European Marine Observation and Data Network

Biology

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European Marine Observation and Data Network

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- Start: 30-08-2013
- 19 partners + 4 subcontractors

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- Prefinancing
- All partners received initial payment (4 *in progr.*)
- All partners signed Consortium Agreement (2 *in progr.*)

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- Kick off meeting: 11 & 12 September 2013
- 40 participants, all partners
- Discussed work program

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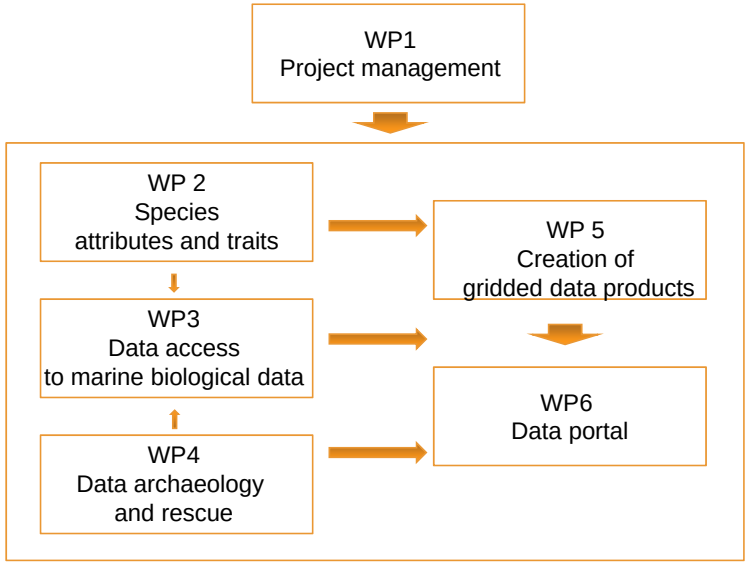

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- Budget: Total 1,700,000 Euros

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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WP3 Data access to marine biological data

- D3.1: Assessment of data and databases, including a list of datasets that will be used for the creation of data products (M6)

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WP3 Data access to marine biological data

- All WP3 partners have indicated their data transfer protocol of choice, e.g. the mechanism through which the data will become accessible through the EMODnet Biology Portal:

Data transfer protocol	# partners
IPT	5
SeaDataNet format	3
OGC (WFS)	2
Own web services	2
Combination of protocols	3

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- The inventory has lead to the description of 75 new datasets in the metadata catalogue, all of which will become accessible through the Portal. In total, 101 new (sub)data sets will contribute to the Portal.

Group	# datasets	# records
Benthos	12	1.541.685
Phytoplankton	28	1.474.340
Zooplankton	14	1.721.621
Angiosperms	2	1.845
Macro-algae	3	317.209
Birds	3	123.933
Mammals	2	24.593
Reptiles	2	3.242
Fish	15	2.158.305
No indication		1.400.000

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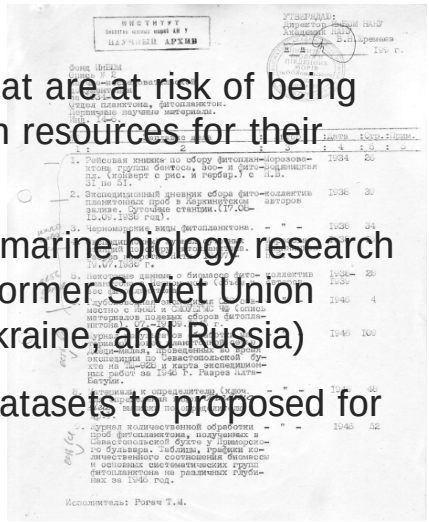
WP4 Data archaeology and rescue

To identify historical data that are at risk of being lost and mobilize the human resources for their archaeology and rescue.



Identification Largest marine biology research organizations of the Former Soviet Union countries (Georgia, Ukraine, and Russia)

The list of identified datasets to proposed for digitization.

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WP4 Data archaeology and rescue

Difficulties: 18 persons contacted – three agreed

- Dataset has several originators and there is **uncertainty that data holder has rights** to distribute digitize dataset through EMODNET portal
- The activity is **very time consuming** and can interfere with main work tasks of data holder
- There is **no interest in digitizing** historical datasets (especially for retired professionals)
- There is interest in digitizing dataset but **no interest in distributing datasets** within scientific community
- **Data policy of the organization doesn't allow** distributing raw data (regardless time coverage)
- Scientists from **Russian institutions pointed out that for the last years the rules on distributing raw data materials became very strict and they are not allowed** to distribute raw data materials.

