



# DOIs and other Digital Persistent Identifiers

National Centers for  
Environmental Information (NCEI)

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# What are Digital Persistent Identifiers?

- A string of numbers, letters, symbols that are assigned to the object
- Digital identifier that is globally unique, persistent, machine resolvable and processable
- Used for disambiguation and identification of entities across platforms
- Standard way to cite/reference research components

# Types of Persistent Identifiers

- Digital Object Identifiers (DOIs)
  - For work product(s); research output
  - Managed through Registration Agencies (**Datacite**, Crossref)
- Personal Identifiers
  - For people (researchers, grantees)
  - **ORCID**, Scopus Author ID, etc.)
- Organization/Funder Identifiers
  - For organizations (funders, employers, etc.)
  - **Research Organization Registry (ROR)**. Ringgold, ISNI, etc.)



# DOI Structure

Prefix: Indicates the registrant. This is the prefix for NOAA datasets. The prefix for NOAA publications is different.

10.25921/mzv0-km10

Suffix: alphanumeric string that identifies the object associated with the ID; unique for each object

# Expressing a DOI

DOI Number

[10.25921/mzv0-km10](#)

VS

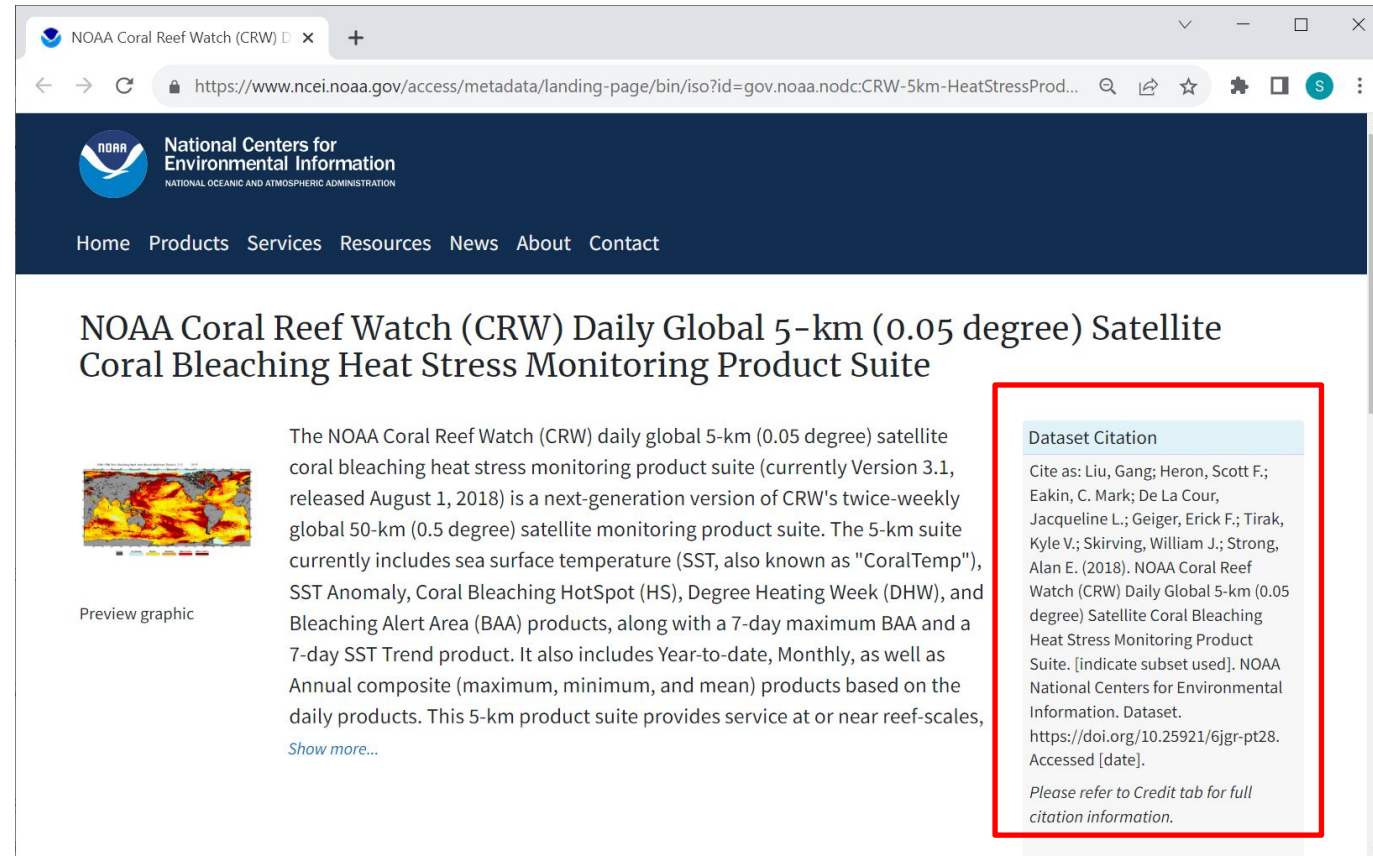
DOI URL

<https://doi.org/10.25921/mzv0-km10>



# Dataset Citation - Benefits of a DOI

- Permanent URL
- Research Attribution
- Potential increased dataset discovery
  - Crosslinks between datasets and publications
- Recognition and ability to track dataset usage



NOAA Coral Reef Watch (CRW) Daily Global 5-km (0.05 degree) Satellite Coral Bleaching Heat Stress Monitoring Product Suite

The NOAA Coral Reef Watch (CRW) daily global 5-km (0.05 degree) satellite coral bleaching heat stress monitoring product suite (currently Version 3.1, released August 1, 2018) is a next-generation version of CRW's twice-weekly global 50-km (0.5 degree) satellite monitoring product suite. The 5-km suite currently includes sea surface temperature (SST, also known as "CoralTemp"), SST Anomaly, Coral Bleaching HotSpot (HS), Degree Heating Week (DHW), and Bleaching Alert Area (BAA) products, along with a 7-day maximum BAA and a 7-day SST Trend product. It also includes Year-to-date, Monthly, as well as Annual composite (maximum, minimum, and mean) products based on the daily products. This 5-km product suite provides service at or near reef-scales, [Show more...](#)

