


EMODnet
European Marine
Observation and
Data Network
Your gateway to marine data in Europe

EMODnet Biology

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Coordinator EMODnet
Biology

The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.

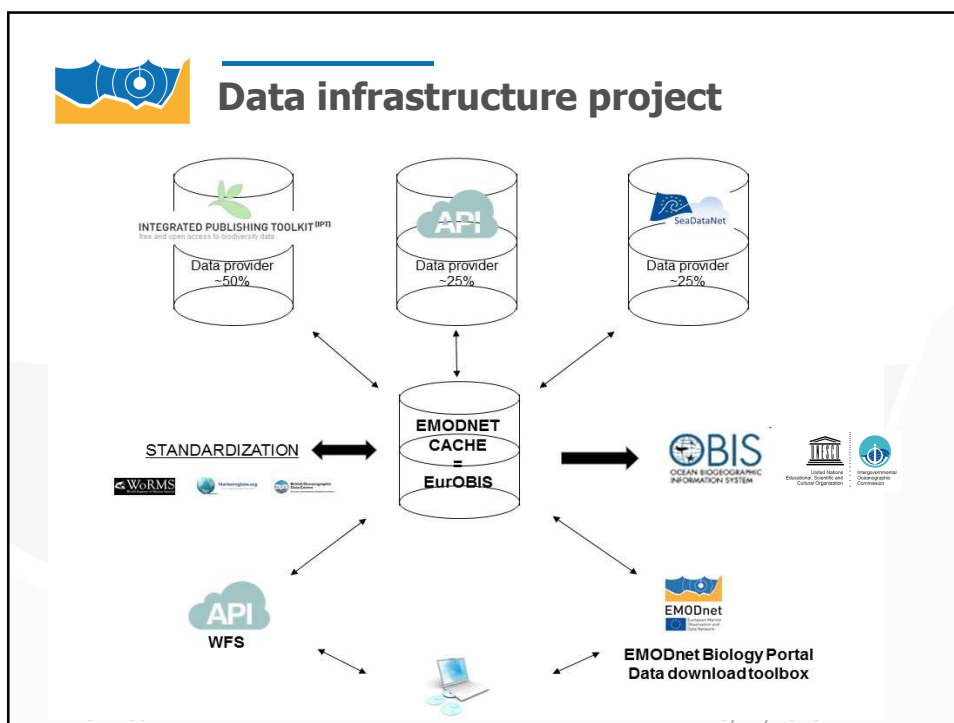
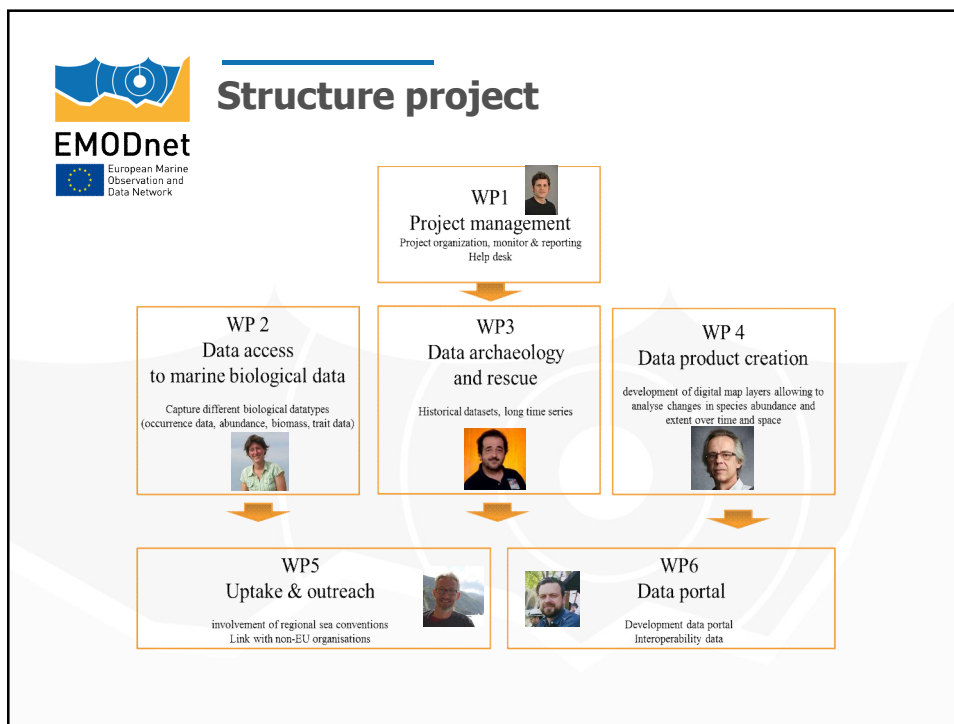


