

# Biological & Chemical Oceanography Data Management Office: a domain-specific repository for oceanographic data from around the world

Hannah Ake, Matt Biddle, Nancy Copley, Danie Kinkade, Shannon Rauch, Mak Saito, Adam Shepherd, Megan Switzer, Peter Wiebe, and Amber York | Woods Hole Oceanographic Institution

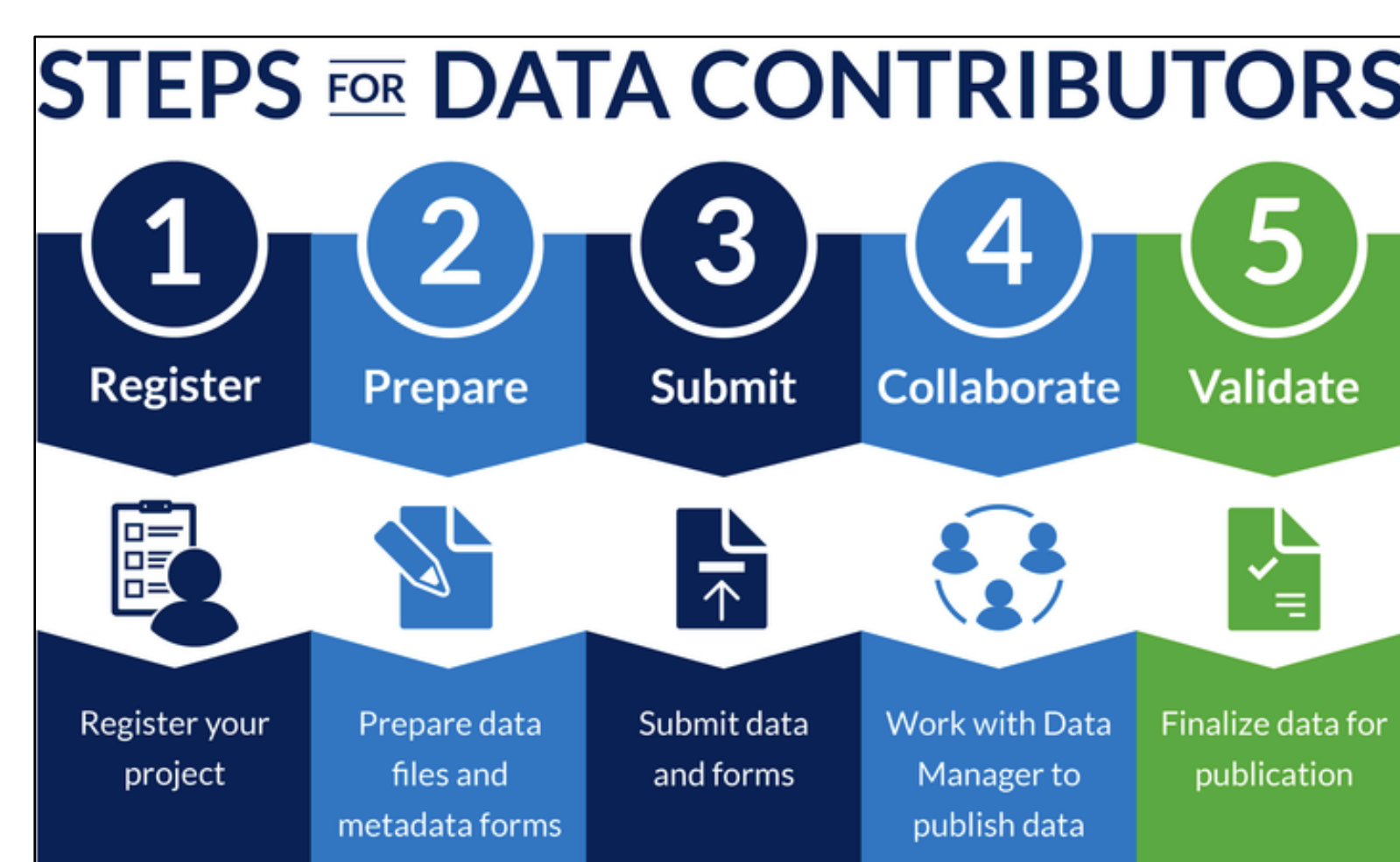
## Introduction

The Biological and Chemical Oceanography Data Management Office (BCO-DMO) is a domain-specific digital data repository that works with investigators funded under the National Science Foundation's Division of Ocean Sciences and Office of Polar Programs to manage their data free of charge. Data managers work closely with investigators to satisfy their data sharing requirements and to develop comprehensive Data Management Plans, as well as to ensure that their data will be well described with extensive metadata creation. Additionally, BCO-DMO offers tools to find and reuse these high-quality data and metadata packages, and services such as DOI generation for publication and attribution. These resources are free for all to discover, access, and utilize.

