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Review

The Biodiversity of the Mediterranean Sea: Estimates, Patterns, and Threats

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The Mediterranean Sea is a marine biodiversity hot spot. Here we combined an extensive literature analysis with expert opinions to update publicly available estimates of major taxa in this marine ecosystem and to revise and update several species lists. We also assessed overall spatial and temporal patterns of species diversity and identified major changes and threats. Our results listed approximately 17,000 marine species occurring in the Mediterranean Sea. However, our estimates of marine diversity are still incomplete as yet—undescribed species will be added in the future. Diversity for microbes is substantially underestimated, and the deep-sea areas and portions of the southern and eastern region are still poorly known. In addition, the invasion of alien species is a crucial factor that will continue to change the biodiversity of the Mediterranean, mainly in its eastern basin that can spread rapidly northwards and westwards due to the warming of the Mediterranean Sea. Spatial patterns showed a general decrease in biodiversity from northwestern to southeastern regions following a gradient of production, with some exceptions and caution due to gaps in our knowledge of the biota along the southern and eastern rims. Biodiversity was also generally higher in coastal areas and continental shelves, and decreases with depth. Temporal trends indicated that overexploitation and habitat loss have been the main human drivers of historical changes in biodiversity. At present, habitat loss and degradation, followed by fishing impacts, pollution, climate change, eutrophication, and the establishment of alien species are the most important threats and affect the greatest number of taxonomic groups. All these impacts are expected to grow in importance in the future, especially climate change and habitat degradation. The spatial identification of hot spots highlighted the ecological importance of most of the western Mediterranean shelves (and in particular, the Strait of Gibraltar and the adjacent Alboran Sea), western African coast, the Adriatic, and the Aegean Sea, which show high concentrations of endangered, threatened, or vulnerable species. The Levantine Basin, severely impacted by the invasion of species, is endangered as well.

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This abstract has been translated to other languages (File S1).

Introduction

The *Mare medi terraneum* (in Latin) describes the Mediterranean as a "sea in the middle of the land." This basin is the largest (2,969,000 km^2) and deepest (average 1,460 m, maximum 5,267 m) enclosed sea on Earth (Figure 1a).

Situated at the crossroads of Africa, Europe, and Asia, the Mediterranean coasts have witnessed the flourishing and decline of many civilizations. The region was an important route for merchants and travelers of ancient times, allowing for trade and cultural exchange, and today it is notable for contributions to global economy and trade. Its coasts support a high density of inhabitants, distributed in 21 modern states, and it is one of the top tourist destinations in the world, with 200 million tourists per year [1].

The Mediterranean Sea connects through the Strait of Gibraltar to the Atlantic Ocean in the west and through the Dardanelles to the Sea of Marmara and the Black Sea in the northeast. In the southeast, the Suez Canal links the Mediterranean to the Red Sea and the Indian Ocean (Figure 1a). In the Strait of Sicily, a shallow ridge at 400 m depth separates the island of Sicily from the coast of Tunisia and divides the sea into two main subregions: the western (area $=0.85$ million km^2) and the eastern (area $=1.65$ million km^2).

General oceanographic conditions in the Mediterranean have been previously described in detail [e.g., 2–5]. It is a concentration basin: evaporation is higher in its eastern half, causing the water level to decrease and salinity to increase from west to east. The resulting pressure gradient pushes relatively cool, low-salinity water from the Atlantic across the Mediterranean basin. This water warms up to the east, where it becomes saltier and then sinks in the Levantine Sea before circulating west and exiting through the Strait of Gibraltar. The climate in the region is characterized by hot, dry summers and cool, humid winters. The annual mean sea surface temperature shows a high seasonality and important gradients from west to east and north to south (Figure 1b) [3]. The basin is generally oligotrophic, but regional features enrich coastal areas through changing wind conditions, temporal thermoclines, currents and river discharges, and municipal sewage [6,7,8] (Figure 1c). The basin is characterized by strong environmental gradients [9], in which the eastern end is more oligotrophic than the western. The biological production decreases from north to south and west to east and is inversely related to the increase in temperature and salinity.

The Mediterranean has narrow continental shelves and a large area of open sea. Therefore, a large part of the Mediterranean basin can be classified as deep sea (Figure 1d) and includes some unusual features: (1) high homothermy from 300–500 m to the bottom, where temperatures vary from 12.8°C–13.5°C in the western basin to 13.5°C–15.5°C in the eastern, and (2) high salinity of 37.5–39.5 psu. Unlike in the Atlantic Ocean, where temperature decreases with depth, there are no thermal boundaries in the deep sea of the Mediterranean [10]. Shelf waters represent 20% of the total Mediterranean waters, compared with the 7.6% of the world oceans, and therefore play a proportionally greater role here than in the world's oceans [4]. Shelves in the south are mainly narrow and steep (e.g., Moroccan, Algerian, and Libyan coasts, with the exception of the Gulf of Gabés), while those in the north are wider (e.g., the north and central Adriatic Sea, the Aegean Sea, and the Gulf of Lions) [4] (Figure 1d). These features influence the morphology and constrain the connections to the Atlantic, the Red Sea, and the Indian Ocean [3,11].

The enclosed Mediterranean had a varied geological history, including isolation from the world ocean, that led to its near drying out during the Messinian crisis (5.96 million years ago) and to drastic changes in climate, sea level, and salinity [12,13]. The

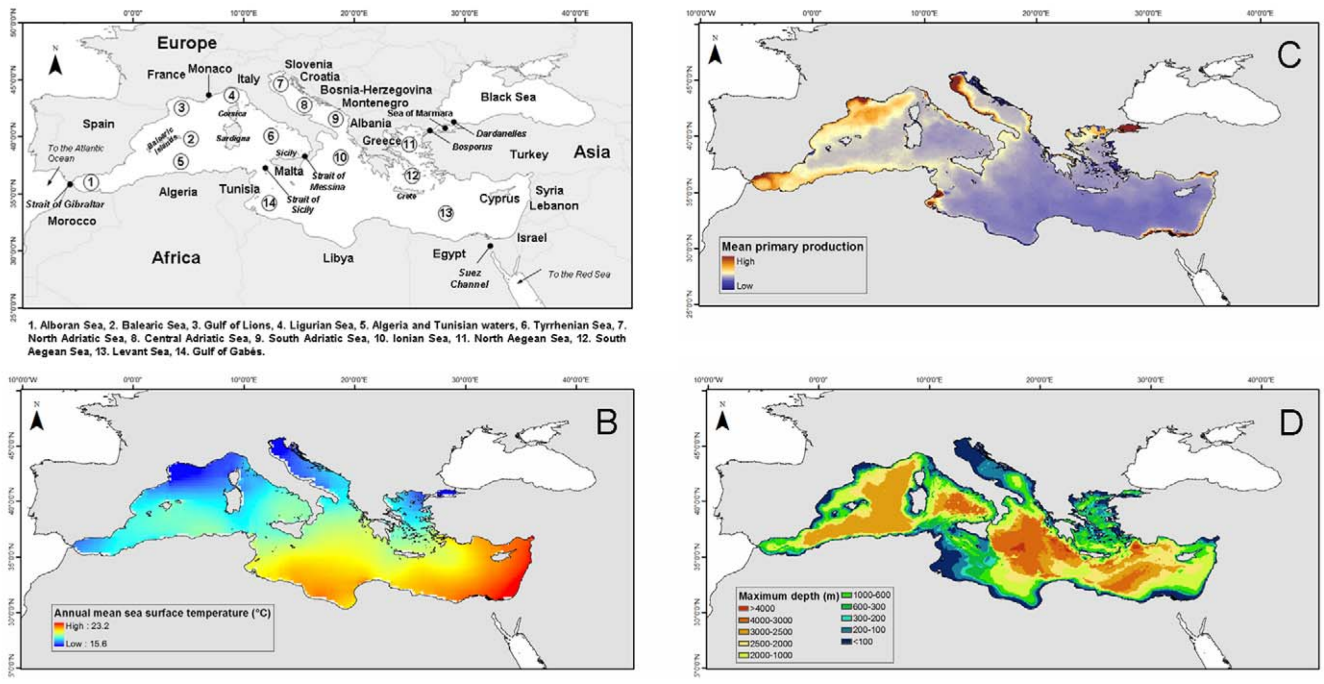

Figure 1. Biogeographic regions and oceanographic features of the Mediterranean Sea. (A) Main biogeographic regions, basins, and administrative divisions of the Mediterranean Sea, (B) Annual mean sea surface temperature (°C) (2003, NOAA), (C) Annual mean relative primary production (2002, Inland and Marine Waters Unit, Institute for Environment and Sustainability, EU Joint Research Centre, Ispra, Italy), and (D) maximum average depth (m) (NOAA).
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geological history, biogeography, ecology, and human history have contributed to the Mediterranean's high cultural and biological diversity [14–17].

The recent marine biota in the Mediterranean Sea is primarily derived from the Atlantic Ocean, but the wide range of climate and hydrology have contributed to the co-occurrence and survival of both temperate and subtropical organisms [18,19]. High percentages of Mediterranean marine species are endemic [16,20]. This sea has as well its own set of emblematic species of conservation concern, such as sea turtles, several cetaceans, and the critically endangered Mediterranean monk seal (*Monachus monachus*). It is the main spawning grounds of the eastern Atlantic bluefin tuna (*Thunnus thynnus*) [e.g., 21–25]. There are several unique and endangered habitats, including the seagrass meadows of the endemic *Posidonia oceanica*, vermetid reefs built by the endemic gastropod *Dendropoma petraeum*, coralligenous assemblages [e.g., 26–29], and deep-sea and pelagic habitats that support unique species and ecosystems [e.g., 30–32]. Many sensitive habitats exist within the coastal ecosystems. There are 150 wetlands of international importance for marine and migrating birds, and some 5,000 islands and islets [33–35].

The region has numerous laboratories, universities, and research institutes dedicated to exploring the sea around them [e.g., 36]. In addition to the unique geologic, biogeographic, physical, and ecological features, our current understanding of the high biodiversity of the Mediterranean Sea is built on the long tradition of study dating from the times of the Greeks and Romans. Historical documentation began with Aristotle, who contributed to the classification and description of marine biodiversity, and was followed by the work of Plinius (Historia naturalis, liber IX) in the first century B.C., Carl von Linné in the eighteenth century, and many others to the middle of the nineteenth century [e.g., 37–40]. The first deep-sea investigations began at the end of the nineteenth century [e.g., 41–43]. The expeditions of the R.V. "Calypso" by Jacques-Yves Cousteau in the Mediterranean during the 1950s and 1960s provided as well valuable material that supported many important publications on the Mediterranean diversity. The history of ecological research and species discovery in the region has been thoroughly reviewed by Riedl [44], Margalef [45], and Hofrichter [46], though mostly confined to the western Mediterranean.

Numerous detailed taxonomic inventories now exist, most of which are specific to sub-regions or to a range of organisms [e.g., 47–56, among many others]. Efforts continue to provide complete datasets of taxonomic groups for the entire basin [e.g., 57–67], although they need periodic updates. Freely available databases for macroorganism inventory include the Medifaune database [68], the Food and Agriculture Organization Species Identification Field Guide for Fishery Purposes [69], the FNAM (Fishes of the North-Eastern Atlantic and the Mediterranean) atlas [70], and the ICTIMED database [71].

However, Web-based datasets often lack updates because of limitations in funding or expertise, and in general, the marine biodiversity of the Mediterranean is less known than its terrestrial counterpart [33,72]. There are still important gaps at population, community, habitat, and sub-region levels, as well as in basic information about taxonomy distribution, abundance, and temporal trends of several groups [72,73]. In some areas biodiversity data exist, but it is not easily accessible, because the inventories are not publicly available [74]. Data are also lacking to evaluate the conservation status of many species [34].

The Mediterranean region has been inhabited for millennia, and ecosystems have been altered in many ways [e.g., 5,16,45,75]. Therefore, impacts of human activities are proportionally stronger in the Mediterranean than in any other sea of the world [33].

Therefore, combined natural and anthropogenic events shaped the biodiversity of the Mediterranean Sea in the past and are likely to continue to do so. Within this complex framework, our aims were threefold:

1. Review available estimates of Mediterranean marine biodiversity, including new estimates of less conspicuous organisms, updating previous checklists, and incorporating living organisms from microbes to top predators.
2. Describe the main spatial and temporal patterns of biodiversity, including innovative ways of describing these patterns.
3. Summarize the main drivers of change and threats to marine biodiversity.

We have collated available information, generated coherent patterns, and identified the current state of knowledge and information gaps, challenges, and prospects for future research. We embrace the concept of biodiversity in its broader definition as the variation of life at all levels of biological organization, but we have focused our efforts on documenting species-level diversity.

Methods

Diversity estimates

Total estimates of biodiversity. We used our updated taxonomic estimates of species diversity to revise the total estimate of Mediterranean marine biodiversity and to compare it with previous studies [16,19,68]. We assessed online data availability by comparing these estimates with global and regional datasets that store an important portion of Mediterranean information, including the World Register of Marine Species database (WoRMS), Marbef Data System (European Register of Marine Species, ERMS) and the Ocean Biogeographic Information System (OBIS), FishBase and SeaLifeBase, AquaMaps, and ICTIMED [71,76–81]. We also calculated the percentage that Mediterranean species of macrophytes and metazoans make up of their global counterpart, by comparing our estimates with global number of marine species according to Bouchet [82] and Green and Short [26] for flowering plants, and Groombridge and Jenkins [83] for other Vertebrata species.

Estimates by taxonomic group. We combined an extensive literature analysis with expert opinions to update publicly available estimates of major taxa and to revise and update several species lists. While most of this information has been incorporated into the supporting materials (File S2), here we present detailed summaries of the diversity of some specific groups inhabiting either the extreme ends of the food web (microbes and predators) or the deep-sea environment that represents the most prevalent habitat type in the Mediterranean Sea. In addition, we provide an overview of the newly introduced species. We also identified information gaps by taxonomic group and assessed species discoveries over time for several taxa to visualize the rates of diversity description.

Table 1 and File S2 summarize specific information for each taxonomic group for which such analysis is possible, and File S2 lists the experts contributing to this synthesis. File S2 also lists several experts and taxonomic guides by taxa, although it is not an exhaustive list of experts by taxonomic group in the Mediterranean Sea. File S2 provides methodological specifications and the detailed taxonomic review of several groups too, as well as revised checklists, detailed references, and additional information.

Table 1. Taxonomic classification of species reported in the Mediterranean Sea (File S2 for details).

Taxonomic group	No. species[1]	State of knowledge	No. introduced species	No. experts[2]	No. identification guides and key references[3]
Domain Archaea	Unknown	Very limited		3	
Domain Bacteria	Unknown (165 macroscopically identifiable cyanobacteria described)	Very limited/2		5	7
(including Cyanobacteria)					
Domain Eukarya					
Protoctista and Chromista	Unknown, first estimate approx. 4400[4]	Very limited/3–4	23	24	25
Dinomastigota (Dinoflagellata)	673	4			2
Bacillariophyceae	736	4			1
Coccolithophores	166	4			1
Foraminifera	>600	Benthic and planktonic/3			5
Heterokontophyta	277	3	23	19	1+ File S2
Plantae [5]	854	New species being described and reclassified/4	90	35	3+ File S2
Chlorophyta	190 (180[6])	4	17		File S2
Rhodophyta	657	4	73		File S2
Magnoliophyta	7	5	1		File S2
Animalia	11595		512		
Porifera	681	Well known except southern areas and the Levantine Sea/4		6	5
Cnidaria	757	Limited/4	3	11	7+ File S2
Platyhelminthes	1000	Very limited/3		6	1
Mollusca	2113	Well known, but new species being described/4	Approx. 200	19	4+ File S2
Annelida	1172	New species being described/5	70–80	>28	5+ File S2
Crustacea	2239	New species being described/3–4	106	34	25+ File S2
Bryozoa	388	Limited/4	1	7	7+ File S2
Echinodermata	154	Lack of data in southern and deeper areas/5	5	3	2+ File S2
Tunicata (Ascidiacea)	229	Limited/4	15	8	6+ File S2
Other invertebrates	2168	Limited/3–4	2	17	15+ File S2
Vertebrata (Pisces)	650	Well known, except few rare species recorded sporadically/5	116 (91)	13	10+ File S2
Other vertebrates	43	Well known for mammals, reptiles and birds/5		12	12+ File S2
SUBTOTAL					
TOTAL REGIONAL DIVERSITY[3]	**16848**		**626***		

State of knowledge: 5 = very well known (>80% described, identification guides <20 years old, and current taxonomic expertise); 4 = well known (>70% described, identification guides <50 years old, some taxonomic expertise), 3 = poorly known (<50% species described, identification guides old or incomplete, no present expertise within region), 2 = very poorly known (only few species recorded, no identification guides, no expertise), 1 = unknown (no species recorded, no identification guides, no expertise). ND = No data. Number of experts and number of identification guides correspond to the list provided in File S2, listing several experts and taxonomic guides by taxa, although this is not an exhaustive list of experts by taxonomic group in the Mediterranean Sea. (1) Sources: databases, scientific literature, books, field guides, technical reports (see File S2); (2) N° of experts provided in File S2, listing several experts by taxa, although this is not an exhaustive list of experts by taxonomic group in the Mediterranean Sea; (3) Identification guides cited in File S2; (4) This number is highly uncertain (see text section The biodiversity of the "smallest"); (5) corresponding to macrophytobenthos; (6) 10 species reported within the Chlorophyceae (Volvocales) and Prasinophyceae (Chlorodendrales, Pyramimonadales) are unicellular and can be considered to be phytoplanktonic, although they thrive in mediolittoral and supralittoral pools and have been classically included in the checklists of marine macroalgae.
*This estimate is continuously increasing and may be as high as 1,000 species if unicellular aliens and foraminiferans are included [e.g., 206,207,208].
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To classify the estimates of organisms, we followed the taxonomic classification by WoRMS [76]. This classification is followed in the other regional syntheses of marine diversity of the Census of Marine Life (Census) and enables comparison between regions. We therefore used a practical division of the Eukarya into Plantae, Animalia, Protists, and Chromists even though the current kingdom division in the eukaryotes ranges between 6 and 12 and few coincide with these traditional divisions [84–86].

However, we placed together Archaea and Bacteria because little information exists for either of these divisions.

Our review included only generic information on prokaryotic (Bacteria and Archaea) and eukaryotic (Protists) marine microbes and detailed quantification of diversity of a few groups, such as seaweeds and seagrasses (a phylogenetically heterogeneous group of eukaryotic photosynthetic organisms) and metazoans (invertebrates and vertebrates). Within Animalia, we especially focused on the phyla Porifera, Cnidaria (with emphasis on benthic forms), Mollusca, Annelida (with emphasis on Polychaeta), Arthropoda (with emphasis on Decapoda, Cumacea, and Mysidacea), Bryozoa, Echinodermata, Sipuncula, some other invertebrates forming part of the meiobenthos (Nematoda, benthic Harpacticoida [Crustacea: Copepoda], benthic Foraminifera, and Gastrotricha), Tunicata (with emphasis on Ascidiacea), and the subphylum Vertebrata. We did not include the Fungi occurring in the Mediterranean Sea (which are reported to be approximately 140 species) [87].

Depiction of patterns

Spatial and bathymetric patterns. To describe spatial patterns, we used published available information by region or subregions and by taxonomic group regarding sighting locations, home ranges, or general information on distribution of species in the Mediterranean Sea. We also included information on biodiversity patterns by depth, reviewing data of several taxa available in the literature.

Spatial patterns of benthic primary producers and invertebrate species were explored at the scale of large regions or basins. When available, we used detailed spatial data, mostly available in the form of expert-drawn maps or sighting locations, to map spatial patterns of vertebrate species using GIS (geographical information system) software (ArcView by ESRI). For each 0.1×0.1 degree grid cell within the Mediterranean, we estimated the species richness of different taxonomic groups as the sum of the species co-occurring by overlapping expert-drawn distribution maps. We compiled data about exotic fish species from the CIESM (The Mediterannean Science Commission) atlas [88,89] and the paper by Quignard and Tomasini [90]. Data for other fish species were available from the FNAM atlas [70] and data compiled by Ben Rais Lasram et al. [91]. We used maps of species occurrence and sighting locations as point data to draw the distributional ranges of resident marine mammals and turtles, but we excluded nonresident or visiting species from the species richness maps. We represented the latter information as point data showing their sighting locations [22,92–99]. The current distribution of Mediterranean monk seal was drawn by integrating information in recent literature [23,100–107]. Information on the distribution of seabird colonies around the Mediterranean, and of Audouin's gull *Larus audouinii* in particular, was collected from different observations [108–111].

In our analysis, we considered those regions with uncertain or insufficient data (mainly identified by a question mark in distribution maps) as "no occurrence." However, we recognize that the absence of data may well reflect a lack of study effort in a given area rather than actual absence of a species, and thus we used the missing data to identify regions that are insufficiently studied. Moreover, available data have been collected mainly from the 1980s to 2000s. Therefore, species richness maps generated in this study should be considered as cumulative distribution maps rather than current distributions.

We also used the global species distribution model AquaMaps [80] to generate standardized range maps of species occurrence. AquaMaps is a modified version of the relative environmental suitability (RES) model developed by Kaschner et al. [112]. This is an environmental envelope model that generates standardized range maps, within which the relative probability of occurrence for marine species is based on the environmental conditions in each 0.5×0.5 degree cell of a global grid (see specifications of Mediterranean AquaMaps in File S2). We produced AquaMaps of predicted patterns of biodiversity for different taxa in the Mediterranean by overlaying the respective subsets of the 685 available distribution maps for Mediterranean species and counting all species predicted to occur in a given cell. We assumed a species to be present in each cell for which the species-specific predicted relative probability of occurrence was greater than zero. For the prediction of marine mammal biodiversity, we used a probability threshold of species occurrence of at least 0.4 to define presence in a given area, since there is some evidence that lower probabilities for species in this taxa often describe a species' potential rather than its occupied niche [112]. We then used these predictions to visualize species richness patterns by selected latitudinal and longitudinal transects. These results were compared with the maps generated using regional distributions and sighting locations.

Temporal patterns. The analysis of temporal changes in Mediterranean marine biodiversity requires the integration of diverse data from paleontological, archaeological, historical, and fisheries data, as well as ecological surveys and monitoring data [e.g., 113–116]. We summarized temporal changes of diversity using studies that dealt with this challenge using available data that informed on changes over past centuries and millennia. We integrated historical records of Mediterranean monk seals and sea turtles around the Mediterranean to explore examples of historical spatial changes [22,23,101,106,117–119].

For the north Adriatic Sea, we analyzed data from Lotze et al. [113], who used a multidisciplinary approach to assess the ecological changes and overall shift in diversity over historical time scales in 12 estuaries and coastal seas worldwide, including the north Adriatic Sea. They assessed the number of species that became depleted (>50% decline), rare (>90% decline), or extirpated (locally extinct) in the north Adriatic Sea over past centuries and millennia, based on records for 64 species or species groups that used to be of ecological or economic importance in the Adriatic Sea (File S2). These records included marine mammals, birds, reptiles, fish, invertebrates, and plants and were grouped into ten distinct cultural periods (File S2).

Threats to biodiversity

Changes in diversity are partially driven by anthropogenic factors, in addition to natural forces. Therefore, our last aim was to identify and quantify the importance of historical and current human-induced drivers and threats to marine biodiversity.

We used the aggregated results presented by Lotze et al. [113] and explicitly separated the data available for the north Adriatic Sea as an example to explore historical threats in the Mediterranean. Those authors evaluated human impacts that caused or contributed to the depletion or extirpation of species in the north Adriatic Sea over historical time scales.

We also identified current human threats to diversity using published data on specific taxa and areas of the Mediterranean (File S2) and the opinion of experts. Each expert was asked to (1) list main threats to diversity for their taxonomic expertise group using data available and experience, and (2) rank those threats from 1 to 5, taking into account the relative importance of each threat to the biodiversity (0: no importance, 1: lowest in importance, 5: highest in importance). The experts repeated the ranking exercise considering data available and projecting their results 10 years into the future (File S2).

In addition and to visualize the impacts of climate warming on species diversity, we documented the mean location of February (the coldest month of the year in the Mediterranean) sea surface isotherms (°C) for the period 1985 to 2006, integrating several data sources. We also generated current and projected future temperature maps, which we compared with sea surface temperature (SST) data from the 1980s. First, we compiled weekly SST data from the National Climatic Data Center (National Operational Model Archive and Distribution System Meteorological Data Server, NOMADS, NOAA Satellite and Information Service), and interpolated maps at 0.1° resolution. Next, we averaged weekly SST values from 1981 to 1984 for each 0.1° grid cell. Last, we used the Mediterranean model OPAMED8 based on the A2 IPCC scenario [120] to visualize the future climate. This model considers main forcing parameters (river runoffs, exchanges with connected seas, and wind regimes) and was used to generate climate data for the middle (2041–2060) and the end of the twenty-first century (2070–2099).

Finally, we visualized potential hot spots for conservation efforts by linking predicted species distributions from the AquaMaps model to status information reported by the International Union for Conservation of Nature [121–123]. From the available AquaMaps, a total of 110 maps belonged to vertebrate species that had been classified as critically endangered, endangered, vulnerable, or near threatened in the Mediterranean Sea. This represented the 16% of all species included in the Mediterranean AquaMaps (File S2). We subsequently mapped the richness of these species using a probability threshold of more than 0.4, which usually corresponds to the most frequently used and ecologically most important habitats [112].

Results

Diversity estimates in the Mediterranean

Our analysis revealed approximately 17,000 species occurring in the Mediterranean Sea (Table 1 and File S2). Of these, at least 26% were prokaryotic (Bacteria and Archaea) and eukaryotic (Protists) marine microbes. However, the data available for Bacteria, Archaea, and Protists were very limited, so these estimates have to be treated with caution (see next section), as well as data for several invertebrate groups (such as Chelicerata, Myriapoda, and Insecta).

Within the Animalia, the greater proportion of species records were from subphylum Crustacea (13.2%) and phyla Mollusca (12.4%), Annelida (6.6%), Plathyhelminthes (5.9%), Cnidaria (4.5%), the subphylum Vertebrata (4.1%), Porifera (4.0%), Bryozoa (2.3%), the subphylum Tunicata (1.3%), and Echinodermata (0.9%). Other invertebrate groups encompassed 14% of the species, and Plantae included 5%. Detailed biodiversity estimates of main taxonomic groups of benthic macroscopic primary producers and invertebrates are summarized in Table 1 and documented in File S2 in detail.

Available information showed that the highest percentage of endemic species was in Porifera (48%), followed by Mysidacea (36%), Ascidiacea (35%), Cumacea (32%), Echinodermata (24%), Bryozoa (23%), seaweeds and seagrasses (22%), Aves (20%), Polychaeta (19%), Pisces (12%), Cephalopoda (10%), and Decapoda (10%) (File S2). The average of the total endemics was 20.2%. In some groups the percentage of endemics was now lower than in the past, partly due to new finding of Mediterranean species in adjacent Atlantic waters (File S2).

The biodiversity of the ''smallest''

An important bulk of species diversity was attributed to the prokaryotic (Bacteria and Archaea) and eukaryotic (Protists) marine microbes. However, the differences in the methodologies and types of studies and the continuously changing state of our knowledge of marine microbial diversity make it difficult to provide species estimates for the Mediterranean (or from anywhere else) and establish comparisons.

Current methods cannot yet provide reliable estimates of the microbial richness of a system [e.g., 124] because of (i) our limited capacity to describe morphological variability in these organisms, (ii) the limited development and the biases associated with molecular techniques used to identify them, even with the use of the most powerful of these techniques, and (iii) the uncertainty in determining a ''microbial species'' and where to draw the line that differentiates one species from another. Morphological variability is used to describe diversity of some groups of microbes, such as ciliates and microphytoplankton [125], but this is not useful for most nano- and almost all picoplanktonic organisms, including all Archaea and most Bacteria. Therefore, until recently, surveys of microbial diversity were mainly limited to those taxa with enough features to be described under an optical microscope. Among phytoplankton, the best-studied groups included thecate dinoflagellates, diatoms, coccolithophores, and silicoflagellates. Among microzooplankton, groups like tintinnids, foraminifers, or radiolarians attracted most attention. Much less information is available on ''naked'' auto- or heterotrophic flagellates and on small picoplankton species.

However, researchers have made efforts to obtain estimates of the dominant microbial species in Mediterranean waters. The expansion of electron microscopy in the last decades of the twentieth century helped to untangle inconsistencies in the distribution of some described species and to consolidate the establishment of a biogeography of many protist taxa. More recently, molecular techniques (metagenomics) have been used to enumerate the microorganisms present in a given sample and have completely transformed the field by changing ideas and concepts. These advances have highlighted the problems with the species concept when applied to microbial communities, which may be based on morphology, biology, or phylogeny [125]. Furthermore, different methodologies have biases that give different views of microbial diversity [e.g., 126,127], and now we know that microdiversity is a general characteristic of microbial communities [128], making the delimitation of ''diversity'' units difficult. To avoid some of the problems with the ''species'' delimitation, some authors prefer to use ''functional diversity'': the amount and types of microbial proteins (e.g., functions) in the sample [e.g., 129], rather than ''species'' diversity.

According to the compilation published in Hofrichter [87], the number of described protist species in the Mediterranean is approximately 4,400 (Table 1). However, this estimate requires cautious interpretation and it is likely that many morphospecies, more or less well described, will include a number of cryptic or pseudocryptic variants [e.g., 125]. Molecular methods have recently uncovered new sequences that are being associated with the organisms they represent [130]. Fingerprinting techniques [131] have been used to compare microbial communities and establish the scale of variability of these communities. For example, Schauer et al. [132] determined that, along the coastal northwestern Mediterranean, the time of the year was more important than exact location in determining bacterial community structure. Acinas et al. [133] and Ghiglione et al. [134] showed that microbial communities tend to be similar in the horizontal scale and much more variable on the vertical scale, but these techniques are not appropriate to determine the number of species present and usually refer only to the dominant organisms. Recent application of new methodologies (such as metagenomics and 454-

tag sequencing) will in the near future provide more accurate estimates.

All studies to date concur in identifying members of the SAR11 group as some of the most abundant Mediterranean bacteria, comprising 25–45% of the reported sequences [e.g., 126,127]. These are followed by other Alphaproteobacteria, which tend to be more common in coastal regions and during algal blooms (such as *Roseobacter*-like). Cyanobacteria (*Prochlorococcus* and *Synechococcus*), diverse culturable (Alteromonadales) and unculturable Gammaproteobacteria and Bacteroidetes form the rest of the diversity with some differences with depth and with distance from land. Several studies have concentrated in the diversity of subgroups of these abundant bacteria in the Mediterranean [e.g., 135,136].

Additionally, the diversity of deep samples and the communities from which they are taken have received considerable attention in the Mediterranean. Specific and likely unique ecotypes of some bacteria appear at certain depths, [e.g., 137], free-living communities appear to be as complex as epipelagic communities [138], and appear to vary seasonally, as do surface communities [139]. The deep-sea Mediterranean maintains several extremely peculiar and interesting ecosystems, such as the deep hypersaline anoxic "lakes" in the Ionian Sea that are reported to include several new and little-known microbial lineages [e.g., 140].

Some studies have shown that bacterial richness peaks in tropical latitudes [e.g., 141] and concluded that at Mediterranean latitudes the number of detectable "operational taxonomic units" (OTUs) is between 100 and 150. Zaballos et al. [142] arrived at a similar value that, once extrapolated, indicated a value of approximately 360 OTUs for surface waters. A slightly lower value was estimated for the coastal Blanes Bay Microbial Observatory [e.g., 126] based on a different approach. Archaeal richness is known to be lower than bacterial richness [e.g., 143], and this has been seen in the Mediterranean and in other oceans. Results of these new sequencing techniques suggest that microbial richness in the sea is much higher because of the presence of a "rare biosphere" composed of very few individuals of many distinct organism types [144,145]. Application of this technique to data from the northwestern Mediterranean indicates that the numbers should be raised to about 1,000 "bacterial species" per sample [146]. Again, the real magnitude of bacterial richness in the Mediterranean cannot be appreciated with the techniques available.

A similar situation to that with prokaryotes occurs with small eukaryotes, which are photosynthetic, heterotrophic, or mixotrophic organisms. These small eukaryotes are found in abundances of 10^3–10^4 ml^{-1} and have low morphological variability [147]. Thus we must rely on molecular techniques to grasp their diversity. Molecular work has allowed the discovery of new groups of eukaryotes present in this smallest size class [148,149].

The study of Mediterranean protists has benefited from the early establishment of marine laboratories and a number of illustrated books and checklists [e.g., 150–155]. More recent inventories can be found in Velasquez and Cruzado [156] and Velasquez [157] for diatoms, Gómez [158] for dinoflagellates and Cros [159] for coccolithophorids. The compilation of northwestern Mediterranean diatom taxa of Velasquez [157] records 736 species and 96 genera. The checklist of Gómez [158] contains 673 dinoflagellate species in 104 genera.

Cros [159] lists 166 species of coccolithophorids of the northwestern Mediterranean and revised the classification of several important taxa [see also 160]. Recently, the discovery of a number of combination coccospheres bearing holo- and heterococcoliths [161] fostered the recognition that holococcolithophores do not belong to a separate family, as previously accepted, but are part of a life cycle that includes holo- and heterococcolithophore stages. The biodiversity of photosynthetic nano- and picoflagellates other than coccolithophores is poorly known for most groups, as may be expected from the difficulties involved in their identification. However, in the last decade, work using optical and electron microscopy, often in combination with molecular and culturing techniques, has considerably increased the taxonomic knowledge of many of these groups and has highlighted the potential existence of much cryptic or unknown diversity [e.g., 162,163].

There are few taxonomic surveys of heterotrophic flagellates [e.g., 164], although many phytoplankton studies based on microscopy also included taxa from these groups. Massana et al. [165] describes a high diversity of picoeukaryotic sequences, belonging to two groups of novel alveolates (I with 36% and II with 5% of clones), dinoflagellates (17%), novel stramenopiles (10%), prasinophytes (5%), and cryptophytes (4%). Later work has shown that these novel stramenopiles are free-living bacterivorous heterotrophic flagellates [130].

Most of the biodiversity work on ciliates has focused on tintinnids or loricate ciliates, while studies involving naked ciliates tend to use groupings based on ecological morphotypes and only rarely include detailed taxonomical work [e.g., 155,166–168]. Numbers of species ranging from 40 to 68 were recorded in one to several-year surveys of various Mediterranean sites [among others 154]. Other groups, such as the Foraminifera, which have calcium carbonate tests, and the Radiolaria, which produce siliceous or strontium sulfate skeletons, have been the subject of many stratigraphical and paleoceanographical studies. However, biodiversity work on living Foraminifera and Radiolaria in the Mediterranean is scarce [e.g., 155,169,170]. Hofrichter [87] provided a systematic summary of the main groups and species of both autotrophic and heterotrophic protists found in the Mediterranean.

The biodiversity at high trophic levels

Species that occupy the upper trophic levels, normally beyond the level of secondary consumers, are classified as predators. They have lower diversity than other taxonomic groups, but information available is usually more detailed (Table 1 and File S2). We reviewed data available for fish, seabirds, marine mammals, and turtles in the Mediterranean Sea.

Ground-breeding species such as seabirds (gulls and terns) are counted using census bands [171] and monitored by satellite tracking. However, procellariiforms reproduce in caves and burrows in cliffs on remote, inaccessible islets, and census methods to estimate population densities are not totally reliable. Population models, based on demographic parameters, allow researchers to estimate extinction probabilities [172]. A census of marine mammals or turtles normally uses transect data collected from aerial or boat-based sighting surveys developed to assess abundance, while movement patterns are tracked with transmitters and monitored by satellite tracking as well. Fish species are mainly studied using scuba diving or fishing techniques.

There is still some discussion about diversity estimates for these taxonomic groups. For fish species, for example, several estimates of Mediterranean diversity exist: Quignard [173] lists a total of 562 fish species occurring in the Mediterranean Sea; Whitehead et al. [70] mention 589; Fredj and Maurin [68] list a total of 612 species (and identified 30 species as uncertain); and Quignard and Tomasini [90] register 664 species. Hofrichter [87] summarizes 648 species, and Golani et al. [89] report a total of 650 fishes (File S2). Fish diversity estimates also change as new species are described or reclassified. The updated list of exotic fish species [88] reveals that the Mediterranean currently contains 116 exotic species, although more species are likely to be cited. There is also a long-standing controversy regarding genetic differentiation among a few fish populations and sub-basins, especially of commercial species due to management implications (for example for the European anchovy *Engraulis encrasicolus*), although results are still under debate [e.g., 174].

Approximately 80 fish species are elasmobranchs, although the status of some is uncertain because of infrequency or uncertain reporting [e.g., 123,175,176]. According to Cavanagh and Gibson [123], nine of these elasmobranch species may not breed in the Mediterranean, while some are rare because the Mediterranean represents the edge of their distribution ranges. Only four batoid species are Mediterranean endemics: the Maltese skate (*Leucoraja melitensis*), the speckled skate (*Raja polystigma*), the rough ray (*R. radula*), and the giant devilray (*Mobula mobular*) [175].

Nine species of marine mammals are encountered regularly in the Mediterranean (File S2) [92,93,94,97]. Of these species, five belong to the Delphinidae, and one each to the Ziphiidae, Physeteridae, Balaenopteridae, and Phocidae. Other 14 species are sporadically sighted throughout the basin and are considered "visitors" or "non-residents."

Of the seven living species of sea turtles, two (the green and the loggerhead *Chelonia mydas* and *Caretta caretta* - Cheloniidae) commonly occur and nest in the Mediterranean, and one (leatherback turtle *Dermochelys coriacea* - Dermochelyidae) is regularly sighted but there is no evidence of nesting sites. The other two (hawksbill and Kemp's riddle turtles *Eretmochelys imbricata* and *Lepidochelys kempi* - Cheloniidae) are extremely rare and considered to be vagrants in the Mediterranean (File S2) [22,95,96,98,99].

Seabirds from the Mediterranean have a low diversity (15 species, File S2) and their population densities are small, consistent with a relatively low-productivity ecosystem compared with open oceans, and particularly with upwelling regions. Ten of the Mediterranean species are gulls and terns (Charadriiformes), four are shearwaters and storm petrels (Procellariiformes), and one is a shag (Pelecaniformes). Three of the ten species are endemics [108–110].

What is hidden in the deep?

Because of the large size of the Mediterranean deep-sea ecosystems (Figure 1d), our knowledge of the benthic deep-sea diversity is incomplete [177]. In the past 20 years, several studies on deep-sea sediment diversity have been undertaken in various oceans [e.g., 178,179] but have been limited to a few taxonomic groups. However, due to technological improvements that render the deep waters more accessible, the deep-sea benthos of the Mediterranean has received increased attention and there is progress toward a more comprehensive view of the levels, patterns, and drivers of deep-sea biodiversity in this semienclosed basin [180].

Its paleoecological, topographic, and environmental characteristics suggest that the Mediterranean Sea is a suitable model for investigating deep-sea biodiversity patterns along longitudinal, bathymetric and energetic gradients across its different regions. There are few areas with depths greater than 3,000 m (Figure 1d), and typically bathyal or abyssal taxonomic groups are limited. Cold-water stenothermal species that elsewhere represent the major part of the deep-sea fauna [181] are also unknown in the Mediterranean Sea. The Mediterranean abyssal macrobenthos comprises a large number of eurybathic species and only 20–30 true abyssal species. In the western basin, where the depth does not exceed 3,000 m, the abyssal fauna is less abundant than in the deeper eastern basin, where abyssal species are dominant in the Matapan trench, which is more than 5,050 m deep [182]. The close affinity between Mediterranean and Atlantic congeneric deep-water species suggests that the ancestors of the Mediterranean bathyal endemic species moved from the Atlantic when conditions were favorable (i.e. when larvae of deep Atlantic fauna was able to enter in the Western Mediterranean due to hydrodynamic and physico-chemical conditions allowed it).

According to Pérès [183], the deep-water fauna of the Mediterranean has a lower degree of endemism than that of the Atlantic at similar depths. So while the Mediterranean basin is recognized as one of the most diverse regions on the planet, the deep sea in the Mediterranean may contain a much lower diversity than deep-sea regions of the Atlantic and Pacific oceans [184,185]. The reasons for such a low diversity may be related to (a) the complex paleoecological history characterized by the Messinian salinity crisis and the almost complete desiccation of the basin [186], and (b) the Gibraltar sill that is, potentially, a physical barrier to the colonization of larvae and deep-sea benthic organisms from the richer Atlantic fauna. These factors may explain the composition of the benthos in the deep sea of the Mediterranean [187]. It may also be that the high deep-sea temperatures (about 10°C higher than in the Atlantic Ocean at the same depth) have led to a Mediterranean deep-sea fauna that consists of reproductively sterile pseudopopulations that are constantly derived through larval inflow. These postulates were based on the analysis of the macrobenthos, characterized by life cycles with meroplanktonic larvae that are spread by currents [188].

However, the populations of the most common benthic mollusks in depths greater than 1,000 m off the Israeli coast are composed of both adult and juvenile specimens, and one species, *Yoldia micrometrica*, the most common and abundant species in the eastern Mediterranean, is unrecorded from the westernmost part of the sea. In addition, and though much reduced in diversity and richness compared with the deep-sea fauna of the western and central basins of the Mediterranean, the Levantine bathybenthos is composed of autochthonous, self-sustaining populations of opportunistic, eurybathic species that have settled there following the last sapropelic event [189–191].

Macpherson [192] and Briggs [193] have suggested that within the Atlantic-Mediterranean region, the fauna (including invertebrates and fishes) of the Mediterranean is more diverse than that of the Atlantic and displays considerable endemism. For strictly deep-dwelling species (e.g., the deep-water decapod crustacean family Polychelidae), the Gibraltar sill is not an impenetrable barrier for some deep-waters macrobenthic species [194]. Moreover, available hypotheses did not consider meiofauna diversity, which is characterized by direct development [188] but also by a small size, which allows organisms' resuspension and drifting over wide regions. This is consistent with information on the most abundant deep-sea phylum, the Nematoda, which often accounts for more than 90% of total meiofauna abundance [9,195]. Nematode diversity has been investigated only in a few areas of the deep sea in the Mediterranean: slopes of the Gulf of Lions, Catalan margin and Corsica, Tyrrhenian basin, and Eastern Mediterranean [e.g., 196–198]. Recent collections from a limited number of sites throughout the Mediterranean basin (at approximately 1,000 m, 3,000 m, and 4,000 m depth), suggest that, conversely to what was expected, the deep-sea nematode fauna of the Mediterranean basin is rather diverse.

At bathyal and abyssal depths, levels of nematode genera and species richness are similar to those reported from other deep-sea areas of the world oceans [198]. In the deep sea of the Mediterranean, small-bodied taxa (e.g., meiofauna) can reach a high diversity, and with the presence of a high prokaryotic diversity in the sediments of the deep-sea Mediterranean [199], this may change the view that the Mediterranean deep-sea biota is impoverished in comparison with its Atlantic counterpart. Endemic macrobenthic species account for approximately 13–15% of total species number at depths from 200 m to 1,000 m, and approximately 20% at 2,000 m [200]. These estimates are similar for each taxon (Table 1) and are further supported by the continuous discovery of new species (both within the highly diverse Nematoda and in rare phyla such as the Loricifera) in different sectors of the deep Mediterranean [180]. Therefore, the general conclusion that the biodiversity is high in coastal systems and low in the deep sea of the Mediterranean might not hold true. Detailed references about the deep Mediterranean can be found in [180].

New biodiversity

The biodiversity of the Mediterranean is definitively influenced by the introduction of new species [e.g., 88,201–208]. Since the first review of exotic species in the Mediterranean [209], the studies in this topic have intensified. Now more than 600 metazoan species have been recorded as alien, these representing 3.3% of the total estimates (Table 1, and File S2 for detailed information by taxonomic group). However, this estimate is continuously increasing and may be as high as 1,000 species if unicellular aliens and foraminiferans are included [e.g., 206,207,208].

Most of these introductions are littoral and sublittoral benthic or demersal species (or their symbionts). Because the shallow coastal zone, and especially the benthos, has been extensively studied and is more accessible than deeper waters, new arrivals probably will be encountered and identified in shallow waters. The species most likely to be introduced by the predominant pathways (the Suez Canal, vessels, and mariculture) are shallow-water species.

A taxonomic classification of the alien species showed that the alien phyla most frequently recorded are Mollusca (33%), Arthropoda (18%), Chordata (17%), Rhodophyta (11%), and Annelida (8%). The data are presumably most accurate for large and conspicuous species that are easily distinguished from the native biota and for species that occur along a frequently sampled or fished coast and for which taxonomic expertise is readily available. Data are entirely absent for many of the small members of invertebrate phyla [210]. Thus, the true numbers of alien species are certainly downward biased.

The native range of the alien species in the Mediterranean was most commonly the Indo-Pacific Ocean (41%), followed by the Indian Ocean (16%), and the Red Sea (12%), while some species have a pantropical or circumtropical distribution (19%). The actual origins of the Mediterranean populations of a species widely distributed in the Indo-Pacific Ocean may be their populations in the Red Sea, both from the Indian or Pacific oceans, or a secondary introduction from already established populations in the Mediterranean itself [e.g., 50]. However, and with few notable exceptions [e.g., 211,212], the source populations of alien species in the Mediterranean have not been assessed by molecular means. Even so, it is clear that most alien species in the Mediterranean are thermophilic and therefore originated in tropical seas (see Figure 2). The exceptions are exotic algae, of which the largest numbers are in the Gulf of Lions and the northern Adriatic [213,214], and a few other examples [e.g., 215].

As far as can be deduced, the majority of aliens in the Mediterranean entered through the Suez Canal (Erythrean aliens) (53%), and an additional 11% were introduced primarily through the Canal and then dispersed by vessels. Introductions from vessels from other parts of the world account for 22% of introduced species, and aquaculture accounts for 10%. A further 2% arrived with the introduction of aquaculture and were secondarily spread by vessels. The means of introduction differ greatly among the phyla: whereas of the alien macrophytes, 41% and 25% were introduced through mariculture and vessels, respectively, the majority of alien crustaceans, mollusks, and fish are Erythrean aliens (59%, 64%, and 86%, respectively), and mariculture introductions are few (4%, 5%, and 4%, respectively) [216, B.S. Galil, personal observation].

The numbers of alien species that have been recorded over the past century have increased in recent decades. The increasing role of the Mediterranean as a hub of international commercial shipping, a surge in the development of marine shellfish farming over the last 25 years, and the continued enlargement of the Suez Canal have contributed to the resurgence of introductions since the 1950s. Many introduced species have established permanent populations and extended their range: 214 alien species have been recorded from three or more peri-Mediterranean countries, and 132 have been recorded from four or more countries [216, B.S. Galil, personal observation].

A comparison of the alien species recorded along the Mediterranean coasts of Spain and France and an equivalent length of coast in the Levantine Sea (from Port Said, Egypt, to Marmaris, Turkey) showed marked differences in their numbers, origin, and means of introduction. There are nearly four times as many alien species along the Levantine coast (456 species) as along the western coast of the Mediterranean (111 species). The majority of aliens in the Eastern Mediterranean entered through the Suez Canal (68% of the total, 14% vessel-transported, 2% mariculture), whereas mariculture (42%), vessels (38%), or both (5%) are the main means of introduction in the Western Mediterranean [216, B.S. Galil, in preparation]. Climate change favors the introduction of Red Sea species in the southeastern Mediterranean and their rapid spreading northwards and westwards (see section 4.2c and d). It similarly favors species coming from the African Atlantic coasts to enter the western basin [89,217].

Spatial patterns of Mediterranean biodiversity

Longitudinal and latitudinal patterns. Describing the distribution of marine diversity is as important as quantifying it. In the Mediterranean, a northwestern-to-southeastern gradient of species richness was observed in most groups of invertebrate species analyzed here, with a highly heterogeneous distribution of species in the different regions (Table 2, and File S2 for detailed information). We noticed only a few exceptions. For example, while there was the same number of *Euphausia* species in the western and central basins, estimates for several other invertebrate groups were higher in the Aegean Sea than in central areas of the Mediterranean. These exceptions may be due to different species tolerance to environmental factors (such as temperature and salinity), connectivity between regions, and to the lack of data in some regions.

We found similar results for vertebrate species. There was a decreasing gradient from northwest to the southeast, while the sea around Sicily had the highest richness (375 species per 0.1×0.1 degree cell), followed by other northwestern coastal and shelf areas (Figures 2a–b). The distribution of elasmobranch species was not homogenous either, showing a higher concentration of species in the west (Figure 2c). The endemic richness gradient of fish species was more pronounced with latitude, the north side exhibiting a greater richness, and the Adriatic appearing as a hot spot of endemism with 45 species per cell (Figure 2d). Spatial patterns also showed how most of Mediterranean coastal waters have been colonized by exotic species (Figure 2e). The highest richness of exotic species occurred along the Israeli coast.

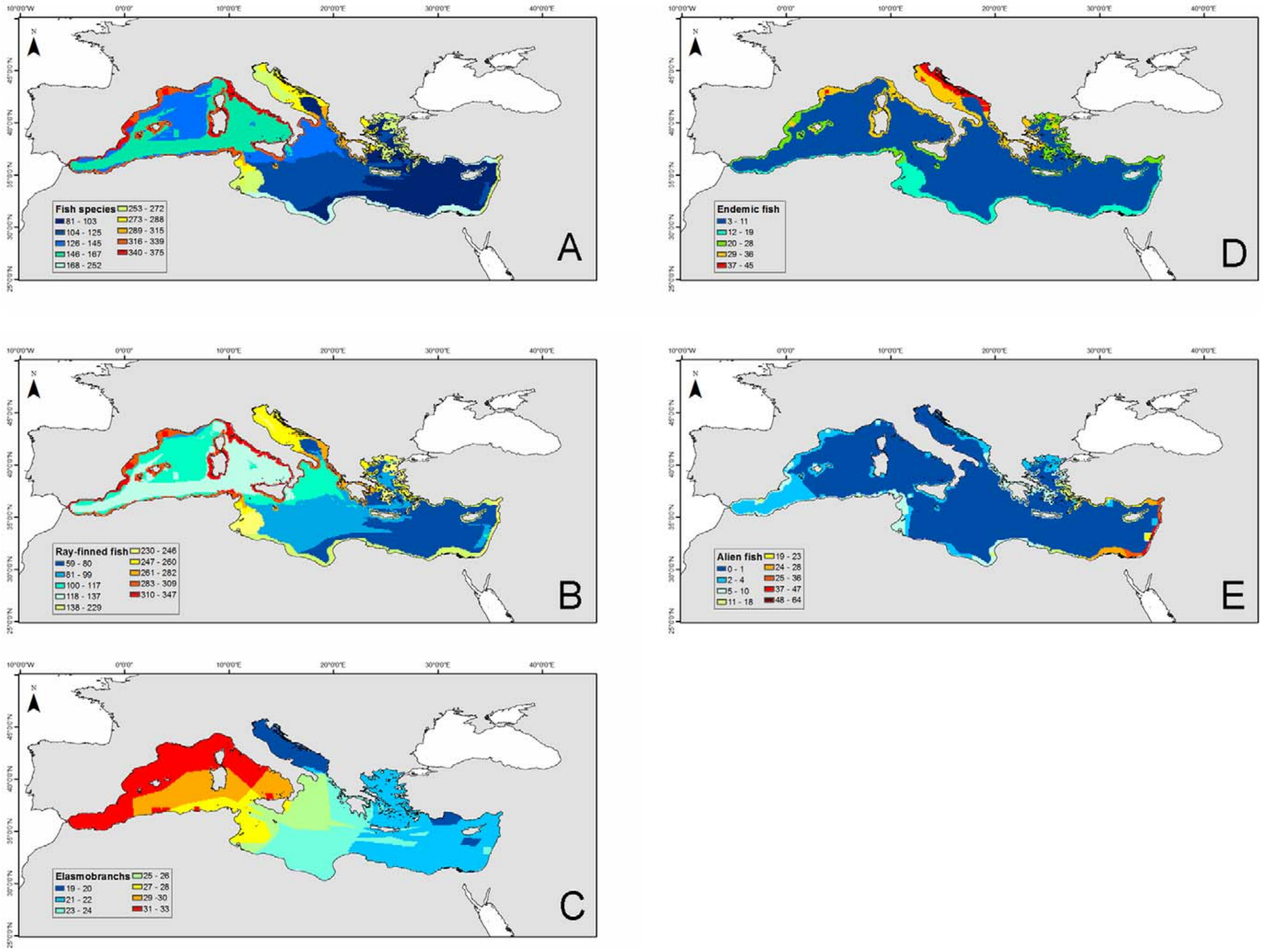

Figure 2. Spatial patterns of fish species richness in the Mediterranean Sea based on superimposed expert-drawn maps. (A) All fish species (n = 625), (B) ray-finned fish species (n = 545), (C) elasmobranchs (n = 80), (D) endemic fish species (n = 79), (E) alien fish species (n = 127) [data modified from 91]. Colors express species occurrence from blue (little or no occurrence) to red (highest occurrence). The size of the cell is 0.1×0.1 degree.
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Marine mammals were concentrated in the Western Mediterranean and Aegean seas (Figure 3a). Of the nine resident marine mammals, eight were found in the western part of the basin. This distribution pattern was also observed for the visiting marine mammals (Figure 3b). Two of the three resident sea turtles (loggerhead, green, and leatherback turtles) occurred in the central Mediterranean and Aegean seas, while the two visiting turtles were absent from the eastern side (Figure 3c). There were fewer seabird colonies and seabird density was lower in the southeast than the northwest (Figure 3d).

Spatial patterns of benthic biodiversity in the deep sea are poorly known in comparison with other ecosystems. Available information is scarce and our maps and estimates include only approximations for the deep sea. In this context, metazoan meiofauna and, in particular, nematodes can be used to describe the biodiversity patterns in the deep sea. Deep-sea nematode diversity appears to be related to that of other benthic components such as foraminifers [218], macrofauna [219], and the richness of higher meiofauna taxa in the deep sea [220]. Results for the deep sea of the Mediterranean show a clear longitudinal biodiversity gradient that also occurs along the open slopes, where values decrease eastward, from Catalonia to the margins of southern Crete (Figure 4a). The analysis of the Nematoda indicates that at equally deep sites, nematode diversity decreases from the western to the eastern basin and longitudinal gradients are evident when comparing sites at 3,000 m or 1,000 m depth [195]. Complementary information on spatial patterns of the deep Mediterranean fauna can be found in [180].

Additional information from the literature on spatial patterns of Mediterranean marine diversity suggests that the measurement of local α-diversity is not sufficient to draw a clear picture for the whole Mediterranean basin. Whittaker [221] defined α-diversity as the number of species found in a sample (or within a habitat), β-diversity as the extent of species replacement along environmental gradients (termed "turnover diversity" by Gray [222]), and γ-diversity as the diversity of the whole region. The analysis of β-diversity of Nematoda among different sites in the deep sea of the Mediterranean and across bathymetric and longitudinal gradients reveals an extremely high species turnover. By comparing nematode assemblages at (a) different depths, (b) similar depths in two different basins, and (c) similar depths within the same basin, the dissimilarity of biodiversity among deep-sea samples is always greater than 70% [195,197,198,223]. On average, the dissimilarity of nematode diversity between western and eastern

Table 2. Species richness by taxa and regions of the Mediterranean Sea.

	W Med[1]	E Med[2]	NW Med	Alboran Sea	SW Med	Adriatic Sea	Central Med	Ionian Sea	Aegean Sea	Tunisian Pl.[3]/Gulf of Sidra	Levantine Basin[10]	Reference [11]
Ceramiales (Rhodophyta)	248					198	211		193			
Phaeophyceae			161		119(4)	160	183(5)	122(6)			74	[16]
Porifera			432	181	123	230		181	200	90	94	
Anthozoa	151					100		58	90		38	
Gastropoda	1148					462	582		622		83	[66]
Cephalopoda	61	55				45						[435]
Polychaeta	946	877										
Harpacticoid copepoda	254								96			
Cumacea	85	74	78	43	42	13	50(5)	28	43	4	48	
Mysidacea	90	55	62	9	2	34	64(5)	7	5	30		
Euphausiacea	13					12	13		12		11	[67]
Isopoda	149					47	26		74		34	[66]
Cirripedia	34					17	17		17		13	[66]
Amphipoda	421					242	160		260		144	[66]
Decapoda (1)	316					228	205		252		59	[66]
Decapoda (2)						293(7)			260		230	
Echinodermata	144(8)					101	98(9)		107		73	
Sipuncula			45	19	15	36	36			16		
Ascidiacea	193	167										

N: North, S: South, W: West, E: East, Med: Mediterranean.
(1)Including NW Med, Alboran Sea, SW Med, Tyrrhenian Sea, and excluding Adriatic Sea;
(2)Including Aegean, Ionian, Levantine, and Central Mediterranean;
(3)Plateau;
(4)North Africa,
(5)Tyrrhenian Sea;
(6)Mediterranean Greece and Turkey,
(7)Italian waters;
(8)Including Thyrrenian Sea, Alboran, and SW Mediterranean;
(9)Including the Ionian Sea,
(10)There are severe gaps in our knowledge of most invertebrate taxa in the Levantine Sea,
(11)This contribution (details in supplementary material), except where noted.
doi:10.1371/journal.pone.0011842.t002

Mediterranean at about 3,000 m depth is greater than 80% and at similar depths the dissimilarity between Atlantic and Western Mediterranean exceeds 90%. These findings indicate that each region is characterized by the presence of a specific assemblage and species composition. This has important implications for estimating the overall regional diversity (γ-diversity) but also suggests the presence of high biogeographic complexity in the Mediterranean. However, these patterns may not hold for all the taxonomic groups [224], and a broader comparison is needed.

Spatial patterns predicted with AquaMaps. Predicted patterns of overall species richness based on AquaMaps showed a concentration of species in coastal and continental waters most pronounced in the Western Mediterranean, Adriatic, and Aegean seas (Figure 5). Less than half of the species were predicted to occur in the deeper waters of the central Mediterranean, and biodiversity was particularly low in offshore waters at the eastern end. Given the overall proportion of ray-finned fishes in AquaMaps dataset (File S2), overall biodiversity patterns from these figures were largely dominated by Actinopterygii (Figures 5a and b). The concentration in coastal waters was more pronounced in the map focusing on these taxa (Figure 5b). Predicted species richness of elasmobranchs was similar to that for Actinopterygii, but rays and sharks occurred farther offshore, especially in the waters of Tunisia and Libya (Figure 5c). The Aegean Sea, especially its northern sector, also showed high invertebrate species richness, which was otherwise low in most of the remaining central and eastern basin (Figure 5d). Biodiversity patterns for the marine mammals contrasted with patterns for fishes and invertebrates in that many species were also predicted to occur in the offshore western and central basin waters, and particularly in slope waters (Figure 5e). The biodiversity patterns of sea turtles broadly mimic those of the other more species-rich taxa in that there was a concentration in coastal areas and a decline in species richness from the northwest to the southeast (Figure 5f).

Therefore, there were similarities and differences between expert-drawn maps (Figures 2 and 4) and modeling results (Figure 5). The pattern describing species richness of ray-finned fish was similar overall (Figures 2b and 5b), but for the elasmobranchs there were some noticeable differences (Figures 2c and 5c). While both methods identified areas around Sicily, the coast of Tunisia, and the Western Mediterranean as high diversity hot spots, the Adriatic and Aegean seas showed up as high in

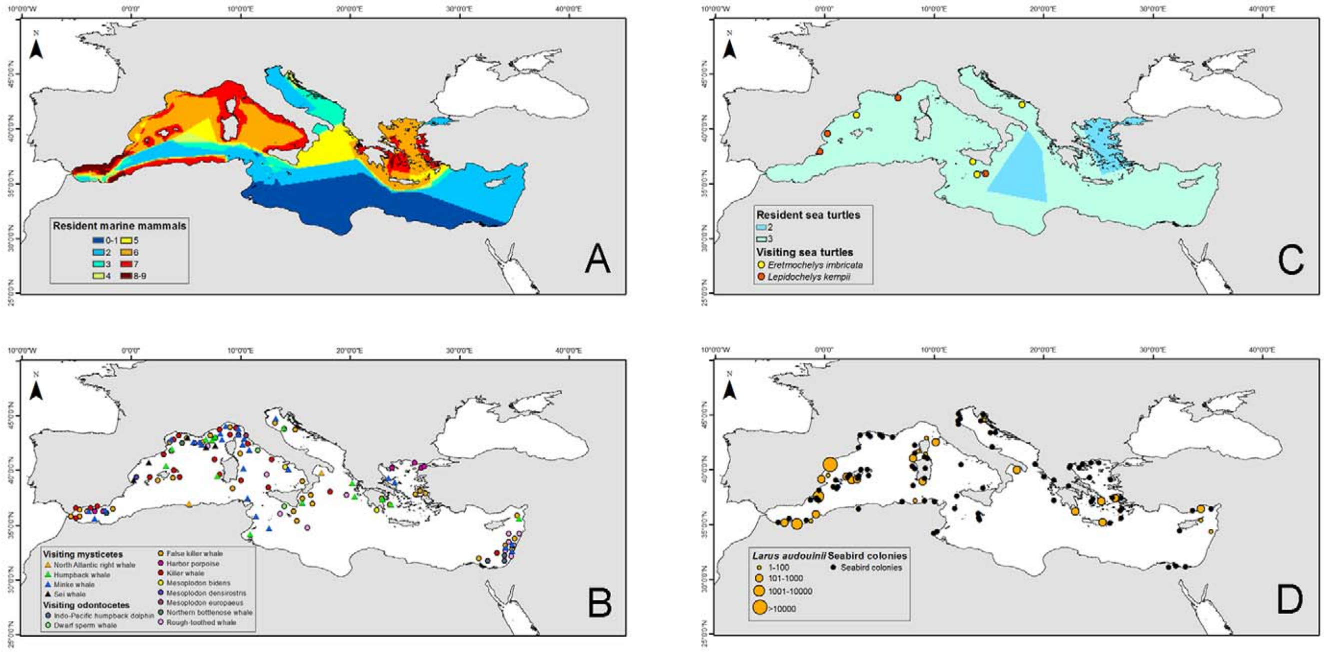

Figure 3. Spatial patterns of vertebrate species richness in the Mediterranean Sea based on superimposed expert-drawn maps (excluding fish species). (A) resident marine mammals (n = 9), (B) nonresident marine mammals (n = 14), and (C) resident sea turtles (n = 3), as well as sighting records (dots) of the two visiting sea turtles. Colors express species occurrence from blue (little or no occurrence) to red (highest occurrence). (D) Seabird colonies (the yellow dots show the distribution and population density of colonies in breeding pairs (bp) of Audouin's gull: Some dots represent the epicenter of several smaller colonies in archipelagos). The size of the cell is 0.1×0.1 degree.
doi:10.1371/journal.pone.0011842.g003

species richness only in the predicted maps. Both types of analyses arrived at similar patterns for marine mammals, although the lack of distinction between resident and visitor species in the AquaMaps analysis hampered the direct comparison of diversity patterns for these taxa. Nevertheless, differences could be seen around the Aegean and Alboran seas (Figures 3c and 6e). Maps of sea turtle diversity showed peaks in the western region based on both types of analysis, but there were a few discrepancies regarding the eastern Mediterranean (Figures 3e and 6f). AquaMaps analysis of predicted species richness of invertebrates also showed a geographical gradient (Figure 5d).

Latitudinal transects corresponding to cross sections through the species richness map (Figure 5a) highlighted the importance of coastal habitats for fishes and invertebrates. These habitats were represented by peaks in species numbers in areas corresponding to shelf waters (Figure 6a). Cross-section gradients followed a similar pattern for fishes and invertebrates; large variations were mostly determined by depth changes along the respective transects. There was also an overarching trend of decreasing species richness from western to eastern waters, a trend that became particularly pronounced in the southern transects. Marine mammal transects diverged from the general trend in that species richness was less directly linked to depth variation. Changes in fish and invertebrate species richness along three different longitudinal cross sections again followed similar depth contours (Figure 6b). Marine mammal longitudinal biodiversity patterns in the Western Mediterranean followed a different trend with highest numbers predicted to occur in deeper waters, such as the southern Tyrrhenian Sea. There appeared to be a general decrease of diversity from northern to southern regions.

Bathymetric patterns. Because seaweeds and seagrasses are photosynthetic organisms, their development is limited to shallow areas where there is enough light for growth. They are distributed between the mediolittoral zone and the deepest limit of the circalittoral zone, situated at 110 m in the clearest waters of the western Mediterranean [225] and a bit deeper in the even more oligotrophic waters of the eastern part [27]. Their growth occurs only on the continental shelves and the uppermost parts of seamounts above 150 m depth. Seaweeds, which have a limited distribution across the whole bathymetric gradient, show an increase in species richness from the highest levels of the mediolittoral rocks down to the lower infralittoral and upper circalittoral communities. There they display the highest species richness, as many as 150 species reported in a surface of 1,600 cm^2 at 18 m depth [226]. Species richness then decreases along the circalittoral zone from the shallowest down to the deepest parts [227], becoming nil at the beginning of the bathyal zone.

The pattern of a generally decreasing diversity with increasing depth was also documented here for invertebrate and fish species (Figures 3, 4, 7, and 8) and is consistent with previous studies [e.g., 31,228]. Diversity was concentrated in coastal areas and continental shelves, mainly above 200 m depth. However, patterns did not necessarily show a monotonic decrease with depth. For example, more polychaete species inhabited shallow waters than deep waters, particularly below 1,000 m deep, but this pattern was less clear when looking at maximum ranges of depth (Figure 7a, File S2). It is not clear whether this is a real pattern of lower deep-sea diversity or a result of the lack of proper faunistic studies in the Mediterranean at those depths. Larger numbers of cumacean species were found in shallow waters of 0–99 m depth (48 species) and between 200 m and 1,400 m depth, but species richness decreased below this depth (Figure 7b, references in File S2). The highest endemism (43.8%) was found between 0 and 99 m depth. The largest number of mysidaceans (54 species) was also found in shallow waters less than100 m deep. At depths between 100 m and 1,000 m, 27 species were found, and below 1,000 m, 21

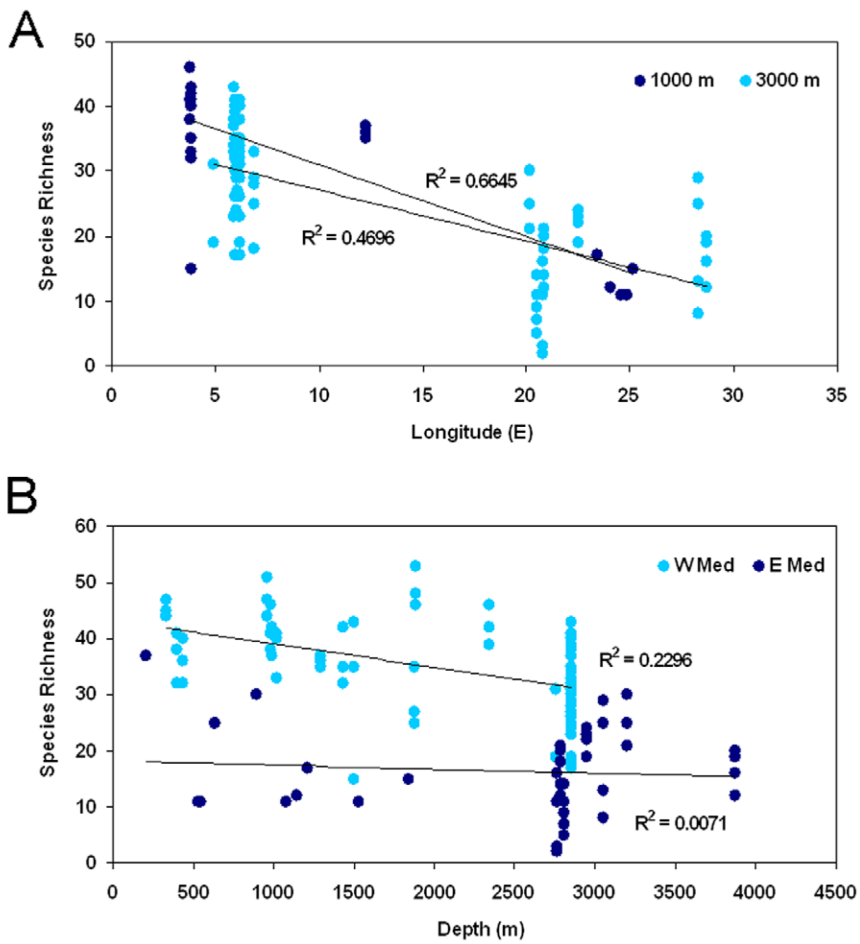

Figure 4. Patterns of benthic biodiversity in the deep sea of the Mediterranean. (A) Longitudinal patterns, and (B) bathymetric patterns of benthic nematodes along the open slopes of the European margins. Benthic biodiversity is estimated as the total number of meiofaunal taxa, and as nematode species richness (expected number of nematode species for a theoretical sample of 51 specimens).
doi:10.1371/journal.pone.0011842.g004

species. The level of endemism was also higher in the 0–100 m depth interval (29 species, 78.4% of total endemism) than in the 100–1,000 m interval (3 species, 8.1%) or below 1,000 m (5 species, 13.5%), in line with results obtained for cumaceans. The circalittoral zone was the region with highest anthozoan species richness (61.8% by numbers of species) followed by the infralittoral (57.6%) and bathyal (40%) zones (File S2). Half of the total number of species were restricted to one of the infra-, circa-, or bathyal zones, and 9.7% were eurybathic, while the remaining species (40%) were intermediate in depth distribution. We also found exceptions to the pattern of decreasing diversity with depth. The bathymetric range of Mediterranean sipunculans was generally quite wide [229]. Most of the Mediterranean records were bathyal, whereas there were few sublittoral records (File S2).

