

# NODC Ocean Acidification Data Submission 101: Sharing Your data

Ocean Acidification Data Stewardship  
(OADS) Team

[www.nodc.noaa.gov/oceanacidification](http://www.nodc.noaa.gov/oceanacidification)

[Nodc.ocean.acidification@noaa.gov](mailto:Nodc.ocean.acidification@noaa.gov)

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# OADS Introduction

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## □ **What is OADS**

- Short for Ocean Acidification Data Stewardship (OADS) Project
- Funded by NOAA's Ocean Acidification Program (OAP) and led by Libby Jewett.

## □ **Project Goal:**

- Overarching goal is to serve the OA community by providing dedicated online data discovery, access to OAP funded data and other ocean carbon data sets.

## □ **Team Members:**

- Krisa Arzayus, Ph.D.
  - Chief, Marine Data Stewardship Division
- Hernan Garcia, Ph.D.
  - Team Lead of OADS
- Liqing Jiang, Ph.D.
  - Responsible for all chemical and biological data

# Outline

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- ▣ Where to submit your OA related data
  
- ▣ Sending your data to NODC
  - Data files preparation
  - Metadata files preparation
  - File transmission
  - What happens after your data are submitted
  
- ▣ Other Information:
  - Data citation efforts
  - Restricted access to data

# Where to submit your data

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- National Oceanographic Data Center (NODC).
  - ▣ All OAP funded data need to be archived at NODC.
  
- Data acquisition centers (DACs)
  - ▣ You have the option of sending your data to DACs other than NODC.
  - ▣ You are asked to send an email to [nodc.ocean.acidification@noaa.gov](mailto:nodc.ocean.acidification@noaa.gov), as soon as the data submission is complete. In the email, please describe:
    - i. Which DAC you submitted your data to;
    - ii. Title of your data set, and any other data set identifiers if available;
    - iii. Date and time of your data submission;
    - iv. A point of contact from your research group for future communication concerning this data set.

# Data files preparation (observational OA data sets)

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- **All text formats are ok:**
  - ASCII (csv, txt, etc); preferably non-commercial formats
- **Preferred file formats:**
  - Netcdf
    - [NODC netcdf templates](#)
- **Recommended column headers:**
  - Surface Underway data
    - [Example file \(csv\)](#)
    - [Column headers](#)
  - Profile data (e.g., CTD, discrete bottle data)
    - [Example file \(csv\)](#)
    - [Column headers](#)
  - Mooring data (e.g., buoys)
    - [Example file \(csv\)](#)
    - [Column headers](#)

# Implementing ISO metadata standard

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- NODC follow NOAA's directives for management of environmental data and information ([NOAA's Administrative Order 212-15](#))
- NODC is implementing metadata standards based on ISO, the International Organization for Standardization
- Applying standards facilitates inter-operable machine-to-machine discovery of data for the long-term.

# Metadata files preparation options (observational OA data sets)

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- **XML (Extensible Markup Language) version :**
  - To fill out the [xml template \(ISO 19115-2\)](#) directly.
- **To use an input form to fill out the XML template**
  - Download [the input form file \(\\*.sps\)](#), in addition to the xml file above, and save it in the same folder as the \*.xml file.
  - Download [the community version of Authentic](#), and install it on your PC.
    - For Mac OS or Linux users, please check out [this link](#).
  - Open Authentic, File-> Open -> choose \*.xml -> click “OK” for the license warning -> click “OK” for the next warning as well -> browse to the \*.sps file and click “OK”
  - Start inputting your metadata and remember to save your progress along the way.
  - When you are done, save the finished \*.xml file, this will be your metadata.
- **Text version (recommended):**
  - To fill out an [text file](#), and we will do the rest of the work for you.
    - [Example](#) of a completed metadata file.
    - [Definitions about the metadata terms](#)

# Metadata files preparation (experimental biological OA data sets)

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## □ **Currently in development:**

### □ Metadata templates

- ISO 19115 biological template record(s) based on the current OA template with additional documentation fields for taxonomy and methodologies (XML format).
- "Fillable" text version(s) of the OA biological template

## □ **Planned:**

- Biological data input form modified from original OA input form.

