Instructions for submitting Research Application Tracking System (RATS) cruise reports and data to NOAA NCEI using the Send2NCEI (S2N) submission tool

As part of the Marine Scientific Research (MSR) Consent process, a digital copy of all data of scientific value collected during the marine scientific research activities are to be submitted to the U.S. National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Information (NCEI) using the Send2NCEI (S2N) archival tool. NCEI is the designated repository for all data collected under the MSR program authorized by the U.S. Department of State (DOS).

Below are step-by-step instructions for submitting your Research Application Tracking System (RATS) data and cruise reports to NCEI using S2N. For questions about S2N, please contact NCEI.Archive@noaa.gov and NCEI.Coastal@noaa.gov. You can find detailed MSR information in the MSR policy and application procedures web and by contacting MarineScience@state.gov.

Send2NCEI (S2N) is a data archiving tool that allows the submission of data files and related documentation (< 20 gigabytes) to NCEI for long term preservation, stewardship, and open discovery and access. For data packages larger than 20 gigabytes, please contact NCEI.Coastal@noaa.gov. The instructions below refer to descriptive figures which are included at the bottom of this document.

Step 1: **Create an account with login.gov** (Figure 1a)
If you already have an account, move to Step 2. This login.gov account is required to use S2N. S2N uses login.gov to allow you to sign in to your S2N account safely and securely. To create an individual login.gov account, you will need: 1. Your email address, 2. To create a password and 3. Use one or more authentication methods.

Step 2: **Login to S2N** (Figure 1b)
If this is your first time using S2N, you will need to supply your contact information (Figure 2). You can edit your profile information at any time. After you enter your information, you will be directed to the "**New Submission Package**" page (Figure 3). If you have submitted data packages to NCEI before using S2N, you will be directed to the S2N Dashboard (Figure 4).

Note: *S2N will time out if you are inactive entering information for several minutes. If this happens, please log back into S2N.*

The S2N dashboard allows you to create new data submissions. It also allows you to edit existing data packages not yet formally uploaded and submitted for NCEI archival under "**Submission Packages I Am Working On**". Data submissions can be edited as many times as needed until before upload as shown in Step 3. The S2N help page provides additional descriptions about each step.

"**Submission Packages NCEI Is Working On**" contains data packages that have been uploaded and submitted to NCEI for archival via S2N. These packages are under review by NCEI data archivists, and are no longer editable from S2N. To provide a data or metadata update or additional information related to a submitted data package, please contact NCEI.Archive@noaa.gov and NCEI.Coastal@noaa.gov and include the "**Submission Package Reference ID**" received from NCEI S2N.

"**Archived Submission Packages**" contains data packages approved for NCEI archival.

"**Rejected Submission Packages**" contains data packages that require additional information from the data submitter. If you have questions, please email us (NCEI.Archive@noaa.gov and NCEI.Coastal@noaa.gov) and include the Data Reference ID and NCEI Accession.

Creating a "**New Submission Package**" requires the following information (Figures 5a-e):

1. **People and Projects** (Figure 5a)

    a. **Responsible Persons:** This is a required field. Add at least one person's name responsible for the collection of the data (i.e., chief scientist and/or point of contact). You can enter as many people as necessary. Names already in the NCEI archive will autocomplete.
    b. **Related Funding Agencies:** This is an optional field. Add one or more funding agencies. Agency names already in the archive will autocomplete.
    c. **Related Projects and/or Programs:** This is an optional field. You can add one or more projects and/or program names associated with your field work.
    d. Click "**Save"** after each metadata variable entered.
    e. Click "**Continue**"

2. **Dates and Locations** (Figure 5b)

    a. **Dates**: This is a required field. These are the start and end dates of the entire data collection irrespective of variable: Enter the dates in YYYY-MM-DD format (e.g., 2021-03-19 for Year: 2021; Month: March; Day: 19)
    b. **Location:** This is a required field. Enter in the northernmost, easternmost, southernmost and westernmost geographic coordinates in decimal degrees where data were collected irrespective of variables measured during the cruise.
    c. **Ship Names or Platform:** This is an optional field. Enter the name of the research vessel or platform used in the collection of the data. Use the autocomplete if appropriate.
    d. **Sea Areas or Regions:** This is an optional field. Enter the name of the oceanic region or basin where the data was collected (i.e., North Pacific). You can enter as many entries as you wish. Use the autocomplete if appropriate.
    e. Click "**Save"** after each metadata variable entered.
    f. Click "**Continue**"

