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Accessing data and other services

KATIE GOWERS, BRITISH OCEANOGRAPHIC DATA CENTRE
BANGOR UNIVERSITY OPEN ACCESS WEEK, OCTOBER 2015



**National
Oceanography Centre**
NATURAL ENVIRONMENT RESEARCH COUNCIL

noc.ac.uk

NERC SCIENCE OF THE
ENVIRONMENT

BODC delivering data

There is very little point in storing data long term, fully documented and quality controlled if no-one can access it!

Part of BODC's role is the distribution of marine data.

The data we hold is very diverse:

- CTD, Underway, Moorings etc
- Discrete samples
- Bathymetry
- Waves, Currents, Sea level
- And much more!

Data availability

The majority of BODC's data holding are visible online and we are adding to this all the time!

Some data BODC holds are restricted. This could be because:

- It's commercial data
- It falls in to an approved NERC embargo period of 2 years
- A project has restricted access to the data for a period of time

All NERC funded data are available under an open data license once any agreed embargo period (max 2 years) has ended.

BODC support open data access wherever possible.

Access control



ADCP data from Project A is restricted to project members only for 2 years



Jane Bloggs is part of project A



She is assigned a role in BODC showing she is part of Project A



She logs in to BODC website and requests the data



Her email address is recognised and the system can see she has the right role. The data are supplied.



Access control



ADCP data from Project A is restricted to project members only for 2 years



Joe Bloggs is not part of project A



He hasn't been assigned the role for project A



He logs in to BODC website and requests the data



His email address is recognised but he hasn't got the right role.
The data are not supplied.



Websites driven by Vocab

amazon.co.uk
Try Prime

Shop by Department ▾

All ▾

- All Departments
- Amazon Instant Video
- Apps & Games
- Baby
- Beauty
- Books
- Car & Motorbike
- CDs & Vinyl
- Classical
- Clothing
- Computers
- Digital Music
- DIY & Tools
- DVD & Blu-ray
- Electronics & Photo
- Garden & Outdoors
- Gift Cards
- Grocery
- Health & Personal Care
- Industrial & Scientific
- Jewellery
- Kindle Store
- Kitchen & Home
- Large Appliances
- Lighting
- LOVEFILM by Post
- Luggage
- Luxury Beauty
- Musical Instruments & DJ
- PC & Video Games

This list is built from a Vocab of departments

An item may fall in to more than one department

This is fine as long as it is tagged with ALL relevant departments

BritishRedCross
Donate to the British Red Cross

12:58
01/10/2015

NERC SCIENCE OF THE ENVIRONMENT

Using our website

The search facility for data on our website is also run from Vocabs.

In addition it is possible to narrow down results by geographic area, time and depth.

It also has a checkout system (similar to a website like Amazon)

You will need to register with us to use our data request facilities

www.bodc.ac.uk



Using our website

If anyone is interested (and we have time) we could try a live demo of the website after this presentation.

In the meantime I will give you some basic introductions to what is available.

It can help to understand what is driving the search capability.

The best way to see the potential is actually to have a go yourself!

Using our website

The screenshot shows the website's navigation bar with the following items: About us, Data, Projects, Partners, Products, and Help and hints. The 'Data' menu is expanded, showing two sub-menus. The first sub-menu, 'Where to find data', includes: Online delivery, Published Data Library, Information and inventories, Code and format definitions, Submitting data to BODC, and Portals and links. The second sub-menu, 'All data series', includes: CTD profiles, Current meter series, Wave data series, Argo floats, CTD and underway (AMT), Gridded bathymetry data (GEBCO), UK Tide Gauge Network, Historical UK tide gauge data, International sea level, Numerical model data, OPenDAP/DODS server, and Historical BPR data.

