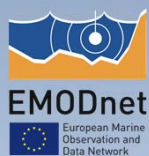


European Marine Observation and Data Network

LOT NO: 5 – BIOLOGY



Simon Claus
Flanders Marine Institute (VLIZ)



 **EMODnet**

**Building upon EMODnet preparatory action:
2009-2012**

- Temporal/Spatial distribution Phytoplankton, Zooplankton, Angiosperms, Macro-algae, Invertebrate bottom fauna, fish, Birds, Sea mammals, Reptiles. Parameters: Abundance, Biomass. Geographic Focus: North Sea incl. Kattegat, Channel; Bay of Biscay, Iberian Coast
- 9 partners (mainly data centres and marine biology data networks)



3

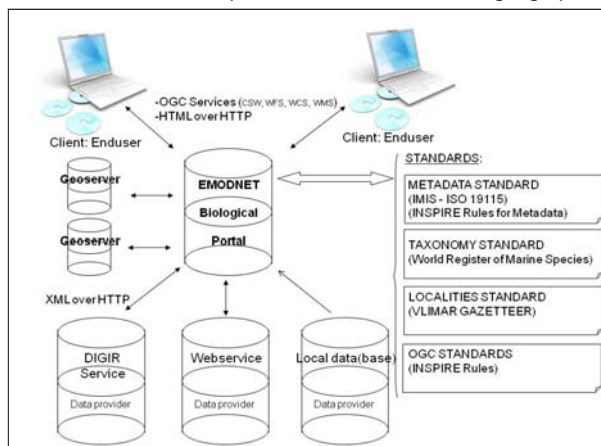
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The data portal system

- Uses EurOBIS scheme for integrating spatio-temporal biogeographic data (Darwin Core)
- Geographic standards: OGC compliant, Marine Gazetteer for geographic names