Other studies carried out on depth-related distribution of marine biodiversity in the deep sea of the Mediterranean available form the literature suggest a generally unimodal pattern of species richness, the highest values of which are observed at intermediate depths (about 2,000 m) and lower values at upper bathyal (<2,000 m) and abyssal (>2,000 m) plains [230,231]. More recent studies, however, have demonstrated that such patterns are not always recognizable [e.g., 223–233]. In open slope systems, bathymetric gradients of species diversity have been widely documented [e.g., 230–234]. In the Mediterranean, nematode diversity also decreases with depth (Figure 4b), but the degree of species decrease is limited and ample ranges of biodiversity are observed at the same depth. These results suggest that the eurybathy of the Mediterranean fauna (3,613 species) could be lower than previously reported [235]. For example, analysis of all the existing nematode diversity data from the Aegean Sea showed that there is a gradual increase of diversity with depth from the littoral zone down to the bathyal areas (2,000 m) (N. Lampadariou, personal observation). Complementary information on bathymetric patterns of the deep Mediterranean fauna are explored with detail in [180].

Temporal trends

Available data from the literature show that environmental factors have led to profound changes in the abundance, distribution, and composition of Mediterranean marine species in the distant past [e.g., 19,33,87]. For example, during the Cretaceous, the Mediterranean Sea (called Tethys) was connected to the Atlantic on its western side and the Indo-Pacific on its eastern side. The two oceans contributed very different faunas to the Tethys. During the Miocene, the Tethys was isolated from the Indo-Pacific Ocean and at the Messinian stage, the connection with the Atlantic Ocean was also closed. During this Messinian salinity crisis, the Mediterranean underwent severe desiccation

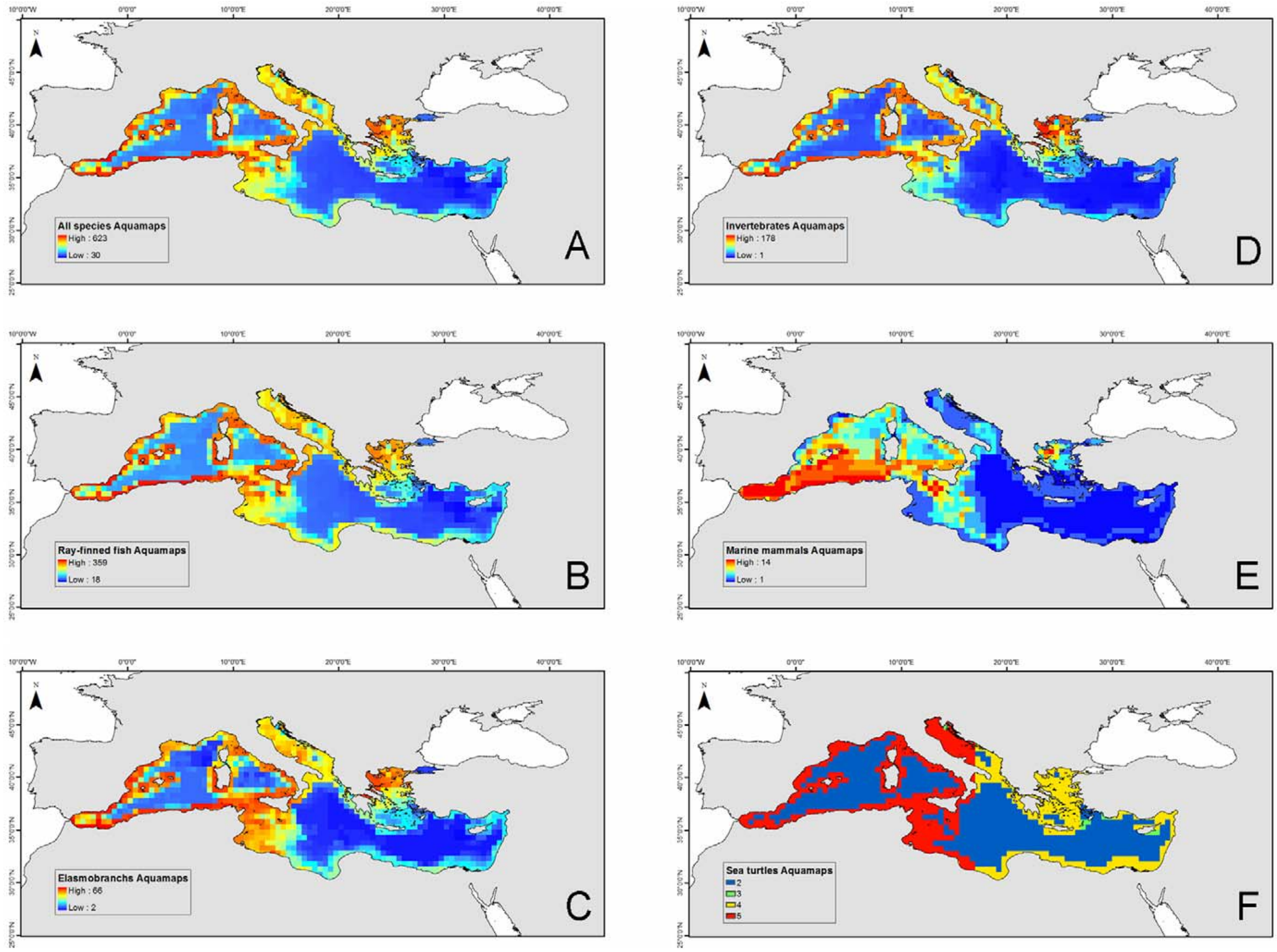

Figure 5. Spatial predicted patterns of species richness in the Mediterranean Sea based on the AquaMaps model [80, and File S2]. (A) All species (n = 693), (B) ray-finned fishes (n = 397), (C) elasmobranchs (n = 74), (D) invertebrates (n = 193), (E) marine mammals (n = 16), (F) sea turtles (n = 5). All maps were generated without imposing a probability threshold except for marine mammals, for which we used a probability threshold of ≥0.4. Colors express species occurrence from blue (little or no occurrence) to red (highest occurrence). The size of the cell is 0.5×0.5 degree.

doi:10.1371/journal.pone.0011842.g005

that drove most species to extinction. Although some shallow areas remained on the two sides of the Siculo-Tunisian Strait, and there were many allopatric speciations [19,236,237], the reopening of the Strait of Gibraltar 5 million years ago led to restocking of the Mediterranean with fauna and flora from the Atlantic. Up to the nineteenth century, the Mediterranean had been connected with the eastern Atlantic Ocean only.

In this section, however, we summarized main changes since the end of the last ice age (approximately 12,000 years ago). During this time there were notable climate-driven fluctuations but also human-induced changes due to the long periods of exploration and exploitation, and more recently the reopening to the Red Sea through the Suez Canal, the globalization of commerce and trade, increasing pollution and eutrophication of coastal areas, habitat modification and loss, and finally the looming climate change.

Early evidence of human interaction with marine fauna in the Mediterranean Sea comes from the Paleolithic period and continues through the Mesolithic and Neolithic periods (approximately 20,000–4000 B.C.). Zooarchaeological remains are found in Franchthi Cave in the southern Argolid, Greece [238], Las Cuevas de Nerja in southern Spain [239], Athlit Yam, a submerged site south of Haifa Bay in Israel [240], Cape Andreas Kastros in Cyprus [241], and the Strait of Gibraltar [242]. In Greece, fish bones of large tuna, Sparidae and Mugillidae, were found. Zooarchaeological remains in Spain include 20 taxa and show changes in mean fish size and range over time that have been considered as indication of overfishing. At Cape Andreas Kastros in Cyprus and in Athilit Yam, 90% of the remains are grey trigger fish (*Balistes capriscus*), which points to intensive fishing regardless of size. In Gibraltar, remains of Mediterranean monk seals and mollusks consumed by humans were found. However, stable isotope analyses of human bones show that between 10,000 and 8000 B.C., the main Mediterranean coastal populations did not rely significantly on marine food [243,244].

Since the fifth century B.C., humans have exploited marine resources. Aristotle, in his zoological works dating to the fourth century B.C., focuses his scientific interest on fish and invertebrates exploited by humans in various ways [245]. Fisheries in the Aegean communities by that period are characterized by variability both in the nature and abundance of the exploited fish and in the manner of their exploitation [246]. Mollusks and other invertebrates are part of the diet of ancient Greeks, and their

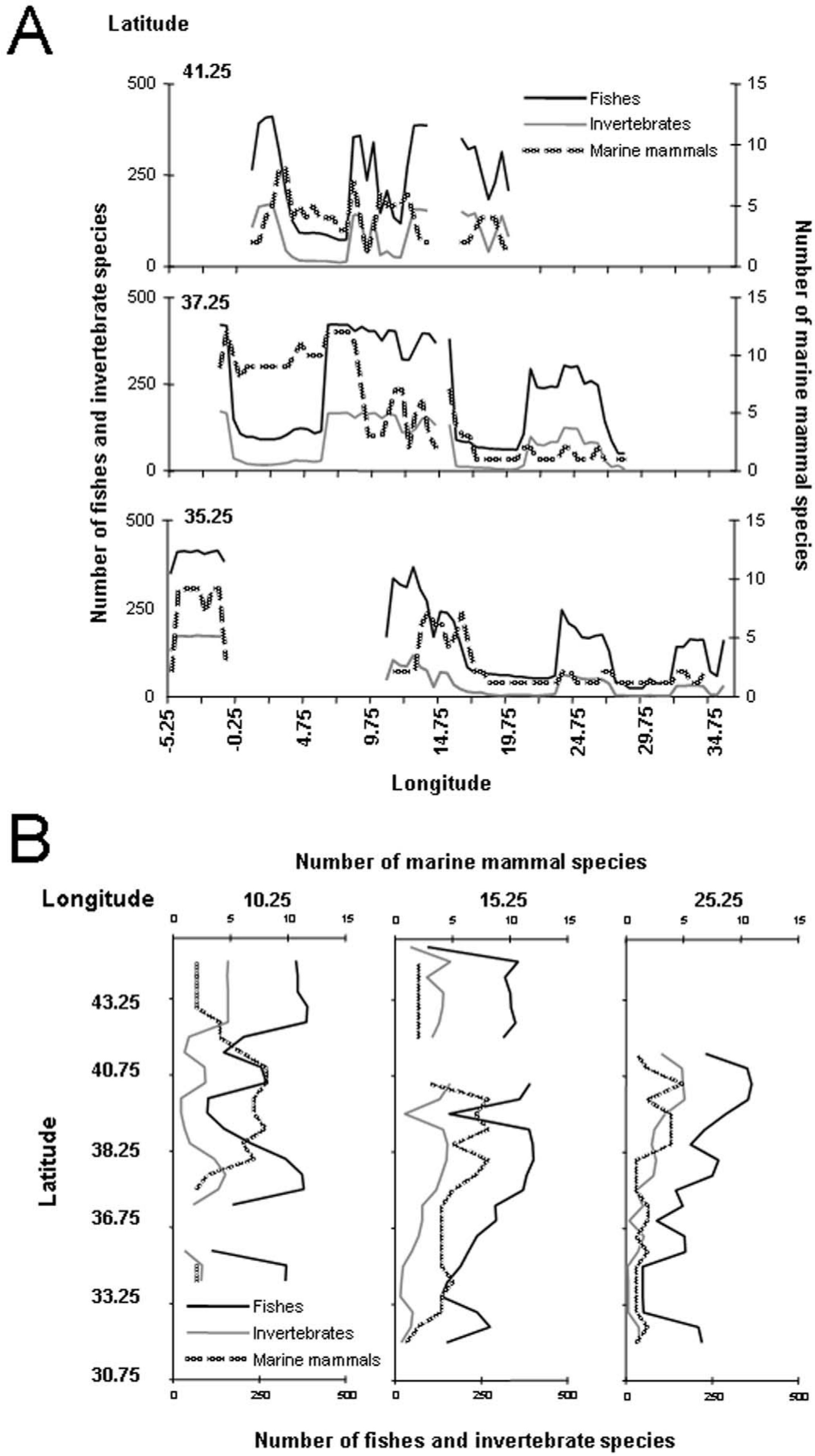
A
Latitude
41.25
37.25
35.25
Fishes
Invertebrates
Marine mammals
Number of fishes and invertebrate species
Number of marine mammal species
Longitude
-5.25
-0.25
4.75
9.75
14.75
19.75
24.75
29.75
34.75
B
Number of marine mammal species
Longitude
10.25
15.25
25.25
Latitude
43.25
40.75
38.25
36.75
33.25
30.75
Number of fishes and invertebrate species

Figure 6. Transects of spatial predicted species richness produced using the AquaMaps model [80, and File S2]. (A) Latitudinal transects, and (B) Longitudinal transects. The contribution of fishes, invertebrates, and marine mammals to geographic gradients in biodiversity is shown.
doi:10.1371/journal.pone.0011842.g006

consumption is connected with the treatment or prevention of various health problems and diseases [247]. Bath sponges of the genera *Spongia* and *Hippospongia*, collected by skillful divers, are widely exploited for household and personal hygiene purposes, and play a principal role in medical practice [248].

Commercial fishing and fish processing activities play an important role in the Pontic economy. The export of fish and fish products, including salt-fish (*tarichos*) and fish sauce (*garum*) mainly from European anchovy to the Aegean Sea, continue into the Roman period [249]. These products are exported from the western Mediterranean, but g*arum* is forgotten in the west by the tenth century, although it is still prepared in Constantinople in the fifteenth and sixteenth centuries [250]. Naval trade traffic becomes intense, and invasions of islands from the mainland are already common, and they result in the beginning of the introduction of alien species in those ecosystems. Some of these introductions (rats, carnivores) trigger the extirpation of many seabird colonies, and they have shaped the current distribution of several seabird species [251,252].

Seafood becomes increasingly popular toward the end of Roman domination, probably because of the proximity of, and access to, marine resources. There is historical evidence of

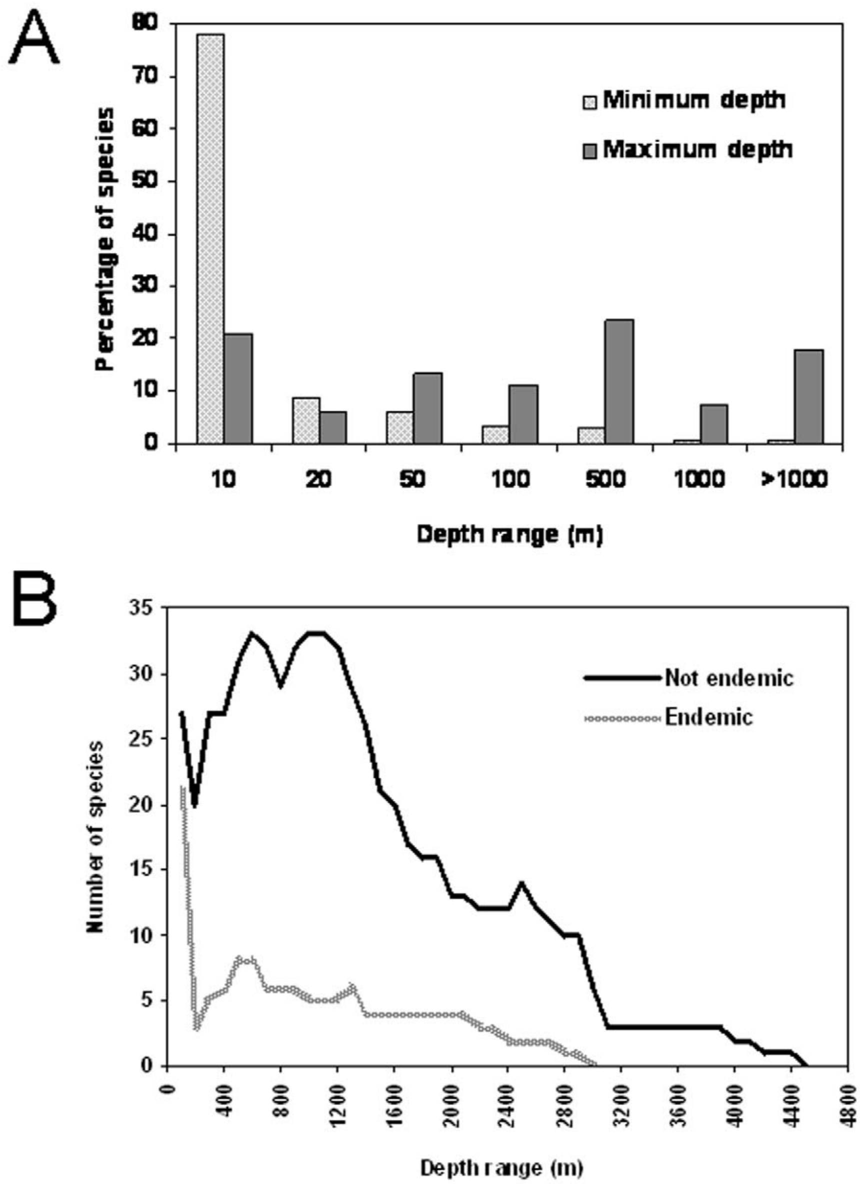

Figure 7. Bathymetric patterns of species richness. (A) Bathymetric ranges of distribution for Mediterranean polychaete species at minimum and maximum depths where they have been reported (File S2), and (B) number of Mediterranean cumaceans recorded in each 100 m depth interval (Endemic species are plotted in gray. For nonendemic species only records from the Mediterranean Sea are considered, File S2).
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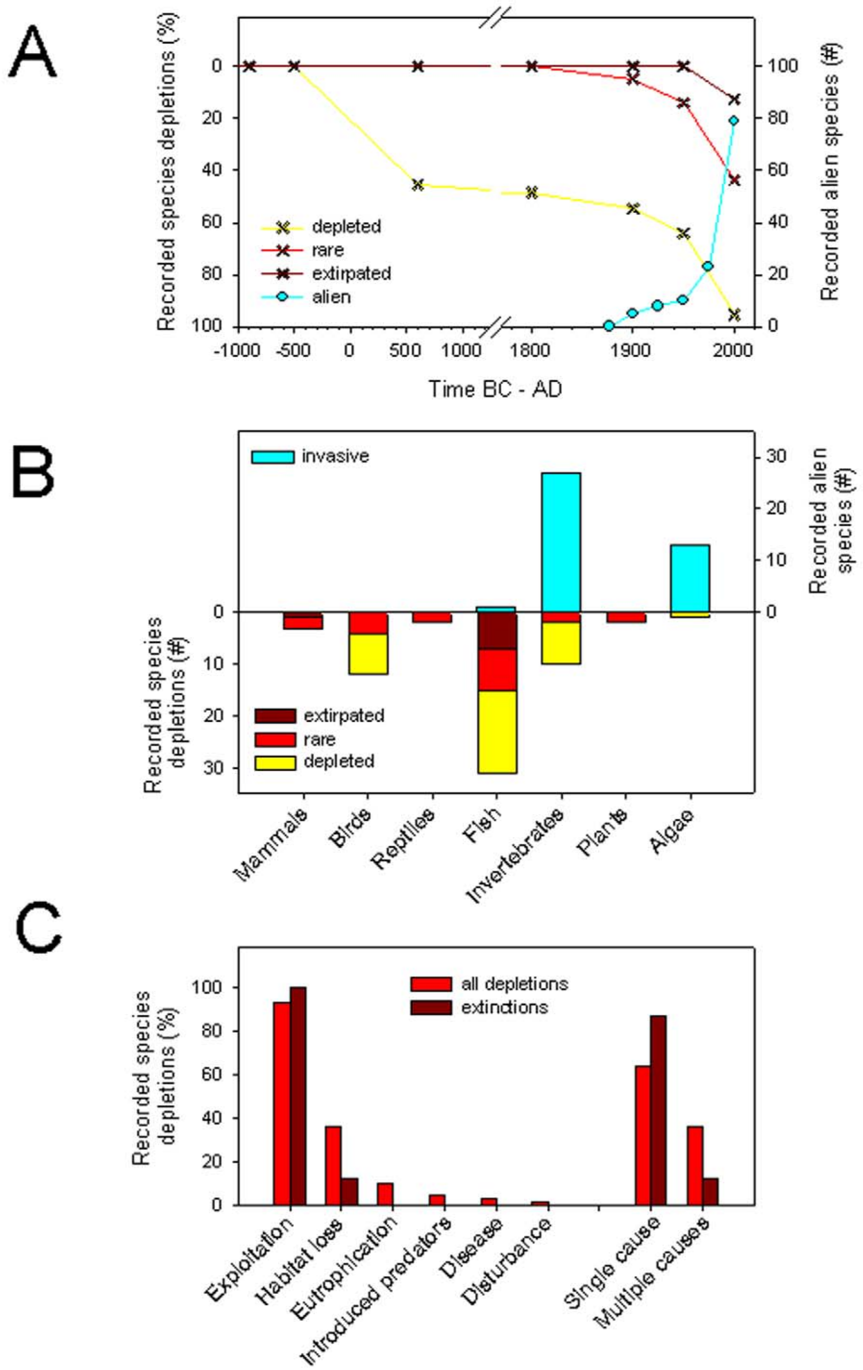

Figure 8. Historical changes and threats of species in the Mediterranean Sea. (A) Historical trends in the proportion of species being depleted (>50% decline), rare (>90% decline), or extirpated (100% decline) in the North Adriatic Sea, based on data for 64 economically and ecologically important species for which long-term records are available. Temporal trends for alien species refer to recorded exotic mollusks in the whole Mediterranean Sea [272]. (B) Shifts in species diversity of the North Adriatic Sea over historical time scales. Species depletions and extirpations occurred mostly in larger species groups, while invasions occurred in smaller and lower trophic-level species [data from 271]. (C) Threats to diversity in the North Adriatic Sea over historical time scales. Shown is the percent of recorded species depletions and extinctions caused by, or attributed to, different human impacts. Also shown is whether human impacts acted as single or multiple causes. Data were adapted from Lotze et al. [113].
doi:10.1371/journal.pone.0011842.g008

overfishing in some parts of the Western Mediterranean in the early Imperial period [253]. Even then, certain fishing techniques are prohibited to manage or counteract the decline in fish stocks (such as fishing by torch lights at night), and efforts are made to boost natural availability with introduced fish and shellfish stocks. For example, the parrot fish (*Sparisoma cretense*) is captured in the Aegean Sea and released in the Tyrrhenian Sea [253,254]. There are also pictorial remains that show fishing gear and a large variety of targeted species during Roman times. Gastropods [255], the red coral *Corallium rubrum* [256], and several species of sponges [257] were exploited on an industrial scale.

Fishing, fish processing, industrial exploitation of several marine species, and development of improved fishing gear continue during the Byzantine period [253]. Various literary sources point out that targeted species, among them the currently overfished tuna, are conspicuous. There is a 200-year gap between the Moslem conquest of the Near East and northern Africa and the appearance in the ninth century of the first Arabic written sources [250]. In northern Africa, the first written evidence dates from the tenth century and refers to fishing gear used to catch mullets, Atlantic bluefin tuna (with large spears), and fish in shallow waters [258]. Zooarchaeological material from the Israeli coastline dating from the Byzantine through the Moslem Crusader and Mamluk periods (fourteenth century) points to a high consumption of marine and freshwater fish that are still fished in Israel today, such as the thin-lipped grey mullet (*Liza ramada*), Sparidae, and the parrot fish [250]. There is noticeable fishing activity dating from the Byzantine, Moslem (tenth century), and later Norman periods (eleventh to thirteenth centuries) in southern Italy and in Sicily, where Atlantic bluefin tuna is the main target species exploited by traps (*tonnara*) [259].

Harvesting of the gastropods *Hexaplex trunculus* and *Bolinus brandaris* is an example of the successive exploitation of marine resources from the Iron Age until the thirteenth century in the Eastern Mediterranean. These species are specifically harvested for the purple pigments extracted from their shells and used to dye clothes. This harvest disappear from the Levantine area in the late twelfth century, and from Greece a century later, although both species are still abundant to this day [250]. Another example of human exploitation of marine resources from historical times is the hunting of seabirds on islands, particularly of shearwaters, which probably constituted the only source of protein in periods of scarcity especially on small islands. In places such as Formentera (Balearic Islands), humans contribute to the depletion, and partial extinction, of Balearic shearwaters (*Puffinus mauretanicus*), with consequences at the level of the marine trophic web [260].

Human impacts on marine biodiversity grow increasingly stronger as the Mediterranean cities and ports continue to grow and more recent centuries witnessed substantial advances in technology. It is assumed that since the fourteenth century, the adoption of new fishing methods (such as the *tonnara*, a sort of drift net mainly used for tuna fishing) in the Western Mediterranean, their spread to southern Italy [261,262], and their introduction to the Adriatic in the seventeenth century [261,263] increase fishing catches. Fishing catches increase to an extent that even the early fishermen organizations (sixteenth century), such as *Cofradias* in Catalonia [262] and the *Prud'homies* in Provence [264], are concerned about possible negative effects on exploited stocks. Such effects are further intensified by the increasing industrialization in the nineteenth century, with an increase in the efficiency of existing fishing gear (e.g., otter trawl) and the introduction of new ones (such as midwater pelagic trawls, hydraulic dredges, and iron-toothed dredges). Industrialized fishing had severe impacts on species, habitats, and ecosystems [265]. Several studies also show historical changes in fish communities of different regions of the basin [e.g., 25,123,266–268]. These findings point to a general severe depletion of top predators in the basin, including Atlantic bluefin tuna, which is considered critically endangered according to the declining trend observed in the Atlantic and the Mediterranean in the last 50 years. Historical fluctuations in the abundance of this species have been described on the basis of a centuries-long time-series of tuna trap catches, starting in the seventeenth century, and suggested to be linked to climate fluctuations [269].

Despite this comparative wealth of historic information about temporal trends mainly linked to the history of human exploitation of Mediterranean marine biodiversity, many unknowns remain in spatial and chronological gaps from prehistoric periods to the present. Ancient, medieval, and early modern records contain qualitative rather than quantitative data, and it is difficult to depict general diversity trends at either a species or ecosystem level at the scale of the whole Mediterranean.

Interesting results do emerge from analyses of specific regions. The overall trends reported by Lotze et al. [113] for the north Adriatic Sea indicated that prehistoric people had no measurable effect on marine resources around this basin (Figure 8a, see File S2 for species included in the analysis). This changed during the Classical period (500 B.C. to A.D. 600) [270], and especially during Roman times, when reports of species depletion and overexploitation in coastal waters increased. It is possible that marine species recovered from heavy exploitation after the collapse of the Roman Empire, as has been documented for terrestrial resources [33]. However, human population increased during the Medieval period (approximately A.D. 600 to 1500), increasing the pressure on marine resources. With the onset of the industrialization in Europe in the nineteenth century, signs of species depletions and rareness increased and accelerated throughout the twentieth century, when the first extirpations of species were also recorded. Biodiversity did not decrease, however, because some species were newly introduced into the Adriatic Sea [271]. No temporal trend is known for alien species in the Adriatic Sea, so we showed (Figure 8a) a timeline of mollusk invasions in the Mediterranean as a whole [272], which started in the late nineteenth century and accelerated during the twentieth century. The depletion of formerly abundant species and the invasion of new species caused a shift in species composition and diversity in the north Adriatic Sea [113]. Local species depletions and extirpations mostly occurred among large species, including marine mammals, birds, reptiles, and commercial fish and invertebrates, while species invasions were mainly by smaller species at lower trophic levels, such as invertebrates and algae (Figure 8b). Such fundamental changes in species composition had effects on the structure and functioning of food webs and ecosystems [113,273].

Population declines have also been noted among marine mammals throughout the Mediterranean. These species include sperm whales, which have been declining since the end of the 1980s [274]; short-beaked common dolphins, which began to decline around the 1970s [93,275]; common bottlenose dolphins, which have decreased by at least 30% over the past 60 years [97,276]; and striped dolphins, which have been in decline since the early 1990s [277]. The Mediterranean monk seal, in particular, was deliberately hunted during the Roman period [278], and it disappeared in the greatest part of the Mediterranean basin during the early 1900s [279,280]. Currently, it mainly occurs in small, isolated areas of the Greek and Turkish coasts, and northwest African coastal waters (Figure 9), but the presence of Mediterranean monk seal in some of these areas is uncertain. There are fewer loggerhead and green turtles throughout the Mediterranean, although historical records were available to determine the severity of their population decline [22,95]. Known nesting sites especially for the loggerhead turtle disappeared in several areas of the basin [22] (Figure 9).

Although the population trends for most seabird species are not well known, all reliable long-term information suggests that most seabird species have recovered on the European coasts during the last three decades. This recovery is due to more restrictive conservation policies at national and international levels. With the

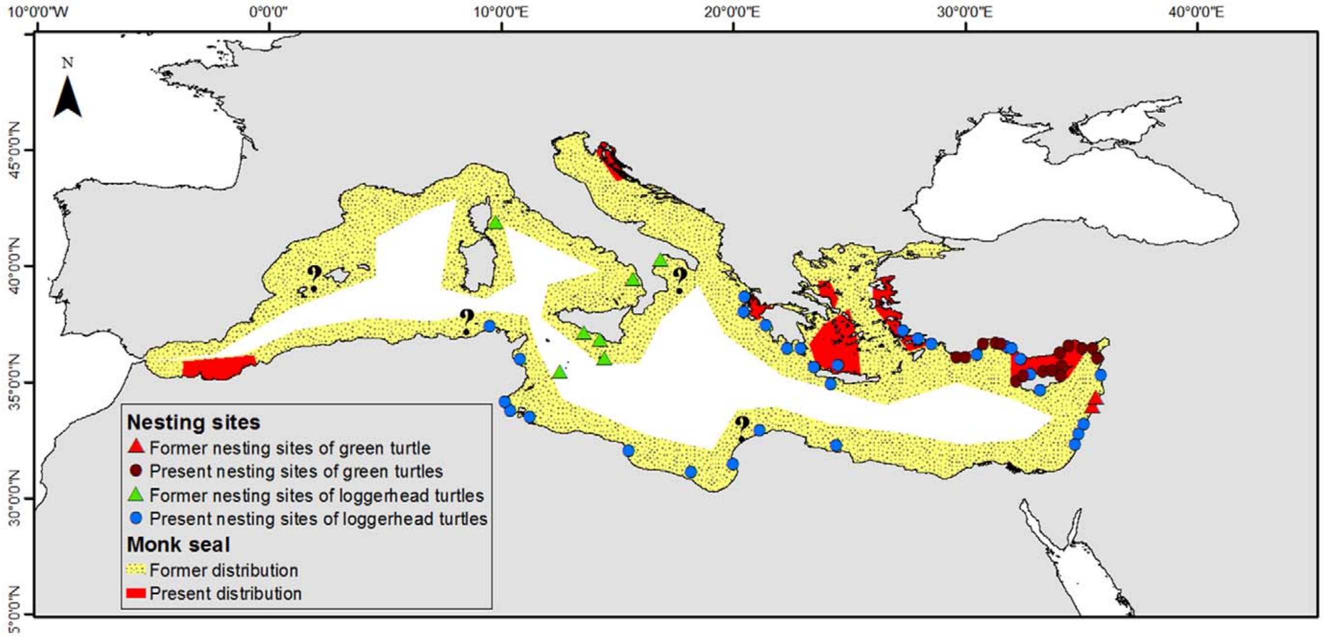

Figure 9. Distribution of monk seals and nesting sites of marine turtles in the Mediterranean. Present (red areas) and historical (yellow areas) distribution of the Mediterranean monk seal [22,23,101,106,117–119], and nesting sites for loggerhead turtle and green turtle [modified from 22]. Green and red triangles, respectively, are the former nesting sites for loggerhead turtle and green turtle; green and red dots are the present sites. Question marks represent sites where one or a few Mediterranean monk seals have been recently seen.
doi:10.1371/journal.pone.0011842.g009

exception of shearwaters, seabird species show relatively stable population trends. Gulls and terns, after two decades (1980s and 1990s) of sharp increase in their densities (up to an average 13% annual growth rate in Audouin's gull) [171], are now in dynamic equilibrium [281]. Sparse data on shags suggest a slow recovery in the last two decades. Storm petrel populations are stable at the few long-term monitored sites [282], but many suitable breeding sites have been destroyed since historical times along coastlines. Paleontological records confirm that the distribution of many species was much larger, even occupying habitats in the interior of large islands relatively far from the sea, where recolonization is now impossible [283]. Population recoveries of Mediterranean seabirds must be considered only partial, and only occurring where protection is effective [284].

Threats to diversity and hot spots

As shown above, anthropogenic factors have influenced the general patterns and temporal trends of Mediterranean marine diversity with varying degrees of intensity. Quantifying the importance of each threat is essential for future analysis.

Lotze et al. [113] provided data to evaluate the human impacts that caused or contributed to the depletion or extirpation of species in the north Adriatic Sea over historical time scales. Exploitation stood out as the most important factor causing or contributing to 93% of depletions and 100% of local extinctions or extirpations (Figure 8c). Habitat loss or destruction was the second-most-important human impact, followed by eutrophication, introduced predators, disease, and general disturbance. While 64% of depletions and 88% of local extinctions were caused by a single human impact, in all other cases the combination of two or several human causes was responsible for the decline or loss. This highlights the importance of cumulative human impacts, especially in coastal ecosystems, with emphasis on species with commercial interest.

Recently, anthropogenic drivers and threats to diversity increased and further diversified in the Mediterranean, as observed elsewhere [285]. Published information and the opinion by experts identified and ranked current threats to diversity in the Mediterranean (Figure 10, and File S2). The sum of the ranking (0–5 for each threat) showed that for 13 large taxonomic groups, habitat loss and degradation are considered the primary impact on diversity, followed by exploitation, pollution, climate change, eutrophication and species invasions. These were the most conspicuous threats and also affect the greatest number of taxonomic groups. Other threats to diversity were maritime traffic (collisions with vessels) and aquaculture. Within 10 years from now, habitat degradation and exploitation were predicted to retain the predominant roles, while pollution and climate change will likely increase in importance, followed by eutrophication. Of all current threats to biodiversity in the Mediterranean, climate change was predicted to show the largest growth in importance within the next 10 years (10.8%), followed by habitat degradation (9.2%), exploitation (6.2%), and pollution, eutrophication, and invasion of species (4.6% each) (Figure 10).

Figure 11 shows past changes and projected future increases in sea surface temperature (SST) in the Mediterranean Sea. The 15°C isotherm, whose one-century climatological mean crosses the Straits of Sicily, may have moved northward in recent times (Figure 11a). This can imply that a number of tropical Atlantic species that entered the Mediterranean during the last interglacial (125,000 to 110,000 years ago) will reenter the Western Mediterranean in the near future [286–288]. In the meantime, in the Western Mediterranean, the "14°C divide" [289], the one-century climatological mean of the surface isotherm for February that coincides with a frontal system created by mesoscale eddies in the Algerian Basin [290] and that may act as a barrier to dispersal, has apparently moved northward in recent times (Figure 11a). The southern sectors of the Mediterranean harbor many native warm-

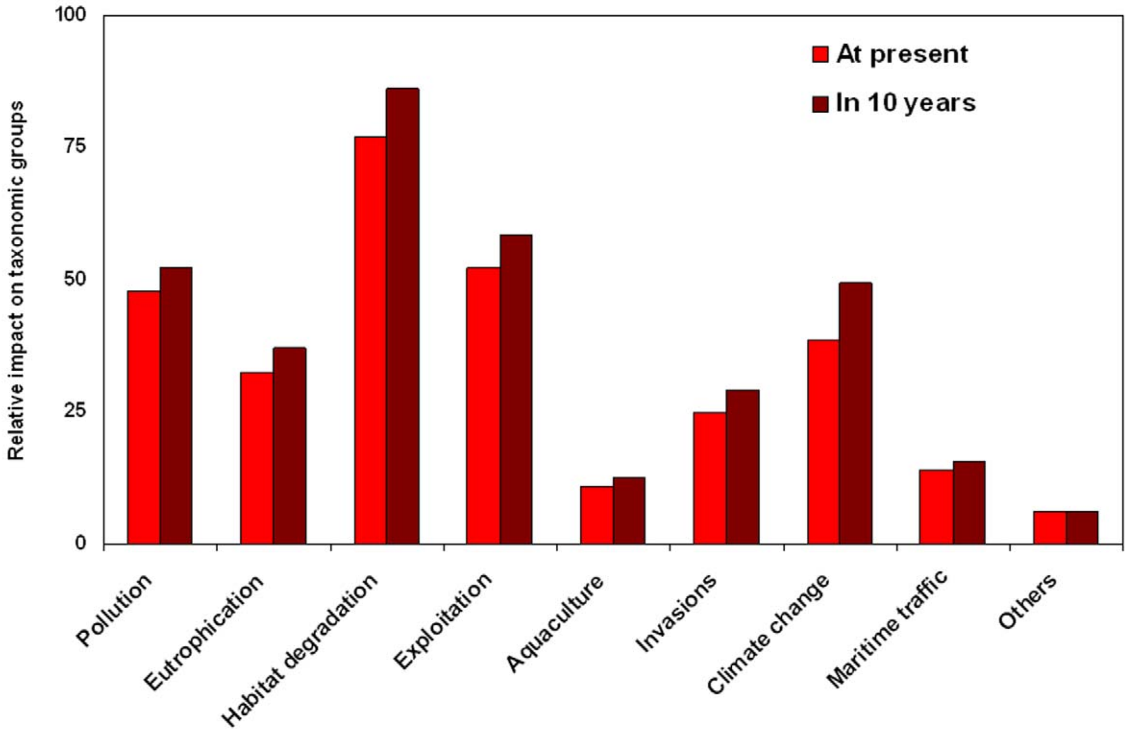

Figure 10. Current and future threats to biodiversity in the Mediterranean Sea. We used published data on specific taxa and expert opinion. Threats to diversity were ranked from 0 to 5 for 13 taxonomic groups and results are shown as the percentage of the ranking to the maximum values (File S2).
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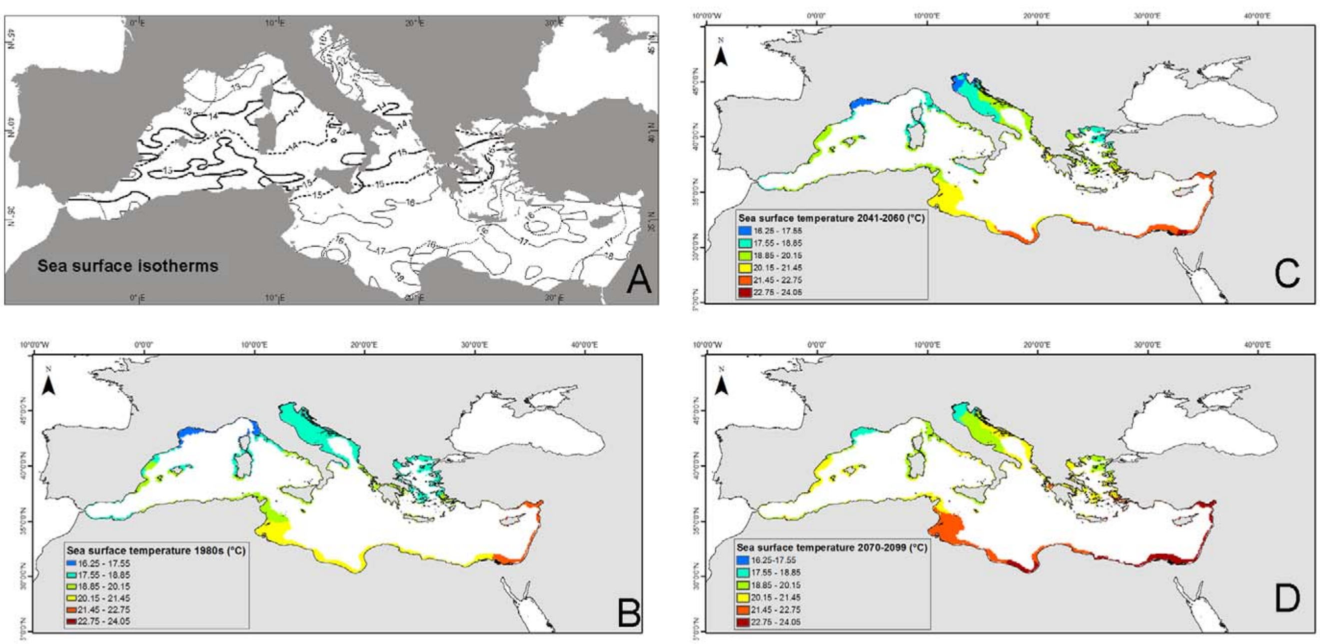

Figure 11. Past changes in seawater temperature and future projections in the Mediterranean Sea. (A) recent northward shifting of February sea surface isotherms (°C) in the Mediterranean Sea (broken lines are the one-century climatological means, solid lines the means for 1985–2006: the 14°C and the 15°C ''dividers'' are highlighted by a thicker tract. Data compiled from MEDATLAS, GOS-MED, NOAA-AVHRR data and various other sources. Seawater surface temperature on the continental shelves is shown (B) during the 1980s (according to the NOAA data), (C) by 2041–2060, and (D) by 2070–2099 [according to the OPAMED8 model based on the A2 IPCC scenario, 120]. The size of the cell is 0.1×0.1 degree.
doi:10.1371/journal.pone.0011842.g011

water species that do not occur or get much rarer in the northern sectors. These ''southerners'' are apparently confined by the 14°C divide. Perhaps not coincidentally, many of these native but ''meridional'' warm-water species have colonized the northern sectors, which are thus facing a process of ''meridionalization'' [e.g., 286,291,292]. In addition, the mean SST made in early 1980s (Figure 11b) revealed that the warmest area of the Mediterranean was the Levantine Basin, with a mean SST of 21.8°C, and the coolest areas were the Gulf of Lions and the Ligurian Sea, with a mean SST of 16.9°C. Climate models predicted that by 2041–2060, the major part of the Mediterranean will become warmer except the northern Adriatic, which is expected to become cooler (OPAMED8 model based on the A2 IPCC scenario, Figure 11c). By 2070–2099, the Mediterranean is projected to warm by 3.1°C (Figure 11d), the last cool enclaves being the Gulf of Lions and the northern Adriatic, with a mean SST of 18°C.

Taking into account data regarding marine biodiversity and threats, we mapped vertebrate endangered species and have tried to locate potential hot spot areas of special concern for conservation in the Mediterranean (Figure 12). The first attempt included fish, marine mammals, and sea turtles, which are considered important sentinels for ocean health. The identified hot spots highlighted the ecological importance of most of the western Mediterranean shelves. The Strait of Gibraltar and adjacent Alboran Sea and African coast were identified as representing important habitat for many threatened or endangered vertebrate species. The most threatened invertebrate species in the Mediterranean, the limpet *Patella ferruginea*, is also distributed along this area [293]. Both the northern Adriatic and Aegean seas also showed concentrations of endangered, threatened, or vulnerable species. Other equally species-rich waters along the northeast African coast, and the southern Adriatic Sea, were of lesser concern for the protection of endangered species.

Discussion

Estimates and patterns of marine diversity in the Mediterranean Sea

Our estimate of 17,000 species for marine biodiversity in the Mediterranean updated and exceeded previous values, which were on the order of 8,000–12,000 species (Table 3). In comparison with the 1992 estimate [15], the total number of recorded species has increased substantially. As a result of recent efforts and improvements in analytical methods and instruments, our estimates of invertebrates and protists, in particular, have undergone an upward revision in recent years. Current estimates of sponges, cnidarians, polychaetes, mollusks, arthropods, echinoderms, ascidians, and other invertebrates all exceed those dating back to the early 1990s. However, since most microbial diversity is basically unknown, global numbers and their evolution are uncertain.

Estimates from global databases that include Mediterranean information up to September 2009 range from 4% and 25% of the total species diversity estimated in our study (Table 3). They covered vertebrate taxa fairly comprehensively, but other taxonomic groups were underrepresented. WoRMS included 8,562 records of Mediterranean marine species, which represented 50% of species registered in this study. Mediterranean databases such as ICTIMED (specialized in fish diversity) included about 70% of fish diversity reported in our study.

Total estimates of Mediterranean species of macrophytes and metazoans represented 6.4% of their global counterpart (Table 4). Macrophytes showed the highest percentage of shared species with global estimates, and Heterokontophyta and Magnoliophyta scored the highest (17.2% and 11.7%, respectively). Among metazoans, Mediterranean sponges showed the highest percentage (12.4%), followed by polychaetes (9.4%) and cnidarians (7.7%). Other groups represented much lower percentages of the total, such as echinoderms (2.2%), fish species (4%), and mollusks (4%).

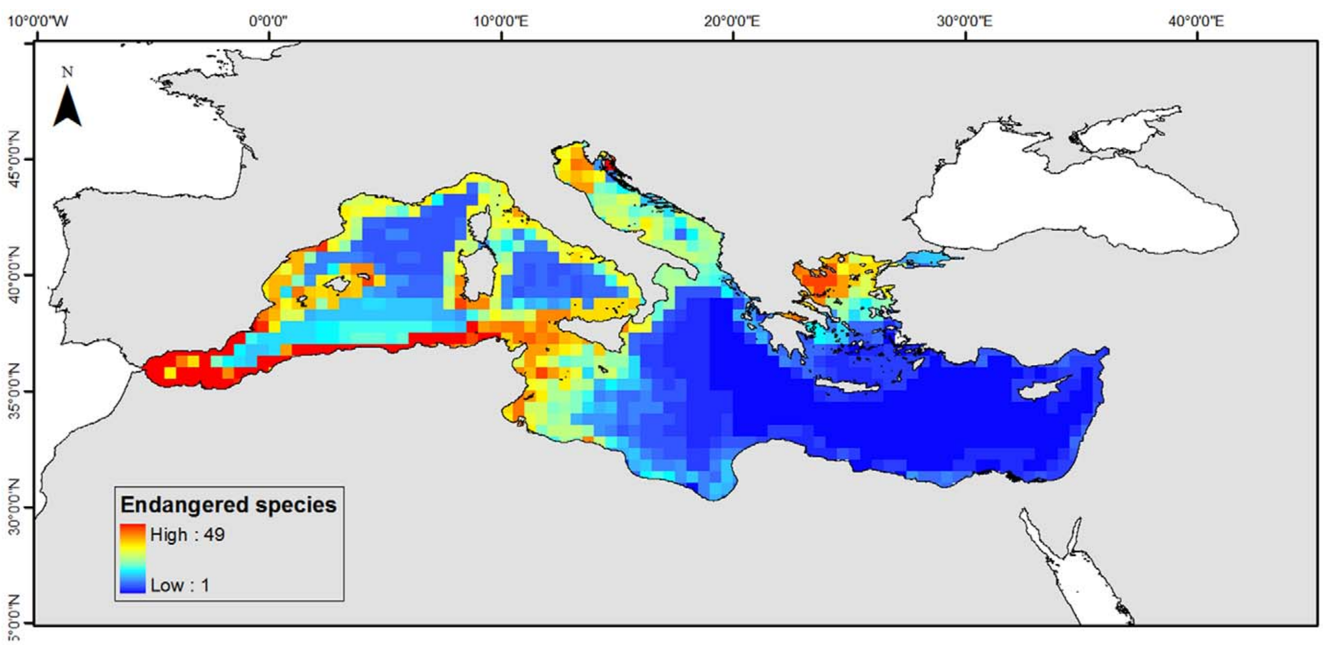

Figure 12. Biodiversity hot spots for Mediterranean vertebrate species of special conservation concern. This figure includes 110 critically endangered, endangered, vulnerable, or near threatened species. Results are predictions based on AquaMaps model [80, and File S2] and generated using a probability threshold of occurrence of ≥0.4 to highlight likely areas of critical habitat for each species. Colors express species occurrence from blue (little occurrence) to red (highest occurrence). The size of the cell is 0.5×0.5 degree.
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Table 3. Group-specific biodiversity estimates for the Mediterranean marine biota through time [16,19,68], including the current estimate (estimate 2009), and online free-access global databases [71,77–81].

	Datasets for the Mediterranean Sea				Global datasets**		
	MEDIFAUNA 1992[1]	Bianchi and Morri 2000[2]	Boudouresque 2004[3]	Current estimate 2009[4]	AquaMaps[5]	FishBase & SeaLifeBase[6]	OBIS 2009[7]
Benthic primary producers[8]	0	1086	1034	1131	260	0	0
Invertebrates	6338	6575	7287	10901	3445	2088	193
Vertebrates	694	639	694	693	613	618	493
Bacteria, Protists and Fungi	0	265	2985	Approx. 4400	10	0	0
Total	7032	8565	12000	16848	4328	2706	686

**Queried July 2009.
[1][15];
[2][19];
[3][16];
[4]Table 1;
[5][80];
[6][78];
[7][77];
[8]Heterokontophyta, Rhodophyta, Chlorophyta and Magnoliophyta.
doi:10.1371/journal.pone.0011842.t003

Table 4. Number of Mediterranean species of macrophytes and metazoans, global number of marine species, and percentage of Mediterranean species with respect to their global counterparts.

Taxa	No. species this work	No. species worldwide*	%
Macrophytes			
Phaeophyta	277	1600	17.31
Chlorophyta	190	2500	7.60
Rhodophyta	657	6200	10.60
Magnoliophyta	7	60	11.67
Metazoans			
Porifera	681	5500	12.38
Cnidaria	757	9795	7.73
Platyhelminthes	1000	15000	6.67
Mollusca	2113	52525	4.02
Annelida	1172	12000	9.77
Crustacea	2239	44950	4.98
Bryozoa	388	5700	6.81
Echinodermata	154	7000	2.20
Ascidiacea	229	4900	4.67
Other invertebrates	2168	18565	11.68
Vertebrata (Pisces)	650	16475	3.95
Other Vertebrata	43	481	8.94
Total	**12725**	**203051**	**6.27**

*Based on Bouchet [82], Green and Short [26], and Groombridge and Jenkins [83].
doi:10.1371/journal.pone.0011842.t004

Previous studies claim the existence of a gradient of species richness from the northwest to the southeast Mediterranean [e.g., 90,251,294–297], in agreement with differences in key environmental variables, such as latitude, salinity, temperature, and water circulation, in addition to the distance from the Strait of Gibraltar. Our results confirmed this general decreasing trend and showed that the distribution of marine diversity in the Mediterranean is highly heterogeneous.

The Western Mediterranean displays the highest values of species richness, likely owing to the influx of Atlantic species and the wide range of physicochemical conditions. The central Mediterranean, Adriatic, and Aegean seas are areas of second-highest species richness, although with exceptions. The Adriatic Sea sometimes displays lower species numbers because of restricted exchange with the western basin, decreasing depth toward the north, the presence of fresh water, and the larger amplitude of temperature variations [297,298]. However, this basin shows a large number of endemics possibly owing to its higher isolation. The Aegean Sea normally follows the western areas, mainly because of its more direct exchange with the western basin and its higher habitat diversity [297,299,300]. The Levantine Basin and southeastern side have in general the lowest species richness, which is due to the unfavorable conditions prevailing in the area (such as high salinity) as well as the less intensive sampling effort [297,301].

In fact, a lack of data is evident in several eastern and southern regions of the Mediterranean basin. This may have strongly influenced some of our results regarding spatial patterns, so generalizations have to be made carefully. Marine research in the Mediterranean has been regionally biased, reflecting sparse efforts along the southern and easternmost rim. It has even been suggested that the relative species richness of different taxa by sector of the Mediterranean is a better indicator of the level of research effort than of true species richness [302]. Therefore, as new species are assessed in the eastern and southern areas, patterns may be modified. Moreover, the diversity in the eastern end is more influenced by species introductions. The Suez Canal, opened in 1869, has restored the connection between the Mediterranean and the Indian Ocean [303], and in recent years we have witnessed an exponential increment in the number of Indo-Pacific species recorded in the Eastern Mediterranean [e.g., 88,304]. This trend will continue to influence the biodiversity of the Mediterranean Sea.

In addition, the data used to draw spatial patterns were collected from the 1980s to 2000s, so results may differ from the current situation and may represent potential ranges and values rather than current ones. However, similarities exist between results achieved with distribution maps drawn with expert data and predicted results using AquaMaps models. These similarities indicated that the species richness maps resulting from this study are a useful first attempt to represent comprehensive species richness patterns at the Mediterranean scale. Differences encountered using both methods may be due to limitations of the data. By their nature, expert-drawn maps or sightings often represent underestimates of total species distributions because of the absence or lack of effort in certain areas (in our case the southern shorelines of Mediterranean along the coasts of northern Africa and the eastern sites) and the inability to detect rarer species without sufficient efforts. On the other side, AquaMaps model predictions do not currently factor human impacts or ecological interactions and may be closer to fundamental or historical niche rather than realized niche. Therefore some AquaMaps predictions may represent overestimates (a good example is the Mediterranean monk seal; see www.aquamaps.org). Besides, the relative probability of occurrence calculated from AquaMaps does not distinguish between a rare species that might only have been sighted once in a given cell, and a more abundant species that might be sighted every day. AquaMaps rely exclusively on data accessible through OBIS/GBIF, which currently contains few Mediterranean records. Therefore, for many species, occurrence was inferred from habitat use outside of the Mediterranean. Because the Mediterranean environment represents some environmental extremes (such as salinity and temperature records), occurrences in the eastern part may not have been captured adequately by AquaMaps, and this could partially explain the low values in this region. These limitations are extended to our first attempt to depict hot spot areas in the Mediterranean. The eastern region hosts important populations of elasmobranchs and marine mammals that are currently threatened, but their probability of occurrence estimated by AquaMaps model is lower than 0.4. Further studies should be able to reconcile both mapping sources and confirm or correct patterns.

Explanations for the observed heterogeneity of species richness in the Mediterranean Sea include the threshold of the Siculo-Tunisian Strait that divides the Mediterranean into two basins, and the paleo-biogeographical history of the Mediterranean Sea. The western basin shows more biological similarity with the Atlantic Ocean, hosting a higher number of cold-temperate species, while the eastern basin shows more biological similarities with the Indo-Pacific, and hosts a larger number of subtropical species. The Siculo-Tunisian Strait still partially acts as a barrier to the dispersal of many species between the two basins and constitutes their meeting point.

Diversity differences between areas may also reflect changes in water masses and circulation [305,306] as well as changes in temperature and salinity [307]. The diversity of some groups is definitively influenced by this temperature gradient. For the sipunculans, richness may be linked to the temperature of the water masses during the year [289], which reflects a physiological barrier between cold and warm water for cold- and warm-water species. For example, *Golfingia margaritacea* is mainly a temperate and boreal species [229], and its presence in the Mediterranean may indicate the prevalence of colder water masses. In contrast, other thermophilic species, such as *Phascolion convestitum* and *Aspidosiphon elegans*, have been proposed as Lessepsian migrants [229,308].

Diversity distribution in the Mediterranean is also associated with a productivity gradient. Higher productivity areas show higher diversity partially because they are important feeding and reproductive sites for several taxa. Most of these areas occur in the Western Mediterranean and the northern Adriatic that, for example, host many species of fish, seabirds, marine mammals, and turtles [e.g., 91,110,309]. Their distribution is associated with feeding habits [e.g., 92,93,97,276,280]. Moreover, some fish, seabirds, sea turtles, and mammals show opportunistic feeding behavior, exploiting discards from trawling and purse seines, and to a lesser extent from artisanal long-lining [e.g., 310–312]. In developed Mediterranean countries, discards from trawl fishing can be up to 400% of the commercially valuable catches, and such amounts of food, which may be predictable in space and time, are scavenged by many species. Most Mediterranean marine mammals are predominantly offshore and prefer deep-water habitats, but a few species can venture to inshore waters and scavenge fishery discards [97,309,313].

The three main categories explaining the drivers of biodiversity in the deep Mediterranean are (i) bathymetric gradients, which are associated with increasing pressure and decreasing food availability in deeper sediments; (ii) geographical and physicochemical features, which are responsible for the north-northwest–south-southeast gradient in trophic conditions; and (iii) environmental heterogeneity (e.g., grain size distribution, habitat complexity, distribution of food inputs) [179,180]. Our understanding of the mechanisms driving deep-sea biodiversity patterns is still limited, but some of the factors frequently invoked are (a) sediment grain size and substrate heterogeneity [231]; (b) productivity, organic content, or microbial activity [314]; (c) food resources [233]; (d) oxygen availability [315]; (e) water currents [185]; and (f) occasional catastrophic disturbances [219]. Thus, the spatial distribution of available energy may influence the distribution of benthic abundance, biomass, and biodiversity [9,184,196,219, 316–318]. Food availability depends almost entirely on the supply of energy from the water column and decreases with depth, which may explain most of the variability between the observed spatial patterns of the benthic biodiversity in the deep Mediterranean Sea.

Threats to diversity

In the past, geological and physical changes lie at the root of the most dramatic changes in biodiversity in the Mediterranean Sea. Today, human activities are essential elements to consider as well, and several of them threaten marine diversity. The most important threats in this region are habitat loss, degradation and pollution, overexploitation of marine resources, invasion of species, and climate change.

Habitat degradation, pollution, and eutrophication. Our results show that habitat degradation and loss is currently the most widespread threat and was also important in the past. Human interventions, such as coastal modification, that can be traced back to before the Roman period [75], have important consequences for diversity. Coastal development, sediment loading, and pollution reduced the extent of important habitats for marine diversity, such as seagrass meadows, oyster reefs, maërl, and macroalgal beds, and affected Mediterranean ecosystem functioning well before the 1900s [319–321]. Most species depend strongly on their habitats (such as bryozoans, sponges, echinoderms, benthic decapods, and organisms of the suprabenthos and meiobenthos); hence, its loss and degradation have major effects on marine diversity.

Cultural eutrophication, in particular in semienclosed basins such as the Adriatic Sea, can also be traced back for centuries [322,323]. This phenomenon reached its peak in the late 1980s [323] and, in addition to fishing, may be the cause of the sequence of jellyfish outbreaks, red tides, bottom anoxia events leading to benthic mass mortalities, and mucilage events that have occurred in recent ecological history of the Adriatic Sea [324]. Direct and indirect pollution is generated directly from the coast, or through fluvial contributions, and ends up in the sea [5]. Pollution affects a wide range of marine species [e.g., 110,252,325–328] and is of primary concern for the conservation of the deep-sea ecosystems [180].

The main threats for most seabirds and marine turtles in the Mediterranean arise from habitat degradation and loss [110,252]. The breeding habitat for seabirds is relatively well protected along the northern Mediterranean shore, but the protection of many seabird colonies and hot spots is less effective along the southern shore because of limited resources. Marine wind farms, which are expected to increase in some countries, may represent a new conservation concern for seabird populations [329]. Marine turtles are also affected primarily by degradation of habitats but also by marine pollution, driftnets, gillnet and longline by-catches, and boat strikes [22,95,330]. The continuing increase of coastal settlements is important for the region's economic activity, but it is also causing intense environmental degradation through excessive coastal development, further pollution, and consumption of natural resources, all of which add pressure to coastal areas and the marine environment [46].

Exploitation of marine species. This study also illustrates that the oldest and one of the most important maritime activities that has become a threat to diversity is human exploitation of marine resources. People around the Mediterranean have exploited marine resources since earliest times. Maybe not surprisingly, negative effects of the exploitation of the Mediterranean marine biodiversity were first reported in the fourth century B.C. by Aristotle. He mentioned that scallops had vanished from their main fishing ground (Gulf of Kalloni, in Lesvos Island) since fishermen began using an instrument that scratched the bottom of the sea [247]. Early records of overfishing and depletion of coastal resources become evident during Roman and medieval times and are driven by human population growth and increasing demand and the increasing commercialization and trade of food and products [113,115].

The current high demand for marine resources continues and has resulted in high levels of fishing or harvesting intensity. Several fish resources are highly exploited or overexploited [e.g., 25,331–335]. Other organisms that are exploited or affected by exploitation in the Mediterranean include macrophytes, sponges, cnidarians, echinoderms, mollusks, arthropods, polychaetes, ascidians, and other invertebrates (File S2) [e.g., 257,336–342].

The threats to currently endangered marine mammals and sea turtles include unwanted by-catch [121,265] as well as historical exploitation. For sea turtles, the overall mortality rate caused by entanglement in fishing gear and by habitat degradation is poorly known [95], but for marine mammals the major threats clearly derive from human activities: direct or indirect effects of exploitation, such as prey depletion, direct killing, and fishery by-catch [97,122,275,277,343–345]. At sea, threats to seabirds mainly come from fisheries [346–347], particularly by-catch in longlining [172,348].

Fishing is being expanded toward deeper areas and is threatening several ecosystems [e.g., 265,349,350], while management effectiveness in the Mediterranean is low [351,352]. Fishing activity may also be the cause of ecosystem structural and functional changes and ecosystem degradation [e.g., 273,353–355].

Bioinvasions. A few Mediterranean invasive aliens have drawn the attention of scientists, managers, and media for the conspicuous impacts on the native biota attributed to them. A pair of coenocytic chlorophytes, *Caulerpa taxifolia* [356] and *C. racemosa* var. *cylindracea* [357], are the most notorious invaders due to their high impact on marine benthic ecosystems, thus the best-studied invasive species in the Mediterranean. Other work [216] has traced the impacts of invasive aliens that entered the Mediterranean from the Red Sea through the Suez Canal and displaced native species.

Tropical species have been entering the Mediterranean through either the Suez Canal (Lessepsian migration) or the Strait of Gibraltar for decades, and mainly by ship transportation. The Mediterranean is highly susceptible to ship-transported bioinvasions: one-fifth of the alien species recorded in the Mediterranean were first introduced by vessels [216]. In 2006, 13,000 merchant vessels made 252,000 calls at Mediterranean ports, and an additional 10,000 vessels passed through the sea (REMPEC/WG.29/INF.9). The increase in shipping-related invasions may be attributed to the increase in shipping volume throughout the region, changing trade patterns that result in new shipping routes, improved water quality in port environments, augmented opportunities for overlap with other introduction vectors, and increasing awareness and research effort [358–359]. The swarms of the vessel-transported American comb jelly (*Mnemiopsis leidyi*) that spread across the Mediterranean from Israel to Spain in 2009 raise great concern because of their notorious impacts on the ecosystem and fisheries [ansamed.info and 360].

Moreover, with the development of large-scale marine aquaculture (mariculture) in the late twentieth century, the commercially important alien shellfish *Crassostrea gigas* and *Ruditapes philippinarum* were intentionally introduced to the Mediterranean. The high permeability of aquaculture facilities, transport, and transplantation of these species have resulted in many unintentional introductions: oyster farms have become veritable gateways into Mediterranean coastal waters for alien macrophytes [213]. The massive "official" and "unofficial" importation of foreign spat (young bivalves both before and after they become adherent) in the 1970s and 1980s coincided with a marked increase of alien species around oyster farms, and the aliens were considered to have arrived with the oysters [361]. Segments of the industry may still resort to illegal importation: neither the Turkish authorities nor the UN Food and Agricultural Organization were aware of the importation of the bilaterally ablated female banana prawn (*Fenneropenaeus merguiensis*) that was found in the Bay of Iskenderun, Turkey [362].

Although some aliens are responsible for reducing the population of some native species [363], others have become locally valuable fishery resources [364]. Some Erythrean aliens were exploited commercially almost as soon as they entered the Levantine Sea, and their economic importance was quickly acknowledged [365]. Levantine fisheries statistics record the growing prominence of the Erythrean aliens: the Erythrean prawns are highly prized and, beginning in the 1970s, a shrimp fishery developed in the Levantine Sea. Nearly half of the trawl catches along the Levantine coast consist of Erythrean fish, but the commercially exploitable species were accompanied each summer by swarms of the scyphozoan jellyfish *Rhopilema nomadica*, washed ashore along the Levantine coast. The shoals of jellyfish adversely affect tourism, fisheries, and coastal installations, and severe jellyfish envenomations require hospitalization. The recent spread of the silver stripe blaasop (*Lagocephalus sceleratus*) and the striped catfish (*Plotosus lineatus*) pose severe health hazards. Other work

[216] has traced the impacts of invasive aliens that entered the Mediterranean from the Red Sea through the Suez Canal and displaced native species.

Pronounced thermal fluctuations and a significant increase in the average temperature of the waters in the Mediterranean during the past two decades have coincided with an enlarged pool of warm-water alien species that have become established and expanded their distributions (see next section). These thermophilic aliens have a distinct advantage over the native Mediterranean biota. Though no extinction of a native species is yet attributable to invasion of new species, sudden declines in abundance, concurrent with proliferation of aliens, have been recorded [216]. Examination of the profound ecological impacts of some of the most conspicuous invasive alien species underscores their role, among many anthropogenic stressors, in altering the infralittoral benthic communities. Local population losses and niche contraction of native species may not induce immediate extirpation, but they may trigger reduction of genetic diversity and loss of ecosystem functions and processes, and habitat structure.

Impacts of climate change. Climate change is exerting a major effect on Mediterranean marine biodiversity through seawater warming [e.g., 366–372]. The increase in seawater temperature has affected the distribution and abundance of native and alien species, and has had both direct and indirect effects on invertebrates and fish [e.g., 373–379, see File S2]. The increase in water temperature in the Mediterranean also alters jellyfish population dynamics [e.g., 380] and may act in addition to indirect fishing impacts [e.g., 381].

Seawater of the Mediterranean Sea has been warming since at least the 1970s [382,383]. Rising temperature enlarges the pool of alien species that could establish themselves, enables the warm-water species (native and alien) present in the sea to expand beyond their present distributions, and provides the thermophilic aliens with a distinct advantage over the native Mediterranean biota. The appearance of numerous allochthonous species of tropical origin is leading to what is called the "tropicalization" of the Mediterranean Sea [384]. Although tropical invaders have been recorded in the northernmost sectors of the Mediterranean [e.g., 385,386], tropicalization is especially obvious in the southern sectors, where species of tropical origin now form a significant portion of the biota.

Tropical species have been entering the Mediterranean through either the Suez Canal (Lessepsian migration) or the Strait of Gibraltar for decades [201,387], but they used to remain in the eastern or western basin, respectively. Thus it conformed to the traditional physiographic and biogeographic subdivision of the Mediterranean [367]. However, in the last two decades, the number of tropical species that have also spread through the entire basin is growing. Examples of Erythrean aliens that crossed the Strait of Sicily include algae, a seagrass, many invertebrates and fish [e.g., 216,388–390]. Species coming from the tropical Atlantic have traveled the opposite way to reach the Levantine Sea [e.g., 50,391]. The Strait of Sicily is today a crossroad for species of distinct tropical origins (Atlantic and Indo-Pacific), expanding their range longitudinally within the Mediterranean [370,392].