▶ About us ▼ **Data** ▶ Projects ▶ Partners ▶ Products ▶ Help and hints

Where to find data

▼ **Online delivery**

▶ Published Data Library

▶ Information and inventories

▶ Code and format definitions

▶ Submitting data to BODC

▶ Portals and links

All data series

CTD profiles

Current meter series

Wave data series

Argo floats

CTD and underway (AMT)

Gridded bathymetry data (GEBCO)

UK Tide Gauge Network

Historical UK tide gauge data

International sea level

Numerical model data

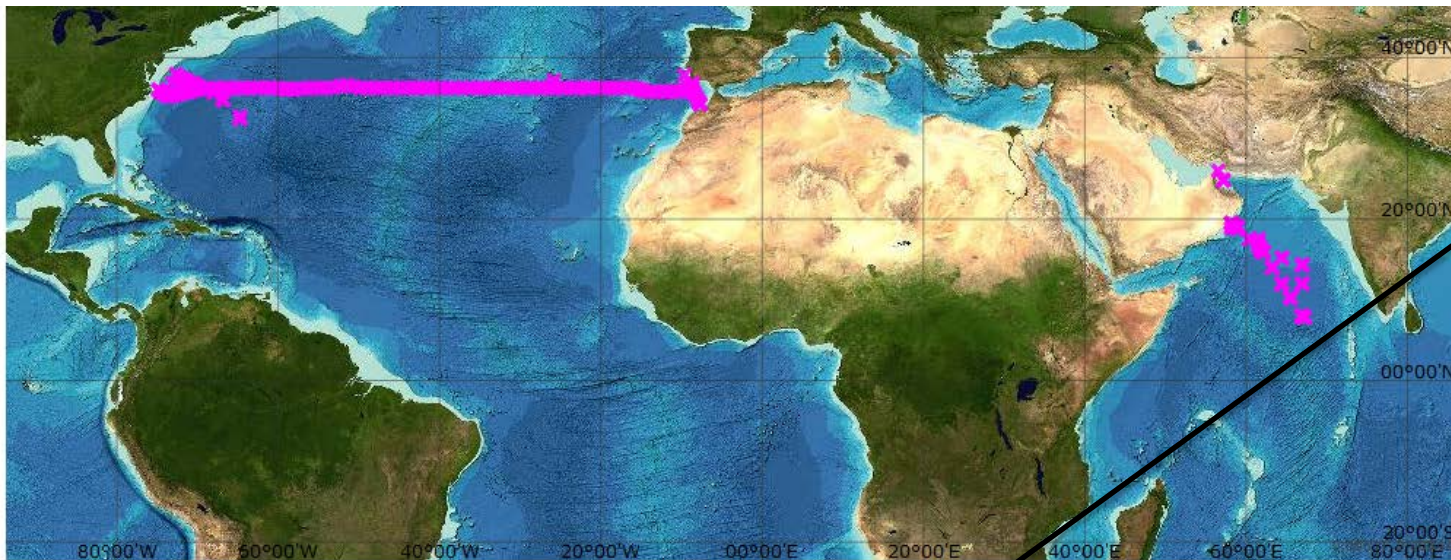
OPenDAP/DODS server

Historical BPR data

ographic Databa
rganisations.

and water transport rates

Depl
Fisher
during



You can select data by area

Northerly Southerly Westerly Easterly

Start date

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

End date

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

You can also select data by:

- Date
- Data type
- Parameter
- Project
- Cruise
- Instrument depth
- Originator

Results

Your results will be summarised in a table below – to start with it will show all the series available until you start to narrow down.

Results table

Add selected to basket View basket

Found 95326 | Showing (1 - 300) | 1 2 3 4 | Next > Last >

Select	Data collections	Project	Cruise	Site	Data type	Start date	Latitude	Longitude	Positional definition	Min depth	Max depth	Organisation	Country	Data availability	Documentation
<input type="checkbox"/>	36 North Project oceanographic data	36 North	RRS Charles Darwin cruise CD171	-	CTD or STD cast	2005-05-02	34.7085	-66.71483	Fixed point	5	5243	National Oceanography Centre, Southampton	United Kingdom	Unrestricted	
<input type="checkbox"/>	36 North Project oceanographic data		RRS Charles Darwin		CTD or STD	2005-05-03	35.59367	-67.99983	Fixed point	9		National Oceanography	United		
<input type="checkbox"/>	36 North Project oceanographic data					2005-05-03	36.23083	-69.14067	Fixed point	3					
<input type="checkbox"/>	36 North Project oceanographic data					2005-05-03	36.32367	-69.74067	Fixed point	3					
<input type="checkbox"/>	36 North Project oceanographic data		CD171			2005-05-04	36.49667	-70.00633	Fixed point	3		Southampton			
<input type="checkbox"/>	36 North Project oceanographic data	36 North	RRS Charles Darwin cruise CD171	-	CTD or STD cast	2005-05-04	36.64017	-70.2625	Fixed point	3	4413	National Oceanography Centre, Southampton	United Kingdom	Unrestricted	
			RRS Charles									National			

Select boxes allow you to choose specific series from your search results

Documentation about each series are available by clicking on the book icon



Checking out your data

1. Narrow down your results by searching with the relevant search criteria.
2. Select the series of interest to you.
3. Add these series to your basket (above the table of results).

