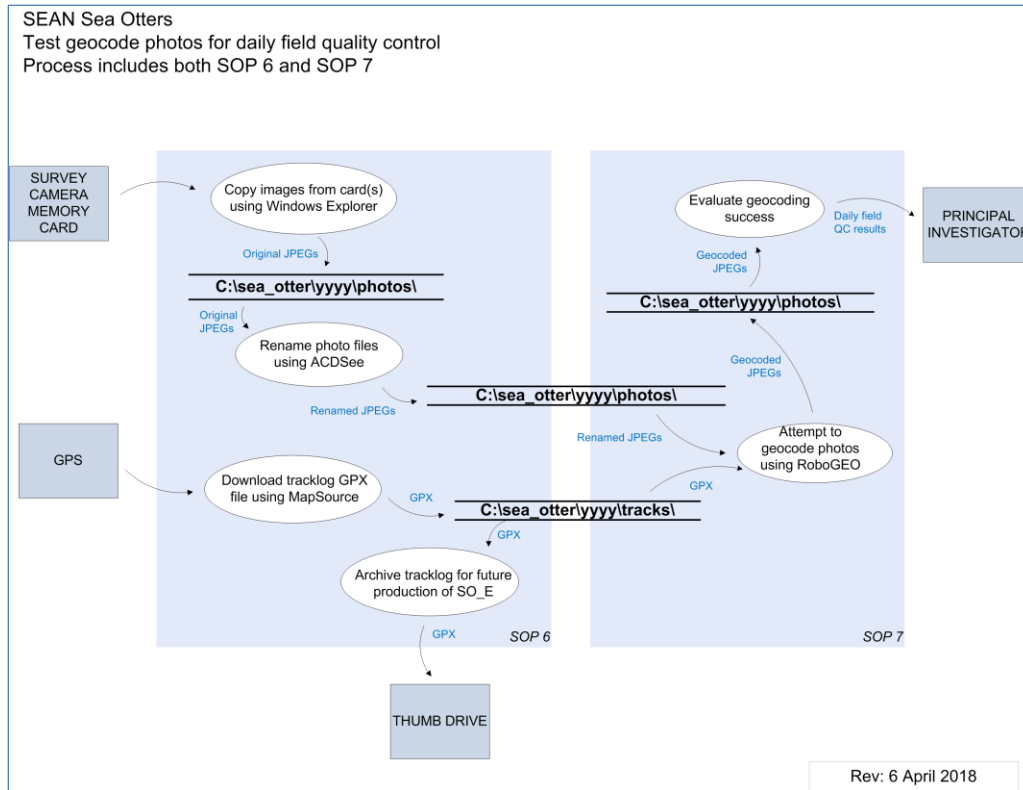


Figure SOP6.1. Data flow when SOP 6 is used for field quality control.

The second case when SOP 6 is performed is after all photos have been collected for this survey effort, at which time the processes (in both SOP 6 and SOP 7) are done from scratch using all available photos and tracklogs under carefully controlled office conditions in order to produce formal deliverables. This has its data flow illustrated in Figure SOP6.2. Due to inadequate network bandwidth at GLBA, case two must be physically executed at the SEAN office.

