

Standard Operating Procedure (SOP) 8: Processed CNV Files (OC_C Creation) version 3

Glacier Bay National Park and Preserve oceanographic monitoring protocol

Change History

Previous Version #	Revision Date	Revised By	Changes	Justification	New Version #
2	February 2020	B. Johnson	Replace actions referencing integration website with Data Store. Change references to “certified” with “accepted”. Rename GLBA server path to \\nps\akrdfs\GLBA\Science\Data\Oceanography.	Integration website was deprecated. Terminology guidance changed by CO. The GLBA file server share had been renamed since the prior SOP version.	3
1	September 2018	B. Johnson	Added Data Steward role.	To lessen workload on PI.	2
-		B. Johnson	Initial version	For original protocol	1

Please cite this Standard Operating Procedure as:

Johnson, W. 2020. Standard Operating Procedure (SOP) 8: Processed CNV Files (OC_C Creation) version 3 Glacier Bay National Park and Preserve oceanographic monitoring protocol. National Park Service, Juneau, Alaska. Available online at <https://irma.nps.gov/DataStore/Reference/Profile/2272145>.

Summary

At the end of the survey season, the accepted HEX files along with the appropriate CON file(s) for the cruise year are retrieved from the Data Store website and copied to the work zone on the park file server. Sea-Bird SBEDataproce.exe software is executed under script control, creating the CNV files.

Once created, the individual CNV files are zipped into one file for the year. The Data Steward submits the one file to the Data Manager as OC_C. Validation and quality assurance iterations are performed until the Data Steward is satisfied the data are as accurate and complete as is practical. The Data Steward, in consultation with the Project Leader, accepts the deliverable and the Data Manager arranges for repository and dissemination.

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Two profile plots of each fully processed CNV file are also generated by the SBEDataprocs scripts. The project leader retains the plots to inform later creation of deliverable OC_M, Data Quality Assignment.

If multiple CTDs were employed during a cruise year, CNV processing must be performed separately for each CTD by moving each set of HEX files into the \HEX_raw\ folder separately and running the processing against it with the proper calibration file. This also applies if one CTD is represented by two or more CON files in a cruise year (as, say, when an instrument is replaced midseason).

Note: before executing this procedure, it may be helpful to review protocol narrative Appendix H regarding standard directory structures and Appendix I regarding Sea-Bird software layout.

SOP 8 requires users to work in the internal NPS network under valid Active Directory accounts. Access questions should be directed to the Data Manager.

Detailed Steps

A. Data Steward Tasks

1. Because most data files are stored on the park server, it is much faster to perform these tasks from the park than over the wide area network (WAN). In lieu of working within the park, a remote user might wish to employ terminal services on a computer located in the park.
2. Obtain the latest accepted HEX files.
 1. Be absolutely certain the OC_B for the year has been completed through acceptance and dissemination; this process temporarily erases original raw data from the file server and requires an accepted web copy of OC_B in order to restore it.
 2. Rename directory
\\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\HEX_raw\ to
\\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\$HEX_raw\ in order to sideline any existing OC_B.
 3. Download the accepted OC_B deliverable from website
http://science.nature.nps.gov/im/units/sean/OC_Main.aspx to the park file server directory \\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\HEX_raw\.
 4. Unzip its files using Windows Explorer and Winzip or similar application. It could take a while to extract the files that comprise a year.
 5. Only one CTD may be processed at a time. If multiple CTDs (or one CTD having multiple CON files) were used during a cruise year, then delete all downloaded files from \HEX_raw\ except those for one CTD/CON combination. Ensure the needed OC_A CON files have been downloaded to the work zone for the target year. The other CTD(s) must have their CNVs created in separate iterations of this procedure.
3. Obtain the most recent accepted CON file(s) for the season.
 1. Be certain the OC_A for the time immediately preceding the cruise has been completed through acceptance and dissemination; this process erases original raw data from the file server and replaces them with the accepted files.