Results table

Add selected to basket

View basket

4. View your basket to see what you have chosen
5. Checkout your data



The requests team

We also have a requests team at BODC to answer queries about our data and website.

You can contact them on enquiries@bodc.ac.uk

They can provide data that isn't currently exposed to our web request area

Currently available online ~ 95,326 datasets

Be clear about what you are looking for – there is a lot of data and requesting everything “just in case” isn't going to work.

Vocabs

BODC manage a lot of vocabs and these along with vocabs from other organisations are now fully searchable and available to download online!

These include the Vocabs that BODC use to tag our data with metadata (for the majority of situations you may be able to use existing vocabs).

This means:

- the resource required to maintain the vocab is done by us
- vocabularies and concepts have already been thought through and are well populated
- you can use vocabs which are either international standards in their own right or are mapped to international standards

[▶ About us](#)
[▼ Data](#)
[▶ Projects](#)
[▶ Partners](#)
[▶ Products](#)
[▶ Help ar](#)

Where to find data

- ▶ Online delivery
- ▶ Published Data Library
- ▶ Information and inventories
- ▼ **Code and format definitions**
 - ▶ Submitting data to BODC
 - ▶ Portals and links

BODC parameter codes
 BODC request (ASCII) format
 Ocean Data View (ODV) format
 QXF (a netCDF) format
 CF netCDF format
 AXF (historical) format
 GEBCO grid formats
 ▶ Sea level formats
 SeaVoX
 Vocabulary editor
Vocabulary search

appreciate your comments. If you experience a
[Web Master](#).

Data
 is, archive and distribute biological, Exp
 physical and geophysical marine data. Find we
 to download and request data, search our dur
 s and submit data to us. [\[more\]](#)

Products

https://www.bodc.ac.uk/data/codes_and_formats/vocabulary_search/

Searching existing vocabs

Vocabulary search

help

Simple search for vocabularies

Advanced search for vocabularies

Simple search within a vocabulary

Advanced search within a vocabulary

Find a vocabulary

Search for terms within a vocabulary

Click search button with empty search text to get list of all available collections

Search text

Search

Search box

Vocabs

Project roles

Vocabulary search

help

Simple search for vocabularies

Advanced search for vocabularies









Simple search within a vocabulary

Advanced search within a vocabulary

Click search button with empty search text to get list of all available collections

Search text

Search

12	C87	BODC project roles	Terms used by BODC to describe roles associated with scientific projects.	British Oceanographic Data Centre	
11	C89	BODC dataset roles	Terms used by BODC for roles that describe the relationship between a person or organisation with a specific dataset.	British Oceanographic Data Centre	
11	P01	BODC Parameter Usage Vocabulary	Terms built using the BODC parameter semantic model designed to describe individual measured phenomena. May be used to mark up sets of data such as a NetCDF array or spreadsheet column.	British Oceanographic Data Centre	
9	L22	SeaVoX Device Catalogue	Terms for distinct sampling or measuring devices that may be identified in the real world in terms of manufacturer and model number.	SeaDataNet and MarineXML Vocabulary Content Governance Group	
8	B06	BODC data and metadata integrity checks	Terms describing automated integrity checks applied to data and metadata during BODC quality control.	British Oceanographic Data Centre	
7	C30	Active vocabulary content governance authorities	Bodies responsible for the intellectual control of vocabularies served by the NDG/SeaDataNet vocabulary server.	British Oceanographic Data Centre	
7	L21	SeaDataNet device category types	High-level classification of devices based on function and mode of deployment.	SeaDataNet	
6	C75	BODC Organisations	Labels and metadata for organisations used by BODC to tag data and metadata.	British Oceanographic Data Centre	

BODC Project Roles (C87)

Vocabulary search

help

Simple search for vocabularies

Advanced search for vocabularies

Simple search within a vocabulary

Advanced search within a vocabulary

If you want to see all terms in a vocab leave the search text box empty

The collection id is the vocab collection id we just looked up

Click search button with empty search string to get list of all available concepts

Search text

Collection ID

C87

Search

BODC Project Roles (c87)

Vocabulary search help

Search in **C87** BODC project roles

Search text Vocabulary [advanced options](#)

Found 12 records | Show (1 - 10) | [Next >](#) [Last »](#)

[download results](#) | [start again](#)

You can
download
the results!