If the southern sectors of the Mediterranean are being "tropicalized" (higher occurrence of tropical aliens) and the northern sectors "meridionalized" (increased proportion of indigenous thermophilic species), it is uncertain what will happen to those species of boreo-Atlantic origin, which entered the Mediterranean during glacial periods and have been established in the northern and colder areas of the basin. Because they cannot move farther northward, they may dramatically decrease [393] or even be at risk of extirpation. Although the total extinction of flora and fauna from a basin as wide as the Mediterranean may be unrealistic, the signs of increased rarity or even disappearance of cold-water species deserve further investigation [354,394–397]. An example is the deep-water white coral, *Lophelia pertusa*, reefs of which have become rare in the Mediterranean [61]. These coldest parts of the Mediterranean (Gulf of Lions, northern Adriatic) could act as a sanctuary for cold-temperate species, but if warming intensifies, those areas may act as traps without any cooler water for escape [371].

Global warming may cause thermophilic species of the southern Mediterranean to appear more frequently in the northern and colder parts [e.g., 19,397–399], and an increasing colonization by southern exotic species may be seen [400]. But there may also be habitat fragmentation and local extinction of species unable to undertake migrations. Lack of (evidence of) species extinctions, coupled with establishment of alien species, is apparently leading to an increased species richness of the Mediterranean, a much debated issue [202]. Richness is increasing at the whole-basin scale (γ-diversity), but it is difficult to establish what is happening at local scales (α-diversity) in coastal areas. Instances of species replacement [e.g., 202,396–397,401], and mass mortalities due to high temperature or pathogens [e.g., 374,402–403] and perhaps aliens [404] have been observed. Climate warming, moving physiological barriers and inducing the spatial overlap between alien and indigenous species, causes biotic homogenization [400] and hence a depression in β-diversity. Thus, the relationship between tropicalization, meridionalization, and biodiversity is not straightforward.

In general, the establishment of tropical invasive aliens may cause Mediterranean communities to lose their particular character [405] and to become similar to their tropical analogs, especially in the southern portions of the basin [406]. *Cladocora caespitosa*, the most important shallow-water zooxanthellate species living in the Mediterranean, was more abundant and built more conspicuous formations during periods of the Quaternary, when the Mediterranean climate was subtropical [407]. However, warming episodes in recent summers coincided with mass-mortality events of this coral [e.g., 408]. Hence, it is unlikely that the Mediterranean in the future will contain significant coral constructions. The overwhelming number of Lessepsian immigrants will move the composition of the biota more and more like that of the Red Sea, but Mediterranean communities will probably look like those that today characterize southern Macaronesia and the Cape Verde region, with scanty coral and abundant algae [e.g., 409], rather than those of the Red Sea and the Indo-Pacific.

Seawater acidification may also be a threat to Mediterranean marine biodiversity [410]. The most obvious consequence of the increased concentration of CO_2 in seawater is a reduced rate of biogenic calcification in marine organisms [411,412]. This could affect both planktonic and benthic communities. Calcifying phytoplankton (coccolithophores) play a significant role in the primary productivity of the oligotrophic Mediterranean Sea, whereas many benthic habitats are engineered by sessile organisms that lay down carbonate crusts. Calcareous red algae are the builders of coralligenous reefs, one of the most important Mediterranean ecosystems, and seawater acidification will probably impair their role [413]. However, noncalcifying photosynthetic plants, such as frondose algae and seagrasses, may take advantage of a greater availability of CO_2. But large, erect species of brown algae as well as Mediterranean seagrass are now in decline because of the environmental degradation, induced primarily by human activities [336,414].

The unknowns and limitations

The study of Mediterranean marine diversity over many years has produced a significant amount of information. Yet this information remains incomplete with the discovery and description of new species, especially of smaller, less conspicuous and cryptic biota (Table 1 and File S2). The biodiversity in the Mediterranean Sea may be in fact much higher than is currently known.

We do not have credible measures of microbial richness, but development of new technologies will allow us to decide whether this is knowable or not. The description of microbial diversity is probably better approached through the continued study at selected sites, such as the Microbial Observatories, for which data exist on both identification methodologies and the functioning of the ecosystem. Current Mediterranean observatories are at Blanes Bay, Gulf of Naples, Villefranche's Point B, Dyfamed station, and the MOLA and SOLA stations in Banyuls. Sites in the southern and eastern Mediterranean are still to be added.

Further exploration and taxonomic work on seaweeds and seagrasses is needed in all the African countries (mainly in Libya and Egypt), the Levantine Sea (Israel, Lebanon, Cyprus, Syria), and the Aegean Sea (Greece and Turkey). Phycological surveys are also required in Croatia, because several species (and even genera) described from the Adriatic have never been found again and require taxonomic reevaluation. We do not expect a significant increase in the rate of description of new species, but the description of new macroalgal species continues [e.g., 415,416]. A large number of species are poorly known, and our checklist includes several *taxa inquirenda* (see File S2). Accurate morphological studies, and new molecular tools, are required to decipher the taxonomy of several genera, including *Ectocarpus*, *Cystoseira*, *Acrochaetium*, *Polysiphonia*, and *Ulva*.

A similar situation exists for the invertebrates (see File S2). Most of the small fauna of the Mediterranean are typical of current scientific knowledge: in one of the best-known geographic areas of the world, there are many regions and habitats that remain insufficiently studied, and several taxonomic groups in deep-sea areas and portions of the southern region are still poorly known. The description of new species is still a high priority. As illustrative examples, the accumulation curves for cumaceans, mysids, polychaetes, and ascidians discovered (described or first recorded) (Figure 13) show that no asymptote has been reached, and there has been no slowing in the rate of discovery for less conspicuous species in the Mediterranean, as it is observed when analyzing accumulation curves in other parts of the world [76].

The shortage of taxonomists for many groups is a particularly serious problem worldwide, and it also applies to the Mediterranean Sea. Several of the main invertebrate specialists have retired

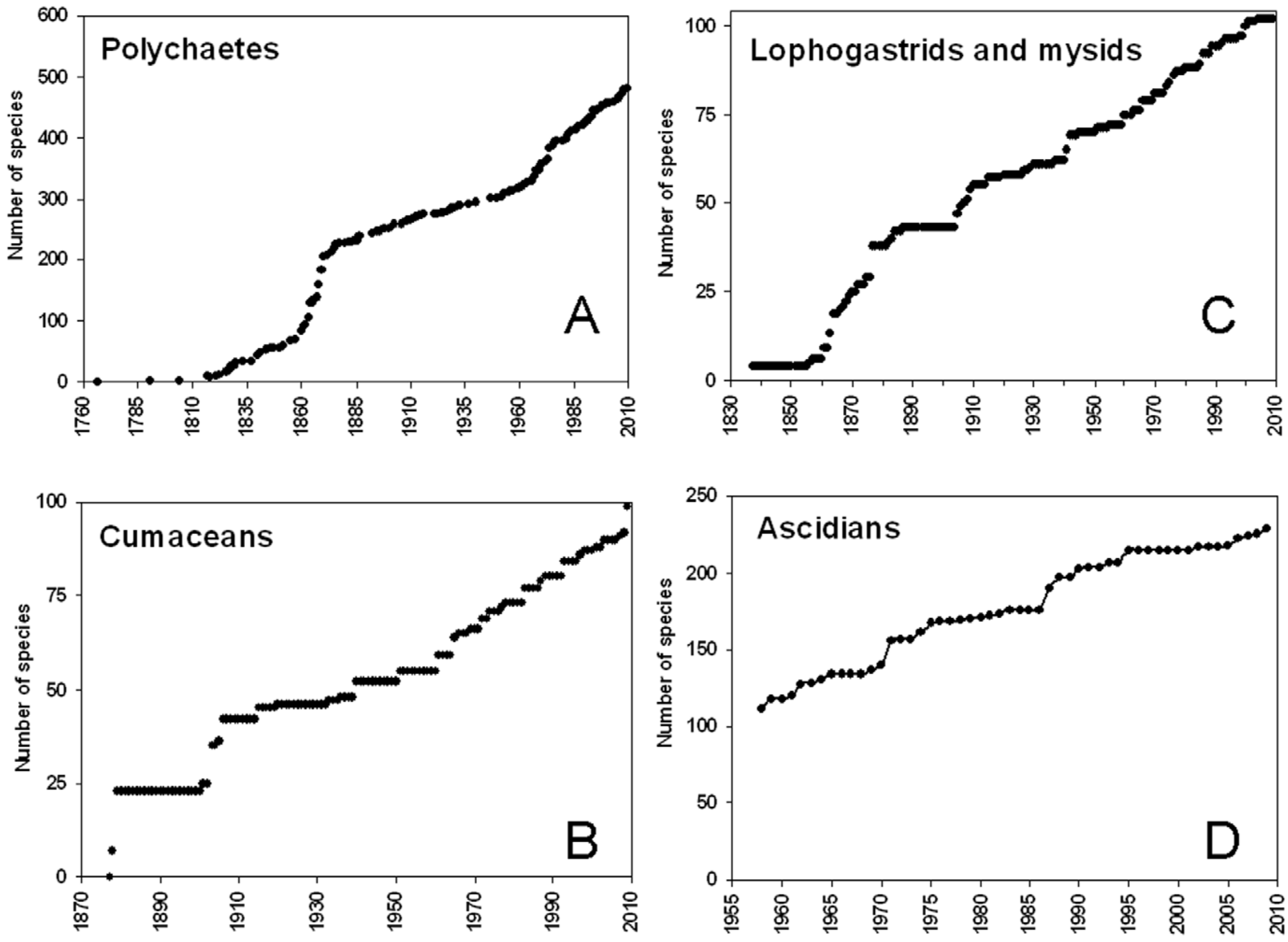

Figure 13. Cumulative numbers of species discovered (described or first recorded) over time in the Mediterranean Sea. (A) polychaetes, (B) cumaceans, (C) lophogastrids and mysids, and (D) ascidians (File S2).
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or are close to retirement and few are being replaced. Many samples are not being properly identified, which leads to a corresponding underestimation of biodiversity [417,418]. The current spread of invasive species requires serious taxonomic attention. Many, if not most, taxonomic groups are subject to anthropogenic threats in one way or another, and researchers must work against time to avoid losing valuable biological information. Undescribed invertebrate species may become extinct before we even know of their existence [419,420]. In addition, and paradoxically, some of the commonest and most accessible ecosystems such as beaches, among other habitats in the Mediterranean, have been poorly studied [421,422–424].

Sampling biases are another source of uncertainty in the estimation of marine biodiversity. In particular, the three-dimensional character of marine ecosystems requires much more study at depths where light penetration is perceived as important but is poorly understood. Light intensity decreases with increasing depth and species perform extensive migrations within the water column or along the seabed. Endobenthic species display rhythms of emergence, including burying or burrowing within the substrate

A

Depth (m)	Period	Fish, cephalopods & crustacean species	Shannon diversity index H'
100	Day	49	20,963
	Night	42	27,556
400	Day	40	21,985
	Night	31	22,523

B

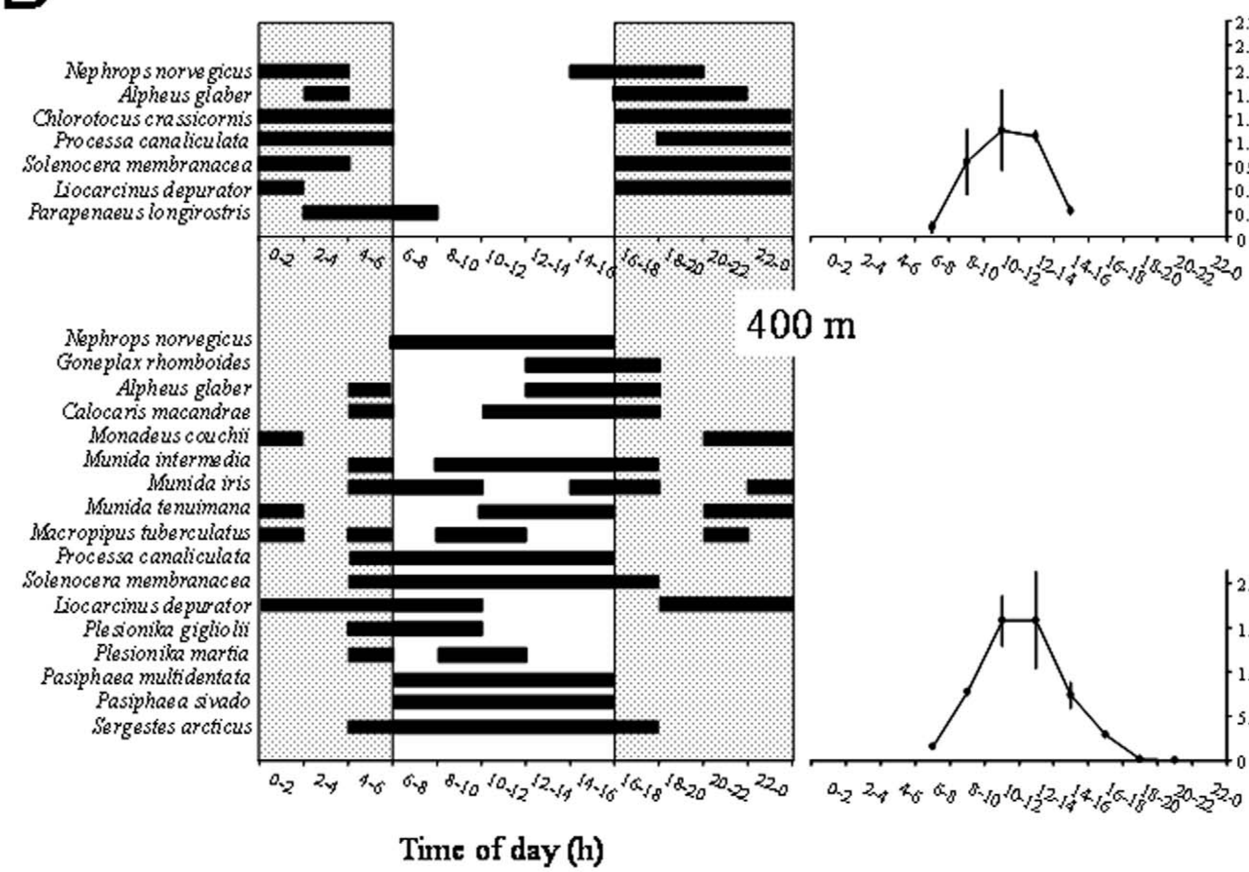

Figure 14. Diel difference in biodiversity estimates obtained with trawling in the Mediterranean Sea. Reported diel differences in estimated biodiversity are obtained by two trawl hauls performed at the autumnal equinox at midday and midnight, in the same sampling location of the western Mediterranean shelf (100 m) and slope (400 m), during October 1999 (NERIT survey). (A) Number of fish, crustaceans, and cephalopod species, and Shannon diversity index (H'), and (B) Waveform analysis of four-day time series of data for catches (left) and light intensity variations as photon fluency rate (PFR; right) for representative decapods. Black rectangles depict the temporal limits of significant increases in catches. Shaded gray rectangles indicate the night duration [adapted from 425].
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and sheltering in natural holes [425]. Marine species react to light intensity cycles, which may include movements in and out of our sampling windows [426]. Information gathered without attention to such rhythmicity will affect perceived population distribution, biomass, and estimated biodiversity [425]. These issues have been integral to land ecology since the early twentieth century [427] but have been rarely considered in the marine environment. In the Mediterranean, Sardà et al. [428] considered this problem during day-night sampling at and below the end of the twilight zone (1,000 m depth) and observed day-night fluctuations in their catches. Midday and midnight trawl catches at different depths during October showed great differences in fish, cephalopod, and crustacean species composition and relative abundance in the deeper areas (see Figure 14a). Waveform analysis of crustacean catches showed behavioral rhythms that affected presence or absence from catches made at different times during a 24-hour cycle (Figure 14b). Because trawl surveying is one of the commonest methods of sampling in marine waters [429], and is one of the most used in the Mediterranean Sea, future biodiversity studies should correct for the practice of sampling only during daytime. In addition, observations of important diel variation in the fauna associated with seagrasses include a notable increase of species richness and abundance in nighttime samples [430,431]. This issue brings together the problem of biodiversity and climate change due to expected changes in species migrations and rhythmicity.

While Mediterranean vertebrate species are better known than the invertebrates, our understanding is still incomplete and often outdated. The FNAM atlas [70], which contains data collected and edited during the 1980s and 1990s, is based on regional data and expert knowledge and is the only record of geographic ranges for all Mediterranean fish species. Several areas of the southern Mediterranean have never been surveyed scientifically. Long-term monitoring programs are absent or unavailable for many countries. Since vertebrate species may be useful indicators of changes in ocean food webs [432], a major challenge that remains is to achieve time-series sampling of species diversity, abundance, and habitat data. These time series should have large spatial and temporal scales to develop useful indicators of changes in Mediterranean marine ecosystems and provide measures of ecological connections and ecosystem services.

A clearer identification of hot spot areas will require the inclusion of new data on macroalgae and seagrasses, invertebrates, and seabirds. Most of the Mediterranean seabird species (with the exception of some large gulls) are protected by European laws because of their small or declining populations or the small number of breeding sites. Nine species are included in Annex II of the EU list of endangered or threatened species. The Balearic shearwater is critically endangered [172], and the monitored colonies of Cory's and Mediterranean shearwaters are slowly declining [433]. Although information is incomplete for macroalgae and invertebrates [293,434], a total of 11 species of macroalgae, 3 of flowering plants, 9 of sponges, 3 of cnidarians, 17 of mollusks, 2 of crustacean decapods, and 3 of echinoderms are now listed as endangered or threatened in the Annex II of the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1995). A recent proposal (2009) for amendments in the annex II increased to four the number of flowering plants and to 16 plus all the species of the genus *Cystoseira* (with the exception of *C. compressa*) the number of endangered species of macroalgae.

Conclusions

The Mediterranean Sea is a region of high biodiversity that ranks among the best known in the world, although much work remains to be done. The description of new species, especially of invertebrates and protists, undergoes upward revision, and new discoveries continually modify previous estimates. Increased efforts are required in taxonomy and sampling of poorly known ecosystems and on long-term monitoring programs of species and habitats. The invasion of alien species will continue to change the biodiversity of the Mediterranean Sea and requires continuous monitoring.

The first attempt to integrate the spatial data and temporal trends presented here enables one to visualize macroecological patterns at the Mediterranean scale. These results depict a region of high diversity and heterogeneity, but they also evidence the need for further study of geographical areas that are largely unexplored, mainly the African coasts and certain zones of the southeastern basin and the deep sea.

Our study illustrates that the Mediterranean is a complex region where ecological and human influences meet and strongly interact, posing a large and growing potential impact to marine biodiversity. Although much is known about individual threats, knowledge is very limited about how multiple impacts will interact. Therefore, there is the need to develop comprehensive analysis of conservation and management initiatives to preserve Mediterranean biodiversity. Owing to the Mediterranean physically, ecologically, and socioeconomically steep gradients, this region may be seen as a model of the world's oceans and a suitable laboratory to study marine ecosystems and decipher future trends.

In addition to further sampling and taxonomic efforts, much of what remains to be done requires free distribution of publicly available data from national and regional research initiatives. This will facilitate database updates and enable scientific discussion. Marine surveys are not always accessible at the regional level and, when available, data coverage is often incomplete. Regional initiatives (such as MedObis) provide promising platforms for the integration of efforts devoted to marine biodiversity within the Mediterranean region, but they must be kept up to date. Individual and collaborative research efforts must continue to advance our knowledge of marine biodiversity in the Mediterranean Sea and narrow down the unknowns.

Supporting Information

File S1 Abstract translations
Found at: doi:10.1371/journal.pone.0011842.s001 (0.08 MB DOC)

File S2 Supplementary material
Found at: doi:10.1371/journal.pone.0011842.s002 (12.38 MB DOC)

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References

1. NOAA, National Oceanic and Atmospheric Administration (2009) Large marine ecosystems Web page: http://www.lme.noaa.gov/. The Mediterranean LME. Accessed December, 2009.
2. Bethoux JP (1979) Budgets of the Mediterranean Sea - Their dependance on the local climate and on the characteristics of the Atlantic waters. Oceanologica Acta 2: 157–163.

3. Hopkins TS (1985) Physics of the sea. In: Margalef R, ed. Key environments: Western Mediterranean. New York: Pergamon Press.
4. Pinardi N, Arneri E, Crise A, Ravaioli M, Zavatarelli M (2006) The physical, sedimentary and ecological structure and variability of shelf areas in the Mediterranean sea (27). In: Robinson AR, Brink KA, eds. The Sea Harvard University Press. pp 1245–1331.
5. Bas C (2009) The Mediterranean: A synoptic overview. Contributions to Science 5: 25–39.
6. Estrada M (1996) Primary production in the northwestern Mediterranean. Scientia Marina 60 (Suppl. 3): 55–64.
7. Zavatarelli M, Raicich F, Bregant D, Russo A, Artegiani A (1998) Climatological biogeochemical characteristics of the Adriatic Sea. Journal of Marine Systems 18: 227–263.
8. Bosc E, Bricaud A, Antoine D (2004) Seasonal and interannual variability in algal biomass and primary production in the Mediterranean Sea, as derived from 4 years of SeaWiFS observations. Global Biogeochemical Cycles 18: doi:10.1029/2003GB002034.
9. Danovaro R, Dinet A, Duineveld G, Tselepides A (1999) Benthic response to particulate fluxes in different trophic environments: A comparison between the Gulf of Lions–Catalan Sea (western-Mediterranean) and the Cretan Sea (eastern-Mediterranean). Progress in Oceanography 44: 287–312.
10. Emig C, Geistdoerfer P (2005) The Mediterranean deep-sea fauna: Historical evolution, bathymetric variations and geographical changes. ArXiv preprint q-bio/0507003v1.
11. Bas C (2002) El mar Mediterráneo: Recursos vivos y explotación Barcelona: Ariel Ciencia. 512 p.
12. Maldonado A (1985) Evolution of the Mediterranean basins and a detailed reconstruction of the Cenozoic paleoceanography. In: Margalef R, ed. Key Environments: Western Mediterranean. Oxford: Pergamon Press. pp 17–59.
13. Garcia-Castellanos D, Estrada F, Jiménez-Munt I, Gorini C, Fernàndez M, et al. (2009) Catastrophic flood of the Mediterranean after the Messinian salinity crisis. Nature 462: doi:10.1038/nature08555.
14. Myers N, Mittermeier RA, Mittermeier CG, da Fonseca GAB, Kent J (2000) Biodiversity hotspots for conservation priorities. Nature 403: 853–858.
15. Fredj G, Bellan-Santini D, Meinardi M (1992) État des connaissances sur la faune marine Méditerrannéenne. Bulletin Institute Oceanographique Monaco 9: 133–145.
16. Boudouresque CF (2004) Marine biodiversity in the Mediterranean: Status of species, populations and communities. Scientific Reports of Port-Cros National Park, France 20: 97–146.
17. Danovaro R, Pusceddu A (2007) Ecomanagement of biodiversity and ecosystem functioning in the Mediterranean Sea: Concerns and strategies. Chemistry and Ecology 23: 347–360.
18. Sarà M (1985) Ecological factors and their biogeographic consequences in the Mediterranean ecosystem. In: Moraitous-Apostolopoulou M, Kiortsis V, eds. Mediterranean Marine Ecosystems. New York: Plenum Press. pp 1–17.
19. Bianchi CN, Morri C (2000) Marine biodiversity of the Mediterranean Sea: Situation, problems and prospects for future research. Marine Pollution Bulletin 40: 367–376.
20. Tortonese E (1985) Distribution and ecology of endemic elements in the Mediterranean fauna (fishes and echinoderms). In: Moraitous-Apostolopoulou M, Kiortsis V, eds. Mediterranean marine ecosystems. New York: Plenum Press. pp 57–83.
21. Delaugerre M (1987) Status of marine turtles in the Mediterranean with particular reference to Corsica France. Vie et Milieu 37: 243–264.
22. Groombridge B (1990) Marine turtles in the Mediterranean: Distribution, population status, conservation: A report to the Council of Europe, Environment Conservation and Management Division.
23. Reijnders P, Verriopoulos G, Smj M (1997) Status of Pinnipeds relevant to the European Union. Wageningen, The Netherlands: DLO, Institut for Forestry and Nature Research. 195 p.
24. Bearzi G, Holcer D, Notarbartolo di Sciara GN (2004) The role of historical dolphin takes and habitat degradation in shaping the present status of northern Adriatic cetaceans. Aquatic Conservation-Marine and Freshwater Ecosystems 14: 363–379.
25. MacKenzie BR, Mosegaard H, Rosenberg AA (2009) Impending collapse of bluefin tuna in the northeast Atlantic and Mediterranean. Conservation Letters 2: 26–35.
26. Green EP, Short FT (2003) The world atlas of seagrasses. Berkeley, Calif: University of California Press. 310 p.
27. Ballesteros E (2006) Mediterranean coralligenous assemblages: A synthesis of present knowledge. Oceanography and Marine Biology - An Annual Review 44: 123–195.
28. Safriel U (1966) Recent vermetid formation on the Mediterranean shore of Israel. Proceedings of the Malacological Society of London 37: 27–34.
29. Goren M, Galil BS (2001) Fish biodiversity in the vermetid reef of Shiqmona (Israel). PSZNI PSZNI Marine Ecology 22: 369–378.
30. Sardà F, Calafat A, Flexas MM, Tselepides A, Canals M, et al. (2004) An introduction to Mediterranean deep-sea biology. Scientia Marina 68 (Suppl.3): 7–38.
31. Sardà F, Company JB, Rotllant G, Coll M (2009) Biological patterns and ecological indicators for Mediterranean fish and crustaceans below 1,000 m: A review. Reviews in Fish Biology and Fisheries 19: 329–347.
32. Gili JM, Bouillon J, Pages F, Palanques A, Puig P, et al. (1998) Origin and biogeography of the deep-water Mediterranean Hydromedusae including the description of two new species collected in submarine canyons of Northwestern Mediterranean. Scientia Marina 62: 113–134.
33. Blondel J, Aronson J (2005) Biology and wildlife of the Mediterranean region. Oxford University Press. i-xxii, 328 p.
34. IUCN-MED (2009) Centre for Mediterranean Cooperation: http://www.uicnmed.org/web2007/en/ and http://www.iucn.org/about/union/secretariat/offices/iucnmed/. Accessed December, 2009.
35. Bellan-Santini D, Lacaze JC, Poizat C (1994) Les biocenoses marines et littorales de la Mediterranée, synthèse, menaces et perspectives. Muséum National d'Histoire Naturelle, Paris.
36. CIESM, The Mediterranean Science Commission (2009) CIESM Guide of Marine Research Institutes: http://www.ciesm.org/online/institutes/marin.htm. Accessed December, 2009.
37. Risso A (1826–1827) Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environs de Nice et des Alpes Maritimes. Paris: F.G. Levrault Libraire. 5 volumes.
38. Costa OG, Costa A (1836–1871) Crostacei ed Aracneidi, Fauna del Regno di Napoli. 408 pls, 3692 p.
39. Olivi G (1792) Zoologia Adriatica. Ossia Catalogo ragionato degli Animali del Golfo e delle Lagune; preceduto da una Dissertazione sulla Storia fisica e naturale del Golfo; e accompagnato da Memorie ed Osservazioni. Bassano. 9 pls, xxxii+334 p.
40. Nardo GD (1847) Sinonimia moderna delle specie registrate nell'opera intitolata: Descrizione de' Crostacei e de' Pesci che abitano le lagune e golfo Veneto rappresentati in figure, a chiaro-scuro ed a colori dall'abate Stefano Chiereghini ven. clodiense applicata per commisione governativa: Antonelli, Venezia. 127 p.
41. Milne-Edwards A (1882) Rapport sur les travaux de la commission chargée par M. le Ministre de l'instruction publique d'etudier la Faune sous-marine dans les grandes profondeurs de la Méditerranée et de l'Ocean Atlantique. Archives des Missions Scientifiques et Litteraires 3: 1–59.
42. Giglioli EH (1882) Rapport préliminaire sur les recherches relatives à la faune sous-marine de la Méditerranée faites en juillet et septembre 1881, à bord du pyroscaphe «Washington», sous le commandement du Capitain de vaisseau G. B. Magnaghi (extrait). Annales des Sciences Naturelles 6: 1–28.
43. Adensamer T (1898) Zoologische Ergebnisse. XI. Decapoden gesammelt auf S.M. Schiff "Pola" in den Jahren 1890–1894. Berichte der Commission für Erforschung des Östlichen Mittelmeres, XXII Denkschriften der Mathematisch-naturwissenschaftlichen Klasse der kaiserlichen Akademie der Wisschaften in Wien 65: 597–628.
44. Riedl R (1983) Fauna and Flora of the Mediterranean: A Systematic Marine Guide for Biologists and Nature Lovers. Hamburg: Verlag Paul Parey. 836 p.
45. Margalef R (1985) Key Environments: Western Mediterranean. New York: Pergamon Press. 362 p.
46. Hofrichter Rc (2001) El Mar Mediterráneo: Fauna, Flora, Ecología. I. Parte General. Barcelona: Ediciones Omega. 591 p.
47. SIBM, Societa' Italiana di Biologia Marina (2009) Checklist of marine fauna of the Italian seas: www.sibm.it/CHECKLIST/principalechecklistfauna.htm. Accessed December, 2009.
48. Koukouras A, Sinis AI, Bobori D, Kazantzidis S, Kitsos MS (2007) The echinoderm (Deuterostomia) fauna of the Aegean Sea, and comparison with those of the neighbouring seas. Journal of Biological Research-Thessaloniki 7: 67–92.
49. Zabala M, Maluquer P, Harmelin J-G (1993) Epibiotic bryozoans on deep-water scleractinian corals from the Catalonia slope (western Mediterranean, Spain, France). Scientia Marina 57: 65–78.
50. Morri C, Puce S, Bianchi CN, Bitar G, Zibrowius H, et al. (2009) Hydroids (Cnidaria: Hydrozoa) from the Levant Sea (mainly Lebanon), with emphasis on alien species. Journal of the Marine Biological Association of the United Kingdom 89: 49–62.
51. Pipitone C, Arculeo M (2003) The marine Crustacea Decapoda of Sicily (central Mediterranean Sea): A checklist with remarks on their distribution. Italian Journal of Zoology 70: 69–78.
52. Cartes JE, Maynou F, Fanelli E, Romano C, Mamouridis V, et al. (2009) The distribution of megabenthic, invertebrate epifauna in the Balearic Basin (western Mediterranean) between 400 and 2300 m: Environmental gradients influencing assemblages composition and biomass trends. Journal of Sea Research 61: 244–257.
53. Gallardo T, Gómez Garreta A, Ribera MA, Cormaci M, Furnari G, et al. (1993) Check-list of Mediterranean seaweeds. II: Chlorophyceae Wille s. l. Botanica Marina 36: 399–421.
54. Ribera MA, Gómez A, Gallardo T, Cormaci M, Furnari G, et al. (1992) Check-list of Mediterranean seaweeds. I: Fucophyceae (Warming, 1884). Botanica Marina 35: 109–130.
55. Abelló P, Carbonell A, Torres P (2002) Biogeography of epibenthic crustaceans on the shelf and upper slope off the Iberian Peninsula Mediterranean coasts: Implications for the establishment of natural management areas. Scientia Marina 66 (Suppl. 2): 183–198.
56. Templado J, Calvo M, Moreno D, Flores A, Conde F, et al. (2006) Flora y Fauna de la Reserva Marina y Reserva de Pesca de la isla de Alborán. Madrid: Secretaría General de Pesca Marítima, MAPA. 269 p.

57. Carpine C, Grashoff M (1975) Les gorgonaires de la Méditerranée. Bulletin de l'Institut Océanographique, Monaco 71: 1–140.
58. Arvanitidis C, Bellan G, Drakopoulos P, Valavanis V, Dounas C, et al. (2002) Seascape biodiversity patterns along the Mediterranean and the Black Sea: Lessons from the biogeography of benthic polychaetes. Marine Ecology Progress Series 244: 139–152.
59. Bouillon J, Medel MD, Pagès F, Gili JM, Boero F, et al. (2004) Fauna of the Mediterranean Hydrozoa. Scientia Marina 68 (Suppl. 2): 1–454.
60. Voultsiadou E (2009) Reevaluating sponge diversity and distribution in the Mediterranean Sea. Hydrobiologia 628: 1–12.
61. Zibrowius H (1980) Les Scléractiniaires de la Méditerranée et de l'Atlantique nord-orientale. Mémoires de l'Institut Océanographique, Monaco 11: 1–284.
62. Zabala M, Maluquer P (1988) Illustrated keys for the classification of Mediterranean Bryozoa. Treballs del Museu de Zoologia de Barcelona 4: 1–294.
63. Logan A, Bianchi CN, Morri C, Zibrowius H (2004) The present-day Mediterranean brachiopod fauna: Diversity, life habits, biogeography and paleobiogeography. Scientia Marina 68 (Suppl. 1): 163–170.
64. Bellan-Santini D, Karaman G, Krapp-Schickel G, Ledoyer M, Myers AA, et al. (1982) The Amphipoda of the Mediterranean. Part 1: Gammaridae (Acanthonotozomatidae to Gammaridae). Mémoires de l'Institut Océanographique de Monaco 13: 364.
65. Udekem d'Acoz Cd (1999) Inventaire et distribution des crustacés décapodes de l'Atlantique nord-oriental, de la Méditerranée et des eaux continentales adjacentes au nord de 25° N. 383. Patrimoines Naturels (MNHN/PN) 40: 1–383.
66. Koukouras A, Voultsiadou E, Kitsos MS, Doulgeraki S (2001) Macrobenthic fauna diversity in the Aegean Sea, affinities with other Mediterranean regions and the Black Sea. Bios (Macedonia, Greece) 6: 61–76.
67. Mavidis M, Aplikioti M, Kirmitzoglou I, Koukouras A (2005) The Euphausiacean fauna (Malacostraca) of the Aegean sea, and comparison with those of the neighbouring seas. Crustaceana 78: 19–27.
68. Fredj G, Maurin C (1987) Les poissons dans la banque de données MEDIFAUNE: Application à l'étude des caractéristiques de la faune ichthyologique méditerranéenne. Cybium 11: 217–299.
69. Fischer W, Bauchot M, Schneider M (1987) Fiches FAO d'identification des espèces pour les besoins de la pêche. Méditerranée et Mer Noire, zone de pêche 37. RomeItalie: Service des ressources marines, département des pêches de la FAO. Vol II. Vertébrés.
70. Whitehead P, Bauchot L, Hureau J, Nielsen J, Tortonese E (1986) Fishes of the North-Eastern Atlantic and the Mediterranean. Paris: UNESCO.
71. ICTIMED (2009) Mediterranian Sea Fishes Database: http://www.cmima.csic.es/ictimed. Accessed October, 2009.
72. Costello MJ, Bouchet P, Emblow CS, Legakis A (2006) European marine biodiversity inventory and taxonomic resources: State of the art and gaps in knowledge. Marine Ecology Progress Series 316: 257–268.
73. Boero F (2003) State of knowledge of marine and coastal biodiversity in the Mediterranean Sea. Tunis: Project for the Preparation of a Strategic Action Plan for the Conservation of Biological Diversity in the Mediterranean region (Sap BIO). UNEP Regional Activity Centre for Specially Protected Areas. 29 p.
74. CIESM (1997) Mediterranean marine biodiversity: CIESM workshop monographs 1. 64 p.
75. Hughes JD (1994) Pan's travail: Environmental problems of the ancient Greeks and Romans. Johns Hopkins University Press.
76. WorMS (2009) World Register of Marine Species database: http://www.marinespecies.org Accessed September, 2009.
77. OBIS (2009) Ocean Biogeographic Information System: http://www.iobis.org/. Accessed September, 2009.
78. FishBase (2009) A Global Information System on Fishes: http://www.fishbase.org. Accessed September, 2009.
79. SeaLifeBase (2009) http://www.sealifebase.org/. Accessed September, 2009.
80. Kaschner K, Ready JS, Agbayani E, Rius J, Kesner-Reyes K, et al. (2009) AquaMaps: Predicted range maps for aquatic species www.aquamaps.org. Accessed October, 2009.
81. Costello MK, Emblow C, White R (2001) European register of marine species. ;A check-list of marine species in Europe and bibliography of guides to their identification. Patrimonies naturels, 50, Museum National d'Histoire Naturelle, Paris: 463.
82. Bouchet P (2006) The magnitude of marine biodiversity. In: Duarte CM, ed. The exploration of marine biodiversity scientific and technological challenges. Bilbao: Fundación BBVA. pp 31–64.
83. Groombridge B, Jenkins M (2002) World atlas of biodiversity. Berkeley, Calif: University of California Press. 340 p.
84. Baldauf SL (2003) The deep roots of eukaryotes. Science 300: 1703.
85. Simpsom A, Roger AJ (2004) The Real 'Kingdoms' of Eukaryotes. Current Biology 14: R693–R696.
86. Burki F, Shalchian-Tabrizi K, Minge M, Skjaeveland A, Nikolaev SI, et al. (2007) Phylogenomics Reshuffles the Eukaryotic Supergroups. PLoS ONE 8: doi:10.1371/journal.pone.0000790.
87. Hofrichter Rc (2002) El Mar Mediterráneo. Fauna, Flora, Ecología. II/1. Guía Sistemática y de Identificación. Barcelona: Ediciones Omega. 849 p.
88. CIESM (2009) CIESM atlas of exotic species in the Mediterranean Sea: http://www.ciesm.org/online/atlas/index.htm. Accessed December, 2009.
89. Golani D, Orsi Relini L, Massuti E, Quignard J (2002) The CIESM atlas of exotic species in the Mediterranean. ;Volume I. Fishes. Monaco.
90. Quignard JP, Tomasini JA (2000) Mediterranean fish biodiversity. Biologia Marina Mediterranea 7: 1–66.
91. Ben Rais Lasram F, Guilhaumon F, Mouillot D (2009) Fish diversity patterns in the Mediterranean Sea: Deviations from a mid-domain model. Marine Ecology Progress Series 376: 253–267.
92. Notarbartolo di Sciara G (2002) Cetaceans of the Mediterranean and Black seas: State of knowledge and conservation strategies. A report to the ACCOBAMS Secretariat, Monaco.
93. Bearzi G, Reeves RR, Notarbartolo di Sciara G, Politi E, Canadas A, et al. (2003) Ecology, status and conservation of short-beaked common dolphins *Delphinus delphis* in the Mediterranean Sea. Mammal Review 33: 224–252.
94. Frantzis A, Alexiadou P, Paximadis G, Politi E, Gannier A, et al. (2003) Current knowledge of the cetacean fauna of the Greek Seas. Journal of Cetacean Research and Management 5: 219–232.
95. Camiñas JA (2004) Sea turtles of the Mediterranean Sea: Population dynamics, sources of mortality and relative importance of fisheries impacts. Papers presented at the Expert Consultation on Interactions between Sea Turtles and Fisheries within an Ecosystem Context, Rome, 9–12 March 2004: 27.
96. Venizelos L, Papapavlou K, Dunais MA, Lagonika C (2005) A review and reappraisal of research in some previously unsurveyed Mediterranean marine turtle nesting sites. Belgian Journal of Zoology 135: 271–277.
97. Reeves R, Notarbartolo di Sciara G (2006) The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. Málaga, Spain: IUCN Centre for Mediterranean Cooperation. 142 p.
98. NOAA (2007) Hawksbill Sea Turtle (*Eretmochelys imbricata*). Five year Review: Summary and Evaluation: NOAA and U.S. Fish and Wildlife Service. 90 p.
99. Tomás J, Raga JA (2009) Occurrence of Kemp's ridley sea turtle (*Lepidochelys kempii*) in the Mediterranean. Marine Biodiversity Records Marine Biological Association of the United Kingdom 1: 1–2.
100. Dendrinos P, Karamanlidis AA, Kotomatas S, Paravas V, Adamantopoulou S (2008) Report of a New Mediterranean Monk Seal (*Monachus monachus*) Breeding Colony in the Aegean Sea, Greece. Aquatic Mammals 34: 355–361.
101. Johnson WM, Karamanlidis AA, Dendrinos P, Fernández de Larrinoa P, Gazo M, et al. (2009) Mediterranean Monk Seal (*Monachus monachus*). http://www.monachus-guardian.org. Accessed December, 2009.
102. Gucu AC, Gucu G, Orek H (2004) Habitat use and preliminary demographic evaluation of the critically endangered Mediterranean monk seal (*Monachus monachus*) in the Cilician Basin (Eastern Mediterranean). Biological Conservation 116: 417–431.
103. Notarbartolo di Sciara G, Adamantopoulou S, Androukaki E, Dendrinos P, Karamanlidis A, et al. (2009) National strategy and action plan for the conservation of the Mediterranean monk seal in Greece, 2009–2015. Report on evaluating the past and structuring the future. Publication prepared as part of the LIFE-Nature Project: MOFI: Monk Seal and Fisheries: Mitigating the conflict in Greek Seas. Hellenic Society for the Study and Protection of the Mediterranean monk seal (MOm), Athens.
104. Güçlüsoy H, Savas Y (2003) Status of the Mediterranean monk seal, *Monachus monachus*, in the Foca Pilot Monk Seal Conservation Area, Turkey. Zoology in the Middle East 28: 5–16.
105. Güçlüsoy H, Kıraç CO, Veryeri NO, Savaş Y (2004) Status of the Mediterranean monk seal, *Monachus monachus* (Hermann, 1779) in the coastal waters of Turkey. EU Journal of Fisheries & Aquatic Sciences 21: 201–210.
106. Harwood J, Stanley H, Beudels M-O, Vanderlingen C (1996) Metapopulation dynamics of the Mediterranean monk seal. In: McCullough DR, ed. Metapopulations and wildlife conservation. Washington, DC: Island Press. pp 241–258.
107. Mo G, Agnesi S, Di Nora T, Tunesi L (2007) Mediterranean monk seal sightings in Italy through interviews: Validating the information (1998–2006). Rapport Commission International Mer Méditerranée 38: 542.
108. Aguilar JS, Monbailliu X, Paterson A (1993) Status and conservation of seabirds: Proceedings of the 2nd Pan-Mediterranean Seabird Symposium. Calvià, Mallorca, 1989. S.E.O., Madrid. 386 p.
109. Yésou P, Sultana J (2000) Monitoring and conservation of birds, mammals and sea turtles of the Mediterranean and Black Seas: Proceedings of the 5th MEDMARAVIS Pan-Mediterranean Seabird Symposium, Gozo, Malta, October 1998. Environmental Protection Dpt, Malta. 320 p.
110. Mínguez E, Oro D, de Juana E, Martinez-Abrain A (2003) Mediterranean sea birds and their conservation. Scientia Marina 67 (Suppl.2): 1–148.
111. Oro D, Baccetti N, Boukhalfa D, Eken G, El Hili A, et al. (2000) Current breeding distribution and status of Audouin's gulls *Larus audouinii* in the Mediterranean. In: Sultana JYP, ed. Monitoring and conservation of birds, mammals and sea turtles of the Mediterranean and Black seas: BirdLife Malta, Malta. pp 69–80.
112. Kaschner K, Watson R, Trites AW, Pauly D (2006) Mapping worldwide distributions of marine mammals using a relative environmental suitability (RES) model. Marine Ecology Progress Series 316: 285–310.
113. Lotze HK, Lenihan HS, Bourque BJ, Bradbury RH, Cooke RG, et al. (2006) Depletion, degradation, and recovery potential of estuaries and coastal seas. Science 312: 1806–1809.
114. Pinnegar JK, Engelhard GH (2008) The 'shifting baseline' phenomenon: A global perspective. Reviews in Fish Biology and Fisheries 18: 1–16.

115. Gertwagen R, Raicevich S, Fortibuoni T, Giovanardi O (2008) Il Mare Com'era. Proceedings of the II HMAP Mediterranean and the Black Sea project;Chioggia (Italy), 27th-29th September 2006.
116. Raicevich S, Fortibuoni T, Giovanardi O (2008) Integrazione di fonti storiche, statistiche, antropologiche e scientifiche per individuare l'estirpazione di specie marine minacciate nel Mediterraneo; Gertwagen R, Raicevich S, Fortibuoni T, Giovanardi O, eds. Il Mare Com'era. Proceedings of the II HMAP Mediterranean and the Black Sea project Chioggia (Italy), 27th-29th September 2006. pp 183–199.
117. Avella FJ, Gonzalez LM (1984) Monk seal (*Monachus monachus*) - A survey along the Mediterranean coast of Morocco; Ronald K, Duguy R, eds. Second International Conference on the Monk Seals, La Rochelle, France, 5–6 October 1984. Annales de la Societé des Sciences Naturelles de la Charente-Maritime. Supplement, Decembre 1984. pp 60–78.
118. Gonzalez LM, Avella FJ (1989) La extinction de la Foca Monje (*Monachus monachus*) en las costas Mediterráneas de la península ibérica y propuesta de una estrategia de actuación. Ecología (Icona, Madrid) 3: 157–177.
119. Aguilar A (1999) Status of Mediterranean monk seal populations. Tunis: Aloes Editions. 60 p.
120. Somot S, Sevault F, Déqué M (2006) Transient climate change scenario simulation of the Mediterranean Sea for the twenty-first century using a high-resolution ocean circulation model. Climate Dynamics 27: 851–879.
121. IUCN, International Union for Conservation of Nature (2009) The IUCN red list of threatened species. Data available at http://www.iucnredlist.org/. Accessed October, 2009.
122. Reeves R, Smith B, Crespo E, Notarbartolo di Sciara G (2003) Dolphins, whales and porpoises: 2002–2010 conservation action plan for the world's cetaceans IUCN/SSC Cetacean Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK. ix+139.
123. Cavanagh RD, Gibson C (2007) Overview of the conservation status of cartilaginous fishes (Chondrichthyans) in the Mediterranean Sea; IUCN, editor. Gland and Malága.
124. Pedrós-Alió C (2006) Marine microbial diversity: Can it be determined? Trends in Microbiology 14: 257–263.
125. Amato A, Kooistra W, Levialdi Ghiron JH, Mann DG, Pröschold T, et al. (2007) Reproductive isolation among sympatric cryptic species in marine diatoms. Protist 158: 193–207.
126. Alonso-Sáez L, Balagué V, Sà E, Sánchez O, González JM, et al. (2007) Seasonality in bacterial diversity in north-west Mediterranean coastal waters: Assessment through clone libraries, fingerprinting and FISH. FEMS Microbiology Ecology 60: 98–112.
127. Feingersch R, Suzuki MT, Shmoish M, Sharon I, Sabehi G, et al. (2009) Microbial community genomics in eastern Mediterranean Sea surface waters. The ISME Journal: doi:101038/ismej200992.
128. Acinas SG, Klepac-Ceraj V, Hunt DE, Pharino C, Ceraj I, et al. (2004) Fine-scale phylogenetic architecture of a complex bacterial community. Nature 430: 551–554.
129. Venter JC, Remington K, Heidelberg JF, Halpern AL, Rusch D, et al. (2004) Environmental genome shotgun sequencing of the Sargasso Sea. Science 304: 66.
130. Massana R, Terrado R, Forn I, Lovejoy C, Pedrós-Alió C (2006) Distribution and abundance of uncultured heterotrophic flagellates in the world oceans. Environmental Microbiology 8: 1515–1522.
131. Dorigo U, Volatier L, Humbert JF (2005) Molecular approaches to the assessment of biodiversity in aquatic microbial communities. Water Research 39: 2207–2218.
132. Schauer M, Massana R, Pedrós-Alió C (2000) Spatial differences in bacterioplankton composition along the Catalan coast (NW Mediterranean) assessed by molecular fingerprinting. FEMS Microbiology Ecology 33: 51–59.
133. Acinas SG, Rodríguez-Valera F, Pedrós-Alió C (1997) Spatial and temporal variation in marine bacterioplankton diversity as shown by RFLP fingerprinting of PCR amplified 16S rDNA. FEMS Microbiology Ecology 24: 27–40.
134. Ghiglione JF, Larcher M, Lebaron P (2005) Spatial and temporal scales of variation in bacterioplankton community structure in the NW Mediterranean Sea. Aquatic Microbial Ecology 40: 229–240.
135. Garczarek L, Dufresne A, Rousvoal S, West NJ, Mazard S, et al. (2007) High vertical and low horizontal diversity of *Prochlorococcus* ecotypes in the Mediterranean Sea in summer. FEMS Microbiology Ecology 60: 189–206.
136. Blumel M, Suling J, Imhoff JF (2007) Depth-specific distribution of Bacteroidetes in the oligotrophic Eastern Mediterranean Sea. Aquatic Microbial Ecology 46: 209.
137. López-López A, Bartual SG, Stal L, Onyshchenko O, Rodríguez-Valera F (2005) Genetic analysis of housekeeping genes reveals a deep-sea ecotype of *Alteromonas macleodii* in the Mediterranean Sea. Environmental Microbiology 7: 649–659.
138. Moeseneder MM, Winter C, Herndl GJ (2001) Horizontal and vertical complexity of attached and free-living bacteria of the eastern Mediterranean Sea, determined by 16S rDNA and 16S rRNA fingerprints. Limnology and Oceanography 46: 95–107.
139. Winter C, Kerros ME, Weinbauer MG (2009) Seasonal changes of bacterial and archaeal communities in the dark ocean: Evidence from the Mediterranean Sea. Limnology and Oceanography 54: 160–170.
140. Yakimov MM, La Cono V, Denaro R, D'Auria G, Decembrini F, et al. (2007) Primary producing prokaryotic communities of brine, interface and seawater above the halocline of deep anoxic lake L'Atalante, Eastern Mediterranean Sea. The ISME Journal 1: 743–755.
141. Fuhrman JA, Steele JA, Hewson I, Schwalbach MS, Brown MV, et al. (2008) A latitudinal diversity gradient in planktonic marine bacteria. Proceedings of the National Academy of Sciences 105: 7774–7778.
142. Zaballos M, López-López A, Ovreas L, Bartual SG, D'Auria G, et al. (2006) Comparison of prokaryotic diversity at offshore oceanic locations reveals a different microbiota in the Mediterranean Sea. FEMS Microbiology Ecology 56: 389–405.
143. Galand P, Gutiérrez-Provecho C, Massana R, Gasol JM, Casamayor EO (In review) Inter-annual recurrence of archaeal assemblages in the coastal NW Mediterranean Sea (Blanes Bay Microbial Observatory). Limnology and Oceanography.
144. Sogin ML, Morrison HG, Huber JA, Welch DM, Huse SM, et al. (2006) Microbial diversity in the deep sea and the underexplored "rare biosphere". Proceedings of the National Academy of Sciences 103: 12115–12120.
145. Pedrós-Alió C (2007) Dipping into the rare biosphere. Science 315: 192–193.
146. Pedrós-Alió C, Pommier T, Acinas SG, Gasol JM (Submitted) Patterns of spatial bacterial diversity in NW Mediterranean by 454.
147. Potter D, Lajeunesse TC, Saunders GW, Anderson RA (1997) Convergent evolution masks extensive biodiversity among marine coccoid picoplankton. Biodiversity and Conservation 6: 99–107.
148. Massana R, Pedrós-Alió C (2008) Unveiling new microbial eukaryotes in the surface ocean. Current Opinion in Microbiology 11: 213–218.
149. Not F, del Campo J, Balagué V, de Vargas C, Massana R (2009) New insights into the diversity of marine picoeukaryotes. PLoS ONE 4(9): e7143.
150. Trégouboff G, Rose M (1957) Manuel de planctonologie méditerranéenne. Paris: C.N.R.
151. Travers M (1975) Inventaire des protistes du Golfe de Marseille et de ses parages. Paris: Annales de l'Institut Océanographique 51(1): 51–75.
152. Massutí M, Margalef R (1950) Introducción al estudio del plancton marino. Barcelona: Patronato Juan de La Cierva. Sección de Biología Marina. 183 p.
153. Margalef R (1969) Composición específica del fitoplancton de la costa catalana levantina (Mediterráneo Occidental) en 1962–67. Investigación Pesquera 33: 345–380.
154. Margalef R, Estrada M (1987) Synoptic distribution of summer microplankton (Algae and Protozoa) across the principal front in the western Mediterranean. Investigación Pesquera 51: 121–140.
155. Kimor B, Wood EJF (1975) A plankton study in the eastern Mediterranean Sea. Marine Biology 29: 321–333.
156. Velasquez ZR, Cruzado A (1995) Inventory of the diatom flora of the NW Mediterranean Sea. Vie et Milieu 45: 249–263.
157. Velasquez ZR (1997) Fitoplancton en el Mediterráneo Noroccidental: Ph. D. Thesis. Spain: Universitat Politècnica de Catalunya.
158. Gómez F (2003) Checklist of Mediterranean free-living dinoflagellates. Botanica Marina 46: 215–242.
159. Cros L (2002) Planktonic coccolithophores of the NW Mediterranean. Barcelona: Universitat de Barcelona, Spain.
160. Cros L, Fortuño JM (2002) Atlas of northwestern Mediterranean coccolithophores. Scientia Marina 66 (Suppl. 1): 1–182.
161. Cros L, Kleijne A, Zeltner A, Billard C, Young JR (2000) New examples of holococcolith-heterococcolith combination coccospheres and their implications for coccolithophorid biology. Marine Micropaleontology 39: 1–34.
162. Cerino F, Zingone A (2006) A survey of cryptomonad diversity and seasonality at a coastal Mediterranean site. European Journal of Phycology 41: 363–378.
163. Chrétiennot-Dinet MJ, Courties C (2007) Biodiversity of unicellular algae: Example of pico- and ultraplanktonic eucaryotes of the Thau lagoon. Vie et Milieu 47: 317–324.
164. Arndt H, Hausmann K, Wolf M (2003) Deep-sea heterotrophic nanoflagellates of the Eastern Mediterranean Sea: Qualitative and quantitative aspects of their pelagic and benthic occurrence. Marine Ecology Progress Series 256: 45–56.
165. Massana R, Balagué V, Guillou L, Pedrós-Alió C (2004) Picoeukaryotic diversity in an oligotrophic coastal site studied by molecular and culturing approaches. FEMS Microbiology Ecology 50: 231–244.
166. Bernard C, Rassoulzadegan F (1994) Seasonal variations of mixotrophic ciliates in the northwest Mediterranean Sea. Marine Ecology Progress Series 108: 295–295.
167. Vaqué D, Blough HA, Duarte CM (1997) Dynamics of ciliate abundance, biomass and community composition in an oligotrophic coastal environment (NW Mediterranean). Aquatic Microbial Ecology 12: 71–83.
168. Modigh M, Castaldo S (2002) Variability and persistence in tintinnid assemblages at a Mediterranean coastal site. Aquatic Microbial Ecology 28: 299–311.
169. Pujol C, Grazzini CV (1995) Distribution patterns of live planktic foraminifers as related to regional hydrography and productive systems of the Mediterranean Sea. Marine Micropaleontology 25: 187–217.
170. Fontanier C, Jorissen FJ, Lansard B, Mouret A, Buscail R, et al. (2008) Live foraminifera from the open slope between Grand Rhône and Petit Rhône Canyons (Gulf of Lions, NW Mediterranean). Deep-Sea Research Part I 55: 1532–1553.
171. Oro D, Martínez-Abraín A (2007) Deconstructing myths on large gulls and their impact on threatened sympatric waterbirds. Animal Conservation 10: 117–126.

172. Oro D, Aguilar JS, Igual JM, Louzao M (2004) Modelling demography and extinction risk in the endangered Balearic shearwater. Biological Conservation 116: 93–102.
173. Quignard JP (1978) La Méditerranée creuset ichthyoloqique. Bulletin de Zoologie 45: 23–36.
174. Grant W (2005) A secondary look at mitochondrial DNA variability in European anchovy (*Engraulis encrasicolus*): Assessing models of population structure and the Black Sea isolation hypothesis. Genetica 125: 293–309.
175. Serena F (2005) Field identification Guide to the Sharks and Rays of the Mediterranean and Black Sea. Rome. 97 p.
176. Compagno LJV (2001) Sharks of the world. An annotated and illustrated catalogue of the shark species known to date. Volume 2. Bullhead, mackerel and carpet sharks (Heterodontiformes, Lamniformes and Orectolobiformes).
177. Gage JD, Tyler PA (1992) Deep-sea biology: A natural history of organisms at the deep-sea floor: Cambridge University Press. 504 p.
178. Gambi C, Vanreusel A, Danovaro R (2003) Biodiversity of nematode assemblages from deep-sea sediments of the Atacama Slope and Trench (South Pacific Ocean). Deep-Sea Research Part I 50: 103–117.
179. Ramírez-Llodra E, Brandt A, Danovaro R, Escobar E, German CR, et al. (submitted) Deep diverse and definitely different: Unique attributes of the world's largest ecosystem. Biogeosciences.
180. Danovaro R, Company BJ, Corinaldesi C, D'Onghia G, Galil BS, et al. (submitted) Deep-Sea biodiversity in the Mediterranean Sea: The known, the unknown, and the unknowable. PLoS ONE 5(8): e11832. doi:10.1371/journal.pone.0011832.
181. Emig CC (1997) Bathyal zones of the Mediterranean continental slope: An attempt. Publicaciones Especiales-Instituto Español de Oceanografia (España) 23.
182. Laubier L, Emig C (1993) La faune benthique profonde de Méditerranée. In: Della Croce N, ed. Symposium Mediterranen Seas 2000: Istituto di Scienze Ambientali Marine, S. Margherita Ligure. pp 397–428.
183. Pérès JM (1985) History of the Mediterranean biota and the colonization of the depths. In: Margalef R, ed. Western Mediterranean. Oxford: Pergamon Press. pp 198–232.
184. Lambshead PJD, Brown CJ, Ferrero TJ, Mitchell NJ, Smith CR, et al. (2002) Latitudinal diversity patterns of deep-sea marine nematodes and organic fluxes: A test from the central equatorial Pacific. Marine Ecology Progress Series 236: 129–135.
185. Lambshead PJD, Tietjen J, Ferrero T, Jensen P (2000) Latitudinal diversity gradients in the deep sea with special reference to North Atlantic nematodes. Marine Ecology Progress Series 194: 159–167.
186. Krijgsman W, Hilgen FJ, Raffi I, Sierro FJ, Wilson DS (1999) Chronology, causes and progression of the Messinian salinity crisis. Nature 400: 652–655.
187. Bouchet P, Taviani M (1992) The Mediterranean deep-sea fauna: Pseudopopulations of Atlantic species? Deep-Sea Research I 39: 169–184.
188. Higgins RP, Thiel H (1988) Introduction to the study of meiofauna. Washington, DC & London: Smithsonian Institution Press. 488 p.
189. Galil BS, Goren M (1994) The deep sea Levantine Fauna.-New records and rare occurrences. Senckenbergiana Maritima 25: 41–52.
190. Goren M, Galil BS (1997) New records of deep-sea fishes from the Levant Basin and a note on the deep-sea fishes of the Mediterranean. Israel Journal of Zoology 43: 197–203.
191. Fishelson L, Galil BS (2001) Gonad structure and reproductive cycle in the deep-sea hermaphrodite tripodfish, *Bathypterois mediterraneaus* (Chlorophthalmidae, Teleostei). Copeia 2: 556–560.
192. Macpherson E (2002) Large-scale species-richness gradients in the Atlantic Ocean. Proceedings of the Royal Society B: Biological Sciences 269: 1715.
193. Briggs JC (2007) Marine longitudinal biodiversity: Causes and conservation. Diversity and Distributions 13: 544–555.
194. Abelló P, Cartes JE (1992) Population characteristics of the deep-sea lobsters *Polycheles typhlops* and *Stereomastis sculpta* (Decapoda: Polychelidae) in a bathyal mud community of the Mediterranean Sea. Marine Biology 114: 109–117.
195. Danovaro R, Gambi C, Lampadariou N, Tselepides A (2008) Deep-sea nematode biodiversity in the Mediterranean basin: Testing for longitudinal, bathymetric and energetic gradients. Ecography 31: 231–244.
196. Lampadariou N, Tselepides A (2006) Spatial variability of meiofaunal communities at areas of contrasting depth and productivity in the Aegean Sea (NE Mediterranean). Progress in Oceanography 69: 19–36.
197. Pusceddu A, Gambi C, Zeppilli D, Bianchelli S, Danovaro R (2009) Organic matter composition, metazoan meiofauna and nematode biodiversity in Mediterranean deep-sea sediments. Deep-Sea Research Part II 56: 755–762.
198. Danovaro R, Bianchelli S, Gambi C, Mea M, Zeppilli D (2009) α-, β-, γ-, δ and ε-diversity of deep-sea nematodes in canyons and open slopes of E-Atlantic and Mediterranean margins. Marine Ecology Progress Series 396: 197–209.
199. Danovaro R, Corinaldesi C, Luna G, Magagnini M, Manini E, et al. (2009) Prokaryote diversity and viral production in deep-sea sediments and seamounts. Deep-Sea Research Part II 56: 738–747.
200. Bellan-Santini D, Fredj G, Bellan G (1992) Mise au point sur les connaissances concernant le benthos profond méditerranéen. Oebalia 17: 21–36.
201. Galil BS (2006) The Suez Canal - The marine caravan - The Suez Canal and the Erythrean invasion. In: Gollasch S, Galil BS, Cohen AN, eds. Monographiae Biologicae: Bridging divides: Maritime canals as invasion corridors. Heidelberg: Springer. pp 207–300.
202. Galil BS (2007) Loss or gain? Invasive aliens and biodiversity in the Mediterranean Sea. Marine Pollution Bulletin 55: 314–322.
203. Zenetos A, Pancucci-Papadopoulou M-A, Zogaris S, Papastergiadou E, Vardakas L, et al. (2009) Aquatic alien species in Greece (2009): Tracking sources, patterns and effects on the ecosystem. Journal of Biological Research-Thessaloniki 12: 135–172.
204. Streftaris N, Zenetos A (2006) Alien marine species in the Mediterranean - the 100 ''worst invasives'' and their impact. Mediterranean Marine Science 7: 87–118.
205. Streftaris N, Zenetos A, Papathanassiou E (2005) Globalisation in marine ecosystems: The story of non-indigenous marine species across European seas. Oceanography and Marine Biology - An Annual Review 43: 419–453.
206. Galil BS, Gollasch S, Minchin D, Olenin S (2009) Alien Marine Biota of Europe. Handbook of Alien Species in Europe. pp 93–104.
207. Zenetos A, Çinar ME, Pancucci-Papadopoulou MA, Harmelin JG, Furnari G, et al. (2005) Annotated list of marine alien species in the Mediterranean with records of the worst invasive species. Mediterranean Marine Science 6: 63.
208. Zenetos A, Meriç E, Verlaque M, Galli P, Boudouresque CF, et al. (2008) Additions to the annotated list of marine alien biota in the Mediterranean with special emphasis on Foraminifera and Parasites. Mediterranean Marine Science 9: 119–165.
209. Zibrowius H (1991) Ongoing modification of the Mediterranean marine fauna and flora by establishment of exotic species. Mesogée 51: 83–107.
210. Galil BS (2008) Alien species in the Mediterranean Sea - Which, when, where, why? Hydrobiologia 606: 105–116.
211. Bucciarelli G, Golani D, Bernardi G (2002) Genetic cryptic species as biological invaders: The case of a Lessepsian fish migrant, the hardyhead silverside *Atherinomorus lacunosus*. Journal of Experimental Marine Biology and Ecology 273: 143–149.
212. Hassan M, Harmelin-Vivien M, Bonhomme F (2003) Lessepsian invasion without bottleneck: Example of two rabbitfish species (*Siganus rivulatus* and *Siganus luridus*). Journal of Experimental Marine Biology and Ecology 291: 219–232.
213. Verlaque M (2001) Checklist of the macroalgae of Thau Lagoon (Hérault, France), a hot spot of marine species introduction in Europe. Oceanologica Acta 24: 29–49.
214. Boudouresque CF, Verlaque M (2002) Biological pollution in the Mediterranean Sea: Invasive versus introduced macrophytes. Marine Pollution Bulletin 44: 32–38.
215. Faccia I, Alyakrinsky A, Bianchi CN (2009) The crab that came in from the cold: First record of *Paralithodes camtschaticus* (Tilesius, 1815) in the Mediterranean Sea. Aquatic Invasions 4: 381–384.
216. Galil BS (2009) Taking stock: Inventory of alien species in the Mediterranean Sea. Biological Invasions 11: 359–372.
217. Relini M, Orsi L, Puccio V, Azzurro E (2000) The exotic crab *Percnon gibbesi* (H. Milne Edwards, 1853) (Decapoda, Grapsidae) in the Central Mediterranean. Scientia Marina 64: 337–340.
218. Gooday AJ, Bett BJ, Shires R, Lambshead PJD (1998) Deep-sea benthic foraminiferal species diversity in the NE Atlantic and NW Arabian sea: A synthesis. Deep-Sea Research Part 2 Topical Studies in Oceanography 45: 165–201.
219. Levin L, Etter R, Rex M, Gooday A, Smith C, et al. (2001) Environmental influences on regional deep sea species diversity. Annual Reviews Ecology and Systematics 32: 51–93.
220. Danovaro R, Gambi C, Dell'Anno A, Corinaidesi C, Fraschetti S, et al. (2008) Exponential decline of deep-sea ecosystem functioning linked to benthic biodiversity loss. Current Biology 18: 1–8.
221. Whittaker RH (1960) Vegetation of the Siskiyou Mountains, Oregon and California. Ecological Monographs 26.
222. Gray JS (2000) The measurement of marine species diversity, with an application to the benthic fauna of the Norwegian continental shelf. Journal of Experimental Marine Biology and Ecology 250: 23–49.
223. Danovaro R, Canals M, Gambi C, Heussner S, Lampadariou N, et al. (2009) Exploring benthic biodiversity patterns and hot spots on European margin slopes. Oceanography 22: 22–31.
224. Gaertner JC, Bertrand JA, Relini G, Papaconstantinou C, Mazouni N, et al. (2007) Spatial pattern in species richness of demersal fish assemblages on the continental shelf of the northern Mediterranean Sea: A multiscale analysis. Marine Ecology Progress Series 341: 191–203.
225. Ballesteros E (1994) The deep-water *Peyssonnelia* beds from the Balearic Islands (Western Mediterranean). PSZNI Marine Ecology 15: 233–253.
226. Ballesteros E (1990) Structure and dynamics of the community of *Cystoseira zosteroides* (Turner) C. Agardh (Fucales, Phaeophyceae) in the Northwestern Mediterranean. Scientia Marina 54: 217–229.
227. Ballesteros E (1992) Els vegetals i la zonació litoral: Espècies, comunitats i factors que influeixen en la seva distribució. Barcelona: Arxius Secció Ciències 101. Institut d'Estudis Catalans. 616 p.
228. Moranta J, Stefanescu C, Massutí E, Morales-Nin B, Lloris D (1998) Fish community structure and depth-related trends on the continental slope of the Balearic Islands (Algerian basin, western Mediterranean). Marine Ecology Progress Series 171: 247–259.
229. Pancucci-Papadopoulou MA, Murina GV, Zenetos A (1999) The phylum Sipuncula in the Mediterranean Sea. Monographs on Marine Sciences 2: 1–109.