## □ **PIs may currently submit data following current OA data submission procedures**

- During the interim period for developing biology-specific templates and tools, data may be submitted to the NODC with a study description and associated data file header and measured parameter/variable information. Please include accompanying metadata as reports, text, and/or other standard metadata formats (if available) such as FGDC. Providing detailed documentation in addition to the data is strongly suggested.
- Accompanying documentation should describe experimental geographical information/details for field-collected specimens and specific taxonomy as applicable.
- Documentation provided by PIs will be converted to ISO format; the completed standard format metadata will be included as part of the final data archival package at the NODC.

# File transmission to NODC

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- We recommend you to compress all files before your file transmission.
- You could deliver the compressed files to NODC in the following ways:
  - ▣ Email files in an attachment to: [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov), and cc [NODC.Ocean.Acidification@noaa.gov](mailto:NODC.Ocean.Acidification@noaa.gov)
  - ▣ FTP (details in the following two slides)
  - ▣ Regular mail (e.g., DVD)
    - Mailing Address:  
Data Officer  
SSMC3 E/OC1 4th Floor  
1315 East-West Highway  
Silver Spring, MD 20910
- If FTP or Regular mail is used, you are still asked to send an email to [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov), and cc [NODC.Ocean.Acidification@noaa.gov](mailto:NODC.Ocean.Acidification@noaa.gov) to inform us after the file transmission is completed.

# FTP files to NODC (Windows)

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Assuming your file is at **G:/PATH/OA/test.txt** of your local computer, and you want to copy them to NODC's FTP server at **pub/incoming/oads**.

## □ Instructions:

- 1) Open Windows Command Prompt window (run "CMD", or Start->Programs->Accessories->Command Prompt)
- 2) Change the disk name to G: by typing "G:"
- 3) Use the command "cd" to navigate to the directory of "G:\PATH\OA\"
- 4) Enter "ftp ftp.nodc.noaa.gov"
- 5) When prompted for name, enter "anonymous".
- 6) When prompted for password, enter your e-mail address.
- 7) Change directory to "pub/incoming/oads" by entering: "cd pub/incoming/oads/".
- 8) Change transfer type to ASCII by entering "ascii" if the data files are text. If the file is a special PC format (image, word processor, spread sheet, presentation graphics) do not change the type to ascii, but make sure the transfer type is binary by entering "bin". **Please use "bin" for compressed files.**
- 9) Use "put filename", where "filename" is the name of your file, or for multiple files use "mput \*.\*" or "mput \*" to transmit the data files. When transferring multiple files you can turn off the prompt for each filename by typing "prompt" before you type the "mput" command
- 10) After completion of file transmission, enter "ls" to obtain a list of files that were sent, both by you and other recent data submitters
- 11) Enter "bye" to log off.

# FTP files to NODC (Macintosh or Linux)

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Assuming your file is at **/PATH/OA/test.txt** of your local computer, and you want to copy them to NODC's FTP server at **pub/incoming/oads**.

## □ Instructions:

- 1) Open a terminal and navigate to the folder (/PATH/OA/) on your computer by using the command "cd".
- 2) Enter "ftp ftp.nodc.noaa.gov".
- 3) When prompted for name, enter "anonymous".
- 4) When prompted for password, enter your e-mail address.
- 5) Change directory to "pub/incoming/oads" by entering: "cd pub/incoming/oads/".
- 6) Change transfer type to ASCII by entering "ascii" if the data files are text. If the file is a special PC format (image, word processor, spread sheet, presentation graphics) do not change the type to ascii, but make sure the transfer type is binary by entering "bin". **Please use "bin" for compressed files.**
- 7) Use "put filename", where "filename" is the name of your file, or for multiple files use "mput \*.\*" or "mput \*" to transmit the data files. When transferring multiple files you can turn off the prompt for each filename by typing "prompt" before you type the "mput" command
- 8) After completion of file transmission, enter "ls" to obtain a list of files that were sent, both by you and other recent data submitters
- 9) Enter "bye" to log off.