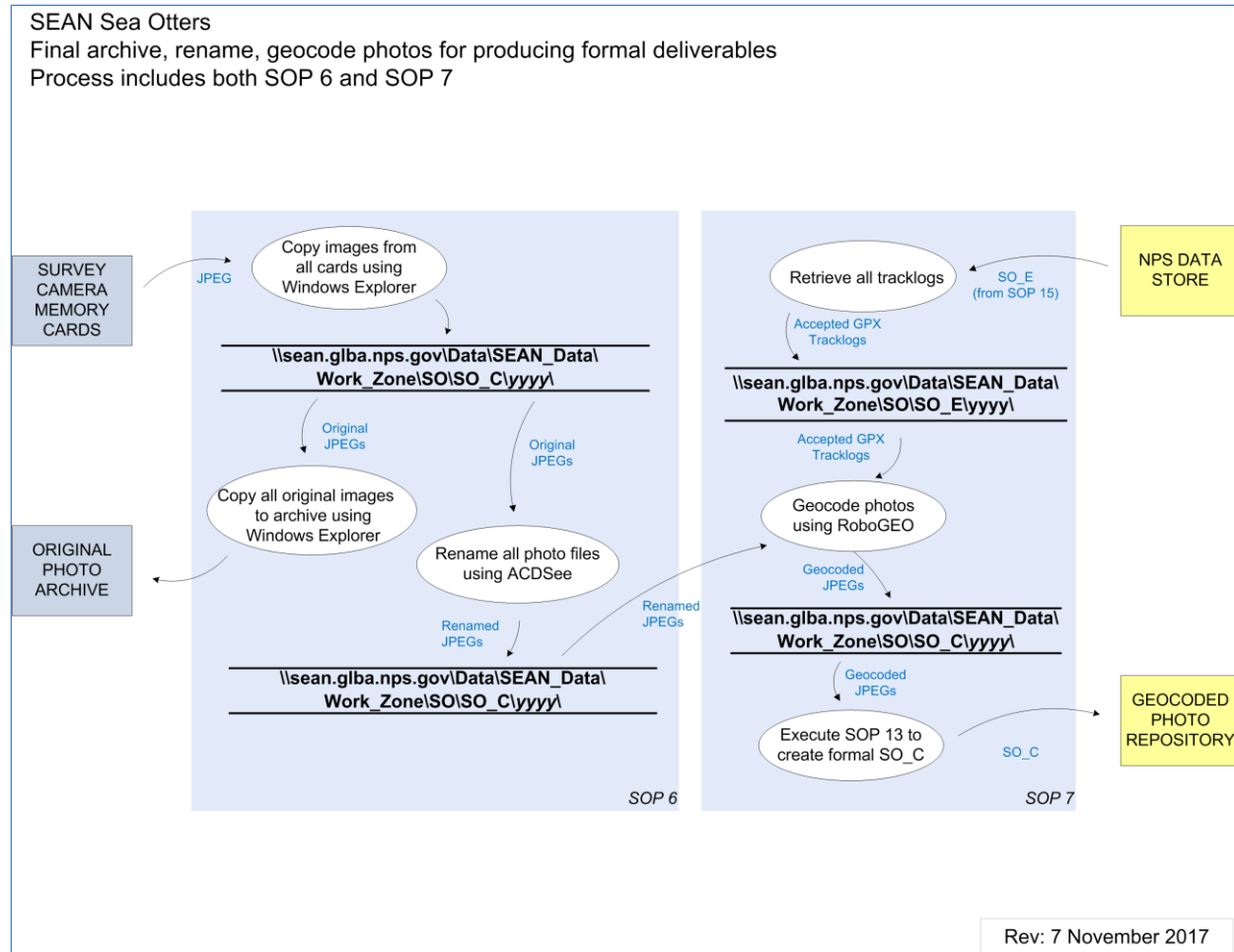


Figure SOP 6.2. Data flow when SOP 6 is used for formal deliverable production.

Detailed Steps

When done for daily field quality assessment, the computer is typically self-contained and not connected to the NPS network. For this the “photo folder”, referenced below, will be “C:\Sea_otter\yyyy\photos\” where yyyy is the year of survey effort. The “tracklog folder” will be “C:\Sea_otter\yyyy\tracks\”. It is likely each aerial survey flight will temporarily require about 400GB of free disk space on the field computer.

When this SOP is instead performed for preparing final deliverables in the office after all flights for the survey effort are finished, the photo folder is on the NPS network at

“\\sean.glba.nps.gov\Data\SEAN_Data\Work_Zone\SO\SO_C\yyyy\”. The tracklog folder is “\\sean.glba.nps.gov\Data\SEAN_Data\Work_Zone\SO\SO_E\yyyy\”. **Under no circumstances may these particular network folders be used for field quality assessment – permanent data loss may result.**

This SOP references a “survey type” code used in naming files. For this purpose the encoding of survey type is: A = Optimal Abundance, O = Optimal, R = Random, and X = External.

1. After completing an aerial survey, download the digital images from the camera’s memory card(s) onto a computer.

1. If not already present, create the photo folder to hold this survey.
2. If not already present, create a subfolder under the photo folder named “\yyyyymmdd_t\” where yyyyymmdd is the 8 digit date of the aerial survey and *t* is the survey type – for example [photo folder path]\20180714_R\.
3. Insert the first camera memory card in the computer’s reader slot.
4. Use Windows Explorer to copy the photos from the memory card to the subfolder created above by dragging and dropping.
5. Use Windows Explorer to compare the number of files on the card with the number of files in the subfolder. Rectify any omissions.
6. Repeat the copy process for any other memory cards needing to be processed from this flight.
7. **If these are field quality assessment (as opposed to office) images, retain the used memory cards in a safe place for later deliverable creation in the office.**
 1. Label them with flight date and survey type.
 2. Never take cards containing data images back into the field where they might be lost or damaged.
 3. Obtain a new set of formatted memory cards for the next flight, if needed.
8. **If these are the office (as opposed to field) images, make an archival copy of the full set of original files that are now in the photo folder.**
 1. Using Windows Explorer, select all aerial survey photo subfolders from “\\sean.glba.nps.gov\Data\SEAN_Data\Work_Zone\SO\SO_C\yyyy\” and drag them into “\\sean.glba.nps.gov\Sea Otter Original Photo Archive\yyyy\”.
 2. Copying may take a long time, but do not begin the next step of renaming files until the archive verification is complete.
 3. When the copying is finished, use Windows Explorer to compare the number of files in both folders as well as the number of total bytes used. If they do not match, take corrective action.
 4. Using Windows Explorer, mark the files in “\\sean.glba.nps.gov\Sea Otter Original Photo Archive\yyyy\” as read-only in order to prevent future accidental file damage.
 5. Notify the SEAN data manager that a new year has been downloaded and needs to be permanently archived using the network’s standard backup system.
 6. Once the archive copy is complete, the original memory cards may be erased and used for other purposes.
2. Rename the digital images.
 1. From the photo folder, open the subfolder containing the downloaded images of interest using ACDSee Pro. (See figure SOP6.1.)
 2. Use Ctrl+A to highlight all images within the subfolder.
 3. Chose Batch | Rename to open the Batch Rename dialog box.
 4. Under the template tab, check “Use template to rename files”.
 5. In the Template dropdown box, type the new file name prefix to indicate the date of the survey and the type of survey. The format for these file names is SO_C_yyyymmdd_t_#### where yyyyymmdd is the survey date, *t* represents the survey type, and #### is the frame number. For

example, SO_C_20170719_R_0001.JPG indicates this is the first image from a sea otter random survey conducted on July 19, 2017.