230. Rex MA (1981) Community structure in the deep-sea benthos. Annual Review of Ecology and Systematics 12: 331–353.
231. Etter RJ, Grassle JF (1992) Patterns of species diversity in the deep sea as a function of sediment particle size diversity. Nature 360: 576–578.
232. Rex M, Etter R, Stuart C (1997) Large scale patterns of species diversity in the deep-sea benthos. In: Ormond RFG, Gage JD, Angel MV, eds. Marine Biodiversity: Patterns and processes. Cambridge: Cambridge University Press. pp 94–121.
233. Levin LA, Gage JD (1998) Relationships between oxygen, organic matter and the diversity of bathyal macrofauna. Deep-Sea Research Part II 45: 129–163.
234. Soetaert K, Heip C (1995) Nematode assemblages of deep-sea and shelf break sites in the North Atlantic and Mediterranean Sea. Marine Ecology Progress Series 125: 171–183.
235. Fredj G, Laubier L (1983) The deep Mediterranean benthos. In: Moraitou Apostolopoulou M, Kiortsis V, eds. Mediterranean marine ecosystems NATO Conference Series. New-York: Plenum Press. pp 109–145.
236. Heads M (2005) Towards a panbiogeography of the seas. Biological Journal of the Linnean Society 84: 675–723.
237. Rouchy JM, Caruso A (2006) The Messinian salinity crisis in the Mediterranean basin: A reassessment of the data and an integrated scenario. Sedimentary Geology 188: 35–67.
238. Shackleton JC, Van Andel TH (1986) Prehistoric shore environments, shellfish availability, and shellfish gathering at Franchthi, Greece. Geoarchaeology 1: 127–143.
239. Morales A, Roselló E (2004) Fishing down the food web in Iberian prehistory? A new look at the fishes from Cueva de Nerja (Málaga, Spain). In: Brugal J-P, Desse J, eds. Petits animaux et sociétés humaines du complément alimentaire aux ressources utilitaires XXIVe rencontres internationales d'archéologie et d'histoire d'Antibes. Antibes: Éditions APDCA. pp 111–123.
240. Zohar I, Dayan T, Spanier E (1997) Predicting grey triggerfish body size from bones. International Journal of Osteoarchaeology 7: 150–156.
241. Desse J, Desse-Berset N (1994) Osteometry and fishing strategies at Cape Andreas Kastros (Cyprus, 8th Millennium BP). In: Van Neer W, ed. Fish exploitation in the past, Proceedings of the 7th meeting of the ICAZ Fish Remains Working Group Annales du Musee Royal de l'Afrique Centrale, Sciences Zoologiques. pp 69–79.
242. Stringer C, Finlayson J, Barton R, Fernández-Jalvo Y, Cáceres I, et al. (2008) Neanderthal exploitation of marine mammals in Gibraltar. Proceedings of the National Academy of Sciences 105: 14319–14324.
243. Craig O, Biazzo M, Tafuri M (2006) Paleodietary records of coastal Mediterranean populations. Journal of Mediterranean Studies 16: 63–78.
244. Alcover J (2008) The first Mallorcans: Prehistoric colonization in the western Mediterranean. Journal of World Prehistory 21: 19–84.
245. Voultsiadou E, Vafidis D (2007) Marine invertebrate diversity in Aristotle's zoology. Contributions to Zoology 76: 103–120.
246. Mylona D (2007) Fish-eating in Greece from the fifth century BC to the seventh century AD. A story of impoverished fishermen or luxurious fish banquets?:Ph.D. Thesis. University of Southampton.
247. Voultsiadou E, Koutsoubas D, Achparaki M (2010) Bivalve mollusc exploitation in Mediterranean coastal communities: An historical approach. Journal of Biological Research-Thessaloniki: in press.
248. Voultsiadou E (2007) Sponges: An historical survey of their knowledge in Greek antiquity. Journal of the Marine Biological Association of the United Kingdom 87: 1757–1763.
249. Bekker-Nielsen T, Enghoff IB (2006) Report on a pilot study of fish remains in Black Sea sediment cores. Available at http: hmp.ruc.dk/documents. pp 52–60.
250. Gertwagen R (2008) Approccio multidisciplinare allo studio dell'ambiente marino e della pesca nel Medio Evo nel Mediterraneo orientale. In: Gertwagen R, Raicevich S, Fortibuoni T, Giovanardi O, eds. Il Mare Com' era Proceedings of the II HMAP Mediterranean and the Black Sea project Chioggia (Italy), 27th-29th September 2006. pp 144–182.
251. Zotier R, Bretagnolle V, Thibault J-C (1999) Biogeography of the marine birds of a confined sea, the Mediterranean. Journal of Biogeography 26: 297–313.
252. Ruffino L, Bourgeois K, Vidal E, Duhem C, Paracuellos M, et al. (2009) Invasive rats and seabirds after 2,000 years of an unwanted coexistence on Mediterranean islands. Biological Invasions 11: 1631–1651.
253. Trakadas LA (2006) Exhausted by fishermen's nets': Roman sea fisheries and their management. Journal of Mediterranean Studies 16: 259–272.
254. Bullock A (2008) Lo Scarus degli antichi: La storia dello *Sparisoma cretense* nel secolo I; Gertwagen R, Raicevich S, Fortibuoni T, Giovanardi O, eds. Chioggia (Italy). pp 94–105.
255. Alfaro Giner C, Costa Ribas B (2008) Methodological aspects of purple dye production on Ibiza: The new site of Cala Olivera. In: Alfaro Giner C, Karali L, eds. Vestidos Textiles y Tintes Estudios sobre la productión de bienesde consumo en la Antigüdad. Valencia. pp 195–208.
256. Bresc H (2000) Pêche et commerce du corail en Méditerranée de l'Antiquitè au Moyen Age. In: Morel JP, Rondi-Costanzo C, Ugolini D, eds. Corallo di ieri, corallo di oggi Volume 5 di Scienze e materiali del patrimonio culturale, Volume 25 di Travaux du Centre Camille Jullia: Edipuglia. pp 41–53.
257. Pronzato R, Manconi R (2008) Mediterranean commercial sponges: Over 5000 years of natural history and cultural heritage. PSZNI Marine Ecology 29: 146–166.
258. Trakadas LA (2008) La pesca in Nord Africa dalla tarda antichità al Medio Evo: Una breve panoramica; Gertwagen R, Raicevich S, Fortibuoni T, Giovanardi O, eds. Il Mare Come Era, Proceedings of the II HMAP Mediterranean and the Black Sea project. Chioggia (Italy), 27th-29th September 2006. pp 26–34.
259. Bresc H (2001) Pêche et habitat en Méditerranée Occidentale. Castrum. pp 525–539.
260. Louzao M, Igual JM, Genovart M, Forero MG, Hobson KA, et al. (2008) Inter-population variation in egg size of an endangered Procellariiform: Interplay between body size and feeding ecology. Acta Oecologica 34: 186–193.
261. Alegret JL (1999) Space, resources and history: The social dimension of fisheries in the Northwest Mediterranean. In: Symes D, ed. Europe's southern waters: Management issues and practice. Oxford: Blackwell Science. pp 55–65.
262. Garrido A, Alegret J (2008) Evoluzione delle tecniche di pesca e uso del territorio: Una panoramica a lungo termine. In: Gertwagen R, Raicevich S, Fortibuoni T, Giovanardi O, eds. Il Mare Com'era, Proceedings of the II HMAP Mediterranean and the Black Sea project Chioggia (Italy), 27th-29th September 2006. pp 116–126.
263. De Nicolò L (2008) Il pesce nell'alimentazione mediterranea tra il XVI e il XIX secolo; Gertwagen R, Raicevich S, Fortibuoni T, Giovanardi O, eds. Il Mare Come Era, Proceedings of the II HMAP Mediterranean and the Black Sea project. Chioggia (Italy), 27th-29th September 2006. pp 35–45.
264. Frangoudes K (2008) I prud'homies: Asociazioni professionali di pescatori francesi nel Mediterraneo. In: Gertwagen R, Raicevich S, Fortibuoni T, Giovanardi O, eds. Il Mare Come Era, Proceedings of the II HMAP Mediterranean and the Black Sea project Chioggia (Italy), 27th-29th September 2006. pp 46–49.
265. Tudela S (2004) Ecosystem effects of fishing in the Mediterranean: An analysis of the major threats of fishing gear and practices to biodiversity and marine habitats. General Fisheries Council for the Mediterranean Studies and Reviews 74 : 2004: i–vi, 1–44.
266. Ferretti F, Myers RA, Serena F, Lotze HK (2008) Loss of large predatory sharks from the Mediterranean Sea. Conservation Biology 22: 952–964.
267. Fortibuoni T, Giovanardi O, Libralato S, Raicevich S, Solidoro C (2008) Integrating historical naturalists' descriptions and statistical-scientific data to describe changes in fish assemblages over the last two centuries in the Northern Adriatic Sea (Mediterranean): ICES Annual Science Conference, Halifax (Canada), CM 2008/R:14.
268. Jukić-Peladić S, Vrgoc N, Krstulovic-Sifner S, Piccinetti C, Piccinetti-Manfrin G, et al. (2001) Long-term changes in demersal resources of the Adriatic Sea: Comparison between trawl surveys carried out in 1948 and 1998. Fisheries Research 53: 95–104.
269. Ravier C, Fromentin JM (2001) Long-term fluctuations in the eastern Atlantic and Mediterranean bluefin tuna population. ICES Journal of Marine Science 58: 1299–1317.
270. Haywood J (1997) Atlas of World History. Oxfordshire Abingdon, UK: Andromeda Oxford.
271. Occhipinti-Ambrogi A (2002) Susceptibility to invasion: Assessing scale and impact of alien biota in the Northern Adriatic. In: Brian F, ed. Alien marine organisms introduced by ships in the Mediterranean and Black seas. Istanbul, 6 - 9 November 2002: CIESM Workshop Monographs 20. pp 69–74.
272. Zenetos A, Gofas S, Russo G, Templado J (2004) Molluscs. In: Brian F, ed. CIESM atlas of exotic species in the Mediterranean Vol 3. Monaco: CIESM Publishers. 376 p.
273. Coll M, Lotze HK, Romanuk TN (2008) Structural degradation in Mediterranean Sea food webs: Testing ecological hypotheses using stochastic and mass-balance modelling. Ecosystems 11: 939–960.
274. Notarbartolo di Sciara G, Bearzi G, Cañadas A, Frantzis A. Highmortality of sperm whales in the north-western Mediterranean, 1971–2003; 2004. SC/56/BC10. Scientific Committee of the International Whaling Commission, Sorrento, 29 June - 10 July 2004.
275. Bearzi G, Agazzi S, Gonzalvo J, Costa M, Bonizzoni S, et al. (2008) Overfishing and the disappearance of short-beaked common dolphins from western Greece. Endangered Species Research 5: 1–12.
276. Bearzi G, Fortuna CM, Reeves RR (2008) Ecology and conservation of common bottlenose dolphins *Tursiops truncatus* in the Mediterranean Sea. Mammal Review 39: 92–123.
277. Aguilar A, Raga JA (1993) The striped dolphin epizootic in the Mediterranean Sea. Ambio 22: 524–528.
278. Johnson WM, Lavigne DM (1999) Monk seals in antiquity: Mededelingen: Netherlands Commission for International Nature Protection. Leiden. pp 1–101.
279. IUCN (1984) Endangered species - Ten to the dozen, but short measure for protected areas: Mediterranean monk seal: IUCN Bulletin 15 (111): 10–12.
280. IUCN/UNEP (1988) The Mediterranean monk seal: Marine Mammal Action Plan Series, pp 1–59.
281. Tavecchia G, Pradel R, Genovart M, Oro D (2007) Density-dependent parameters and demographic equilibrium in open populations. Oikos 116: 1481–1492.
282. Sanz-Aguilar A (2008) From life-history traits to conservation management: The storm-petrel as a case study. Mallorca: University of the Balearic Islands. Spain. 170 p.

283. Alcover JA (2000) Vertebrate evolution and extinction on western and central Mediterranean Islands. Tropics 10: 103–123.
284. Donald PF, Sanderson FJ, Burfield IJ, Bierman SM, Gregory RD, et al. (2007) International conservation policy delivers benefits for birds in Europe. Science 317: 810.
285. Jackson JBC, Kirby MX, Berger WH, Bjorndal KA, Botsford LW, et al. (2001) Historical overfishing and the recent collapse of coastal ecosystems. Science 293: 629–638.
286. Bianchi CN, Morri C (1994) Southern species in the Ligurian Sea (northern Mediterranean): New records and a review. Bollettino dei Musei e degli Istituti Biologici dell'Università di Genova (1992–1993) 58–59: 181–197.
287. Bianchi CN, Morri C (1993) Range extension of warm-water species in the northern Mediterranean: Evidence for climatic fluctuations? Porcupine Newsletter 5: 156–159.
288. Guidetti P, Boero F (2001) Occurrence of the Mediterranean parrotfish *Sparisoma cretense* (Perciformes: Scaridae) in south-eastern Apulia (south-east Italy). Journal of the Marine Biological Association of the UK 81: 717–718.
289. Bianchi CN (2007) Biodiversity issues for the forthcoming tropical Mediterranean Sea. Hydrobiologia 580: 7–21.
290. Millot C (2005) Circulation in the Mediterranean Sea: Evidences, debates and unanswered questions. Scientia Marina 69 (Suppl.1): 5–21.
291. Guidetti P, Bianchi CN, La Mesa G, Modena M, Morri C, et al. (2002) Abundance and size structure of *Thalassoma pavo* (Pisces: Labridae) in the western Mediterranean Sea: Variability at different spatial scales. Journal of the Marine Biological Association of the UK 82: 495–500.
292. Grubelić I, Antolic B, Despalatovic M, Grbec B, Paklar GB (2004) Effect of climatic fluctuations on the distribution of warm-water coral *Astroides calycularis* in the Adriatic Sea: New records and review. Journal of the Marine Biological Association of the UK 84: 599–602.
293. Templado J, Calvo M, Luque AA, Garvía A, Maldonado M, et al. (2004) Guía de los invertebrados y peces marinos españoles protegidos por la legislación nacional e internacional. Madrid: Ministerio de Medio Ambiente, Serie Técnica. 214 p.
294. Fredj G (1974) Stockage et exploitation des données en écologie marine. C. Considération géographiques sur le peuplement bentique de la Méditerranée. Mémoires de l'Institute Océanographique, Monaco 7: 1–88.
295. Taviani M (2002) The Mediterranean benthos from late Miocene up to present: Ten million years of dramatic climatic and geologic vicissitudes. Biologia Marina Mediterranea 9: 445–463.
296. Emig C, Geistdoerfer P (2004) The Mediterranean deep-sea fauna: Historical evolution, bathymetric variations and geographical changes. Notebooks on Geology G2004_A01_CCE-PG.
297. Por FD, Dimentman C (2006) Mare Nostrum: Neogene and anthropic natural history of the Mediterranean basin, with emphasis on the Levant. Bulgaria: Pensof Publishers.
298. Theocharis A, Georgopoulos D, Lascaratos A, Nittis K (1993) Water masses and circulation in the central region of the Eastern Mediterranean: Eastern Ionian, South Aegean and Northwest Levantine, 1986–1987. Deep-Sea Research Part 2 Topical Studies in Oceanography 40: 1121–1142.
299. Pérès JM (1967) The mediterranean benthos. Oceanography and Marine Biology - Annual Review 5: 449–533.
300. Ovchinnikov IM (1966) Circulation in the surface and intermediate layers of the Mediterranean. Oceanology 6: 48–58.
301. Por F, Dimentman C (1989) The Legacy of Tethys: An aquatic biogeography of the Levant. In: Dumont HJ, Wergel MJA, eds. Monographiae Biologicae: Dordrecht: Kluwer Academic Publishers pp. pp 1–214.
302. Bellan-Santini D (1990) Mediterranean deep-sea amphipods: Composition, structure and affinities of the fauna. Progress in Oceanography 24: 275–287.
303. Por FD (2009) Tethys returns to the Mediterranean: Success and limits of tropical re-colonization. BioRisk 3: 5–19.
304. Ben Rais Lasram F, Tomasini JA, Guilhaumon F, Romdhane MS, Chi TD, et al. (2008) Ecological correlates of dispersal success of Lessepsian fishes. Marine Ecology Progress Series 363: 273–286.
305. Robinson AR, Malanotte-Rizzoli P, Hecht A, Michelato A, Roether W, et al. (1992) General circulation of the Eastern Mediterranean. Earth Science Reviews 32: 285–309.
306. Lascaratos A, Roether W, Nittis K, Klein B (1999) Recent changes in deep water formation and spreading in the eastern Mediterranean Sea: A review. Progress in Oceanography 44: 5–36.
307. Özsoy E, Hecht A, Ünlüata Ü, Brenner S, Sur HI, et al. (1993) A synthesis of the Levantine Basin circulation and hydrography, 1985–1990. Deep-sea Research Part 2 Topical studies in oceanography 40: 1075–1119.
308. Açik S (2008) Occurrence of the alien species *Aspidosiphon elegans* (Sipuncula) on the Levantine and Aegean Coasts of Turkey. Turkish Journal of Zoology 32: 443–448.
309. Cañadas A, Sagarminaga R, Garc a-Tiscar S (2002) Cetacean distribution related with depth and slope in the Mediterranean waters off southern Spain. Deep-Sea Research Part I 49: 2053–2073.
310. Oro D, Ruiz X (1997) Exploitation of trawler discards by breeding seabirds in the north-western Mediterranean: Differences between the Ebro Delta and the Balearic Islands areas. ICES Journal of Marine Science 54: 695–707.
311. Bozzano A, Sardà F (2002) Fishery discard consumption rate and scavenging activity in the northwestern Mediterranean Sea. ICES Journal of Marine Science 59: 15–28.
312. Tomas J, Aznar FJ, Raga JA (2001) Feeding ecology of the loggerhead turtle *Caretta caretta* in the western Mediterranean. Journal of Zoology 255: 525–532.
313. Cuttelod A, García N, Abdul Malak D, Temple H, Katariya V (2008) The Mediterranean: A biodiversity hotspot under threat. In: Vié J-C, Hilton-Taylor C, Stuart SN, eds. The 2008 review of the IUCN red list of threatened species: IUCN Gland, Switzerland.
314. Jahnke RA (1996) The global ocean flux of particulate organic carbon: Areal distribution and magnitude. Global Biogeochemical Cycles 10.
315. Diaz RJ, Rosenberg R (1995) Marine benthic hypoxia: A review of its ecological effects and the behavioural responses of benthic macrofauna. Oceanography and Marine Biology - an Annual Review 33: 245–303.
316. Tselepides A, Lampadariou N, Hatziyanni E (2004) Distribution of meiobenthos at bathyal depths in the Mediterranean Sea. A comparison between sites of contrasting productivity. Scientia Marina 68 (Suppl. 3): 39–51.
317. Gambi C, Danovaro R (2006) A multiple-scale analysis of metazoan meiofaunal distribution in the deep Mediterranean Sea. Deep-Sea Research Part I-Oceanographic Research Papers 53: 1117–1134.
318. Galil BS (2004) The limit of the sea: The bathyal fauna of the Levantine Sea. Scientia Marina 68 (Suppl. 3): 63–72.
319. Airoldi L, Beck MW (2007) Loss, status and trends for coastal marine habitats of Europe. Oceanography and Marine Biology - An Annual Review 45: 345–405.
320. Stefani M, Vincenzi S (2005) The interplay of eustasy, climate and human activity in the late Quaternary depositional evolution and sedimentary architecture of the Po Delta system. Marine Geology 222: 19–48.
321. Turley CM (1999) The changing Mediterranean Sea - A sensitive ecosystem? Progress in Oceanography 44: 387–400.
322. Barmawidjaja DM, Vanderzwaan GJ, Jorissen FJ, Puskaric S (1995) 150 years of eutrophication in the northern Adriatic Sea - Evidence from a benthic foraminiferal record. Marine Geology 122: 367–384.
323. Sangiorgi F, Donders TH (2004) Reconstructing 150 years of eutrophication in the north-western Adriatic Sea (Italy) using dinoflagellate cysts, pollen and spores. Estuarine Coastal and Shelf Science 60: 69–79.
324. Boero F (2001) Adriatic ecological history: A link between jelly outbreaks, red tides, mass mortalities, overfishing, mucilages, and thaliacean plakton? In: Brian F, ed. Gelatinous plankton outbreaks: Theory and practice. Monaco: CIESM Workshop Series. pp 44–46.
325. Borrell A, Aguilar A, Pastor T (1997) Organochlorine pollutant levels in Mediterranean monk seals from the western Mediterranean and the Sahara Coast. Marine Pollution Bulletin 34: 505–510.
326. Giangrande A, Licciano M, Musco L (2005) Polychaetes as environmental indicators revisited. Marine Pollution Bulletin 50: 1153–1162.
327. Hummon WD, Todaro MA, Balsamo M, Tongiorgi P (1990) Effects of pollution on marine Gastrotricha in the Northwestern Adriatic Sea. Marine Pollution Bulletin 21: 241–243.
328. Sanpera C, Moreno R, Ruiz X, Jover L (2007) Audouin's gull chicks as bioindicators of mercury pollution at different breeding locations in the western Mediterranean. Marine Pollution Bulletin 54: 691–696.
329. Garthe S, Hüppop O (2004) Scaling possible adverse effects of marine wind farms on seabirds: Developing and applying a vulnerability index. Journal of Ecology 41: 724–734.
330. Margaritoulis D (2000) Marine turtles in the Mediterranean: Population status and conservation. Proceedings of the 5th Medmaravis Symposium, Gozo, Malta, 29 September-3 October. pp 262–280.
331. Lleonart J, Maynou F (2003) Fish stock assessments in the Mediterranean: State of the art. Scientia Marina 67(Suppl. 1): 37–49.
332. Papaconstantinou C, Farrugio H (2000) Fisheries in the Mediterranean. Mediterranean Marine Science 1: 5–18.
333. Bas C, Maynou F, Sardà F, Lleonart J (2003) Variacions demogràfiques a les poblacions d'espècies demersals explotades: els darrers quaranta anys a Blanes i Barcelona; Biologia IEC-SCB, editor. 202 p.
334. Bombace G, Grati F (2007) Che succede alle risorse di pesca del Mediterraneo? Notiziario della Società Italiana di Biologia Marina 51: 29–38.
335. FAO, Food and Agriculture Organization (2004) The State of World Fisheries and Aquaculture. FAO, Rome (Italy).
336. Thibaut T, Pinedo S, Torras X, Ballesteros E (2005) Long-term decline of the populations of Fucales (*Cystoseira* spp. and *Sargassum* spp.) in the Albères coast (France, North-western Mediterranean). Marine Pollution Bulletin 50: 1472–1489.
337. Tsounis G, Rossi S, Gili JM, Arntz WE (2007) Red coral fishery at the Costa Brava (NW Mediterranean): Case study of an overharvested precious coral. Ecosystems 10: 975–986.
338. Guidetti P, Fraschetti S, Terlizzi A, Boero F (2004) Effects of desertification caused by *Lithophaga lithophaga* (Mollusca) fishery on littoral fish assemblages along rocky coasts of southeastern Italy. Conservation Biology 18: 1417–1423.
339. Thorpe JP, Solé-Cava AM, Watts PC (2000) Exploited marine invertebrates: Genetics and fisheries. Hydrobiologia 420: 165–184.
340. De la Rosa J, Saiz JI, Moreno D (2008) *Sipunculus nudus* Linnaeus, 1767 Tita. In: Barea JM, Ballesteros E, Moreno D, eds. Libro Rojo de los Invertebrados de Andalucía. Sevilla: Junta de Andalucía. pp 639–642.
341. Antoniadou C, Vafidis D (2008) First assessment of *Microcosmus sabatieri* (Tunicata: Ascidiacea) small-scale fishery in the South Aegean Sea (Eastern Mediterranean). Cahiers de Biologie Marine 49: 97–100.

342. Sardà F (1998) Symptoms of overexploitation in the stock of the Norway lobster (*Nephrops norvegicus*) on the "Serola Bank" (western Mediterranean Sea off Barcelona). Scientia Marina 62: 295–299.
343. Panigada S, Pesante G, Zanardelli M, Capoulade F, Gannier A, et al. (2006) Mediterranean fin whales at risk from fatal ship strikes. Marine Pollution Bulletin 52: 1287–1298.
344. Panou A, Jacobs J, Panos D (1993) The endangered Mediterranean monk seal *Monachus monachus* in the Ionian Sea, Greece. Biological Conservation 64: 129–140.
345. Tudela S, Kai AK, Maynou F, El Andalossi M, Guglielmi P (2005) Driftnet fishing and biodiversity conservation: The case study of the large-scale Moroccan driftnet fleet operating in the Alboran Sea (SW Mediterranean). Biological Conservation 121: 65–78.
346. Louzao M, Igual JM, McMinn M, Aguilar JS, Triay R, et al. (2006) Small pelagic fish, trawling discards and breeding performance of the critically endangered Balearic shearwater: Improving conservation diagnosis. Marine Ecology Progress Series 318: 247–254.
347. Arcos JM, Louzao M, Oro D (2008) Fishery ecosystem impacts and management in the mediterranean: Seabirds point of view. In: Nielsen JL, Dodson JJ, Friedland K, Hamon TR, Musick J, et al., eds. Reconciling Fisheries with Conservation: Proceedings of the Fourth World Fisheries Congress. BethesdaMaryland: American Fisheries Society, Symposium 49. pp 1471–1479.
348. Igual JM, Tavecchia G, Jenouvrier S, Forero MG, Oro D (2009) Buying years to extinction: Is compensatory mitigation for marine bycatch a sufficient conservation measure for long-lived seabirds? PLoS ONE 4.
349. Libralato S, Coll M, Tudela S, Palomera I, Pranovi F (2008) Novel index for quantification of ecosystem effects of fishing as removal of secondary production. Marine Ecology Progress Series 355: 107–129.
350. Coll M, Palomera I, Tudela S (2009) Decadal changes in a NW Mediterranean Sea food web in relation to fishing exploitation. Ecological Modelling 220: 2088–2102.
351. Mora C, Myers RA, Coll M, Libralato S, Pitcher TJ, et al. (2009) Management Effectiveness of the World's Marine Fisheries. PLoS Biology 7: e1000131.
352. Tsikliras A, Moutopoulos D, Stergiou K (2007) Reconstruction of Greek marine fisheries landings: National versus FAO statistics. In: Zeller D, Pauly D, eds. Reconstruction of marine fisheries catches for key countries and regions (1950–2005). Vancouver: Fisheries Centre Research Reports 15(2). Fisheries Centre, University of British Columbia. pp 121–137.
353. Sala E (2004) The past and present topology and structure of Mediterranean subtidal rocky-shore food webs. Ecosystems 7: 333–340.
354. Boero F, Bonsdorff E (2007) A conceptual framework for marine biodiversity and ecosystem functioning. PSZNI Marine Ecology 28: 134–145.
355. Guidetti P, Terlizzi A, Fraschetti S, Boero F (2003) Changes in Mediterranean rocky-reef fish assemblages exposed to sewage pollution. Marine Ecology Progress Series 253: 269–278.
356. Meinesz A (2002) Killer algae, The true tale of a biological invasion. Chicago and London: University of Chicago Press. 360 p.
357. Klein J, Verlaque M (2008) The *Caulerpa racemosa* invasion: A critical review. Marine Pollution Bulletin 56: 205–225.
358. CIESM (2002) Alien marine organisms introduced by ships in the Mediterranean and Black seas. CIESM Workshop Monographs 20: 136.
359. Galil BS (2006) Shipwrecked: shipping impacts on the biota of the Mediterranean Sea. In: Davenport JL, Davenport J, eds. The ecology of transportation: Managing mobility for the environment: Springer. pp 39–69.
360. Daskalov GM (2002) Overfishing drives a trophic cascade in the Black Sea. Marine Ecology Progress Series 225: 53–63.
361. Mineur F, Johnson M, Maggs C (2007) Hull fouling on commercial ships as a vector of macroalgal introduction. Marine Biology 151: 1299–1307.
362. Ozcan T, Galil B, Bakir K, Katagan T (2006) The first record of the banana prawn *Fenneropenaeus merguiensis* (De Man, 1888) (Crustacea: Decapoda: Penaeidae) from the Mediterranean Sea. Aquatic Invasions 1: 286–288.
363. Galil BS (2007) Seeing red: Alien species along the Mediterranean coast of Israel. Aquatic Invasions 2: 281–312.
364. Abdel Razek F (1987) Crab fishery of the Egyptian waters with notes on the bionomics of *Portunus pelagicus* (L.). Acta Adriatica 28: 143–154.
365. Gruvel A (1936) Contribution à l'étude de la bionomie générale et de l'exploitation de la faune du Canal de Suez. Mémoires présentés à l'Institut d'Égypte 29: 1–229.
366. Bianchi CN (1997) Climate change and biological response in the marine benthos. Proceedings of the Italian Association for Oceanology and Limnology 12: 3–20.
367. Bianchi CN, Morri C (2004) Climate change and biological response in Mediterranean Sea ecosystems: A need for broad-scale and long-term research. Ocean Challenge 13: 32–36.
368. Schneider A, Wallace DWR, Kortzinger A (2007) Alkalinity of the Mediterranean Sea. Geophysical Research Letters 34: L15608.
369. Fowler SW (2008) Ocean acidification issues in the Mediterranean and Black Seas: Present status and future perspectives. In: Briand F, ed. Impacts of acidification on biological, chemical and physical systems in the Mediterranean and Black Seas CIESM Workshop Monographs Monaco. pp 23–30.
370. Lejeusne C, Chevaldonné P, Pergent-Martini C, Boudouresque C, Pérez T (2010) Climate change effects on a miniature ocean: the highly diverse, highly impacted Mediterranean Sea. Trends in Ecology & Evolution 1204: published online. DOI 10.1016/j.tree.2009.1010.1009.
371. Ben Rais Lasram F, Guilhaumon F, Somot S, Thuiller W, Mouillo D (submitted) The Mediterranean Sea as a "cul-de-sac" for endemic fishes facing climate change. Global Change Biology.
372. CIESM (2008) Climate warming and related changes in Mediterranean marine biota; Brian F, editor. Monaco: CIESM Workshop Monographs 35: 152 p.
373. Webster NS (2007) Sponge disease: A global threat? Environmental Microbiology 9: 1363–1375.
374. Garrabou J, Coma R, Bensoussan N, Bally M, Chevaldonne P, et al. (2009) Mass mortality in northwestern Mediterranean rocky benthic communities: Effects of the 2003 heat wave. Global Change Biology 15: 1090–1103.
375. Perez T, Garrabou J, Sartoretto S, Harmelin JG, Francour P, et al. (2000) Mortalité massive d'invertébrés marins: Un événement sans précédent en Méditerranée nord-occidentale. Comptes Rendus de l'Academie des Sciences-Serie III-Sciences de la Vie 323: 853–866.
376. Bianchi CN, Morri C (2001) The battle is not to the strong: Serpulid reefs in the Lagoon of Orbetello (Tuscany, Italy). Estuarine Coastal and Shelf Science 53: 215–220.
377. Lejeusne C, Chevaldonné P (2005) Population structure and life history of *Hemimysis margalefi* (Crustacea: Mysidacea), a 'thermophilic' cave-dwelling species benefiting from the warming of the NW Mediterranean. Marine Ecology Progress Series 287: 189–199.
378. Heller C (1863) Crustaceen des Südlichen Europa. Wien. 10 pls. 336 p.
379. Pesta O (1918) Die Decapodenfauna der Adria. Versuch einer Monographie. Leipzig und Wien: Franz Deuticke Verlag. 1 pl, 500 p.
380. Molinero JC, Buecher E, Lučić D, Malej A, Miloslavic M (2009) Climate and Mediterranean Jellyfish: Assessing the effect of temperature regimes on jellyfish outbreak dynamics. Annales - Ser Hist Nat 19: 1–8.
381. Coll M, Palomera I, Tudela S, Dowd M (2008) Food-web dynamics in the South Catalan Sea ecosystem (NW Mediterranean) for 1978–2003. Ecological Modelling 217: 95–116.
382. Féral JP (2008) Are climate changes already threatening sessile species (or species with low mobility) in the North-Western Mediterranean Sea? Vulnerability of coastal ecosystems. In: Briand F, ed. Climate warming and related changes in Mediterranean marine biota CIESM Workshop Monographs. Monaco. pp 79–87.
383. Salat J, Pascual J (2002) The oceanographic and meteorological station at l'Estartit (NW Mediterranean). In: Brian F, ed. Tracking long-term hydrological change in the Mediterranean Sea Mediterranean Science Commision Ciesm Workshop Series, n° 16. Monaco. pp 29–32.
384. Bianchi CN, Morri C (2003) Global sea warming and "tropicalization" of the Mediterranean Sea: Biogeographic and ecological aspects. Biogeographia 24: 319–327.
385. Francour P, Mouine N (2008) First record of *Kyphosus sectator* (Kyphosidae) along the French Mediterranean coast. Cybium 32: 275–276.
386. Dulčić J, Scordella G, Guidetti P (2008) On the record of the Lessepsian migrant *Fistularia commersonii* (Rüppell, 1835) from the Adriatic Sea. Journal of Applied Ichthyology 24: 101–102.
387. Por FD (1978) Lessepsian migrations: The influx of Red Sea biota into the Mediterranean by way of the Suez Canal. Heidelberg: Springer. 228 p.
388. Klein J, Ruitton S, Verlaque M, Boudouresque CF (2005) Species introductions, diversity and disturbances in marine macrophyte assemblages of the northwestern Mediterranean Sea. Marine Ecology Progress Series 290: 79–88.
389. Gambi MC, Barbieri F, Bianchi CN (2008) New record of the alien seagrass *Halophila stipulacea* (Hydrocharitaceae) in the western Mediterranean: A further clue to changing Mediterranean Sea biogeography. JMBA2 Biodiversity Records: 7.
390. Garibaldi F, Orsi Relini L (2008) Record of the bluespotted cornetfish *Fistularia commersonii* Rüppell, 1838 in the Ligurian Sea (NW Mediterranean). Aquatic Invasions 3: 471–474.
391. Yokes B, Galil BS (2006) The first record of the needle-spined urchin *Diadema setosum* (Leske, 1778) (Echinodermata: Echinoidea: Diadematidae) from the Mediterranean Sea. Aquatic Invasions 1: 188–190.
392. Azzurro E (2008) The advance of thermophilic fishes in the Mediterranean Sea: Overview and methodological questions. In: Briand F, ed. Climate warming and related changes in Mediterranean marine biota. Monaco: CIESM Workshop Monographs. pp 39–45.
393. Quignard JP, Raibaut A (1993) Ichthyofauna of the languedocian coast (Gulf of Lion) Faunistic and Demographic modification. Vie et Milieu 43: 191–195.
394. Bombace G (2001) Influence of climatic changes on stocks, fish species and marine ecosystems in the Mediterranean Sea. Archivio di Oceanografia e Limnologia 22: 67–72.
395. Grbec B, Dulcic J, Morovic M (2002) Long-term changes in landings of small pelagic fish in the eastern Adriatic-possible influence of climate oscillations over the Northern Hemisphere. Climate Research 20: 241–252.
396. Chevaldonné P, Lejeusne C (2003) Regional warming-induced species shift in NW Mediterranean marine caves. Ecology Letters 6: 371–379.
397. Sabatés A, Martín P, Lloret J, Raya V (2006) Sea warming and fish distribution: The case of the small pelagic fish, *Sardinella aurita*, in the western Mediterranean. Global Change Biology 12: 2209–2219.

398. Astraldi M, Bianchi CN, Gasparini GP, Morri C (1995) Climatic fluctuations, current variability and marine species distribution: A case study in the Ligurian Sea (north-west Mediterranean). Oceanologica Acta 18: 139–149.
399. Goren M, Galil BS (2005) A review of changes in the fish assemblages of Levantine inland and marine ecosystems following the introduction of non-native fishes. Journal of Applied Ichthyology 21: 364–370.
400. Ben Rais Lasram F, Mouillot D (2009) Increasing southern invasion enhances congruence between endemic and exotic Mediterranean fish fauna. Biological Invasions 11: 697–711.
401. Morri C, Bianchi CN (2001) Recent changes in biodiversity in the Ligurian Sea (NW Mediterranean): Is there a climatic forcing? In: Faranda FM, Guglielmo L, Spezie G, eds. Structure and processes in the Mediterranean ecosystems. Milan: Springer. pp 375–384.
402. Cerrano C, Bavestrello G, Bianchi CN, Cattaneo-Vietti R, Bava S, et al. (2000) A catastrophic mass-mortality episode of gorgonians and other organisms in the Ligurian Sea (Northwestern Mediterranean), summer 1999. Ecology Letters 3: 284–293.
403. Cerrano C, Bavestrello G (2009) Mass mortalities and extinctions. In: Wahl M, ed. Marine hard bottom communities ecological studies 206. Berlin: Springer-Verlag.
404. Bally M, Garrabou J (2007) Thermodependent bacterial pathogens and mass mortalities in temperate benthic communities: A new case of emerging disease linked to climate change. Global Change Biology 13: 2078–2088.
405. Bellan-Santini D, Bellan G (2000) Distribution and peculiarities of Mediterranean marine biocoenoses. Biologia Marina Mediterranea. pp 67–80.
406. Fishelson L (2000) Marine animal assemblages along the littoral of the Israeli Mediterranean seashore: The Red-Mediterranean Seas communities of species. Italian Journal of Zoology 67: 393–415.
407. Peirano A, Morri C, Bianchi CN, Aguirre J, Antonioli F, et al. (2004) The Mediterranean coral *Cladocora caespitosa*: A proxy for past climate fluctuations? Global and Planetary Change 40: 195–200.
408. Rodolfo-Metalpa R, Richard C, Allemand D, Bianchi CN, Morri C, et al. (2006) Response of zooxanthellae in symbiosis with the Mediterranean corals *Cladocora caespitosa* and *Oculina patagonica* to elevated temperatures. Marine Biology 150: 45–55.
409. Bianchi CN, Haroun R, Morri C, Wirtz P (2000) The subtidal epibenthic communities off Puerto del Carmen (Lanzarote, Canary Islands) Arquipélago. Life and Marine Sciences Suppl. 2 (Part A): 145–156.
410. Hall-Spencer JM, Rodolfo-Metalpa R, Martin S, Ransome E, Fine M, et al. (2008) Volcanic carbon dioxide vents show ecosystem effects of ocean acidification. Nature 454: 96–99.
411. Orr JC, Fabry VJ, Aumont O, Bopp L, Doney SC, et al. (2005) Anthropogenic ocean acidification over the twenty-first century and its impact on calcifying organisms. Nature 437: 681–686.
412. Fabry V (2008) Marine calcifiers in a high-CO2 ocean. Science 320: 1020–1022.
413. Kuffner IB, Andersson AJ, Jokiel PL, Rodgers KS, Mackenzie FT (2008) Decreased abundance of crustose coralline algae due to ocean acidification. Nature Geoscience 1: 114–117.
414. Montefalcone M, Morri C, Peirano A, Albertelli G, Bianchi CN (2007) Substitution and phase shift within the *Posidonia oceanica* seagrass meadows of NW Mediterranean Sea. Estuarine Coastal and Shelf Science 75: 63–71.
415. Alongi G, Cormaci M, Furnari G (2008) *Chylocladia wynnei* sp. nov. (Champiaceae, Rhodophyta) from the Mediterranean Sea. Botanica Marina 51: 145–150.
416. Rodriguez-Prieto C, De Clerck O (2009) *Leptofauchea coralligena* (Faucheaceae, Rhodophyta), a new species from the Mediterranean Sea. European Journal of Phycology 44: 107–121.
417. Davis A, Roberts D, Ayre D (1999) Conservation of sessile marine invertebrates: You do not know what you have until it is gone. In: Ponder W, Lunney D, eds. The other 99% The conservation and biodiversity of invertebrates. Mosman: Transaction of the Royal Zoological Society of New South Wales. pp 325–329.
418. Boero F (2001) Light after dark: The partnership for enhancing expertise in taxonomy. Trends in Ecology & Evolution 16: 266.
419. Wittmann KJ (1999) Global biodiversity in Mysidacea, with notes on the effects of human impact. In: Schram FR, von Vaupel Klein JC, eds. Crustaceans and the Biodiversity Crisis. Leiden Boston, Köln: Brill. pp 511–525.
420. Wittmann KJ (2001) Centennial changes in the near-shore mysid fauna of the Gulf of Naples (Mediterranean Sea), with description of *Heteromysis riedli* sp. n. (Crustacea, Mysidacea). PSZNI Marine Ecology 22: 85–109.
421. San Vicente C (1996) Contribución al conocimiento de las comunidades y poblaciones suprabentónicas en habitats seleccionados del litoral del golfo de Vizcaya y del Mediterraneo noroccidental. Barcelona: Universitat de Barcelona. Spain. 457 p.
422. San Vicente C (1999) El suprabentos de les platges catalanes, un racó de biodiversitat. L'Atzavara 8: 33–43.
423. Barberá Cebrián C (2002) Misidáceos (Crustacea, Peracarida) asociados a fanerógamas marinas en el sudeste ibérico. Alacant: Universitat d'Alacant. Spain. 248 p.
424. Munilla T, San Vicente C (2005) Suprabenthic biodiversity of Catalan beaches (NW Mediterranean). Acta Oecologica 27: 81–91.
425. Aguzzi J, Bahamon N, Marotta L (2009) The influence of light availability and predatory behavior of the decapod crustacean *Nephrops norvegicus* on the activity rhythms of continental margin prey decapods. PSZNI Marine Ecology 30: 366–375.
426. Bahamon N, Sardà F, Aguzzi J (2009) Fuzzy diel patterns in catchability of deep-water species on the continental margin. ICES Journal of Marine Science 66: 2211–2218.
427. Park O (1941) Concerning community symmetry. Ecology 22: 164–167.
428. Sardà F, Company JB, Castellón A (2003) Intraspecific aggregation structure of a shoal of a Western Mediterranean (Catalan Coast) deep-sea shrimp, *Aristeus antennatus* (Risso, 1816), during the reproductive period. Journal of Shellfish Research 22: 569–580.
429. Raffaelli D, Bell E, Weithoff G, Matsumoto A, Cruz-Motta JJ, et al. (2003) The ups and downs of benthic ecology: Considerations of scale, heterogeneity and surveillance for benthic–pelagic coupling. Journal of Experimental Marine Biology and Ecology 285: 191–203.
430. Templado J, Ballesteros E, García Raso JE, San Martín G (2004) La comunidad posidonícola. In: Luque AA, Templado J, eds. Praderas y bosques marinos de Andalucía. Sevilla: Consejería de Medio Ambiente de la Junta de Andalucía. pp 89–116.
431. Rueda JL, Urra J, Salas C (2008) Diel and seasonal variation of a molluscan taxocoenosis associated with a *Zostera marina* bed in southern Spain (Alboran Sea). Helgolander Marine Research 62: 227–240.
432. Boyd I, Wanless S, Camphuysen CJ (2006) Top predators in marine ecosystems: Their role in monitoring and management. Cambridge: Cambridge University Press.
433. Bourgeois K, Vidal E (2008) The endemic Mediterranean yelkouan shearwater *Puffinus yelkouan*: Distribution, threats and a plea for more data. Oryx 42: 187–194.
434. Boudouresque CF, Avon M, Gravez V (1991) Les especes marines à proteger en Méditerranée. Marseille: GIS Posidonie. 447 p.
435. Bello G (2004) The biogeography of Mediterranean cephalopods. Biogeographia 24: 201–217.

Supporting information 1st file: abstracts translations

The Biodiversity of the Mediterranean Sea: Estimates, Patterns, and Threats

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Abstrac translated to Arabic:

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يعتبر البحر الأبيض المتوسط نقطة ساخنة للتنوع البيولوجي البحري. قمنا في هذه الدراسة بدمج تحليل مستفيض للأدب مع معلومات الخبراء قصد تحديث تقديرات الأصناف اع الرئيسية في ذلك النظام الإيكولوجي البحري كما قمنا بمراجعة وتحديث قوائم الأنو المختلفة. قمنا كذلك بتقييم الأنماط الزمانية والمكانية للتنوع البيولوجي وتحديد التغيرات الكبرى والتهديدات.

أحصينا ما يقرب من 17 000 كائنة بحرية في البحر الأبيض المتوسط. أظهرت الأنماط المكانية ي اتجاه الجنوب حسب تواجد انخفاض تدريجي عام في التنوع البيولوجي من الشمال الغربي ف الإنتاج مع بعض الاستثناءات والاحتياطات اللازمة نظرا لوجود نقائص في معرفة الكائنات الحية على طول السواحل الجنوبية والشرقية.

بصفة عامّة يكون التنوع البيولوجي أعلى في المناطق الساحلية والجرف القاري ويتناقص أن الإفراط في استغلال وخسارة الموائل هما السببان مع العمق. أظهرت الاتجاهات الزمنية الرئيسيان للتغيرات التاريخية في التنوع البيولوجي. حاليا ، يمثل ضياع وتدهور الموائل، يليها الاستغلال المفرط والتلوث وتغير المناخ ، والتخثث وانتشار الأنواع الغريبة المجموعات التصنيفية . كل هذه التأثيرات التهديدات الرئيسية التي تؤثر على أكبر عدد من من المرجح أن تزداد في المستقبل ، خاصة تغير المناخ وتدهور الموائل.

تحديد النقاط الساخنة يكشف الأهمية الإيكولوجية لمعظم جروف غرب البحر الأبيض المتوسط الأدرياتيكي خاصة مناطق مضيق جبل طارق ، وبحر البوران والساحل الأفريقي وشمال البحر وبحر ايجه التي تتميز بتواجد كثيف للكائنات المهددة بالانقراض. أما الحوض الشرقي فهو مهدد بانتشار الكائنات الغريبة.

تقدير أنماط التنوع البيولوجي البحري لا يزال ناقصا بسبب بعض الأنواع التي لم توصف ت التنوع الميكروبي بعد والتي ستضاف في المستقبل. كما يوجد نقص في تقديرا وكائنات المناطق العميقة والمناطق الشرقية والجنوبية التي لا تزال غير معروفة. إن غزوات الأنواع الغريبة هي من العوامل الحاسمة التي سوف تستمر والتي ستحدث تغييرا رئيسيا للتنوع البيولوجي في الحوض الشرقي للبحر الأبيض المتوسط.

Abstrac translated to Catalan:

La biodiversidat de la mar Mediterrània: estimacions, patrons i amenaces

Resum

La mar Mediterrània és un "punt calent" de diversitat marina. En aquest treball combinem una extensa anàlisi de la literatura científica amb opinions d'experts per tal de posar al dia les estimacions publicades de la diversitat dels principals tàxons existents en aquest ecosistema marí, i per a revisar i actualitzar les diverses llistes d'espècies disponibles. També s'avaluen els patrons espacio-temporals globals de la diversitat específica i s'identifiquen els principals canvis i amenaces que afecten la diversitat de la Mediterrània. Hem quantificat aproximadament 17.000 espècies que habiten la Mediterrània i hem constatat una disminució general de la biodiversitat des de les regions noroccidentals cap a les sud-orientals, de forma paral·lela al gradient de producció primària, però amb algunes excepcions. Cal interpretar aquesta observació amb precaució degut a llacunes en el coneixement de la biota a les vores sud i est. La diversitat és generalment més alta a les àrees costaneres i a les plataformes continentals, i disminueix amb la profunditat. Les tendències temporals indiquen que la sobre-explotació i la pèrdua d'hàbitat han estat els principals factors antropogènics que han generat canvis històrics de biodiversitat. Actualment la pèrdua i degradació d'hàbitat, seguides per l'explotació, la contaminació, el canvi climàtic, l'eutrofització i l'establiment d'espècies invasores són les amenaces més importants i afecten un nombre elevat de grups taxonòmics. Es preveu que tots els impactes augmentin en el futur, especialment el canvi climàtic i la degradació d'hàbitat. La identificació de "punts calents" subratlla la importància ecològica de la major part de les plataformes de la Mediterrània occidental i, en particular, de l'estret de Gibraltar amb el mar d'Alboran i les costes africanes adjacents, conjuntament amb el mar Egeu i el mar Adriàtic, que mostren altes concentracions d'espècies en perill, amenaçades o vulnerables. La biodiversitat de la conca Llevantina, greument afectada per la invasió d'espècies, es troba també amenaçada. De tota manera, les estimacions presents de la riquesa i els patrons de la diversitat marina són incompletes i cal esperar que en el futur s'afegiran noves espècies encara no descrites. La diversitat microbiana està substancialment infravalorada i les zones marines profundes i parts de les regions meridionals i orientals són encara molt poc conegudes. La invasió d'espècies alienes és un factor crucial que continuarà canviant la biodiversitat de la Mediterrània, sobretot a la conca oriental.

Abstrac translated to Dutch:

De biodiversiteit van de Middellandse Zee: Schattingen, patronen en bedreigingen

Samenvatting

De Middellandse Zee is een hotspot voor mariene biodiversiteit. In dit paper combineren we een uitgebreide literatuurstudie met meningen van experts teneinde huidige schatting van prominente taxa in dit ecosysteem te herzien, en verschillende soortenlijsten bij te werken. We beschouwen ruimtelijke trends in soortenrijkdommen, en identificeren grote veranderingen en bedreigingen. Wij kwantificeerden ongeveer 17.000 mariene soorten die voorkomen in de Middellandse Zee. Ruimtelijke trends toonde een algemene daling in biodiversiteit van de noordwestelijke naar zuidoostelijke regio's, wat grotendeels overeen komt met een verloop van productie, maar met inachtname van lacunes in feitelijke kennis van flora en fauna langs de zuidelijke en oostelijke kusten van de Middellandse Zee. Biodiversiteit is in het algemeen hoger in de kustgebieden en het continentaal plat, en neemt af met diepte. Van oudsherre zijn overbevissing en habitatverlies de voornaamste menselijke factoren geweest die leidden tot veranderingen in biodiversiteit. Op dit moment zijn verlies en afbraak van habitat, gevolgd door overbevissing, vervuiling, klimaatverandering, eutrofiëring en de vestiging van uitheemse soorten de belangrijkste bedreigingen die het grootste aantal taxonomische groepen beinvloedden. Van al deze effecten, maar met name klimaatverandering en aantasting van habitat, is voorspeld dat zij in de toekomst in belang zullen toenemen. De identificatie van "hot spots" benadrukt het ecologische belang van het merendeel van de plateaus in de westelijke Middellandse Zee: de Straat van Gibraltar en de aangrenzende Alboran Zee en de Afrikaanse kust, de noordelijke Adriatische Zee en de Egeïsche Zee, waar hoge concentraties van ernstig bedreigde, bedreigde of kwetsbare soorten zijn aangetroffen. Het Levantijnse Basin, sterk beïnvloed door de invasie van uitheemse soorten, wordt ook bedreigd. Toch zijn onze schatting en patronen van mariene diversiteit onvolledig aangezien vele nog onbeschreven soorten in de nabije toekomst zullen worden toegevoegd. Schattingen van diversiteit voor microben zijn wel degelijk ondervertegenwoordigd, en de diepzee en delen van de zuidelijke en oostelijke regio zijn nog steeds slecht bekend. De invasie van uitheemse soorten is een cruciale factor met blijvende invloed op de biodiversiteit van de Middellandse Zee, met name in haar oostelijk bekken.

Abstrac translated to French:

Biodiversité de la mer Méditerranée: estimations, patrons et menaces

Résumé

La mer Méditerranée est un *hot spot* de biodiversité marine. Dans cette étude, nous combinons une analyse extensive de la littérature avec une connaissance d'expert afin de mettre à jour les estimations publiques disponibles des principaux taxons dans cet écosystème marin, et afin de réviser et de mettre à jour diverses listes d'espèces. De même, nous évaluons les patrons spatiaux et temporaux de la diversité spécifique et nous identifions les principaux changements et menaces. Nous avons dénombré approximativement 17 000 espèces marines en mer Méditerranée. Les patrons spatiaux ont montré une diminution générale de la biodiversité du nord ouest au sud est suivant un gradient de production avec toutefois quelques exceptions et des précautions dues aux failles de notre connaissance des biotes le long des rives sud et est. La biodiversité est généralement plus élevée au niveau des zones côtières et du plateau continental, et elle décroît avec la profondeur. Les tendances temporelles ont montré que la sur-exploitation et la perte des habitats sont les principaux drivers humains des changements historiques de la biodiversité. Actuellement, la perte des habitats et leur dégradation, suivies par la sur-exploitation, la pollution, les changements climatiques, l'eutrophisation et l'établissement des espèces exotiques sont les principales menaces qui ont un impact sur le plus grand nombre de groupes taxonomiques. Tous ces impacts sont susceptibles d'augmenter dans le futur, particulièrement les changements climatiques et la dégradation des habitats. L'identification des *hot spots* révèle l'importance écologique de la plupart des plateaux ouest méditerranéens et particulièrement le détroit de Gibraltar, la mer d'Alboran, les côtes africaines, le nord de l'Adriatique et la mer Egée qui montrent une forte concentration d'espèces en danger, menacées et vulnérables. Le bassin Levantin, sévèrement touché par les invasions d'espèces, est aussi menacé. Cependant, nos estimations et les patrons de diversité marine demeurent incomplets puisque certaines espèces non encore décrites s'y ajouteront dans le futur. Les estimations de la diversité microbienne sont substantiellement sous représentées et les zones profondes ainsi que les régions est et sud dont encore peu connues. Les invasions d'espèces exotiques sont un facteur crucial qui continuera de modifier la biodiversité méditerranéenne principalement dans le bassin est.

Abstrac translated to German:

Die Artenvielfalt des Mittelmeers: Artenanzahl,-verteilung und Gefährdung/Bedrohung

Zusammenfassung

Das Mittelmeer ist ein bekannter Hotspot für marine Biodiversität. Basierend auf einer umfassenden Literaturrecherche und unter Berücksichtigung von Expertenwissen stellen wir hier neu berechnete Schätzungen über die Artenanzahl verschiedener Taxa, sowie einige aktualisierte Artenlisten vor. Des weiteren haben wir die allgemeinen zeitlichen und räumlichen Verteilungsmuster der Biodiversität im Mittelmeer untersucht und hier dargestellt, sowie die Hauptursachen für mögliche vergangene und zukünftige Veränderungen identifiziert. Nach unseren Ergebnissen kommen schätzungsweise 17,000 marine Arten im Mittelmeer vor. In Hinblick auf Verteilungsmuster zeigen unsere zusammengetragenen Ergebnisse einen klaren abnehmenden Trend, der – dem Hauptprimärproduktionsgradienten folgendend - von nordwestlicher in südöstlicher Richung verläuft. Im allgemeinen ist die Artenvielfalt im Küstenbereich und entlang des Kontinentalshelfs grösser und nimmt mit zunehmender Tiefe ab. Überfischung und Habitatzerstörung waren bisher die hauptsächlichen anthropogenen Ursachen für Veränderungen und Abnahme der Artenvielfalt. Heutzutage spielen neben Habitatverlust, der die Hauptbedrohung mit den größten Auswirkungen auf die meisten Artengruppen darstellt, auch Fischerei, Umweltverschmutzung, Klimawandel, Überdüngung und das Einschleppen invasiver Arten eine Rolle. Nach unseren Vorhersagen wird die Auswirkung aller hier aufgeführten Faktoren in Zukunft noch zunehmen, dies gilt vor allem für Klimawandel und Habitatverlust. Unsere Untersuchungen zeigten eine besondere Konzentration bedrohter Arten entlang der westlichen Shelfgebiete, wobei hier die Strasse von Gibraltar und die daneben liegenden Gebiete des Alboranischen Meer sowie der afrikanische Küstenstreifen und auch die Adria und das Ägäische Meer besonders hervorstechen. Das Levantinische Becken, in welchem die Anzahl invasiver Arten besonders hoch ist, ist ebenfalls bedroht. Die hier gezeigten Daten hinsichtlich der Gesamtartenzahl und Verbreitungsmuster können nur vorläufige Schätzungen darstellen, da vermutlich noch weitere bisher unbekannte Arten dazu kommen werden. Besonders lückenhaft ist unser Wissen über die Mikrobenvielfalt und die mediterranen Tiefseegebiete, sowie über einige Gebiete in den südöstlichen Bereichen des Mittelmeers. Das Einschleppen invasiver Arten ist ein kritischer Faktor, der auch weiterhin grossen Einfluss auf die Artenvielfalt des Mittelmeers haben wird, besonders in den östlichen Becken.

Abstrac translated to Greek:

Η βιοποικιλότητα στη Μεσόγειο θάλασσα: εκτιμήσεις, πρότυπα και απειλές

Περίληψη

Η Μεσόγειος Θάλασσα αποτελεί πυρήνα θαλάσσιας βιοποικιλότητας. Στην εργασία αυτή γίνεται εκτεταμένη ανάλυση της βιβλιογραφίας σε συνδυασμό με τις απόψεις ειδικών με σκοπό την αναθεώρηση των διαθέσιμων εκτιμήσεων μεγέθους της ποικιλότητας των κύριων ομάδων οργανισμών στο θαλάσσιο αυτό οικοσύστημα, αλλά και την παρουσίαση ενημερωμένων καταλόγων ειδών. Γίνεται ακόμη εκτίμηση γενικών χωρικών και χρονικών προτύπων της ποικιλότητας των ειδών και προσδιορίζονται σημαντικές μεταβολές και απειλές. Καταγράφηκε η παρουσία 17.000 θαλάσσιων ειδών στη Μεσόγειο κατά προσέγγιση. Τα πρότυπα χωροκατανομής έδειξαν μια γενικευμένη μείωση της βιοποικιλότητας από τις βορειοδυτικές προς τις νοτιοανατολικές περιοχές, η οποία ακολουθεί μια αντίστοιχη διαβάθμιση της πρωτογενούς παραγωγής. Το πρότυπο αυτό γίνεται δεκτό με ορισμένες εξαιρέσεις κι επιφυλάξεις λόγω ελλιπούς γνώσης για το βιόκοσμο των ανατολικότερων και νοτιότερων περιοχών. Η βιοποικιλότητα είναι γενικά μεγαλύτερη στις παράκτιες περιοχές και την υφαλοκρηπίδα, ενώ μειώνεται αυξανομένου του βάθους. Οι τάσεις μέσα στο χρόνο δείχνουν ότι η υπεραλίευση και η καταστροφή των ενδιαιτημάτων αποτελούν τα σημαντικότερα ανθρωπογενή αίτια των ιστορικών αλλαγών στη βιοποικιλότητα. Σήμερα, η απώλεια και υποβάθμιση των ενδιαιτημάτων και ακολούθως η εκμετάλλευση, η ρύπανση, η κλιματική αλλαγή, ο ευτροφισμός και η εγκατάσταση αλλόχθονων ειδών αποτελούν τις σημαντικότερες απειλές και επηρεάζουν τις περισσότερες ταξινομικές ομάδες οργανισμών. Όλες αυτές οι επιδράσεις προβλέπεται ότι θα εμφανιστούν περισσότερο έντονες στο μέλλον, κυρίως όσον αφορά την κλιματική αλλαγή και την υποβάθμιση των ενδιαιτημάτων. Ιδιαίτερη οικολογική σημασία ως πυρήνες βιοποικιλότητας μέσα στη Μεσόγειο φαίνεται να έχουν η υφαλοκρηπίδα της Δυτικής λεκάνης στη μεγαλύτερη έκτασή της, με έμφαση στο στενό του Γιβραλτάρ, τη γειτονική θάλασσα του Αλμποράν και τις αφρικανικές ακτές, η βόρεια Αδριατική θάλασσα και το Αιγαίο πέλαγος. Οι περιοχές αυτές παρουσιάζουν μεγάλες συγκεντρώσεις ειδών που κινδυνεύουν, απειλούνται ή είναι τρωτά. Η Λεβαντίνη, που έχει δεχθεί έντονη εισβολή αλλόχθονων ειδών, βρίσκεται επίσης σε κίνδυνο. Πάντως, η θαλάσσια βιοποικιλότητα και τα πρότυπά της στη Μεσόγειο είναι ακόμη ελλιπώς γνωστά και αναμένεται ότι πρόκειται να γίνουν περιγραφές και προσθήκες νέων ειδών στο μέλλον. Η γνώση για την ποικιλότητα των μικροοργανισμών, καθώς και το βιόκοσμο των μεγάλων βαθών και των νότιων και ανατολικότερων περιοχών αναμένεται να αυξηθεί. Τέλος, η εισβολή αλλόχθονων ειδών αποτελεί αποφασιστικό παράγοντα ο οποίος θα συνεχίσει να μεταβάλλει τη βιοποικιλότητα της Μεσογείου, ιδιαίτερα στην ανατολική λεκάνη.

Abstrac translated to Hebrew:

המגוון הביולוגי של הים התיכון: אמדן, מגמות, ואיומים

תקציר

הים התיכון הוא בעל מגוון ביולוגי רב. במאמר זה אנו משלבים בחינה מפורטת של הספרות עם דעות מומחים
האומדנים המצויים של הקבוצות הטקסונומיות הראשיות במערכת הימית ולתקן מספר רשימות במטרה לעדכן את
מינים. בנוסף אנו אומדים מגמות במרחב ובזמן של שונות מינים ומזהים שינויים חשובים ואיומים על המגוון. כ
מזרחו, -מערב הים לדרום-17,000 מינים מצויים בים התיכון. דגמים מרחביים מצביעים על פחיתה במגוון מצפון
בעקבות דעיכה הדרגתית ביצור. אך יש להתריע שקביעה זו עשויה להשתנות אם יצומצמו הפערים במידע על
הביוטה לאורך החופים הדרומיים והמזרחיים של הים.

ן המגוון הביולוגי גבוה יותר בדרך כלל בקרבת החופים ואדני היבשת, ופוחת בעומק. המגמות לאורך ציר הזמ
מצביעות שניצול לא מבוקר ואובדן בתי גידול הם הסיבות העיקריות לשינויים מעשי אדם במגוון.

בהווה, השחתה והרס בתי גידול, ניצול משאבים, זיהום, שינוי אקלימי, העשרה אורגנית והתבססות מינים זרים הם
ת. השפעות אלו צפויות להחמיר האיומים העיקריים המשפיעים על המספר הגדול ביותר של קבוצות טקסונומיו
בעתיד, במיוחד שינוי אקלימי והרס בתי גידול. זיהוי אתרים בעלי מגוון מינים גבוה במיוחד מבליט את החשיבות
דני היבשת במערב הים התיכון, במיוחד מיצר גיברלטר, ים אלבורן והחוף האפריקאי הסמוך; צפון האקולוגית של א
אשר בהם ריכוז של מינים רגישים ובסכנת הכחדה. אגן הלבנט, המושפע באורח חמור –הים האדריאטי והאגאי
אנו צופים שמינים נוספים –מפלישות מינים, נמצא בסכנה גם הוא. האומדנים והדגמים של מגוון ימי אינם שלמים
יתוארו ויתווספו למניין בעתיד. אומדני מינים חד תאיים לוקים בחסר, ואזורים בים העמוק, ובדרום ומזרח הים
התיכון ידועים אך מעט. פלישה של מינים זרים מהווה גורם מכריע אשר יוסיף וישנה את מגוון המינים, בעיקר
באגן המזרחי.

Abstrac translated to Italian:

La biodiversità del Mar Mediterraneo: stime, distribuzione e minacce

Riassunto

Il Mar Mediterraneo è un *hotspot* di biodiversità marina. Questo studio integra un'ampia analisi della letteratura insieme a opinioni di esperti con l'intento di aggiornare pubblicamente le stime disponibili dei maggiori *taxa* di questo ecosistema marino, e di rivedere e aggiornare le liste delle diverse specie. La nostra ricerca ha valutato anche la distribuzione spaziale e temporale complessiva della diversità delle specie, identificandone i cambiamenti e le minacce più significative: nel Mediterraneo.sono state quantificate circa 17.000 specie marine. Le distribuzioni spaziali hanno mostrato una generale diminuzione della biodiversità dalle regioni nord-ovest a quelle sud-est, seguendo un gradiente di produzione, con qualche eccezione e cautela dovuta a mancanza di dati sul biota lungo le coste sudorientali. La biodiversità è generalmente più elevata nelle aree costiere e nelle scarpate continentali e diminuisce con la profondità. I trend temporali hanno mostrato come lo sfruttamento eccessivo delle risorse e la perdita degli habitat siano stati i fattori principali di origine umana alla base dei cambiamenti storici nella biodiversità. Attualmente, le minacce più significative e quelle che impattano il maggior numero di gruppi tassonomici sono la perdita di habitat e la sua degradazione, seguiti da sfruttamento, inquinamento, cambiamenti climatici, eutrofizzazione e introduzione di specie aliene. Si prevede che tutte queste minacce diventino sempre più importanti in futuro, specialmente il cambiamento climatico e la degradazione dell'habitat. L'identificazione di *hotspot* mette in evidenza l'importanza ecologica della maggior parte delle coste occidentali del Mediterraneo, in particolare dello stretto di Gibilterra e delle adiacenti coste del Mare di Alboran e dell'Africa, dell'Adriatico settentrionale e dell'Egeo, aree che mostrano elevate concentrazioni di specie in pericolo, minacciate o vulnerabili. Anche il bacino levantino, gravemente colpito dall'invasione di specie, è minacciato. Tuttavia, le nostre stime e la distribuzione della biodiversità marina sono ancora incomplete, essendoci specie non descritte che verranno aggiunte in futuro. Le stime sulla biodiversità dei microbi sono sostanzialmente ancora sottorappresentate, così come sono poco conosciute le aree marine profonde e alcune parti delle regioni meridionali e orientali. L'invasione di specie aliene è un fattore cruciale che continuerà a modificare la biodiversità mediterranea, soprattutto nel bacino orientale.

Abstrac translated to Spanish:

La biodiversidad del mar Mediterráneo: estimaciones, patrones y amenazas

Resumen

El mar Mediterráneo es un *hotspot* marino de biodiversidad. En este trabajo hemos combinado el análisis de datos bibliográficos con la opinión y el conocimiento de expertos para actualizar las estimaciones de la biodiversidad de especies marinas de los principales taxones en este ecosistema, al mismo tiempo que hemos revisado numerosos listados de especies. También hemos analizado los patrones espaciales y temporales de la diversidad, así como identificado las principales amenazas. Se han cuantificado un total aproximado de 17.000 especies marinas en el mar Mediterráneo. Los patrones espaciales muestran como esta diversidad decrece desde el noroeste al sudeste siguiendo un gradiente de producción teniendo en cuenta algunas excepciones y precauciones, ya que existen aun áreas con gran escasez de datos, sobretodo en las zonas del sur y del este. La biodiversidad marina es generalmente mayor en las zonas costeras y en las plataformas continentales y desciende con la profundidad. Los patrones temporales indican que la sobreexplotación y la degradación y la pérdida del hábitat han sido en el pasado las actividades humanas con mayor impacto sobre la biodiversidad marina. Actualmente, la degradación y la pérdida del hábitat, seguidas por la explotación, la polución, el cambio climático, la eutrofización y la introducción de especies foráneas, son las principales amenazas que afectan al mayor número de grupos taxonómicos. La importancia de estos impactos muy probablemente crecerá en un futuro, especialmente la de los asociados al cambio climático y a la degradación del hábitat. En este trabajo se identifican una serie de *hotspots* o zonas con una elevada concentración de especies de gran importancia ecológica, en la parte occidental del mar Mediterráneo, y en particular en el estrecho de Gibraltar, el mar de Alborán y la costa africana asociada, y también en el norte del mar Adriático y del mar Egeo. Estas regiones muestran una alta concentración de especies en peligro, amenazadas o vulnerables. El mar de Levante, impactado notablemente por la invasión de especies foráneas, también se encuentra amenazado. Sin embargo, nuestro conocimiento sobre el número total de especies marinas y los patrones de biodiversidad son aun incompletos, ya que existen numerosas especies aún sin describir. Las estimaciones relativas a la comunidad bacteriana están substancialmente infravaloradas, y gran parte del mar profundo y regiones del sur y del este del mar Mediterráneo se encuentran todavía prácticamente inexploradas. La invasión de especies foráneas es también un factor crucial que continuará influyendo en la biodiversidad marina del Mediterráneo, sobretodo en las zonas situadas en la cuenca este.

Supporting information 2nd file: supplementary material

The Biodiversity of the Mediterranean Sea: Estimates, Patterns, and Threats

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Outline

Table S1. Taxonomic classification of species known from the Mediterranean Sea.

Table S2. List of co-authors with expertise, specific contribution to the synthesis, and contact information.

Text S1. Taxonomic revision and methodological specifications.

Mediterranean AquaMaps (by Kristin Kaschner, Kathy Kesner-Reyes, Josephine Barile & Elijah Laxamana)

Text S2. Mediterranean AquaMaps specifications.

Table S3. Mediterranean native and endemic marine species reported by FishBase/SeaLifeBase by different taxa and current extent of coverage of AquaMaps.

Table S4. Proportion of checked or expert-reviewed AquaMaps for different taxa.

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Table S6. Checklist of species included in AquaMaps of the Mediterranean Sea.

Seaweeds and Seagrasses (by Enric Ballesteros)

Table S7. Mediterranean biodiversity (species/infraspecific taxa, families, orders, classes) for the phyla Heterokontophyta, Rhodophyta, Chlorophyta and Magnoliophyta and all the macrophytobenthos. Total number of species/intraspecific taxa is also split into introduced, endemics and others.

Table S8. Percentage of introduced, endemics and other macrophytobenthic species/infraspecific taxa by phylum and totals.