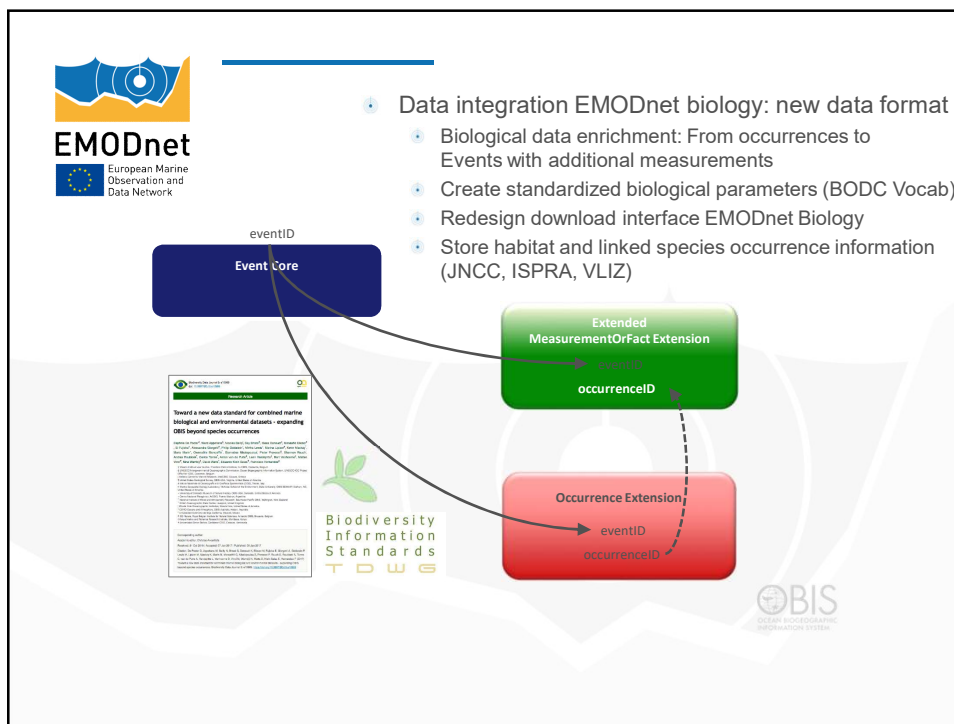
Administration & partnership

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- Project signed 19th April 2017 – prepare for year 1 reporting
- Kick off meeting 25-26 April 2017, GA Year 1, 3-4 May, Trieste, Italy
- 22 partners, 1 subcontractor
- 9 associated data partners (data call): start 15/1/2018

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Statistics EMODnet Biology

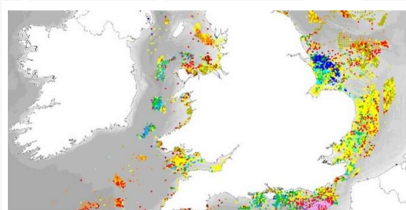
- 1.212 marine biological dataset descriptions (metadata)
- 843 datasets integrated and available through EurOBIS, representing 20.691.985 occurrence records, of which 18.019.824 quality controlled records (87% QC'd).
- 95 + in the pipeline
- 77.208 species names – of which 60.585 are accepted species names – linked to the World Register of Marine Species (WoRMS)
- 14 data products
- Additional Measurements: 6,905,793

DiscoveryLevel3	recordnr
Biota Quantifications	3986393
Rock and sediment physical properties	1636693
iota Descriptors	905566
Water column temperature and salinity	236831
Administration and dimensions	40578
Rock and sediment chemistry	31348
Meteorology	30395
NULL	17773
Optical properties	12262
Sea Level	4351
Dissolved gases	3584
Waves	10
Gravity, magnetics and bathymetry	9



Oil & Gas industry: UK benthos Database

- Release half a century of UK seabed grab survey data. These data originate from multiple sources in industry and government, and their collation and standardisation represents a significant opportunity to better understand and protect our marine environment.