As a repository embedded in our research community, BCO-DMO is well positioned to offer knowledge and expertise from both domain trained data managers and the scientific community at large. BCO-DMO is currently home to more than 9000 datasets and 900 projects, all of which are or will be submitted for archive at the National Centers for Environmental Information (NCEI). Our data holdings continue to grow, and encompass a wide range of oceanographic research areas, including biological, chemical, physical, and ecological. These data represent cruises and experiments from around the world, and are managed using community best practices, standards, and technologies to ensure accuracy and promote re-use. BCO-DMO is a repository and tool for investigators, offering both ocean science data and resources for data dissemination and publication.

## Planning, Submission, and Citation

BCO-DMO strives to make data management and submission easy for our contributors. The office works closely with investigators to build robust data and metadata packages, and BCO-DMO data managers apply community standard vocabularies and perform gross quality control for each dataset in our system.

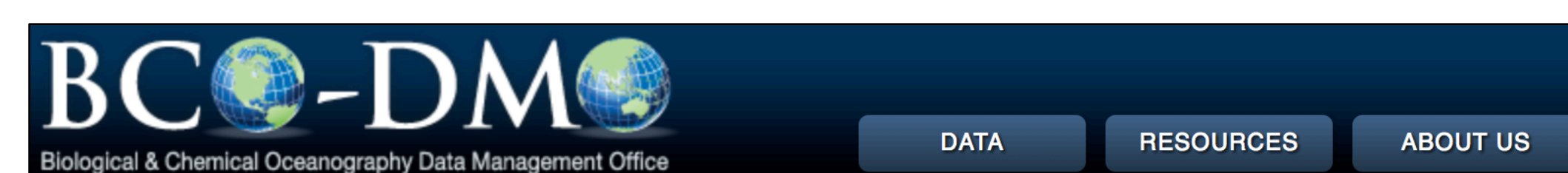


## Tools & Services

The tools and services available at BCO-DMO are free to all users.

### Data Management Plans

The Data Management Plan (DMP) tool, available at BCO-DMO, helps investigators develop plans that meet their funding agency's data policy requirements.



### Resources

- How to Get Started Contributing Data
- Frequently Asked Questions (FAQs)
- Data Access Tutorial (PDF file)
- NSF Two Page Data Management Plan
  - New in January 2015: BCO-DMO's Data Management Plan Template

Access the DMP tool and BCO-DMO's DMP template through our Resources page.

## Digital Object Identifiers

- Every dataset at BCO-DMO is assigned a DOI
- DOIs are minted by the Woods Hole Open Access Server (WHOAS).

**Dataset: Rainfall and temperature data**

Get Data [Cite This Dataset](#)

DOI: 10.1575/1912/bco-dmo.664755

**Data Citation:**

Edmunds, P., Tsounis, G. (2016) Rainfall and seawater temperature in St. John, USVI in 1987-2013 (St. John LTREB project, VI Octocorals project). Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2016-11-09 (if applicable, indicate subset used). doi:10.1575/1912/bco-dmo.664755 (access date)

**Terms of Use**

All data sets are licensed under a Creative Commons Attribution 4.0 International License (CC BY 4). Per the CC BY 4 license it is understood that any use of the data set will properly acknowledge the individual(s) listed above using the suggested data citation. If you wish to use the data set, it is highly recommended that you contact the original principal investigator(s) (PI). Should the relevant PI be unavailable, please contact BCO-DMO (info@bco-dmo.org) for additional guidance. For general guidance please see the BCO-DMO Terms of Use document.