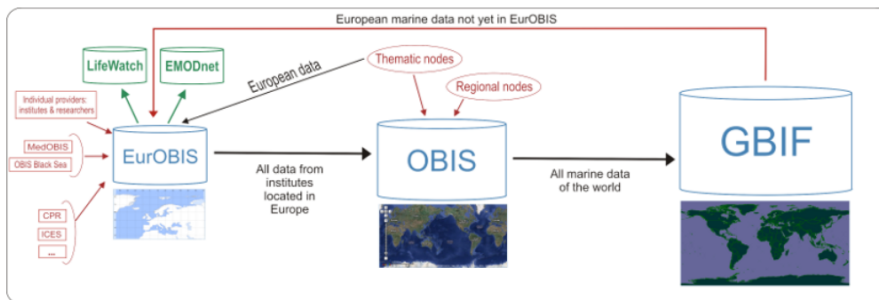
4

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International data flows



5

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 **EMODnet**

Data standardisations



Marineregions.org
towards a standard for georeferenced marine names

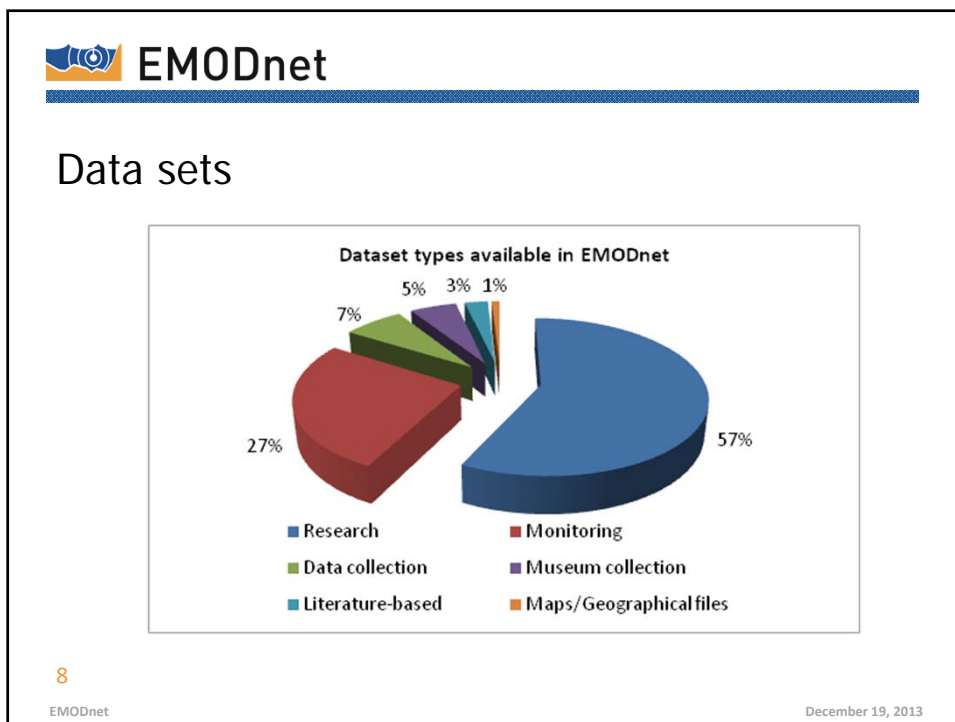
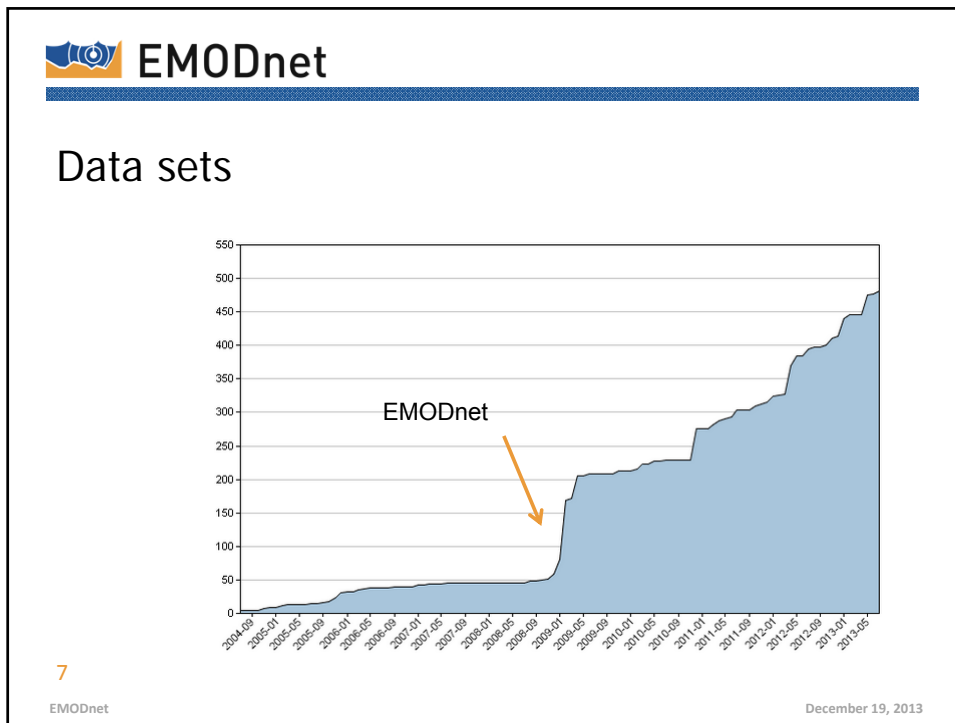


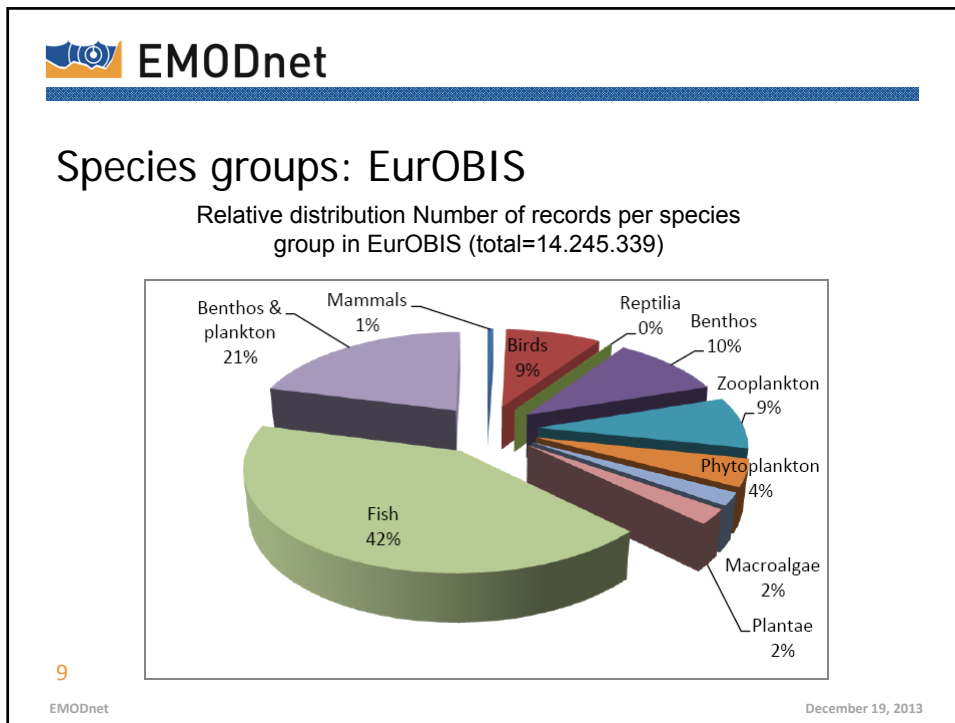
Term-by-term mapping of OBIS terms and Darwin Core Terms