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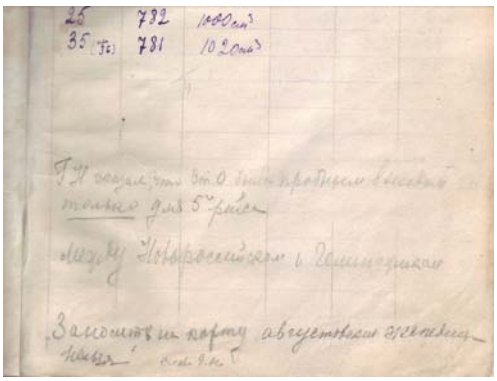
WP4 Data archaeology and rescue



Sample processing book (1951). The remark on the first page in Russian: to put coordinates of august expedition on map is forbidden

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WP2: Identification and collection of species, species attributes and species indicator information

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Collaboration with FP7-DEVOTES

DEVOTES
www.devotes-project.eu

a comprehensive catalogue of existing indicators in the European Regional Seas, including their coverage, strengths, weaknesses, and data requirements.

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Collaboration with FP7-DEVOTES

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Indicator
|Criteria | Descriptor |Pressures

'Abundance of selected marine mammals'
|Abundance key trophic groups | D4 Food webs | Extraction of species (by-catch)

Biodiversity component: Harbour porpoise '*Phocoena phocoena*" – Marine subregion: Greater North Sea

Extract species list (n=57) linked to indicators.

RECORDS	ScientificName	aphia_id
353559	Clupea harengus	126417
335470	Fulmarus glacialis	137195
299270	Gadus morhua	126436
226575	Melanogrammus aeglefinus	126437
197202	Pleuronectes platessa	127143
189027	Uria aalge	137133
163447	Sprattus sprattus	126425
134836	Rissa tridactyla	137156
92977	Platichthys flesus	127141
16481	Pollachius virens	126441
14425	Delphinus delphis	137094
13553	Squalus acanthias	105923
12173	**Phocoena phocoena**	137117
11901	Caretta caretta	137205
10382	Halichoerus grypus	137080
10040	Tursiops truncatus	137111
6903	Clangula hyemalis	137071
4968	Melanitta fusca	137072
2507	Sterna paradisaea	137165
2485	Solea solea	127160
2350	Phoca vitulina	137084
1745	Mnemiopsis leidyi	106401
1639	Balaenoptera acutorostrata	137087
1610	Somateria mollissima	137074
1566	Lagenorhynchus albirostris	137101
1181	Trachurus mediterraneus	126820
1080	Sterna hirundo	137162
943	Gavia stellata	137188
871	Mytilus galloprovincialis	140481
777	Melanitta nigra	137073
712	Mytilus galloprovinciallis	140481
544	Chamelea gallina	141907
389	Zostera (Zostera) marina	145795
255	Zostera noltei	495082
246	Mergus serrator	159098
234	Phyllophora crispa	145660
215	Cystoseira crinita	145514

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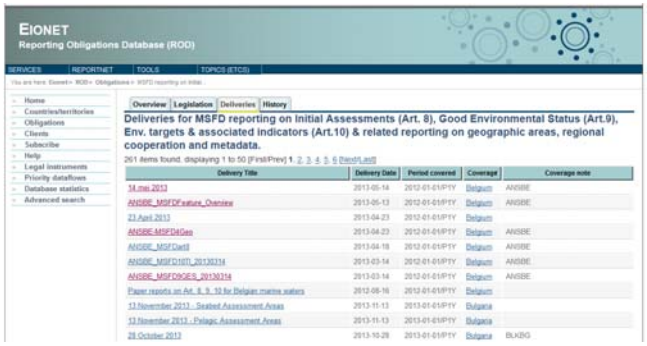
Further explore official MSFD indicators

Available at EEA's EIONET: in local language



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Workshop 12-13 Februari, Paris Ifremer, 25 experts
Discuss prior 'functional' traits and standard: vocabulary for collecting traits:

eol Encyclopedia of Life · NATURAL HISTORY MUSEUM · ……. · GBIF · marum Center for Marine Environmental Sciences · LIFEWATCH Regional portal · WoRMS World Register of Marine Species

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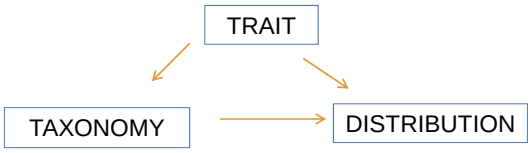
World databases of species have now been established but are limited to taxonomic (e.g. World Register of Marine Species,) and distribution (e.g. Ocean Biogeographic Information System) data.