Data contributed by P. Edmunds & G. Tsounis

**Rainfall and seawater temperature in St. John, USVI in 1987-2013 (St. John LTREB project, VI Octocorals project).**

Citable URI: <https://doi.org/10.1575/1912/bco-dmo.664755>

Date Created: 2016-11-09

Location: St. John, U.S. Virgin Islands; California State University Northridge; St. John, US Virgin Islands; 18.3185; 64.7242; westlong: 64.698206; southlong: -18.376667; eastlong: 64.802611; northlong: -18.298206

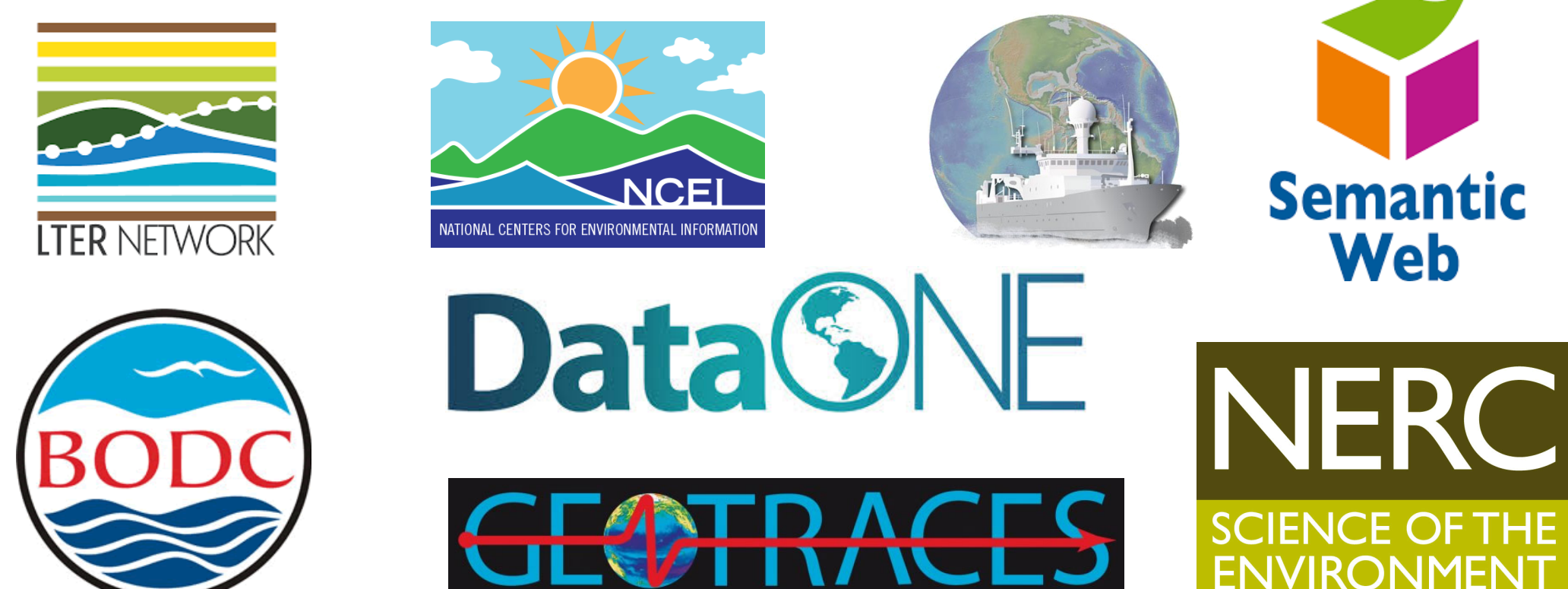
View/Open: [bco-dmo-rainfall-and-temperature-data.csv](#) (1.05GB) | [bco-dmo-rainfall-and-temperature-data.txt](#) (77.78KB) | [Field notes.pdf](#) (22.02KB)