3. **Data Types** (Figure 5c)

   a. **Parameter or Variable:** This is a required field. Enter at least one measured variable or calculated parameter (i.e, coral, salinity, tritium, chlorophyll A). There is no limit on variables and/or parameters entered. Use the autocomplete if appropriate.

   b. **Units/Observation Category/Sampling instrument:** These are required fields. You must enter at least one variable or parameter. As appropriate, enter the units of measurement, observation type, and sampling instrument. If data has no units of measurement or other fields, enter "NA" (i.e., Not Applicable).

   c. Click "**Save"** after each metadata variable entered.

   d. When done, click "**Continue**"

4. **Package Descriptions** (Figure 5d)

   a. **Data Set Title:** This is a required field. S2N will suggest a general title based on the metadata provided in other fields. You can accept, edit, or generate your own title. The title should describe the data in general (i.e., *Temperature and salinity measurements taken by Conductivity-Temperature-Depth (CTD) from the research vessel Ronald Brown in the Caribbean Sea from 2010-05-06 to 2010-06-20*).

   b. **Abstract:** This is a required field. The abstract provides a summary of the entire data collection (i.e., *Physical and biological oceanographic time series measurements were collected to study the diurnal migration of copepods. This dataset is the U.S. State Department MSR RATS UYYYY-XX*). **Please note that it is mandatory to include in the abstract "This dataset is the U.S. State Department MSR RATS UYYYY-XX". UYYYY-XX is your assigned MSR RATS number.** This is required to allow open discovery and access of MSR RATS data submissions archived at NCEI.

   c. **Dataset Author List:** This is a required field. Add at least one person's name as author of the dataset (i.e., chief scientist, and/or other personnel). Enter name(s) as Last_name, First_name Middle_initial. For multiple authors, separate names by a semicolon ';'.

   d. **Purpose:** This is an optional field. Add information about the project, funding agency, and/or any other metadata.

   e. **References:** This is an optional field. Add citation information about scientific publications, user guides, websites, data reports, and any other information.

   f. When done, click "**Continue**"

Step 3: Submit Data (Figure 5e)

Once all required S2N fields are entered, data is ready to be uploaded for NCEI appraisal

Note: Please carefully review your data submission package before uploading and submitting to NCEI. After the data has been uploaded via S2N, you will no longer be able to edit the data

package within S2N. Please contact NCEI.Archive@noaa.gov and NCEI.Coastal@noaa.gov with questions.

Files to upload: All data submitted to NCEI S2N must be in computer machine-readable non-commercial digital data formats. Do not include data in commercial formats, including MatLab. Please refer to the [NCEI Preferred File Formats](#) for more information. All data received at NCEI are considered public open access.

- To upload a file (i.e, cruise report, data, metadata) via S2N, click "**Choose File**". Select the file you wish to upload from your operating system's file menu. Note only one file can be uploaded at a time. However, another option is to first compress all data files (i.e., ZIP) and submit the compressed folder. ***Note:*** *data cannot exceed 20GB in size.*
- To upload additional single files to S2N, click "**Add another file**". Repeat this step as needed.
- After all appropriate files have been added, there is an option to provide comments at the bottom of the page.
- When all files have been added, click "**Upload Files and Submit**". After the data has been uploaded, the data package can no longer be edited. The data package will appear in "**Submission Packages NCEI Is Working On**".

Step 4. After data has been submitted for appraisal and archival at NCEI

- After you successfully submit and upload the data package to NCEI for data appraisal, you will receive an automated S2N email indicating your data was received along with a "**Reference ID number**". This is a temporary data reference ID used to communicate with NCEI via email (NCEI.Archive@noaa.gov and NCEI.Coastal@noaa.gov) with questions.
- NCEI data archivists will then conduct a [data appraisal](#). NCEI staff may contact you with additional questions.
- Once the data are accepted for archival, it will be published online. NCEI will email you an "**Accession Number**" and a direct link to the data. An accession number is a unique permanent NCEI reference number. Using this number, a user can search and access the original data from NCEI as well as information about the data itself. Your data are now freely and openly discoverable, accessible, interoperable, and reusable.
- Once all of the data has been uploaded to the NCEI S2N and accepted for archival, the data provider must forward the NCEI data submission confirmation email with the assigned Accession Number to marinescience@state.gov. **Please include "U20XX-XXX Research Data" in the email subject line.**
- At a later time, you will receive an additional email from NCEI staff indicating a newly minted Digital Object Identifier ([DOI](#)) number and a corresponding online landing page. **All MSR RATS data must have a DOI assigned by NCEI.** The data provider must forward the DOI confirmation email from NCEI to marinescience@state.gov. **Please include "U20XX-XXX Research Data" in the subject line.** Once a DOI has been assigned, the MSR RATS dataset will also be openly discoverable and accessible via the [NCEI-hosted Marine Scientific Research Data Access Page](#) (Figure 6). This page

identifies MSR RATS data collected by international scientists in U.S. waters and archived at NCEI.