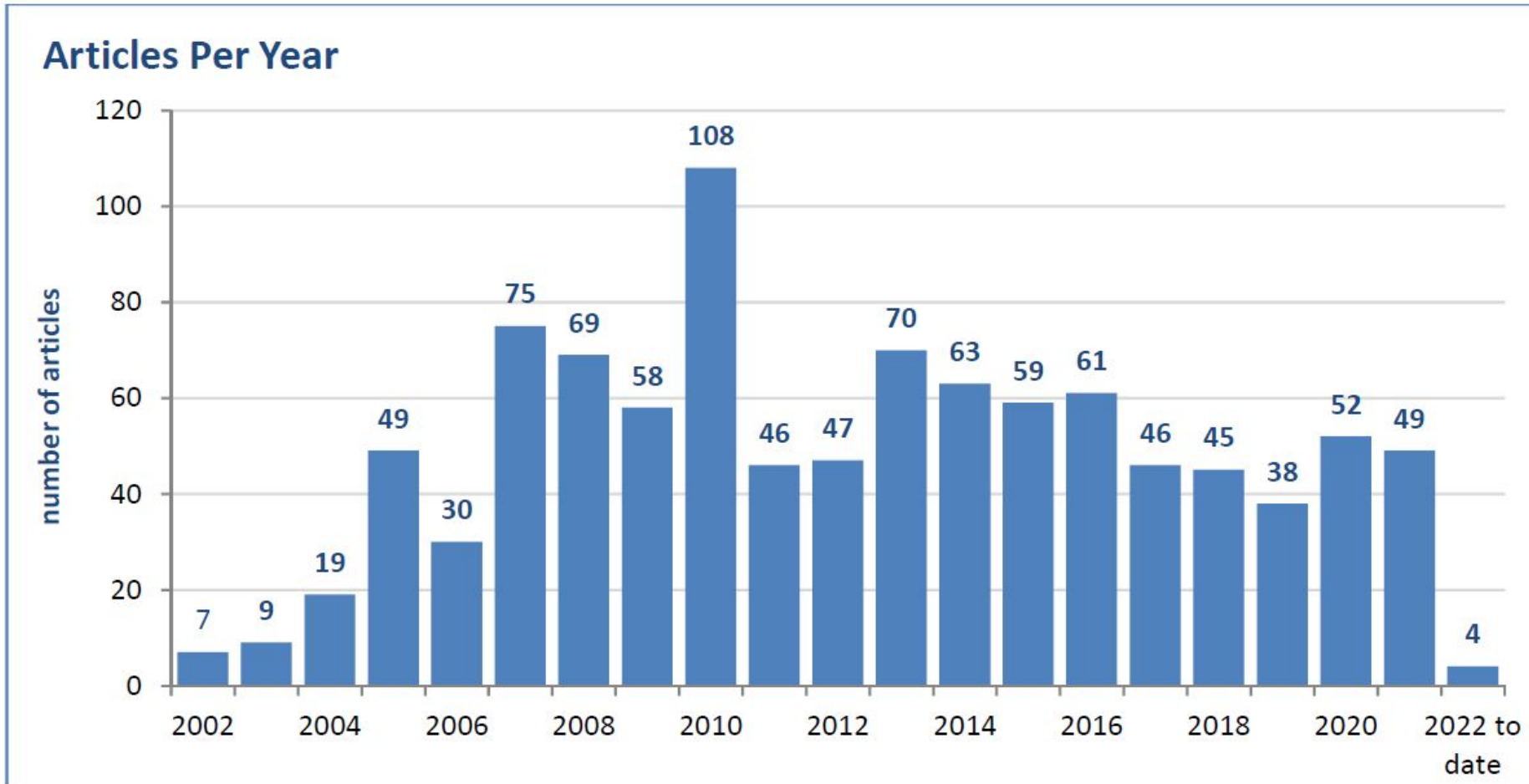
Preview graphic

**Dataset Citation**

Cite as: Liu, Gang; Heron, Scott F.; Eakin, C. Mark; De La Cour, Jacqueline L.; Geiger, Erick F.; Tirak, Kyle V.; Skirving, William J.; Strong, Alan E. (2018). NOAA Coral Reef Watch (CRW) Daily Global 5-km (0.05 degree) Satellite Coral Bleaching Heat Stress Monitoring Product Suite. [indicate subset used]. NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.25921/6jgr-pt28>. Accessed [date].

Please refer to Credit tab for full citation information.