The benefits of these databases could be multiplied by associating species with richer ecological and biological information.



- Which invasive pelagic species are known to occur in the Black Sea?
- Is the functional diversity higher in the deep sea?
- Effect of temperature changes on functional diversity
- Are organisms bigger towards the poles?…

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Workshop 12-13 Februari, Paris Ifremer
Discuss prior 'functional' traits and standard vocabulary for collecting traits:

Trait	Relevance of propsoed high priority traits
Taxonomic	Related species have similar traits so taxonomic relationships predict traits of related species
Environment	Most studies are confined to a particular environment so this trait allows users to quickly isolate species of interest for their purpose.
Depth	The most widely available variable to distinguish species habitat.
Substratum	**A key physical factor determining benthic species habitat.**
Habitat	Derived from environment, depth, and substratum.
'Habit'	Determines mode of dispersal and ecological role (e.g. habitat forming) in the ecosystem.
Skeleton	**Calcareous important for ocean acidification** and fossil record. **Gelatinous** important due to sampling difficulties, role as predators, and hazard to humans.
Diet	Influence on abundance of other species, determines position in food web.
Body size	**Related to position in food web, species abundance, metabolic rates, and dispersal.**

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WP 5: Creation of gridded abundance data products

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Objectives

- Implement DIVA methodology to produce statistically optimized gridded map layers.
- Make gridded maps of 3 species per group in appropriate time window
- Estimate the accuracy of the gridding procedure by comparison with validation data.
- Produce spatial maps (data products) relevant for MSFD Descriptor 2 (non-indigenous species).
- Produce spatial maps of quality indicators for MSFD, if available and feasible

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Workshop NIOZ 23-24/01/2014 Finalization of the maps for test species

- *Amphiura* in N.Sea (benthic species)
- *Calanus* in N.Atlantic (zooplankton)
- *Gadus morhua* in North Sea (fish)
- *Mnemiopsis* in Black Sea (invasive Black Sea)
- *Marenzelleria* in Baltic Sea (invasive Baltic Sea)

- planned bird, mammal, seagrasses, phyotplankton species

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Amphiura filiformis North Sea

- Abundant, benthic species
- Reference dataset:
  - North Sea Benthos Survey 1986.
  - North Sea Project 2000
- DIVA map to be produced
- Comparison DIVA-kriging
- Relation with environmental factor(s) and habitat map(s)
- Compare our products with other initiatives

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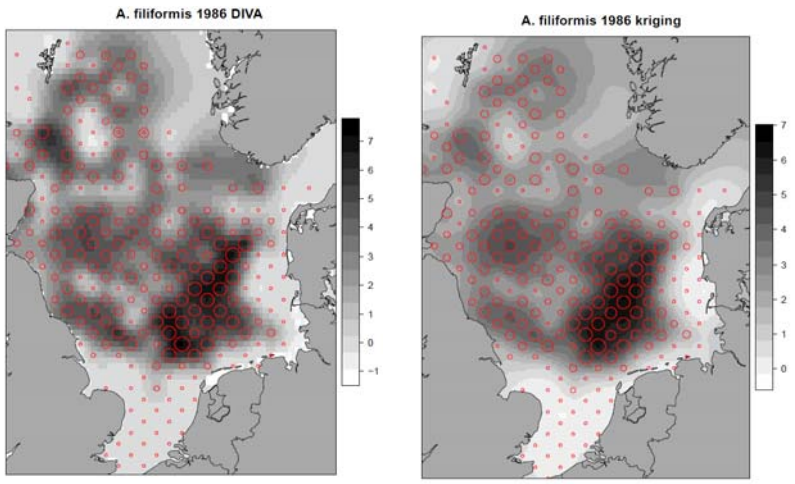
First results DIVA & krigging NSBS1986