# What happens after you share your data with NODC?

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- **Always happen**
  - **Archive the data in the Ocean Archive System**
    - An email to data provider after an Accession number is created
    - A second email to data provider after the data are published online
  - **Create a rich metadata using ISO XML template as resources allow**
  
- **Possibly happen**
  - **Update your data and create a new version (with your permission)**
  - **Convert your data files into Netcdf format**
  - **Your data might be used in data products, such as the World Ocean Database**

# NODC Geoportal data discovery and access

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## Search the NODC Archive

Search metadata content, e.g. title:SST; use + to require keywords, e.g. +water +temperature;

use "" to search for an exact phrase, e.g. "water temperature"

(Search tips!)

### Additional Options

Clear

#### WHEN

Dates overlap range  Dates within range

From:  ... (yyyymmdd)

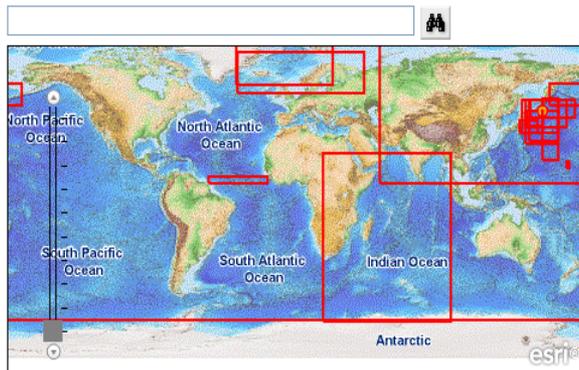
To:  ... (yyyymmdd)

#### WHERE

Zoom the map to desired area and choose "intersecting" or "fully within"

You can zoom the map by shift-click-dragging a bounding box

Anywhere  Intersecting  Fully within



Results 26-50 of 3572 record(s)

Expand results [Zoom To Results](#) [Zoom To Searched Area](#)

[Dissolved inorganic carbon, pH, alkalinity, temperature, salinity and other variables collected from discrete sample and profile observations using CTD, Coulometer for DIC measurement and other instruments from the Hokusei Maru in the North Pacific Ocean from 2001-06-04 to 2001-06-10 \(NODC Accession 0112246\)](#)

[Dissolved inorganic carbon, pH, alkalinity, temperature, salinity and other variables collected from discrete sample and profile observations using CTD, Coulometer for DIC measurement and other instruments from the Hokusei Maru in the North Pacific Ocean from 2001-07-10 to 2001-07-21 \(NODC Accession 0112247\)](#)

[Temperature, Salinity, Dissolved Oxygen, Phosphate, Nitrite, pH, Alkalinity, Bottom depth, Meteorology data collected from Arctic Seas and North Western Pacific by various Former Soviet Institutions in 1925 - 1989 years \(NODC Accession 0075099\)](#)

[Dissolved inorganic carbon, pH, alkalinity, temperature, salinity and other variables collected from discrete sample and profile observations using Alkalinity titrator, CTD and other instruments from the HESPERIDES in the North Atlantic Ocean from 2010-04-05 to 2010-05-16 \(NODC Accession 0109927\)](#)

[Temperature, salinity, pH, phosphate, meteorology measurements collected using bottle from the Professor Zubov in the Greenland and Norwegian Seas during 1970 \(NODC Accession 0059377\)](#)

[Dissolved inorganic carbon, pH, alkalinity, temperature, salinity and other variables collected from discrete sample and profile observations using CTD, Coulometer for DIC measurement and other instruments from the BOSEI MARU NO. 2 in the North Pacific Ocean from 1998-10-03 to 1998-10-20 \(NODC Accession 0112190\)](#)

[Dissolved inorganic carbon, pH, alkalinity, temperature, salinity and other variables collected from discrete sample and profile observations using CTD, Coulometer for DIC measurement and other instruments from the BOSEI MARU NO. 2 in the North Pacific Ocean from 1999-10-07 to 1999-10-26 \(NODC Accession 0112199\)](#)