Name	Required	OBIS		DarwinCore
		Type	Description	Type name

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Search Legend Feedback Help Lat: 42.28 Lon: -33.03

(Choose a theme)
 Benthos
Zooplankton
 Phytoplankton
 Fish
 Birds
 Mammals
 Reptiles
 Algae
 Pigments
 Angiosperms

Metadata
[Data catalog](#)
[Submit dataset](#)
[Statistics](#)

Taxa(115) Parameters(2) Datasets(56) Layers(1)

<< < 1 >> >>

ScientificName	Authority	Common name	AphiaID	RecordCount	Display
<i>Acartia longiremis</i>	(Lilljeborg, 1853)		104257	13,151	
<i>Acartia neglignens</i>	Dana, 1849		104259	1	
<i>Aetideus armatus</i>	(Boeck, 1872)		104275	1,033	
<i>Anomalocera patersoni</i>	Templeton, 1837		104722	690	

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Data Discovery and Access Service

Search Legend Feedback Help Lat: 68.89 Lon: -28.57

- Google Satellite
- NOAA ETOPO1
- GESCO_08
- Digital Elevation Model
- Abiotic data**
- EMODNET Bathymetry
- Seabed substrate (North Sea and Baltic Sea)
- Administrative Boundaries**
- Exclusive Economic Zones
- ICES Ecoregions
- IHO Sea areas
- Seabed habitats**
- Seabed habitat Baltic Sea - by energy
- Seabed habitat Baltic Sea - by salinity
- Seabed habitats Celtic and North Sea
- Seabed habitats Western Mediterranean
- Data**
- Gadus morhua, including synonyms in EuroBIS

Taxa(5) Parameters(0) Datasets(0) Layers(2) Map features

ScientificName	Authority	Common name	RecordCount	QC	Display
Mytilus	Linnaeus, 1758		26,256		
Mytilus edulis	Linnaeus, 1758	blue mussel; edible blue mussel; eetbare mossel;	23,232		

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Pilot Portal For Biology
Data Discovery and Access Service

Search Legend Feedback Help Lat: 54.3 Lon: 14.61

- IHO Sea areas
- Seabed habitats**
- Seabed habitat Baltic Sea - by energy
- Seabed habitat Baltic Sea - by salinity
- Seabed habitats Celtic and North Sea
- Seabed habitats Western Mediterranean
- Data**
- Gadus morhua, including synonyms in EuroBIS
- Mytilus edulis in EuroBIS
- Mytilus edulis in EuroBIS
- Mytilus edulis in EuroBIS
- Distribution prediction
- Aquamaps Gadus morhua
- Aquamaps Gadus morhua
- benthos**
- FAO distribution prediction of Mytilus edulis
- FAO distribution prediction of Mytilus edulis

Taxa(115) Parameters(2) Datasets(56) Layers(1) Map features

Position: 44.2, -4.9

EUROBIS

CatalogNumber	ScientificName	Year	Month	Day	Longitude	Latitude	MinimumDepth	MaximumDepth	Sex	ObservedIndividualCount	InstitutionCode	TaxonLSID	Me
20287	Pseudostichopus villosus	1974	10	1	-4.91	44.38	4475.0	4475.0	3.0		Itremer	urn:lsid:marinespecies.org:taxname:1245808:495	
21103	Spiroptera montrosabii	1971	10	1	-4.85	44.12	800.0	800.0	4.0		Itremer	urn:lsid:marinespecies.org:taxname:1396683:495	
22553	Amperina rosea	1973	8	1	-4.88	44.35	4293.0	4293.0	4.0		Itremer	urn:lsid:marinespecies.org:taxname:1242723:495	
22554	Deima valdium	1973	8	1	-4.88	44.35	4293.0	4293.0	4.0		Itremer	urn:lsid:marinespecies.org:taxname:1252221:495	
22555	Mesothuria lactea	1973	8	1	-4.88	44.35	4293.0	4293.0	1.0		Itremer	urn:lsid:marinespecies.org:taxname:1245669:495	
22556	Protankya brychia	1973	8	1	-4.88	44.35	4293.0	4293.0	1.0		Itremer	urn:lsid:marinespecies.org:taxname:183372:495	
20288	Psychropotes longicauda	1974	10	1	-4.91	44.38	4475.0	4475.0	6.0		Itremer	urn:lsid:marinespecies.org:taxname:1242728:495	
20291	Eucopeia hanseni	1974	10	1	-4.91	44.38	4475.0	4475.0	3.0		Itremer	urn:lsid:marinespecies.org:taxname:119918:495	
20292	Eucopeia major	1974	10	1	-4.91	44.38	4475.0	4475.0	1.0		Itremer	urn:lsid:marinespecies.org:taxname:119919:495	