6. Click Start Rename

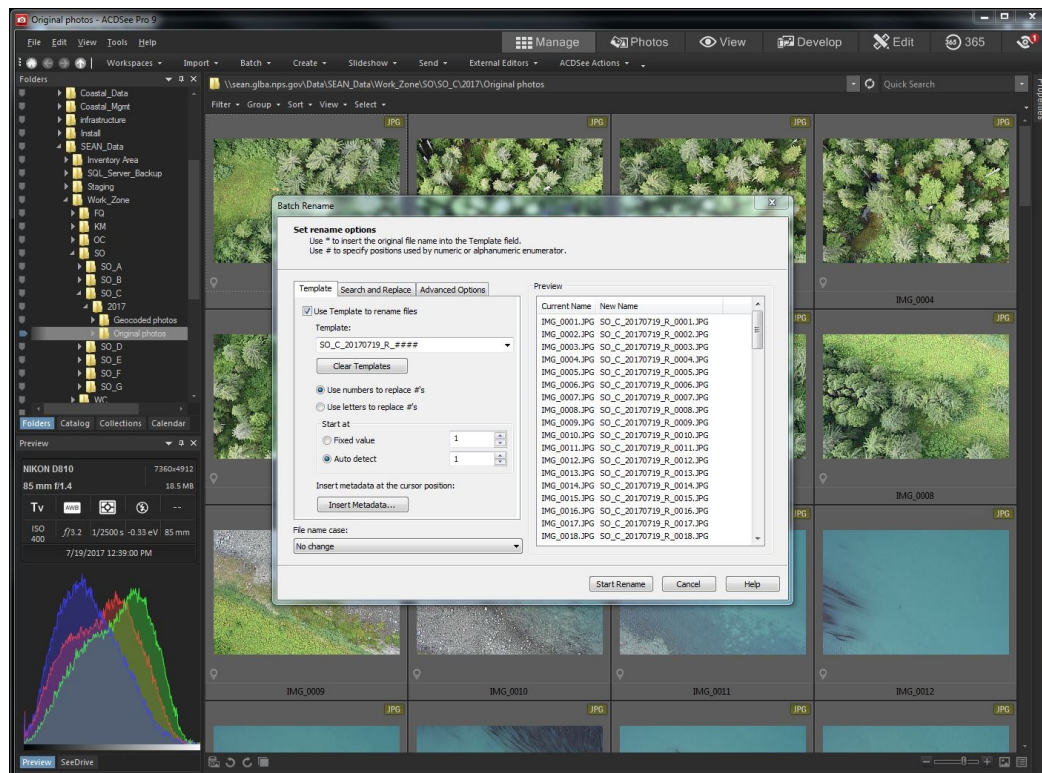


Figure SOP6.1 ACDSee batch rename screen.

3. If this is being done in the field QC context then populate the tracklog folder from the GPS:

1. If not already present, create the tracklog folder on the field computer to hold this survey effort's files.
2. Connect the Garmin GPS unit to the computer and power it on.
3. Open BaseCamp and set custom preferences. Under Edit | Preferences | Time confirm that the time offset is “-8 hours from UTC”, which corresponds to ADT.
4. Transfer all tracks and waypoints from the GPS unit to BaseCamp by selecting Device | Receive from device | Select waypoints and tracks | OK.
5. Save the resulting BaseCamp file to the tracklog folder and name the file ‘SO_E_yyyymmdd_t.GPX’ where yyyymmdd is the survey date, and t represents the survey type (‘A’, ‘O’, ‘R’, or ‘X’). An example is SO_E_20190630_A.GPX. If there is more than one date present in the GPX content, name yyyymmdd using the earliest date.
6. Make a permanent copy of the tracklog folder on a USB thumb drive.
 1. This will be the sole basis for creating deliverable SO_E.
 2. Do not take the USB drive into the field where it may be lost or damaged: if this is lost all photos might become unusable and the survey effort will fail.
7. Proceed to SOP 7 to attempt to geocode the image files for QC purposes.

4. If this is being done in the office to create formal deliverables then populate the network tracklog folder from the USB thumb drive created during field work:

1. Use Windows Explorer to copy the USB tracklog folder to the office tracklog folder. (In case of USB loss or damage, the computer used for field quality assessment might still have a copy of the original GPS tracklog download.)
2. Execute SOP 15 to create a formal accepted SO_E tracklog deliverable: SO_E must be finalized before attempting to geocode the photos in SOP 7.
3. Retain the USB copy of the tracklogs until deliverable SO_E has been formally accepted, at which point the USB drive may be repurposed.