2. Be aware the CON_Calibration folder for the year is used for several purposes and may contain more files than the one you need for this particular process. Also note that multiple CON files created from several years may be present in the same folder.
3. Delete any file of the same name as the accepted OC_A in
\\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\CON_Calibration\.
4. Download the most recent accepted OC_A deliverable for the year to
\\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\CON_Calibration\. The appropriate file is the most recent one for the CTD in use, which internally contains sensor calibration records all dated before the start of the cruise.
5. If the configuration or calibration of a CTD was updated during the season, an additional CON file that matches each revised configuration must also be downloaded.
4. Using Windows Explorer, create a folder if necessary for the CNV output at
\\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\CNV_processed where YYYY is the cruise year surveyed.
 1. Within that folder, create a subdirectory named “temp” if not already present.
 2. If the CNV_Processed folder already exists from an earlier failed attempt at creating OC_C, delete all its existing files, including those in the temp directory, using Windows Explorer. If CNV_processed already contains files from an iteration of this process for another CTD/CON combination used in the current cruise year, then leave those files in place.
5. Use SBEDataproce.exe to generate one CNV file from each HEX file.
 1. Be aware of inherent software limitations as detailed in SOP 7.
 2. The final output CNV files will be directed to
\\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\CNV_processed\.
 3. Each file will be named *YYMM_C_DDDD_cc_suffix.CNV*
 1. YY is year, MM is month, C is CTD#, DDDD is dump number, and cc is cast number.
 2. Suffix refers to a set of single letters separated by underscores that get generated as a byproduct of the software process. A typical suffix is “c_f_a_m_l_d_b.”
 4. Invoke the previously installed automation scripts by double-clicking the provided desktop icon or, if no icon is available, double-clicking its BAT file in Windows Explorer.
 1. Each CTD has its own version of the script. For example, CTD #1 uses C:\Program Files\Sea-Bird\#1CNV_Create.bat. CTD #5 uses C:\Program Files\Sea-Bird\#5CNV_Create.bat. If a CTD has its sensor configuration revised, the new configuration may also need its own script.
 2. If the scripts are not available on the workstations employed (Figure 8.1), contact the Data Manager to have them installed.
 3. Details of program configuration are provided in protocol narrative appendix I.

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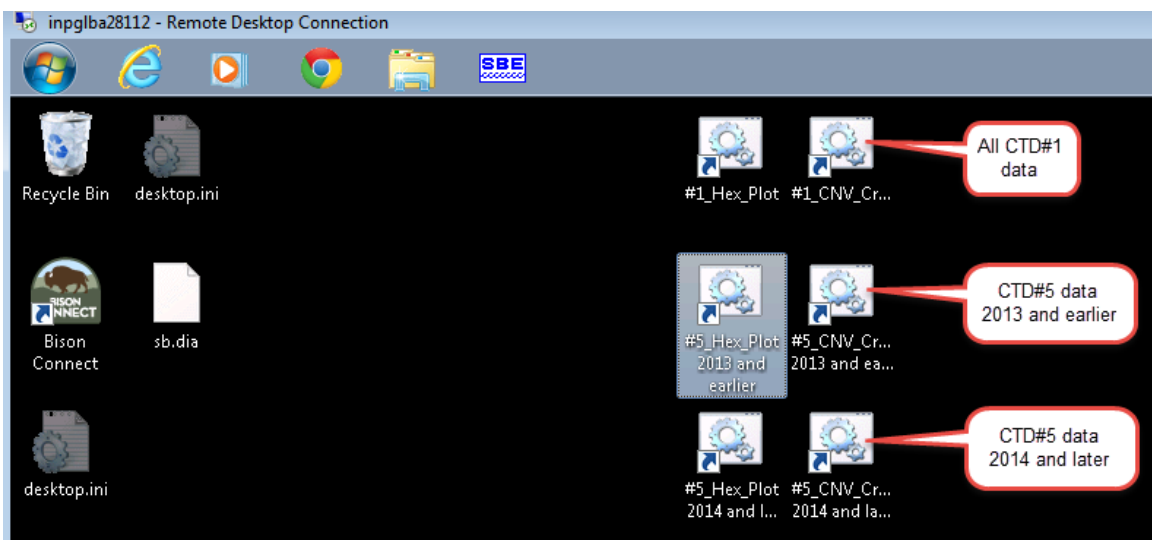


Figure SOP 8.1. The application used to generate CNV files must match the CTD configuration used.