DOI: 10.1575/1912/bco-dmo.664755

Keyword: Rainfall; seawater temperature

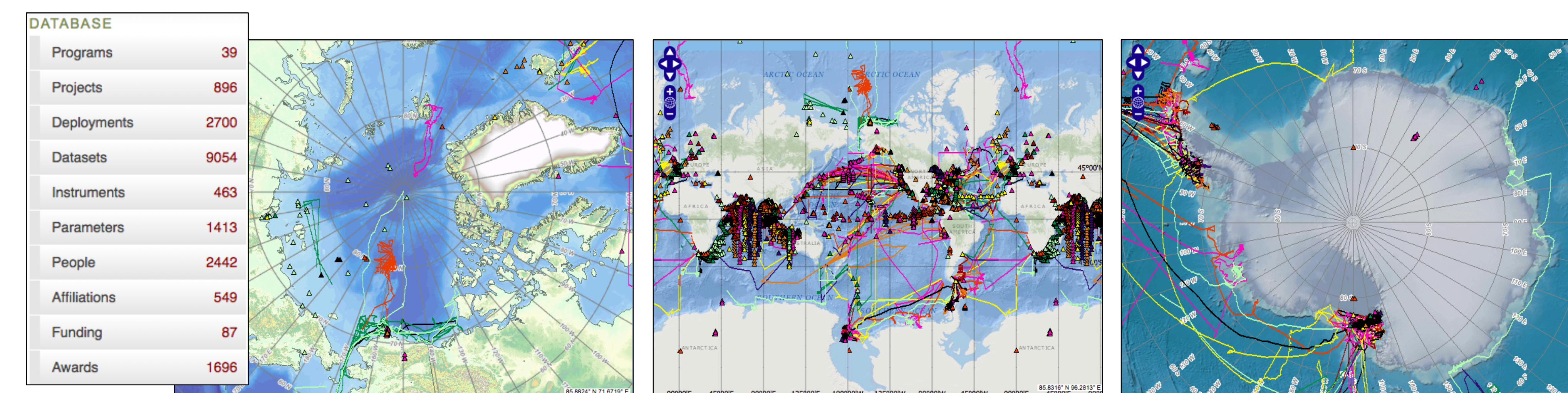
**WHOAS: Woods Hole Open Access Server**  
a repository for the Woods Hole scientific community

BCO-DMO fosters data discoverability and re-use through partnerships and web technologies. Semantic Web technology and Linked Open Data allow BCO-DMO to connect our datasets with relevant information submitted to other repositories, improving the quality and value of the data packages.



## Our Data Holdings

BCO-DMO's data system provides access to marine ecosystem research results from around the world, including data and imagery from cruises, experiments, and models.