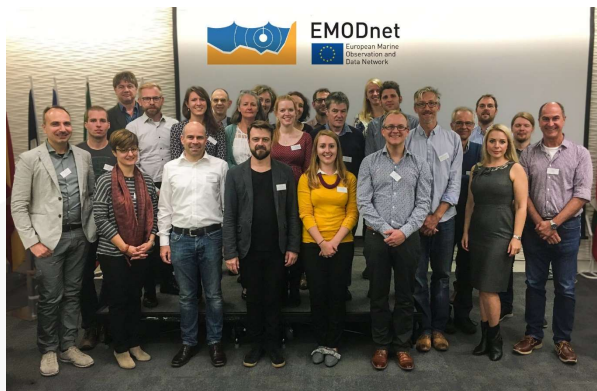
Analysis of 50 years of marine data: new insights into life on the seabed and potential for better protection of the marine environment

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WP5 Uptake and Outreach



Workshop to investigate scope of data products and applicability to end users






WP5 Uptake and Outreach

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Activity

- London Workshop – October 2017
- 25 participants including:
 - All 4 Regional Sea Commissions
 - Transatlantic/global partnerships
 - Industry
 - Academia
- Focus development of data products in WP4

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WP5 Uptake and Outreach

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Activity

- Using the workshop recommendations and network we have
 - Submitted an abstract to Ocean Obs 19 Conference
 - Begun the development of a paper for Ocean Policy
 - Engaged with OSPAR working groups
- Next steps
 - Manuscript submission – July 2018
 - Continue to support the Regional Sea Commissions data requirements through consultation and discussion
 - Plan workshop for M24 of EMODnet Biology

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Result of the workshop

- Concentration and structuring of the data products based on **Essential Ocean Variables for biodiversity**
- Contacts with both OSPAR and HELCOM showed that they are **not interested in 'ready-made' data products from EMODNET**, as they want to keep full (political) control on the process
- The most useful contribution from EMODNET is the production of **underlying data layers, which are usually covered by the EOVs**. We will therefore not concentrate on special products for the Commissions, unless explicitly asked to do so (and how).

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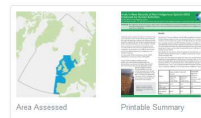
Example NIS

Trends in New Records of Non-Indigenous Species Introduced by Human Activities

D2 - Non-Indigenous Species

D2.1 - Abundance and state characterisation of non-indigenous species, in particular invasive species

Non-indigenous species are not only a major threat to marine biodiversity, but can also have considerable socio-economic impacts. Newly recorded species have been encountered at a relatively constant rate in the areas assessed. Preventing the introduction of non-indigenous species is considered the most cost-effective approach to management.



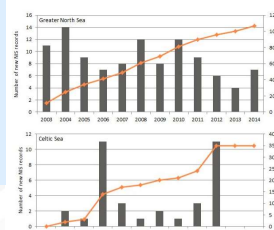
World Register of Introduced Marine Species
A gateway to introduced, cryptogenic & previously considered alien species

Home | Search taxa | Browse taxa | Distributions | Terminology | References | Statistics | Online sources | Tutorial | Log in

World Register of Introduced Marine Species (WRIMS)

Introduction

- alien species: 1,812
- species with uncertain origin: 78
- species with unknown origin: 125



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OSPAR used the WRIMS data-base to source information on introductions of NIS into OPSAR regions II, III and IV

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Data Products

- Atlas of Marine Life
 - Basic *data* maps
 - Biological ***Time series plots***
 - Gridded *abundance* maps
 - ***Vulnerability*** maps, ***indicator*** maps
- Species Distribution Models
 - Based on physical, chemical, use information
- Trait-based Analyses: 'thermal niche', **benthic function**,...
- Link with EBV: '*Essential Biodiversity Variables*'

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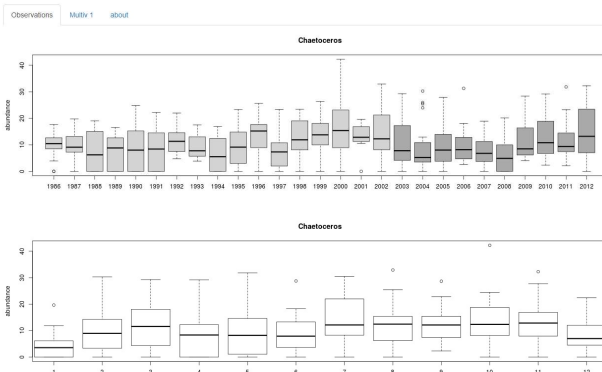
Data visualistain Long term plankton monitoring sites (Adriatic)