# Articles per Year that use OER data

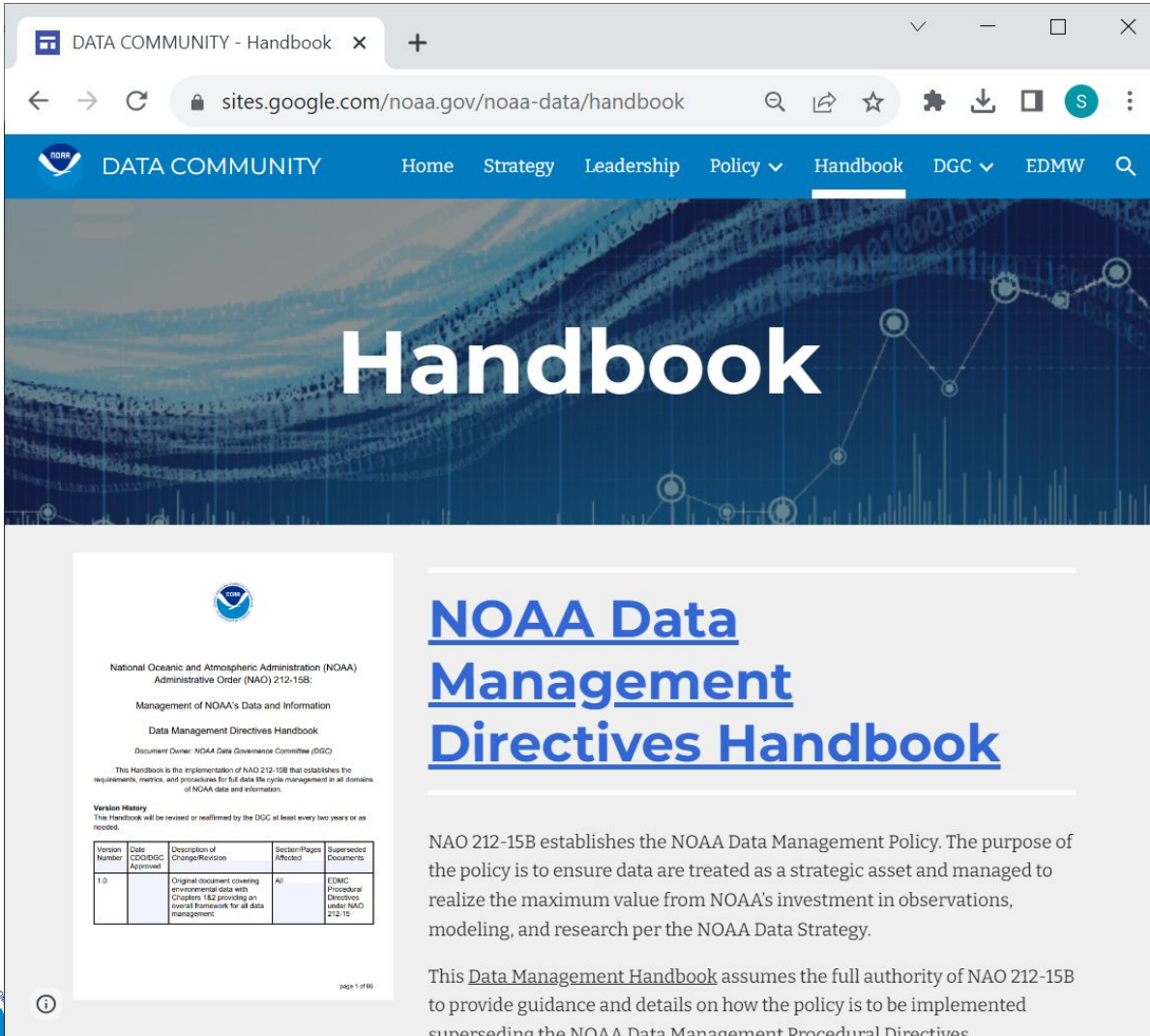


(Davis & Shinn, 2022)

# Guidance and Best Practices

DOI requirements at the NOAA Level are set by the **NOAA Data Governance Council** and documented in the NOAA Data Management Handbook

- Publication DOIs - NOAA Library
- Dataset DOIs - NCEI
- Software - No Policy



DATA COMMUNITY - Handbook

sites.google.com/noaa.gov/noaa-data/handbook

DATA COMMUNITY Home Strategy Leadership Policy Handbook DGC EDMW

# Handbook

**NOAA Data Management Directives Handbook**

National Oceanic and Atmospheric Administration (NOAA)  
Administrative Order (NAO) 212-15B:  
Management of NOAA's Data and Information  
Data Management Directives Handbook  
Document Owner: NOAA Data Governance Committee (DGC)  
This Handbook is the implementation of NAO 212-15B that establishes the requirements, metrics, and procedures for full data life cycle management in all domains of NOAA data and information.

**Version History**  
This Handbook will be revised or reaffirmed by the DGC at least every two years or as needed.

Version Number	Date CCO/DGC Approved	Description of Change/Revision	Section/Pages Affected	Superseded Documents
1.0		Original document covering environmental data with Chapters 1-6 providing an overall framework for all data management.	All	EDMC Procedural Directives under NAO 212-15

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NAO 212-15B establishes the NOAA Data Management Policy. The purpose of the policy is to ensure data are treated as a strategic asset and managed to realize the maximum value from NOAA's investment in observations, modeling, and research per the NOAA Data Strategy.

