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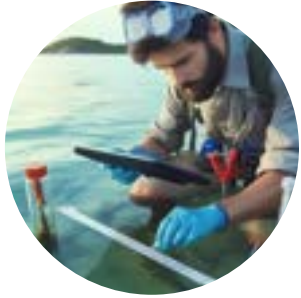
DTO-BioFlow

Integration of biodiversity monitoring
data into the Digital Twin Ocean

DTO-BioFlow data training
workshop:

DwC eMoF table for
measurements or facts

Concepts



Measurements

Quantitative

- ≡ Water temperature: 16 Celsius
- ≡ Organism biomass: 35 Kg/m³
- ≡ Length of the organism: 23 cm
- ≡ Duration of the net tow: 2h
- ≡ Concentration of NO₃ in water: 3.56 mg/L

Facts

Qualitative



- ≡ Sampling instrument name: Agassiz Trawl
- ≡ Habitat type: Mixed seaweeds
- ≡ Life stage of the organism: Adult
- ≡ Sea state: 4
- ≡ Sex of the organism: Female

Concepts

Biotic

Link to occurrences



Organism quantifications



Species biometrics



Organism characteristics

Abiotic

Do not link to occurrences



Abiotic measurements



Sampling methodologies



Habitat descriptions

Standardisation: BODC NVS vocabs

eventID	occurrenceID	measurementType	measurementTypeID	measurementValue	measurementValueID	measurementUnit	measurementUnitID
ost_1	ost_1:occ1	Fish length (mm)	http://vocab.nerc.ac.uk/collection/P01/current/OBSINDLX	12.6		millimetres	https://vocab.nerc.ac.uk/collection/P06/current/UXMM/
ost_1	ost_1:occ2	Body_length_in_m m	http://vocab.nerc.ac.uk/collection/P01/current/OBSINDLX	10		mm	https://vocab.nerc.ac.uk/collection/P06/current/UXMM/
ost_1	ost_1:occ2	Life stage	http://vocab.nerc.ac.uk/collection/P01/current/LSTAGE01/	Adult	https://vocab.nerc.ac.uk/collection/S11/current/S1116/	Not applicable	https://vocab.nerc.ac.uk/collection/P06/current/XXXX/
ost_1		Sampling duration	http://vocab.nerc.ac.uk/collection/P01/current/AZDRZZ01/	2		hours	https://vocab.nerc.ac.uk/collection/P06/current/UHOR/
ost_1		Gear	http://vocab.nerc.ac.uk/collection/P01/current/NMSPINST/	Agassiz trawl	https://vocab.nerc.ac.uk/collection/L22/current/T00L1252/	Not applicable	https://vocab.nerc.ac.uk/collection/P06/current/XXXX/

Standardisation: BODC NVS vocabs

equivalent				equivalent		equivalent	
eventID	occurrenceID	measurementType	measurementTypeID	measurementValue	measurementValueID	measurementUnit	measurementUnitID
ost_1	ost_1:occ1	Fish length (mm)	http://vocab.nerc.ac.uk/collection/P01/current/OBSINDLX	12.6		millimetres	https://vocab.nerc.ac.uk/collection/P06/current/UXMM/
ost_1	ost_1:occ2	Body_length_in_m m	http://vocab.nerc.ac.uk/collection/P01/current/OBSINDLX	10		mm	https://vocab.nerc.ac.uk/collection/P06/current/UXMM/
ost_1	ost_1:occ2	Life stage	http://vocab.nerc.ac.uk/collection/P01/current/LSTAGE01/	Adult	https://vocab.nerc.ac.uk/collection/S11/current/S1116/	Not applicable	https://vocab.nerc.ac.uk/collection/P06/current/XXXX/
ost_1		Sampling duration	http://vocab.nerc.ac.uk/collection/P01/current/AZDRZZ01/	2		hours	https://vocab.nerc.ac.uk/collection/P06/current/UHOR/
ost_1		Gear	http://vocab.nerc.ac.uk/collection/P01/current/NMSPINST/	Agassiz trawl	https://vocab.nerc.ac.uk/collection/L22/current/T00L1252/	Not applicable	https://vocab.nerc.ac.uk/collection/P06/current/XXXX/