LTERR North Adriatic plankton series

Currently restricted to Phytoplankton
Phytoplankton

Choose a species (group)
Chaetoceros

value double sqrt transformed





Vulnerability Benthic communities

- Derived data products maps with information about sensitivity of benthic communities
- Using trait based analysis to assess the sensitivity, resilience of benthic communities (again pressures)
- Using observations data, taxonomic data, functional trait data
- Work done in collaboration with:
 - OSPAR: ICG-COBAM (BH1 Indicator)
 - ICES: WGBENT, WGBIODIV

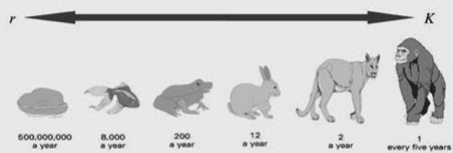
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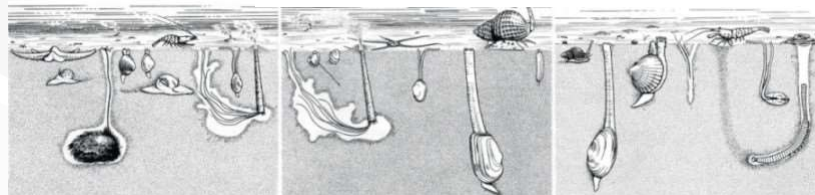
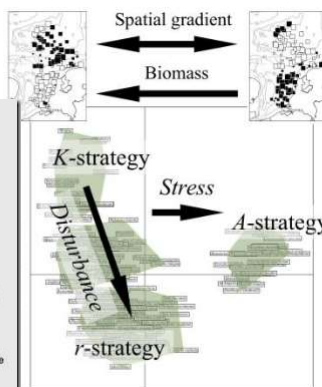


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The *r*-*K* Scale of Reproductive Strategy: Balancing Egg Output versus Parental Care




Oysters are an example of a very *r*-strategy. They produce 500 million fertilized eggs a year and provide no parental care. The great apes are an example of a very *K*-strategy. They produce one infant every five or six years and provide extensive parental care.



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Benthic macroinvertebrate trait data compilation



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- Body length
- Fragility
- Motility
- Degree of attachment
- Lifespan
- Maturity
- Sexuality
- Reproductive frequency
- Annual fecundity
- Offspring type
- Offspring size
- Offspring protection
- Offspring development
- Pelagic stage duration

and the following habitat traits:

- Trophy
- Burrowing depth
- Sociability
- Commercial interest
- Salinity
- Depth
- Substratum type
- Mud content
- Foraging depth

Salinity range

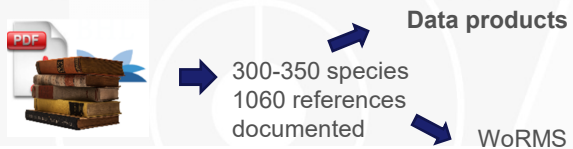
Thermal range

Depth range

Substratum type

Mud content


Foraging depth



Data products

300-350 species
1060 references documented

WoRMS




Response traits => those capturing fitness growth, survival and reproduction

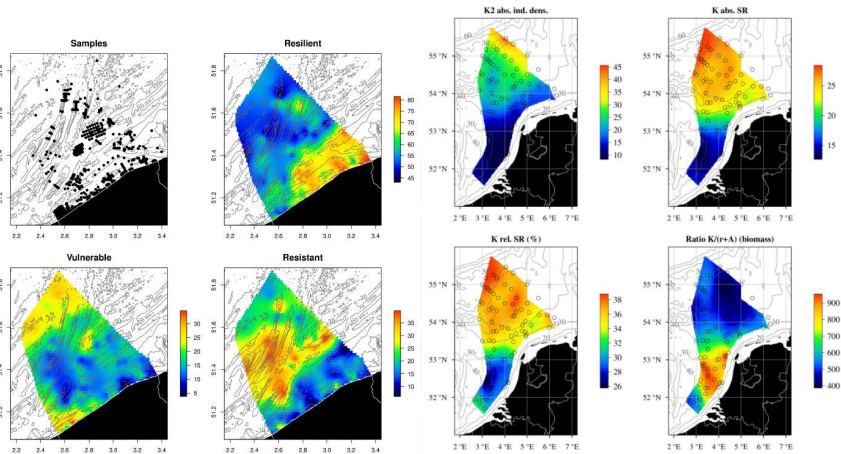
Vulnerability maps:

Spatial maps with resilient – vs vulnerable communities


Towards a life history trait-based ecological indicator...