- If you have data and/or metadata updates after the original submission for archival, you are required to re-submit your data. Please contact NCEI.Archive@noaa.gov and NCEI.Coastal@noaa.gov and include in your email the Accession Number and DOI for guidance.
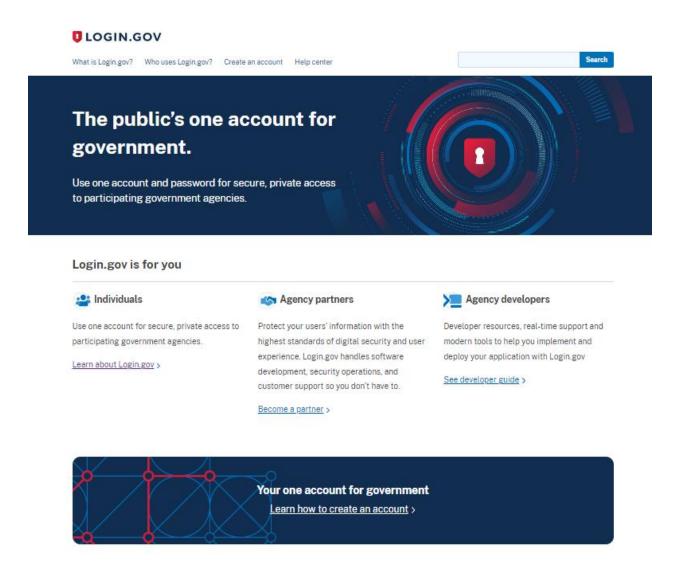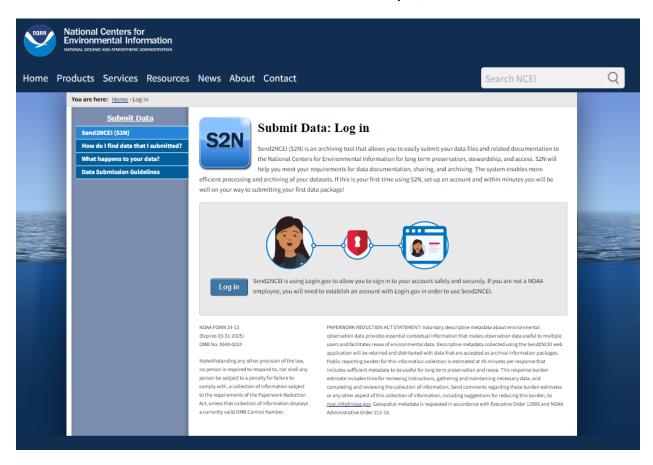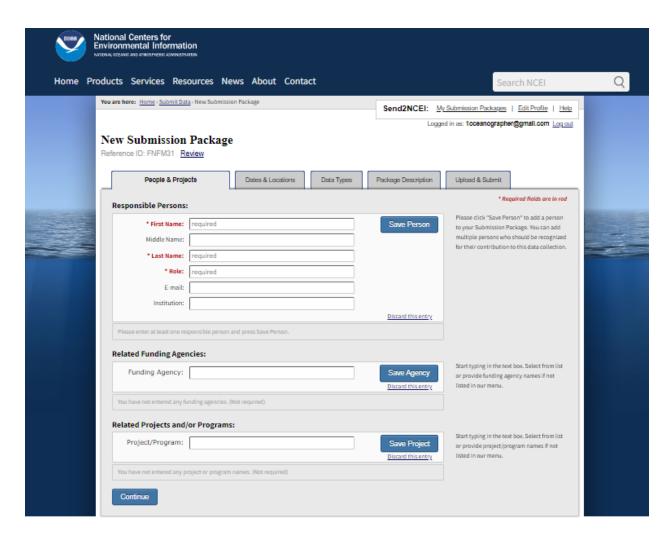
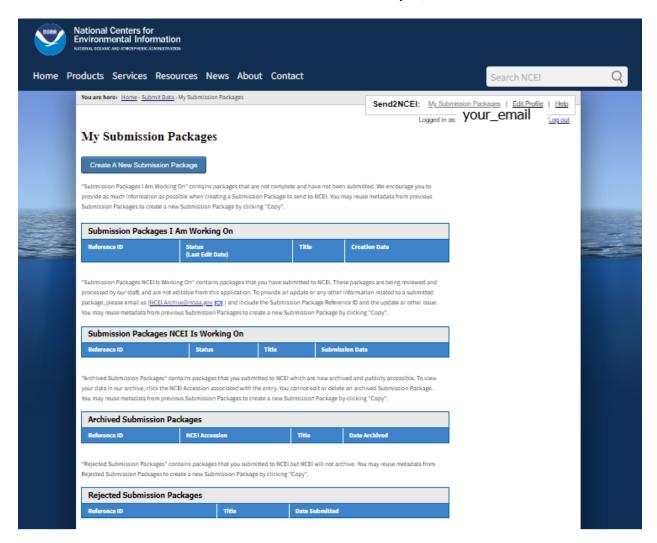**Figure 1a**. Login.gov web page where you can create an individual account (https://login.gov/).