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Pilot Portal For Biology
Data Discovery and Access Service

Search Legend Feedback Help Lat: 54.62 Lon:2.01

- Google Satellite
- NOAA ETOP01
- GEBCO_06
- Countries
- Administrative Boundaries**
 - Exclusive Economic Zones
 - ICES Ecoregions
 - IHO Sea areas
 - World grid 5"
- Data**
 - Larnice conchilega in EuroBIS
- Geology**
 - Sea Bed Substrate, North Sea & Baltic Sea
 - 1. Mud to sandy mud
 - 2. Sand to muddy sand
 - 3. Coarse -grained sediment
 - 4. Mixed sediment
 - 6. Diamicton (Till)
 - 7. Bedrock

Taxa(1) Parameters(0) Datasets(0) Layers(0)

ScientificName	Authority	Common name	AphiaID	RecordCount	Dis
Larnice conchilega	Pallas, 1766	sand mason,	131495	10,161	

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Pilot Portal For Biology
Data Discovery and Access Service

Search Legend Feedback Help Lat: 44.7 Lon:13.38

(Choose a theme)
Larnice conchilega

Search Reset map

Download dataset

Please fill in the fields correctly. This information will not be used for commercial purposes. We will only use it to keep you up to date of new releases of the database. Fields with an asterisk are required fields.

Name: Simon Cleas
 Organisation: Vliz
 E-mail*: simon.cleas@vliz.be
 Country*: BE

For what purposes will you use the data*
 for scientific research

Choose a format: Text file Excel file

I agree to the [terms of use](#)

Download

Observations of Larnice conchilega (10161)

Observations of Larnice conchilega [help](#)





1 2 3 4 5 6 7 8 9 10 >>>

Catalog no	Scientific name	Year	Month	Day	Lon	Lat	Min depth	Max depth	Sex	Observed ind. #	Publication	AphiaID	Metadata
------------	-----------------	------	-------	-----	-----	-----	-----------	-----------	-----	-----------------	-------------	---------	----------

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- Biological Data workshops
 - Engaging with community
 - Defining priorities for biological data products
 - Producing biological data products
 - Data products:
 - Species attributes (Identify species by tags: invasives, HAB's, functional groups)
 - Gridded species distribution maps (maps based on actual data + prediction and possible range)
 - Time-related maps (map growth, biomass, size-structures on yearly, seasonally, monthly)
 - Sensitivity and vulnerability maps (expert judgement necessary)







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- EMODnet Biology 2 (2013-2016)
 - Build further upon Biology I - 23 partners



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Specific Biology Objectives

- The biological portal should provide data and metadata on surveys in the water column and on the sea-bed from each of the following groups of marine species, hereafter called categories: (1) phytoplankton/(2) zooplankton/(3) angiosperms/(4) macro-algae/(5) invertebrate bottom fauna/(6) birds (surface observation at sea and coastal nesting)/(7) mammals/(8) reptiles/(9) fish (other than the data on fish species collected through the Common Fisheries Policy Data Collection Framework=>WP3,4
- This list does not include commercial fish species which are dealt with separately under the Data Collection Framework and do not need to be considered here although the portal should be able to accept data stream from the data Collection framework should that be made available. The portal should be pre-disposed to provide access to data from fisheries surveys should the data become available=>WP6