Table S9. Checklist of the phylum Heterokontophyta and comments to the checklist.

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Table S12. Checklist of the phylum Magnoliophyta and comments to the checklist.

Sponges (by Eleni Voultsiadou & Thanos Dailianis)

Figure S1. Mediterranean percentages of the world sponge families and genera for each demosponge order.

Figure S2. Distribution of the recorded demosponge species (outer circle) and genera (inner circle) richness in distinct zoogeographic areas of the Mediterranean.

Anthozoans (by Dimitris Vafidis)

Table S13. Checklist of the class Anthozoa (Phylum Cnidaria).

Mollusks (by José Templado & Roger Villanueva)

Table S14. Checklist of the phylum Mollusca.

Table S15. Number of Mediterranean species of each of the eight mollusks classes.

Polychaetes (by Daniel Martín & João Gil)

Table S16. Checklist of the class Polychaeta (Phylum Annelida).

Cumaceans (by Jordi Corbera)

Table S17. Checklist of the order Cumacea (Phylum Arthropoda), with enumeration of references in each region of the Mediterranean Sea.

Table S18. Species number of cumaceans known in different Mediterranean regions.

Mysidaceans (by Carles San Vicente)

Table S19. Checklist of the orders Mysida and Lophogastrida (Phylum Arthropoda) known in the different Mediterranean regions considered.

Table S20. Species number of mysidaceans known in the world and in the Mediterranean Sea. Endemics and its percentage for each family are also indicated.

Figure S3. Number of mysidacean species recorded in each of the main biogeographical zones of the Mediterranean Sea.

Decapods (by Carlo Froglia)

Table S21. Checklist of the Mediterranean endemic species of the Order Decapoda (Phylum Arthropoda), known geographic distribution and bathymetric range.

Bryozoans (Carlos Mª López-Fé de la Cuadra)

Text S3. References for Mediterranean bryozoan species.

Table S22. Checklist of the phylum Bryozoa.

Echinoderms (by Athanasios Koukouras & Miltiadis-Spyridon Kitsos)

Text S4. References for Mediterranean Echinoderms diversity.

Table S23. Checklist of the phylum Echinodermata, and their distribution in the geographical areas of the Mediterranean with reference to their presence in the Atlantic and the Indo-Pacific Oceans.

Figure S4. Distribution of the known species of echinoderms in the main geographical areas of the Mediterranean, as real numbers (parentheses) and percentages of the total Mediterranean species.

Figure S5. Percentages of the four zoogeographical categories in the Mediterranean territorial areas and the Black Sea.

Sipunculans (by José Ignacio Saiz-Salinas)

Table S24. Checklist of the phylum Sipuncula. Asterisks indicate unpublished identifications from the author J.I. Saiz. *N. sp. cf. flagriferum* (43º02.83'N; 9º41.06'E; depth: 454 m). *P. turnerae* (41º07'N; 2º25'E; depth: 1100 m).

Figure S6. Cluster analysis of sipunculan species of the Mediterranean Sea by biogeographic sectors as proposed by Bianchi and Morri (2000).

Meiobenthos (by Nikolaos Lampadariou)

Text S5. References for Mediterranean Meiobenthos.

Ascidians (by Xavier Turon)

Table S25. Check-list of the class Ascidiacea (Subphylum Tunicata, Phylum Chordata).

Fishes (by Frida Ben Rais Lasram)

Table S26. Checklist of the class Chondrichthyes, Actinopterygii, Myxini and Hyperoartia (subphylum Vertebrata, phylum Chordata).

Seabirds, marine mammals, and turtles (by Daniel Oro & Chiara Piroddi)

Table S27. Checklist of the class Aves (subphylum Vertebrata, phylum Chordata).

Table S28. Checklist of the class Mammalia (subphylum Vertebrata, phylum Chordata).

Table S29. Checklist of the class Reptilia (subphylum Vertebrata, phylum Chordata).

The diversity of the past and temporal patterns (by Heike Lotze)

Table S30. Ecologically and economically important species of the Adriatic Sea for which long-term data were available and that were included in historical diversity trends.

Table S31. Timing of different cultural periods around the Adriatic Sea (after Haywood 1997; Lotze et al. 2006).

Current threats to diversity

Table S32. Ranking of current threats for various taxonomic groups in the Mediterranean Sea.

Table S33. Ranking of future threats to diversity (considering 10 years from now) for various taxonomic groups in the Mediterranean Sea.

Table S1. Taxonomic classification of species known from the Mediterranean Sea

The total number of species described, as well as the number of endemic and introduced species are given. Here we also provide a list of several experts and taxonomic guides by taxa, although this is not an exhaustive list of experts by taxonomic group in the Mediterranean Sea.

Division/ Kingdom	Phylum or Class	Class or Order	Order or Family	Described species	State of Knowledge	No. endemic species	No. undescribed species	No. introduce species	Taxonomic experts (name)[1]	Identification guides and references[2]
Animalia										
	Chordata			**954**				**131**		
	Vertebrata			693						
		Mammalia		23	9 common, 14 visiting. Few data on trends				G. Bearzi, G. Notabartolo di Sciara, A. Aguilar, C. Piroddi	[1,2,3,4, Table S28]
		Aves		15	Well known, trends less known	3			D. Oro, J.S. Aguilar, N. Baccetti, J.M. Arcos	[5,6,7, Table S27]
		Reptilia		5	3 common, 2 visiting. Few data on trends				J.A. Camiñas, J. Tomás, J.A. Raga	[8,9,10,11,12, Table S29]
		Pisces* (Myxinida, Petromyzontida, Chondrichthyes,Actinopterygia)		650	Good resolution, except few rare species recorded sporadically	Approx. 80		116 (91*) *marine aliens only	F. Ben Rais Lasram, D. Lloris, L.J.V. Compagno, D. Golani, E. Massutí, J. Moranta, F. Serena, J.P. Quignard, J.A. Tomasini, I.K. Fergusson, S.P. Iglésias, E. Macpherson, M. Goren	[13,14,15,16,17,18,19,20 ,21,22, Table S26]
	Tunicata			229						
		Ascidiacea		229		80		15	X. Turon, R. Brunetti, F. Monniot , A. Koukouras, F. Mastrototaro, A. Tursi, N. Shenkar, A.A. Ramos-Esplà	[23,24,25,26,27,28, Table S25]
		Thaliacea		Unknown						
		Appendicularia		Unknown						
	Cephalocordata			1						[19]
	Mesozoa			31						[19]
		Dicyemida, Rhomobozoa, Monoblastozoa		17						
		Orthonectida		14						[19]
	Echinodermata			**154**	Lack of data in the south and the deep	37		5	A. Koukouras, M.-S. Kitsos, C. Palacin	[29,30, Table S23]

		Crinoidea		5		2		0		
		Asteroidea		33		5		1		
		Ophiuroidea		34		6		2		
		Echinoidea		28		5		1		
		Holothuroidea		54		19		1		
	Hemichordata			**5**						[19]
	Xenoterubellida			Unknown						
	Platyhelminthes		Mainly benthic	**800-1000**		57			R.A. Patzner, R. Hofrichter, A. Schmidt-Rhaesa, A. Faubel, C. Noreña Janssen, M. Curini Galletti	[19]
	Acanthocephala		Mainly terrestrial	Unknown	Poor					[19]
	Rotifera (Rotatoria)			**59**						[19]
	Nematomorpha			**1**						[19]
	Nematoda		Meiofauna	**>703**	Poor				N.Lampadariou, R. Danovaro, R. Sandulli	[19, 31,32,33,34]
	Priapulida			**4 - 5**						[19,35]
	Loricifera		Recently discovered	**2 - 10**						[19,35]
	Kinorhyncha			**28**						[19]
	Tardigrada			**>77**					M. Gallo d'Addabbo	[36]
	Onychophora			Unknown						[19]
	Arthropoda			**3014**				**106**		[19,37]
	Crustacea			2239						
	Anostraca			Unknown						
	Phyllopoda			7						[19]
	Copepoda								G. Gorsky, M. Alcaraz, E. Saiz	
		Harpacticoida	Benthic, meiofauna	>254					K. Sevastou, A. Eleftheriou	[38,39,40,41,42]
		Calanoida, Cyclopoida	Pelagic	>150						[19]
	Mystacocarida			1?						[19]
	Ostracoda			500					N. Pugliese	
	Ascothoracida			1						

	Cirripeda			>40					A. Koukouras, A. Matsa, G. Relini	[43,44]
	Malacostraca									
		Leptostraca		6					J. Moreira	[36,45]
		Stomatopoda		11				2	P. Abelló, C. Froglia, B.S. Galil	[46,47,48].
		Bathynellacea		10?						[19]
		Euphausiacea		13					M. Mavidis, L. Guglielmo	[49]
		Decapoda		383		40		74 (69*) *marine aliens	C. Froglia, A. Koukouras, J. E. Cartes, B. Companys, B.S. Galil, P. Noël, P. Dworschak, C. d'Udekem d'Acoz, T. Katagan	[44,50,51,52,53, Table S21]
		Thermosbaenacea		5						[19]
		Mysidacea		102	African coasts and eastern sector less studied	37	0.6% annual increase of new species	2	C.Sanvicente, C. Barberá Cebrián, J.E. Cartes, T. Munilla, P. Ariani, K. Wittman	[54,55, Table S19]
		Cumacea	Water-sediment interface	99	Adriatic Sea or the Gulf of Gabes unknown	32	0.5% annual increase of new species	1	J. Corbera, J.E. Cartes, J.C. Sorbe	[56, Table S17]
		Isopoda		165						[44]
		Amphipoda		449					D. Bellan-Santini, S. Ruffo, T. Krapp-Schickel	[44,57,58,59]
		Tanaidacea		43						[19]
	Arachnida		Only species related to marine environments	13/450						[19,37]
	Pantopoda			>45					T. Murilla, F. Krapp	[19]
	Chilopoda			6						[19]
	Myriapoda		Only species related to marine environments	2/10						[19,37]
	Apterygota			14						[19]
	Insecta		Only species related to marine environments	54/250						[19,37]
	Chaetognatha			**>20**						[19]
	Nemertea			**172**						[19]

	Annelida			**1172**					D. Martin, J. Gil, C. Arvanitidis, G. San Martín, E. López, R. Capaccioni, M. Aguado, R. Sardá, J. Parapar, F. Aguirrezabalaga, J. Moreira, J.M. Amoureaux, A. Giangrande, C. Gambi, G. Cantone, C. Lardicci, B. Mikac, N. Simboura, M.E. Çinar, Z. Ergen, N. Ben Eliahu, R. Barnich, D. Fiege, F. Pleijel, A. Mackie, A. Castelli	
		Polychaeta		1122		210	4.2 species being discovered per year	70-80		[60,61,62,63, Table S16]
		Clitellata		44					E. Rota, A. Minelli	[36,37]
		Echiura		6						[35]
	Sipuncula			**34**	Poor in southern and deep areas		Unknown, but large	**2**	J.I. Saiz	[64,65,66,67,68,69, Table S24]
	Phoronida			**3/5**					C.C. Emig	[19,70]
	Brachiopoda			**14/15**		**2**			C.C. Emig, F. Álvarez	[19,71,72]
	Mollusca			**2113**	Poor in southern and deep areas		5-10 species being discovered every year	**154-203**	J. Templado, H. Mienis, B. Cesare	[73,74,75,76, Table S14]
		Aplacophora (Caudofoveata)		9				0	L. Salvini Plaven	
		Aplacophora (Solenogastres)		29				0	L. Salvini Plaven	
		Polyplacophora		31				1	B. Dell'Angelo	
		Monoplacophora		1				0		
		Gastropoda		1564				92	B. Sabelli, M. Oliverio, S. Gofass, R. Cattaneo Vietti, M. Ballesteros	
		Bivalvia		400				57		
		Scaphopoda		14				0	G. Steiner	
		Cephalopoda		65		3		4	G. Bello, P. Belcari, P. Jereb, E. Lefkaditou, A. Quetglas, A. Salman, P. Sánchez, R. Villanueva	[73]
	Gnathostomulida			**10**						[19]
	Gastrotricha		Meiofauna	**165**	Poor				W.D. Hummon, M.A. Todaro, M. Balsamo	[19,77]
	Cycliophora			**1**	Poor					[78,79]
	Entoprocta			**19**						[19,35]
	Bryozoa		Mainly benthic	**388**		88		**1??**	C.M. López de la Cuadra, JA. Álvarez, Y.V. Gautier,	[80,81,82,83,84,85,86, Table S22]

									J.G. Harmelin, J.C. García Gómez, M. Zabala, A. Rosso	
		Cyclostomata		53	Poor	17				
		Ctenostomata		44	Poor	5				
		Cheilostomata		292	Poor	66				
	Placozoa			**1/2?**						[19]
	Ctenophora		Mainly pelagic	**>30**						[19]
	Cnidaria (Coelenterates)			**757**						[19,87, and references within]
		Anthozoa		164		37		3	D. Vafidis, H. Zibrowius C. Morri, A. Altuna Prados, P.J. López González	[44,88,89,90, Table S13]
		Scyphozoa		20					F. Boero, B.S. Galil, M. Avian	[19]
		Cubozoa		1					M. Avian	
		Hydrozoa		457					J.M.Gili, F. Boero, J. Bouillon, Á.L. Peña Cantero	[91]
		Myxozoa		115						[19]
	Porifera			**681**	Well known except southern areas and the Levantine Sea				J. Vacelet, N. Boury-Esnault, M. Pansini, M.J. Uriz, M. Maldonado, E. Voultsiadou	[92,93,94,95,96]
		Hexactinellida		8						
		Calcarea		44						
		Demospongiae		629		Approx. 302				
Plantae[3]	**seaweeds (part) and seagrasses**		Only benthic	**854**	Limited	**171**		**91**	A. Athanasiadis, A. Gómez-Garreta, A. Meinesz, A. Sfriso, A. Vergés, C. Perrone, C. Rodriguez-Prieto, C.F. Boudouresque, CI Delle Foglie, D. Balata, D. Serio, E. Ballesteros, E. Cecere, F. Boisset, F. Cinelli, F. De Masi, F. Rindi, F. Tripodi, G. Alongi, G. Bressan, G. Furnari, G. Giaccone, G. Sartoni, G.M. Gargiulo, I. Pérez-Ruzafa, J. Rull, L.	[97]

									Babbini-Benussi, L. Piazzi, M. Altamirano, M. Cormaci, M. Verlaque, M.A. Ribera, M.C. Barceló, N. Sánchez, S. Benhissoune	
	Rhodophyta			657		150		73		[98, Table S10]
	Chlorophyta[4]		Macroalgae	190 (180[4])		20		17		[99, Table S11]
	Magnoliophyta or angiospermae			7		1		1		Table S12
Protoctista (Protozoa) & Chromista			Mainly marine and freshwater	**Unknown, first estimate approx. 4400[5]**	Very limited				M. Estrada, J.M. Gasol	[19,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122]
	Chlorophyta		Microalgae							
		Bacillariophyceae		736					Z.R. Velasquez	[113]
		Coccolithophores		166					L. Cros	[114]
	Dinoflagellata			673					F. Gomez	[19,120]
	Foraminifera		Benthic and pelagic	>600						[110,122,123,124,125].
	Heterokontophyta			277		81		23	A. Athanasiadis, A. Gómez-Garreta, A. Meinesz, A. Sfriso, A. Vergés, C. Perrone, C. Rodriguez-Prieto, C.F. Boudouresque, C.I. Delle Foglie, D. Balata, D. Serio, E. Ballesteros, E. Cecere, F. Boisset, F. Cinelli, F. De Masi, F. Rindi, F. Tripodi, G. Alongi	[126, Table S9]
Prokaryotes				Not Available	Very limited					
Bacteria and Archaea				Not Available	Very limited				J. Gasol, C. Pedrós-Alió, R. Massana, K. Linke, W. Petz	[19,127,128,129,130,131,132]
	Large cyanobacteria			165						[19,35]

(1) Not an exhaustive list; (2) Not an exhaustive list; (3) Includes a part of the Macrophytobenthos (red and green seaweeds and seagrasses); (4) 10 species reported within the Chlorophyceae (Volvocales) and Prasinophyceae (Chlorodendrales, Pyramimonadales) are unicellular and can be considered to be phytoplanktonic although they thrive in mediolittoral and supralittoral pools and have been classically included in the checklists of marine macroalgae; (5) This number is highly uncertain (see text section heading "The biodiversity of the 'smallest'").

References

1. Notarbartolo di Sciara G (2002) Cetaceans of the Mediterranean and Black Seas: state of knowledge and conservation strategies. A report to the ACCOBAMS Secretariat, Monaco.
2. Bearzi G, Reeves RR, Notarbartolo di Sciara G, Politi E, Canadas A, et al. (2003) Ecology, status and conservation of short-beaked common dolphins *Delphinus delphis* in the Mediterranean Sea. Mammal Review 33: 224-252.
3. Frantzis A, Alexiadou P, Paximadis G, Politi E, Gannier A, et al. (2003) Current knowledge of the cetacean fauna of the Greek Seas. Journal of Cetacean Research and Management 5: 219-232.
4. Reeves R, Notarbartolo di Sciara G (2006) The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. Málaga, Spain: UCN Centre for Mediterranean Cooperation. 142 p.
5. Aguilar JS, Monbailliu X, Paterson A (1993) Status and Conservation of Seabirds: Proceedings of the 2nd Pan-Mediterranean Seabird Symposium. Calvià, Mallorca, 1989. S.E.O., Madrid. 386 p.
6. Yésou P, Sultana J (2000) Monitoring and Conservation of Birds, Mammals and Sea Turtles of the Mediterranean and Black Seas: Proceedings of the 5th MEDMARAVIS Pan-Mediterranean Seabird Symposium, Gozo, Malta, October 1998. Environmental Protection Dpt, Malta. 320 p.
7. Mínguez E, Oro D, de Juana E, Martinez-Abrain A (2003) Mediterranean sea birds and their conservation: Scientia Marina. Vol. 67 (Suppl.2): 1-148.
8. Groombridge B (1990) Marine turtles in the Mediterranean: distribution, population status, conservation: a report to the Council of Europe, Environment Conservation and Management Division.
9. Camiñas JA (2004) Sea turtles of the Mediterranean Sea: population dynamics, sources of mortality and relative importance of fisheries impacts. Papers presented at the Expert Consultation on Interactions between Sea Turtles and Fisheries within an Ecosystem Context, Rome, 9-12 March 2004: 27.
10. Venizelos L, Papapavlou K, Dunais MA, Lagonika C (2005) A review and reappraisal of research in some previously unsurveyed Mediterranean marine turtle nesting sites. Belgian Journal of Zoology 135: 271-277.
11. NOAA (2007) Hawksbill Sea Turtle (*Eretmochelys imbricata*). Five year Review: Summary and Evaluation: NOAA and U.S. Fish and Wildlife Service. 90 p.
12. Tomás J, Raga JA (2009) Occurrence of Kemp's ridley sea turtle (*Lepidochelys kempii*) in the Mediterranean. Marine Biodiversity Records Marine Biological Association of the United Kingdom 1: 1-2.
13. Fischer W, Bauchot M, Schneider M (1987b) Fiches FAO d'identification des espèces pour les besoins de la pêche. Méditerranée et Mer Noire, zone de pêche 37. Rome, Italie: Service des ressources marines, département des pêches de la FAO.Vol II. Vertébrés.
14. Whitehead P, Bauchot L, Hureau J, Nielsen J, Tortonese E (1986) Fishes of the North-Eastern Atlantic and the Mediterranean. Paris: UNESCO.
15. Fergusson IK. Checklist of sharks frequenting the Mediterranean Sea; 1994. pp. 15-16.
16. Quignard JP, Tomasini JA (2000) Mediterranean fish biodiversity. Biologia Marina Mediterranea 7: 1-66.
17. Compagno LJV (2001) Sharks of the World. An annotated and illustrated catalogue of the shark species known to date. Volume 2. Bullhead, mackerel and carpet sharks (Heterodontiformes, Lamniformes and Orectolobiformes).
18. Golani D, Orsi Relini L, Massuti E, Quignard J (2002) The CIESM Atlas of exotic species in the Mediterranean. Volume I. Fishes. Monaco.

19. Hofrichter Rc (2002) El Mar Mediterráneo. Fauna, Flora, Ecología. II/1. Guía Sistemática y de Identificación. Barcelona: Ediciones Omega. 849 p.
20. Serena F (2005) Field identification Guide to the Sharks and Rays of the Mediterranean and Black Sea. Rome. 97 p.
21. Cavanagh RD, Gibson C (2007) Overview of the conservation status of cartilaginous fishes (Chondrichthyans) in the Mediterranean Sea; IUCN, editor. Gland and Malága.
22. Iglésias SP, Clique A (2009) Identification et Classification des Chondrichtyens et des Actinoptérygiens du Nord-est Atlantique et de la Méditerranée. http://www.mnhn.fr/iccanam/.
23. Salfi M (1931) Gli Ascidiacei dei Golfo di Napoli. Publicazione della Stazione Zoologica di Napoli 11: 293-360.
24. Harant H, Vernières P (1933) Faune de France. Tuniciers. I: Ascidies. Paris, France: P. Lechevalier.
25. Tursi A (1980) Guide por il riconoscimiento delle specie animali delle acque lagunari e costiere italiane. Ascidiacei. Consiglio Nazionale delle Ricerche 4: 7-88.
26. Turon X (1987) Estudio de las ascidias de las costas de Cataluña e Islas Baleares. Barcelona: University of Barcelona. Spain.
27. Ramos-Esplá AA (1988) Ascidias litorales del Mediterráneo ibérico. Faunística, Ecología y Biogeografía. Barcelona: University of Barcelona, Spain.
28. Naranjo S (1995) Taxonomía, zoogeografía y ecología de las ascidias del Estrecho de Gibraltar. Implicaciones de su distribución bionómica en la caracterización de áreas costeras. Sevilla: University of Sevilla, Spain.
29. Tortonese E (1979) Review of present status of knowledge of the Mediterranean echinoderms. Proceedings of the European colloquium on echinoderms Brussels: 141-149.
30. Koukouras A, Sinis AI, Bobori D, Kazantzidis S, Kitsos MS (2007) The echinoderm (Deuterostomia) fauna of the Aegean Sea, and comparison with those of the neighbouring seas. Journal of Biological Research-Thessaloniki 7: 67-92.
31. Allgen CA (1942) Die freilebenden Nematoden des mittelmeeres. Eine zusammenstellung sÃmtlicher aus dem Mittelmeer bekannten Nematoden. Zoologische Jb (Systematik) 76: 1-102.
32. Schuurmans Stekhoven Jr JH (1950) The free living marine nemas of the Mediterranean. I. The Bay of Villefranche. Memoires Institut Royal des Sciences Naturelles de Belgique 37: 1-220.
33. Boucher G (1970b) Deux especes nouvelles de Nematodes de la vase terrigene cotiere de Banyuls-Sur-Mer. Bulletin du Museum National d'Histoire Naturelle, Serie 2 42: 975-983.
34. Vitiello P (1974) Marine nematodes associations in the muddy bottoms of Provence. I. Muddy sediments in sheltered areas and terrigenous coastal muds. Annales de l'Institut Oceaanographique, Paris 50: 145-172.
35. Boudouresque CF (2004) Marine biodiversity in the Mediterranean: status of species, populations and communities. Scientific Reports of Port-Cros National Park, France 20: 97-146.
36. SIBM (2009) Checklist of marine fauna of the Italian seas: www.sibm.it/CHECKLIST/principalechecklistfauna.htm.
37. Riedl R (1983) Fauna and Flora of the Mediterranean: a Systematic Marine Guide for Biologists and Nature Lovers. Hamburg: Verlag Paul Parey. 836 p.
38. Soyer J (1970) Bionomie benthique du plateau continental de la cote catalane franssaise. III. Les peuplements de Copepodes harpacticoides (Crustacea). Vie et Milieu 21: 337-511.
39. Stobbe K (2001) Temporal and spatial variabilities of harpacticoid copepods in the eulittoral zone of a sandy beach on Crete, Greece. Rostock: MSc Thesis, Faculty of Biological Sciences. University of Rostock, Rostock. 63 p.

40. Mitwally H, Montagna PA (2001) Egyptian interstitial Copepoda Harpacticoida with the description of two new species and one new subspecies. Crustaceana: 513-544.
41. Zenetos A, Meric E, Verlaque M, Galli P, Boudouresque CF, et al. (2008) Additions to the annotated list of marine alien biota in the Mediterranean with special emphasis on Foraminifera and Parasites. Mediterranean Marine Science 9: 119-165.
42. Sevastou K, Eleftheriou A (submitted) Meiobenthic diversity in space and time: the case of harpacticoid copepods in two Mediterranean microtidal sandy beaches.
43. Koukouras A, Matsa A (1998) The thoracican cirriped fauna of the Aegean Sea: New information, check list of the Mediterranean species, faunal comparisons. Marine Biodiversity 28: 133-142.
44. Koukouras A, Voultsiadou E, Kitsos MS, Doulgeraki S (2001) Macrobenthic fauna diversity in the Aegean Sea, affinities with other Mediterranean regions and the Black Sea. Bios (Macedonia, Greece) 6: 61-76.
45. Moreira J, Kocak C, Katagan T (2007) *Nebalia kocatasi* sp. nov., a new species of leptostracan (Crustacea: Phyllocarida) from Izmir Bay (Aegean Sea, eastern Mediterranean). Journal of the Marine Biological Association of the UK 87: 1247-1254.
46. Fischer W, Bauchot M, Schneider M (1987a) Fiches FAO d'identification des espèces pour les besoins de la pêche. Méditerranée et Mer Noire, zone de pêche 37. Rome, Italie: Service des ressources marines, département des pêches de la FAO.Vol I. Vegetaux et invertebres.
47. Froglia C, Manning RB (1989) Checklist and key to adult mediterranean Stomatopod Crustacea. In: Ferrero EA, editor. Biology of Stomatopods: Selected Symposia and Monographs, U.Z.I., 3: 265-273.
48. Abelló P, Pretus JL, Corbera J (1994) Occurrence and distribution of some stomatopod crustaceans in the western Mediterranean. Miscel lània Zoològica 17: 107-113.
49. Mavidis M, Aplikioti M, Kirmitzoglou I, Koukouras A (2005) The Euphausiacean fauna (Malacostraca) of the Aegean sea, and comparison with those of the neighbouring seas. Crustaceana 78: 19-27.
50. Heller C (1863) Crustaceen des Südlichen Europa. Wien. 10 pls, 336 p.
51. Koukouras A, Dounas C, Türkay M, Voultsiadou-Koukoura E (1992) Decapod crustacean fauna of the Aegean Sea: new information, check list, affinities. Senckenbergiana Maritima 22: 217-244.
52. Stevcic Z, Galil B (1993) Checklist of the Mediterranean brachyuran crabs. Acta Adriatica 34: 65-76.
53. Udekem d'Acoz Cd (1999) Inventaire et distribution des crustacés décapodes de l'Atlantique nord-oriental, de la Méditerranée et des eaux continentales adjacentes au nord de 25° N. 383. Patrimoines Naturels (MNHN/PN) 40: 1-383.
54. Bacescu M (1941) Les Mysidacés des eaux méditerranéennes de la France (spécialment de Banyuls) et des eaux de Monaco. Bulletin de l´Institut Océanographique 795: 1-46.
55. Wittmann KJ (2001) Centennial changes in the near-shore mysid fauna of the Gulf of Naples (Mediterranean Sea), with description of *Heteromysis riedli* sp. n. (Crustacea, Mysidacea). PSZNI Marine Ecology 22: 85-109.
56. Fage L (1951) Cumacés. Faune de France 54: P. Lechevalier, Paris.
57. Bellan-Santini D, Karaman G, Krapp-Schickel G, Ledoyer M, Myers AA, et al. (1982) The Amphipoda of the Mediterranean. Part 1: Gammaridae (Acanthonotozomatidae to Gammaridae). Mémoires de l'Institut Océanographique de Monaco 13: 364.
58. Bellan-Santini D, Diviacco G, Krapp-Schickel G, Myers AA, Ruffo S (1989) The Amphipoda of the Mediterranean. Part 2. Gammaridea (Haustoriidae to Lysianassidae). Mémoires de l'Institut Océanographique, Monaco 13: 365-576.
59. Ruffo S (1998) The Amphipoda of the Mediterranean. 13: 958.
60. Bellan G (2001) European register of marine species: a check-list of the marine species in Europe and a bibliography of guides to their identification. In: Costello MJ, Emblow C,

White RJ, editors. European register of marine species: a check-list of the marine species in Europe and a bibliography of guides to their identification Collection Patrimoines Naturels. Paris, France: Muséum national d'Histoire Naturelle. pp. 214-231.
61. Arvanitidis C, Bellan G, Drakopoulos P, Valavanis V, Dounas C, et al. (2002) Seascape biodiversity patterns along the Mediterranean and the Black Sea: lessons from the biogeography of benthic polychaetes. Marine Ecology Progress Series 244: 139-152.
62. Viéitez J, Alós C, Parapar J, Besteiro C, Moreira J (2004) Annelida Polychaeta I. In: Ramos M, Alba J, Bellés X, Gosálbez J, Guerra A, editors. Fauna Ibérica Vol 23. Madrid: CSIC. pp. 530.
63. San Martín G (2003) Annelida, Polychaeta II: Syllidade. In: Ramos M, Alba J, Bellés X, Gosálbez J, Guerra A, editors. Fauna Ibérica Vol 21. Madrid: CSIC. pp. 554.
64. Pancucci-Papadopoulou MA, Murina GV, Zenetos A (1999) The phylum Sipuncula in the Mediterranean Sea. Monographs on Marine Sciences 2: 1-109.
65. Murina VV (2002) Novyi podvid morskikh chervei (Sipuncula, Golfingiidae) iz Egeiskogo morya. Vestnik Zoologii 36: 87-88.
66. Açik S (2009) Soft-bottom sipunculans in Izmir Bay (Aegean Sea, eastern Mediterranean). Zootaxa 2136: 40-48.
67. Açik S, Murina GV, Çinar ME, Ergen Z (2005) Sipunculans from the coast of northern Cyprus (eastern Mediterranean Sea). Zootaxa 1077: 1-23.
68. Açik S (2007) Observations on the population characteristics of *Apionsoma (Apionsoma) misakianum* (Sipuncula: Phascolosomatidae), a new species for the Mediterranean fauna. Scientia Marina 71: 571-577.
69. Açik S (2008) Occurrence of the alien species *Aspidosiphon (Aspidosiphon) elegans* (Sipuncula) on the Levantine and Aegean Coasts of Turkey. Turkish Journal of Zoology 32: 443-448.
70. Emig CC (2007) Phoronida world database. Available online at http://www.marinespecies.org/phoronida. Consulted on 2010-01-09.
71. Logan A, Bianchi CN, Morri C, Zibrowius H (2004) The present-day Mediterranean brachiopod fauna: diversity, life habits, biogeography and paleobiogeography. Scientia marina 68 (Suppl. 1): 163-170.
72. Emig CC (2006) Brachiopoda world database. Available online at http://www.marinespecies.org/brachiopoda. Consulted on 2010-01-09.
73. Bello G (2004) The biogeography of Mediterranean cephalopods. Biogeographia 24: 201–217.
74. Sabelli B, Giannuzzi-Savelli R, Bedulli D (1990) Catalogo annotato dei molluschi marini del Mediterraneo. Bologna: Libreria Naturalistica Bolognese. 348 p.
75. San Martín G (2003) Annelida, Polychaeta II: Syllidade; Ramos MA, Alba J, Bellés X, Gosálbez J, Guerra A et al., editors. Madrid: CSIC. 554 p.
76. CLEMAM (2009) Check List of the European Marine Mollusca: http://www.somali.asso.fr/clemam/index.
77. Hummon WD, Roidou E (1995) Marine Gastrotricha of Greece. A preliminary report. Biologia Gallo-Helenica 22: 279-289.
78. Matthias O, Peter F, Gonzalo G (2005) Hidden diversity and host specificity in cycliophorans: a phylogeographic analysis along the North Atlantic and Mediterranean Sea. Molecular Ecology 14: 4427-4440.
79. Nedved O (2004) Occurrence of the phylum Cycliophora in the Mediterranean. Marine Ecology Progress Series 277: 297-299.
80. Gautier YV (1962) Recherches écologiques sur les Bryozoaires Chilostomes en Méditerranée occidentale. Recueil des Travaux de la Station marine d'Endoume 38: 1-434.
81. Zabala M (1986) Fauna dels Briozous dels Paisos Catalans. Barcelona: Arxius de la Secció de Ciències 84. Institut d'Estudis Catalans. 833 p.

82. López de la Cuadra CM, Garcia Gomez JC (1988) Briozoos queilostomados del Estrecho de Gibraltar y áreas próximas. Cahiers de Biologie Marine 29: 21-36.
83. Zabala M, Maluquer P (1988) Illustrated keys for the classification of Mediterranean Bryozoa. Treballs del Museu de Zoologia de Barcelona 4: 1-294.
84. Álvarez JA (1992) Briozoos de la Campaña Fauna I. Parte Primera: Ctenostomida, Cheilostomida y Anascina. Cahiers de Biologie Marine 33: 273-297.
85. Harmelin JG, d'Hondt JL (1992) Bryozoaires del parages de Gibraltar (campagne océanographique BALGIM, 1984). 2 - Ctenostomes et Cyclostomes. Bulletin du Museum National d'Histoire Naturelle, Paris Serie 2 14: 605-621.
86. Hayward PJ, McKinney FK (2002) Northern Adriatic Bryozoa from the vicinity of Rovinj, Croatia. Bulletin of the American Museum of Natural History 270: 1-139.
87. Altuna Prados A (2008) Bibliografía de los Cnidarios de la Península Ibérica e Islas Baleares. Documento electrónico disponible en http://www.fauna-iberica.mncn.csic.es/faunaib/Altuna5.pdf, Proyecto Fauna Ibérica, Museo Nacional de Ciencias Naturales, Madrid.
88. Vafidis D, Koukouras A, Voultsiadou-Koukoura E (1994) Octocoral fauna of the Aegean Sea with check list of the Mediterranean species: New information, faunal comparisons. Annales de l'Institut Océanographique 70: 217-229.
89. Chintiroglou CC, Doumenc D, Zamponi M (1997) Commented list of the Mediterranean Actiniaria and Corallimorpharia(Anthozoa). Acta Adriatica 38: 65-70.
90. Voultsiadou E, Vafidis D (2007) Marine invertebrate diversity in Aristotle's zoology. Contributions to Zoology 76: 103-120.
91. Bouillon J, Medel MD, Pagès F, Gili JM, Boero F, et al. (2004) Fauna of the Mediterranean Hydrozoa. Scientia Marina 68 (Suppl. 2): 1-454.
92. Pansini M, Longo C (2003) A review of the Mediterranean Sea sponge biogeography with, in appendix, a list of the demosponges hitherto recorded from this sea. Biogeographia 24: 59-90.
93. Voultsiadou E (2009) Reevaluating sponge diversity and distribution in the Mediterranean Sea. Hydrobiologia 628: 1-12.
94. Van Soest R, Boury-Esnault N, Hooper J, Rützler K, de Voogd N, et al. (2008) World Porifera database: www.marinespecies.org/porifera.
95. SMEBD (2009) World Register of Marine Species: Accessed htttp://www.marinespecies.org on [2009-09-29].
96. Hooper JNA, van Soest RWM (2002) Systema Porifera. A guide to the classification of sponges. New York: Kluwer Academic/Plenum Publishers.
97. Cabioc'h J, Le Floc'h JY, Le Toquin A, Boudouresque CF, Meinesz A, et al. (2006) Guide des algues des mers d'Europe: Délachaux et Niestlé. 272 p.
98. Gomez Garreta A, Gallardo T, Ribera MA, Cormaci M, Furnari G, et al. (2001) Checklist of Mediterranean seaweeds. III. Rhodophyceae Rabenh. 1. Ceramiales Oltm. Botanica Marina 44: 425-460.
99. Gallardo T, Gómez Garreta A, Ribera MA, Cormaci M, Furnari G, et al. (1993) Check-list of Mediterranean seaweeds. II: Chlorophyceae Wille s. l. Botanica Marina 36: 399-421.
100. Navarro M, Massutí M (1940) Composición y ciclo anual del plancton superficial de la bahía de Palma de Mallorca. Notas y Resúmenes Instituto Español de Oceanografía 97: 1-62.
101. Massutí M, Margalef R (1950) Introducción al estudio del plancton marino. Barcelona: Patronato Juan de La Cierva. Sección de Biología Marina. 183 p.
102. Trégouboff G, Rose M (1957) Manuel de planctonologie méditerranéenne. Paris: C.N.R.
103. Balech E (1959) Tintinnoidea del Mediterráneo. Trabajos del Instituto Español de Oceanografía 28: 1-88.
104. Margalef R (1969) Composición específica del fitoplancton de la costa catalana levantina (Mediterráneo Occidental) en 1962-67. Investigación Pesquera 33: 345-380.

105. Kimor B, Wood EJF (1975) A plankton study in the eastern Mediterranean Sea. Marine Biology 29: 321-333.
106. Travers M (1975) Inventaire des protistes du Golfe de Marseille et de ses parages. Annales de l'Institut Océanographique, Paris 51(1): 51-75.
107. Laval-Peuto M, Brownlee DC (1986) Identification and systematics of the Tintinnina (Ciliophora): evaluation and suggestions for improvement. Annuaire de l'Institut Océanographie de Paris 62: 69-84.
108. Margalef R, Estrada M (1987) Synoptic distribution of summer microplankton (Algae and Protozoa) across the principal front in the western Mediterranean. Investigación Pesquera 51: 121-140.
109. Bernard C, Rassoulzadegan F (1994) Seasonal variations of mixotrophic ciliates in the northwest Mediterranean Sea. Marine Ecology Progress Series 108: 295-295.
110. Pujol C, Grazzini CV (1995) Distribution patterns of live planktic foraminifers as related to regional hydrography and productive systems of the Mediterranean Sea. Marine Micropaleontology 25: 187-217.
111. Velasquez ZR, Cruzado A (1995) Inventory of the diatom flora of the NW Mediterranean Sea. Vie et Milieu 45: 249-263.
112. Vaqué D, Blough HA, Duarte CM (1997) Dynamics of ciliate abundance, biomass and community composition in an oligotrophic coastal environment (NW Mediterranean). Aquatic Microbial Ecology 12: 71-83.
113. Velasquez ZR (1997) Fitoplancton en el Mediterráneo Noroccidental: Ph. D. Thesis. Universitat Politècnica de Catalunya. Spain.
114. Cros L, Kleijne A, Zeltner A, Billard C, Young JR (2000) New examples of holococcolith-heterococcolith combination coccospheres and their implications for coccolithophorid biology. Marine Micropaleontology 39: 1-34.
115. Cros L, Fortuño JM (2002) Atlas of northwestern Mediterranean coccolithophores. Scientia Marina 66 (Suppl. 1): 1-182.
116. Cros L (2002) Planktonic coccolithophores of the NW Mediterranean. Barcelona: Universitat de Barcelona, Spain.
117. Dolan JR, Claustre H, Carlotti F, Plounevez S, Moutin T (2002) Microzooplankton diversity: relationships of tintinnid ciliates with resources, competitors and predators from the Atlantic Coast of Morocco to the Eastern Mediterranean. Deep-Sea Research Part I 49: 1217-1232.
118. Modigh M, Castaldo S (2002) Variability and persistence in tintinnid assemblages at a Mediterranean coastal site. Aquatic Microbial Ecology 28: 299-311.
119. Arndt H, Hausmann K, Wolf M (2003) Deep-sea heterotrophic nanoflagellates of the Eastern Mediterranean Sea: qualitative and quantitative aspects of their pelagic and benthic occurrence. Marine Ecology Progress Series 256: 45-56.
120. Gómez F (2003) Checklist of Mediterranean free-living dinoflagellates. Botanica Marina 46: 215-242.
121. Massana R, Balagué V, Guillou L, Pedrós-Alió C (2004) Picoeukaryotic diversity in an oligotrophic coastal site studied by molecular and culturing approaches. FEMS Microbiology Ecology 50: 231-244.
122. Fontanier C, Jorissen FJ, Lansard B, Mouret A, Buscail R, et al. (2008) Live foraminifera from the open slope between Grand Rhône and Petit Rhône Canyons (Gulf of Lions, NW Mediterranean). Deep-Sea Research Part I 55: 1532-1553.
123. Samir AM, Abdou HF, Zazou SM, El-Menhawey WH (2003) Cluster analysis of recent benthic foraminifera from the northwestern Mediterranean coast of Egypt. Revue de Micropaléontologie 46: 111-130.
124. Hyams O, Almogi-Labin A, Benjaminia C (2002) Larger foraminifera of the southeastern Mediterranean shallow continental shelf off Israel. Israel Journal of Earth Sciences 51: 169-179.

125. Mojtahid M, Jorissen F, Lansard B, Fontanier C, Bombled B, et al. (2009) Spatial distribution of live benthic foraminifera in the Rhône prodelta: Faunal response to a continental–marine organic matter gradient. Marine Micropaleontology 70: 177-200.
126. Ribera MA, Gómez A, Gallardo T, Cormaci M, Furnari G, et al. (1992) Check-list of Mediterranean seaweeds. I: Fucophyceae (Warming, 1884). Botanica Marina 35: 109-130.
127. Zaballos M, López-López A, Ovreas L, Bartual SG, D'Auria G, et al. (2006) Comparison of prokaryotic diversity at offshore oceanic locations reveals a different microbiota in the Mediterranean Sea. FEMS Microbiology Ecology 56: 389-405.
128. Alonso-Sáez L, Balagué V, Sà E, Sánchez O, González JM, et al. (2007) Seasonality in bacterial diversity in north-west Mediterranean coastal waters: assessment through clone libraries, fingerprinting and FISH. FEMS Microbiology Ecology 60: 98-112.
129. Feingersch R, Suzuki MT, Shmoish M, Sharon I, Sabehi G, et al. (2009) Microbial community genomics in eastern Mediterranean Sea surface waters. The ISME Journal: doi:101038/ismej200992.
130. Garczarek L, Dufresne A, Rousvoal S, West NJ, Mazard S, et al. (2007) High vertical and low horizontal diversity of *Prochlorococcus* ecotypes in the Mediterranean Sea in summer. FEMS Microbiology Ecology 60: 189-206.
131. Blumel M, Suling J, Imhoff JF (2007) Depth-specific distribution of Bacteroidetes in the oligotrophic Eastern Mediterranean Sea. Aquatic Microbial Ecology 46: 209.
132. Pedrós-Alió C, Pommier T, Acinas SG, Gasol JM (Submitted) Patterns of spatial bacterial diversity in NW Mediterranean by 454.

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Text S1. Taxonomic revision and methodological specifications

Here we provide the detailed information for the taxonomic revision of macrophytes (seaweeds and seagrasses), invertebrates and Ascidiacea (subphylum Tunicata, phylum Chordata) in the Mediterranean Sea. This information is summarized in Table 1 in the main body of the study and Table S1, while checklists and specific figures are included in Tables S7-S29 and Figures S1-S6.

Seaweeds and seagrasses

Here we include a wide array of organisms usually known as seaweeds, and a reduced group of aquatic flowering plants known as seagrasses. They are a phylogenetic heterogeneous group of eukaryotic photosynthetic organisms. The application of molecular tools to the classification of living organisms has led to a better understanding of the phylogenetic relationships between them and has been demonstrated that brown seaweeds are included in the group Chromista while red seaweeds, green seaweeds, and flowering plants belong to Plantae. Here we do not include blue green algae (phylum Cyanobacteria), which, although classically considered in the textbooks of botany, they are prokaryotic. Most of the brown, red and green algae grow usually attached in the sea bottom or the intertidal zone, while blue greens both thrive as a component of the benthos and the plankton. Their taxonomy is being reshaped continuously, and it is hard to know the real diversity of this group at the "species" level.

The Mediterranean Sea was probably the first area in the world where SCUBA diving techniques were used in the study and collection of macroalgae [1], which is the main and best methodology currently in use. However, deep waters below 50 meters depth are still usually sampled by indirect methods such as dredging or bottom trawling. Plants thriving in the mediolittoral and upper infralittoral zone can be easily collected by hand with no special equipment or simply with the provision of a face mask and a snorkel. See Tsuda and Abbott [2] for a more detailed description of collection, handling, preservation and identification of macroalgae.

Athanasiadis [3] provides a thorough revision of the history of Mediterranean phycology (or algae studies), which began long time ago with the descriptions of several algal species by Theophrastus three centuries B.C., increased during the early Linnean period (Gmelin, Lamarck, Lamouroux, Roth, Bory de Saint Vincent and others), was maintained in the 19th century (C. Agardh, J. Agardh, Kützing, Meneghini, Ardissone, Montagne, Schmitz, Berthold, Foslie and others) and continued until the end of the 19th century, when Zanardini published the first Mediterranean illustrated flora, and the start of the 20th century when Preda published a red algal flora of Italy, Sauvageau his monograph on *Cystoseira*, and De Toni his monumental "Sylloge Algarum". Afterwards, Hamel, Funk, J. Feldmann, Feldmann-Mazoyer, Dangeard, and Ercegovic made important contributions to the phycology in the mid of the 20th century. At present, there are several teams working in the taxonomy of Mediterranean seaweeds, mainly in Italy, France and Spain. Several countries or regions have checklists of marine macroalgae: Morocco, Algeria, Tunis, Libya, Malta, Alexandria (Egypt), Turkey, Aegean Sea, Adriatic Sea, Italy, Sicily, Corsica, eastern Pyrenees (France), and Catalonia and Andalusia (Spain). Moreover, partial checklists of Mediterranean seaweeds have been published since 1992 [4,5,6]. There are also studies focused in introduced species [e.g. 7,8,9,10], a subject that is in constant revision [11].

The total number of taxa currently present in the Mediterranean basin is 1131 (see the annotated checklist of every phyla and for the criteria used in making the lists, Table S7). Phaeophyceae (268 taxa), Pelagophyceae (two species), and Xanthophyceae (seven species) are the three classes within the phylum Heterokontophyta with benthic representatives (this class also hosts the Chrysophyceae, Raphidophyceae, Dictyochophyceae, and others with planktonic representatives). The Mediterranean representatives of the phylum Rhodophyta belong to five classes: Bangiophyceae (eight species), Compsopogonophyceae (17 species), Porphyridiophyceae (1 species), Stylonematophyceae (five species), and Florideophyceae (626 taxa). The highly diverse phylum Chlorophyta hosts five classes with Mediterranean benthic representatives: Chlorophyceae (12 species), Prasinophyceae (six species), Trebouxiophyceae (three species), Ulvophyceae (73 taxa) and Bryopsidophyceae (52 taxa). Some (ten) of the species reported within the Chlorophyceae (Volvocales) and Prasinophyceae (Chlorodendrales, Pyramimonadales) are unicellular and can be considered to be phytoplanktonic, although they thrive in mediolittoral and supralittoral pools and have been classically included in the checklists of marine macroalgae. Thus, strictly benthic chlorophytes number 180 instead of the 190 reported in Table 1. We also include in the list of the flowering plants (phylum Magnoliophyta) those that are usually considered as seagrasses (four autochthonous species and one introduced) as well as two other species typical from brackish waters that they can also be collected in extremely shallow lagoons and sheltered bays (*Ruppia* spp.).

The percentage of endemic species at a basin level ranges from approximately 10% in the phylum Chlorophyta to 30% in the phylum Heterokontophyta, with an average of 22.3% for all the macrophytobenthos (see Table S8). The higher number of endemics is found within the Rhodophyceae, which hosts a large number of deep water red algae considered to be endemic. However, this number is decreasing as increasing studies of macroalgae are made in Macaronesian islands and warm-temperate eastern Atlantic Ocean (coasts of Portugal and Spain) using SCUBA. They are reporting a high number of Mediterranean supposed endemics [e.g. 12,13,14,15]. Within the red algae the highest numbers of endemics are found in *Polysiphonia* (12) and *Acrochaetium* (nine), but both genus need nomenclatural and taxonomical reinvestigations, and these numbers could decrease significantly. Other genera with a high number of endemics include *Peyssonnelia* (six), *Rodriguezella* (four), *Osmundea* (four), and *Kallymenia* (three). *Ptilophora mediterranea* is an interesting endemic of the eastern Mediterranean basin with its closest relatives being found in the Indian Ocean, suggesting that it is a paleoendemic that overcame the Messinian salinity crisis. Within the brown algae, the genus *Cystoseira* alone accounts for 37 endemic taxa (23 species, and 14 infraspecific entities), which makes this genus a landmark in the marine Mediterranean flora. Most *Cystoseira* endemic species are considered neoendemic as they have probably evolved from Atlantic taxa entering the Mediterranean Sea from the Atlantic Ocean starting after the Messinian salinity crisis [16]. Moreover species of the genus *Cystoseira* act as ecosystem engineers in sublitoral Mediterranean communities and are of paramount ecological importance, similar to that played by species of the order Laminariales in other temperate seas and oceans. Also a member of the order Fucales, *Fucus virsoides,* is a neoendemic restricted to the northern Adriatic and the only true Mediterranean representative of this genus. Another important endemic brown alga is *Laminaria rodriguezii*, known from the Adriatic and the western basin, with apparently no relationships with other European species of this genus, and considered to be a Tethys relic [17]. Stands of

Laminaria rodriguezii are restricted to deep waters, usually below 70 meters depth. Other canopy-forming Laminariales and Tilopteridales (e.g. *Laminaria ochroleuca*, *Saccorhiza polyschides*) are very uncommon in the Mediterranean and they are only found in the Messinian strait, between Italy and Sicily, and in places subjected to surface water inflow from the Atlantic ocean (southern Spain and Moroccan and Algerian coasts). Amongst the green algae, the highest number of endemics is found in *Ulva* but, again, this is a genus where nomenclatural and taxonomical reinvestigations are required. Within the flowering plants, *Posidonia oceanica* is the only endemic, with its closest relatives found again in the Indian Ocean (coasts of southern Australia), suggesting that *P. oceanica* is a Tethys relic [17]. Moreover, *P. oceanica* forms extensive meadows in the infralittoral zone, from the surface in sheltered areas to more than 40 m depth in the crystal-clear waters of the eastern Mediterranean, which makes it the most important Mediterranean shallow-water ecosystem. It is only absent in the easternmost area of the Mediterranean, the Moroccan coast and areas of southern Spain situated close to the Strait of Gibraltar.

The Mediterranean Sea is a hot spot for marine introduced species and up to 114 introduced macrophytes have been reported, representing the 10% of the known marine flora. At present, the main vector of introduction of marine macrophytes is aquaculture which surpasses the Suez Canal [7]. The highest number of exotic algae is currently found in coastal lagoons from the Gulf of Lions and northern Adriatic and not in the eastern basin, unlike other groups [18]. According to Boudouresque and Verlaque [8], at least eight introduced species merit the category of invasive as they play a conspicuous role in the recipient ecosystems: *Sargassum muticum, Stypopodium schimperi, Acrothamnion preissii, Asparagopsis armata, Lophocladia lallemandii, Womersleyella setacea, Caulerpa racemosa var. cylindracea, Caulerpa taxifolia* and *Halophila stipulacea*. However, sometimes the invasive capacity of these species is not the same in the different sub-basins, geographical areas or environments and we still do not know which are the features of the species and the environment that allow a species to become invasive.

There is a gradient of species richness between the western to the eastern basin as it has been observed in most groups of organisms (Table 2). For example of the total number of 263 species of the order Ceramiales (Rhodophyta) reported in the checklist, 94% appear in the western basin, 80% in the border between eastern and western basins (Sicily, Tunisia, Ionian Sea), 75% in the Adriatic, and 73% in the eastern basin.

Some seagrass meadows, algal stands, and algal-dominated communities and landscapes are known to be threatened in the Mediterranean [19]. Airoldi and Beck [20] reported coastal development and water quality, followed by destructive fishing, and diseases, pests and predators as the main drivers of the loss of seagrass meadows and macroalgal stands along European coasts, including the Mediterranean. Coastal management, and chemical pollution, as well as trawling, invasive species, increased epiphytism and increased herbivory by sea-urchins are amongst the main causes of the decline of *Posidonia oceanica* meadows [21]. Overgrazing by sea urchins, out-competition by mussels, habitat destruction related to coastal management, chemical pollution, increased water turbidity, human trampling and direct plant destruction attributed to net fishing and even scientific sampling have been blamed for the local extinction of up to 11 taxa belonging to the genera *Cystoseira* and *Sargassum* in the eastern Pyrenees (France) [22]. Colonization by turf algae [23] and global change [24] have also been considered as factors explaining the decrease in Fucales (i.e. brown algae). Increasing abundance of turf-forming, filamentous, or ephemeral algae are also reported as the main cause for the decline of macroalgal stands [25,26]. Trawling, alien invasions, waste waters, diving activities and large scale events involving mass-mortalities are reported as the main causes of disturbance affecting deep-water coralline algae-dominated environments (coralligenous and maërl beds) [27]. At present there is no species of macroalgae or seagrass that has became extinct at the basin scale, but there are some reports of extinctions at local scales [e.g. 22], which can result in a total extinction for some endemics with reduced geographical distribution (e.g. some *Cystoseira* spp.).

The only text regarding habitat and species protection at a regional scale that has been signed by all the Mediterranean countries is the Barcelona Convention. Two Action Plans ("Marine Vegetation" and "Coralligenous and other calcareous bioconcretions") specifically deal with the protection of macrophytobenthos and the habitats they constitute. Another Action Plan ("Introduced and Invasive Species") and the Protocol concerning Specially Protected Areas and Biological Diversity ("SPA Protocol") deal also in part with marine macroalgae and seagrasses. At present, there are 14 species of macrophytes that are listed in the Annex II of the SPA Protocol but in 2009 a list with 44 species was proposed to the National Focal Points for approval. Engineering species, both fleshy (most *Cystoseira* spp., *Sargassum* spp., *Laminaria* spp., *Posidonia oceanica*, *Zostera* spp.) and calcareous (*Titanoderma ramosissimum*, *T. trochanter*, *Tenarea tortuosa*, *Lithophyllum byssoides*) will all be hopefully included in the Annex II in the near future, as well as some rare and highly threatened deep-water endemics.

At a European level there are several EEC Directives that protect marine vegetation: Habitats Directive (92/43/EEC), Water Framework Directive (2000/60/EC) and Marine Strategy Directive (2008/56/EC). Within the Habitats Directive, although no marine macrophytes are listed in the Annex II - species whose conservation requires the designation of special areas of conservation -, *Posidonia oceanica* meadows are a priority natural habitat type and Member States have designated special areas of conservation to ensure its protection. The Water Framework Directive indirectly protects macroalgae and seagrasses as its purpose is to prevent further deterioration and to protect/enhance the ecological status of aquatic coastal (and freshwater) ecosystems, in a similar way that it is stated in the Marine Strategy Directive for all marine ecosystems. Moreover, a Council Regulation (EC 1967/2006, 21 December 2006) concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, prohibits fishing with trawl nets, dredges, seines or similar nets above seagrass meadows, coralligenous concretions and maërl beds, which, if correctly implemented in all Member States, should be an important measure for protection of these habitats.

However, even with all these regulations, and as far as the protection of marine macrophytobenthic diversity is concerned, habitat destruction and degradation, changes in water quality and turbidity associated to pollution, habitat modification due to changes in the food web of anthropogenic origin, and invasive species will continue to be the major threats in the short and mid-term. We already know that the impact of increasing temperatures and decreasing pH associated to climate change will enhance the development of warm water species (and doing so the expansion of Lessepsian migrants), will cause the rarefaction or even extinction of some species of cold water affinities, will enhance the production of fleshy algae, and will inhibit the growth of calcareous algae [e.g. 28,29].

Animalia

All animal phyla with marine representatives are present in the Mediterranean Sea, including the puzzling phyla discovered in recent times, Loricifera and Cycliphora, by Reinhardt Kristensen in 1983, and R. Kristensen and Peter Funch in 1995, respectively. Loricifera was first recorded in the Mediterranean Sea by Todaro and Kristensen [30] with the description of the new species *Nanoloricus khaitatus*. Larvae of two additional undescribed species of this phylum have been mentioned by Hofrichter [31]. On the other hand, Baker et al. [32] and Baker and Giribet [33] pointed out the presence of at least two species of Cycliphora in the Mediterraean, *Symbium pandora* and a undescribed species found in Croatia.

In this synthesis, we especially focused our efforts on diversity of the phyla a) Porifera, b) Cnidaria, with emphasis on Anthozoa, c) Mollusca, d) Annelida, with emphasis on Polychaeta, e) Arthropoda, with emphasis on Decapoda, Cumacea and Mysidacea, f) Bryozoa, g) Echinodermata, h) Sipuncula, i) other invertebrates such as nematodes, and less conspicuous species of the meiobenthos, j) Tunicata with emphasis on Ascidiacea, and k) the subphylum Vertebrata (including fish, marine mammals, sea turtles and seabirds).

- Porifera

Mediterranean sponges are an important component of the sublittoral and circalittoral hard substrata communities. They thrive in sciaphilic habitats such as the coralligenous environment [34], submerged or semi-submerged caves [35,36], living also in the proximity of hydrothermal vents [37]. This phylum has been a subject of interest for humans in the littoral of the Mediterranean Sea since the time of Aristotle (4th century BC), who reported five different sponge species in his zoological writings [38]. However, systematic investigation of sponge species occurred after the 17th century. Mediterranean sponge faunal list (at least demosponges which contain 85% of all living sponges) has been recently reviewed and updated by Pansini and Longo [39] and Voultsiadou [40]. Here we updated previous efforts using literature references.

The total number of species from the Mediterranean Sea is to date 681, including 629 Demospongiae, 44 Calcarea, and 8 Hexactinellida. Lists of the Porifera species recorded from the Mediterranean are available in the World Porifera Database [41] and the World Register of Marine species [42], and corresponding percentages (calculated according to the *Systema Porifera*, [43] for each demosponge order separately are illustrated in Figure S1. Due to their sessile habit and their short-lived, current dependant larvae [44], a large number of the Mediterranean demosponges (~48%) are endemic and only 11.5% are cosmopolitan or circumtropical [39]. The strong zoogeographical affinity of the Mediterranean sponge fauna with that of the Atlantic [45] is reflected in species composition, with 37.5% of the Mediterranean sponges being of Atlantic origin, while only few (~3%) are Indo-Pacific [39]. Although several species had been assumed to be Lessepsian migrants [46], recent studies [47] support that their identity with known Red Sea or Indo-Pacific species can be either rejected or remains highly doubtful, and that they are rather thermophilous remnants from an ancient warm period of the Mediterranean. Deep-sea sponges have been studied mostly in the western Mediterranean [48,49]; although bathyal species have been considered as widely distributed [50] and eurybathic [51] recent research revealed several species endemic in the bathyal zone of the eastern Basin [52].

The distribution of demosponge species and genera richness in the different regions of the Mediterranean is also uneven (Figure S2). Four major zoogeographic sub-areas have been identified in the Mediterranean according to the affinities of their sponge fauna: the north-western, north-eastern, the central zone, and the south-eastern areas [40]. A clear prevalence of the north-western basin, which hosts 78% of the total Mediterranean demosponge species and a decline pattern in sponge diversity from the north-western to the south-eastern is observed. The 14 demosponge orders are represented all over the Mediterranean; nevertheless, a gradual decrease in species numbers of Poecilosclerida and an increase of Dictyoceratida, Halichondrida, and Homosclerophorida is observed from the northwest to the southeast Mediterranean [53].

The Mediterranean sponge fauna can be characterized as well studied. However, the knowledge of the distribution of the sponge fauna is far from uniform. While substantial effort has been invested in the study of the northern coastline, investigation in the southern areas and the Levantine has been arguably sporadic and limited [39]. This is especially crucial for environments where sponge diversity is acknowledged to be high, such as sciaphilic habitats, or those which constitute a promising field for discovering new biodiversity, such as deep-sea and extreme environments [37,52,54]. Lately there has been an additional source of new sponge diversity in the form of cryptic species. The difficulties that sponges manifest to the taxonomist are notorious, mostly due to the lack or plasticity of distinguishing morphologic characters that is inherent in several taxa or groups [55]. Molecular data from recent studies have highlighted this concealed biodiversity [56,57,58,59,60].

Sponges demonstrate a wide variety of roles related to the functioning of marine ecosystems, including creation and modification of substrate, benthic-pelagic coupling, as well as a spectrum of interactions and associations with marine organisms [61,62,63]. Although sponges are present in most aquatic environments, the preponderance of their biodiversity occurs in specific habitats, such as coastal hard substrate formations, caves and overhangs, reefs and seamounts, as well as detritic and coralligenous seabeds. These ecosystems are highly vulnerable to degradation both by localized factors such as coastal pollution or industrial fishing [64,65] and global climate change phenomena [66]. The latter can also have a direct effect on sponge diversity, promoting mortality events on several species of the littoral community [67,68]. Thus, the protection of Mediterranean sponge biodiversity is utterly dependant on the protection of those sensitive aquatic environments. Initiations on protection and management plans both in local and global scale will thus have critical effect on the preservation of evidenced or yet unspecified sponge diversity. Sponges also frequently act as ecosystem engineers offering a living substratum to numerous other organisms [69]. Thus, they constitute important biodiversity hotspots in the Mediterranean environment deserving special attention and protection.

Sponges can be commercial products, with a commercial interest that has been traditionally restricted to the common high quality ‘bath sponges’ of the Mediterranean. Five species, *Spongia officinalis*, *S. mollisima*, *S. zimocca*, *S. lamella,* and *Hippospongia communis* have been harvested since early historical times and intensively throughout the 20th century, especially at the eastern and southern part of the basin [70]. The economic and social importance of bath sponges has been significant, as they were, and still are, exported and utilized worldwide [71]. Moreover, the Mediterranean is rich in sponge species with potential bioactive components [72] producing secondary metabolites with anticancer, antibiotic, anti-inflammatory, or antifouling activity [73]. Since production requirements can not be sustainably met by harvesting wild populations, *in situ* sponge culture is being investigated [74]. Mariculture has been investigated for the production of Mediterranean bath sponges [75], especially after the natural populations faced a dramatic decline due to the combined effect of uncontrolled harvesting and several mass mortality events [76], as well as climate warming [68,77].

Progress towards management and protection measures aiming at species is critical, regarding sponges utilized as biological resources. Those include the Mediterranean bath sponges, as well as species with proved or potential value for the pharmaceutical industry. The lack of control characterizing intensive bath sponge harvesting throughout the 20th century in the Mediterranean is acknowledged as an apparent cause for the recent decline of natural populations. Sixteen Mediterranean sponge species have been included in the Barcelona (Annex II and III) the Bern Convention (Appendices II and III) as worthy of protection or exploitation regulation.

- Cnidaria

We summarized available information for the Classes hydrozoans, scyphozoans and cubozoan [31,78], while a special emphasis is put on anthozoans. Anthozoans are common in most marine habitats from shallow to deep oceanic waters. Although most anthozoans occur on hard substrata (Gorgonacea, Scleractinia, etc.), a large number are adapted to life in mud, sand or gravel (Pennatulacea, Ceriantharia) in big range of current velocities but favoring for strong ones [e.g. 79,80]. They feed on nanoeukaryotes, dinoflagellates, diatoms, ciliates, as well as detrital POC and are generally considered microplankton suspension feeder [81]. For some the nutrition comes via their symbiotic relationship with small algae living in their gastrodermis and other are carnivorous [e.g. 82,83,84]. Although Aristotle (4th century BC) was the first to mention the presence of four anthozoans in the Aegean Sea [38], the knowledge on biodiversity of this group in the Mediterranean Sea rose after 17th century. Here we revise previous estimates of anthozoan diversity.

A total of 757 species of Cnidaria are currently quantified (Table 1 and Table S1). Anthozoa species recorded so far are 164 species including 51 Octocorallia and 113 Hexacorallia (Table S13). Two primary faunal components are recognized: Atlantic-Mediterranean (62.20% of the fauna by numbers of species) and endemic (21.95%). The boreal component contributes only minimally (1.83%), while the remaining fauna is made up of cosmopolitan (8.54%) and Amphi-Atlantic species (4.88%). There is only one confirmed Indo-Pacific component (*A. erythraea*) in the Mediterranean Sea. Introduced corals into the Mediterranean have been cited due to shipping via the Atlantic: *Oculina patagonica* and *Diadumene cincta* [85,86], and in the Red Sea: *Acabaria erythraea* [87].

The geographical and bathymetric distribution of anthozoan species and genera richness in the different regions of the Mediterranean is rather uneven (Table 2, and Table S13). Three major zoogeographical zones have been identified in the Mediterranean according to the affinities of their anthozoan fauna: a zone of high diversity (Alboran Sea, Western basin, Tyrrhenian basin), a zone of moderate diversity (Adriatic Sea, Aegean Sea), and a zone of impoverished diversity (Ionian basin, Levantine basin). The higher species diversity in the western basin can be explained by the occurrence of a number of Atlantic species with eastern boundaries in the Mediterranean, i.e. in various areas of the western basin [88,89,90]. Intensive research effort in the western Mediterranean may also be responsible for this difference in numbers. Another reason is the general impoverishment in the diversity of the eastern part biota due to the oligotrophic conditions in the area [91].

Corals have been used since antiquity for jewellery, costume accessories and souvenirs [92], and also produce diverse compounds useful in medicine [93]. Harvesting and ripping out of colonies, as well as chemical pollution, burial and sediments deposition, are harming too many species, particularly permanently attached, erect forms such as gorgonians, antipatharians and scleractinians. Red coral (*Corallium rubrum*) is a precious coral and has been widely sought after since ancient times in the Mediterranean. Nowadays it is one of the most over-exploited invertebrates in this sea [e.g. 92,94].

Less than 20% of the corals living in the Mediterranean have been included under the annexes of the conventions for the protection of animal life. The most of them (85%) are only protected under Annex II of CITES, which does not extend full protection but rather regulates their commercial trade. Six of them are protected under EC legislation or international conventions and two are included in the lists of maximum protection [95].

- Mollusca

Mollusks are important components of marine communities worldwide, making up to 15-25% of the benthic macrofauna. This is one of the few phyla that are routinely taken into consideration in marine biodiversity surveys and are considered to be an ‘appropriate indicator group’ for rapid assessment of diversity inhabiting a particular area [96]. Their importance did not escape early human settlers who clearly appreciated their value as seafood or the beauty of their shells. The Mediterranean molluscan fauna is one of the most anciently studied. Most malacologist, professional or amateur, are aware of the seminal works of Forbes (1844) for the Aegean Sea, Philippi (1836) for Sicily, or Bucquoy, Dautzenberg and Dollfus (1882-1898) from the French Mediterranean coast, among others. In the late 19th century, syntheses of available knowledge on the Mediterranean mollusks were provided by Weinkauff, Monterosato, Carus, among others.

General collecting procedures, techniques and gears are used to sample mollusks in the Mediterranean (towed nets to sample planktonic species, fishing gears to sample cephalopods, bottom sledges, dredges, grabs, box samplers or corers to collect members of the infauna, scuba diving sampling for littoral species living of rocky bottoms, and many other specialized methods). A useful and rapid method to give preliminary background information of the mollusks’ diversity of a particular area is the study of small samples of bioclastic sediments (a sediment type composed of fragments of organic skeletal materials and shells of micromollusks). Empty shells are a biodiversity indicator that points the difficulty of estimating the real magnitude of species richness for taxonomical groups that do not have *post mortem* remains, such as flatworms, polychaetes, meiofauna, or peracarid crustaceans [96]. One small sample of bioclastic sediment in the Mediterranean may contain more than 100 species of mollusks [97].

In the Mediterranean, 2113 species of marine mollusks are known. Table S14 shows the completed species list of mollusks, including cephalopods, based on Sabelli et al. [98] and Bello [99] and updated from CLEMAM database (Check List of the European Marine Mollusca: http://www.somali.asso.fr/clemam/index). The class Gastropoda is the one with higher number of species (74% of all known species in the Mediterranean), followed by Bivalvia (19%), Cephalopoda (3%), Polyplacophora (1.5%), Solenogastres (1.4%), Scaphopoda (0.7%), Aplacophora (0.4%), and Monoplacophora (0.05%). In general, mollusks show a decreasing biodiversity from the west to the east, with about 45% of the species in the eastern basin (Table 2 shows data regarding cephalopods and gastropods). Two main 'hot spots' for mollusks are observed in the Alboran Sea and the area around Sicily. A mixture of Mediterranean and Atlantic species are present in the former, where Penas et al. [100] recorded up to 655 species of mollusks in a small area surrounding the Alboran Island. On the other hand, the central zone of the Mediterranean Sea around Sicily is an area with a high degree of endemic species. Moreover, the Mediterranean Sea currently hosts more than 150 exotic species of mollusks, of which about 90 forms established populations [101,102]. The bulk of the introduced species of mollusks in the Mediterranean (about 154) are species of Indo-Pacific origin, mostly as 'Lessepsian immigrant'.