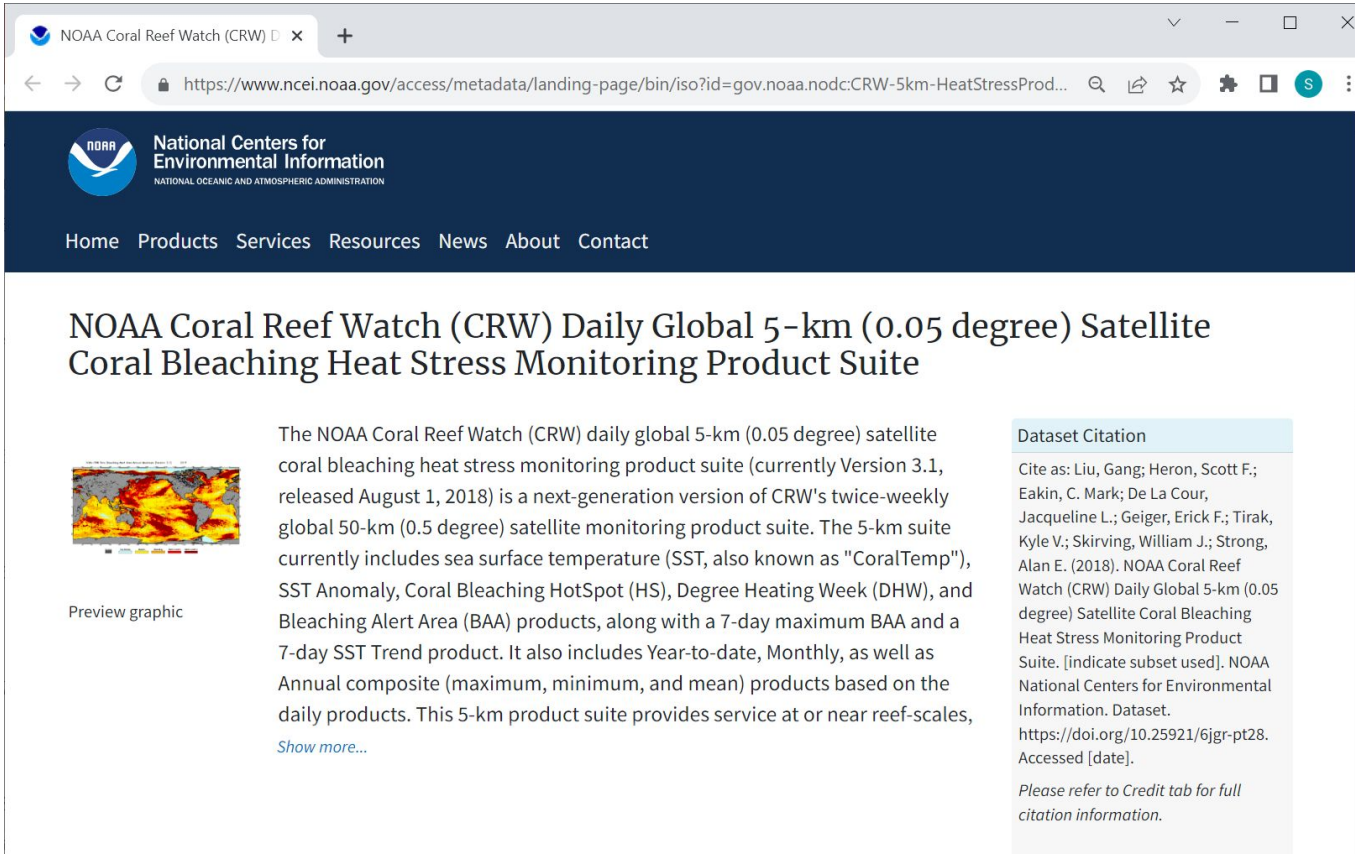
This [Data Management Handbook](#) assumes the full authority of NAO 212-15B to provide guidance and details on how the policy is to be implemented superseding the NOAA Data Management Procedural Directives.



# NOAA Dataset DOI Requirements

- Data must be archived with NCEI to receive a NOAA dataset DOI
- Datasets that have previously been issued a DOI will not have a NOAA DOI issued.
- NOAA Avoid DOIs for subsets of collections that have DOIs,
  - ex. Parent-Child relationships
- Data should be accessible\*
- Data from a Federal source cannot be withheld from access "solely for the purpose of being the first to publish"

# Required Fields for a DOI



The screenshot shows a web browser window with the NOAA Coral Reef Watch (CRW) metadata page. The page title is "NOAA Coral Reef Watch (CRW) Daily Global 5-km (0.05 degree) Satellite Coral Bleaching Heat Stress Monitoring Product Suite". The page includes a NOAA logo, a navigation menu (Home, Products, Services, Resources, News, About, Contact), and a main content area. The main content area features a "Preview graphic" of a coral reef map with a color scale from 0 to 100. The text describes the product suite, including sea surface temperature (SST), SST Anomaly, Coral Bleaching HotSpot (HS), Degree Heating Week (DHW), and Bleaching Alert Area (BAA) products. A "Dataset Citation" section provides the citation information for the dataset.

