



EMODnet



European Marine
Observation and
Data Network

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EMODnet Phase III

D3.5. Prioritization report based on data gaps analysis and WP4 feedback



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¹ [The disclaimer is needed when the document is published](#)

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1. Overview

Historical data from old publications and expedition logbooks constitute an invaluable source of biological and environmental information. Therefore, they are of paramount importance for the establishment of baselines for present and future studies, especially when dealing with large-scale biogeographic heterogeneity and global climate change (Faulwetter et al. 2015; Mavraki et al. 2016). For example, historical records of biodiversity (i.e. past distribution of species, including verified absence information) could be used for the detection, monitoring and prediction of future trends regarding shifts in distribution range, biological invasions and local species extinctions (Nikolopoulou et al. 2015; Tsikopoulou et al. 2016). This is extremely important for understudied “data poor” areas which also happen to be particularly susceptible to temperature alteration and biological invasions such as the eastern and southern sectors of the Mediterranean Sea.

The aim of this deliverable was to develop a prioritization exercise in order to generate a list of “priority” historical datasets for rescue within WP3 (and based on feedback from WP4), thus filling spatial and temporal gaps in species occurrences and associated environmental data. We used as an initial pool of datasets a list of approximately 240 historical marine/aquatic datasets that was assembled by HCMR/LifeWatchGreece during the previous phase of EMODnet (Faulwetter et al. 2015). The list mainly consists of archaeological data (from 1890s to 1950s) and rescue data (from 1960s to 2000s) and is being further completed and annotated with metadata during the current phase of the project.

For the actual prioritization exercise, the datasets were prioritized according to a variety of criteria including their thematic and taxonomic cover with regards to Essential Ocean Variables (EOVs), temporal and geographic scope as well as language constraints and accessibility (online digital files or in hard copies in libraries). Priority was given to datasets from the southern and eastern sectors of the Mediterranean Sea (e.g. North Africa and Aegean Sea, respectively) and datasets from expeditions that have been already partly digitized in the previous phases of the project, which cover the entire Mediterranean basin.

A total of 20 datasets were prioritized (see next section), covering a broad temporal (1841-1974), taxonomic and geographic scope. In addition, these datasets concern six out of the ten Essential Ocean Variables (EOVs) followed in EMODnet, thus addressing different needs of the project (e.g. supporting policy decisions and potential development of data products). These are:

- EOVS - Phytoplankton biomass and diversity
- EOVS - Zooplankton biomass and diversity
- EOVS - Fish abundance and distribution
- EOVS - Benthic invertebrate abundance and distribution
- EOVS - Seagrass cover and composition
- EOVS - Macroalgal canopy cover and composition

Most of the assembled datasets were collected in the framework of historical expeditions in the

Mediterranean Sea and adjacent seas, such as:

- Edward Forbes' expedition (1841-1842) in the Aegean Sea (dataset #4).
- Danish Oceanographical expeditions (1908-1910) to the Mediterranean and adjacent seas (Atlantic Ocean, Sea of Marmara and the Black Sea) (datasets #11, #12, #13).
- Various sampling expeditions (1904-1933) carried out in Egyptian waters (mostly located in the marine area off Alexandria, in the Suez Canal, alongside the river Nile and in a number of lakes) (datasets #1, #2, #3, #5, #6, #7, #8, #9, #10).
- Calypso expedition (1964) in the Eastern Mediterranean Sea (dataset #16).

The order of the priority datasets in the next section is random, except for the first five datasets that have been partly worked. However, given the various challenges and difficulties involved in the digitization process of historical datasets (e.g. lack of standardization, exact georeferencing, taxonomic inconsistencies and updates, misspellings of taxa and location, compiling overlapping information from different publications), the list is rather indicative and not exhaustive. Therefore, the prioritization exercise will continue during the next period and potential modifications could be suggested depending on emerging difficulties and the particular needs of the project.

2. “Priority” Datasets

Dataset #1

Resource Citation:

Steuer A (1936) The fishery grounds near Alexandria. 12. Insecta, Araneida, Pseudoscorpionidea. Notes and Memoirs of the Fisheries Research Directorate of Egypt, No. 20, 9 pp.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Insecta, Araneida, Pseudoscorpionidea

Temporal coverage:

1938

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

PDF source:

Available through the HCMR library

Dataset #2

Resource Citation:

Steinbock (1937) Turbellaria XIV. The fishery grounds near Alexandria. Notes and Memories of the Fisheries Directorate of Egypt, No. 25, 15 pp.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Turbellaria

Temporal coverage:

1933

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

PDF source:

Available through the HCMR library

Dataset #3

Resource Citation:

EL Saby MMK (1937) A chemical study of the Egyptian *Sardinella*. 1. Variation in the fat content of whole fish, flesh, and gonads. Notes and Memoirs of the Fisheries Research Directorate of Egypt, No. 29, 25 pp.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Pisces (*Sardinella*)

Temporal coverage:

1933-1936

Essential Ocean Variable (EOV):

EOV4 - Fish abundance and distribution

PDF source:

Available through the HCMR library

Dataset #4

Resource Citation:

Forbes E (1843) Report on the Mollusca and Radiata of the Aegean Sea: and on their distribution, considered as bearing on geology. Reports of the British Association for the Advancement of Science for 1843. 130-193.

