

SEAN sea otter monitoring SOP 13: Geocoded photos (deliverable SO_C)

Revision History Log:

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

Summary

Original photo files are retrieved from cameras, archived to permanent storage, and given standardized names in SOP 6. Accepted tracklog files are used to insert latitude, longitude, and altitude into each photo file's EXIF metadata section during SOP 7. The resulting image files, once validated and accepted, are installed in a photo repository as SO_C. Due to the large size of SO_C data, it is not practical to disseminate the product over the internet. Access needs to be arranged on an *ad hoc* basis with network staff.

Detailed Steps

1. Project Leader tasks
 1. Verify SOP 6 has been completely and correctly executed.
 1. SOP 6 creates a network folder structure containing aerial photo files.
 2. SOP 6 creates a permanent archive of the original files. **The archive is essential because subsequent steps in SOP 6 can irreversibly alter the downloaded photo files.**
 2. SOP 6 standardizes file names. Those exact names will be required by later processes. Verify the format of the file names.
 3. Verify SOP 7 has been completely and correctly executed.
 1. SOP 7 references the SO_E tracklog files. Be sure these were formally accepted versions of SO_E and not non-validated versions.
 2. SOP 7 rewrites each photo file's EXIF metadata with latitude, longitude, and altitude. Spot check a sample to verify they are present.
 4. Submit to data manager for product validation.
 1. Specify the survey year to be validated.
 2. The data manager will know where to find the files.
2. Data manager tasks
 1. Create an entry for this in the submission log database.
 2. Unlike most deliverables, an SO_C candidate is too large to also store in http://sean.glba.nps.gov/Data/SEAN_Data/Staging/. The single authoritative version must remain in the designated Geocoded Photo Repository location.
 3. Perform validation against criteria specified in appendix A.
 4. Report results to project leader.
3. Project leader tasks

1. If submission is not valid
 1. Edit corrections until product appears to be in valid state.
 1. Invalid filenames may be corrected using Windows explorer.
 2. All other errors are optional and involve lat/long/elevation metadata values.
 1. Review the relevant tracklog file in the SO_E using an XML editing tool (or Notepad if no other tool is available).
 2. Correct any invalid trackpoints by editing in interpolated values based on adjacent valid trackpoints.
 3. In the event an optional error cannot be resolved, make no correction: it will be flagged in subsequent deliverables that employ SO_E as a basis.
 2. Resubmit to data manager for another validation attempt.
2. If submission is valid then review final product for acceptance.
 1. If not of adequate quality, despite meeting formal validation, notify data manager to withdraw the current candidate from further consideration
 2. If judged to be of best quality then notify data manager it is accepted.
4. Data manager tasks
 1. If project leader wishes the deliverable withdrawn then mark it withdrawn in the deliverable tracking system and inform project leader.
 2. If project leader accepts the candidate:
 1. Using Windows Explorer, tag the file set for this survey effort with a read-only attribute to lower the risk of accidental file damage. The files currently are left in the work zone which, for now, also serves as the Geocoded Photo Repository,
 2. Update the SO_C reference in the Data Store repository so it reflects that the product for the specific survey effort has been accepted. The reference explains that, due to their size, the deliverable files are not available online.
 3. Update the network web site page so it reflects that the SO_C product for the specific survey effort has been accepted. The reference explains the deliverable files are not available online.
 4. Record product status in tracking tables.
 5. Inform project leader the deliverable has been deployed, such as it is.

Appendix SOP-13.A: Geocoded photos – detailed deliverable definitions

Purpose of Deliverable

This contains the relevant set of photo images with embedded geographic coordinates that serve as the basis for sea otter population estimates at a particular point in time.

Frequency Produced

SO_C is produced once for each full survey performed. Typically this is once per year.

Prerequisites

The SO_E Tracklog product must be complete and accepted for dissemination before SO_C may be built. SOP 6 must be completed before commencing: it copies photo images to a network folder structure and archives the originals to a storage facility for permanent retention.