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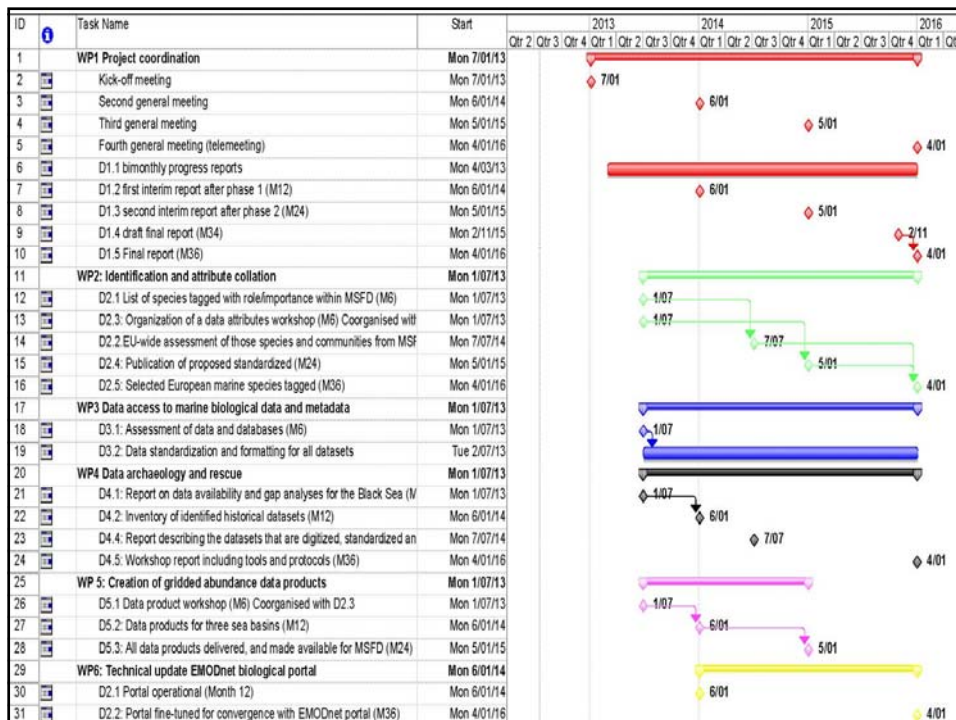
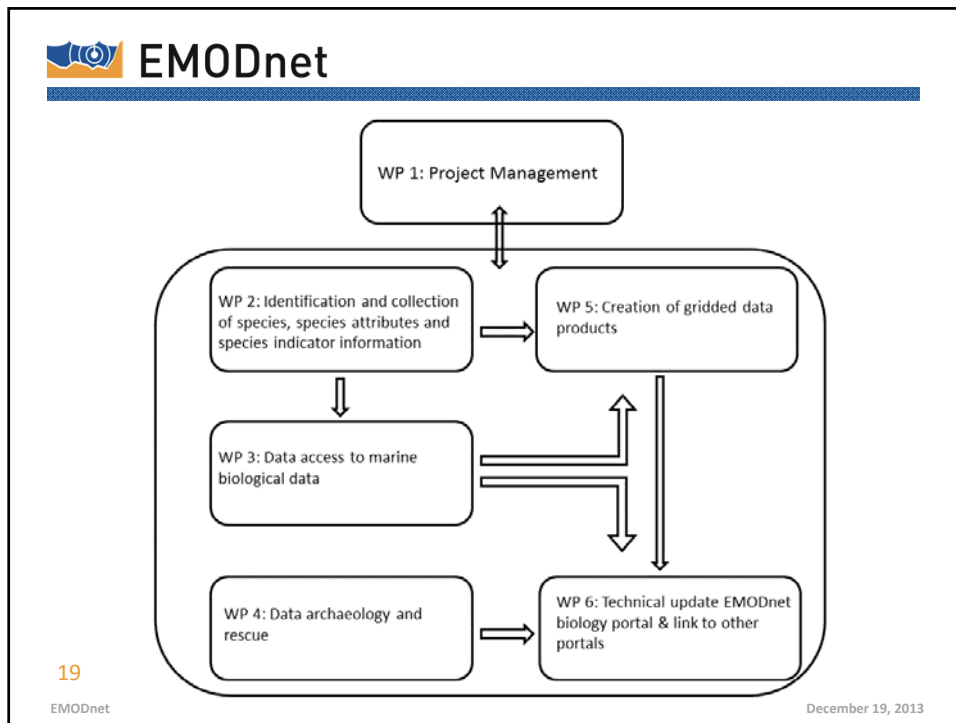
Specific Biology Objectives

- Special attention should be given to those species and communities (habitats) which are protected by EU Directives and international conventions, and those to be used as indicators for Marine Strategy Framework Directive (when known from reporting in October 2012).The level of protection (if appropriate) of a given species should be included =>WP 2
- For at least three species of each of these species groups, a gridded set of map layers should be produced showing the average abundance of the species in a set of time window (seasonal or annual as appropriate). The user should then be able to understand the precision of the result. =>WP5
- The portal should also calculate spatially distributed data products specifically relevant for Marine Strategy Framework Directive Descriptor 2 (non-indigenous species) based on guidance provided by the MSFD Common Implementation Strategy.=>WP2, WP5

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■ Budget: Total 1,700 000 Euros

Tasks	Percent of total budget
Project management	9,4 %
Identification and collection of species, species attributes and species indicator information	14,7 %
Data access to marine biological data	31,2 %
Data archaeology and rescue	8,2 %
Creation of gridded abundance data products	17,6 %
Technical development	10,6 %
Organisation scientific workshops and meetings	8,2 %
Total	100 %

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EMODnet Biology 2 (2013-2016)

WP 2: Identification and collection of species, species attributes and species indicator information

■ Objectives

The general aim of this work package is to streamline the **data and data products that will be collated and created during the project, in line with the priorities that are developed under EU Directives and international conventions**. The link will be met by **identifying and focusing on the relevant species, communities, indicators and data types identified under the Marine Strategy Framework Directive**.

This work package will extend its work to collect and **store information on different managerial, functional, and structural species attributes in a structured and accessible manner**. This is to ensure that the resulting information can be integrated into the querying tools of the EMODnet Biology portal increasing the portals performance for targeted search by different user groups.