Marine regions and subregions:

Eastern Mediterranean Sea (Aegean Sea)

Taxonomic coverage:

Mollusca, Cnidaria, Ctenophora and Echinodermata

Temporal coverage:

1841-1842

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

EOV3 - Zooplankton biomass and diversity

PDF source:

<http://www.biodiversitylibrary.org/item/46634#page/176/mode/1up>

Dataset #5

Resource Citation:

Nasr AH (1940) The marine algae of Alexandria. A study of the occurrence of some marine algae on the Egyptian Mediterranean Coast. Notes and Memoirs of the Fisheries Research Directorate of Egypt, No. 37, 9 pp. + II pl.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Marine algae

Temporal coverage:

1938

Essential Ocean Variable (EOV):

EOV10 - Macroalgal canopy cover and composition

PDF source:

Available through the HCMR library

Dataset #6

Resource Citation:

Nasr (1940) A report on some marine algae collected from the vicinity of Alexandria. Notes and Memoirs of the Fisheries Research Directorate of Egypt, No. 36, 33 pp.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Marine algae

Temporal coverage:

1938

Essential Ocean Variable (EOV):

EOV10 - Macroalgal canopy cover and composition

PDF source:

Available through the HCMR library

Dataset #7

Resource Citation:

Whitehouse RH (1933). Report on fish eggs and larvae taken during 1931. Notes and Memoirs of the Fisheries Research Directorate of Egypt, No. 4, 22 pp.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Pisces

Temporal coverage:

1931

Essential Ocean Variable (EOV):

EOV4 - Fish abundance and distribution

PDF source:

Available through the HCMR library

Dataset #8

Resource Citation:

Macdonald R (1933) An examination of plankton hauls made in the Suez Canal during the year 1928. Notes and Memoirs of the Fisheries Research Directorate of Egypt, No. 3, 12 pp.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Zooplankton taxa

Temporal coverage:

1928

Essential Ocean Variable (EOV):

EOV3 - Zooplankton biomass and diversity

PDF source:

Available through the HCMR library

Dataset #9

Resource Citation:

Wimpenny RS (1934) An analysis of Arabian seine net hauls on the sea-coast near Ashtoum El Gameel, August 1928-May 1929. Notes and Memoirs of the Fisheries Research Directorate of Egypt, No. 2, 113 pp.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Pisces

Temporal coverage:

1928-1929

Essential Ocean Variable (EOV):

EOV4 - Fish abundance and distribution

PDF source:

Available through the HCMR library

Dataset #10

Resource Citation:

Klie W (1935) V. Ostracoda. Die fischereigrunde vor Alexandrien. Notes and Memoirs of the Fisheries Research Directorate of Egypt, No. 12, 10 pp.

Marine regions and subregions:

Eastern Mediterranean Sea (Egypt)

Taxonomic coverage:

Ostracoda

Temporal coverage:

1933

Essential Ocean Variable (EOV):

EOV3 - Zooplankton biomass and diversity

PDF source:

Available through the HCMR library

Dataset #11

Resource Citation:

Jørgensen E (1920) Mediterranean Ceratia. Report on the Danish Oceanographical Expeditions 1908-10 to the Mediterranean and adjacent Seas. II Biology 11: 1-110, 94 figs., 26 charts.

Marine regions and subregions:

Mediterranean Sea

Taxonomic coverage:

Dinophyceae

Temporal coverage:

1908-1910

Essential Ocean Variable (EOV):

EOV2 - Phytoplankton biomass and diversity

PDF source:

<http://aquaparadox.obs-vlfr.fr/html/PFD/Taxonomic%20Monographs/jorgensen1920.pdf>

Dataset #12

Resource Citation:

Jørgensen E (1923) Report on the Danish Oceanographical expeditions 1908-1910 to the Mediterranean and adjacent seas. Vol II Biology. J.2 Mediterranean Dinophysiaceae. II Biology 11: 1-48.