NOAA Coral Reef Watch (CRW) Daily Global 5-km (0.05 degree) Satellite Coral Bleaching Heat Stress Monitoring Product Suite

The NOAA Coral Reef Watch (CRW) daily global 5-km (0.05 degree) satellite coral bleaching heat stress monitoring product suite (currently Version 3.1, released August 1, 2018) is a next-generation version of CRW's twice-weekly global 50-km (0.5 degree) satellite monitoring product suite. The 5-km suite currently includes sea surface temperature (SST, also known as "CoralTemp"), SST Anomaly, Coral Bleaching HotSpot (HS), Degree Heating Week (DHW), and Bleaching Alert Area (BAA) products, along with a 7-day maximum BAA and a 7-day SST Trend product. It also includes Year-to-date, Monthly, as well as Annual composite (maximum, minimum, and mean) products based on the daily products. This 5-km product suite provides service at or near reef-scales, [Show more...](#)

**Dataset Citation**

Cite as: Liu, Gang; Heron, Scott F.; Eakin, C. Mark; De La Cour, Jacqueline L.; Geiger, Erick F.; Tirak, Kyle V.; Skirving, William J.; Strong, Alan E. (2018). NOAA Coral Reef Watch (CRW) Daily Global 5-km (0.05 degree) Satellite Coral Bleaching Heat Stress Monitoring Product Suite. [indicate subset used]. NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.25921/6jgr-pt28>. Accessed [date].