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EMODnet Biology 2 (2013-2016)

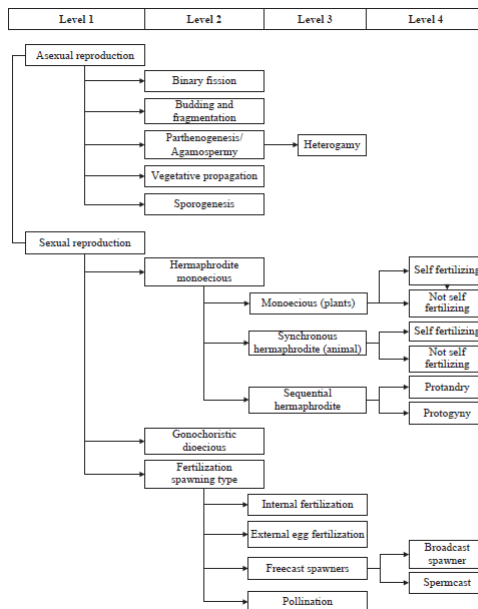
WP 2: Identification and collection of species, species attributes and species indicator information (MBA)

WT 2.1: Identification of species and species attributes information

- D2.1 List of species tagged with role and importance within MSFD reporting and the linked descriptor for inclusion in ERMS/WoRMS (M6).
- D2.2. Assessment of those species and communities identified by national MSFD leads as required for MSFD monitoring and reporting (M18)

WT2.2: Collection of species attributes information

- D2.3: Organization of a data attributes workshop to discuss a standardized vocabulary and prioritize the biological attribute and trait information, in collaboration with WoRMS taxonomic editors (M6).
- D2.4: Publication of proposed standardized species attributes vocabulary (M24).
- D2.5: Selected European marine species tagged with relevant species attributes information and available through WoRMS and on the EMODnet biological portal (M36).



Potential for traits vocab to be hierarchical to increase coverage and allow future refinement

Example traits hierarchy for reproduction from Reusser & Lee (2011) .



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EMODnet Biology 2 (2013-2016)

WP3: Data access to marine biological data

Objectives

The objective of Work package 3 is to **provide data and metadata on surveys in the water column and on the seabed from the different groups of marine species** (phytoplankton, zooplankton, macro-algae, angiosperms, benthos, birds, mammals, reptiles and fish).

These databases were identified during the data inventory and gap analysis that was performed during the pilot project of EMODnet biology and represent Europe's largest marine biological data collections covering all trophic levels of the marine ecosystem.

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WP3: Data access to marine biological data

Deliverable 3.1:

Assessment of data and databases, including list of datasets that will be used for creation of products

- ✓ December 2013 (instead of Month 6, February 2014)
- ✓ Will be started during break-out sessions

Deliverable 3.2:

Data standardization and formatting of all datasets mentioned under data coverage section of proposal for linking with EMODnet Biology

- ✓ September 2014: data flow ready
- ✓ Updates & additions: throughout the project

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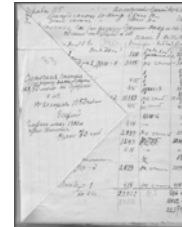
12/19/2013

EMODnet Biology 2 (2013-2016)

WP4: Data archaeology and rescue (IBSS)

Activities:

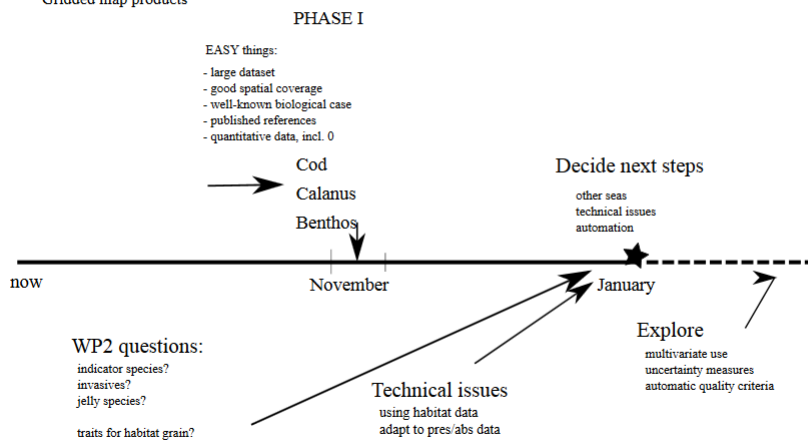
- Gap analyses and inventory of historical data that are at risk of being lost
- Run of small grant system
- Implementation of mechanism to ensure continuous inflow of datasets in the future