Data Flow

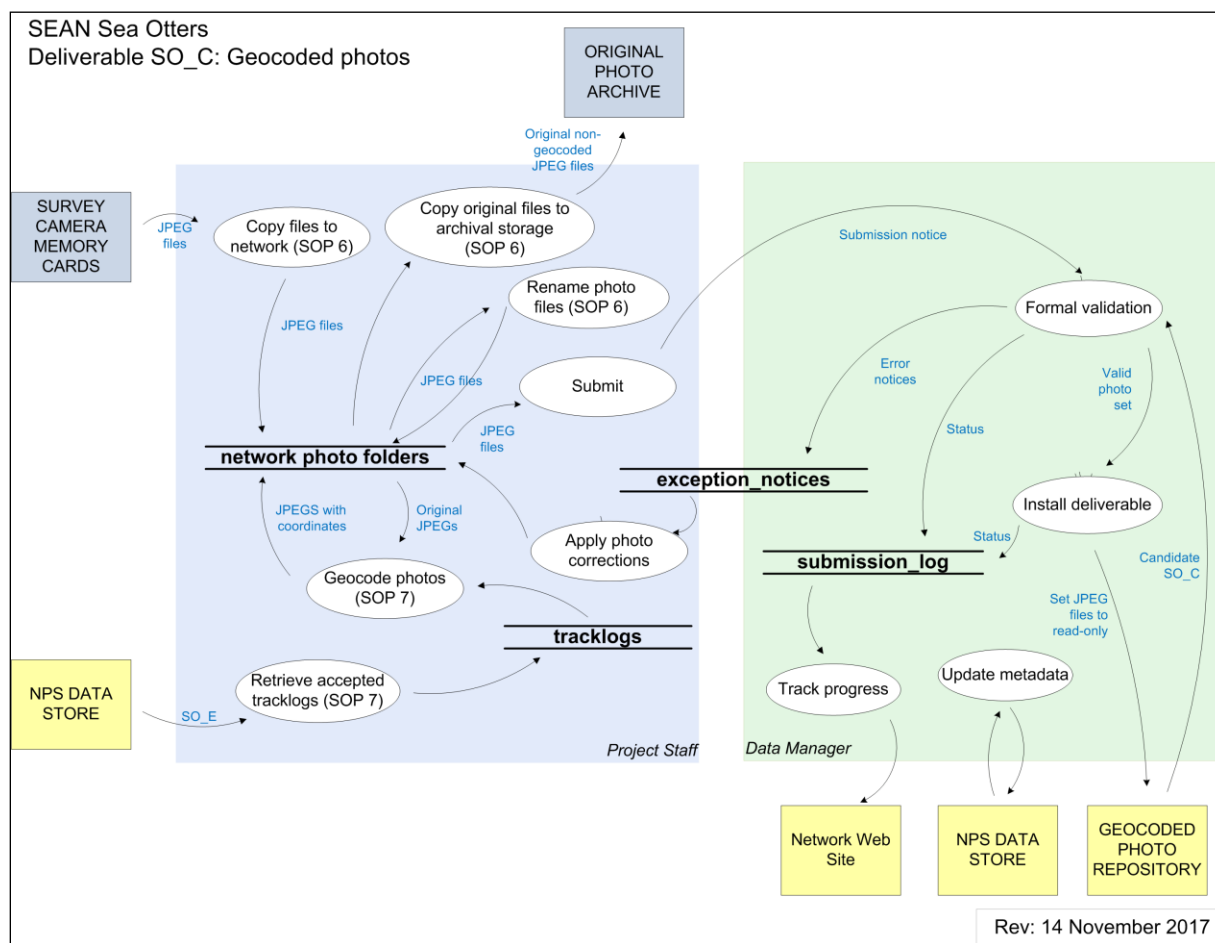


Figure SOP-13.A.1 Data flow required to generate deliverable SO_C Geocoded photos.

Deliverable Definition Forms

Form A: Non-tabular Information Deliverable

<i>Vital Sign:</i> SO Sea Otters	<i>Deliverable ID:</i> SO_C	<i>Deliverable Title:</i> Geocoded photos
<i>File Format:</i> JPEG	<i>Associated Software and Version:</i> RoboGEO 6.3 or greater	<i>Revision Date:</i> 11-14-2017
<i>Expected Frequency:</i> One set per survey effort, occupying about 500GB of data space	<i>Submission Unit:</i> Survey year	<i>ID of first protocol it applies to:</i> SO-2017.1
<i>What purpose does this deliverable serve?</i> Provides a photographic record of all observed transects in a survey as a basis for the population estimation process.		
<i>Summary of content:</i> JPEG images covering contiguous transects. EXIF metadata embedded in each photo are augmented with latitude, longitude and elevation data obtained from GPS tracklogs.		
<i>Mandatory validation criteria:</i> 1. The file content must conform to the ISO/IEC 10918-5:2013 JPEG standard. 2. The filename of individual photos must conform to the specification stated in SOP 6.		
<i>Optional validation criteria:</i> Each file's EXIF metadata section should have: 1. Latitude present and between 58.2 and 59.2. 2. Longitude present and between -134.5 and -137.5. 3. Altitude present and between -70 and 1,400 meters.		
<i>Deliverable ID of any other SEAN data products required to create this product</i> SO_E tracklogs.		
<i>Description and source of any outside data required to create this product:</i> This deliverable requires access to aerial photo files extracted from camera memory modules.		