5. A DOS command window will appear and prompt the user for parameters.
 1. Provide the four-digit year in response to the prompt.
 2. Enter the name of the calibration file to use.
 1. Generally, this is the file most current at the beginning of the survey year.
 2. Enter the filename and extension only.
 1. For example, 1_0436a.con
 2. Do not attempt to specify any directory information. The locations of calibration files for each year are predefined.
6. While nothing may appear to be happening, processes are starting in the background. Each one may take several minutes to appear on the screen. Be patient.
7. A Windows dialog box will appear titled “Data Conversion.”
 1. It shows parameters used and provides the status of file processing.
 2. As long as file processing progress is shown, nothing should be touched in the dialog box.
 3. Message boxes indicating errors in a particular file may appear.
 1. The messages are terse but do explain the nature of problems.
 2. Generally, they can be dismissed by pressing the OK button.
 3. If presented with a message box asking “Do you want to process the next file?”, one may generally press YES.
 1. A few defective files should not be grounds for cancelling the deliverable.
 2. Discuss any concerns with the Data Manager.
 4. This “Data Conversion” subprocess will be over when its dialog box disappears.
8. Dialog boxes will similarly appear and disappear as the following additional processes execute: Filter, Align CTD, Cell Thermal Mass, Loop Edit, Derive, Bin Average, Sea Plot ‘A’ series, Sea Plot ‘B’ series.
 1. Note and dismiss any warning messages as they appear.
 2. Errors serious enough to halt the process are possible.

1. Appendix I provides details helpful in diagnosis.
2. The latest Sea-Bird software manual may explain how to recover.
3. The Data Manager may be able to assist.
9. Once the whole process completes, several sets of files will be created.
 1. \\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\CNV_processed\ will contain the final CNV files to be used in assembling OC_C.
 2. \\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\Plot\CNV\ will contain a pair of plots for each cast.
 1. These are drawn from the fully processed CNV files.
 2. They should be similar but not identical to the quality assurance plots in the ...Plot\HEX\ subdirectory.
 3. \\nps\akrdfs\GLBA\Science\Data\Oceanography\Data\YYYY\CNV_processed\temp\ will contain the intermediate files left by each subprocess.
 1. These are left behind for diagnostic purposes.
 2. They are not to be reported to SEAN.
 3. They may be deleted once the associated OC_C is successfully accepted.
6. Zip all the CNV files in
\\files.glba.nps.gov\Science\Data\Oceanography\Data\YYYY\CNV_processed\ into a single file stored in the same folder.
 1. Use Winzip or a similar application.
 2. Name the archive file CNV_YYYY_a.zip.
 1. YYYY is the calendar year.
 2. Sequence letter “a” is A for first attempt, B for second, etc.
 3. For example, the second attempt at creating a valid 2012 OC_C deliverable would use filename CNV_2012_B.ZIP.
7. Submit the deliverable file via email notification to the Data Manager for validation.
 1. Specify in the message body it is deliverable OC_C, as defined in the current protocol package ID.
 2. Specify the fully qualified filename that the ZIP resides in.
 3. Do not attach the ZIP file to the email, as it may be too large to be delivered.
 4. Do not alter the deliverable file after the submission email has been sent; that could break the validation process.