Please refer to Credit tab for full citation information.

- Author(s)
- Title
- Abstract
- Publisher
- Publication Year
- Recommended Citation
- Browse Graphic

# Reserved DOIs

- Support dataset DOIs required by publishers in order to publish articles.
- NCEI must have a copy of the data even if draft
- ***Factor in timeline for receiving DOIs and publication processes***
- *NCEI can issue a DOI without releasing the data for 12 to 24 months depending on funding source\**





# Two Options for Assigning a DOI

- DOI for a collection of data
  - Station
  - Network
  - Parameter / Instrument Package
- DOI for individual datasets
  - Total estimated number of DOIs may come into discussion when reviewing citation granularity
- Most DOI assignments occur at the time of dataset submission & may involve discussion to determine the right resolution
- After the fact - Contact [ncei.doi@noaa.gov](mailto:ncei.doi@noaa.gov) to request a doi



# DOI Granularity Considerations

**Fair Credit:** The contents of this granularity have the same source (see examples below) to ensure that fair credit is given by the citation.

- Project/Program
- Science Researcher(s) or Data Collectors
- Funding source

**Data Reference:** This granularity guides users to the data at a useful level for scientific use and reproducibility (the citation may contain further subset information).

- Instrument(s)
- Platform(s)
- Variables measured

**Publication Requirements:** This granularity meets the citation needs for a publication (which may contain further subset information in the citation).



# Additional Resources

- ORCID For Researchers - NOAA Libguide  
<https://libguides.library.noaa.gov/ORCID>
- For my ally is the DOI, and a powerful ally it is " Basics of Digital Object Identifiers - NOAA Library Seminar  
<https://www.youtube.com/watch?v=Tel10uQXDqA>
- If you only knew the power of ORCID " Using ORCIDs for Disambiguation - NOAA Library Seminar  
<https://www.youtube.com/watch?v=FdvopbKMfRQ>
- Talk to me, Goose" Using Dataset DOIs: Part 2 of our Digital Object Identifier Series - NOAA Library Seminar  
<https://www.youtube.com/watch?v=yfPPFBKjHFE>