Mediterranean mollusks are highly diverse from a morphological and ecological point of view, ranging from minute wormlike interstitial animals (smaller than 1 mm) to giant squids (*Architeuthis*), and from minute snails (0.7 mm in *Retrotortina fuscata*) to giant fan shells (up to 90 cm in *Pinna nobilis*). Within gastropods (the most diverse class of mollusks) almost 35% of the species have an adult size smaller than 5 mm (micro-mollusks). By contrast, species larger than 50 mm account only less than 3%. Nevertheless, faunal surveys and inventories have a tendency to focus on the large species of 'seashells' and neglect the smaller species.

While members of most classes of mollusks are adapted to a particular environment or life-stile (caudofoveates, scaphopods, and most of bivalves are members of the infauna of sedimentary bottoms, monoplacophorans and polyplacophorans live on rocky surfaces, solenogastres are epifaunal members that prey upon cnidarians, cephalopods are highly specialized predators), gastropods are present in any marine environment (from hydrothermal vents to the pelagic realm), and they show great disparity in external form and behaviour. All kind of feeding habits (micrograzers, deposit feeders, herbivores, filter feeders, parasites, generalist or specialized predators, and scavengers) can be found within gastropods. All species of the order Acochlidiacea are interstitial animals, and all members of the orders Thecosomata and Gymnosomata and few others are holoplanktonic animals. Within the pelagic realm, cephalopods are the only group of mollusks that have nektonic species, reaching large adult size, are placed as predators competing with fishes. Most of the benthonic mollusks live in littoral areas or in the continental shelf (about 96% of the species) and only about 4% belong to the bathyal fauna. Some groups of mollusks evidence significant degree of endemics, for example, nearly 10% of the Mediterranean cephalopods are considered endemic or quasi-endemic, a characteristic observed in the Family Sepiolidae [99].

Although mollusks have been more intensely studied in the Mediterranean than almost in any other sea since the antiquity, an average of five to ten new marine species of mollusks are still being described each year in this sea. As an example, Penas et al. [100] recently described eight new species of gastropods near the Alboran Island. Currently, large-scale DNA sequencing provides the view of biodiversity being underestimated in all parts of the tree of life due the existence of cryptic species. Therefore, probably many more Mediterranean new species of mollusks will be recognized in the next years [e.g. 103]. Besides, many exotic species are being added to the native species because the global process of 'bioinvasions' is affecting notably the Mediterranean Sea, as it has been commented before.

Habitat loss and degradation is the main threat that impacts the molluscan diversity in the Mediterranean coasts, following by over-exploitation and fisheries (due to cephalopods and bivalves are important fishing resources for Mediterranean countries), pollution, introduction of new species, climate change and others. These threats are frequently cumulative and cause biotic homogenization and impoverishment. Mass mortalities have also known on some species, for instance the bivalve *Spondylus gaederopus* suffered widespread mortality in 1981 and 1982 [104] probably because a viral, bacterial or fungal infection. Besides, anchor causes notably damage the populations of the large fan shell *Pinna nobilis* [105]. In some cases, fishing periods coincide with reproductive seasons for cephalopod species, increasing the impact on their populations [106,107].

Seventeen Mediterranean species of mollusks have been included in the Anex II of the Barcelona Convention (Annex II and III) and Appendix II of the Bern Convention as worthy of protection. One of the species included in these lists is the data mussel *Lithophaga lithophaga*, because its overfishing by scuba divers causes serious damage along calcareous coasts of the Mediterranean Sea [108,109]. This boring bivalve is harvested by scuba divers, who smash the rocks with chisels or pneumatic hammers to detach the specimens from the walls into which their live. The major consequence is the removal of the biological cover (macroalgae and zoobenthos), which ranges from bare patches to complete desertification of the bottom communities [110].

- Polychaeta

Polychaeta are truly segmented worms belonging to the phylum Annelida, among which they represent the class with the largest number of described Mediterranean species. The Mediterranean Polychaeta fauna has always been among the most intensively studied. A wide panoply of sampling and analytical methods are involved in the study of polychaetes [111,112,113,114], while major insights in revealing cryptic species have been obtained, and more are still expected, from the use of fine morphological [e.g. 115], and molecular techniques [e.g. 116]. Based on an extensive taxonomic revision of all known European polychaetes, in which all existing literature up to 2008 has been checked and contrasted, we updated the total estimates for the Mediterranean polychaete species (see Table S16), which is then compared with the respective estimates for geographically restricted areas (western and eastern basins, and the Iberian Mediterranean coasts).

Polychaetes have a wide size range, extending from small meiofauna (less than 1 mm long) to big megafaunal (reaching about three m long) organisms, and are among the most common inhabitants of marine benthic bottoms, from shallow-waters to deep-sea and from brackish to hypersaline waters, with well-consolidated incursions into the plankton, as well as in continental environments [117]. They inhabit all types of substrata, from rocky bottoms to muddy sediments, where they may be among the most dominant organisms, both in terms of abundance and biomass, and also often in diversity [118]. Most of them are free-living, showing a variety of feeding strategies [119], but there are numerous cases of more or less specialized symbionts, from parasites to mutualists, living in association with many marine taxa, including other polychaetes [120].

There are numerous works in the Mediterranean Sea comprising different geographical ambits, which include more or less complete taxonomic compilations of polychaete species (see Table

S16). A first attempt to estimate the total number of benthic Mediterranean polychaetes was done by Bellan [121] who reported 950 species. More recently, Arvanitidis et al. [122] extensively analysed the Mediterranean and Black Sea polychaete biodiversity patterns, reporting 1036 species as valid (based on a 1999 inventory). Our analysis reveals that the whole Mediterranean polychaete fauna currently includes 1122 species, grouped in 452 genera belonging to 72 families.

According to Arvanitidis et al. [122], the Mediterranean polychaetes are dominated by cosmopolitan species (more than 30% of the total), while the Mediterranean endemics represented 18.8%. However, the former trend (often attributed to the presence of opportunistic species), may be confusing, as many supposed cosmopolitan species revealed to have, after recent accurate morphological and/or genetic studies, more geographically restricted distributions, and the Mediterranean cosmopolites (e.g. *Haplosyllis spongicola*) are certainly not an exception [see 123]. In turn, a few Mediterranean endemics have to be removed from this category after looking at the adequate habitats in other biogeographical regions, or as a consequence of more precise taxonomic revisions. *Haplosyllis chamaeleon* (a symbiotic species associated to the gorgonian *Paramuricea clavata*, another Mediterranean endemics), has been recently found to live in association with *Paramuricea grayii* in the Atlantic coasts of Galicia, NE Iberian Peninsula [123], while *Acanthicolepis costeaui* was shown to be a junior synonym of *Acanthicolepis asperrima*, a species with a wider distribution along the European Atlantic coast [124]. Thus, the number of species known only from the Mediterranean Sea may be currently estimated as 210, taking into account that it is not yet possible to assess how many of them are truly Mediterranean endemics.

The western Mediterranean is the richest basin for polychaetes, and most likely the best studied too (Table 2). It is harbouring 85% of the species. The Central Basin, Adriatic Sea and Aegean Sea harboured a 50%, respectively, while the Levantine Basin harboured less than 45%. A total of 946 polychaete species are known from the western Mediterranean, 877 (78%) from the eastern Mediterranean, and 601 (54%) from the Iberian Mediterranean coasts. Therefore, the western basin is a 6% richer than the eastern one, but we have to consider the spectacular increase of the diversity of the polychaete fauna from the eastern basin lately, probably associated with the increasing number of studies in this biogeographic region. The Iberian Mediterranean has a reduced set of species, but its variation in taxonomic distinctness (283.4), shows a significant departure ($p = 0.08$) from the upper limit of the simulated distribution [125,126,127], indicating that some higher taxa include more species than those expected at random. A possible explanation may be the recent faunistic efforts concentrated in a few families carried out within the frame of the Fauna Iberica project [128,129].

New species are still being described either as a result of studying common habitats using new approaches [e.g. 130], or unexplored environments or regions in any way [e.g. 114], while an additional source of diversity may be invasive species [131] including Lessepsian migrants [e.g. 132], which were estimated to be around 6-7% the known Mediterranean species (i.e. 70 - 80 known invaders nowadays). The same occurs with a significant part of the southern coasts, and major advances in terms of the knowledge of the diversity of the group may be expected from the exploration of these regions. The average number of polychaete species that have been newly described from Mediterranean waters is 3.8 per year, since the first one described by Linné

[133]. This rhythm of descriptions was almost four times higher (12.4 new species per year) during the 1860s, with the concurrent works of R. E. Claparède, A. E. Grube and E. H. Ehlers, among others, and was almost twice as high (5.7 new species per year) during the late 1960's and early 1970's. In the last five years (2005-2009), there has been an average of 4.2 newly described Mediterranean polychaete species per year (Figure 13a). Although the deep-sea Mediterranean bottoms seem to be less rich that those from the nearby seas (e.g. the Atlantic ones), they are still largely unexplored. The same occurs with a significant part of the southern coasts, both of the western and eastern basins. Major advances in terms of the knowledge of the diversity of the group may be expected from the exploration of these regions.

Major threats to polychaete diversity in the Mediterranean Sea may be linked to the increasing anthropogenization of the coasts, the global increase of temperatures, changes in the water quality (e.g. acidification, turbidity), overfishing, or the presence of introduced/invasive species, sometimes in a massive way like in the case of the reef-building serpulid *Ficopomatus enigmaticus* [134]. Polychaetes can also play a harmful role as fouling organisms in ship-hulls or harbours and other marine structures, as pests in natural and cultured oyster populations, or as introduced species, with the subsequent economical losses [e.g. 135].

Moreover, some polychaetes are eaten by humans, mainly those known as "palolo" worms [136], while others have been traditionally used in local pharmacopoeia [e.g. 137]. The presence of toxins or venom glands in some groups (e.g, Amphionomidae, *Glycera*, *Metaxypsamma*), and the fact that other groups are chemically defended [e.g. 138], opens the possibility of new investigations and applications in pharmacology and medicine. Polychaetes have also a significant economical relevance, as revealed by the growing commercial activities and the international market for polychaete species that are dug up or farmed, mainly for being used as fishing bait and as a food item in aquaculture, with the implied risk of introducing foreign species and associated pathogens or other non-native organisms in the wild [e.g. 139,140]. Threats to polychaete diversity may be also linked to overfishing. However, polychaetes are ubiquitous and, unless major perturbations occur, the only expected consequences would be the replacement of some species by others locally or regionally. An exception may be species associated with restricted habitats, like coastal lagoons, or with specialized life habits, like the symbiotic *Ichthyotomus sanguinarius* [an external parasite of eels never found again since its original description, 141].

- Arthropoda

This phylum is highly diverse and species can be found all along the Mediterranean Sea and among the most common habitats. The estimation of total number of species is difficult because species vary enormously in size and habitats, as well as they go through metamorphic changes that have confused taxonomists for centuries. Information for this synthesis came from several sources (Table 1 and Table S1). Crustaceans are the dominant group in terms of biodiversity and they include some commercial groups that have been better studied (such as decapods or stomatopods). Estimates for several arthropod groups of the Mediterranean Sea have been listed in regional lists along the basins, and several checklists exist (Table 1 and Table S1). Here we summarize main species estimates and we revised in detail the estimates available for i) cumaceans, ii) mysidaceans and iii) decapods.

A total of 2244 species of crustaceans have been registered so far in the Mediterranean Sea (Table 1 and Table S1). Cumaceans and mysidaceans are important groups belonging to the suprabenthos communities. Studies in the western Mediterranean showed that they can comprise from 42% of total suprabenthos in deep waters [862-1808 m, 163] to 61.8% in shallower areas [1-3 m, 164]. A total of 871 species are listed here to be the principal components of the Mediterranean suprabenthos communities, including Cumacea, Mysida and Lophogastrida, Isopoda, Amphipoda, Tanaidacea, and Euhpausiacea.

(i) Cumaceans: Accurately sampling the near-bottom invertebrate swimming species (in the suprabenthic habitat) is a difficult task due to the size of the species and their behaviour. Cumaceans, for example, were considered during long time larval stages of other crustaceans. Adult cumaceans range from 1.5 to 35 mm total length but they grow into small development instars before reaching the adult form. Fractions of a same population are lost if they are sampled or sieved with standard mesh size such in studies of macrofauna [142]. Cumaceans live in the water-sediment interface, they burrow into the sediment, and some littoral species migrate to the water surface during night-time [143]. Studies to quantify their biodiversity use dredges, and when densities are low, as frequently it happens in deep water, suprabenthic or epibenthic sledges that collect animals from the nearest sea floor water layer are used.

It was only in 1870 when cumaceans were recognized as an independent order. Since then, the knowledge of this crustacean group has grown slowly and taxonomic effort has varied greatly among biogeographical regions. The Mediterranean Sea, together with the northeast Atlantic Ocean, is likely one of the best-studied regions in the world. Our estimates show that cumaceans from the Mediterranean are composed of 99 species (Table S17). Six of the eight cumacean families are present in the Mediterranean Sea, lacking the family Gynodiastylidae, distributed in the southern Hemisphere and the family Ceratocumidae, the species of which are restricted to deep waters. Nannastacidae is the most specious family (28 species), followed by Bodotriidae and Diastylidae (27 and 23 species respectively). Leuconidae is represented by 13 species while Lampropidae and Pseudocumatidae have only four species each. The level of endemics is relatively high reaching to 32.3% for the whole Mediterranean Sea. In addition to the still unknown cumaceans Mediterranean species, it is also very probable that other foreigners could invade this sea. This fact has been already observed in the Levantine Sea where a Red Sea species was recently found [165].

In the NW Mediterranean there are 78 cumacean species known that account the 91.8% of those recorded for the western basin, and the 78.8% of those in the whole Mediterranean Sea. Conversely, in the Tunisian Plateau/Gulf of Sintra and the Adriatic Sea only few species have been recorded (four and 13, respectively). A total of 85 species are recorded in the western basin *versus* 74 in the eastern (Table S18). However, high differences in species richness observed in the four regions considered of the western basin are mostly due to the different taxonomical effort instead to an actual difference between the fauna of these seas. Both basins have 15 endemic species in common, while there are 11 endemic species exclusives from the western basin, and seven from the eastern. In terms of percentage, endemics are very similar in both basins (30.6% in the western and 29.7% in the eastern).

The taxonomic effort to describe cumaceans diversity varied also greatly among regions and areas such as the Adriatic Sea or the Gulf of Gabés are practically unknown. The accumulation curve of cumaceans species discovered (described or first recorded) in the Mediterranean Sea (Figure 13b) shows that no asymptote has been reached so far, and therefore, there has been no slowing in the rate of discovery of Mediterranean cumaceans since late 19^{th} century. This represents an annual increase of about 0.5% of the known Mediterranean cumaceans. This rate of discovery, despite it seems low, is very similar to observed in most groups of crustaceans [172].

Human activities manly focused on littoral waters such as fishing, coastal engineering, sandy beach restoration, fish farming, etc., are affecting and will affect the area where cumacean diversity and level of endemics of these crustaceans are highest. Cumaceans, and especially those living in shallowest bottoms, are very sensitive with the mean size grain of the sediment [173] and small changes in its composition may lead to the disappearance of certain species. Changes in the cumacean assemblage structure were already observed in the Spanish coast induced by massive influxes of waste water and sludge discharges [174]. Increment in shipping, as well as in water temperature because the global warming, will favour the establishment of aliens that could threaten the autochthonous cumaceans fauna.

(ii) Mysidaceans: They are regularly represented in the Mediterranean Sea, from the Alboran Sea to the Marmara Sea and from the coastal lagoons and beaches to the bathyal environments. The majority of the species live as well in the suprabenthic habitat, but some can be found in hard bottoms (or caves) or performing vertical migrations between the bottom and the surface, mainly at night. The studies of Mediterranean mysidacean began in 1837, when the first two species were described by Milne-Edwards. During the decades of 1860-1941 several species were described as a result of intensive sampling by diverse authors (G.O. Sars, W. Tattersall, V. Czerniavsky, M. Bacescu). From Bacescu [144] contribution, the knowledge of the mysidacean biodiversity has grown regularly until now.

Several methods are used to sample the majority of lophogastrid and mysid species [145,146]. The majority of world species [74%, 147] live in the suprabenthic habitat (or hyperbenthic, composed of near-bottom swimming species), which need specific gears to sample. The most efficient mysidacean samplers, and in general for suprabenthos, are nets mounted on suprabenthic sledges that are towed over the surface of the sediment [148,149]. The choice of a suprabenthos sampling equipment depends largely on local conditions (e.g. depth of the samples, size of the ship, power and capabilities of the lifting gears, bottom conditions, etc.). Coastal mysids, especially in hard bottoms (or caves) can also be sampled by Scuba using diver-operated specially-designed suction bottles or plankton nets. Many mysidaceans species exhibit pelagic phases and perform vertical migrations between the bottom and the surface, mainly at night. Pelagic samples can be taken with plankton nets (such as rectangular mid-water trawl, obliquely Tucker trawl, or vertically plummet net). However, coastal and oceanic strictly pelagic species are relatively few in number.

Mediterranean mysidaceans are composed of 38 genera and 102 species. Four of the seven mysidacean families are present in the Mediterranean Sea, lacking the family Petalophthalmidae (order Mysida) whose species are restricted to deep waters. The two families of the order Stygiomysida are a small group of cavernicoulus mysids endemic of caves in Central America and Mediterranean fresh waters caves but without known representation in the Mediterranean marine environment. A complete list of genera and species of the Orders Lophogastrida and Mysida at present known from the Mediterranean marine waters, their geographical distribution, and their habitat based on current information are provided in Tables S19-20. The Mediterranean mysidacean fauna consist of 37 endemic species, in addition to 48 species that also occur in the north-eastern Atlantic, and 18 cosmopolitan species. At present there are few invasive species in the Mediterranean Sea: the Ponto-Caspian mysid *Hemimysis anomala,* and the Atlantic species *Neomysis integer*, both recently detected and confirmed, respectively, in the estuary of the Grand Rhône [166]. There is a decrease in mysidacean species richness from the west to the east basins (90 known species in the western basin *versus* 55 in the eastern) (Figure S3). Isopoda, Cirripeda, Amphipoda and Decapoda also show a general higher species richness in the western basin (Table 2).

The mysidacean fauna of the Mediterranean Sea is also considered one of the best known faunas of the world [145]. However, while the marine mysid fauna of the north-western Mediterranean and the Tyrrhenian Sea (especially the Gulf of Naples) are the best known, various parts of the African coasts and of the eastern sector of the Mediterranean Sea have been little or no studied (Figure S3). The temporal trend of new species descriptions show a climbing curve that suggest that there is still a large number of unknown species to describe in this sea (Figure 13c).

The impact of anthropogenic activities in the Mediterranean mysidacean is poorly documented. There are some evidences of significant changes in the mysidacean fauna in areas under strong anthropogenic pressure, thus most Mediterranean coasts. In some areas of the north-western basin there are indications of species substitutions of the genus *Hemimysis,* probably caused by global climate warming [175]. In the gulf of Naples, as a result of the eutrophication of waters and other anthropogenic coastal pressures, local population extinctions or strong area regressions have been described [176]. Unfortunately, many of the supposed new species could likely become extinct before we even know of their existence [147,176]. Biodiversity of Mediterranean lophogastrids and mysids is therefore immersed in a critical point of knowledge and scientists must work against time with the aim of not loosing such valuable biological information.

(iii) Decapods: regarding their diversity, several early regional studies included substantial information [e.g. 150,151,152,153,154,155,156,157]. The first treatise on the whole Mediterranean decapod fauna was published by Heller [158] and listed 154 marine species. In the 20th century important monographs updated the knowledge of regional faunas [159,160,161]. In the last twenty years our knowledge of the decapod fauna has progressed further, often as a by-product of the fishery surveys carried out to monitor the status of Mediterranean fishery resources that include high valued shrimps. Currently, there is a complete compilation on decapods of the Mediterranean Sea and north east Atlantic Ocean [162].

Overall 383 species, of those 309 autochthonous species in 63 families, have been reported in the Mediterranean Sea for decapods (against 480 species in 79 families in the Ibero-Mauritanian sectors of the Atlantic Ocean). The present autochthonous Mediterranean decapod fauna mirrors that of the temperate east Atlantic, even if it is significantly impoverished. This is due to the main connection of the Mediterranean to the eastern Atlantic Ocean through the Gibraltar Strait and that Mediterranean decapod fauna, after the Messinian salinity crisis, was rebuilt mainly from the east Atlantic stock of species. Forty Mediterranean autochthonous decapod species are endemic, and 12 of these are still known only for the type locality and the original description (Table S21). The cut of the Suez Canal in 1869 has restored the connection with the Indian Ocean, and since then, we have witnessed an exponential increment in the number of Indo-pacific decapod species recorded in the eastern Mediterranean [167]. Some of them have become locally valuable fishery resources [168], others are deemed responsible for the reduction of the populations of some autochthonous species [169]. The arrival of a large number of Lessepsian immigrants in the Levantine Sea has significantly modified the biodiversity of its decapod fauna. Currently, the Mediterranean is hosting 74 non indigenous decapod species. The autochthonous decapod species recorded in the Levantine Sea are only 60% of those reported for the whole Mediterranean Sea, even if the intensified research effort in the Aegean and Levantine Seas in the last thirty years has proved the species richness of the autochthonous decapods fauna is higher than previously supposed.

Even if decapods of the Mediterranean Sea are also regarded among the best known, new taxa continue to be discovered as a result of revisions of "difficult" genera, as *Anapagurus* by García-Gómez [170], or of the use of more appropriate techniques to collect burrowing species that are seldom obtained with traditional sampling gears [171].

Multiple anthropogenic causes, such as over-exploitation of fishery resources, coastal pollution, maritime traffic, etc., threaten the Mediterranean decapod fauna. The joint research effort of taxonomists and ecologists may help to mitigate the losses of the original Mediterranean biodiversity. Global warming may in the next future significantly affect both the distribution of these species living in coastal waters and the arrival of new Lessepsian migrants in the eastern basin. Actually a small population of *Ocypode cursor* has already been recorded on a Sicilian beach and the stock of *Crangon crangon*, a fishery commodity, in the northern Adriatic collapsed in the last twenty years. The dramatic decrease of this boreal species has been in parallel by the increment of the penaeid shrimp *Melicertus kerathurus* a thermophilic species unknown in the area until a century ago [see 158,159]. The changes we witness may be explained also by other factors that act synergistically, and highlight the importance of a continuous monitoring of the biodiversity in the Mediterranean Sea.

- Bryozoa

Species of this phylum are abundant and diverse in the sea bottom of the Mediterranean Sea, mainly on hard substrata. However, due to its comparatively small size, they are very often overlooked or misidentified. Bryozoans live in different substratum on which the colonies are settled: rocks, algae or other animals like mollusk shells or corals. Few species live on soft bottoms, where they usually settle on small hard pieces of substratum (small rocks or shells) that lie on the bottom. The relatively well studied western European coast of the Mediterranean has produced an abundant bibliography (Table S22).

Bryozoans have been sampled by extraction of the substratum on which the colonies are settled: rocks, algae or other animals like mollusk shells or corals, because the detaching of the colonies often destroy or severely damage them to the point of becoming unrecognizable. The observation and annotation of colonies without extraction, directly or by photography, is suitable for middle to large sized colonies of well known and easily recognizable species, which are not the most. Therefore, the sampling by trawls or dredges that do not include hard substrata tends to underestimate the bryozoans diversity of an area. Most species are determined in the laboratory with a stereomicroscope, because their usually well developed calcareous skeleton is very distinctive, but the use of a Scanning Electron Microscope (SEM) is necessary in many cases due to the small size of the zooids and the overall similarity of some species.

A total of 389 species of bryozoans have been cited in the Mediterranean and 88 species (23%) are endemic (Table S22). Of these ones, 53 species belong to the order Cyclostomata (with 17 endemic species), 44 species belong to Ctenostomata (with five endemic species), and 292 species are of the order Cheilostomata (with 66 endemic species). However, some citations may be doubtful and the taxonomic status of some of the species cited may need updating. In addition, the qualification of endemic is provisional, given that the neighbouring Atlantic waters and a great part of the Mediterranean ones are not well studied.

The most extensive works about Spanish bryozoan are those by Zabala [177] and Zabala and Maluquer [178], which, although mainly devoted to Catalonia, suppose a revision and updating of most previous information about the Mediterranean bryozoan. The Straits of Gibraltar and Alboran Sea have been studied in the last 20 years by several authors [179,180,181,182,183,184,185,186,187,188,189,190]. The French coasts are also well studied, with continuous new descriptions since the 19th century [191,192,193,194,195,196,197]. The Italian coast has been less studied but there is some noticeable work [198,199,200]. Moreover, the bryozoans of the Adriatic Sea have been recently revised [201]. On the contrary, the African coasts have been scarcely studied, although some works, mainly from French authors were done along these coasts in the first half of the 20th century [e.g. 202]. The eastern basin has been poorly studied as well, except from some occasional works [203,204].

However, not only a geographical bias exists, but also a taxonomic one, which is not exclusive of the Mediterranean Sea, but extensive to the general studies about bryozoans. The order Cheilostomata is the best studied due to it is the most diverse one, with about 80% of the known species, and species are easier to identify due to their high polymorphy of zooids, which are modified for different uses, and differ greatly between species even when they are closely related. On the contrary, the other two marine orders, Ctenostomata and Cyclostomata, have technical difficulties that make them harder to identify. Ctenostomata species are soft and give few external characters. Cyclostomata are well calcified, but the colonies are usually very small and cryptic, and often, if they are not reproductive, they cannot be morphologically identified because some distinctive characters occur only in the gonozooid, which is not present in young specimens or no reproductive colonies. The works on these two orders are thus very valuable, like the worldwide revision of Ctenostomata [205] and the works on Cyclostomes [185,187,188,195]. In addition, some general works such as Zabala [177], Zabala and Maluquer [178], Álvarez [186]; Álvarez [189], and Hayward and McKinney [201] include interesting revisions.

Little is known about threats to bryozoans populations in the Mediterranean Sea because many species have been seldom found. The cryptic habitats and small size of most colonies make an evaluation of risks difficult. But they share the fate of their habitats and where the coast is environmentally degraded, the populations of bryozoans may suffer the same effect. A case of massive mortality of invertebrates, including bryozoans, has been documented in the Provence related with a month of high temperature [206]. Besides, some species (i.e. *Pentapora fascialis*, *Retepora* spp) are also impacted by diver frequentation [e.g. 207]. However, there are also some species that are favoured by human activities, mainly the fouling ones like *Bugula neritina*, *Schizoporella errata* or *Watersipora subovoidea*. These and other ones are usually intertidal or shalow sublitoral species that may settle on artificial substrata and be dispersed by ships and debris. *Bugula neritina*, for instance, is a currently cosmopolitan species of Indo-Pacific origin which was spread by ships during the 19th and 20th centuries, and is now among the most abundant bryozoans in European and Mediterranean shallow-waters, especially well installed in harbours. One species of bryozoan, *Hornera lichenoides* is included in the Annex II of the Barcelona Convention.

- Echinodermata

A detailed revision of the relevant literature was carried out and information regarding the taxonomy and geographical distribution of the Mediterranean species of echinoderms was collected (Text S4). Tortonese [208] and Koukouras et al. [209] reviewed the Mediterranean echinoderm fauna. Since then, some additional information on the taxonomy and the geographical distribution of the Mediterranean echinoderm species has been published [210,211,212,213,214]. We also used the data collected from 190 stations in the Aegean Sea and Cyprus (0-1,250 m depth). Samples were obtained using fishing nets, dredges, grabs and by free or SCUBA diving. All echinoderm specimens were identified to species level and deposited at the Museum of the Department of Zoology, Aristotle University of Thessaloniki (Greece). Based on the literature and sampling data we updated the available checklist and their general distribution in the Mediterranean Sea.

Tortonese [208] reviewed the Mediterranean echinoderm fauna and reported 143 species (five Crinoidea, 30 Asteroidea, 34 Ophiuroidea, 26 Echinoidea and 48 Holothuroidea). Koukouras et al. [209], based on new information, raised the number and updated their distribution in the Mediterranean Sea. We estimated that the echinoderm fauna of the Mediterranean Sea is currently composed of 154 valid species (five Crinoidea, 33 Asteroidea, 34 Ophiuroidea, 28 Echinoidea, 54 Holothuroidea) (Table S23 provides with information on their depth distribution and detailed references). Species richness in each one of the main geographical areas of the Mediterranean Sea is given in Table 2 and Figure S4. Differences between areas can be discussed in terms of water masses and circulation [215,216] along with data on temperature and salinity variations [217], and geographical aspects [218,219]. Most of the Mediterranean echinoderm species (67.7% of the total Mediterranean species number) have an Atlantic-Mediterranean distribution, while 37 species (24%) are Mediterranean endemics. The echinoderm fauna of the Levantine is enriched by 5 Lessepsian migrant species, one of which *Synaptula reciprocans* has expanded its distribution in the Aegean Sea (Figure S4 and S5).

Echinoderms richness showed that the western Mediterranean hosted 93.5% of the known Mediterranean species and displayed the highest species richness among all other areas (Figure S5). The Central Mediterranean came fourth in echinoderm species richness among the Mediterranean areas (63.6%). However, it should have had a higher species number compared to the Aegean Sea and the Adriatic due to its direct neighbouring with the western Mediterranean. The rather low number of echinoderm species from this area is attributed to the limited sampling effort. The Adriatic Sea hosts 101 echinoderm species (65.5%). The Aegean Sea, although more distant from Gibraltar, displayed a higher echinoderm species richness in relation to the Adriatic and the Central Mediterranean (69.4% of the species). The Levantine Basin displayed the lowest richness (47.4% of the species).

In general terms, the Mediterranean echinoderm fauna is well studied, however there is a lack of relevant information from the southern Mediterranean coast due to less intensive sampling effort [219], as well as there is a lack of knowledge concerning the Mediterranean deep-sea echinoderm fauna [212]. The acquisition of a concise, detailed view on the Mediterranean echinoderm fauna is often limited by certain taxonomical problems. The descriptions of certain rare endemic species, such as the ophiuroid *Pectinura vestita*, are old and incomplete and these species have not been re-collected ever since. Thus, various records of echinoderm species from the Mediterranean should be considered doubtful since the respective identifications have been carried out in the framework of benthic ecological studies and have not been checked by taxonomy experts. In addition, many records in the literature are given under older, invalid names [209].

Climate change is considered a major threat for the Mediterranean marine biodiversity. Recently, it has been demonstrated that the entrance rate of the Lessepsian decapod, mollusk and fish species in the Mediterranean has been accelerating as a result of the increase in the mean temperature of the Mediterranean waters, a reflection of the global climate change [220,221,222]. Furthermore, for the same reason, the dispersal rates of the Lessepsian species towards higher geographical latitudes are also increasing. In this context, the Lessepsian holothurians species *Synaptula reciprocans* seems to be quickly expanding its distribution in the Mediterranean since it has been recently reported from the Dodecanese and Cyclades Islands (south Aegean Sea) [223], while till 2007 it was known up to Rhodos I. [209]. Future research may be focused to study the entrance and dispersal rates of the Lessepsian echinoderms in the Mediterranean and their potential impact on the native fauna.

Certain echinoderm species constitute an important fishery resource. The sea urchins *Paracentrotus lividus* and *Sphaerechinus granularis* can be usually found in Mediterranean fish markets since their gonads are regularly consumed. Certain holothurians, such as *Holothuria tubulosa,* are commonly used as fishing bait, while different species of asteroids and echinoids are used for decoration. However, there is no enough information about threats to echinoderm species, although they can have important ecological roles: for example, sea urchins are important in structuring the assemblages in shallow hard-substrate areas through grazing, and they may drive the transition from erect macroalgal assemblages to coralline barrens [224,225, and references therein].

- Sipuncula

The phylum Sipuncula is one of the minor worm phyla, closely related to annelids. The last comprehensive revision of the Mediterranean sipunculan fauna was by Pancucci-Papadopoulou et al. [226]. Since then, only a few additions have been published [227,228,229,230,231]. Here we reviewed available information to update the list of sipunculans in the Mediterranean with published and unpublished identifications.

A total of 34 species and 4 subspecies of sipunculans arranged in 9 genera and 5 families were recorded in the Mediterranean Sea (Table S24). The more ubiquitous species are *Sipunculus nudus, Golfingia elongata, G. vulgaris, Onchnesoma steenstrupii, Phascolosoma granulatum* and *Aspidosiphon muelleri.* By contrast, very rare species are *Nephasoma constricticervix, Phascolosoma perlucens, Apionsoma trichocephalus, N.* sp. cf. *flagriferum, P. turnerae* and the subspecies *G. vulgaris antonellae.* The last subspecies is endemic of the Mediterranean Sea, whereas the last species is recorded for the first time for the investigated area by using unpublished material (J.I. Saiz, personal communication, Table S24).

Cluster analysis (Figure S6) shows that Mediterranean biogeographical sectors can be placed together into two main groups with a similarity level of 61%. The smallest group includes the three Adriatic areas plus the 'Gulf of Lyon and Ligurian Sea' sector. By contrast, the largest group of the dendrogram comprises the remaining 6 sectors located both at the western and eastern Mediterranean. The main species responsible for this dichotomy are *N. diaphanes diaphanes, A. murinae bilobatae,* and *Thysanocardia procera,* which are well represented in the largest group of the dendrogram, whereas *G. margaritacea* is almost the only species well represented in the smallest group.

Mediterranean sipunculans represent almost the 25% of the global sipunculan diversity. This percentage is relatively low, since the large diversity of the phylum corresponds to warm shallow tropical areas [232]. At the level of families, almost all sipunculan families are represented in the Mediterranean, with the exception of Themistidae. Concerning genera, nine of the 17 genera of sipunculans are represented in the Mediterranean. Some of the absent genera are monotypic or very restricted in their global distribution to warm waters [233]. Only two exotic species have been described so far, and there is only one subspecies considered to be endemic: *Golfingia (Golfingia) vulgaris antonellae* [227].

Regarding species data by region (Table 2) we observed a latitudinal gradient from the north to the south of the Mediterranean and west to east, linked to the temperature of the water masses along the year [234]. Thus, the dendrogram obtained (Figure S6) may be reflecting a physiological barrier for sipunculans with cold *versus* warm species. In fact, *G. margaritacea* is mainly a temperate and boreal species [226] and its presence in the Mediterranean may be indicating the prevalence of colder water masses. By contrast, other termophilic species, such as *Ph. convestitum* and *A. elegans* have been proposed as Lessepian migrants [226,230]. In this way, some other rare records of *Phascolosoma* and *Apionsoma* could be further candidates to migrants.

The spatial analysis of sipunculan diversity shows that African coast is especially undersampled. This also applies to the abyssal zone (> 3,000 m) where only three single records (*N. diaphanes corrugatum, Ph. tuberculosum* and *A. murinae murinae*) are published [235,236].

The only reported endangered sipunculan species is *Sipunculus nudus,* which is collected massively along the Spanish littoral as bait for fishing [237].

- Meiobenthos

Marine sediments hold an abundance of microscopic life, the smallest of which attach to individual sand grains or live in the interstices between grains. A variety of bacteria, archaea, and protists share this habitat with minute metazoans, the meiofauna, a major component of seabed ecosystems, particularly in the deep-sea. About half of the animal phyla are represented in the meiofauna, and some (e.g., Loricifera, Kinorhyncha) are confined to it. Nematodes are typically the most numerous component, with harpacticoid copepods, and foraminiferans also important.

The study of the diversity of main species in the large meiobenthos group (mainly composed of small benthic invertebrates that that can pass through a 0.5 mm mesh but will be retained by a 32 μm mesh and live mainly in the sediment) is a difficult and time consuming tack and therefore most studies have been dealt with higher taxonomic levels [238]. The Mediterranean Sea is not an exception, and species or genus level ecological data are scarce. In this study, nematodes and benthic (Harpacticoida) copepods were investigated, since these two groups are the dominant ones in the most of the cases (Text S5). In addition, among the various meiobenthic organisms, living soft and hard shelled benthic Foraminifera are usually equally important with nematodes, and these two taxa together usually account for over 90% of the meiobenthic community [239]. We therefore include some sparse information available about Foraminifera, as well as about Gastrotricha.

Most of the early qualitative work on free-living marine nematodes in the Mediterranean was summarized by Allgen [240] and Schuurmans Stekhoven Jr [241]. Schuurmans Stekhoven Jr [242] compiled a list of all the species found to the date from the Mediterranean and reported 143 species, 106 of which were new to science. Significant work in the past provided a series of taxonomic works on nematodes, which contributed to the knowledge of nematode biodiversity [e.g. 243,244,245]. De Bovée [246] studied the nematode populations in sublittoral terrigeneous muds off Banyuls-sur-Mer during an annual cycle, and reported a much higher number of species (184). More recently, Danovaro and Gambi [247] investigated the nematode assemblages in a *Posidonia oceanica* bed of the north-western Mediterranean over an annual cycle. High diversity values were correlated with high concentration and high heterogeneity of the food sources indicating that biodiversity is closely coupled with changes in food availability. In the eastern Mediterranean, only few studies have dealt with the lower taxonomic composition of nematodes (family, genus, or species), and several are yet to be published. Wieser [248] studied the meiobenthic nematodes of the Piraeus harbour area (south Aegean Sea) and identified 44 different species of which nine were new to science. Lampadariou [249] studied the nematodes of the continental shelf of the Cretan Sea and some deep-sea areas of the north and south Aegean Sea and found approximately 280 different species, many of which were undescribed. Nematodes currently listed more than 700 species in the Mediterranean Sea [31], and the most important taxonomic papers that contributed to the knowledge of nematode biodiversity are listed in Text S5.

Regarding harpacticoid copepods, there is no clear picture on their actual biodiversity since most studies have been mainly of taxonomic nature [e.g. 250,251,252]. However, the taxonomic studies from the Mediterranean suggest that copepod diversity might actually be high and that many new species are yet to be described. Steuer [253] investigated five different stations near El Shatby in Alexandria. Mitwally and Montagna [254] also studied the harpacticoid copepods along three sandy beaches in Alexandria and found nine species, among which, two members of the Ectinosomatidae, were new to science (*Arenosetella bassantae* and *Noodtiella toukae*). In the western Mediterranean, Soyer [255] studied the populations of harpacticoid copepods on the continental shelf off the coast of Albères between t and 130 m depth and found 254 species. In a study on the harpacticoid copepod populations from the eulittoral zone of a sandy beach on Crete, Stobbe [256] found 12 species. The community was dominated by *Psammotopa phyllosetosa*. Sevastou [257] also studied the harpacticoid copepod populations from two geographically spaced sandy beaches in Crete applying a 13-month sampling design and found 96 species, which outreached by far any species richness recorded in previous studies of comparable habitats.

Until the late 1990s, the study of benthic foraminifera in the Mediterranean has been restricted to a small number of samples collected from specific sites [258,259]. More recently, a larger number of investigations have considered the importance of living benthic foraminifera in ecological studies [e.g. 260,261,262], however they are still far from being well studied. The knowledge recently gained indicated that in the Mediterranean the foraminifera are highly diverse and consist with more than 600 species. A large number of these species belong to Lessepsian invaders [11], which is however still a matter under debate since data on the biogeography, diversity and ecology of autochthonous shallow-water faunas from various carbonate environments of the Mediterranean Sea are limited [263].

In addition, the studies on marine gastrotrichs in the Mediterranean were conducted mainly through a programme of faunistic and taxonomic research of the Italian seas [264,265,266,267,268,269,270] and in Crete [271]. All these studies revealed approximately 150 species from the Mediterranean from a total of 280 and 580 which are known from Europe and world wide, respectively. Hofrichter [31] mentioned 165 species in the Mediterranean Sea.

A small number of pollution studies in the Mediterranean Sea considered the use of meiofauna as potential indicators of anthropogenic disturbance. These studies concerned mostly domestic sewage discharges, pollution in harbours, and fish farm impacts. Marcotte and Coull [272] identified copepod species from five stations placed on transect in the northern Adriatic Sea along a gradient of municipal raw sewage discharge and showed that diversity was very low near the outfall and increased with increasing distance from the source of pollution. Keller [273] investigated the meiofauna communities in a marine area which was highly polluted by the sewage outfall of Marseille. Lampadariou et al. [274] investigated the nematode and copepod community structure along a grid of seventeen stations covering an area from the innermost polluted to the outer clean area of Heraklion harbour, and showed that the nematode community showed a clear zonation according to the degree of pollution and physical disturbance from shipping activities. They concluded that, besides physical factors such as depth, the high level of organic carbon or pollutants such as copper and cadmium played an important role in structuring the nematode communities. A decline in diversity as a result of disturbance caused by fish farming activities was also reported by Mirto et al. [275] from the Gulf of Gaeta in the NW Mediterranean. *Setosabatieria*, which was the dominant genus, was found to be highly sensitive to organic disturbance as it disappeared completely three months after the deployment of cages. In contrast, other nematode genera, such as *Dorylaimopsis*, *Sabatieria*, and *Oxystomina*, proved to be tolerant and benefited from the new organically enriched conditions.

Information on other marine invertebrates is summarized in Table 1 and Table S1. Total updated registries for the other invertebrate species are of 2168 species (1393 species, excluding Arthropoda).

- Ascidiacea

Ascidiacea comprises the largest Class of the Subphylum Tunicata, a part of the phylum Chordata. Although most abundant at sublittoral rocky communities, they are also adapted to live in abyssal plains [276], and few species are intertidal [277]. The Mediterranean fauna is an important part of the global ascidian fauna of the Atlantic and Mediterranean coasts, which totals approximately 500 species [278]. The ascidians of the Mediterranean Sea have been explored since the second half of the 19th century [e.g. 279,280]. In the first half of the 20th century, important taxonomic works were published [e.g. 281,282,283] that improved the knowledge of Mediterranean ascidian diversity. Pérès [284] listed 130 species in the Mediterranean Sea (although since then some species have been synonymised or have split in several species). Later faunistic and taxonomic studies analysed the diversity of the ascidian fauna in particular areas, especially in the western Mediterranean. In this revision we build on Pérès' work and updated the records of ascidian species in the Mediterranean Sea, as well as their distribution and affinities.

Fiala-Medioni [285] reported 77 species from the SE of France. Turon [286] found 107 species in the NE Spanish littoral. Ramos-Esplá [287], similarly, listed 117 species in the Mediterranean shores of Spain. Naranjo [288] found 84 species in the area around the Gibraltar Straits, 79 of which were present in the Mediterranean side. Koukouras et al. [289] first reviewed the long-neglected ascidian fauna of the eastern Mediterranean, providing a check-list of 86 species in this basin, out of an estimate number of 187 for the whole Mediterranean. Mastrototaro and Tursi [290] provided a check-list of the Italian fauna of ascidians, including 128 species. Aside from these authors, most recent work on ascidian diversity in the Mediterranean has been done by specialists such as Jean-Marie Pérès, Claude and Françoise Monniot, Françoise Lafargue, and Riccardo Brunetti, among others. Building on the work by Pérès [284], and exhaustively searching all posterior reports, we listed 229 ascidian species for the Mediterranean Sea. Although some of the records are dubious, we have eliminated from our list only those species that were clearly invalid or synonyms of other species (Table S25). Overall, the number of new citations incorporated to the database since 1960 is 22.4 species per decade (Figure 13d). Of these, 52 species (46.8% of additions) corresponded to newly described species, not just new reports.

From a biogeographic point of view, Pérès [284] reported a major contribution of endemic Mediterranean species (50%). The second major component consisted of species of Atlantic-Mediterranean distribution (37.7%). A further 11.5% of the species were cosmopolitan or had a circumtropical range. Only one species (*Herdmania momus*) was detected as possible Lessepsian migrant at that time. In the area close to the Straits of Gibraltar, the number of Mediterranean endemics falls to 22% of species, while those of Atlantic-Mediterranean distribution rise to 60% [278]. We currently estimated that the endemic ascidians accounted for 34.9% of the species (Table S25). The species with an Atlantic-Mediterranean distribution accounted for another 46.7% (of which 12.2% were found in the Mediterranean only in the western basin); cosmopolitan and circumtropical species made up 14.4% of the total, and nine species (3.9%) were identified as probable Lessepsian migrants. Izquierdo-Muñoz et al. [291] reviewed introduced ascidian species in the Mediterranean, listing 14 species, and Shenkar and Loya [292] reported the occurrence of seven non indigenous ascidian species in the Mediterranean coasts of Israel, many of which are most likely Lessepsian migrants. Particularly worrisome is the recent report of the clubbed tunicate *Styela clava* in the lagoon of Thau, France [293], given the problems that this species has posed to shellfish industry elsewhere [294]. Although not generally recognized as such, many forms adapted to live in man-made structures, even if they have been present for long times in the Mediterranean, are probably introduced, e.g. *Styela plicata* and *Botryllus schlosseri* [295,296].

The composition of the ascidian fauna of the Mediterranean, with species of temperate and subtropical affinities, makes it sensitive to ongoing global warming [77], and a displacement of species of cold-water affinities in favour of termophilic species [297] is expectable. The arrival of introduced ascidian species to the Mediterranean has received considerable attention in recent years. Many introduced species are confined to artificial environments, but other spread outside and colonize natural substratum, turning into invasive forms. One clear instance is the solitary ascidian *Microcosmus squamiger*, which can reach high densities and carpet natural substrates [298]. This species is now common in western Mediterranean [299], and Streftaris and Zenetos [300] listed this species (as *M. exasperatus*) within the 100 "worst" marine invasive in the Mediterranean.

The trends observed in the known distribution of ascidians from the sixties on indicate that the percentage of endemics is now considerably lower (from 50% to ca. 35%), which is partly caused by the finding of Mediterranean species in adjacent Atlantic waters [e.g. 301]. The number of species known only from one or another basin, which was high and highly skewed towards the western basin, is now much lower and more balanced between basins (Table 2). This is the result of increased knowledge of intra-Mediterranean distribution of many species and, particularly, the rise of studies performed in the eastern basin, which is compensating the previous neglect of this area [e.g. 289,290,302]. Endemic ascidians present at both basins represented 16.9% of Mediterranean ascidians, while 11.3% and 7.4% were endemics reported only in the western and eastern basin, respectively (Table S25).

Ascidian diversity is underreported due to sampling effects, the lack of taxonomists, and inherent difficulties in the taxonomy of the group. Rocky shores in the northern Mediterranean can be considered reasonably well studied, but the Mediterranean African shores still present few studies available [e.g. 303], and may be a hotspot of ascidian biodiversity. This is because this region acts as a refuge for Atlantic-Mediterranean species of tropical affinities, while the northern region of the Mediterranean harbours species with temperate and even boreal affinities. Moreover, much remains to be known about the ascidian fauna in deep waters, or in soft-bottom communities. The ascidians themselves pose important problems for identification, due to the lack of distinctive features in some groups, overlapping of characters between species and, particularly, because observation of characters requires specimens adequately preserved in a relaxed state and ripe, which are hardly available. It is a group where molecular tools can substantially contribute to help taxonomic work. Available studies that have incorporated genetic markers to the research on Mediterranean ascidians showed that cryptic speciation may be much commoner than usually recognized [e.g. 304,305,306].

Ascidians are subjected to different threats such as habitat destruction, degradation, and pollution, as well as global warming, arrival of invasive species, exploitation and other factors [e.g. 307,308]. Mass mortalities have also occurred at some occasions; for instance, an undescribed illness devastated the populations of *Microcosmus sabatieri* in the early 1990s at least along Spanish and French shores. This species was once the most abundant solitary form in the shallow sublittoral and reached abundances of approximately one individual per square meter in NE Spain (X. Turon, personal communication). It is nowadays extremely rare. This is significant because in the Mediterranean, large pyurid species such as *M. polymorphus*, *M. sabatieri* and *M. vulgaris* have been consumed since the 1st century AD [309]. *M. sabatieri* is still abundant in the eastern Mediterranean, where it sustains a small-scale fishery [309,310].

Threats to ascidian biodiversity have also biotechnological implications, as ascidians are producers of some of the most promising anticancer compounds found to date in marine invertebrates [311]. They have originated one drug already marketed (Trabectedin, sold under the brand Yondelis®), obtained from *Ecteinascidia turbinata*, a circumtropical species that used to be farmed in the Balearic Islands before a synthetic production of the drug was achieved in the 1990s). A second compound, Aplidin®, obtained from the Mediterranean species *Aplidium albicans* is in advanced clinical trials.

References

1. Giaccone G (1965) L'algologia e la vegetazione algale in Sicilia. Sicilia 45: 41-47.
2. Tsuda R, Abbott I (1985) Collection, handling, preservation and logistics. In Littler MM, Littler DS (eds) Handbook of phycological methods. Ecological field methods: macroalgae Cambridge: Cambridge University Press. 67-86 p.
3. Athanasiadis A (2002) Taxonomy and systematics of Rhodophyta with reference to the Mediterranean taxa. Flora Mediterranea 12: 93–166.
4. Ribera MA, Gomez GA, Gallardo T, Cormaci M, Furnari G, et al. (1992) Check-list of Mediterranean seaweeds. I: Fucophyceae (Warming, 1884). Botanica Marina 35: 109-130.
5. Gallardo T, Garreta AG, Ribera MA, Cormaci M, Furnari G, et al. (1993) Check-list of Mediterranean seaweeds. II. Chlorophyceae Wille sl. Botanica Marina 36: 399-422.
6. Gómez Garreta A, Gallardo T, Ribera MA, Cormaci M, Furnari G, et al. (2001) Checklist of Mediterranean Seaweeds. III. Rhodophyceae Rabenh. 1. Ceramiales Oltm. Botanica Marina 44: 425-460.
7. Verlaque M (2001) Checklist of the macroalgae of Thau Lagoon (Hérault, France), a hot spot of marine species introduction in Europe. Oceanologica Acta 24: 29-49.
8. Boudouresque CF, Verlaque M (2002) Biological pollution in the Mediterranean Sea: invasive versus introduced macrophytes. Marine Pollution Bulletin 44: 32-38.
9. Cormaci M, Furnari G, Giaccone G, Serio D (2004) Alien macrophytes in the Mediterranean Sea: a review. Recent Research Developments in Environmental Biology 1: 1-202.
10. Verlaque M, Ruitton S, Mineur F, Boudouresque C (in press) CIESM Atlas of Exotic species in the Mediterranean. Vol IV. Macrophytes; Briand F, editor. Monaco: CIESM Publishers.
11. Zenetos A, Meriç E, Verlaque M, Galli P, Boudouresque CF, et al. (2008) Additions to the annotated list of marine alien biota in the Mediterranean with special emphasis on Foraminifera and Parasites. Mediterranean Marine Science 9: 119-165.
12. Ballesteros E, Sansón M, Reyes J, Afonso-Carrillo J, Gil-RodrÌguez MC (1992) New records of benthic marine algae from the Canary Islands. Botanica Marina 35: 513-522.
13. Otero-Schmitt J, Sanjuan A (1992) Epibiotic seaweeds of the Cape Verde Islands. Botanica Marina 35: 379-390.
14. Haroun RJ, Gil-Rodríguez MC, Castro JD, Reine WFP (2002) A checklist of the marine plants from the Canary Islands (Central Eastern Atlantic Ocean). Botanica Marina 45: 139-169.
15. Berecibar E, Wynne MJ, Bárbara I, Santos R (2009) Records of Rhodophyta new to the flora of the Iberian Atlantic coast. Botanica Marina 52: 217-228.
16. Roberts M (1978) Active speciation in the taxonomy of the genus *Cystoseira* C. Agardh. Modern approaches to the taxonomy of the red and brown algae; Irvine D, JH P, editors. Academic, London and New York. 399-422 p.

17. Boudouresque CF (2004) Marine biodiversity in the Mediterranean: status of species, populations and communities. Scientific Reports of Port-Cros National Park, France 20: 97-146.
18. Galil BS (2009) Taking stock: inventory of alien species in the Mediterranean Sea. Biological Invasions 11: 359-372.
19. Boudouresque C, Meinesz A, Ballesteros E, Ben Maiz N, Boisset F, et al. (1990) Livre Rouge "Gérard Vuignier" des végétaux, peuplements et paysages marins menacés de Méditerranée. Athens: UNEP/IUCN/GIS Posidonie. 250 p.
20. Airoldi L, Beck MW (2007) Loss, status and trends for coastal marine habitats of Europe. Oceanography and Marine Biology - An Annual Review 45: 345-405.
21. Romero J (2004) Posidònia: els prats del fons del mar. Badalona: Ajuntament de Badalona 159 p.
22. Thibaut T, Pinedo S, Torras X, Ballesteros E (2005) Long-term decline of the populations of Fucales (*Cystoseira* spp. and *Sargassum* spp.) in the Alberes coast (France, North-western Mediterranean). Marine Pollution Bulletin 50: 1472-1489.
23. Benedetti-Cecchi L, Cinelli F (1996) Patterns of disturbance and recovery in littoral rock pools: nonhierarchical competition and spatial variability in secondary succession. Marine Ecology Progress Series 135: 145-161.
24. Serio D, Alongi G, Catra M, Cormaci M, Furnari G (2006) Changes in the benthic algal flora of Linosa Island (Straits of Sicily, Mediterranean Sea). Botanica Marina 49: 135-144.
25. Munda IM (1993) Changes and degradation of seaweed stands in the Northern Adriatic. Hydrobiologia 260: 239-253.
26. Benedetti-Cecchi L, Pannacciulli F, Bulleri F, Moschella PS, Airoldi L, et al. (2001) Predicting the consequences of anthropogenic disturbance: large-scale effects of loss of canopy algae on rocky shores. Marine Ecology Progress Series 214: 137-150.
27. Ballesteros E (2006) Mediterranean coralligenous assemblages: A synthesis of present knowledge. Oceanography and Marine Biology - An Annual Review 44: 123-195.
28. Hall-Spencer JM, Rodolfo-Metalpa R, Martin S, Ransome E, Fine M, et al. (2008) Volcanic carbon dioxide vents show ecosystem effects of ocean acidification. Nature 454: 96-99.
29. Martin S, Gattuso JP (2009) Response of Mediterranean coralline algae to ocean acidification and elevated temperature. Global Change Biology 15: 2089-2100.
30. Todaro MA, Kristensen RM (1998) A new species and first report of the genus *Nanaloricus* (Loricifera, Nanaloricida, Nanaloricidae) from the Mediterranean Sea. Italian Journal of Zoology 65: 219-226.
31. Hofrichter Rc (2002) El Mar Mediterráneo. Fauna, Flora, Ecología. II/1. Guía Sistemática y de Identificación. Barcelona: Ediciones Omega. 849 p.
32. Baker JM, Funch P, Giribet G (2007) Cryptic speciation in the recently discovered American cycliophoran *Symbion americanus*; genetic structure and population expansion. Marine Biology 151: 2183-2193.
33. Baker JM, Giribet G (2007) A molecular phylogenetic approach to the phylum Cycliophora provides further evidence for cryptic speciation in *Symbion americanus*. Zoologica Scripta 36: 353-359.
34. Uriz MJ, Rosell D, Martín D (1992) The sponge population of the Cabrera Archipelago (Balearic Islands): characteristics, distribution and abundance of the most representative species. PSZNI: Mar Ecol 13: 101-117.
35. Pouliquen L (1972) Les spongiaires des grottes sous-marines de la région de Marseille: écologie et systématique. Téthys: 717-758.

36. Corriero G, Liaci LS, Ruggiero D, Pansini M (2000) The sponge community of a semi-submerged Mediterranean cave. PSZNI Marine Ecology 21: 85-96.
37. Pansini M, Morri C, Bianchi CN (2000) The sponge community of a subtidal area with hydrothermal vents: Milos Island, Aegean Sea. Estuarine, Coastal and Shelf Science 51: 627-635.
38. Voultsiadou E, Vafidis D (2007) Marine invertebrate diversity in Aristotle's zoology. Contributions to Zoology 76: 103-120.
39. Pansini M, Longo C (2003) A review of the Mediterranean Sea sponge biogeography with, in appendix, a list of the demosponges hitherto recorded from this sea. Biogeographia 24: 59-90.
40. Voultsiadou E (2009) Reevaluating sponge diversity and distribution in the Mediterranean Sea. Hydrobiologia 628: 1-12.
41. Van Soest R, Boury-Esnault N, Hooper J, Rützler K, de Voogd N, et al. (2008) World Porifera database: www.marinespecies.org/porifera.
42. SMEBD (2009) World Register of Marine Species. Accessed at http://www.marinespecies.org.
43. Hooper JNA, van Soest RWM (2002) Systema Porifera. A guide to the classification of sponges. New York: Kluwer Academic/Plenum Publishers.
44. Maldonado M, Bergquist P (2006) Phylum Porifera. In: Young C, editor. Atlas of marine invertebrate larvae: Academic Press, Elsevier. pp. 21-50.
45. Maldonado M, Uriz MJ (1995) Biotic affinities in a transitional zone between the Atlantic and the Mediterranean: a biogeographical approach based on sponges. Journal of Biogeography 22: 89-110.
46. Pansini M (1992) Considérations biogéographiques et systématiques pour une mise à jour des données sur les peuplement des spongiaires méditerranéens. Bulletin de l'Institut Océanographique de Monaco 9: 43- 51.
47. Vacelet J, Bitar G, Carteron S, Zibrowius H, Perez T (2007) Five new sponge species (Porifera: Demospongiae) of subtropical or tropical affinities from the coast of Lebanon (eastern Mediterranean). Journal of the Marine Biological Association of the UK 87: 1539-1552.
48. Vacelet J (1969) Eponges de la roche du large et de l'étage bathyale Méditerranée. Mémoires du Muséum national d'Histoire naturelle Ser A 29: 1-219.
49. Boury-Esnault N, Pansini M, Uriz M (1994) Spongiaires bathyaux de la Mer d'Alboran et du golfe Ibero-Marocain. Mémoires du Muséum national d'Histoire naturelle, Zoologie 160: 1-173.
50. Uriz M, Rosell D (1990) Sponges from bathyal depths (1000-1750m) in the Western Mediterranean Sea. Journal of Natural History 24: 373-391.
51. Longo C, Mastrototaro F, Corriero G (2005) Sponge fauna associated with a Mediterranean deep-sea coral bank. Journal of the Marine Biological Association of the UK 85: 1341-1352.
52. Ilan M, Gugel J, Galil BS, Janussen D (2003) Small bathyal sponge species from east Mediterranean revealed by a non-regular soft bottom sampling technique. Ophelia 57: 145-160.
53. Voultsiadou E (2005) Demosponge distribution in the eastern Mediterranean: a NW-SE gradient. Helgoland Marine Research 59: 237-251.
54. Perez T, Vacelet J, Bitar G, Zibrowius H (2004) Two new lithistids (Porifera: Demospongiae) from a shallow eastern Mediterranean cave (Lebanon). Journal of the Marine Biological Association of the UK 84: 15-24.

55. Boury-Esnault N (2006) Systematics and evolution of Demospongiae. Canadian Journal of Zoology 84: 205-224.
56. Worheide G, Sole-Cava AM, Hooper JNA (2005) Biodiversity, molecular ecology and phylogeography of marine sponges: patterns, implications and outlooks. Integrative and Comparative Biology 45: 377.
57. Klautau M, Russo CAM, Lazoski C, Boury-Esnault N, Thorpe JP (1999) Does cosmopolitanism result from overconservative systematics? A case study using the marine sponge Chondrilla nucula. Evolution 53: 1414-1422.
58. Borchiellini C, Chombard C, Manuel M, Alivon E, Vacelet J, et al. (2004) Molecular phylogeny of Demospongiae: implications for classification and scenarios of character evolution. Molecular Phylogenetics and Evolution 32: 823-837.
59. Blanquer A, Uriz MJ (2007) Cryptic speciation in marine sponges evidenced by mitochondrial and nuclear genes: a phylogenetic approach. Molecular Phylogenetics and Evolution 45: 392-397.
60. Blanquer A, Uriz MJ (2008) 'A posteriori' searching for phenotypic characters to describe new cryptic species of sponges revealed by molecular markers (Dictyonelidae: Scopalina). Invertebrate Systematics 22: 489-502.
61. Bell JJ (2008) The functional roles of marine sponges. Estuarine, Coastal and Shelf Science 79: 341-353.
62. Taylor MW, Radax R, Steger D, Wagner M (2007) Sponge-associated microorganisms: evolution, ecology, and biotechnological potential. Microbiology and Molecular Biology Reviews 71: 295.
63. Wulff JL (2006) Ecological interactions of marine sponges. Canadian Journal of Zoology 84: 146-166.
64. Carballo JL, Naranjo S (2002) Environmental assessment of a large industrial marine complex based on a community of benthic filter-feeders. Marine Pollution Bulletin 44: 605-610.
65. Stocks K (2004) Seamount invertebrates: Composition and vulnerability to fishing. In: Morato T, Pauly D, editors. Seamounts: Biodiversity and Fisheries. Vancouver: Fisheries Centre Research Reports. pp. 1-78.
66. Coma R, Ribes M, Serrano E, Jimenez E, Salat J, et al. (2009) Global warming-enhanced stratification and mass mortality events in the Mediterranean. Proceedings of the National Academy of Sciences of the United States of America 106: 6176-6181.
67. Webster NS (2007) Sponge disease: a global threat? Environmental Microbiology 9: 1363-1375.
68. Garrabou J, Coma R, Bensoussan N, Bally M, Chevaldonne P, et al. (2009) Mass mortality in Northwestern Mediterranean rocky benthic communities: effects of the 2003 heat wave. Global Change Biology 15: 1090-1103.
69. Koukouras A, Russo A, Voultsiadou-Koukoura E, Arvanitidis C, Steffanidou D (1996) Macrofauna associated with sponge species of different morphology. PSZNI Marine Ecology 17: 569-582.
70. Pronzato R, Manconi R (2008) Mediterranean commercial sponges: over 5000 years of natural history and cultural heritage. PSZNI Marine Ecology 29: 146-166.
71. Pronzato R, Cerrano C, Cubeddu T, Magnino G, Manconi R, et al. (2000) The millennial history of commercial sponges: from harvesting to farming and integrated aquaculture. Biologia Marina Mediterranea 7: 132-143.

72. Voultsiadou E, Vafidis D, Antoniadou C (2008) Sponges of economical interest in the Eastern Mediterranean: an assessment of diversity and population density. Journal of Natural History 42: 529-543.
73. Uriz MJ, Martin D, Rosell D (1992) Relationships of biological and taxonomic characteristics to chemically mediated bioactivity in Mediterranean littoral sponges. Marine Biology 113: 287-297.
74. van Treeck P, Eisinger M, Müller J, Paster M, Schuhmacher H (2003) Mariculture trials with Mediterranean sponge species. The exploitation of an old natural resource with sustainable and novel methods. Aquaculture 218: 439-455.
75. Corriero G, Longo C, Mercurio M, Nonnis Marzano C, Lembo G, et al. (2004) Rearing performance of *Spongia officinalis* on suspended ropes off the Southern Italian Coast (Central Mediterranean Sea). Aquaculture 238: 195-205.
76. Pronzato R (1999) Sponge-fishing, disease and farming in the Mediterranean Sea. Aquatic Conservation: Marine and Freshwater Ecosystems 9: 485-493.
77. Lejeusne C, Chevaldonné P, Pergent-Martini C, Boudouresque C, Pérez T (2010) Climate change effects on a miniature ocean: the highly diverse, highly impacted Mediterranean Sea. Trends in Ecology & Evolution 1204: published online. DOI 10.1016/j.tree.2009.1010.1009.
78. Bouillon J, Medel MD, Pagès F, Gili JM, Boero F, et al. (2004) Fauna of the Mediterranean Hydrozoa. Scientia Marina 68 (Suppl. 2): 1-454.
79. Carpine C, Grasshoff M (1975) Les Gorgonaires de la Méditerranée. Bulletin de l'Institut Océanographique 71: 1-140.
80. Weinberg S (1976) Revision of the common Octocorallia of the Mediterranean circalittoral. I. Gorgonacea. Beaufortia 24: 63-104.
81. Ribes M, Coma R, Rossi S (2003) Natural feeding of the temperate asymbiotic octocoral-gorgonian *Leptogorgia sarmentosa* (Cnidaria: Octocorallia). Marine Ecology Progress Series 254: 141-150.
82. Schlichter D (1982) Nutrional Strategies of Cnidarians: The Absorption, Translocation and Utilization of dissolved nutrients by Heteroxenia fuscescens. American Zoologist 22: 659-669.
83. Freiwald A (2002) Reef-forming cold-water corals. In: Wefer G, Billett D, Hebbeln D, Jorgensen BB, Schluter M et al., editors. Ocean Margin Systems. Berlin, Heidelberg: Springer-Verlag.
84. O'Brien T (2005) The symbiotic association between intracellular zoochlorellae (shlorophyceae) and the coelenterate *Anthopleura xanthogrammica*. Journal of Experimental Zoology 211: 343-355.
85. Bitar G, Zibrowius H (1997) Scleractinian corals from Lebanon, Eastern Mediterranean, including a non-lesspsian invading species (Cnidaria: Scleractinia). Scientia Marina 61: 227-231.
86. Galil BS (2006) Shipwrecked: shipping impacts on the biota of the Mediterranean Sea. In: Davenport JL, Davenport J, editors. The ecology of transportation: managing mobility for the environment: Springer. pp. 39-69.
87. Fine M, Aluma Z, Meroz-Fine Z, Abelson A, Loya Z (2005) *Acabaria erythraea* (Octocorallia: Gorgonacea) a successful invader to the Mediterranean Sea? Coral Reefs 2: 161-164.
88. Vafidis D, Koukouras A, Voultsiadou-Koukoura E (1994) Octocoral fauna of the Aegean Sea with check list of the Mediterranean species: New information, faunal comparisons. Annales de l'Institut Océanographique 70: 217-229.