Marine regions and subregions:

Mediterranean Sea

Taxonomic coverage:

Dinophysiaceae

Temporal coverage:

1908-1910

Essential Ocean Variable (EOV):

EOV2 - Phytoplankton biomass and diversity

PDF source:

<http://www.obs-vlfr.fr/LOV/aquaparadox/html/PFD/Taxonomic%20Monographs/Jorgensen1923.pdf>

Dataset #13

Resource Citation:

Jørgensen E (1924) Mediterranean Tintinnidae. Report on the Danish Oceanographical Expeditions 1908-1910 to the Mediterranean and adjacent Seas, 2. Biology (J.3), 109 pp.

Marine regions and subregions:

Mediterranean Sea

Taxonomic coverage:

Tintinnidae

Temporal coverage:

1908-1910

Essential Ocean Variable (EOV):

EOV2 - Phytoplankton biomass and diversity

PDF source:

<http://aquaparadox.obs-vlfr.fr/html/PFD/Taxonomic%20Monographs/jorgensen1924.pdf>

Dataset #14

Resource Citation:

Topsent E (1894) Éponges du Golfe de Gabès. Mémoires de la Société Zoologique de France. 7: 37-44, pl I.

Marine regions and subregions:

Southern Mediterranean Sea (Gulf of Gabes, Tunisia)

Taxonomic coverage:

Porifera

Temporal coverage:

1892

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

PDF source:

<http://www.marinespecies.org/aphia.php?p=sourcedetails&id=47760>

Dataset #15

Resource Citation:

Barash A, Danin Z (1989) Marine Mollusca at Rhodes. Israel Journal of Zoology, 35: 1-74.

Marine regions and subregions:

Southern Mediterranean Sea (Israel)

Taxonomic coverage:

Mollusca

Temporal coverage:

1970

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

PDF source:

<https://elnais.hcmr.gr/wp-content/uploads/2015/05/bARASH- dANIN 1989.pdf>

Dataset #16

Resource Citation:

Vamvakas CE (1970) Peuplements Benthiques des Substrats Meubles du Sud de la Mer Egée.

Tethys, 2: 89-130.

Marine regions and subregions:

Eastern Mediterranean Sea (Aegean Sea)

Taxonomic coverage:

Foraminifera, Porifera, Cnidaria, Echinodermata, Mollusca, Brachiopoda, Nemertea, Sipuncula, Echiura, Polychaeta, Crustacea, Enteropneusta

Temporal coverage:

1965

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

PDF source:

<https://decapoda.nhm.org/pdfs/30169/30169.pdf>

Dataset #17

Resource Citation:

Lewinsohn Ch (1976) Crustacea Decapoda von der Insel Rhodos, Griechenland. Zoologische Mededelingen, Leiden, 49: 237-254

Marine regions and subregions:

Eastern Mediterranean Sea (Rhodes Island, Aegean Sea, Greece)

Taxonomic coverage:

Decapoda

Temporal coverage:

1970

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

PDF source:

<https://decapoda.nhm.org/pdfs/18849/18849.pdf>

Dataset #18

Resource Citation:

Tortonese E., 1946. On some fishes from the Eastern Mediterranean (Island of Rhodes). Annals and Magazine of Natural History, 13: 710-715.

Tortonese E., 1946. On Echinoderms from the Eastern Mediterranean (Island of Rhodes). Annals and Magazine of Natural History, 13: 715-719.

Marine regions and subregions:

Eastern Mediterranean Sea (Rhodes Island, Aegean Sea)

Taxonomic coverage:

Echinodermata, Pisces

Temporal coverage:

1943

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

EOV4 - Fish abundance and distribution

PDF source:

<http://elnais.ath.hcmr.gr/PDF/1947%20NoteFaunaFloraRodiTortoneseBollPescaPiscIdr.pdf>

Dataset #19

Resource Citation:

Rützler (1975) Ecology of Tunisian commercial sponges. *Tethys*, 7: 249-264.

Marine regions and subregions:

Mediterranean (Tunisia)

Taxonomic coverage:

Porifera and associated macroinvertebrates, Marine algae

Temporal coverage:

1971

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

EOV10 - Macroalgal canopy cover and composition

PDF source:

<https://pdfs.semanticscholar.org/4b8c/25a29f30c85efdb904e2e79f37eb9639a5b4.pdf>

Dataset #20

Resource Citation:

Kisseleva (1982) Comparative characteristics of the benthos at some banks in the Aegean Sea. *Thalassographica*, 6: 107-113.

Marine regions and subregions:

Eastern Mediterranean Sea (Aegean Sea)

Taxonomic coverage:

Porifera, Nemertea, Polychaeta, Sipuncula, Crustacea, Mollusca, Echinodermata, Ascidiacea

Temporal coverage:

1974

Essential Ocean Variable (EOV):

EOV6 - Benthic invertebrate abundance and distribution

PDF source:

https://oceanos-dspace.hcmr.gr/bitstream/handle/123456789/250/vol6%20107_118.pdf

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