# Questions

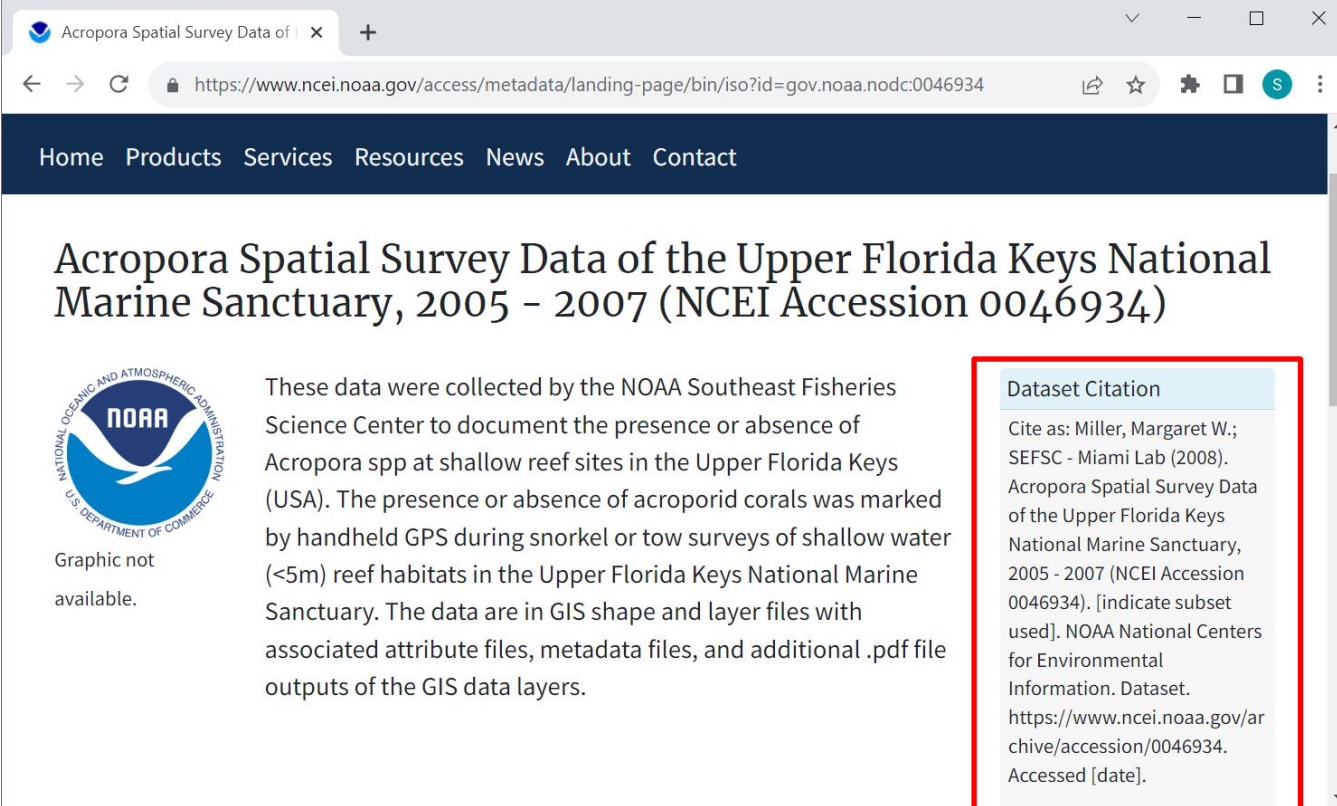


# Backup Slides

# Benefits of a DOI

DOI's can help a user locate referenced data

- Datasets, books, articles can have the same name.
  - A unique identifier allows the user to distinguish your item from similarly named items
- URLs can change over time
- Organization names can change over time



Acropora Spatial Survey Data of the Upper Florida Keys National Marine Sanctuary, 2005 - 2007 (NCEI Accession 0046934)

These data were collected by the NOAA Southeast Fisheries Science Center to document the presence or absence of Acropora spp at shallow reef sites in the Upper Florida Keys (USA). The presence or absence of acroporid corals was marked by handheld GPS during snorkel or tow surveys of shallow water (<5m) reef habitats in the Upper Florida Keys National Marine Sanctuary. The data are in GIS shape and layer files with associated attribute files, metadata files, and additional .pdf file outputs of the GIS data layers.

**Dataset Citation**  
Cite as: Miller, Margaret W.; SEFSC - Miami Lab (2008). Acropora Spatial Survey Data of the Upper Florida Keys National Marine Sanctuary, 2005 - 2007 (NCEI Accession 0046934). [indicate subset used]. NOAA National Centers for Environmental Information. Dataset. <https://www.ncei.noaa.gov/archive/accession/0046934>. Accessed [date].



# Example - Changing Citation

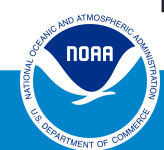
Existing dataset citations changed with NCEI's creation in 2015.

## Original Citation

Miller, Margaret W.; SEFSC - Miami Lab (2008). Acropora Spatial Survey Data of the Upper Florida Keys National Marine Sanctuary, 2005 - 2007 (**NODC Accession 0046934**). [indicate subset used]. **NOAA National Oceanographic Data Center**. Dataset.  
<https://accession.nodc.noaa.gov/0046934>. Accessed [date].