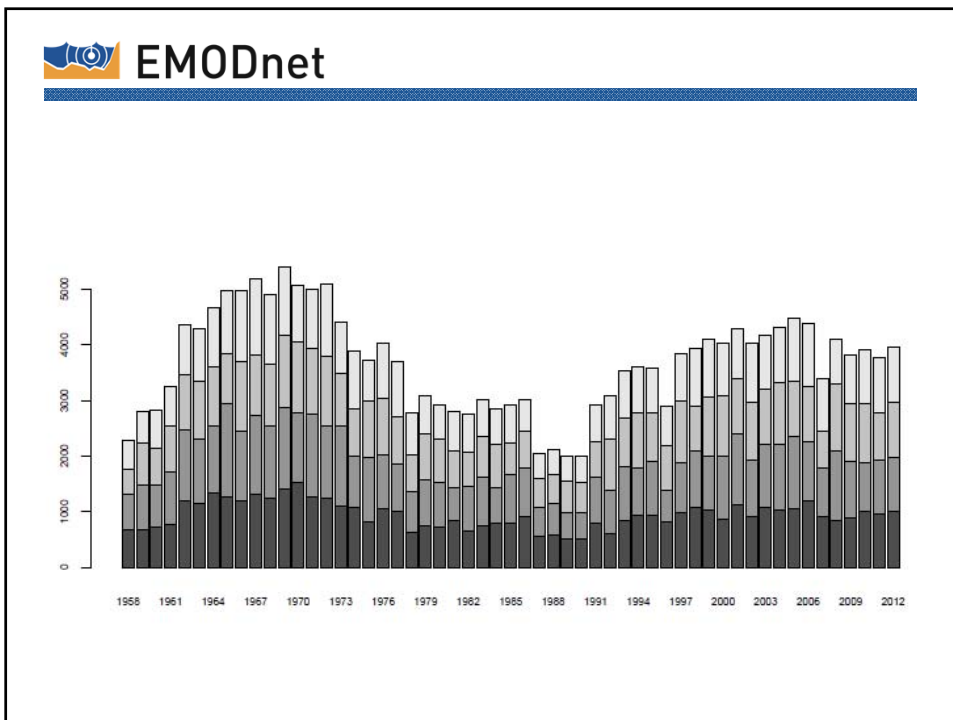
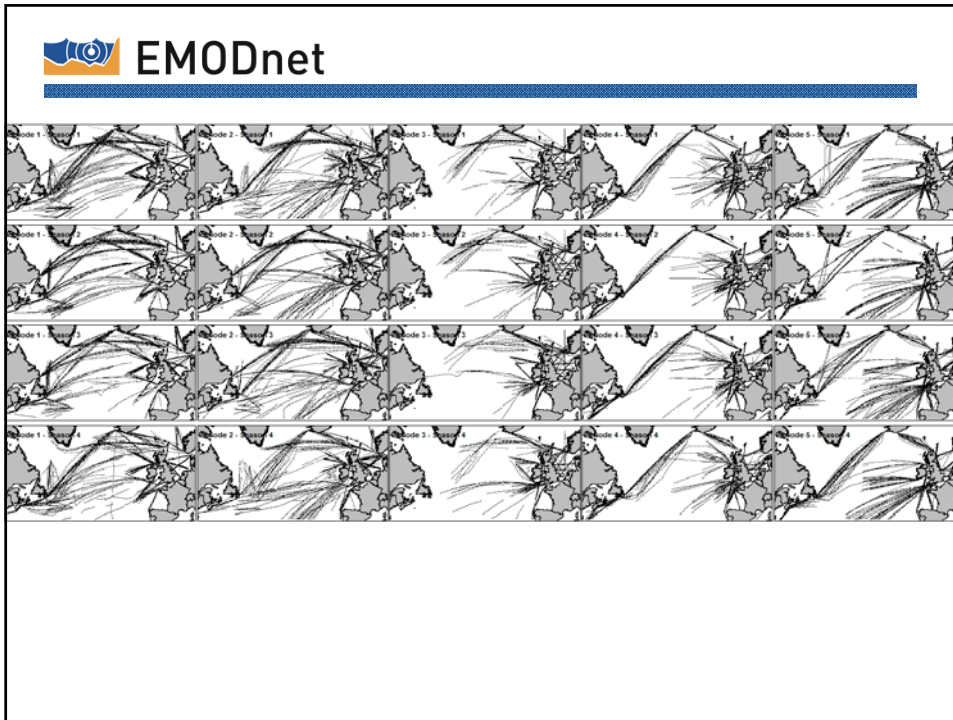