▲ Identifier ▼	▲ PrefLabel ▼	▲ Definition ▼	▲ Date ▼
PA	Project administrator	Project secretariat members providing administrative support to the project without management responsibility.	2011-12-12
CI	Project co-investigator	The persons responsible for the planning, direction and management of a sub-component of a project. Termed a work package leader in EU projects.	2011-12-12
CO	Project collaborator	A provider of input to a project on a mutual co-operation basis without formal involvement in the project.	2011-12-12
MP	Project data manager	Person with particular responsibility for accuracy and completeness of metadata, data quality and the short-term data access and security and assuring the long-term stewardship of the data collected during the project, but has no IPR interest in those data.	2011-12-12
DP	Project dataset principal investigator	The person responsible for a specified subset of the data collected during a project and who holds the IPR for that subset of the data.	2011-12-12
PM	Project manager	Project secretariat member with management responsibilities for the project.	2011-12-12

An example of Linked Data in Action

SeaDataNet and SeaDataNetII were EU funded projects aiming to create and operate a pan-European, marine data management infrastructure, accessible online through a web portal.

Its primary goal was the development of a system providing transparent access to marine data sets and data products from 36 countries in and around Europe.



An example of Linked Data in Action



Banked Data



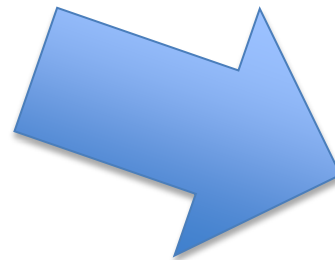
Documentation



Metadata
Tags



Through
Access Control



SeaDataNet

BODC and SeaDataNet



BODC was very actively involved in SeaDataNet and SeaDataNetII

We not only provide data and metadata but are also involved in

- Managing Vocabularies for data processing, communication and quality assurance
- Developing European standards for metadata
- European wide data set directories
- Designing and implementing interoperable systems