abiotic

Standardisation of free text

no need to
standardize numbers

units don't apply to facts

Choosing the right terms

<http://vocab.nerc.ac.uk/collection/{listID}/{version}/{termID}/>



<http://vocab.nerc.ac.uk/collection/P01/current/OBSINDLX>

The NERC Vocabulary Server (NVS) Service Status

[NVS Home](#) | [Vocabularies](#) | [Thesauri](#) | [Search NVS](#) | [SPARQL](#) | [Other Tools](#) | [About NVS](#)

Search for a term in a vocabulary collection

Enter search string using % as wildcard if required. Example: chlorophyllsediment.

☒ Identifier ☒ Preferred label ☒ Alternative label ☐ Definition ☐ Exact match ☐ Case sensitive [toggle advanced options](#)

Search for a term across vocabulary collections

Enter search string

☒ Identifier ☒ Preferred label ☒ Alternative label ☒ Definition ☐ Exact match ☐ Case sensitive

Search for vocabulary collections

Enter search string using % as wildcard if required. Example: parameterfvocabulary.

☒ Identifier ☒ Title ☒ Short title ☒ Description ☒ Governance ☐ Exact match ☐ Case sensitive

Explore mappings

Choosing the right terms

≡ Collection suitability

≡ Vocab term suitability and integrity

Concentration of phosphate {PO43- CAS 14265-44-2} per unit volume of the water body [unknown phase]

URI	http://vocab.nerc.ac.uk/collection/P01/current/PHOSZZ00/
Within Vocab	BODC Parameter Usage Vocabulary
Alternative Labels	PO4
Definition	Concentration of phosphate per unit volume of the water column. Phosphate may be expressed in terms of mass or quantity of substance.

Water body phosphate

URI	http://vocab.nerc.ac.uk/collection/P35/current/EPC00007/
Within Vocab	EMODnet Chemistry aggregated parameter names
Alternative Labels	PO4
Definition	Concentration of phosphate per unit volume of a river, estuary, sea or ocean by any method in filtered or unfiltered water.

phosphate

URI	http://vocab.nerc.ac.uk/collection/S27/current/CS020904/
Within Vocab	BODC parameter semantic model chemical substances
Alternative Labels	PO43-
Definition	Unavailable

Choosing the right terms

measurementTypes

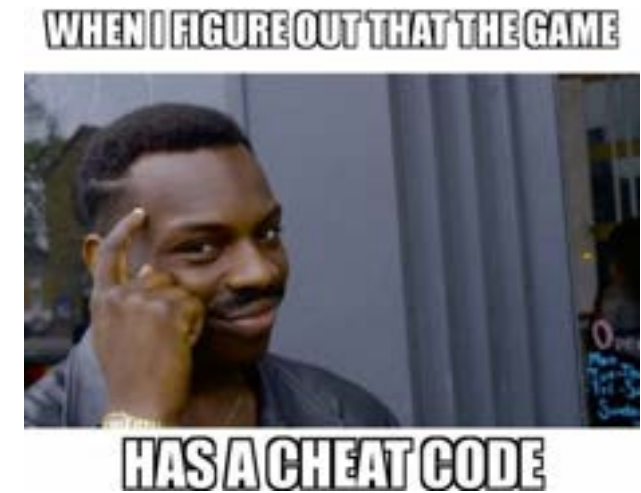
- ≡ [P01](#)- BODC Parameter Usage Vocabulary
 - ≡ Biotic parameters: contain “of biological entity specified elsewhere”

measurementValues

- ≡ [S11](#)- Biological entity life stage terms
- ≡ [S10](#)- BODC parameter semantic model biological entity gender terms
- ≡ [L05](#)- SeaDataNet device categories
- ≡ [L22](#)- SeaVoX Device Catalogue
- ≡ [C17](#)- ICES Platform Codes

measurementUnits

- ≡ [P06](#)- Approved data storage units



Relevant sources

≡ [BODC NVS Search](#)



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THANKS!