89. Hofrichter Rc (2003) Das Mittelmeer, Fauna, Flora, Ökologie, Band II: Bestmmungsführer. Heidelberg: Spektrum Akademischer Verlag. 890 p.
90. Vafidis D (2008) First record of *Leptogorgia sarmentosa* Esper, 1789 (Octocorallia, Gorgoniidae) from the Eastern Mediterranean Sea. Journal of the Marine Biological Association of the United Kingdom 2: 1-2.
91. Por F, Dimentman C (1989) The Legacy of Tethys: an aquatic biogeography of the Levant. In Monographiae Biologicae; Dumont HJ, Wergel MJA, editors: Dordrecht: Kluwer Academic Publishers. 1-214 p.
92. Tsounis G, Rossi S, Gili JM, Arntz WE (2007) Red coral fishery at the costa brava (NW mediterranean): Case study of an overharvested precious coral. Ecosystems 10: 975-986.
93. Watters MR. Tropical marine neurotoxins: venoms to drugs; 2005. Thieme-Stratton Inc. pp. 278-289.
94. Santangelo G, Abbiati M (2001) Red coral fishing trends in the western Mediterranean species. Aquatic Conservation: Marine and Freshwater Ecosystems 11: 253-259.
95. OCEANA (2006) The corals of the Mediterranean: Fondazione Zegna. 83 p.
96. Bouchet P, Lozouet P, Maestrati P, Heros V (2002) Assessing the magnitude of species richness in tropical marine environments: exceptionally high numbers of molluscs at a New Caledonia site Peer reviewed article. Botanical Journal of the Linnean Society 75: 421-436.
97. Luque A, Templado J (1981) Estudio de una tanatocenosis de moluscos de la isla de Sa Torreta (Formentera). Iberus 1: 23-32.
98. Sabelli B, Giannuzzi-Savelli R, Bedulli D (1990) Catalogo annotato dei molluschi marini del Mediterraneo; Bolognese LN, editor. Bologna. 348 p.
99. Bello G (2004) The biogeography of Mediterranean cephalopods. Biogeographia 24: 201–217.
100. Peñas A, Rolán E, Luque AA, Templado J, Moreno D, et al. (2006) Moluscos marinos de la isla de Alborán. Iberus 24(1): 23-151.
101. Zenetos A, Gofas S, Russo G, Templado J (2004) CIESM atlas of exotic species in the Mediterranean. Vol. 3. Molluscs; Brian F, editor. Monaco: CIESM Publishers. 376 p.
102. Gofas S, Zenetos A (2004) Exotic molluscs in the Mediterranean basin: current status and perspectives. Oceanography and Marine Biology - An Annual Review 41: 237-277.
103. Calvo M, Templado J, Oliverio M, Machordom A (2009) Hidden Mediterranean biodiversity: molecular evidence for a cryptic species complex within the reef building vermetid gastropod *Dendropoma petraeum* (Mollusca: Caenogastropoda). Biological Journal of the Linnean Society 96: 898-912.
104. Meinesz A, Mercier D (1983) Sur les fortes mortalités de *Spondylus gaederopus* Linné observées sur les cotes de la méditerranée. Trav Sci Parc Natl Port-Cros 9: 89-95.
105. Templado J, Calvo M, Luque AA, Garvía A, Maldonado M, et al. (2004a) Guía de los invertebrados y peces marinos españoles protegidos por la legislación nacional e internacional. Madrid: Ministerio de Medio Ambiente, Serie Técnica. 214 p.
106. Sánchez P, Martín P (1993) Population dynamics of the exploited cephalopod species of the Catalan Sea (NW Mediterranean). Scientia Marina 57: 153-159.
107. Belcari P, Sartor P, Sanchez P, Demestre M, Tsangridis A, et al. (2002) Exploitation patterns of the cuttlefish, *Sepia officinalis* (Cephalopoda, Sepiidae), in the Mediterranean Sea. Bulletin of Marine Science 71: 187-196.
108. Russo G, Cicogna F (1991) The date mussel (*Lithophaga lithophaga*), a ”case” in the Gulf of Naples. In: Boudoureque CF, Avon M, Gravez V, editors. Les especes marines a proteger en Méditerranée GIS Posidonie. Marseille. pp. 141-150.

109. Fanelli G, Piraino S, Belmonte G, Geraci S, Boero F (1996) Human predation along Apulian rocky coasts (SE Italy): desertification caused by *Lithophaga lithophaga* (Mollusca) fisheries. Biological Conservation 76: 216-216.
110. Guidetti P, Fraschetti S, Terlizzi A, Boero F (2004) Effects of Desertification Caused by *Lithophaga lithophaga* (Mollusca) Fishery on Littoral Fish Assemblages along Rocky Coasts of Southeastern Italy. Conservation Biology 18: 1417-1423.
111. Martin D, Claret M, Pinedo S, Sardà R (1997) Vertical and spatial distribution of near-shore littoral meroplankton off the Bay of Blanes (NW Mediterranean sea). Journal of Plankton Research 19: 2079-2089.
112. Osborn KJ, Haddock SHD, Pleijel F, Madin LP, Rouse GW (2009) Deep-Sea, swimming worms with luminescent "Bombs". Science 325: 964-.
113. Osborn KJ, Rouse GW, Goffredi SK, Robison BH (2007) Description and relationships of *Chaetopterus pugaporcinus*, an unusual pelagic polychaete (Annelida, Chaetopteridae). Biological Bulletin Marine Biological Laboratory, Woods Hole 212: 40-54.
114. Sardà R, Gil J, Taboada S, Gili JM (2009) Polychaete species captured in sediment traps moored in northwestern Mediterranean submarine canyons. Zoological Journal of the Linnean Society 155: 1-21.
115. Lattig P, San Martín G, Martin D (2007) Taxonomic and morphometric analyses of the *Haplosyllis spongicola* complex (Polychaeta: Syllidae: Syllinae) from Spanish seas, with re-description of the type species and descriptions of two new species. Scientia Marina 71: 551-570.
116. Virgilio M, Fauvelot C, Costantini F, Abbiati M, Backeljau T (2009) Phylogeography of the common ragworm *Hediste diversicolor* (Polychaeta: Nereididae) reveals cryptic diversity and multiple colonization events across its distribution. Molecular Ecology 18: 1980-1994.
117. Glasby CJ, Timm T (2008) Global diversity of polychaetes (Polychaeta; Annelida) in freshwater. Hydrobiologia 595: 107-115.
118. Knox GA, Reish DJ, Fauchald K (1977) The role of polychaetes in benthic soft-bottom communities. Essays on Polychaetous Annelids in Memory of Dr Olga Hartman. Los Angeles. pp. 547-604.
119. Fauchald K, Jumars PA (1979) The diet of worms: A study of polychaete feeding guilds. Oceanography and Marine Biology - An Annual Review 17: 193-284.
120. Martin D, Britayev TA (1998) Symbiotic polychaetes: Review of known species. Oceanography and Marine Biology - An Annual Review 36: 217-340.
121. Bellan G (1991) Inventaire de la faune des Annélides Polychètes de Méditerranée. CIESM 32: 105-106.
122. Arvanitidis C, Bellan G, Drakopoulos P, Valavanis V, Dounas C, et al. (2002) Seascape biodiversity patterns along the Mediterranean and the Black Sea: lessons from the biogeography of benthic polychaetes. Marine Ecology Progress Series 244: 139-152.
123. Lattig P, Martin D (2009) A taxonomic revision of the genus *Haplosyllis Langerhans*, 1887 (Polychaeta: Syllidae: Syllinae). Zootaxa 2220: 1-40.
124. Barnich R, Gil J, Fiege D (2000) Revision of the genus *Acanthicolepis* Norman in McIntosh, 1900 (Polychaeta, Polynoidae, Polynoinae). Sarsia 85: 313-319
125. Warwick RM, Clarke KR (2001) Practical measures of marine biodiversity based on relatedness of species. Oceanography and Marine Biology - An Annual Review 39: 207–231.
126. Clarke KR, Warwick RM (2001) A further biodiversity index applicable to species lists: variation in taxonomic distinctness. Marine Ecology Progress Series 216: 265–278.

127. Clarke KR, Warwick RM (1998) A taxonomic distinctness index and its statistical properties. Journal of Applied Ecology 35: 523–531.
128. Viéitez JM, Alós C, Parapar J, Besteiro C, Moreira J, et al. (2004) Annelida Polychaeta I; Ramos MAc, editor. Madrid: Fauna Ibérica, CSIC.
129. San Martín G (2003) Annelida, Polychaeta II: Syllidade; Ramos MA, Alba J, Bellés X, Gosálbez J, Guerra A et al., editors: Madrid: CSIC. 554 p.
130. Martin D, Gil J, Carreras-Carbonell J, Bhaud M (2008) Description of a new species of *Mesochaetopterus* (Annelida, Polychaeta, Chaetopteridae), with re-description of *Mesochaetopterus xerecus* and an approach to the phylogeny of the family. Zoological Journal of the Linnean Society 152: 201-225.
131. Zenetos A, Çinar ME, Pancucci-Papadopoulou MA, Harmelin JG, Furnari G, et al. (2005) Annotated list of marine alien species in the Mediterranean with records of the worst invasive species. Mediterranean Marine Science 6: 63.
132. Sahin GK, Çinar ME (2009) Eunicidae (Polychaeta) species in and around İskenderun Bay (Levantine Sea, Eastern Mediterranean) with a new alien species for the Mediterranean Sea and a re-description of *Lysidice collaris*. Turkish Journal of Zoology 33: 331-347.
133. Linné CV (1767) Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Stockholm.
134. Bianchi CN, Morri C (2001) The battle is not to the strong: Serpulid reefs in the Lagoon of Orbetello (Tuscany, Italy). Estuarine Coastal and Shelf Science 53: 215-220.
135. Kocak F, Ergern Z, Çinar ME (1999) Fouling organisms and their development in a polluted and an unpolluted marina in the Aegean Sea (Turkey). Ophelia 50: 1-20.
136. Thorpe JP, Solé-Cava AM, Watts PC (2000) Exploited marine invertebrates: genetics and fisheries. Hydrobiologia 420: 165-184.
137. Tabrah FL, Kashiwagi M, Norton TR (1970) Antitumor activity in mice of tentacles of two tropical sea annelids. Science 170: 181-183.
138. Martin D, Le Nourichel C, Uriz MJ, Bhaud M, Duchêne C (2000) Ontogenic shifts in chemical defences in the NW Mediterranean *Eupolymnia nebulosa* (Polychaeta, Terebellidae). In: Proceedings of the VI International Polychaete Conference. Bulletin of Marine Science 67: 287-298.
139. Olive PJW (1994) Polychaeta as a world resource: a review of exploitation as a sea angling baits, and the potential for aquaculture based production. Mémoires du Muséum National d'Histoire Naturelle, Paris 162: 603-610.
140. Gambi MC, Castelli A, Giangrande A, Prevedelli D, Zunarelli-Vandini R (1994) Polychaetes of commercial and applied interest in Italy: an overview. Mémoires du Muséum National d'Histoire Naturelle, Paris 162: 593-602.
141. Eisig H (1906) *Ichthyotomus sanguinarius*, eine auf Aalen schmarotzende Annelide. Fauna und Flora des Golfes von Neapel 28: 1-300.
142. Corbera J, San Vicente C, Sorbe JC (2000) Small-scale distribution, life cycle and secondary production of *Cumopsis goodsir* in Creixell Beach (Western Mediterranean). Journal of the Marine Biological Association of the UK 80: 271-282.
143. Macquart-Moulin C (1991) The nocturnal pelagic phases of cumaceans. Journal of Plankton Research 13: 313-337.
144. Bacescu M (1941) Les Mysidacés des eaux méditerranéennes de la France (spécialment de Banyuls) et des eaux de Monaco. Bulletin de l´Institut Océanographique 795: 1-46.
145. Mauchline J (1980) The biology of mysids and euphausiids; Blaxter J, Russell F, Yonge M, editors. London: Academic Press. 681 p.

146. San Vicente C (2004) Curso Práctico de Entomología; Barrientos JA, editor: Asociación Española de Entomología, CIBIO.Centro Iberoamericano de la Biodiversidad. Universitat Autònoma de Barcelona. Servei de Publicacions. 363-378 p.
147. Wittmann KJ (1999) Global biodiversity in Mysidacea, with notes on the effects of human impact. In: Schram FR, von Vaupel Klein JC, editors. Crustaceans and the Biodiversity Crisis: Brill, Leiden Boston, Köln. pp. 511-525.
148. San Vicente C, Sorbe JC (1993) Estudio comparado del suprabentos de las playas catalanas y vascas. Metodología y resultados preliminares. Publicaciones Especiales del Instituto Español de Oceanografia 11: 299-304.
149. Cartes JE, Sorbe JC, Sardà F (1994) Spatial distribution of deep-sea decapods and euphausiids near the bottom in the northwestern Mediterranean. Journal of Experimental Marine Biology and Ecology 179: 131-144.
150. Risso A (1826-1827) Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environs de Nice et des Alpes Maritimes. 5 volumens: F.G. Levrault Libraire, Paris.
151. Roux P (1828-1830) Crustacés de la Méditerranée et de son littoral: Imprimerie D'Achard, Marseille.
152. Costa OG, Costa A (1836-71) Crostacei ed Aracneidi, Fauna del Regno di Napoli. 3692 p., 3408 pls. p.
153. Olivi G (1792) Zoologia Adriatica. Ossia Catalogo ragionato degli Animali del Golfo e delle Lagune; preceduto da una Dissertazione sulla Storia fisica e naturale del Golfo; e accompagnato da Memorie ed Osservazioni. Bassano. 9 pls, xxxii + 334 p.
154. Nardo GD (1847) Sinonimia moderna delle specie registrate nell'opera intitolata: Descrizione de' Crostacei e de' Pesci che abitano le lagune e golfo Veneto rappresentati in figure, a chiaro-scuro ed a colori dall'abate Stefano Chiereghini ven. clodiense applicata per commisione governativa: Antonelli, Venezia. 127 p.
155. Milne-Edwards A (1882) Rapport sur les travaux de la commission chargée par M. le Ministre de l'instruction publique d'etudier la Faune sous-marine dans les grandes profondeurs de la Méditerranée et de l'Ocean Atlantique. Archives des Missions Scientifiques et Litteraires 3: 1-59.
156. Giglioli EH (1882) Rapport préliminaire sur les recherches relatives à la faune sous-marine de la Méditerranée faites en juillet et septembre 1881, à bord du pyroscaphe «Washington», sous le commandement du Capitain de vaisseau G. B. Magnaghi (extrait). Annales des Sciences Naturelles 6: 1-28.
157. Adensamer T (1898) Zoologische Ergebnisse. XI. Decapoden gesammelt auf S.M. Schiff "Pola" in den Jahren 1890-1894. Berichte der Commission für Erforschung des Östlichen Mittelmeres, XXII Denkschriften der Mathematisch-naturwissenschaftlichen Klasse der kaiserlichen Akademie der Wissenschaften in Wien 65: 597-628.
158. Heller C (1863) Crustaceen des Südlichen Europa. Wien. 10 pls, 336 p.
159. Pesta O (1918) Die Decapodenfauna der Adria. Versuch einer Monographie. Leipzig und Wien: Franz Deuticke Verlag. 500 pp,501 pl p.
160. Holthuis LB, Gottlieb E (1958) An annotated list of the Decapod crustacea of the Mediterranean coast of Israel, with an appendix listing the Decapoda of the Eastern Mediterranean. Bulletin of the Research Council of Israel 7B: 1-126.
161. Zariquiey Alvarez R (1968) Crustáceos Decápodos Ibéricos. Investigación Pesquera 32: xv + 510.

162. Udekem d'Acoz Cd (1999) Inventaire et distribution des crustacés décapodes de l'Atlantique nord-oriental, de la Méditerranée et des eaux continentales adjacentes au nord de 25° N. 383. Patrimoines Naturels (MNHN/PN) 40: 1-383.
163. Cartes J, Sorbe JC (1993) Les communautés suprabenthiques bathyales de la Mer Catalane (Méditerranée occidentale): données préliminaires sur la répartition bathymétrique et l'abondance des Crustacés Péracarides. Crustaceana 64: 155-171.
164. Munilla T, Corrales MJ, San Vicente C (1998) Suprabenthic assemblages from Catalan beaches: zoological groups. Orsis 13: 67-78.
165. Corbera J, Galil BS (2007) Colonisation of the eastern Mediterranean by Red Sea cumaceans, with the description of a new species. Scientia Marina 71: 29-36.
166. Wittmann KJ, Ariani AP (2009) Reappraisal and range extension of non-indigenous Mysidae (Crustacea, Mysida) in continental and coastal waters of eastern France. Biological Invasions 11: 401-407.
167. CIESM (2009b) CIESM Atlas of Exotic Species in the Mediterranean Sea: http://www.ciesm.org/online/atlas/index.htm.
168. Abdel Razek F (1987) Crab fishery of the Egyptian waters with notes on the bionomics of *Portunus pelagicus* (L.). Acta Adriatica 28: 143-154.
169. Galil BS (2007) Seeing red: Alien species along the Mediterranean coast of Israel. Aquatic Invasions 2: 281-312.
170. García-Gómez J (1994) The systematics of the genus *Anapagurus* Henderson, 1886, and a new genus for Anapagurus drachi Forest, 1966 (Crustacea: Decapoda: Paguridae). Zoologische Verhandelingen 295: 1-131.
171. Dworschak P, Anker A, Abed-Navandi D (2000) A new genus and three new species of alpheids (Decapoda: Caridea) associated with thalassinids. Annalen der Naturhistorischen Museums in Wien 102B: 301-320.
172. Martin JW, Davis GE (2006) Historical trends in crustacean systematics. Crustaceana 79: 1347-1368.
173. Wieser W (1959) The effect of grain size on the distribution of small invertebrates inhabiting the beaches of Puget Sound. Limnology and Oceanography 4: 181-194.
174. Corbera J, Cardell MJ (1995) Cumaceans as indicators of eutrophication on soft bottoms. Scientia Marina 59 (Suppl. 1): 63-69.
175. Lejeusne C, Chevaldonné P (2005) Population structure and life history of *Hemimysis margalefi* (Crustacea: Mysidacea), a 'thermophilic' cave-dwelling species benefiting from the warming of the NW Mediterranean. Marine Ecology Progress Series 287: 189-199.
176. Wittmann KJ (2001) Centennial changes in the near-shore mysid fauna of the Gulf of Naples (Mediterranean Sea), with description of *Heteromysis riedli* sp. n. (Crustacea, Mysidacea). PSZNI Marine Ecology 22: 85-109.
177. Zabala M (1986) Fauna dels Briozous dels Paisos Catalans. Barcelona: Arxius de la Secció de Ciències 84. Institut d'Estudis Catalans. 833 p.
178. Zabala M, Maluquer P (1988) Illustrated keys for the classification of Mediterranean Bryozoa: Treballs del Museu de Zoologia de Barcelona. 1-294 p.
179. Harmelin JG, Aristegui J (1988) New Cribrilinidae (Bryozoa, Cheilostomata) from the upper bathyal of the Atlanto-Mediterranean region. Journal of Natural History 22: 507-535.
180. López de la Cuadra CM, Garcia Gomez JC (1988) Briozoos queilostomados del Estrecho de Gibraltar y áreas próximas. Cahiers de Biologie Marine 29: 21-36.
181. López de la Cuadra CM, García Gómez JC (1993) Little-known Atlantic Cheilostome Bryozoans at the entrance to the Mediterranean. Journal of Natural History 27: 457–469.

182. López de la Cuadra CM, García Gómez JC (1994) Zoogeographical study of the Cheilostomatida from the Straits of Gibraltar. In: Hayward PJ, Ryland JS, Taylor PD, editors. Biology nad Palaeobiology of Bryozoans. Fredensborg: Olsen & Olsen. pp. 107-112.
183. López de La Cuadra CM, Gomez JCG (2001) New and little-known ascophoran bryozoans from the Western Mediterranean, collected by Fauna Iberica'expeditions. Journal of Natural History 35: 1717-1732.
184. López de la Cuadra CM, García Gómez JC (2004) Foronídeos, Braquiópodos y Briozoos. Fauna Andaluza. In: Tinaut JA, Pascual F, editors. Proyecto Andalucía Naturaleza XV Zoología III Sevilla: Publicaciones Comunitarias, S.L. pp. 51-70.
185. Álvarez JA (1992) Sobre algunas especies de la familia Lichenoporidae Smitt, 1866 (Bryozoa, Cyclostomida) en la región Atlanto-Mediterránea. Parte I: género Disporella Gray, 1848. Cahiers de Biologie Marine 33: 201-243.
186. Álvarez JA (1992) Briozoos de la Campaña Fauna I. Parte Primera: Ctenostomida, Cheilostomida y Anascina. Cahiers De Biologie Marine 33.
187. Álvarez JA (1993) Sobre algunas especies de la familia Lichenoporidae Smitt, 1866 (Bryozoa, Cyclostomida) en la región Atlanto-Mediterránea. Parte II: estudio preliminar del género Lichenopora Defrance, 1823 Cahiers De Biologie Marine 34: 261-288.
188. Álvarez JA (1994) La famille des Lichenoporidae (Bryozoa, Cyclostomida) dans les provinces Atlanto-Méditerarnéenne et Boréale. Partie III: étude des collections du Muséum National d´Histoire Naturelle de Paris. Cahiers De Biologie Marine 35: 491-509.
189. Álvarez JA (1994) Briozoos de la Campaña Fauna I. Parte II: Cheilostomida, Ascophorina y Cyclostomida. Graellsia 50: 129-145.
190. Harmelin JG, d'Hondt JL (1992) Bryozoaires del parages de Gibraltar (campagne océanographique BALGIM, 1984). 2 - Ctenostomes et Cyclostomes. Bulletin du Museum National d'Histoire Naturelle, Paris Serie 2 14: 605-621.
191. Prenant M, Bobin G (1956) Bryozoaires, 1ère partie. Entoproctes, Phylactolémes, Ctènostomes. Faune de France 60: 1-398.
192. Prenant M, Bobin G (1966) Bryozoaires, 2ème partie. Cheilostomes Anasca. Faune de France 68: 1-647.
193. Gautier YV (1962) Recherches écologiques sur les Bryozoaires Chilostomes en Méditerranée occidentale. Recl Trav Stn mar Endoume 38: 1-434.
194. Harmelin JG (1969) Bryozoaires des grottes sous-marines obscures de la région marseillaise. Faunistique et écologie. Tethys 1: 793-806.
195. Harmelin JG (1976) Le sous-ordre des Tubuliporina (Bryozoa Cyclostomata) en Méditerranée. Systematique et écologie. Mémoires de l'Institut Océanographique de Monaco 10: 1-326.
196. Harmelin JG (1977) Briozoaires des Iles d'Hyères: Cryptofaune des valves vides de Pinna nobilis rencontrés dans les harbiers de posidonies. Scientific Reports of Port-Cros National Park, France 3: 143-157.
197. Harmelin JG (1978) Briozoaires des Iles d'Hyères: II - Inventaire des fonds détritiques. Scientific Reports of Port-Cros National Park, France 4: 127-147.
198. Geraci S, Relini G (1970) Osservazioni sistematico-ecologiche sui Briozoi del fouling portuale di Genova. Bollettino del Museo dell'Istituto di Biologia dell'Universita di Genova 38: 103–139.
199. Geraci S (1973) Popolamenti di substrati artificiali posti in fonds a "coralligeno" e in una prateria de Posidonia, II: I Briozoi. Publ Staz Zool Napoli 40: 53-68.

200. Occhipinti Ambrogi A (1981) Briozoi lagunari. CNR, Roma, Guide per il riconoscimento delle specie animali delle acque lagunari e costiere italiane, AQ/1/126 7: 1-146.
201. Hayward PJ, McKinney FK (2002) Northern Adriatic Bryozoa from the vicinity of Rovinj, Croatia. Bulletin of the American Museum of Natural History: 1-139.
202. Canu F, Bassler RS (1930) Bryozoaires marines de Tunisie. Ann St Océan Salambo 5: 1-91.
203. D'Hondt J-L (1988) Bryozoa from the coast of Israel. Italian Journal of Zoology 3: 191-203.
204. Harmelin JG (1968) Bryozoaires récoltés au cours de la campagne du Jean Charcot en Méditerranée orientale (août-septembre 1967). I. Dragages. Bulletin du Museum National d'Histoire Naturelle, Paris Serie 2 40: 1179-1208.
205. D'Hondt JL (1983) Tabular keys for the identification of Recent Ctenostomatous Bryozoa. Memoires de l' Institut Océanographique Monaco 14: 1-134.
206. Perez T, Garrabou J, Sartoretto S, Harmelin JG, Francour P, et al. (2000) Mortalité massive d'invertébrés marins: un événement sans précédent en Méditerranée nord-occidentale. Comptes Rendus de l'Academie des Sciences-Serie III-Sciences de la Vie 323: 853-866.
207. Sala E, Garrabou J, Zabala M (1996) Effects of diver frequentation on Mediterranean sublittoral populations of the bryozoan *Pentapora fascialis*. Marine Biology 126: 451-459.
208. Tortonese E (1979) Review of present status of knowledge of the Mediterranean Echinoderms. Proceedings of the European colloquium on echinoderms Brussels: 141-149.
209. Koukouras A, Sinis AI, Bobori D, Kazantzidis S, Kitsos MS (2007) The echinoderm (Deuterostomia) fauna of the Aegean Sea, and comparison with those of the neighbouring seas. Journal of Biological Research-Thessaloniki 7: 67-92.
210. Tanti CM, Schembri PJ (2006) A synthesis of the echinoderm fauna of the Maltese islands. Journal of the Marine Biological Association of the UK 86: 163-165.
211. Yokes B, Galil BS (2006) The first record of the needle-spined urchin *Diadema setosum* (Leske, 1778) (Echinodermata: Echinoidea: Diadematidae) from the Mediterranean Sea. Aquatic Invasions 1: 188–190.
212. Pagès F, Martín J, Palanques A, Puig P, Gili JM (2007) High occurrence of the elasipodid holothurian Penilpidia ludwigi (von Marenzeller, 1893) in bathyal sediment traps moored in a western Mediterranean submarine canyon. Deep-Sea Research Part I 54: 2170-2180.
213. Despalatović M, Grubelić I, Piccinetti C, Cvitković I, Antolić B, et al. (2009) Distribution of echinoderms on continental shelf in open waters of the northern and middle Adriatic Sea. Journal of the Marine Biological Association of the UK 89: 585-591.
214. Borrero-Pérez GH, Pérez-Ruzafa A, Marcos C, González-Wangüemert M (2009) The taxonomic status of some Atlanto-Mediterranean species in the subgenus Holothuria (Echinodermata: Holothuroidea: Holothuriidae) based on molecular evidence. Zoological Journal of the Linnean Society 157: 51-69.
215. Robinson AR, Malanotte-Rizzoli P, Hecht A, Michelato A, Roether W, et al. (1992) General circulation of the Eastern Mediterranean. Earth Science Reviews 32: 285-309.
216. Lascaratos A, Roether W, Nittis K, Klein B (1999) Recent changes in deep water formation and spreading in the eastern Mediterranean Sea: a review. Progress in Oceanography 44: 5-36.
217. Özsoy E, Hecht A, Ünlüata Ü, Brenner S, Sur HI, et al. (1993) A synthesis of the Levantine Basin circulation and hydrography, 1985-1990. Deep-sea research Part 2 Topical studies in oceanography 40: 1075-1119.
218. Bianchi CN, Morri C (2000) Marine biodiversity of the Mediterranean Sea: Situation, problems and prospects for future research. Marine Pollution Bulletin 40: 367-376.

219. Por FD, Dimentman C (2006) Mare Nostrum: Neogene and anthropic natural history of the Mediterranean basin, with emphasis on the Levant. Bulgaria: Pensoft Publishers.
220. Tzomos T, Kitsos S, Christodoulou M, Koukouras A, Eleftheriou A (2007) Investigation of the evolution and dispersion rates of the Lessepsian Pisces in the Mediterranean. In: Alien aquatic species in eastern Mediterranean Proceedings of the 1st Panhellenic Conference - 5-6th November 2007, HCMR, Crete, editor.
221. Tzomos T, Kitsos S, Mavidis M, Arvanitidis C, Koukouras A (2007) Investigation of the evolution and dispersion rates of the Lessepsian Mollusca in the Mediterranean. In: Alien aquatic species in eastern Mediterranean. Proceedings of the 1st Panhellenic Conference - 5-6th November 2007, HCMR, Crete, editor.
222. Koukouras A, Kitsos MS, Tzomos T, Tselepides A (in press) Evolution of the entrance rate and of the spatio-temporal distribution of the lessepsian Decapoda (Crustacea) in the Mediterranean Sea. Crustaceana.
223. Antoniadou C, Vafidis D (2009) Updated distribution of the holothuroid *Synaptula reciprocans* (Forskal, 1775) in the Mediterranean: does it follow shallow-water circulation patterns? Aquatic Invasions 4: 361-363.
224. Palacin C, Giribet G, Carner S, Dantart L, Turon X (1998) Low densities of sea urchins influence the structure of algal assemblages in the western Mediterranean. Journal of Sea Research 39: 281-290.
225. Sala E, Boudouresque CF, Harmelin-Vivien M (1998) Fishing, trophic cascades, and the structure of algal assemblages: evaluation of an old but untested paradigm. Oikos 82: 425-439.
226. Pancucci-Papadopoulou MA, Murina GV, Zenetos A (1999) The phylum Sipuncula in the Mediterranean Sea. Monographs on Marine Sciences 2: 1-109.
227. Murina VV (2002) Novyi podvid morskikh chervei (Sipuncula, Golfingiidae) iz Egeiskogo morya. Vestnik zoologii 36: 87-88.
228. Açik S, Murina GV, Çinar ME, Ergen Z (2005) Sipunculans from the coast of northern Cyprus (eastern Mediterranean Sea). Zootaxa 1077: 1-23.
229. Açik S (2007) Observations on the population characteristics of *Apionsoma (Apionsoma) misakianum* (Sipuncula: Phascolosomatidae), a new species for the Mediterranean fauna. Scientia Marina 71: 571-577.
230. Açik S (2008) Occurrence of the alien species *Aspidosiphon (Aspidosiphon) elegans* (Sipuncula) on the Levantine and Aegean Coasts of Turkey. Turkish Journal of Zoology 32: 443-448.
231. Açik S (2009) Soft-bottom sipunculans in Izmir Bay (Aegean Sea, eastern Mediterranean). Zootaxa 2136: 40-48.
232. Murina VV (1975) The geographical distribution of marine worms of the phylum Sipuncula of the World Ocean. In: Rice ME, Todorovic M, editors. Proceedings of the International Symposium on the Biology of Sipuncula and Echiura Beograd: Naucno Delo. pp. 3-18.
233. Cutler EB (1994) The Sipuncula Their Systematics, Biology, and Evolution: Ithaca: Cornell University Press. 453 p.
234. Bianchi CN (2007) Biodiversity issues for the forthcoming tropical Mediterranean Sea. Hydrobiologia 580: 7-21.
235. Murina G-VV (1982) On the sipunculans and echiurans fauna of Mediterranean and Iberian basin. Trudy Instituta Okeanologi Akademiya Nauk SSSR, Moskva 117.
236. Cutler EB, Cutler NJ (1987) Deep-water Sipuncula from the eastern Atlantic Ocean. Sarsia 72: 71-89.

237. De la Rosa J, Saiz JI, Moreno D (2008) *Sipunculus nudus* Linnaeus, 1767 Tita. In: Barea JM, Ballesteros E, Moreno D, editors. Libro Rojo de los Invertebrados de Andalucia. Sevilla: Junta de Andalucía. pp. 639-642.
238. Thiel H (1983) Meiobenthos and nanobenthos of the deep-sea. In: Rowe G, editor. Deep-Sea Biology: Wiley, New York. pp. 167-230.
239. Moodley L, Heip CHR, Middelburg JJ (1998) Benthic activity in sediments of the northwestern Adriatic Sea: sediment oxygen consumption, macro-and meiofauna dynamics. Journal of Sea Research 40: 263-280.
240. Allgen CA (1942) Die freilebenden Nematoden des mittelmeeres. Eine zusammenstellung sÃmtlicher aus dem Mittelmeer bekannten Nematoden. Zoologische Jb (Systematik) 76: 1-102.
241. Schuurmans Stekhoven Jr JH (1942) The free living nematodes of the Mediterranean. II. The Camargue. Zoologische Mededeelingen - Rijksmuseum 23: 217-228.
242. Schuurmans Stekhoven Jr JH (1950) The free living marine nemas of the Mediterranean. I. The Bay of Villefranche. Memoires Institut Royal des Sciences Naturelles de Belgique 37: 1-220.
243. Boucher G (1970a) *Paramesacanthion catellus* n. sp. nouvelle espece d' Enoplidae (Nematode) de la vase Terrigene cotiere de Banyuls-Sur-Mer. Bulletin du Museum National d'Histoire Naturelle, Serie 2 42: 570-576.
244. Boucher G (1970b) Deux especes nouvelles de Nematodes de la vase terrigene cotiere de Banyuls-Sur-Mer. Bulletin du Museum National d'Histoire Naturelle, Serie 2 42: 975-983.
245. Vitiello P (1974) Marine nematodes associations in the muddy bottoms of Provence. I. Muddy sediments in sheltered areas and terrigenous coastal muds. Annales de l'Institut Oceaanographique, Paris 50: 145-172.
246. de Bovée F (1988) Dynamique des peuplements meiobenthiques sublittoraux. II. Le peuplement des nematodes libres marins. Vie et Milieu 38: 115-122.
247. Danovaro R, Gambi C (2002) Biodiversity and trophic structure of nematode assemblages in seagrass systems: evidence for a coupling with changes in food availability. Marine Biology 141: 667-677.
248. Wieser W (1955) Eine sammlung mariner nematoden aus Piraeus (Griechenland). Osterreichische Zoologische Zeitschrift 6: 597-631.
249. Lampadariou N (2001) Biology Department. Study of the meiobenthic ecosystem of the Aegean Sea with a special emphasis on nematodes [PhD Thesis]: University of Crete, Heraklion. 216 p.
250. Betouhim-El T, Kahan D (1972) Tisbe pori n. sp. (Copepoda: Harpacticoida) from the Mediterranean coast of Israel and its cultivation in the laboratory. Marine Biology 16: 201Â–209.
251. Galassi DP (1997) Little known harpacticoid copepods from Italy, and description of *Parastenocaris crenobia* n. sp. (Copepoda, harpacticoida). Crustaceana 70: 694 - 709.
252. Jaume D (1997) First record of Superornatiremidae (Copepoda: Harpacticoida) from Mediterranean waters, with description of three new species from Balearic anchihaline caves. Scientia Marina 61: 131–152.
253. Steuer A (1943) Variabilitat und Verbreitung einiger Copepoda Harpacticoida der Gattungen Ameira und Mesochra aus demastlichen Mittelmeer (Alexandrien). Thalassia 6: 1Â–19.
254. Mitwally H, Montagna PA (2001) Egyptian interstitial Copepoda Harpacticoida with the description of two new species and one new subspecies. Crustaceana: 513Â–544.

255. Soyer J (1970) Bionomie benthique du plateau continental de la cote catalane franssaise. III. Les peuplements de Copepodes harpacticoides (Crustacea). Vie et Milieu 21: 337–511.
256. Stobbe K (2001) Temporal and spatial variabilities of harpacticoid copepods in the eulittoral zone of a sandy beach on Crete, Greece: MSc thesis, Faculty of Biological Sciences. University of Rostock, Rostock. 63 p.
257. Sevastou K (2005) On the ecology of meiofauna of the sandy shores of Crete. Distribution patterns of meiobenthic copepods over space and time [PhD Thesis]: University of Crete, Heraklion. 233 p.
258. Cimerman F, Langer M (1991) Mediterranean foraminifera: Umetnosti, Akademia Scientiarum et Artium Slovenica. 118 p.
259. Parker F (1958) Eastern Mediterranean foraminifera. Swedish Deep-Sea Expedition 8: 219-283.
260. Hyams O, Almogi-Labin A, Benjaminia C (2002) Larger foraminifera of the southeastern Mediterranean shallow continental shelf off Israel. Israel Journal of Earth Sciences 51: 169-179.
261. Mojtahid M, Jorissen F, Lansard B, Fontanier C, Bombled B, et al. (2009) Spatial distribution of live benthic foraminifera in the Rhône prodelta: Faunal response to a continental–marine organic matter gradient. Marine Micropaleontology 70: 177-200.
262. Samir AM, Abdou HF, Zazou SM, El-Menhawey WH (2003) Cluster analysis of recent benthic foraminifera from the northwestern Mediterranean coast of Egypt. Revue de Micropaléontologie 46: 111-130.
263. Milker Y, Schmiedl G, Betzler C, Römer M, Jaramillo-Vogel D, et al. (2009) Distribution of recent benthic foraminifera in shelf carbonate environments of the Western Mediterranean Sea. Marine Micropaleontology 73: 207-225.
264. Balsamo M, Fregni E, Tongiorgi P (1996) Marine Gastrotricha from Sicily with the description of a new species of Chaetonotus. Italian Journal of Zoology 63: 173Â–183.
265. Balsamo M, Fregni E, Tongiorgi P (1994) Marine and freshwater Gastrotricha from the Island of Montecristo (Tuscan Archipelago, Italy), with the description of new species. Italian Journal of Zoology 61: 217Â–227.
266. Hummon WD, Todaro MA, Tongiorgi P, Balsamo M (1998) Italian marine Gastrotricha: V. Four new and one redescribed species of Macrodasyida in the Dactylopodolidae and Thaumastodermatidae. Italian Journal of Zoology 65: 109Â–119.
267. Hummon WD, Todaro MA, Balsamo M, Tongiorgi P (1996) Italian marine Gastrotricha: III. Four new pentancrous species of the genus Tetranchyroderma (Macrodasyida, Thaumastodermatidae). Italian Journal of Zoology 63: 73Â–79.
268. Hummon WD, Todaro MA, Tongiorgi P (1993) Italian marine Gastrotricha. II: One new genus and ten new species of Macrodasyida. Bollettino di Zoologia 60: 109Â–127.
269. Hummon WD, Todaro MA, Balsamo M, Tongiorgi P (1990) Effects of pollution on marine Gastrotricha in the Northwestern Adriatic Sea. Marine Pollution Bulletin 21: 241-243.
270. Todaro MA (1992) Contribution to the study of the Mediterranean meiofauna: Gastrotricha from the Island of Ponza, Italy. Bollettino di Zoologia 59: 321Â–333.
271. Hummon WD, Roidou E (1995) Marine Gastrotricha of Greece. A preliminary report. Biologia Gallo-Helenica 22: 279-289.
272. Marcotte BM, Coull BC (1974) Polution, diversity and meiobenthic communities in the North Adriatic (Bay of Piran, Yugoslavia). Vie et Milieu 24: 281-300.
273. Keller M (1986) Structure des peuplements meiobenthiques dans le secteur pollue par le rejet en mer de l'egout de Marseille. Annuaire de l'Institut Océanographie de Paris 62: 13-36.

274. Lampadariou N, Austen MC, Robertson N, Vlachonis G (1997) Analysis of meiobenthic community structure in relation to pollution and disturbance in Iraklion harbour, Greece. Vie et Milieu 47: 9-24.
275. Mirto S, La Rosa T, Gambi C, Danovaro R, Mazzola A (2002) Nematode community response to fish-farm impact in the western Mediterranean. Environmental Pollution 116: 203-214.
276. Monniot C, Monniot F (1978) Recent work on the deep-sea tunicates. Oceanography and Marine Biology - An Annual Review 16: 181-228.
277. Young CM (1989) Distribution and dynamics of an intertidal ascidian pseudopopulation. Bulletin of Marine Science 45: 288-303.
278. Naranjo S, Carballo JL, García-Gómez JC (1998) Towards a knowledge of marine boundaries using ascidians as indicators: characterising transition zones for species distribution along Atlantic-Mediterranean shores. Botanical Journal of the Linnean Society 64: 151-177.
279. Drasche Rv (1883) Die synascidien der Bucht von Rovigno (Istrien). C. Gerold's sohn Verlag. Wien, Austria.
280. Traustedt M (1883) Die einfachen ascidien (ascidiae simplices) des Golfes von Neapel. Mitt Zool Stn Neapel 4: 448-488.
281. Daumézon G (1909) Contributions à l'étude des Synascidies du golfe de Marseille. Bull Sci Fr Belg 42: 269-432.
282. Harant H, Vernières P (1933) Faune de France. Tuniciers. I: Ascidies. Paris, France: P. Lechevalier.
283. Salfi M (1931) Gli Ascidiacei dei Golfo di Napoli. Pubbl Staz Zool Napoli 11: 293-360.
284. Pérès JM (1958) Origine et affinités du peuplement en ascidies de la Méditerranée. Rapport Commission International Mer Méditerranée 14: 493-502.
285. Fiala-Medioni A (1974) Ascidies du benthos rocheux de Banyuls-Sur-Mer. Inventaire faunistique et notes écologiques. Vie Milieu 24: 193-207.
286. Turon X (1987) Estudio de las ascidias de las costas de Cataluña e Islas Baleares: PhD Thesis. University of Barcelona. Spain.
287. Ramos-Esplá AA (1988) Ascidias litorales del Mediterráneo ibérico. Faunística, Ecología y Biogeografía: PhD Thesis. University of Barcelona, Barcelona. Spain.
288. Naranjo S (1995) Taxonomía, zoogeografía y ecología de las ascidias del Estrecho de Gibraltar. Implicaciones de su distribución bionómica en la caracterización de áreas costeras: PhD Thesis. University of Sevilla, Spain.
289. Koukouras A, Voultiadou-Koukoura E, Kevrekidis T, Vafidis D (1995) Ascidian fauna of the Aegean Sea with a check list of the Eastern Mediterranean and Black Sea species. Annales Institut océanographique, Paris 71: 19-34.
290. Mastrototaro F, Tursi A (2006) Ascidiacea. In: revisione della Checklist della fauna marina italiana. http://www.sibm.unige.it/CHECKLIST/principalechecklistfauna.htm.
291. Izquierdo-Muñoz A, Díaz-Valdés M, Ramos-Esplá AA (2009) Recent non-indigenous ascidians in the Mediterranean Sea. Aquatic Invasions 4: 59-64.
292. Shenkar N, Loya Y (2009) Non-indigenous ascidians (Chordata: Tunicata) along the Mediterranean coast of Israel. Marine Biodiversity Records: Online Publication DOI 10.1017/S1755267209990753.
293. Davis MH, Davis ME (2008) First record of Styela clava (Tunicata, Ascidiacea) in the Mediterranean region. Aquatic Invasions 3: 125–132.

294. Arsenault G, Davidson J, Ramsay A (2009) Temporal and spatial development of an infestation of Styela clava on mussel farms in Malpeque Bay, Prince Edward Island, Canada Aquatic Invasions 4: 189-194.
295. de Barros RC, da Rocha RM, Pie MR (2009) Human-mediated global dispersion of *Styela plicata* (Tunicata, Ascidiacea). Aquatic Invasions 4: 45-57.
296. Lopez-Legentil S, Turon X, Planes S (2006) Genetic structure of the star sea squirt, *Botryllus schlosseri*, introduced in southern European harbours. Molecular Ecology 15: 3957-3967.
297. Galil BS (2008) Alien species in the Mediterranean Sea-which, when, where, why? Hydrobiologia 606: 105-116.
298. Rius M, Pineda MC, Turon X (2009) Population dynamics and life cycle of the introduced ascidian Microcosmus squamiger in the Mediterranean Sea. Biological Invasions 11: 2181-2194.
299. Turon X, Nishikawa T, Rius M (2007) Spread of *Microcosmus squamiger* (Ascidiacea: Pyuridae) in the Mediterranean Sea and adjacent waters. Journal of Experimental Marine Biology and Ecology 342: 185-188.
300. Streftaris N, Zenetos A (2006) Alien marine species in the Mediterranean - the 100 “worst invasives” and their impact. Mediterranean Marine Science 7: 87-118.
301. Saldanha L (1974) Estudo do povoamento dos horizontes superiores da rocha litoral da costa da Arrábida (Portugal). Arquivos do Museu Bocage 5: 1-382.
302. Méliane I (2002) Contribution to the knowledge of the ascidian fauna in the south east of Tunisia: MSc Thesis. University of Alicante, Spain.
303. Pérès JM (1956) Résultats scientifiques des campagnes de la Calypso. IV. Etudes sur le seuil Siculo-Tunisien. II. Ascidies. Annales de l'Institut Océanographique, Paris 32: 265-304.
304. Turon X, Tarjuelo I, Duran S, Pascual M (2003) Characterising invasion processes with genetic data: an Atlantic clade of *Clavelina lepadiformis* (Ascidiacea) introduced into Mediterranean harbours. Hydrobiologia 503: 29-35.
305. Lopez-Legentil S, Turon X (2006) Population genetics, phylogeography and speciation of *Cystodytes* (Ascidiacea) in the western Mediterranean Sea. Botanical Journal of the Linnean Society 88: 203-214.
306. Pérez-Portela R, Duran S, Palacín C, Turon X (2007) The Genus Pycnoclavella (Ascidiacea) in the Atlanto-Mediterranean region: a combined molecular and morphological approach. Invertebrate Systematics 21: 187-206.
307. Naranjo SA, Carballo JL, Garcia-Gomez JC (1996) Effects of environmental stress on ascidian populations in Algeciras Bay (southern Spain). Possible marine bioindicators? Marine Ecology Progress Series 144: 119-131.
308. Vazquez E, Young CM (1996) Responses of compound ascidian larvae to haloclines. Marine Ecology Progress Series 133: 179-190.
309. Antoniadou C, Vafidis D (2008) First assessment of *Microcosmus sabatieri* (Tunicata: Ascidiacea) small-scale fishery in the South Aegean Sea (Eastern Mediterranean). Cahiers de Biologie Marine 49: 97-100.
310. Vafidis D, Antoniadou C, Chintiroglou C (2008) Population dynamics, allometric relationships and reproductive status of *Microcosmus sabatieri* (Tunicata: Ascidiacea) in the Aegean Sea. Journal of the Marine Biological Association of the UK 88: 1043-1051.
311. Newman D, Cragg G (2004) Marine natural products and related compounds in clinical and advanced preclinical trials. Journal of Natural Products 67: 1216-1238.

Mediterranean AquaMaps (by Kristin Kaschner, Kathy Kesner-Reyes, Josephine Barile & Elijah Laxamana)

Text S2. Mediterranean AquaMaps specifications

AquaMaps model represents a modified version of the relative environmental suitability model (RES) developed by Kaschner et al. [1]. It is an environmental envelope model that generates standardized range maps and the relative probability of occurrence within that range for marine species based on the environmental conditions in each 0.5 degree latitude by 0.5 degree longitude cell of global grid. The model was developed specifically to deal with the sampling biases, such as heterogeneous sampling effort and species misidentifications, affecting most of the large-scale data sets that are currently available for species distribution modelling in the marine realm [2,3]. The model currently includes more than 9,000 fishes, marine mammals, reptiles and invertebrate species. Predictions are generated based on species-specific environmental tolerances computed using available point occurrences, which are obtained from online databases such as OBIS, or the Global Biodiversity Information Facility [4], but which are then supplemented with other types of habitat usage information obtained directly from online species databases such as FishBase and SeaLifeBase [2,3]. Moreover, an expert-review function in the AquaMaps algorithm explicitly allows for the incorporation of expert knowledge about species occurrence to counteract or compensate known sampling biases. AquaMaps outputs have been successfully validated using independent, effort-corrected survey data and, in the face of the existing sub-optimal input data sets, AquaMaps model performance compares well with that of other presence-only habitat prediction models, such as GARP, Maxent or GAMs [3].

Species richness maps for the Mediterranean Sea were generated by superimposing generated range maps of all individual species and then counting the number of species predicted to be present in each half degree cell.

A summary of the number of species, by different taxa, which are known to occur in and/or are endemic to the Mediterranean Sea based on the data provided by online species databases such as FishBase and SeaLifeBase can be found in Table S3 and Table S4. The appendix also shows the proportion of species currently covered by AquaMaps. Based on the comparison with FishBase and SeaLifeBase data, AquaMaps coverage of higher vertebrate and fish taxa is either complete or relatively comprehensive (Table S5-S6). In contrast, most invertebrate groups are much less well represented and other groups, such as plants, fungi, bacteria, but also seabirds, have not yet been incorporated at all. Of those species covered by AquaMaps and included in this analysis, more than half are ray-finned fishes (Actinopterygii), and roughly a third are invertebrates, and only a very small percentage are higher vertebrates such as cetaceans, pinnipeds or marine turtles. Based on the information available from FishBase and SeaLifeBase, only a relatively small proportion of all species that are native in the Mediterranean Sea are also endemic. At the moment, most AquaMaps available for the Mediterranean species represent the computer-generated default maps, which have not been checked explicitly for consistency with published range maps or fully reviewed by experts. In general, though, a relative high proportion of species in taxa that are often the focus of conservation efforts, such as marine mammals, marine turtles and elasmobranch, have already been reviewed. On average, approximately 16% of all species included in this analysis are listed by the IUCN as endangered, vulnerable or threatened, thus requiring special protection and conservation measures. However, while less than one percent of the ray-finned fishes is considered endangered, 30% and more of the Mediterranean marine mammal species and elasmobranches, and all marine turtles and Holocephali species occurring in this ocean basin are threatened or endangered.

The World Register of Marine Species (WoRMS) lists 8,470 species records for the Mediterranean Sea [5] which is surpassed by an even higher estimate of up to 17,000 marine Mediterranean species based on the information provided in the main part of this paper. Thus, the approximately 700 Mediterranean species currently covered by AquaMaps, which formed the basis for our biodiversity maps, represent only a fraction of all species known to occur in this ocean basin. However, the species list provided by WoRMS also includes all non-Animalia species that are, at the moment, mostly not represented by any of the existing online species databases and for which there are mostly few if any occurrence records available [6]. In terms of predicted patterns of species richness, AquaMaps outputs are probably relatively representative for fishes and marine mammals, although increasing the number of expert-reviews for Mediterranean Actinopterygii species would increase confidence in biodiversity maps for this taxonomic group. Similarly, while the selected presence threshold and the resulting species richness predictions for marine mammals have successfully been validated [7], this type of analysis still remains to be carried out for other taxa. For most taxa, the maps showing biodiversity patterns of endangered species in the Mediterranean Sea, however, can be regarded as reliable and representative, since more than 70% of all underlying species maps have been reviewed by experts.

References

1. Kaschner K, Watson R, Trites AW, Pauly D (2006) Mapping worldwide distributions of marine mammals using a Relative Environmental Suitability (RES) model. Marine Ecology Progress Series 316: 285-310.
2. Kaschner K, Ready JS, Agbayani E, Rius J, Kesner-Reyes K, et al. (2007) About AquaMaps: Creating standardized range maps of marine species (Version of May 2007). www.aquamaps.org.
3. Ready JS, Kaschner K, South AB, Eastwood PD, Rees T, et al. (in press) Predicting the distributions of marine organisms at the global scale. Ecological Modelling: doi:10.1016/j.ecolmodel.2009.1010.1025
4. GBIF (2009) Global Biodiversity Information Facility (GBIF): http://www.gbif.org/.
5. SMEBD (2009) World Register of Marine Species: Accessed htttp://www.marinespecies.org on [2009-09-29].
6. OBIS (2009) Ocean Biogeographic Information System: http://www.iobis.org/.
7. Kaschner K, Tittensor D, Ready J, Gerodette T, Worm B (in preparation) Predicting the impact of climate change on global hotspots of marine mammal biodiversity.

Table S3. Mediterranean native and endemic marine species reported by FishBase/SeaLifeBase by different taxa and current extent of coverage of AquaMaps

Native and Endemic Species Reported from the Mediterranean Sea

		Native			Endemic			Native & Endemic		
		FB/SLB	AquaMaps	%	FB/SLB	AquaMaps	%	FB/SLB	AquaMaps	%
Fishes	Actinopterygii	469	373	80%	42	20	48%	511	393	77%
	Elasmobranchii	76	68	89%	4	4	100%	80	74	93%
	Holocephali	1	1	100%				1	1	100%
	Myxini	1	1	100%				1	1	100%
	Cephalaspidomorphi	2	2	100%				2	2	100%
	Subtotal Fish	**549**	**445**	**81%**	**46**	**24**		**595**	**471**	**79%**
Mammals	Balaenopteridae	4	4	100%				4	4	100%
	Delphinidae	8	8	100%				8	8	100%
	Kogiidae	1	1	100%				1	1	100%
	Phocidae	1	1	100%				1	1	100%
	Phocoenidae				1	1	100%	1	1	100%
	Physeteridae	1	1	100%				1	1	100%
	Ziphiidae	4	4	100%				4	4	100%
	Subtotal Mammals	**19**	**19**	**100%**	**1**	**1**	100%	**20**	**20**	**100%**
Turtles	Cheloniidae	4	4	100%				4	4	100%
	Dermochelyidae	1	1	100%				1	1	100%
	Subtotal Turtles	**5**	**5**	**100%**	**0**	**0**		**5**	**5**	**100%**
Invertebrates	Anopla	6		0%				6	0	0%
	Anthozoa	23	3	13%	1		0%	24	3	13%
	Aplacophora	30		0%				30	0	0%
	Appendicularia	39		0%				39	0	0%

	Articulata	6	2	33%				6	2	33%
	Ascidiacea	141	22	16%				141	22	16%
	Asteroidea	2		0%				2	0	0%
	Bivalvia	311	62	20%	1		0%	312	62	20%
	Bryopsidophyceae	2		0%				2	0	0%
	Calcarea	33		0%				33	0	0%
	Cephalopoda	39	15	38%	2		0%	41	15	37%
	Demospongiae	22	1	5%				22	1	5%
	Echinoidea	3		0%				3	0	0%
	Enopla	4		0%				4	0	0%
	Enteropneusta	7		0%				7	0	0%
	Eoacanthocephala	1		0%				1	0	0%
	Gastropoda	233	11	5%				233	11	5%
	Gymnolaemata	69	4	6%				69	4	6%
	Holothuroidea	4	2	50%				4	2	50%
	Hydrozoa	196	4	2%	10		0%	206	4	2%
	Inarticulata	1		0%				1	0	0%
	Kinorhyncha	19		0%				19	0	0%
	Loricifera	2		0%				2	0	0%
	Malacostraca	209	33	16%				209	33	16%
	Maxillopoda	32	5	16%				32	5	16%
	Nematomorpha	1		0%				1	0	0%
	Not assigned	213		0%				213	0	0%
	Nuda	3		0%				3	0	0%
	Orthonectida	1		0%				1	0	0%
	Ostracoda	2		0%				2	0	0%
	Palaeacanthocephala	6		0%				6	0	0%
	Phascolosomatidea	10	1	10%				10	1	10%
	Pogonophora	1		0%				1	0	0%
	Polychaeta	211	4	2%				211	4	2%
	Polyplacophora	14	3	21%				14	3	21%
	Priapulida	3		0%				3	0	0%
	Pterobranchia	1		0%				1	0	0%
	Pycnogonida	26	2	8%				26	2	8%

	Rhombozoa	17		0%				17	0	0%
	Scaphopoda	17	7	41%				17	7	41%
	Scyphozoa	17	1	6%	1		0%	18	1	6%
	Sipunculidae	18	10	56%				18	10	56%
	Stenolaemata	3		0%				3	0	0%
	Tentaculata	23	1	4%				23	1	4%
	Thaliacea	23		0%				23	0	0%
	Trematoda	4		0%				4	0	0%
	Turbellaria	23		0%				23	0	0%
	Ulvophyceae	2		0%				2	0	0%
	Subtotal Inverts	**2073**	**193**	**9%**	**15**	**0**	**0%**	**2088**	**193**	**9%**
	Total	**2646**	**662**	**25%**	**62**	**25**	**40%**	**2708**	**689**	**25%**

Table S4. Proportion of checked or expert-reviewed AquaMaps for different taxa

		AquaMaps	Expert-reviewed/ checked	% checked
Fishes	Actinopterygii	393	54	13.74%
	Elasmobranchii	74	27	36.49%
	Holocephali	1	1	100.00%
	Myxini	1	0	0.00%
	Cephalaspidomorphi	2	0	0.00%
	Subtotal Fish	**471**	**82**	**17.41%**
Mammals	Balaenopteridae	4	3	75.00%
	Delphinidae	8	8	100.00%
	Kogiidae	1	1	100.00%
	Phocidae	1	1	100.00%
	Phocoenidae	1	1	100.00%
	Physeteridae	1	1	100.00%
	Ziphiidae	4	1	25.00%
	Subtotal Mammals	**20**	**16**	**80.00%**
Turtles	Cheloniidae	4	4	100.00%
	Dermochelyidae	1	1	100.00%
	Subtotal Turtles	**5**	**5**	**100.00%**
Invertebrates	Anopla	0	0	0.00%
	Anthozoa	3	0	0.00%
	Aplacophora	0	0	0.00%
	Appendicularia	0	0	0.00%
	Articulata	2	0	0.00%
	Ascidiacea	22	0	0.00%
	Asteroidea	0	0	0.00%
	Bivalvia	62	1	1.61%
	Bryopsidophyceae	0	0	0.00%
	Calcarea	0	0	0.00%
	Cephalopoda	15	3	20.00%
	Demospongiae	1	0	0.00%
	Echinoidea	0	0	0.00%
	Enopla	0	0	0.00%
	Enteropneusta	0	0	0.00%
	Eoacanthocephala	0	0	0.00%
	Gastropoda	11	0	0.00%
	Gymnolaemata	4	0	0.00%
	Holothuroidea	2	0	0.00%
	Hydrozoa	4	0	0.00%
	Inarticulata	0	0	0.00%
	Kinorhyncha	0	0	0.00%
	Loricifera	0	0	0.00%

	Malacostraca	33	1	3.03%
	Maxillopoda	5	0	0.00%
	Nematomorpha	0	0	0.00%
	Not assigned	0	0	0.00%
	Nuda	0	0	0.00%
	Orthonectida	0	0	0.00%
	Ostracoda	0	0	0.00%
	Palaeacanthocephala	0	0	0.00%
	Phascolosomatidea	1	0	0.00%
	Pogonophora	0	0	0.00%
	Polychaeta	4	0	0.00%
	Polyplacophora	3	0	0.00%
	Priapulida	0	0	0.00%
	Pterobranchia	0	0	0.00%
	Pycnogonida	2	0	0.00%
	Rhombozoa	0	0	0.00%
	Scaphopoda	7	0	0.00%
	Scyphozoa	1	0	0.00%
	Sipunculidae	10	0	0.00%
	Stenolaemata	0	0	0.00%
	Tentaculata	1	0	0.00%
	Thaliacea	0	0	0.00%
	Trematoda	0	0	0.00%
	Turbellaria	0	0	0.00%
	Ulvophyceae	0	0	0.00%
	Subtotal Invert	**193**	**5**	**2.59%**
	Total	**689**	**108**	**15.67%**

Table S5. Mediterranean species of special conservation concern covered by AquaMaps

		IUCN status	No of species	% Endangered	AquaMaps
Fishes	Actinopterygii	CR	2		393
	Actinopterygii	EN	2		
	Actinopterygii	VU	2		
	Actinopterygii	NT	1		
	Subtotal Actinopterygii		7	1.78%	
	Elasmobranchii	CR	12		74
	Elasmobranchii	EN	8		
	Elasmobranchii	VU	10		
	Elasmobranchii	NT	11		
	Subtotal Elasmobranchii		41	55.41%	
	Holocephali	NT	1	100.00%	1
	Subtotal Fish		**97**	**20.73%**	**468**
Mammals	Balaenopteridae	EN	2		20
	Balaenopteridae	VU	1		
	Delphinidae	EN	1		
	Delphinidae	VU	1		
	Phocidae	CR	1		
	Phocoenidae	VU	1		
	Physeteridae	VU	1		
	Subtotal Mammals		**8**	**40.00%**	
Turtles	Cheloniidae	EN	2		**5**
	Cheloniidae	CR	2		
	Dermochelyidae	CR	1		
	Subtotal Turtles		**5**		
Total			**110**	**100.00%**	

Table S6. Checklist of species included in AquaMaps of the Mediterranean Sea

Phylum	Class	Order	Family	Genus	Species	Mean probability of Occurrence	IUCN Code	Expert Reviewed
Annelida	Polychaeta	Canalipalpata	Oweniidae	Owenia	fusiformis	0.16	NL	0
Annelida	Polychaeta	Canalipalpata	Serpulidae	Pomatoceros	triqueter	0.45	NL	0
Annelida	Polychaeta	Canalipalpata	Trichobranchidae	Trichobranchus	glacialis	0.35	NL	0
Annelida	Polychaeta	Not assigned	Capitellidae	Heteromastus	filiformis	0.2	NL	0
Arthropoda	Malacostraca	Amphipoda	Ampeliscidae	Ampelisca	brevicornis	0.21	NL	0
Arthropoda	Malacostraca	Amphipoda	Dexaminidae	Atylus	vedlomensis	0.02	NL	0
Arthropoda	Malacostraca	Decapoda	Aristeidae	Aristaeomorpha	foliacea	0.28	NL	0
Arthropoda	Malacostraca	Decapoda	Aristeidae	Aristeus	antennatus	0.65	NL	0
Arthropoda	Malacostraca	Decapoda	Cancridae	Cancer	pagurus	0.05	NL	0
Arthropoda	Malacostraca	Decapoda	Diogenidae	Dardanus	arrosor	0.62	NL	0
Arthropoda	Malacostraca	Decapoda	Majidae	Maja	squinado	0.29	NL	0
Arthropoda	Malacostraca	Decapoda	Nephropidae	Homarus	gammarus	0.05	NL	1
Arthropoda	Malacostraca	Decapoda	Nephropidae	Nephrops	norvegicus	0.53	NL	0
Arthropoda	Malacostraca	Decapoda	Palinuridae	Palinurus	elephas	0.65	NL	0
Arthropoda	Malacostraca	Decapoda	Pandalidae	Chlorotocus	crassicornis	0.9	NL	0
Arthropoda	Malacostraca	Decapoda	Pandalidae	Plesionika	martia	0.79	NL	0
Arthropoda	Malacostraca	Decapoda	Pasiphaeidae	Pasiphaea	multidentata	0.19	NL	0
Arthropoda	Malacostraca	Decapoda	Penaeidae	Funchalia	villosa	0.61	NL	0
Arthropoda	Malacostraca	Decapoda	Penaeidae	Funchalia	woodwardi	0.32	NL	0
Arthropoda	Malacostraca	Decapoda	Penaeidae	Parapenaeus	longirostris	0.59	NL	0
Arthropoda	Malacostraca	Decapoda	Portunidae	Callinectes	sapidus	0.3	NL	0
Arthropoda	Malacostraca	Decapoda	Portunidae	Carcinus	aestuarii	0.73	NL	0
Arthropoda	Malacostraca	Decapoda	Portunidae	Liocarcinus	depurator	0.04	NL	0
Arthropoda	Malacostraca	Decapoda	Portunidae	Necora	puber	0.03	NL	0
Arthropoda	Malacostraca	Decapoda	Sergestidae	Sergestes	atlanticus	0.24	NL	0
Arthropoda	Malacostraca	Decapoda	Solenoceridae	Solenocera	membranacea	0.75	NL	0

Arthropoda	Malacostraca	Isopoda	Anthuridae	Cyathura	carinata	0.5	NL	0
Arthropoda	Malacostraca	Isopoda	Cirolanidae	Natatolana	borealis	0.23	NL	0
Arthropoda	Malacostraca	Isopoda	Cirolanidae	Natatolana	neglecta	0.48	NL	0
Arthropoda	Malacostraca	Isopoda	Gnathiidae	Gnathia	vorax	0.43	NL	0
Arthropoda	Malacostraca	Isopoda	Idoteidae	Synisoma	capito	0.75	NL	0
Arthropoda	Malacostraca	Isopoda	Janiridae	Janira	maculosa	0.19	NL	0
Arthropoda	Malacostraca	Isopoda	Sphaeromatidae	Dynamene	torelliae	0.54	NL	0
Arthropoda	Malacostraca	Isopoda	Sphaeromatidae	Sphaeroma	serratum	0.71	NL	0
Arthropoda	Malacostraca	Mysida	Mysidae	Gastrosaccus	sanctus	0.18	NL	0
Arthropoda	Malacostraca	Stomatopoda	Squillidae	Squilla	mantis	0.55	NL	0
Arthropoda	Malacostraca	Tanaidacea	Tanaidae	Tanais	dulongii	0.85	NL	0
Arthropoda	Maxillopoda	Pedunculata	Scalpellidae	Scalpellum	scalpellum	0.06	NL	0
Arthropoda	Maxillopoda	Sessilia	Balanidae	Balanus	crenatus	0.04	NL	0
Arthropoda	Maxillopoda	Sessilia	Balanidae	Balanus	improvisus	0.91	NL	0
Arthropoda	Maxillopoda	Sessilia	Chthamalidae	Chthamalus	stellatus	0.83	NL	0
Arthropoda	Maxillopoda	Sessilia	Verrucidae	Verruca	stroemia	0.01	NL	0
Arthropoda	Pycnogonida	Pantopoda	Endeididae	Endeis	spinosa	0.39	NL	0
Arthropoda	Pycnogonida	Pantopoda	Phoxichilidiidae	Anoplodactylus	petiolatus	0.14	NL	0
Brachiopoda	Articulata	Terebratulida	Cancellothyrididae	Terebratulina	retusa	0.43	NL	0
Brachiopoda	Articulata	Terebratulida	Platidiidae	Platidia	anomioides	0.21	NL	0
Bryozoa	Gymnolaemata	Cheilostomata	Hippothoidae	Chorizopora	brongniartii	0.03	NL	0
Bryozoa	Gymnolaemata	Cheilostomata	Microporellidae	Microporella	ciliata	0.35	NL	0
Bryozoa	Gymnolaemata	Cheilostomata	Scrupocellariidae	Scrupocellaria	scrupea	0.9	NL	0
Bryozoa	Gymnolaemata	Cheilostomata	Scrupocellariidae	Scrupocellaria	scruposa	0.79	NL	0
Chordata	Actinopterygii	Acipenseriformes	Acipenseridae	Acipenser	naccarii	0.49	VU	0
Chordata	Actinopterygii	Acipenseriformes	Acipenseridae	Acipenser	sturio	0.27	CR	1
Chordata	Actinopterygii	Anguilliformes	Anguillidae	Anguilla	anguilla	0.52	CR	1
Chordata	Actinopterygii	Anguilliformes	Chlopsidae	Chlopsis	bicolor	0.55	NL	0
Chordata	Actinopterygii	Anguilliformes	Congridae	Ariosoma	balearicum	0.38	NL	0
Chordata	Actinopterygii	Anguilliformes	Congridae	Conger	conger	0.48	NL	1
Chordata	Actinopterygii	Anguilliformes	Congridae	Gnathophis	mystax	0.76	NL	0
Chordata	Actinopterygii	Anguilliformes	Heterenchelyidae	Panturichthys	fowleri	0.68	NL	0

Chordata	Actinopterygii	Anguilliformes	Muraenidae	Gymnothorax	unicolor	0.84	NL	0
Chordata	Actinopterygii	Anguilliformes	Muraenidae	Muraena	helena	0.86	NL	0
Chordata	Actinopterygii	Anguilliformes	Nemichthyidae	Nemichthys	scolopaceus	0.37	NL	0
Chordata	Actinopterygii	Anguilliformes	Nettastomatidae	Facciolella	oxyrhyncha	0.55	NL	0
Chordata	Actinopterygii	Anguilliformes	Nettastomatidae	Nettastoma	melanurum	0.54	NL	0
Chordata	Actinopterygii	Anguilliformes	Ophichthidae	Dalophis	imberbis	0.71	NL	0
Chordata	Actinopterygii	Anguilliformes	Ophichthidae	Echelus	myrus	0.72	NL	0
Chordata	Actinopterygii	Anguilliformes	Ophichthidae	Mystriophis	crosnieri	0.01	NL	0
Chordata	Actinopterygii	Anguilliformes	Ophichthidae	Ophichthus	ophis	0.32	NL	0
Chordata	Actinopterygii	Anguilliformes	Ophichthidae	Ophichthus	rufus	0.71	NL	0
Chordata	Actinopterygii	Anguilliformes	Ophichthidae	Ophisurus	serpens	0.75	NL	0
Chordata	Actinopterygii	Anguilliformes	Serrivomeridae	Serrivomer	brevidentatus	0.35	NL	0
Chordata	Actinopterygii	Atheriniformes	Atherinidae	Atherina	boyeri	0.86	LC	0
Chordata	Actinopterygii	Atheriniformes	Atherinidae	Atherina	hepsetus	0.77	NL	0
Chordata	Actinopterygii	Atheriniformes	Atherinidae	Atherina	presbyter	0.86	NL	0
Chordata	Actinopterygii	Aulopiformes	Alepisauridae	Alepisaurus	ferox	0.39	NL	0
Chordata	Actinopterygii	Aulopiformes	Aulopidae	Aulopus	filamentosus	0.36	NL	0
Chordata	Actinopterygii	Aulopiformes	Chlorophthalmidae	Chlorophthalmus	agassizi	0.46	NL	0
Chordata	Actinopterygii	Aulopiformes	Evermannellidae	Evermannella	balbo	0.37	NL	0
Chordata	Actinopterygii	Aulopiformes	Ipnopidae	Bathypterois	dubius	0.43	NL	0
Chordata	Actinopterygii	Aulopiformes	Paralepididae	Arctozenus	risso	0.33	NL	0
Chordata	Actinopterygii	Aulopiformes	Paralepididae	Lestidiops	jayakari jayakari	0.18	NL	0
Chordata	Actinopterygii	Aulopiformes	Paralepididae	Lestidiops	jayakari pseudosphyraenoides	0.91	NL	0
Chordata	Actinopterygii	Aulopiformes	Paralepididae	Lestidiops	sphyrenoides	0.59	NL	0
Chordata	Actinopterygii	Aulopiformes	Paralepididae	Lestidium	atlanticum	0.26	NL	0
Chordata	Actinopterygii	Aulopiformes	Paralepididae	Paralepis	coregonoides	0.82	NL	0
Chordata	Actinopterygii	Aulopiformes	Paralepididae	Sudis	hyalina	0.45	NL	0
Chordata	Actinopterygii	Batrachoidiformes	Batrachoididae	Halobatrachus	didactylus	0.02	NL	0
Chordata	Actinopterygii	Beloniformes	Belonidae	Belone	belone	0.79	NL	0
Chordata	Actinopterygii	Beloniformes	Belonidae	Tylosurus	acus acus	0.07	NL	0
Chordata	Actinopterygii	Beloniformes	Exocoetidae	Cheilopogon	heterurus	0.36	NL	0