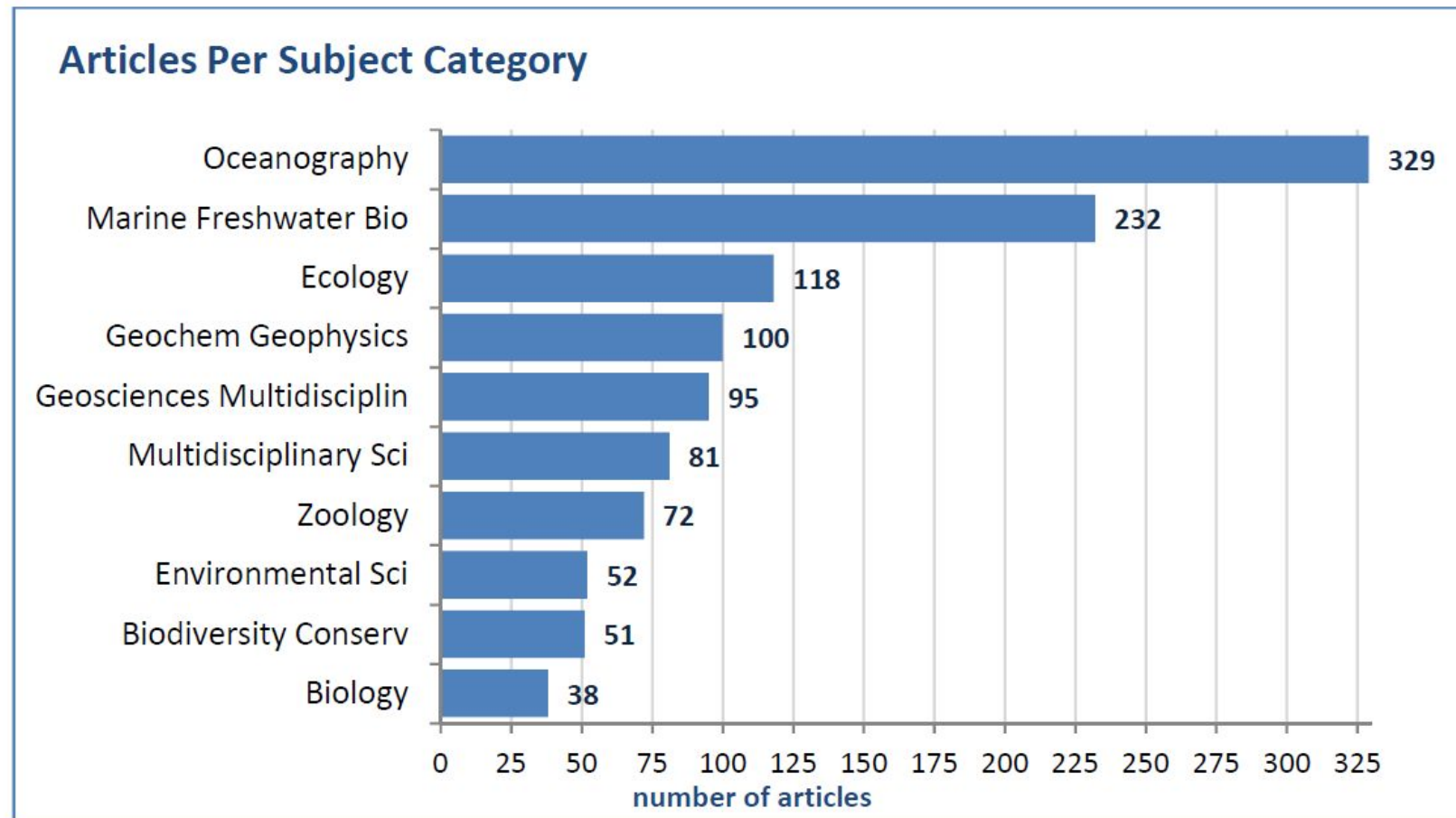
## New Citation

Miller, Margaret W.; SEFSC - Miami Lab (2008). Acropora Spatial Survey Data of the Upper Florida Keys National Marine Sanctuary, 2005 - 2007 (**NCEI Accession 0046934**). [indicate subset used]. **NOAA National Centers for Environmental Information**. Dataset.  
<https://www.ncei.noaa.gov/archive/accession/0046934>. Accessed [date].





# Top Articles per Subject Category that use OER data



(Davis & Shinn, 2022)

# DataCite – NOAA's DOI Provider

- When a data provider requests a DOI we login to the system to:
  - Manually enter in information and generate DOI
  - Use the API to generate DOIs in an automated fashion

**\* DOI** A globally unique string that identifies the resource and can't be changed.

10.80047 kgsy-8205

Click the circle icon for a new random suffix, or the cross icon to delete the random suffix and enter a value manually.

**\* State** The state determines whether a DOI is registered and findable. Once in Registered or Findable state, a DOI can't be set back to Draft state. [More ...](#)

☒ **Draft** only visible in Fabrica, DOI can be deleted

☐ **Registered** registered with the DOI Resolver

☐ **Findable** registered with the DOI Resolver and indexed in DataCite Search

**\* URL** The location of the landing page with more information about the resource.

<https://example.org>

Should be a https URL — within the allowed domain(s) of your repository if domain restrictions are enabled in the repository settings. Http and ftp are also supported. For example <http://example.org>