[Dissolved inorganic carbon, pH, alkalinity, temperature, salinity and other variables collected from discrete sample and profile observations using CTD, Coulometer for DIC measurement and other instruments from the Hokusei Maru in the North Pacific Ocean from 1998-07-18 to 1998-08-18 \(NODC Accession 0112239\)](#)

[Dissolved inorganic carbon, pH, alkalinity, temperature, salinity and other variables collected from discrete sample and profile observations using CTD, Coulometer for DIC measurement and other instruments from the Hokusei Maru in the North Pacific Ocean from 1999-06-22 to 1999-07-06 \(NODC Accession 0112241\)](#)

# Data Citation (DOIs)

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## □ Digital Object Identifiers (DOIs):

- NOAA [Technology, Planning and Integration for Observation program](#) has procured services to issue digital object identifiers (DOIs).
- NOAA Data Centers are working with the NOAA Environmental Data Management Committee and the NOAA Data Architect on
  - Procedural Directive for DOIs (rules)
  - A common look-and-feel landing page for datasets with DOIs
- NOAA National Data Centers will issue the DOIs for data sets they steward.
- A limited number of data sets will be issued as a pilot, as NOAA develops standard operating procedures for operational implementation.

## □ Draft requirements:

- Any dataset must have a robust ISO metadata record
- Each dataset must have a browse graphic associated with it
- Data must be freely and openly accessible

*Are OAP PIs interested in participating in the DOI pilot?*

# Restricted data access

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- The White House has issued several mandates for open access to government funded data.
- NODC supports open access to scientific data.
- Data that have access limitations are considered exceptions to this NODC policy.
- Restricted access metadata must include the finite duration during which access is limited/embargoed.
- Complete metadata for restricted access data will be available, i.e. data will be discoverable but not accessible.

*Are there OAP PIs that anticipate needing limited or restricted access to data?*

# Useful Links

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- Link to the latest version of this presentation (PPT) at [http://www.nodc.noaa.gov/oceanacidification/support/NODC\\_OADS\\_data\\_submission\\_101\\_workshop.pptx](http://www.nodc.noaa.gov/oceanacidification/support/NODC_OADS_data_submission_101_workshop.pptx) (or [PDF](#))
- OADS data submission guidelines: [http://www.nodc.noaa.gov/oceanacidification/stewardship/OADS\\_Data\\_Submission\\_Guidelines.html](http://www.nodc.noaa.gov/oceanacidification/stewardship/OADS_Data_Submission_Guidelines.html)
- Research vessel NODC code (the same as ICES code): <http://www.nodc.noaa.gov/General/NODC-Archive/platformlist.txt>
- [ISO training courses](#)

# Acknowledgements

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- PIs for sharing their data with NODC
- Funding support from the NOAA's Ocean Acidification Program.
- ISO help from Sarah O'connor and Jacqueline Mize at NODC.

# OADS submission workshop dates

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- **OADS Monthly sessions:** July 12, August 2, September 6, ~~October 4,~~ **November 8, 2013**
- **Weekly OADS individual data submission sessions:** to provide individual support and assistance for all NOAA OA PIs to share their data with NODC for long-term archival. Each PI have different types of data and metadata needs (experiments, biological ,chemical, model, etc). When: Every Tuesday from 13:00-14:00 ET starting Oct 15, 2013. How to participate: If you want to sign up for a session, please send us an email to [nodc.ocean.acidification@noaa.gov](mailto:nodc.ocean.acidification@noaa.gov) to let us know about which session you want to participate. You can sign up for as many sessions as you need.
- We can help with specific questions that you may have on 1-1 teleconference/webex.

# For help

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- OADS email address:
  - ▣ [Nodc.ocean.acidification@noaa.gov](mailto:Nodc.ocean.acidification@noaa.gov)
  
- OADS Team contact info:
  - ▣ Krisa Arzayus:
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