Publishing Data



Credit



Reproducibility



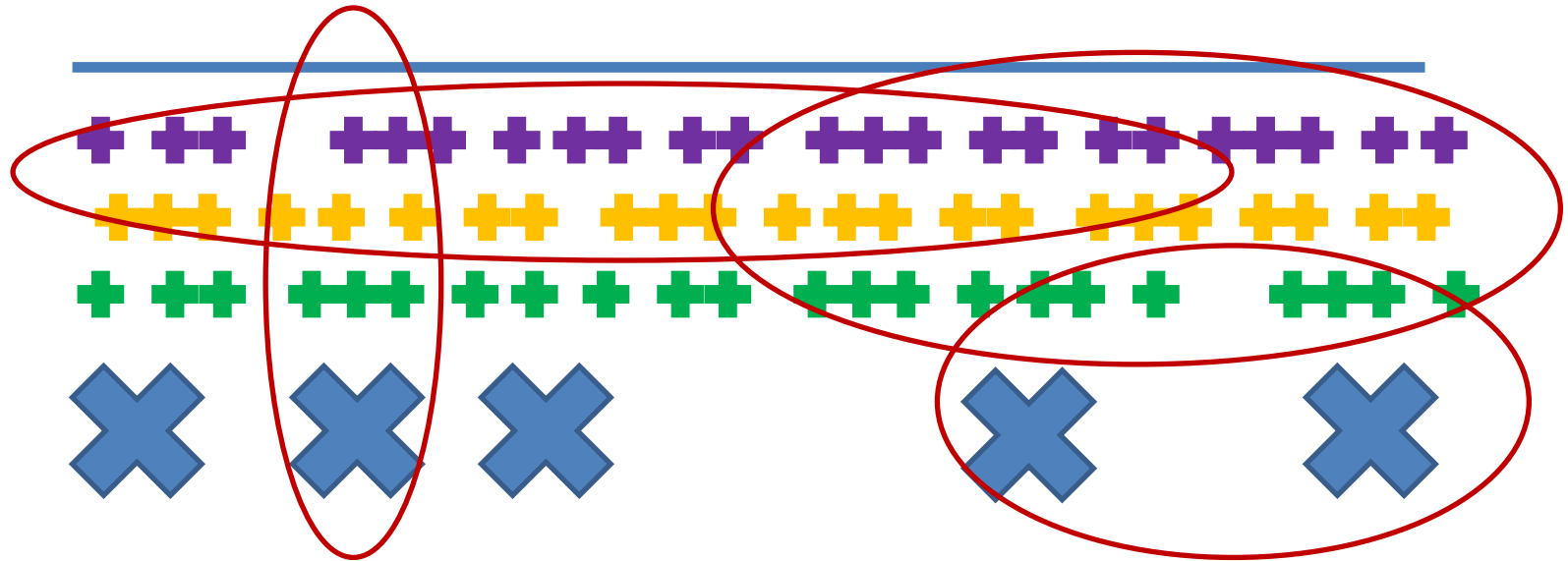
Integrity



Increasingly a requirement for journals



Environmental Dataset Publication

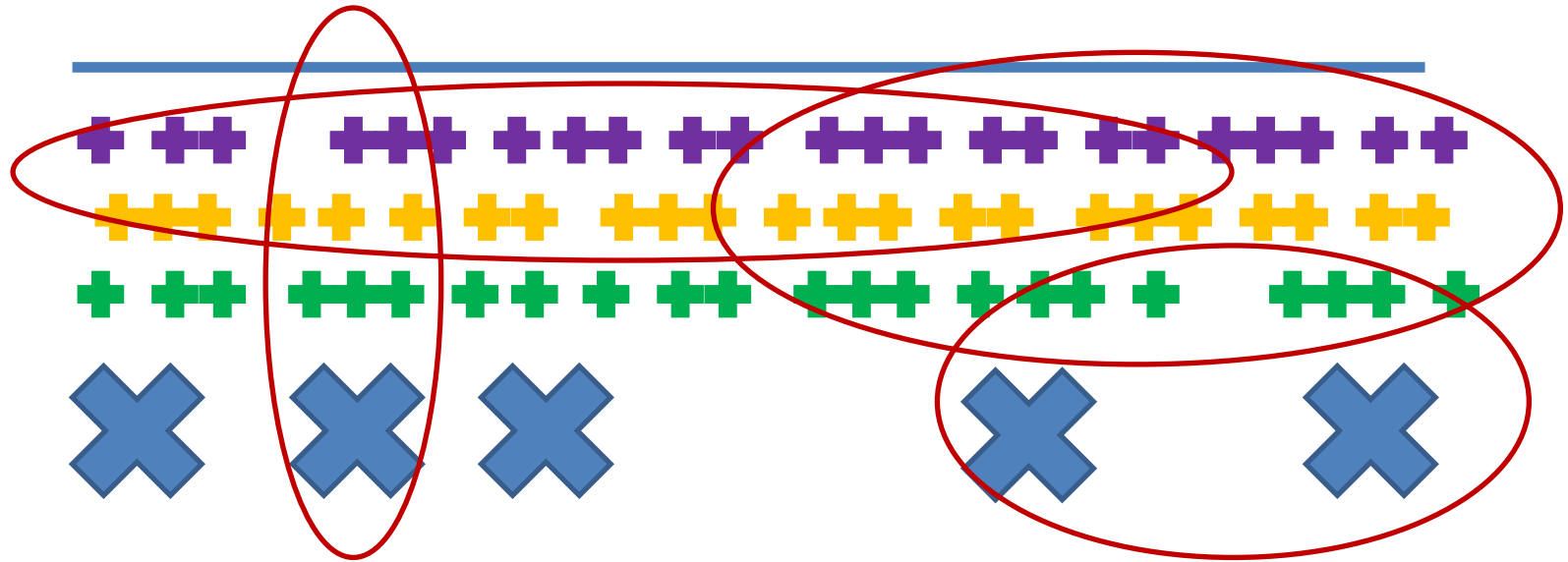


If you imagine that each horizontal line is a different data stream from a cruise.

Some are continuous streams and some are discrete samples.

Four papers use different subsets of these data streams.