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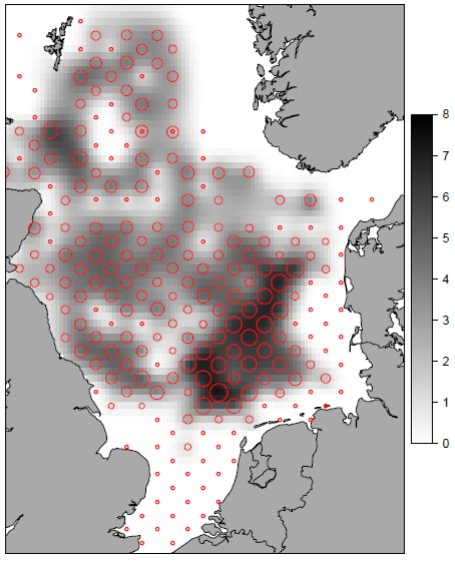

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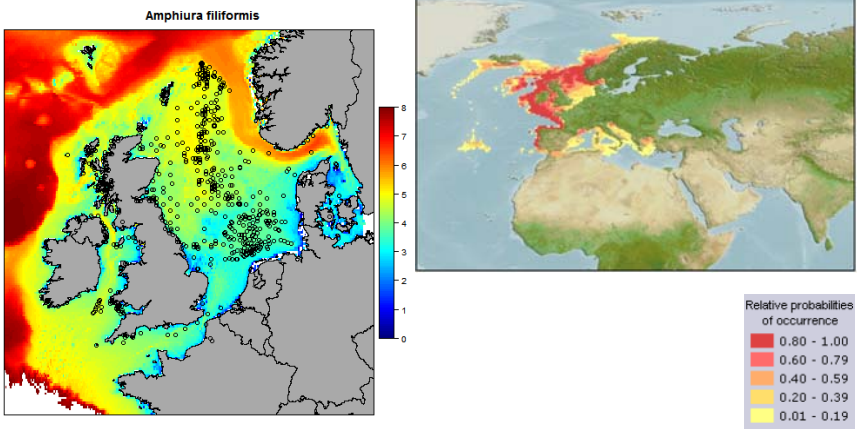
Compare approach gridded abundance products vs environmental envelope modelling



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Compare the products with seabed habitat maps

A5 : Sublittoral sediment (L2)

A5.3 : Sublittoral mud (L3)

A5.35: Circalittoral sandy mud (L4)

A5.353 [Amphiura filiformis] in circalittoral and offshore muddy sand (L

A5.351 [Amphiura filiformis] in circalittoral sandy mud (L5)

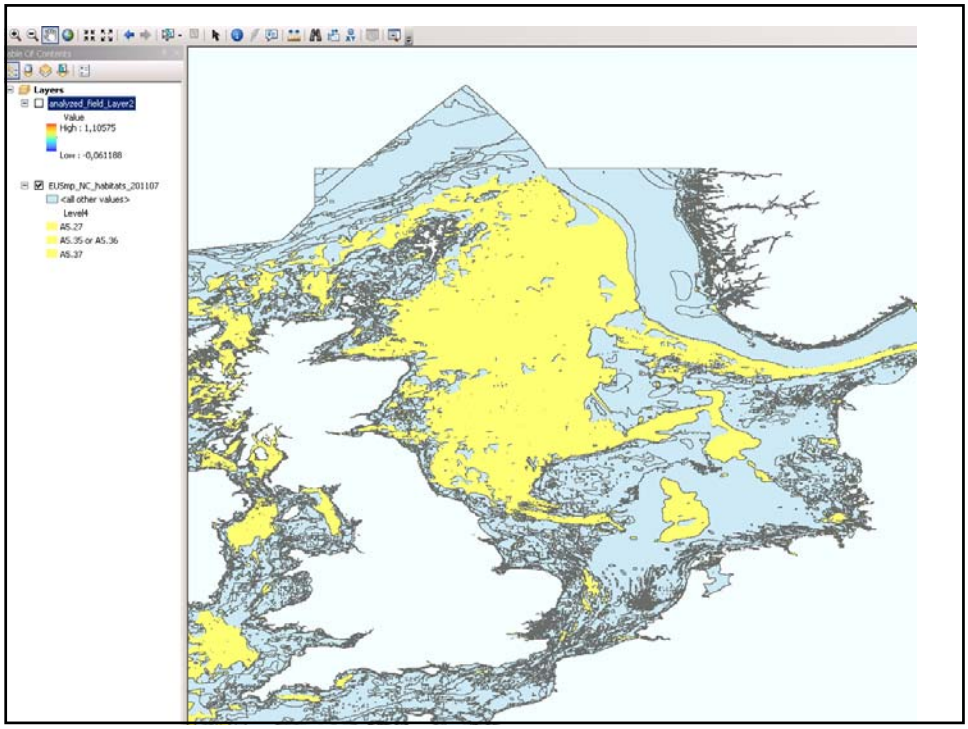
A5.37: Deep circalittoral mud (L4)