Figure 1b. Send2NCEI (S2N) login page (https://www.ncei.noaa.gov/archive/send2ncei/). SN2 requires data providers to create an account with login.gov (Figure 1a).

Figure 2. Information about the data submitter for creating a new account in S2N

Figure 3. Entering information about initial data submission package. Note that every new submission data package includes a "Reference ID".

Figure 4. S2N dashboard where new data submission packages are created and edited before formal submission for NCEI appraisal and archival.

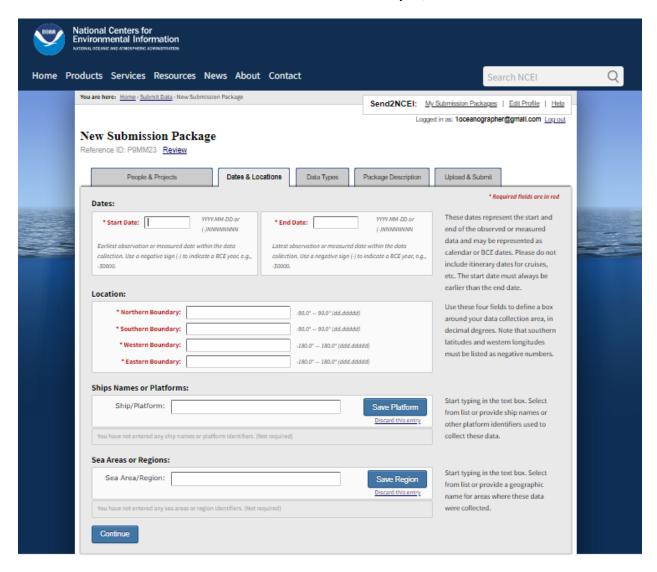**Figure 5a.** S2N information about People & Projects

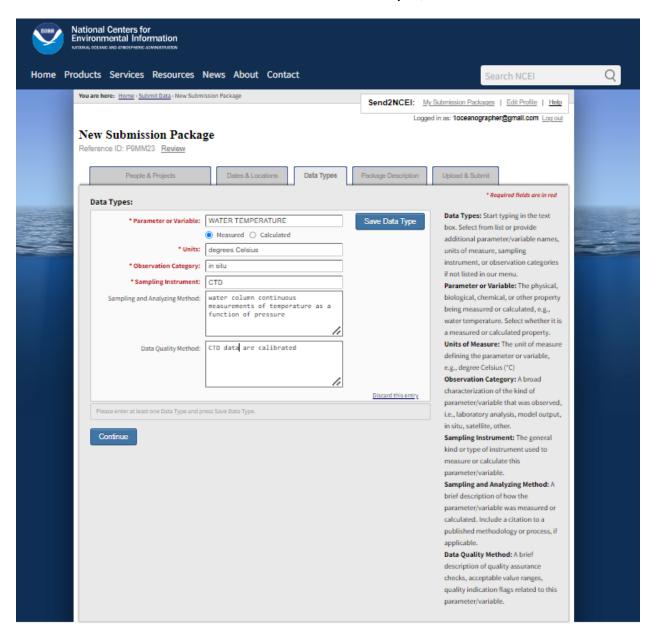**Figure 5b.** S2N information about Dates and Locations