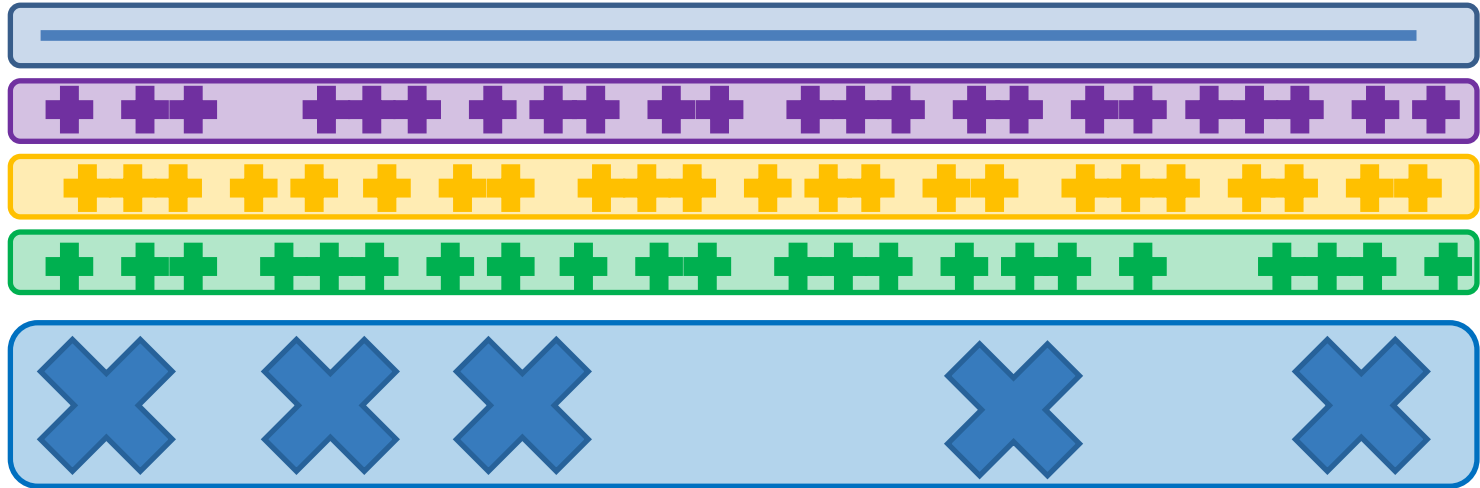
Environmental Dataset Publication



If we create a data publication for the subsets of data:

- Some data are not included in any of the data publications
- Some data are included in more than one data publication

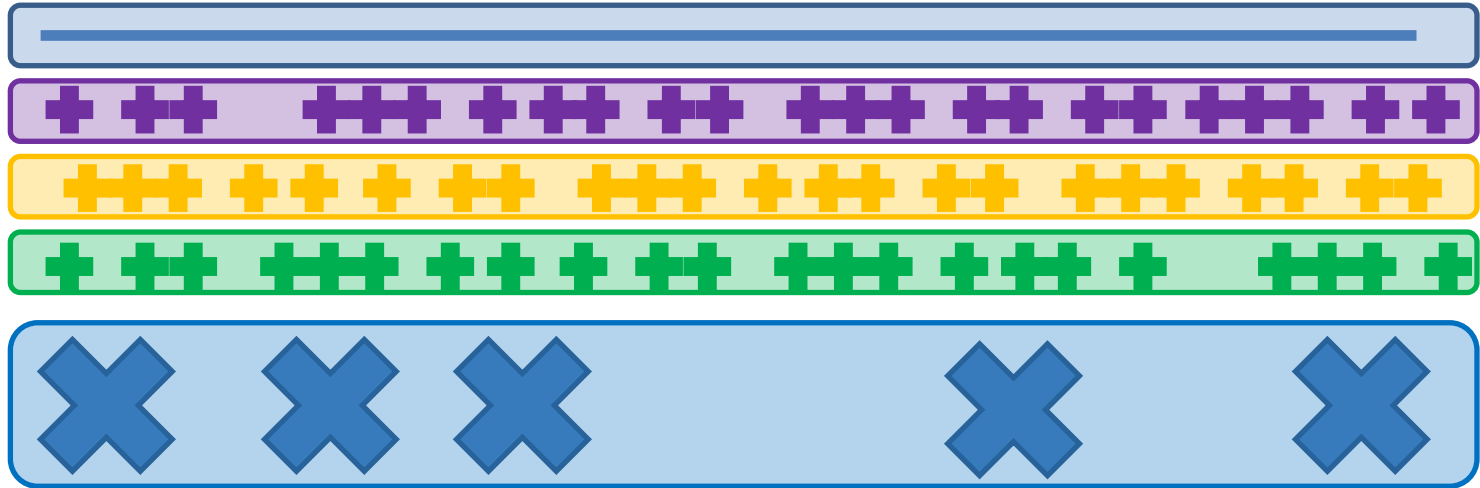
Environmental Dataset Publication



So instead we make a data publication for each stream of data.