A5.376 [Amphiura filiformis] in offshore circalittoral sandy mud (L5)

A5.2 : Sublittoral sand (L3)

A5.27: Deep circalittoral sand (L4)

A5.272 [Amphiura filiformis] in deep circalittoral sand or muddy sand (L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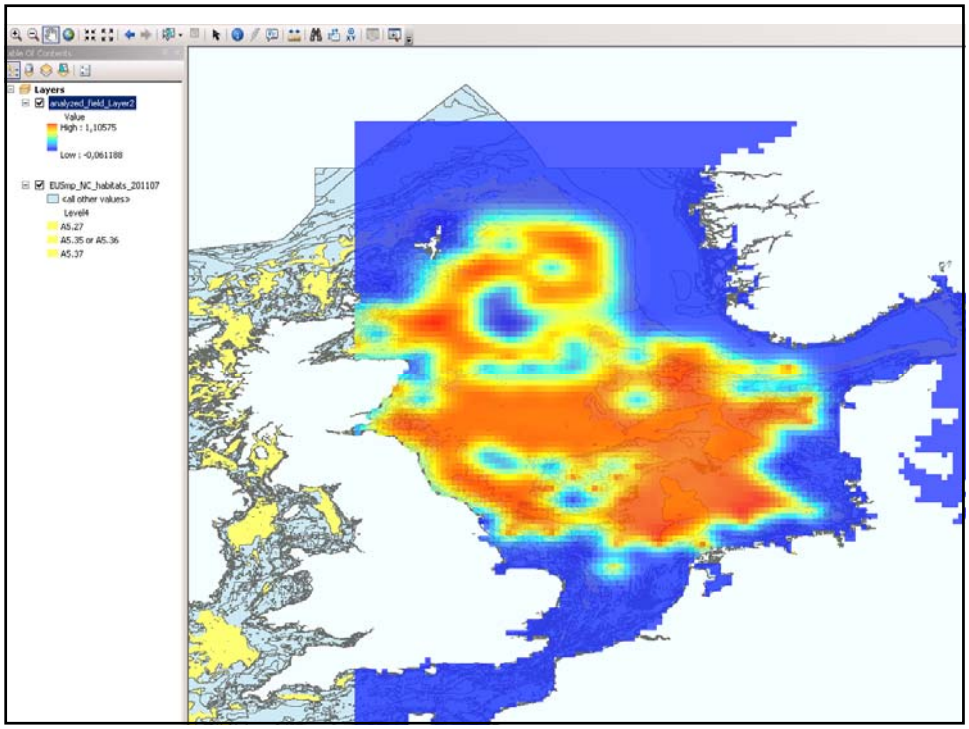
Value
High : 1,10575
Low : -0,061188
EUSmp_NC_habitats_201107
<all other values>
Level4
A5.27
A5.35 or A5.36
A5.37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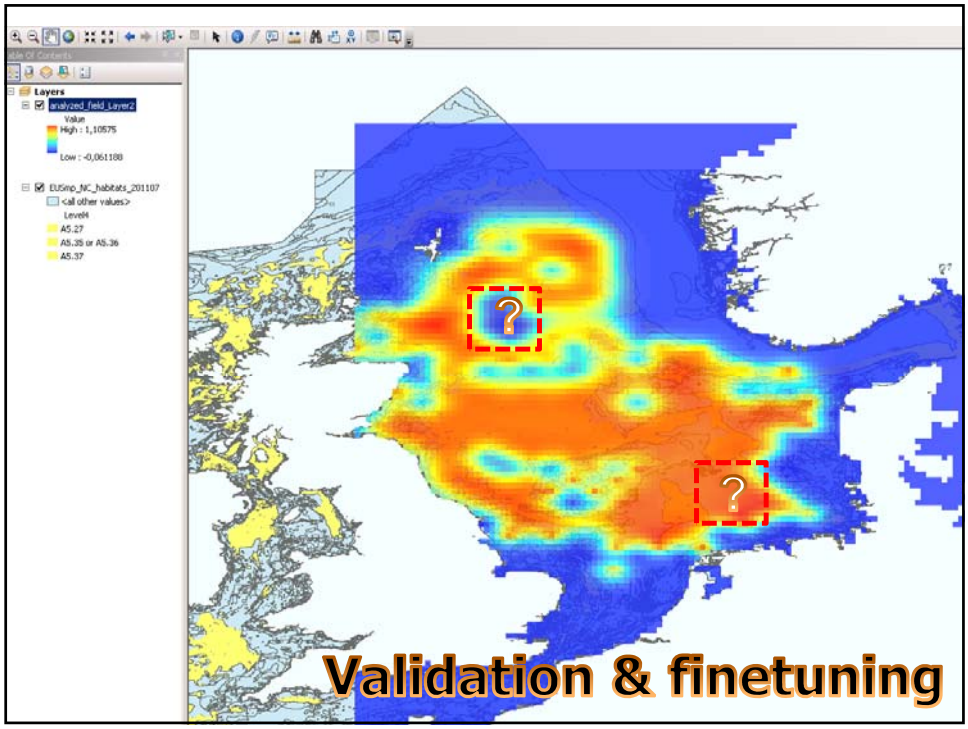
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A5.37
?