B. Data Manager tasks

1. On receipt of the submission, assign the next formal submission number to this file, as found in the master Submission_Log table.
 1. Use the “Update Submission Log” web tool on the Data Management website at http://sean-dm.glba.nps.gov/0_submission_update.aspx.
 2. Complete Submission_Log details up through the Submission_Date column.
 1. The submission status must be P for pending.
 2. The submission scope is the four-digit cruise year.
2. If this is the first OC_C submission for the calendar year, update the deliverable tracking spreadsheet with the date of first submission under OC_C.

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3. Network copy the file into the staging area for validation at
\\sean.glba.nps.gov\data\SEAN_Data\Staging\OC\OC_C.
 1. Put it in its own subdirectory whose name is the same as the submission number.
 2. Ensure its name meets the standards defined in the Data Dictionary (SOP 19).
4. Unzip the file into its component CNV files in the staging area.
5. Invoke validation of the CNV files according to current criteria by using the web program at
http://sean-dm.glba.nps.gov/OC_C_validate_DM.aspx.
 1. Select the pending OC_C submission from among those shown.
 2. Validation summary results are automatically recorded in the Submission_Log.
 3. See the Data Dictionary (SOP 19) for detailed validation criteria.
 4. A findings file gets produced in the same directory as the data detailing validation faults.
6. If submission fails mandatory criteria, reply with a “failure email” that includes:
 1. The submission number assigned
 2. The deliverable ID
 3. The protocol package ID
 4. A specific list of all the mandatory criteria failed by attaching the “findings.htm” file that was automatically created in the staging subdirectory
7. If submission passes mandatory criteria, reply with a “success email” that includes:
 1. The submission number assigned
 2. The deliverable ID
 3. The protocol ID
 4. List of any specific optional criteria failed (by attaching the “findings.htm” file that was automatically created in the staging subdirectory)
 5. Request to accept deliverable as complete.

C. Data Steward tasks

1. On receipt of a failure email:
 1. Make corrections so the deliverable meets mandatory criteria.
 2. Most errors will require correction and re-acceptance of the underlying OC_B deliverable.
 3. Restart the process from the beginning.
2. On receipt of a success email, confer with Project Leader regarding any failed optional criteria:
 1. If these are acceptable:
 1. Reply with an “acceptance email” stating the deliverable is accepted and may be disseminated.
 2. Delete the obsolete intermediate files contained in ... \CNV_Processed\temp\.
 2. If these are unacceptable:
 1. Reply with a “withdrawal email,” stating the deliverable is withdrawn.
 2. Take remedial action to obtain a corrected deliverable.
 3. Restart the process from the beginning.

D. Data Manager tasks

1. On receipt of a withdrawal email:

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1. Mark the withdrawal in the Submission_Log's Status column using the web tool.
2. Terminate the process.
2. On receipt of an acceptance email:
 1. If sensitive information is in the unzipped deliverable:
 1. Products containing sensitive information cannot be disseminated.
 2. Mark the Submission_Log's Status column as Sensitive using the web tool.
 3. Notify the Project Leader and Data Steward the file(s) were sequestered in the staging directory due to sensitivity.
 4. Terminate the process.
 2. Set the acceptance 'C' in the Status column of Submission_Log using the web tool. Also update Date Certified and Certified By. Mark as decertified any obsolete prior accepted submission for this submission unit.
 3. Update the deliverable tracking spreadsheet with the date of acceptance for OC_C.
 4. Update Data Store with the new file
 1. Open the Data Store reference for OC_C (currently tabular dataset 2257926).
 2. In the tabular dataset reference upload the ZIP digital file. Reorder the uploads so they are presented by descending year. If this file covers the same submission period as an already present file, add the word DEPRECATED to the older file but do not delete it.
 3. Update the tabular dataset reference to indicate a new Date of Issue and Content End Date.
 5. Verify deliverable(s) are accessible from Data Store and the CMS website.
 6. Update the deliverable tracking spreadsheet with dates for the Repository and Dissemination milestones.
 7. Do not delete the individual CNV files from the staging area. They will be immediately needed for generating OC_D, which the Data Manager should initiate at once.