Any subsets can be referenced as appropriate (like when you reference a paragraph of a book).

Environmental Dataset Publication



Other, A.N. (2012) Dataset 1: a continuous sensor stream.

Bloggs, J. (2012) Dataset 2: set of discrete carbonate chemistry measurements.

Smith, J. (2013) Dataset 3: set of net sample measurements.

Smith, J. and Jones, A. (2013) Dataset 4: discrete nutrient measurements.

Other, A.N. (2014) Dataset 5: perturbation event results.

Book. Chapter. Paragraph.

Digital Object Identifiers

A character string (a "digital identifier") used to uniquely identify an object such as an electronic document.

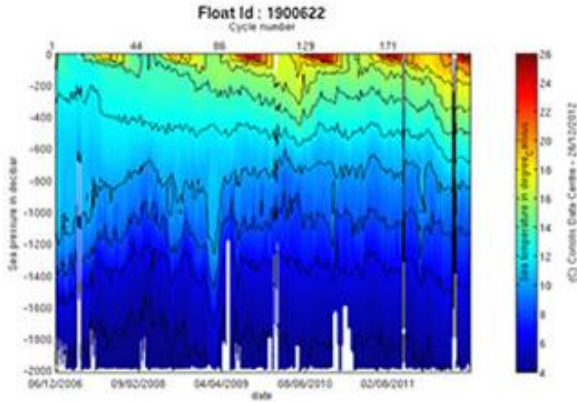
- texts, images, audio or video items, and software
- both electronic and physical forms

Data Publication can be associated with a DOI

BUT a DOI is not a publication.

Scientific journals are publishing data and beginning to require a data publication to support traditional journal articles.

Citing data



doi://10.34
43/fhgjt



You see a graph
in a presentation
or journal article.

Included is a
reference to a
data publication
which includes
a DOI

You follow the
DOI

You find and
download a
copy of the
data

Data publication & DOIs at BODC

BODC has the Published Data Library which provides citable units of data. These citable units are then linked to a DOI.

Sanders R.; Pan X. (2014). AMT16 Dissolved Organic Carbon (DOC) measurements with temperature, salinity and dissolved oxygen ancillary measurements. British Oceanographic Data Centre - Natural Environment Research Council, UK. [doi:10/rq9](https://doi.org/10.1017/rq9).

This is open data in action – being able to access the data behind the journal article.

The principle of reproducibility and integrity of scientific research is enhanced.

Data publication & DOIs at BODC

Our website includes a huge amount of information about the Published Data Library at BODC including:

- The level of service we offer
- Dataset selection procedures
- Data standards that need to be met
- Dataset modification and versioning
- The Published Data Library Catalogue

www.bodc.ac.uk/data/published_data_library/

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Home ► About

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Scientific Data is a peer-reviewed, open-access journal for descriptions of research datasets. We aim to promote wider data sharing and reuse, and to credit those that share. [Key principles](#) ►

Scientific Data welcomes submissions from a broad range of research disciplines, including descriptions of big or small datasets, from major consortiums to single research groups.

[Aims & scope](#) ►



About *Scientific Data*

Scientific Data is an open-access, peer-reviewed publication for descriptions of scientifically valuable datasets. Our primary article-type, the **Data Descriptor**, is designed to make your data more discoverable, interpretable and reusable.

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RSS

<http://www.nature.com/sdata/>

Summary

- Marine data is priceless
- Good data management is vital for scientific research
- Open data is a blossoming concept in environmental science
- Linked data opens up a “world of data”
- BODC is a national facility for looking after and distributing marine data
- We can provide support for submission of data to us
- You can request and download data from our website
- We also offer a wide range of other services including managing vocabs and data publication.





Any questions?

“Numbers have an important story to tell. They rely on you to give them a voice”

Stephen Few



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ENVIRONMENT