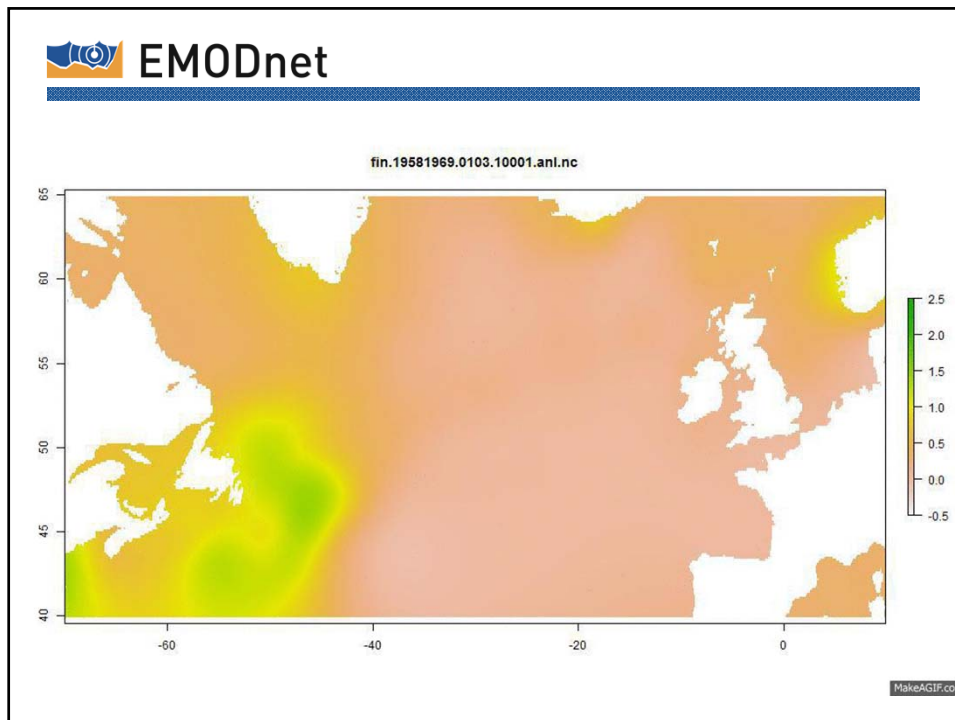
- D4.1: Report on data availability and gap analyses for the Black Sea M9
- D4.2: Description of identified historical datasets M12
- D4.3: Report describing the datasets that are digitized, standardized and mobilized into system including dataset documentation and QC procedures applied M24
- D4.4: Workshop report including description of mechanisms and guidelines on mobilization of historical data into the systems M36


WP 5

Gridded map products







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WP 6: Technical update EMODnet biological portal & link with other portals

- **Objectives**
 - 1) to **develop and maintain** the EMODnet biological portal and portal services
 - 2) to **make the data, metadata and data products** that are created and mobilized during the project **available through the biological portal**
- **Activities**
 - 1) Links and **interoperability** of the EMODnet Biology portal: The EMODnet biological portal will be able to provide links to metadata, data and data products for different systems by establishing direct **machine-to-machine connections**. The portal will be able to handle different data protocols for handling marine biological data by implementing different data standards.
 - 2) Development of the portal: **Portal components**
- **Deliverables**

D6.1 Portal operational (Month 12) - D6.2: Portal fine-tuned for convergence with EMODnet central portal (M36) - D6.3: Maintenance of Portal (M12-M36)

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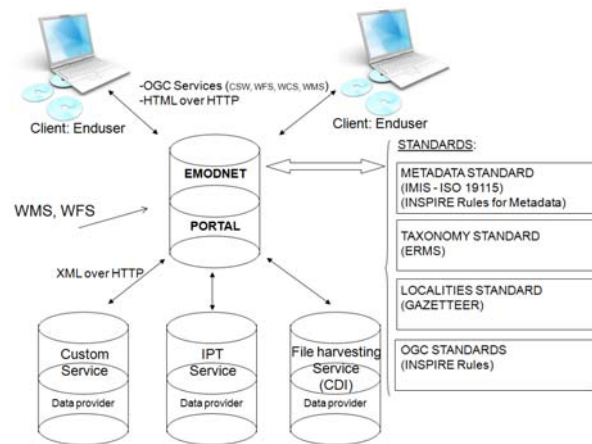
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■ Links and interoperability of the EMODnet Biology portal

■ Data Flow

- IPT (DIGIR)
- Custom services
- OGC web services
- File harvesting (CDI)



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■ Development of the portal: Portal components

- The biological data portal will build further on the biological data portal developed under the preparatory phase and available at <http://bio.emodnet.eu/portal>. This portal visualizes and makes data accessible through a unified search index. Data are available at three different levels of accessibility and precision
 - Metadata; Data ; Aggregated data
- Increased Functionality for **searching, viewing** and **extracting** data
 - The spatial queries will be made possible by entering exact coordinates, by selecting a region on a geographic map or by selecting standardized sea areas; e.g. Exclusive Economic Zone's (EEZs, IHO seas, marine regions defined by MSFD. The spatial query functionality will also allow users to search and select specific coastal information, based on the distance from the coastline
 - Search by biological and ecological attributes
 - Users will also be able to select metadata, data and data products from specific thematic and/or long-term monitoring datasets. The search interface will be developed to facilitate easy retrieval of these large thematic and monitoring data
- User assistance and feedback, statistics and visibility

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