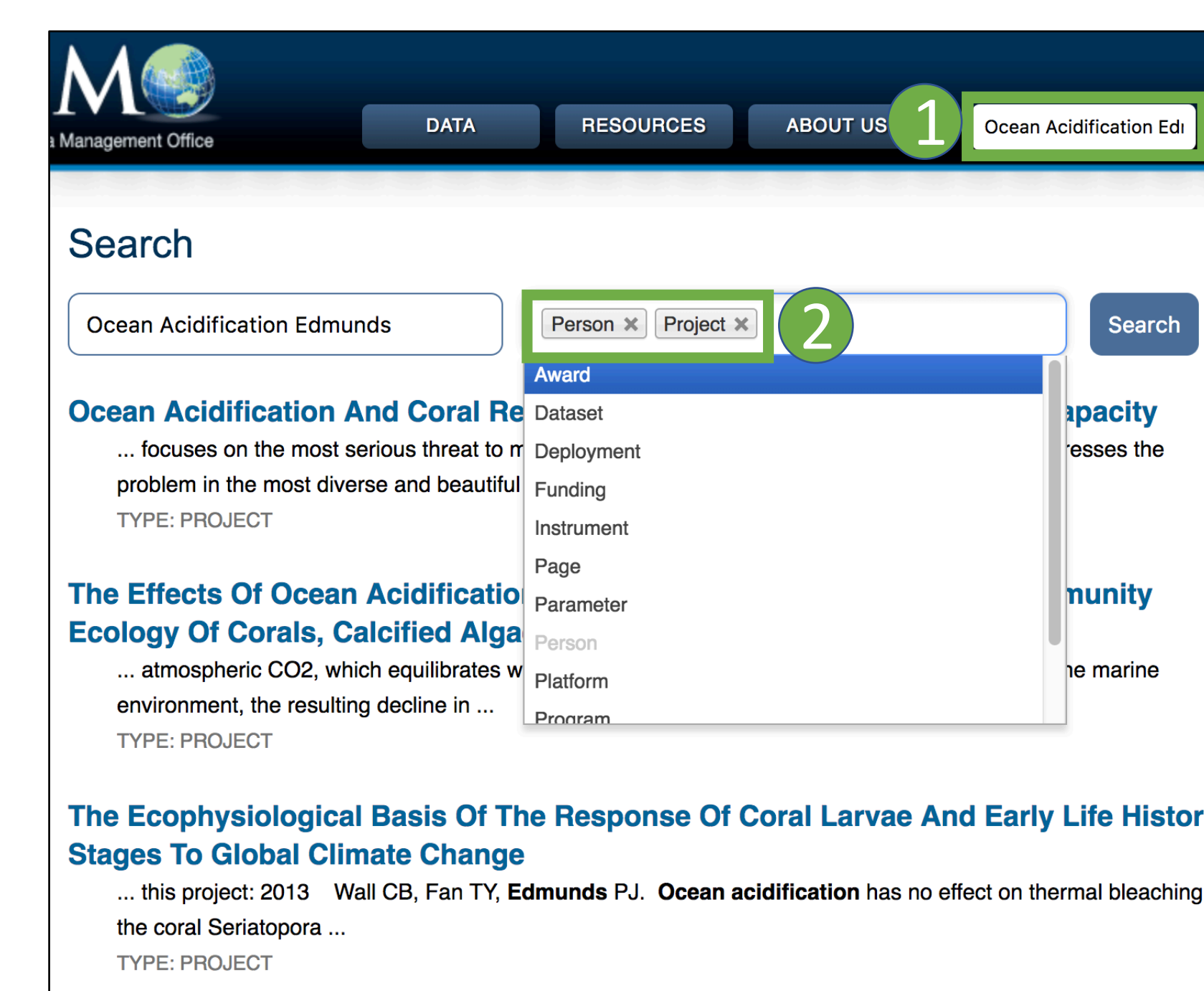


We foster data discovery through multiple search tools, making it easy for users to find and download datasets for re-use.

## Text Search

Use our elastic search or database search to find datasets by cruise, project, person, etc.

### Elastic Search



### Database Search

In both the elastic and database search interface, you can:

- Type in your search parameter
- Filter search by category

Database Search Results for 'Ocean Acidification':

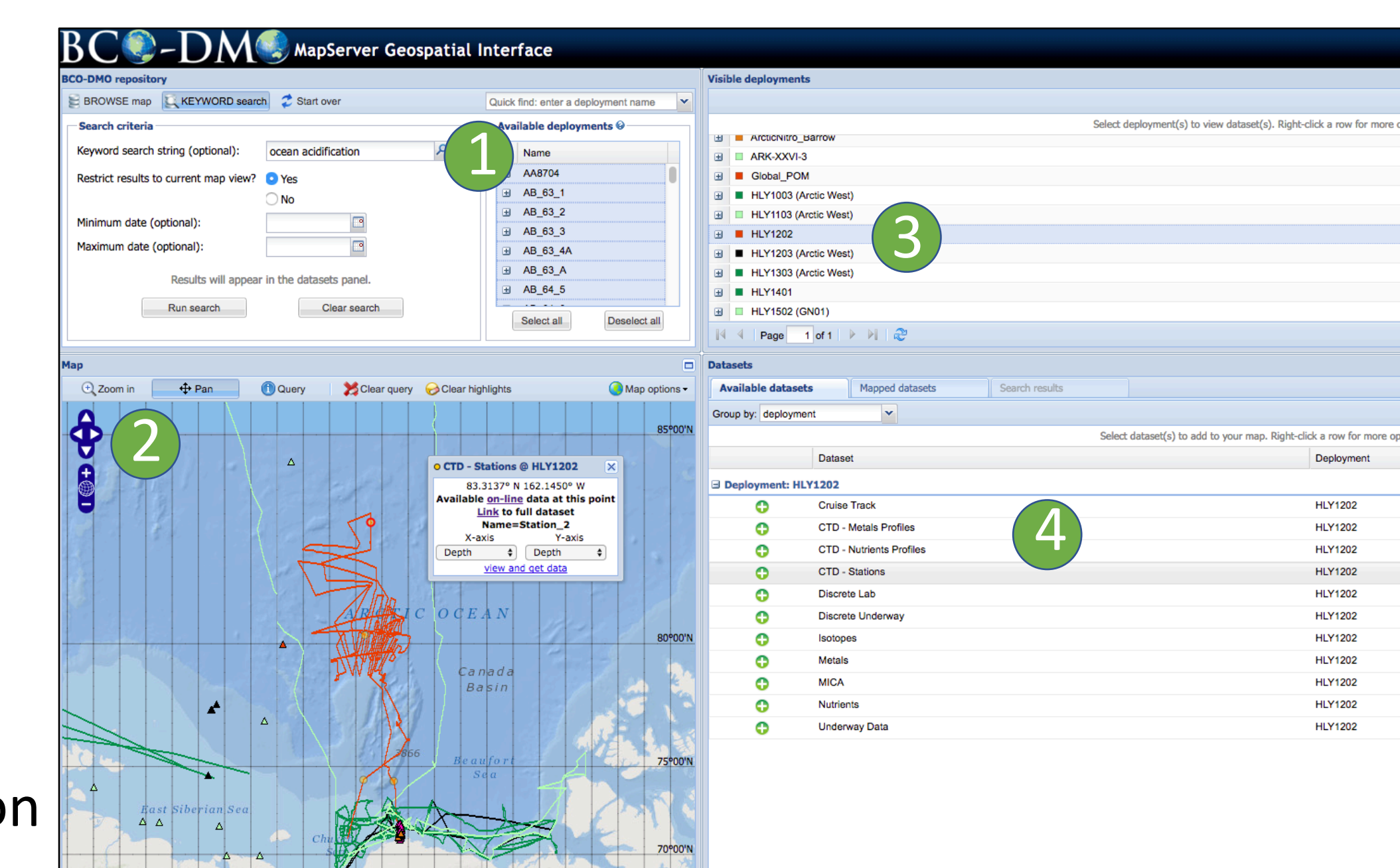
Project	Acronym	Start Date	End Date
Ocean Acidification and Coral Reefs: Scale Dependence and Adaptive Capacity	OA coral adaptation	2015-01	2018-12