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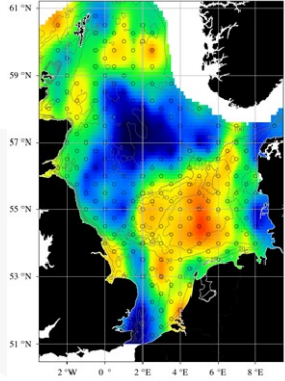


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An EMODnet Vulnerability maps:
... at European Scale



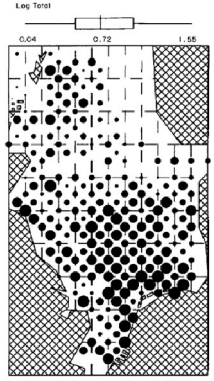


Figure 1 Log of total macrofauna biomass (ash-free dry weight $g\ m^{-2}$) of the North Sea. The radius of the black circles is proportional to the log-transformed biomass within the range of the box-and-whisker plots at the top of the figure. Outliers (in the box-and-whisker plots indicated by points) have the same radius as the maximum or minimum value.

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OceanTeacher
GLOBAL ACADEMY

IODE International
Oceanographic
Data and Information
Exchange

www.oceanteacher.org

Home / EMODnet/Biology / 1) Introduction / General overview of EMODnet Biology data management

General overview of EMODnet Biology data management ©

Preview Edit Reports Grade essays

Data processing: formatting the data according to EMODnet Biology (OBIS) standards (II)

We can think of the data processing as three main blocks, each of them with their own specific standards:
(This is only an introduction. There are specific modules about each of these blocks with practical exercises later in the course.)

- Data structure:** the conceptual data model of the Darwin Core Archive is a "star schema" with a core table in the center of the star and extension tables radiating out of the center. In practice, EMODnet Biology and OBIS use a subset of 1 to 3 tables to represent the data. In more cases, we will use the three tables:
 - Event (core) table: to store sample and/or observation information (time, location, depth, event hierarchy).
 - Occurrence table: to store occurrence details (taxonomy, identification, organismID, ...)
 - Extended Measurements or Facts (EMoF) table: to store sampling information and/or additional biological and/or abiotic measurements.
- Field nomenclature:** the field names of each of the 3 tables have to follow the Darwin Core terminology. There is a minimum number of fields required per table.
- Content:** besides the field names, the content of the data itself has to follow certain standards. For example, the date-related fields have to be ISO 8601 compliant.

01

02

03

Data schema / structure

- 1-3 tables: [OBIS-EMO data format](#)
 - Event core table
 - Occurrence table
 - Extended Measurements or Facts (EMoF)

Field nomenclature

- Darwin Core (DWC) standard [terms](#).
- Minimum of fields required per table.


Content - Controlled vocabulary and standards

- Date/time & Location
- EventID and OccurrenceID
- Taxonomic information: [LSID](#)
- Other parameters: [BIOCHECK vocabulary](#).

Previous
Next

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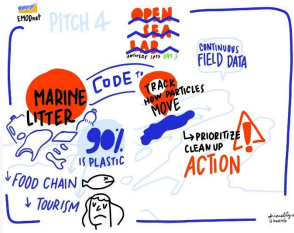
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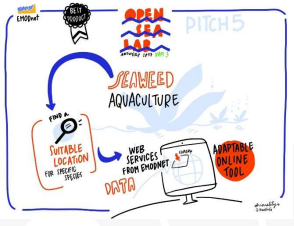
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Open sea lab, hacks...

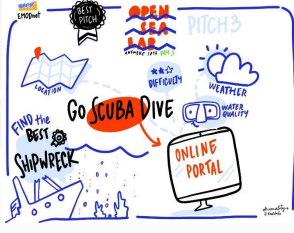
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OPEN SEA LAB
14-17 November 2018 in Brno, Austria, Belgium




PITCH 4
OPEN SEA LAB
CONTINUOUS FIELD DATA
MARINE LITTER
CODE
RAISE AWARENESS
FOOD CHAIN & TOURISM
90% IS PLASTIC
PRIORITY CLEAN UP ACTION




PITCH 5
OPEN SEA LAB
SEAWEED AQUACULTURE
SUITABLE LOCATION FOR PLANTING SEEDS
WEB SERVICES FROM CHINA
ADAPTABLE ONLINE TOOL




PITCH 3
OPEN SEA LAB
GO SCUBA DIVE
FIND THE BEST SHIPWRECK
WEATHER WEATHER
ONLINE PORTAL



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APRIL 26 > 27 > 28 - BRUSSELS



3 days to launch your Belgium-changing project



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