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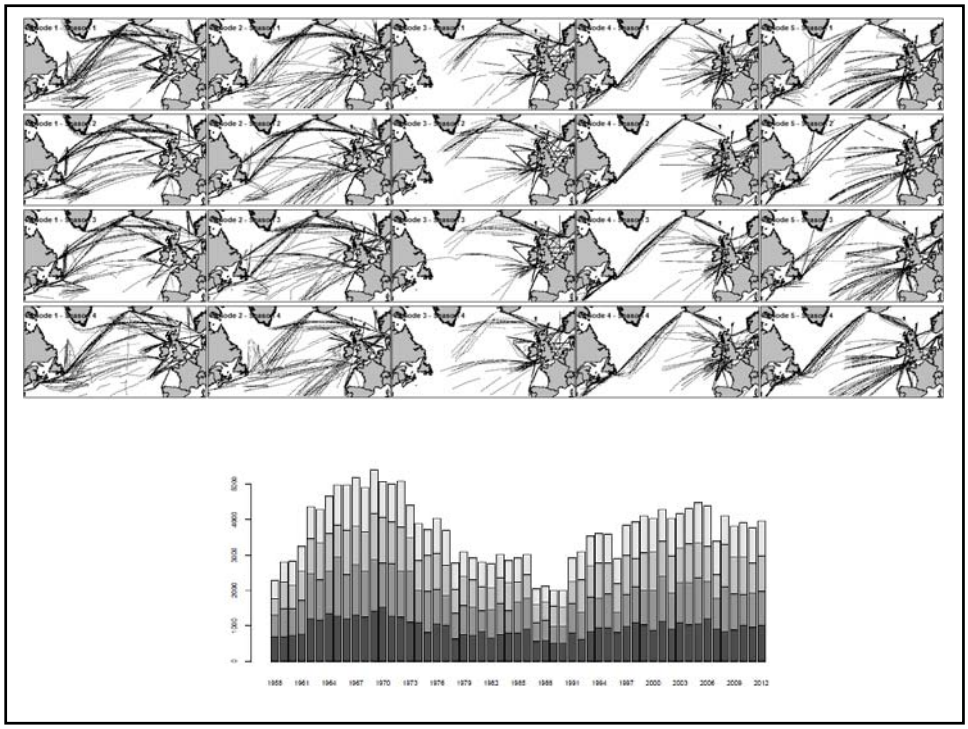
Validation & finetuning



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Marenzelleria Baltic Sea

- Danish data with zeroes
- Swedish data without zeroes – request pending
- Few data with good species identification – big problem!
- Interpolate coastal data?
- Can coastal habitat information be used?

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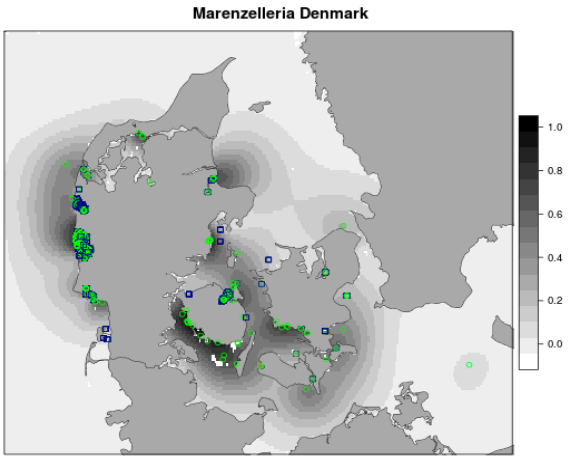
Marenzelleria coastal species



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Thanks, questions?