Project contributed by K. Gross, R. Carpenter, & P. Edmunds

## Map Search

Use our geospatial interface to search for datasets by keyword, data type, or region.

- Enter your search term
- Restrict search results to region of interest using map zoom
- Run search and select a deployment from the results
- Select a dataset from the deployment collection



## View, download, and cite any data package

**/BCO-DMO/OA\_Coral\_Adaptation/carb\_chem ---- Level 3**

Directory | Documentation | Download & Other Operations | **Download**

Level 0 | Next Level | Flat Listing

# Carbon chemistry during Acropora pulchra calcification experiment

# PIs: Edmunds and Carpenter

# Data version: 20 Mar 2017

Site: 1at, 3000

MCR: +17.4907 -119.826

reg\_id: 1

date: 2015-07-12

treatment	task	anal	temp	pH	CO2	CO3	pCO2	NO3	NO2	DOC
Abp-27	6	35.4	27.3	1	8.057	10.30	384.947	386.146	1751.124	237.998
Abp-27	10	35.4	27.15	1	8.044	10.10	375.870	377.047	1738.839	237.923
Abp-30	5	35.4	25.8	1	8.057	10.30	430.130	436.501	1773.040	238.498
Abp-30	12	35.4	30.01	1	8.010	10.80	430.136	431.432	1747.903	236.642
Ripb-27	9	35.4	26.7	1	7.750	26.16	995.484	993.793	2023.483	121.144
Ripb-27	11	35.4	27.1	1	7.702	27.11	1007.806	1005.953	2026.700	120.296
Ripb-30	7	35.4	25.38	1	7.684	27.08	1040.717	1044.007	2023.144	120.327
Ripb-30	8	35.4	28	1	7.699	27.12	1030.206	1033.388	2044.200	124.321

**Dataset: Acropora pulchra calcification experiment: carbonate chemistry**

Get Data | Map It | **View** | Cite | Cite This Dataset

**Project: Ocean Acidification and Coral Reefs: Scale Dependence and Adaptive Capacity (OA coral adaptation)**  
Moorea Coral Reef Long Term Ecological Research site (MCR LTER)

Data contributed by P. Edmunds

## Acknowledgements

BCO-DMO is funded by the U.S. National Science Foundation (NSF). We acknowledge the work done by the investigators who contribute their data to BCO-DMO and the data managers who work to make those data available. The user interfaces to the BCO-DMO data system were developed in collaboration with Julie Allen and Katherine Joyce (WHOI). The geospatial interface was developed in collaboration with Charlton Galvarino (Second Creek Consulting, LLC).

**NSF** **WOODS HOLE OCEANOGRAPHIC INSTITUTION** 1930

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Award: OCE-1435578

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