Figure 5c. S2N information about Data Types (examples)
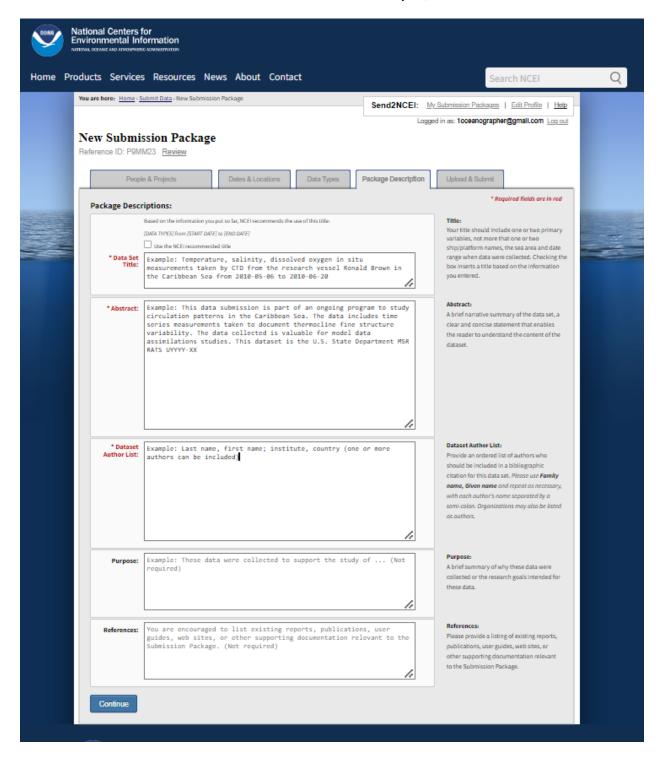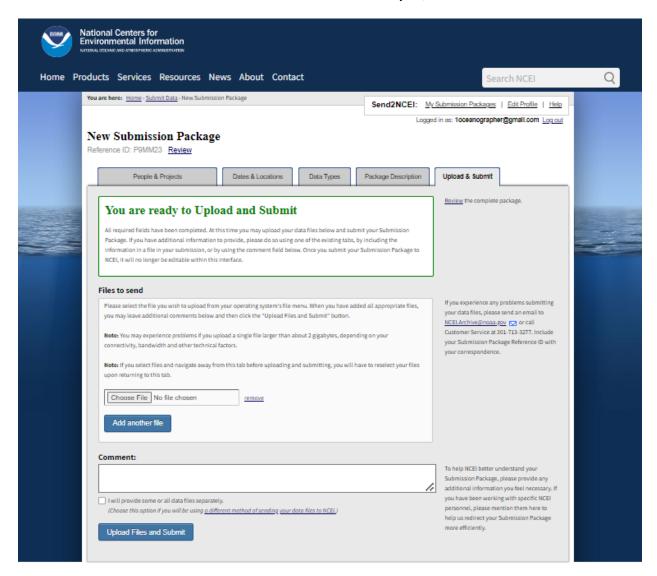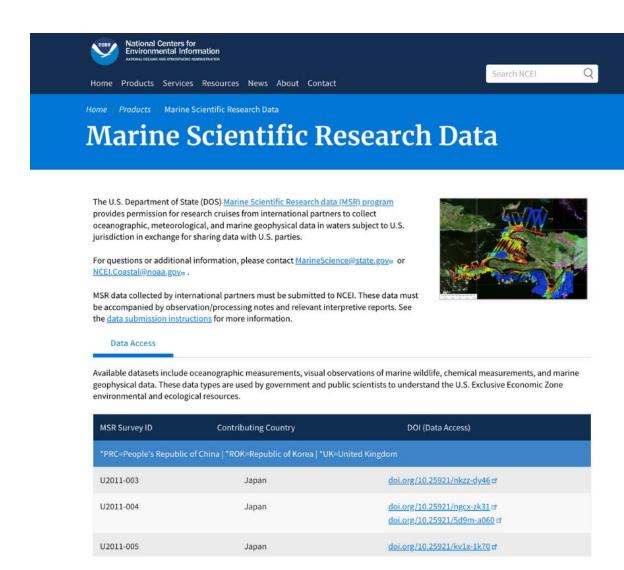
Figure 5d. S2N information about the data submission package (examples). **Please note that it is mandatory to include in the abstract field "This dataset is the U.S. State Department MSR RATS UYYYY-XX".** **UYYYY-XX is your assigned MSR RATS number.** This is required to allow discovery and access of MSR RATS data submissions.

Figure 5e. S2N data submission package upload and submit page. S2N will automatically review your previous metadata entries and alert you if you have missed a required field.

Figure 6. NCEI Marine Scientific Research Data website allows public discovery and access to data collected by international partners authorized by the U.S. Department of State to conduct Marine Science Research (MSR) in waters subject to U.S. jurisdiction. Each data set includes the MSR Research Application Tracking System (RATS) number as well as a Digital Object Identifier.