Chordata	Actinopterygii	Beloniformes	Exocoetidae	Exocoetus	obtusirostris	0.33	NL	0
Chordata	Actinopterygii	Beloniformes	Exocoetidae	Exocoetus	volitans	0.26	NL	0
Chordata	Actinopterygii	Beloniformes	Exocoetidae	Hirundichthys	rondeletii	0.48	NL	0
Chordata	Actinopterygii	Beloniformes	Exocoetidae	Hirundichthys	speculiger	0.29	NL	0
Chordata	Actinopterygii	Beloniformes	Hemiramphidae	Hyporhamphus	picarti	0.83	NL	0
Chordata	Actinopterygii	Beloniformes	Scomberesocidae	Scomberesox	saurus saurus	0.51	NL	0
Chordata	Actinopterygii	Beryciformes	Berycidae	Beryx	decadactylus	0.2	NL	0
Chordata	Actinopterygii	Beryciformes	Trachichthyidae	Hoplostethus	mediterraneus mediterraneus	0.42	NL	0
Chordata	Actinopterygii	Clupeiformes	Clupeidae	Alosa	alosa	0.58	LC	1
Chordata	Actinopterygii	Clupeiformes	Clupeidae	Alosa	fallax	0.58	LC	1
Chordata	Actinopterygii	Clupeiformes	Clupeidae	Sardina	pilchardus	0.75	NL	1
Chordata	Actinopterygii	Clupeiformes	Clupeidae	Sardinella	aurita	0.53	NL	1
Chordata	Actinopterygii	Clupeiformes	Clupeidae	Sardinella	maderensis	0.05	NL	0
Chordata	Actinopterygii	Clupeiformes	Clupeidae	Sprattus	sprattus sprattus	0.44	NL	1
Chordata	Actinopterygii	Clupeiformes	Engraulidae	Engraulis	encrasicolus	0.55	NL	1
Chordata	Actinopterygii	Cyprinodontiformes	Cyprinodontidae	Aphanius	fasciatus	0.86	LC	0
Chordata	Actinopterygii	Gadiformes	Gadidae	Gadiculus	argenteus argenteus	0.7	NL	1
Chordata	Actinopterygii	Gadiformes	Gadidae	Merlangius	merlangus	0.05	NL	1
Chordata	Actinopterygii	Gadiformes	Gadidae	Micromesistius	poutassou	0.58	NL	1
Chordata	Actinopterygii	Gadiformes	Gadidae	Trisopterus	luscus	0.07	NL	0
Chordata	Actinopterygii	Gadiformes	Gadidae	Trisopterus	minutus	0.5	NL	0
Chordata	Actinopterygii	Gadiformes	Lotidae	Gaidropsarus	biscayensis	0.58	NL	1
Chordata	Actinopterygii	Gadiformes	Lotidae	Gaidropsarus	mediterraneus	0.61	NL	0
Chordata	Actinopterygii	Gadiformes	Lotidae	Gaidropsarus	vulgaris	0.38	NL	1
Chordata	Actinopterygii	Gadiformes	Lotidae	Molva	dypterygia	0.62	NL	0
Chordata	Actinopterygii	Gadiformes	Lotidae	Molva	molva	0.04	NL	0
Chordata	Actinopterygii	Gadiformes	Macrouridae	Hymenocephalus	italicus	0.46	NL	0
Chordata	Actinopterygii	Gadiformes	Macrouridae	Nezumia	aequalis	0.36	NL	0
Chordata	Actinopterygii	Gadiformes	Macrouridae	Nezumia	sclerorhynchus	0.34	NL	0
Chordata	Actinopterygii	Gadiformes	Macrouridae	Trachyrincus	scabrus	0.48	NL	0
Chordata	Actinopterygii	Gadiformes	Merlucciidae	Merluccius	merluccius	0.65	NL	1
Chordata	Actinopterygii	Gadiformes	Moridae	Gadella	maraldi	0.27	NL	0

Chordata	Actinopterygii	Gadiformes	Moridae	Guttigadus	latifrons	0.01	NL	0
Chordata	Actinopterygii	Gadiformes	Moridae	Lepidion	lepidion	0.78	NL	0
Chordata	Actinopterygii	Gadiformes	Moridae	Mora	moro	0.07	NL	0
Chordata	Actinopterygii	Gadiformes	Moridae	Physiculus	dalwigki	0.15	NL	0
Chordata	Actinopterygii	Gadiformes	Moridae	Rhynchogadus	hepaticus	0.6	NL	0
Chordata	Actinopterygii	Gadiformes	Phycidae	Phycis	blennoides	0.68	NL	0
Chordata	Actinopterygii	Gadiformes	Phycidae	Phycis	phycis	0.66	NL	0
Chordata	Actinopterygii	Gasterosteiformes	Gasterosteidae	Gasterosteus	aculeatus aculeatus	0.11	LC	1
Chordata	Actinopterygii	Gobiesociformes	Gobiesocidae	Diplecogaster	bimaculata bimaculata	0.14	NL	0
Chordata	Actinopterygii	Gobiesociformes	Gobiesocidae	Lepadogaster	candolii	0.98	NL	0
Chordata	Actinopterygii	Gobiesociformes	Gobiesocidae	Lepadogaster	lepadogaster	0.67	NL	0
Chordata	Actinopterygii	Gobiesociformes	Gobiesocidae	Opeatogenys	gracilis	1	NL	0
Chordata	Actinopterygii	Lampriformes	Lampridae	Lampris	guttatus	0.18	NL	0
Chordata	Actinopterygii	Lampriformes	Lophotidae	Lophotus	lacepede	0.68	NL	0
Chordata	Actinopterygii	Lampriformes	Regalecidae	Regalecus	glesne	0.33	NL	0
Chordata	Actinopterygii	Lampriformes	Trachipteridae	Trachipterus	arcticus	0.35	NL	0
Chordata	Actinopterygii	Lampriformes	Trachipteridae	Trachipterus	trachypterus	0.54	NL	0
Chordata	Actinopterygii	Lophiiformes	Lophiidae	Lophius	budegassa	0.51	NL	0
Chordata	Actinopterygii	Lophiiformes	Lophiidae	Lophius	piscatorius	0.49	NL	1
Chordata	Actinopterygii	Mugiliformes	Mugilidae	Chelon	labrosus	0.69	LC	0
Chordata	Actinopterygii	Mugiliformes	Mugilidae	Liza	aurata	0.83	LC	0
Chordata	Actinopterygii	Mugiliformes	Mugilidae	Liza	ramado	0.84	LC	0
Chordata	Actinopterygii	Mugiliformes	Mugilidae	Liza	saliens	0.86	LC	0
Chordata	Actinopterygii	Mugiliformes	Mugilidae	Mugil	cephalus	0.37	LC	1
Chordata	Actinopterygii	Mugiliformes	Mugilidae	Oedalechilus	labeo	0.83	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Benthosema	glaciale	0.4	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Ceratoscopelus	maderensis	0.61	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Diaphus	holti	0.68	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Diaphus	metopoclampus	0.37	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Diaphus	rafinesquii	0.53	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Diogenichthys	atlanticus	0.31	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Electrona	risso	0.37	NL	0

Chordata	Actinopterygii	Myctophiformes	Myctophidae	Gonichthys	cocco	0.38	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Hygophum	benoiti	0.49	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Hygophum	hygomii	0.42	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Lampanyctus	crocodilus	0.56	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Lampanyctus	pusillus	0.39	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Lobianchia	dofleini	0.37	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Lobianchia	gemellarii	0.38	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Myctophum	punctatum	0.58	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Notoscopelus	bolini	0.66	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Notoscopelus	elongatus	0.78	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Notoscopelus	kroyeri	0.26	NL	0
Chordata	Actinopterygii	Myctophiformes	Myctophidae	Symbolophorus	veranyi	0.6	NL	0
Chordata	Actinopterygii	Notacanthiformes	Notacanthidae	Notacanthus	bonaparte	0.8	NL	0
Chordata	Actinopterygii	Notacanthiformes	Notacanthidae	Polyacanthonotus	rissoanus	0.01	NL	0
Chordata	Actinopterygii	Ophidiiformes	Bythitidae	Cataetyx	alleni	0.87	NL	0
Chordata	Actinopterygii	Ophidiiformes	Bythitidae	Cataetyx	laticeps	0.07	NL	0
Chordata	Actinopterygii	Ophidiiformes	Carapidae	Carapus	acus	0.68	NL	0
Chordata	Actinopterygii	Ophidiiformes	Carapidae	Echiodon	dentatus	0.6	NL	0
Chordata	Actinopterygii	Ophidiiformes	Ophidiidae	Benthocometes	robustus	0.54	NL	0
Chordata	Actinopterygii	Ophidiiformes	Ophidiidae	Ophidion	barbatum	0.56	NL	0
Chordata	Actinopterygii	Osmeriformes	Alepocephalidae	Alepocephalus	rostratus	0.62	NL	0
Chordata	Actinopterygii	Osmeriformes	Argentinidae	Argentina	sphyraena	0.58	NL	0
Chordata	Actinopterygii	Osmeriformes	Argentinidae	Glossanodon	leioglossus	0.77	NL	0
Chordata	Actinopterygii	Osmeriformes	Microstomatidae	Microstoma	microstoma	0.36	NL	0
Chordata	Actinopterygii	Osmeriformes	Microstomatidae	Nansenia	oblita	0.96	NL	0
Chordata	Actinopterygii	Perciformes	Ammodytidae	Ammodytes	tobianus	0.07	NL	0
Chordata	Actinopterygii	Perciformes	Ammodytidae	Gymnammodytes	cicerelus	0.67	NL	0
Chordata	Actinopterygii	Perciformes	Apogonidae	Apogon	imberbis	0.69	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Aidablennius	sphynx	0.85	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Blennius	ocellaris	0.65	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Coryphoblennius	galerita	0.83	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Lipophrys	canevae	0.62	NL	0

Chordata	Actinopterygii	Perciformes	Blenniidae	Lipophrys	pholis	0.39	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Parablennius	gattorugine	0.63	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Parablennius	incognitus	0.7	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Parablennius	pilicornis	0.57	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Parablennius	rouxi	0.7	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Parablennius	sanguinolentus	0.78	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Parablennius	tentacularis	0.89	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Parablennius	zvonimiri	0.76	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Paralipophrys	trigloides	0.76	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Salaria	pavo	0.88	NL	0
Chordata	Actinopterygii	Perciformes	Blenniidae	Scartella	cristata	0.67	NL	0
Chordata	Actinopterygii	Perciformes	Bramidae	Brama	brama	0.27	NL	0
Chordata	Actinopterygii	Perciformes	Callanthiidae	Callanthias	ruber	0.82	NL	0
Chordata	Actinopterygii	Perciformes	Callionymidae	Callionymus	lyra	0.22	NL	1
Chordata	Actinopterygii	Perciformes	Callionymidae	Callionymus	maculatus	0.53	NL	0
Chordata	Actinopterygii	Perciformes	Callionymidae	Callionymus	pusillus	0.81	NL	0
Chordata	Actinopterygii	Perciformes	Callionymidae	Callionymus	reticulatus	0.83	NL	0
Chordata	Actinopterygii	Perciformes	Callionymidae	Callionymus	risso	0.84	NL	0
Chordata	Actinopterygii	Perciformes	Callionymidae	Synchiropus	phaeton	0.6	NL	0
Chordata	Actinopterygii	Perciformes	Caproidae	Capros	aper	0.6	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Campogramma	glaycos	0.78	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Caranx	crysos	0.17	NL	1
Chordata	Actinopterygii	Perciformes	Carangidae	Caranx	hippos	0.31	NL	1
Chordata	Actinopterygii	Perciformes	Carangidae	Caranx	rhonchus	0.19	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Decapterus	macarellus	0.38	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Decapterus	punctatus	0.34	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Elagatis	bipinnulata	0.11	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Lichia	amia	0.58	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Naucrates	ductor	0.28	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Pseudocaranx	dentex	0.32	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Seriola	dumerili	0.36	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Trachinotus	ovatus	0.57	NL	0

Chordata	Actinopterygii	Perciformes	Carangidae	Trachurus	mediterraneus	0.68	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Trachurus	picturatus	0.89	NL	0
Chordata	Actinopterygii	Perciformes	Carangidae	Trachurus	trachurus	0.42	NL	1
Chordata	Actinopterygii	Perciformes	Centracanthidae	Spicara	maena	0.74	NL	0
Chordata	Actinopterygii	Perciformes	Centracanthidae	Spicara	smaris	0.73	NL	0
Chordata	Actinopterygii	Perciformes	Centrolophidae	Centrolophus	niger	0.2	NL	0
Chordata	Actinopterygii	Perciformes	Centrolophidae	Hyperoglyphe	perciformis	0.74	NL	0
Chordata	Actinopterygii	Perciformes	Centrolophidae	Schedophilus	medusophagus	0.33	NL	0
Chordata	Actinopterygii	Perciformes	Centrolophidae	Schedophilus	ovalis	0.49	NL	0
Chordata	Actinopterygii	Perciformes	Cepolidae	Cepola	macrophthalma	0.69	NL	0
Chordata	Actinopterygii	Perciformes	Chaetodontidae	Chaetodon	melannotus	0.01	NL	0
Chordata	Actinopterygii	Perciformes	Clinidae	Clinitrachus	argentatus	0.71	NL	0
Chordata	Actinopterygii	Perciformes	Coryphaenidae	Coryphaena	equiselis	0.25	NL	0
Chordata	Actinopterygii	Perciformes	Coryphaenidae	Coryphaena	hippurus	0.19	NL	1
Chordata	Actinopterygii	Perciformes	Echeneidae	Echeneis	naucrates	0.26	NL	1
Chordata	Actinopterygii	Perciformes	Echeneidae	Remora	australis	0.13	NL	0
Chordata	Actinopterygii	Perciformes	Echeneidae	Remora	brachyptera	0.32	NL	0
Chordata	Actinopterygii	Perciformes	Echeneidae	Remora	osteochir	0.35	NL	0
Chordata	Actinopterygii	Perciformes	Echeneidae	Remora	remora	0.33	NL	0
Chordata	Actinopterygii	Perciformes	Epigonidae	Epigonus	constanciae	0.28	NL	0
Chordata	Actinopterygii	Perciformes	Epigonidae	Epigonus	denticulatus	0.58	NL	0
Chordata	Actinopterygii	Perciformes	Epigonidae	Epigonus	telescopus	0.26	NL	0
Chordata	Actinopterygii	Perciformes	Epigonidae	Microichthys	coccoi	1	NL	0
Chordata	Actinopterygii	Perciformes	Gempylidae	Ruvettus	pretiosus	0.2	NL	1
Chordata	Actinopterygii	Perciformes	Gobiidae	Aphia	minuta	0.64	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Corcyrogobius	liechtensteini	1	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Crystallogobius	linearis	0.78	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Deltentosteus	quadrimaculatus	0.7	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Didogobius	bentuvii	1	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Gammogobius	steinitzi	1	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Gobius	cobitis	0.74	NL	1
Chordata	Actinopterygii	Perciformes	Gobiidae	Gobius	cruentatus	0.77	NL	0

Chordata	Actinopterygii	Perciformes	Gobiidae	Gobius	geniporus	0.8	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Gobius	niger	0.68	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Gobius	paganellus	0.74	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Lesueurigobius	friesii	0.66	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Lesueurigobius	sanzi	0.94	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Lesueurigobius	suerii	0.71	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Millerigobius	macrocephalus	1	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Odondebuenia	balearica	1	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Pomatoschistus	bathi	1	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Pomatoschistus	marmoratus	0.8	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Pomatoschistus	microps	0.27	LC	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Pomatoschistus	minutus	0.06	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Pomatoschistus	pictus	0.08	NL	1
Chordata	Actinopterygii	Perciformes	Gobiidae	Thorogobius	ephippiatus	0.03	NL	0
Chordata	Actinopterygii	Perciformes	Gobiidae	Zosterisessor	ophiocephalus	0.78	DD	0
Chordata	Actinopterygii	Perciformes	Haemulidae	Plectorhinchus	mediterraneus	0.06	NL	0
Chordata	Actinopterygii	Perciformes	Haemulidae	Pomadasys	incisus	0.18	NL	0
Chordata	Actinopterygii	Perciformes	Istiophoridae	Makaira	nigricans	0.32	NL	0
Chordata	Actinopterygii	Perciformes	Istiophoridae	Tetrapturus	albidus	0.47	NL	0
Chordata	Actinopterygii	Perciformes	Istiophoridae	Tetrapturus	belone	1	NL	0
Chordata	Actinopterygii	Perciformes	Kyphosidae	Kyphosus	sectator	0.41	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Acantholabrus	palloni	0.88	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Coris	julis	0.81	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Ctenolabrus	rupestris	0.06	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Labrus	merula	0.77	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Labrus	mixtus	0.08	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Labrus	viridis	0.77	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	bailloni	0.5	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	cinereus	0.77	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	doderleini	0.75	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	mediterraneus	0.79	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	melanocercus	0.59	NL	0

Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	ocellatus	0.75	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	roissali	0.74	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	rostratus	0.77	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Symphodus	tinca	0.9	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Thalassoma	pavo	0.76	NL	0
Chordata	Actinopterygii	Perciformes	Labridae	Xyrichtys	novacula	0.28	NL	0
Chordata	Actinopterygii	Perciformes	Lobotidae	Lobotes	surinamensis	0.36	NL	0
Chordata	Actinopterygii	Perciformes	Luvaridae	Luvarus	imperialis	0.32	NL	0
Chordata	Actinopterygii	Perciformes	Moronidae	Dicentrarchus	labrax	0.35	LC	1
Chordata	Actinopterygii	Perciformes	Moronidae	Dicentrarchus	punctatus	0.79	NL	0
Chordata	Actinopterygii	Perciformes	Mullidae	Mullus	barbatus barbatus	0.94	NL	0
Chordata	Actinopterygii	Perciformes	Mullidae	Mullus	surmuletus	0.73	NL	0
Chordata	Actinopterygii	Perciformes	Mullidae	Pseudupeneus	prayensis	0.12	NL	0
Chordata	Actinopterygii	Perciformes	Nomeidae	Cubiceps	gracilis	0.51	NL	0
Chordata	Actinopterygii	Perciformes	Polynemidae	Galeoides	decadactylus	0.12	NL	1
Chordata	Actinopterygii	Perciformes	Polyprionidae	Polyprion	americanus	0.24	DD	0
Chordata	Actinopterygii	Perciformes	Pomacentridae	Chromis	chromis	0.78	NL	0
Chordata	Actinopterygii	Perciformes	Pomatomidae	Pomatomus	saltatrix	0.28	NL	0
Chordata	Actinopterygii	Perciformes	Priacanthidae	Priacanthus	arenatus	0.36	NL	0
Chordata	Actinopterygii	Perciformes	Scaridae	Sparisoma	cretense	0.25	NL	0
Chordata	Actinopterygii	Perciformes	Sciaenidae	Argyrosomus	regius	0.58	NL	1
Chordata	Actinopterygii	Perciformes	Sciaenidae	Sciaena	umbra	0.54	NL	0
Chordata	Actinopterygii	Perciformes	Sciaenidae	Umbrina	canariensis	0.38	NL	0
Chordata	Actinopterygii	Perciformes	Sciaenidae	Umbrina	cirrosa	0.49	NL	0
Chordata	Actinopterygii	Perciformes	Sciaenidae	Umbrina	ronchus	0.65	NL	0
Chordata	Actinopterygii	Perciformes	Scombridae	Acanthocybium	solandri	0.28	NL	1
Chordata	Actinopterygii	Perciformes	Scombridae	Auxis	rochei rochei	0.65	NL	0
Chordata	Actinopterygii	Perciformes	Scombridae	Auxis	thazard thazard	0.28	NL	0
Chordata	Actinopterygii	Perciformes	Scombridae	Euthynnus	alletteratus	0.38	NL	0
Chordata	Actinopterygii	Perciformes	Scombridae	Katsuwonus	pelamis	0.43	NL	1
Chordata	Actinopterygii	Perciformes	Scombridae	Orcynopsis	unicolor	0.15	NL	0
Chordata	Actinopterygii	Perciformes	Scombridae	Sarda	sarda	0.43	NL	0

Chordata	Actinopterygii	Perciformes	Scombridae	Scomber	scombrus	0.35	NL	1
Chordata	Actinopterygii	Perciformes	Scombridae	Thunnus	alalunga	0.31	DD	0
Chordata	Actinopterygii	Perciformes	Scombridae	Thunnus	thynnus	0.66	DD	1
Chordata	Actinopterygii	Perciformes	Serranidae	Anthias	anthias	0.74	NL	0
Chordata	Actinopterygii	Perciformes	Serranidae	Epinephelus	aeneus	0.09	NT	0
Chordata	Actinopterygii	Perciformes	Serranidae	Epinephelus	caninus	0.03	DD	0
Chordata	Actinopterygii	Perciformes	Serranidae	Epinephelus	marginatus	0.41	EN	1
Chordata	Actinopterygii	Perciformes	Serranidae	Mycteroperca	rubra	0.89	LC	0
Chordata	Actinopterygii	Perciformes	Serranidae	Serranus	atricauda	0.58	NL	0
Chordata	Actinopterygii	Perciformes	Serranidae	Serranus	cabrilla	0.7	NL	0
Chordata	Actinopterygii	Perciformes	Serranidae	Serranus	hepatus	0.74	NL	0
Chordata	Actinopterygii	Perciformes	Serranidae	Serranus	scriba	0.77	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Boops	boops	0.64	NL	1
Chordata	Actinopterygii	Perciformes	Sparidae	Dentex	dentex	0.82	NL	1
Chordata	Actinopterygii	Perciformes	Sparidae	Dentex	gibbosus	0.06	NL	1
Chordata	Actinopterygii	Perciformes	Sparidae	Dentex	macrophthalmus	0.45	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Dentex	maroccanus	0.62	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Diplodus	annularis	0.69	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Diplodus	cervinus cervinus	0.64	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Diplodus	puntazzo	0.84	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Diplodus	sargus sargus	0.77	NL	1
Chordata	Actinopterygii	Perciformes	Sparidae	Diplodus	vulgaris	0.77	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Lithognathus	mormyrus	0.69	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Oblada	melanura	0.79	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Pagellus	acarne	0.7	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Pagellus	bellottii	0.18	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Pagellus	bogaraveo	0.7	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Pagellus	erythrinus	0.73	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Pagrus	auriga	0.07	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Pagrus	caeruleostictus	0.23	NL	0
Chordata	Actinopterygii	Perciformes	Sparidae	Pagrus	pagrus	0.58	EN	1
Chordata	Actinopterygii	Perciformes	Sparidae	Sarpa	salpa	0.79	NL	0

Chordata	Actinopterygii	Perciformes	Sparidae	Sparus	aurata	0.78	NL	1
Chordata	Actinopterygii	Perciformes	Sparidae	Spondyliosoma	cantharus	0.72	NL	0
Chordata	Actinopterygii	Perciformes	Sphyraenidae	Sphyraena	sphyraena	0.66	NL	0
Chordata	Actinopterygii	Perciformes	Stromateidae	Pampus	argenteus	0.13	NL	0
Chordata	Actinopterygii	Perciformes	Stromateidae	Stromateus	fiatola	0.44	NL	0
Chordata	Actinopterygii	Perciformes	Tetragonuridae	Tetragonurus	cuvieri	0.32	NL	0
Chordata	Actinopterygii	Perciformes	Trachinidae	Echiichthys	vipera	0.15	NL	0
Chordata	Actinopterygii	Perciformes	Trachinidae	Trachinus	draco	0.7	NL	0
Chordata	Actinopterygii	Perciformes	Trachinidae	Trachinus	radiatus	0.35	NL	0
Chordata	Actinopterygii	Perciformes	Trichiuridae	Lepidopus	caudatus	0.37	NL	0
Chordata	Actinopterygii	Perciformes	Trichiuridae	Trichiurus	lepturus	0.3	NL	1
Chordata	Actinopterygii	Perciformes	Tripterygiidae	Tripterygion	delaisi	0.86	NL	0
Chordata	Actinopterygii	Perciformes	Tripterygiidae	Tripterygion	tripteronotus	0.81	NL	0
Chordata	Actinopterygii	Perciformes	Uranoscopidae	Uranoscopus	scaber	0.79	NL	0
Chordata	Actinopterygii	Perciformes	Xiphiidae	Xiphias	gladius	0.33	DD	1
Chordata	Actinopterygii	Perciformes	Zoarcidae	Melanostigma	atlanticum	0.01	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Bothidae	Arnoglossus	imperialis	0.29	NL	1
Chordata	Actinopterygii	Pleuronectiformes	Bothidae	Arnoglossus	laterna	0.67	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Bothidae	Arnoglossus	rueppelii	0.87	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Bothidae	Arnoglossus	thori	0.73	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Bothidae	Bothus	podas	0.6	NL	1
Chordata	Actinopterygii	Pleuronectiformes	Citharidae	Citharus	linguatula	0.62	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Cynoglossidae	Symphurus	nigrescens	0.56	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Pleuronectidae	Platichthys	flesus	0.05	LC	1
Chordata	Actinopterygii	Pleuronectiformes	Pleuronectidae	Pleuronectes	platessa	0.19	LC	0
Chordata	Actinopterygii	Pleuronectiformes	Scophthalmidae	Lepidorhombus	boscii	0.61	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Scophthalmidae	Lepidorhombus	whiffiagonis	0.32	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Scophthalmidae	Psetta	maxima	0.57	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Scophthalmidae	Scophthalmus	rhombus	0.66	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Scophthalmidae	Zeugopterus	regius	0.45	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Bathysolea	profundicola	0.63	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Buglossidium	luteum	0.43	NL	1

Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Dicologlossa	cuneata	0.52	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Microchirus	azevia	0.65	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Microchirus	boscanion	0.24	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Microchirus	ocellatus	0.41	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Microchirus	variegatus	0.59	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Monochirus	hispidus	0.5	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Pegusa	lascaris	0.24	NL	0
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Solea	solea	0.37	NL	1
Chordata	Actinopterygii	Pleuronectiformes	Soleidae	Synapturichthys	kleinii	0.77	NL	0
Chordata	Actinopterygii	Salmoniformes	Salmonidae	Salmo	salar	0.32	LR/lc	1
Chordata	Actinopterygii	Salmoniformes	Salmonidae	Salmo	trutta trutta	0.04	LC	1
Chordata	Actinopterygii	Scorpaeniformes	Cottidae	Taurulus	bubalis	0.08	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Dactylopteridae	Dactylopterus	volitans	0.37	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Liparidae	Eutelichthys	leptochirus	0.66	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Peristediidae	Peristedion	cataphractum	0.58	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Scorpaenidae	Pontinus	kuhlii	0.24	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Scorpaenidae	Scorpaena	elongata	0.43	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Scorpaenidae	Scorpaena	loppei	0.8	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Scorpaenidae	Scorpaena	maderensis	0.81	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Scorpaenidae	Scorpaena	notata	0.69	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Scorpaenidae	Scorpaena	porcus	0.75	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Scorpaenidae	Scorpaena	scrofa	0.7	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Scorpaenidae	Scorpaena	stephanica	0.56	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Sebastidae	Helicolenus	dactylopterus dactylopterus	0.42	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Triglidae	Aspitrigla	cuculus	0.69	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Triglidae	Chelidonichthys	lucerna	0.66	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Triglidae	Chelidonichthys	obscurus	0.66	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Triglidae	Eutrigla	gurnardus	0.57	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Triglidae	Lepidotrigla	cavillone	0.71	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Triglidae	Lepidotrigla	dieuzeidei	0.76	NL	1
Chordata	Actinopterygii	Scorpaeniformes	Triglidae	Trigla	lyra	0.54	NL	0
Chordata	Actinopterygii	Scorpaeniformes	Triglidae	Trigloporus	lastoviza	0.66	NL	0

Chordata	Actinopterygii	Stomiiformes	Gonostomatidae	Cyclothone	braueri	0.57	NL	0
Chordata	Actinopterygii	Stomiiformes	Gonostomatidae	Cyclothone	microdon	0.35	NL	0
Chordata	Actinopterygii	Stomiiformes	Gonostomatidae	Cyclothone	pygmaea	0.9	NL	0
Chordata	Actinopterygii	Stomiiformes	Gonostomatidae	Gonostoma	denudatum	0.73	NL	0
Chordata	Actinopterygii	Stomiiformes	Phosichthyidae	Ichthyococcus	ovatus	0.44	NL	0
Chordata	Actinopterygii	Stomiiformes	Phosichthyidae	Vinciguerria	attenuata	0.45	NL	0
Chordata	Actinopterygii	Stomiiformes	Phosichthyidae	Vinciguerria	poweriae	0.47	NL	0
Chordata	Actinopterygii	Stomiiformes	Sternoptychidae	Argyropelecus	hemigymnus	0.38	NL	0
Chordata	Actinopterygii	Stomiiformes	Sternoptychidae	Argyropelecus	olfersii	0.24	NL	0
Chordata	Actinopterygii	Stomiiformes	Sternoptychidae	Maurolicus	muelleri	0.29	NL	0
Chordata	Actinopterygii	Stomiiformes	Sternoptychidae	Valenciennellus	tripunctulatus	0.35	NL	0
Chordata	Actinopterygii	Stomiiformes	Stomiidae	Bathophilus	nigerrimus	0.6	NL	0
Chordata	Actinopterygii	Stomiiformes	Stomiidae	Bathophilus	vaillanti	0.33	NL	0
Chordata	Actinopterygii	Stomiiformes	Stomiidae	Borostomias	antarcticus	0.01	NL	0
Chordata	Actinopterygii	Stomiiformes	Stomiidae	Chauliodus	sloani	0.35	NL	0
Chordata	Actinopterygii	Stomiiformes	Stomiidae	Stomias	boa boa	0.39	NL	0
Chordata	Actinopterygii	Syngnathiformes	Centriscidae	Macroramphosus	scolopax	0.63	NL	0
Chordata	Actinopterygii	Syngnathiformes	Syngnathidae	Entelurus	aequoreus	0.01	NL	0
Chordata	Actinopterygii	Syngnathiformes	Syngnathidae	Hippocampus	guttulatus	0.86	DD	0
Chordata	Actinopterygii	Syngnathiformes	Syngnathidae	Hippocampus	hippocampus	0.83	DD	0
Chordata	Actinopterygii	Syngnathiformes	Syngnathidae	Nerophis	ophidion	0.41	NL	0
Chordata	Actinopterygii	Syngnathiformes	Syngnathidae	Syngnathus	abaster	0.84	LC	0
Chordata	Actinopterygii	Syngnathiformes	Syngnathidae	Syngnathus	acus	0.68	NL	0
Chordata	Actinopterygii	Syngnathiformes	Syngnathidae	Syngnathus	typhle	0.85	NL	0
Chordata	Actinopterygii	Tetraodontiformes	Balistidae	Balistes	capriscus	0.18	NL	1
Chordata	Actinopterygii	Tetraodontiformes	Molidae	Mola	mola	0.41	NL	1
Chordata	Actinopterygii	Tetraodontiformes	Molidae	Ranzania	laevis	0.46	NL	1
Chordata	Actinopterygii	Tetraodontiformes	Ostraciidae	Acanthostracion	quadricornis	0.24	NL	0
Chordata	Actinopterygii	Tetraodontiformes	Ostraciidae	Lactophrys	trigonus	0.31	NL	0
Chordata	Actinopterygii	Tetraodontiformes	Tetraodontidae	Arothron	hispidus	0.17	NL	0
Chordata	Actinopterygii	Tetraodontiformes	Tetraodontidae	Ephippion	guttifer	0.02	NL	0
Chordata	Actinopterygii	Tetraodontiformes	Tetraodontidae	Sphoeroides	pachygaster	0.23	VU	0

Chordata	Actinopterygii	Tetraodontiformes	Tetraodontidae	Torquigener	flavimaculosus	0.69	NL	0
Chordata	Actinopterygii	Zeiformes	Zeidae	Zeus	faber	0.5	NL	0
Chordata	Ascidiacea	Enterogona	Ascidiidae	Ascidia	conchilega	0.05	NL	0
Chordata	Ascidiacea	Enterogona	Ascidiidae	Ascidia	mentula	0.62	NL	0
Chordata	Ascidiacea	Enterogona	Ascidiidae	Ascidia	virginea	0.46	NL	0
Chordata	Ascidiacea	Enterogona	Ascidiidae	Ascidiella	aspersa	0.49	NL	0
Chordata	Ascidiacea	Enterogona	Ascidiidae	Phallusia	mammillata	0.8	NL	0
Chordata	Ascidiacea	Enterogona	Cionidae	Ciona	intestinalis	0.06	NL	0
Chordata	Ascidiacea	Enterogona	Clavelinidae	Clavelina	lepadiformis	0.04	NL	0
Chordata	Ascidiacea	Enterogona	Corellidae	Corella	parallelogramma	0.04	NL	0
Chordata	Ascidiacea	Enterogona	Didemnidae	Didemnum	maculosum	0.48	NL	0
Chordata	Ascidiacea	Enterogona	Didemnidae	Diplosoma	listerianum	0.17	NL	0
Chordata	Ascidiacea	Enterogona	Polycitoridae	Cystodytes	dellechiajei	0.24	NL	0
Chordata	Ascidiacea	Enterogona	Polyclinidae	Polyclinum	aurantium	0.25	NL	0
Chordata	Ascidiacea	Enterogona	Polyclinidae	Sidnyum	turbinatum	0.17	NL	0
Chordata	Ascidiacea	Pleurogona	Molgulidae	Molgula	manhattensis	0.13	NL	0
Chordata	Ascidiacea	Pleurogona	Molgulidae	Molgula	occulta	0.18	NL	0
Chordata	Ascidiacea	Pleurogona	Pyuridae	Pyura	microcosmus	0.72	NL	0
Chordata	Ascidiacea	Pleurogona	Pyuridae	Pyura	tessellata	0.84	NL	0
Chordata	Ascidiacea	Pleurogona	Styelidae	Botrylloides	violaceus	0.03	NL	0
Chordata	Ascidiacea	Pleurogona	Styelidae	Botryllus	schlosseri	0.15	NL	0
Chordata	Ascidiacea	Pleurogona	Styelidae	Polycarpa	pomaria	0.1	NL	0
Chordata	Ascidiacea	Pleurogona	Styelidae	Styela	canopus	0.41	NL	0
Chordata	Ascidiacea	Pleurogona	Styelidae	Styela	plicata	0.41	NL	0
Chordata	Cephalaspidomorphi	Petromyzontiformes	Petromyzontidae	Lampetra	fluviatilis	0.06	LC	0
Chordata	Cephalaspidomorphi	Petromyzontiformes	Petromyzontidae	Petromyzon	marinus	0.24	LC	0
Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Carcharhinus	brachyurus	0.23	DD	0
Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Carcharhinus	brevipinna	0.03	DD	0
Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Carcharhinus	falciformis	0.13	LR/lc	0
Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Carcharhinus	limbatus	0.27	DD	0
Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Carcharhinus	longimanus	0.39	VU	1
Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Carcharhinus	melanopterus	0.22	LR/nt	1

Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Carcharhinus	obscurus	0.28	DD	0
Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Carcharhinus	plumbeus	0.31	EN	0
Chordata	Elasmobranchii	Carcharhiniformes	Carcharhinidae	Prionace	glauca	0.23	VU	0
Chordata	Elasmobranchii	Carcharhiniformes	Scyliorhinidae	Galeus	melastomus	0.63	LC	0
Chordata	Elasmobranchii	Carcharhiniformes	Scyliorhinidae	Scyliorhinus	canicula	0.57	LC	1
Chordata	Elasmobranchii	Carcharhiniformes	Scyliorhinidae	Scyliorhinus	stellaris	0.34	NT	0
Chordata	Elasmobranchii	Carcharhiniformes	Sphyrnidae	Sphyrna	lewini	0.36	LR/nt	0
Chordata	Elasmobranchii	Carcharhiniformes	Sphyrnidae	Sphyrna	mokarran	0.15	EN	1
Chordata	Elasmobranchii	Carcharhiniformes	Sphyrnidae	Sphyrna	tudes	0.15	VU	1
Chordata	Elasmobranchii	Carcharhiniformes	Sphyrnidae	Sphyrna	zygaena	0.23	VU	0
Chordata	Elasmobranchii	Carcharhiniformes	Triakidae	Galeorhinus	galeus	0.39	VU	1
Chordata	Elasmobranchii	Carcharhiniformes	Triakidae	Mustelus	asterias	0.16	LR/lc	0
Chordata	Elasmobranchii	Carcharhiniformes	Triakidae	Mustelus	mustelus	0.49	VU	0
Chordata	Elasmobranchii	Hexanchiformes	Hexanchidae	Heptranchias	perlo	0.26	VU	0
Chordata	Elasmobranchii	Hexanchiformes	Hexanchidae	Hexanchus	griseus	0.19	NT	0
Chordata	Elasmobranchii	Hexanchiformes	Hexanchidae	Hexanchus	nakamurai	0.46	DD	0
Chordata	Elasmobranchii	Lamniformes	Alopiidae	Alopias	superciliosus	0.15	DD	1
Chordata	Elasmobranchii	Lamniformes	Cetorhinidae	Cetorhinus	maximus	0.28	VU	1
Chordata	Elasmobranchii	Lamniformes	Lamnidae	Carcharodon	carcharias	0.32	EN	1
Chordata	Elasmobranchii	Lamniformes	Lamnidae	Isurus	oxyrinchus	0.12	CR	1
Chordata	Elasmobranchii	Lamniformes	Lamnidae	Isurus	paucus	0.32	VU	1
Chordata	Elasmobranchii	Lamniformes	Lamnidae	Lamna	nasus	0.46	CR	1
Chordata	Elasmobranchii	Lamniformes	Odontaspididae	Carcharias	taurus	0.21	CR	1
Chordata	Elasmobranchii	Lamniformes	Odontaspididae	Odontaspis	ferox	0.25	EN	1
Chordata	Elasmobranchii	Pristiformes	Pristidae	Pristis	pectinata	0.21	CR	1
Chordata	Elasmobranchii	Rajiformes	Dasyatidae	Dasyatis	centroura	0.45	NT	0
Chordata	Elasmobranchii	Rajiformes	Dasyatidae	Dasyatis	pastinaca	0.79	NT	1
Chordata	Elasmobranchii	Rajiformes	Dasyatidae	Dasyatis	tortonesei	1	N.E.	0
Chordata	Elasmobranchii	Rajiformes	Dasyatidae	Pteroplatytrygon	violacea	0.22	NT	0
Chordata	Elasmobranchii	Rajiformes	Dasyatidae	Taeniura	grabata	0.01	DD	0
Chordata	Elasmobranchii	Rajiformes	Gymnuridae	Gymnura	altavela	0.21	CR	0
Chordata	Elasmobranchii	Rajiformes	Myliobatidae	Myliobatis	aquila	0.93	NT	0

Chordata	Elasmobranchii	Rajiformes	Myliobatidae	Pteromylaeus	bovinus	0.19	DD	0
Chordata	Elasmobranchii	Rajiformes	Myliobatidae	Rhinoptera	marginata	0.03	NT	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Dipturus	batis	0.42	CR	1
Chordata	Elasmobranchii	Rajiformes	Rajidae	Dipturus	oxyrinchus	0.59	NT	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Leucoraja	circularis	0.82	EN	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Leucoraja	fullonica	0.44	DD	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Leucoraja	melitensis	1	CR	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Leucoraja	naevus	0.59	NT	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	asterias	0.75	LC	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	brachyura	0.36	DD	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	clavata	0.63	NT	1
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	miraletus	0.55	LC	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	montagui	0.62	LC	1
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	polystigma	0.63	NT	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	radula	0.42	DD	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	rondeleti	1	N.E.	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Raja	undulata	0.69	DD	0
Chordata	Elasmobranchii	Rajiformes	Rajidae	Rostroraja	alba	0.78	CR	1
Chordata	Elasmobranchii	Rajiformes	Rhinobatidae	Rhinobatos	cemiculus	0.11	EN	1
Chordata	Elasmobranchii	Rajiformes	Rhinobatidae	Rhinobatos	rhinobatos	0.11	EN	1
Chordata	Elasmobranchii	Squaliformes	Centrophoridae	Centrophorus	granulosus	0.07	VU	1
Chordata	Elasmobranchii	Squaliformes	Dalatiidae	Dalatias	licha	0.18	DD	0
Chordata	Elasmobranchii	Squaliformes	Echinorhinidae	Echinorhinus	brucus	0.22	DD	0
Chordata	Elasmobranchii	Squaliformes	Etmopteridae	Etmopterus	spinax	0.54	LC	0
Chordata	Elasmobranchii	Squaliformes	Oxynotidae	Oxynotus	centrina	0.23	CR	0
Chordata	Elasmobranchii	Squaliformes	Somniosidae	Centroscymnus	coelolepis	0.25	LC	0
Chordata	Elasmobranchii	Squaliformes	Somniosidae	Somniosus	rostratus	0.76	LC	0
Chordata	Elasmobranchii	Squaliformes	Squalidae	Squalus	acanthias	0.15	EN	1
Chordata	Elasmobranchii	Squaliformes	Squalidae	Squalus	blainville	0.53	N.E.	0
Chordata	Elasmobranchii	Squaliformes	Squalidae	Squalus	uyato	0.17	N.E.	0
Chordata	Elasmobranchii	Squatiniformes	Squatinidae	Squatina	aculeata	0.04	CR	1
Chordata	Elasmobranchii	Squatiniformes	Squatinidae	Squatina	oculata	0.05	CR	1

Chordata	Elasmobranchii	Squatiniformes	Squatinidae	Squatina	squatina	0.67	CR	1
Chordata	Elasmobranchii	Torpediniformes	Torpedinidae	Torpedo	marmorata	0.56	LC	0
Chordata	Elasmobranchii	Torpediniformes	Torpedinidae	Torpedo	nobiliana	0.22	DD	0
Chordata	Elasmobranchii	Torpediniformes	Torpedinidae	Torpedo	torpedo	0.37	LC	0
Chordata	Holocephali	Chimaeriformes	Chimaeridae	Chimaera	monstrosa	0.44	NT	1
Chordata	Mammalia	Carnivora	Phocidae	Monachus	monachus	0.81	CR	1
Chordata	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	acutorostrata	0.24	LR/nt	1
Chordata	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	borealis	0	EN	1
Chordata	Mammalia	Cetacea	Balaenopteridae	Balaenoptera	physalus	0.17	EN	1
Chordata	Mammalia	Cetacea	Balaenopteridae	Megaptera	novaeangliae	0.2	VU	1
Chordata	Mammalia	Cetacea	Delphinidae	Delphinus	delphis	0.22	LR/lc	1
Chordata	Mammalia	Cetacea	Delphinidae	Globicephala	melas	0.16	LR/lc	1
Chordata	Mammalia	Cetacea	Delphinidae	Grampus	griseus	0.32	DD	1
Chordata	Mammalia	Cetacea	Delphinidae	Orcinus	orca	0.3	LR/cd	1
Chordata	Mammalia	Cetacea	Delphinidae	Pseudorca	crassidens	0.25	LR/lc	1
Chordata	Mammalia	Cetacea	Delphinidae	Stenella	coeruleoalba	0.64	LR/cd	1
Chordata	Mammalia	Cetacea	Delphinidae	Steno	bredanensis	0.19	DD	1
Chordata	Mammalia	Cetacea	Delphinidae	Tursiops	truncatus	0.39	DD	1
Chordata	Mammalia	Cetacea	Kogiidae	Kogia	sima	0.09	LR/lc	1
Chordata	Mammalia	Cetacea	Phocoenidae	Phocoena	phocoena	0.05	VU	1
Chordata	Mammalia	Cetacea	Physeteridae	Physeter	catodon	0.26	VU	1
Chordata	Mammalia	Cetacea	Ziphiidae	Hyperoodon	ampullatus	0	LR/cd	1
Chordata	Mammalia	Cetacea	Ziphiidae	Mesoplodon	bidens	0.02	DD	0
Chordata	Mammalia	Cetacea	Ziphiidae	Mesoplodon	densirostris	0.09	DD	0
Chordata	Mammalia	Cetacea	Ziphiidae	Ziphius	cavirostris	0.24	DD	1
Chordata	Myxini	Myxiniformes	Myxinidae	Myxine	glutinosa	0.36	NL	0
Chordata	Reptilia	Testudines	Cheloniidae	Caretta	caretta	0.49	EN	1
Chordata	Reptilia	Testudines	Cheloniidae	Chelonia	mydas	0.36	EN	1
Chordata	Reptilia	Testudines	Cheloniidae	Eretmochelys	imbricata	0.18	CR	1
Chordata	Reptilia	Testudines	Cheloniidae	Lepidochelys	kempii	0.22	CR	1
Chordata	Reptilia	Testudines	Dermochelyidae	Dermochelys	coriacea	0.26	CR	1
Cnidaria	Anthozoa	Actiniaria	Aiptasiidae	Aiptasia	mutabilis	0.53	NL	0

Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Cladocora	caespitosa	0.61	NL	0
Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Lophelia	pertusa	0.25	NL	0
Cnidaria	Hydrozoa	Anthoathecata	Eudendriidae	Eudendrium	capillare	0.51	NL	0
Cnidaria	Hydrozoa	Anthoathecata	Eudendriidae	Eudendrium	carneum	0.33	NL	0
Cnidaria	Hydrozoa	Anthoathecata	Eudendriidae	Eudendrium	rameum	0.21	NL	0
Cnidaria	Hydrozoa	Leptothecata	Lafoeidae	Lafoea	dumosa	0.07	NL	0
Cnidaria	Scyphozoa	Semaeostomeae	Ulmaridae	Aurelia	aurita	0.17	NL	0
Ctenophora	Tentaculata	Cydippida	Pleurobrachiidae	Pleurobrachia	pileus	0.07	NL	0
Echinodermata	Holothuroidea	Aspidochirotida	Stichopodidae	Stichopus	regalis	0.55	NL	0
Echinodermata	Holothuroidea	Dendrochirotida	Cucumariidae	Leptopentacta	elongata	0.58	NL	0
Mollusca	Bivalvia	Arcoida	Arcidae	Arca	noae	0.94	NL	0
Mollusca	Bivalvia	Arcoida	Arcidae	Arca	tetragona	0.79	NL	0
Mollusca	Bivalvia	Arcoida	Arcidae	Barbatia	barbata	0.85	NL	0
Mollusca	Bivalvia	Arcoida	Glycymerididae	Glycymeris	bimaculata	0.88	NL	0
Mollusca	Bivalvia	Arcoida	Noetiidae	Striarca	lactea	0.78	NL	0
Mollusca	Bivalvia	Limoida	Limidae	Lima	lima	0.81	NL	0
Mollusca	Bivalvia	Limoida	Limidae	Limatula	subauriculata	0.31	NL	0
Mollusca	Bivalvia	Myoida	Corbulidae	Corbula	gibba	0.21	NL	0
Mollusca	Bivalvia	Myoida	Teredinidae	Teredo	navalis	0.47	NL	0
Mollusca	Bivalvia	Mytiloida	Mytilidae	Gregariella	petagnae	0.81	NL	0
Mollusca	Bivalvia	Mytiloida	Mytilidae	Lithophaga	lithophaga	0.83	NL	0
Mollusca	Bivalvia	Mytiloida	Mytilidae	Modiolula	phaseolina	0.75	NL	0
Mollusca	Bivalvia	Mytiloida	Mytilidae	Modiolus	adriaticus	0.78	NL	0
Mollusca	Bivalvia	Mytiloida	Mytilidae	Modiolus	barbatus	0.81	NL	0
Mollusca	Bivalvia	Mytiloida	Mytilidae	Musculus	costulatus	0.92	NL	0
Mollusca	Bivalvia	Mytiloida	Mytilidae	Mytilus	galloprovincialis	0.77	NL	0
Mollusca	Bivalvia	Nuculoida	Nuculidae	Nucula	hanleyi	0.17	NL	0
Mollusca	Bivalvia	Nuculoida	Nuculidae	Nucula	nucleus	0.32	NL	0
Mollusca	Bivalvia	Nuculoida	Nuculidae	Nucula	sulcata	0.43	NL	0
Mollusca	Bivalvia	Ostreoida	Anomiidae	Anomia	ephippium	0.69	NL	0
Mollusca	Bivalvia	Ostreoida	Anomiidae	Pododesmus	patelliformis	0.42	NL	0
Mollusca	Bivalvia	Ostreoida	Ostreidae	Crassostrea	gigas	0.21	NL	0

Mollusca	Bivalvia	Ostreoida	Ostreidae	Ostrea	edulis	0.28	NL	1
Mollusca	Bivalvia	Ostreoida	Pectinidae	Aequipecten	opercularis	0.51	NL	0
Mollusca	Bivalvia	Ostreoida	Pectinidae	Chlamys	glabra	0.88	NL	0
Mollusca	Bivalvia	Ostreoida	Pectinidae	Chlamys	pesfelis	0.73	NL	0
Mollusca	Bivalvia	Ostreoida	Pectinidae	Chlamys	varia	0.66	NL	0
Mollusca	Bivalvia	Ostreoida	Pectinidae	Delectopecten	vitreus	0.04	NL	0
Mollusca	Bivalvia	Ostreoida	Spondylidae	Spondylus	gaederopus	0.79	NL	0
Mollusca	Bivalvia	Pholadomyoida	Pandoridae	Pandora	inaequivalvis	0.66	NL	0
Mollusca	Bivalvia	Pterioida	Pinnidae	Atrina	pectinata	0.32	NL	0
Mollusca	Bivalvia	Pterioida	Pinnidae	Pinna	nobilis	0.86	NL	0
Mollusca	Bivalvia	Veneroida	Astartidae	Digitaria	digitaria	0.8	NL	0
Mollusca	Bivalvia	Veneroida	Cardiidae	Acanthocardia	aculeata	0.88	NL	0
Mollusca	Bivalvia	Veneroida	Cardiidae	Acanthocardia	paucicostata	0.73	NL	0
Mollusca	Bivalvia	Veneroida	Cardiidae	Acanthocardia	tuberculata	0.75	NL	0
Mollusca	Bivalvia	Veneroida	Cardiidae	Cerastoderma	edule	0.01	NL	0
Mollusca	Bivalvia	Veneroida	Cardiidae	Cerastoderma	glaucum	0.52	NL	0
Mollusca	Bivalvia	Veneroida	Cardiidae	Laevicardium	crassum	0.05	NL	0
Mollusca	Bivalvia	Veneroida	Donacidae	Donax	semistriatus	0.88	NL	0
Mollusca	Bivalvia	Veneroida	Donacidae	Donax	trunculus	0.82	NL	0
Mollusca	Bivalvia	Veneroida	Donacidae	Donax	vittatus	0.03	NL	0
Mollusca	Bivalvia	Veneroida	Lucinidae	Anodontia	fragilis	0.83	NL	0
Mollusca	Bivalvia	Veneroida	Lucinidae	Ctena	decussata	0.8	NL	0
Mollusca	Bivalvia	Veneroida	Lucinidae	Loripes	lacteus	0.94	NL	0
Mollusca	Bivalvia	Veneroida	Lucinidae	Lucinella	divaricata	0.82	NL	0
Mollusca	Bivalvia	Veneroida	Lucinidae	Myrtea	spinifera	0.85	NL	0
Mollusca	Bivalvia	Veneroida	Mesodesmatidae	Paphies	australis	0.08	NL	0
Mollusca	Bivalvia	Veneroida	Petricolidae	Mysia	undata	0.07	NL	0
Mollusca	Bivalvia	Veneroida	Pharidae	Ensis	siliqua	0.1	NL	0
Mollusca	Bivalvia	Veneroida	Psammobiidae	Gari	depressa	0.85	NL	0
Mollusca	Bivalvia	Veneroida	Semelidae	Scrobicularia	plana	0.29	NL	0
Mollusca	Bivalvia	Veneroida	Tellinidae	Tellina	tenuis	0.68	NL	0
Mollusca	Bivalvia	Veneroida	Veneridae	Callista	chione	0.77	NL	0

Mollusca	Bivalvia	Veneroida	Veneridae	Chamelea	gallina	0.45	NL	0
Mollusca	Bivalvia	Veneroida	Veneridae	Clausinella	fasciata	0.62	NL	0
Mollusca	Bivalvia	Veneroida	Veneridae	Dosinia	exoleta	0.49	NL	0
Mollusca	Bivalvia	Veneroida	Veneridae	Dosinia	lupinus	0.57	NL	0
Mollusca	Bivalvia	Veneroida	Veneridae	Ruditapes	decussatus	0.87	NL	0
Mollusca	Bivalvia	Veneroida	Veneridae	Tapes	decussata	0.79	NL	0
Mollusca	Bivalvia	Veneroida	Veneridae	Venerupis	pullastra	0.66	NL	0
Mollusca	Bivalvia	Veneroida	Veneridae	Venus	verrucosa	0.7	NL	0
Mollusca	Cephalopoda	Octopoda	Octopodidae	Eledone	cirrhosa	0.39	NL	0
Mollusca	Cephalopoda	Octopoda	Octopodidae	Eledone	moschata	0.56	NL	0
Mollusca	Cephalopoda	Octopoda	Octopodidae	Illex	coindetii	0.63	NL	0
Mollusca	Cephalopoda	Octopoda	Octopodidae	Octopus	vulgaris	0.59	NL	0
Mollusca	Cephalopoda	Sepiida	Sepiidae	Sepia	orbignyana	0.64	NL	0
Mollusca	Cephalopoda	Sepiolida	Sepiolidae	Heteroteuthis	dispar	0.69	NL	0
Mollusca	Cephalopoda	Sepiolida	Sepiolidae	Rossia	macrosoma	0.03	NL	0
Mollusca	Cephalopoda	Sepiolida	Sepiolidae	Stoloteuthis	leucoptera	0.06	NL	1
Mollusca	Cephalopoda	Teuthida	Brachioteuthidae	Brachioteuthis	riisei	0.53	NL	0
Mollusca	Cephalopoda	Teuthida	Loliginidae	Loligo	forbesii	0.33	NL	1
Mollusca	Cephalopoda	Teuthida	Loliginidae	Loligo	vulgaris	0.65	NL	1
Mollusca	Cephalopoda	Teuthida	Ommastrephidae	Ornithoteuthis	antillarum	0.25	NL	0
Mollusca	Cephalopoda	Teuthida	Ommastrephidae	Todarodes	sagittatus	0.57	NL	0
Mollusca	Cephalopoda	Teuthida	Ommastrephidae	Todaropsis	eblanae	0.13	NL	0
Mollusca	Cephalopoda	Teuthida	Pyroteuthidae	Pterygioteuthis	giardi	0.19	NL	0
Mollusca	Gastropoda	Archaeogastropoda	Haliotididae	Haliotis	tuberculata	0.78	NL	0
Mollusca	Gastropoda	Archaeogastropoda	Patellidae	Patella	ulyssiponensis	0.6	NL	0
Mollusca	Gastropoda	Archaeogastropoda	Trochidae	Gibbula	magus	0.49	NL	0
Mollusca	Gastropoda	Cephalaspidea	Cylichnidae	Cylichna	cylindracea	0.28	NL	0
Mollusca	Gastropoda	Cephalaspidea	Philinidae	Philine	aperta	0.59	NL	0
Mollusca	Gastropoda	Neogastropoda	Muricidae	Bolinus	brandaris	0.77	NL	0
Mollusca	Gastropoda	Neogastropoda	Muricidae	Stramonita	haemastoma	0.67	NL	0
Mollusca	Gastropoda	Neotaenioglossa	Eulimidae	Eulima	glabra	0.72	NL	0
Mollusca	Gastropoda	Neotaenioglossa	Ranellidae	Charonia	lampas	0.52	NL	0

Mollusca	Gastropoda	Neotaenioglossa	Turritellidae	Turritella	communis	0.43	NL	0
Mollusca	Gastropoda	Notaspidea	Pleurobranchidae	Berthella	plumula	0.78	NL	0
Mollusca	Polyplacophora	Chitonida	Acanthochitonidae	Acanthochitona	fascicularis	0.89	NL	0
Mollusca	Polyplacophora	Chitonida	Callochitonidae	Callochiton	septemvalvis	0.02	NL	0
Mollusca	Polyplacophora	Chitonida	Hanleyidae	Hanleya	hanleyi	0.05	NL	0
Mollusca	Scaphopoda	Dentaliida	Dentaliidae	Antalis	vulgaris	0.69	NL	0
Mollusca	Scaphopoda	Dentaliida	Fustiariidae	Fustiaria	rubescens	0.82	NL	0
Mollusca	Scaphopoda	Gadilida	Entalinidae	Entalina	tetragona	0.51	NL	0
Mollusca	Scaphopoda	Gadilida	Gadilidae	Cadulus	jeffreysi	0.68	NL	0
Mollusca	Scaphopoda	Gadilida	Gadilidae	Cadulus	propinquus	0.58	NL	0
Mollusca	Scaphopoda	Gadilida	Gadilidae	Dischides	politus	0.8	NL	0
Mollusca	Scaphopoda	Gadilida	Pulsellidae	Pulsellum	lofotense	0.52	NL	0
Porifera	Demospongiae	Dictyoceratida	Spongiidae	Spongia	officinalis	0.6	NL	0
Sipuncula	Not assigned	Not assigned	Aspidosiphonidae	Aspidosiphon	muelleri	0.28	NL	0
Sipuncula	Not assigned	Not assigned	Golfingiidae	Golfingia	elongata	0.31	NL	0
Sipuncula	Not assigned	Not assigned	Golfingiidae	Golfingia	margaritacea	0.16	NL	0
Sipuncula	Not assigned	Not assigned	Golfingiidae	Golfingia	vulgaris	0.31	NL	0
Sipuncula	Not assigned	Not assigned	Golfingiidae	Nephasoma	abyssorum	0.29	NL	0
Sipuncula	Not assigned	Not assigned	Golfingiidae	Nephasoma	constricticervix	0.08	NL	0
Sipuncula	Not assigned	Not assigned	Golfingiidae	Nephasoma	constrictum	0.38	NL	0
Sipuncula	Not assigned	Not assigned	Golfingiidae	Thysanocardia	procera	0.52	NL	0
Sipuncula	Not assigned	Not assigned	Phascolionidae	Phascolion	strombus	0.45	NL	0
Sipuncula	Not assigned	Not assigned	Phascolionidae	Phascolion	tuberculosum	0.22	NL	0
Sipuncula	Not assigned	Not assigned	Sipunculidae	Sipunculus	nudus	0.27	NL	0

Seaweeds and seagrasses (by Enric Ballesteros)

Table S7. Mediterranean biodiversity (species/infraspecific taxa, families, orders, classes) for the phyla Heterokontophyta, Rhodophyta, Chlorophyta and Magnoliophyta and all the macrophytobenthos

Total number of species/intraspecific taxa is also split into introduced, endemics and others.

	Species	Introduced	Endemic	Others	Families	Orders	Classes
Heterokontophyta	277	23	81	173	26	15	3
Rhodophyta	657	73	150	432	50	22	5
Chlorophyta	190	17	20	153	22	14	5
Magnoliophyta	7	1	1	5	2	1	1
TOTAL	1131	114	252	765	100	52	14

Table S8. Percentage of introduced, endemics and other macrophytobenthic species/infraspecific taxa by phylum and totals

	%Introduced	%Endemic	%Others
Heterokontophyta	8,3	29,2	62,4
Rhodophyta	11,1	22,8	65,8
Chlorophyta	8,9	10,5	80,5
Magnoliophyta	14,3	14,3	71,4
TOTAL	10,1	22,3	67,6

Table S9. Checklist of the phylum Heterokontophyta and comments to the checklist

Algae belonging to the phylum Heterokontophyta (Kingdom Chromista) have been classified by Classes, Orders, Families, Species and other infraspecific levels (subspecies, varieties and forms). Ordination is alphabetical. When no infraspecific level is indicated the taxa corresponds to the type variety.

This list is based in the check-list by Ribera et al. (1992), with some updates and modifications. Particular attention has been devoted to local checklists published after the revision by Ribera et al. (1992): Puglia (Southern Italy) (Cormaci et al. 2001), Tuscany (Northwestern Italy) (Rindi et al. 2002), Morocco (Benhissoune et al. 2002) and Italian coasts (Furnari et al. 2003). Lists of Mediterranean introduced species have also been considered (e.g. Boudouresque & Verlaque 2002; Zenetos et al. 2005, 2008; Verlaque et al. in press) as well as some specific papers (e.g.

Cormaci et al. 1994; Ramon 2000; Ribera et al. 2005; Alongi et al. 2007; Taskin et al. 2010). Black Sea is not included.

Taxonomy follows Algaebase (www.algaebase.org) if not otherwise indicated. Endemic species (found only in the Mediterranean basin, Black Sea included) are preceded by the symbol *. A careful and critical examination of the existing records of every species from the available literature has been performed in order to consider a species as endemic. Introduced species are preceded by the symbol #. As it is not always easy to detect introduced species from the distributional records, we mainly follow the criteria by other authors specialized in this issue. Superscript numbers refer to notes. Some of the commonest synonyms found in Mediterranean literature (if any) are sometimes placed after the currently accepted name. Other synonyms can be found at Algaebase. A list of *taxa inquirenda* as well as a list of *taxa excludenda* is also given at the end of the list; species considered in Ribera et al. (1992) are not stated again.

Kingdom Chromista

Phylum Heterokontophyta

Class Pelagophyceae

Order Sarcinochrysidales

Family Sarcinochrysidaceae
Chrysonephos lewisii (Taylor) Taylor
Nematochrysopsis marina (J. Feldmann) Billard (=*Tribonema marinum* J. Feldmann)

Class Xanthophyceae

Order Vaucheriales

Family Vaucheriaceae
Vaucheria dichotoma (Linnaeus) Martius
Vaucheria piloboloides Thuret
Vaucheria sescuplicaria Christensen
Vaucheria submarina (Lyngbye) Berkeley
Vaucheria synandra Woronin
Vaucheria velutina C. Agardh (=*Vaucheria thuretii* Woronin)
Vaucheria woroniniana Heering

Class Phaeophyceae

Order Cutleriales

Family Cutleriaceae
Cutleria adspersa (Mertens ex Roth) De Notaris (=*Aglaozonia melanoidea* Sauvageau)
Cutleria chilosa (Falkenberg) Silva (=*Aglaozonia chilosa* Falkenberg; =*Cutleria monoica* Ollivier)
Cutleria multifida (Turner) Greville [=*Aglaozonia parvula* (Greville) Zanardini]
Zanardinia typus (Nardo) Silva [=*Zanardinia prototypus* (Nardo) Nardo]

Order Desmarestiales

Family Arthrocladiaceae
Arthrocladia villosa (Hudson) Duby

Family Desmarestiaceae
Desmarestia aculeata (Linnaeus) Lamouroux
Desmarestia dresnayi Lamouroux ex Leman
Desmarestia ligulata (Stackhouse) Lamouroux (=*Desmarestia adriatica* Ercegovic)
#*Desmarestia viridis* (O.F. Müller) Lamouroux

Order Dictyotales

Family Dictyotaceae
Dictyopteris lucida Ribera, Gómez-Garreta, Pérez-Ruzafa, Barceló & Rull
Dictyopteris polypodioides (De Candolle) Lamouroux [=*Dictyopteris membranacea* (Stackhouse) Batters]
Dictyota dichotoma (Hudson) Lamouroux
Dictyota dichotoma var. *intricata* (C. Agardh) Greville [=var. *implexa* (Desfontaines) Gray]
Dictyota fasciola (Roth) Lamouroux [=*Dilophus fasciola* (Roth) Howe]
Dictyota fasciola var. *repens* (J. Agardh) Ardissone
Dictyota linearis (C. Agardh) Greville
**Dictyota mediterranea* (Schiffner) Furnari (=*Dilophus mediterraneus* Schiffner)
#*Dictyota* sp.[1]
Dictyota spiralis Montagne [=*Dilophus ligulatus* (Kützing) J. Feldmann]
Lobophora variegata (Lamouroux) Womersley ex Oliveira
#*Padina boergesenii* Allender & Kraft
#*Padina boryana* Thivy (=*Padina tenuis* Bory)
Padina pavonica (Linnaeus) Thivy
#*Rugulopteryx okamurae* (Dawson) Hwang, Lee & Kim [=*Dictyota okamurae* (Dawson) Hörnig, Schnetter & Prud'homme van Reine]
Spatoglossum schroederi (C. Agardh) Kützing
Spatoglossum solierii (Chauvin ex Montagne) Kützing
#*Spatoglossum variabile* Figari & De Notaris
#*Stypopodium schimperi* (Buchinger ex Kützing) Verlaque & Boudouresque
Taonia atomaria (Woodward) J. Agardh
**Taonia atomaria* f. *ciliata* (C. Agardh) Nizamuddin
**Taonia lacheana* Cormaci, Furnari & Pizzuto
Zonaria tournefortii (Lamouroux) Montagne

Order Ectocarpales

Family Acinetosporaceae
Acinetospora crinita (Carmichael ex Harvey) Sauvageau [=*Acinetospora vidovichii* (Meneghini) Sauvageau]
**Feldmannia battersiides* (Ercegovic) Cormaci & Furnari
Feldmannia irregularis (Kützing) Hamel
Feldmannia lebelii (Areschoug ex P.L. Crouan & H.M. Crouan) Hamel [=*Feldmannia caespitula* (J. Agardh) Knoepffler-Péguy]
Feldmannia padinae (Buffham) Hamel
Feldmannia paradoxa (Montagne) Hamel [=*Feldmannia globifera* (Kützing) Hamel]
**Feldmannia paradoxoides* (Ercegovic) Cormaci & Furnari
Feldmannia simplex (P.L. Crouan & H.M. Crouan*) Hamel*
**Hincksia dalmatica* (Ercegovic) Cormaci & Furnari

Hincksia fuscata (Zanardini) Silva
**Hincksia geniculata* (Ercegovic) Cormaci & Furnari
Hincksia granulosa (Smith) Silva
**Hincksia hauckii* (Ercegovic) Cormaci & Furnari
Hincksia hincksiae (Harvey) Silva
Hincksia mitchelliae (Harvey) Silva
Hincksia ovata (Kjellman) Silva
Hincksia sandriana (Zanardini) Silva
Hincksia secunda (Kützing) Silva

Family Chordariaceae
**Acrospongium ralfsioides* Schiffner
#Acrothrix gracilis Kylin
Ascocyclus orbicularis (J. Agardh) Kjellman[2]
Asperococcus bullosus Lamouroux [=*Asperococcus turneri* (Smith) Hooker]
**Asperococcus bullosus* f. *profundus* J. Feldmann
Asperococcus ensiformis (Chiaje) Wynne (=*Asperococcus compressus* Griffiths ex Hooker)
Asperococcus fistulosus (Hudson) Hooker
Asperococcus scaber Kuckuck
Botrytella micromora Bory
#Botrytella parva (Takamatsu) Kim
Chilionema hispanicum (Sauvageau) Fletcher
Cladosiphon contortus (Thuret) Kylin
**Cladosiphon cylindricus* (Sauvageau) Kylin (=*Castagnea cylindrica* Sauvageau)
**Cladosiphon irregularis* (Sauvageau) Kylin (=*Castagnea irregularis* Sauvageau)
**Cladosiphon mediterraneus* Kützing (=*Castagnea mediterranea* (Kützing) Hauck)
#Cladosiphon zosterae (J. Agardh) Kylin
Climacosorus mediterraneus Sauvageau
Corynophlaea crispa (Harvey) Kuckuck
**Corynophlaea flaccida* (C. Agardh) Kützing
**Corynophlaea hamelii* J. Feldmann
**Corynophlaea umbellata* (C. Agardh) Kützing
**Cylindrocarpus kuckuckii* Taskin, Wynne & Özturk
Cylindrocarpus microscopicus P.L. Crouan & H.M. Crouan
Elachista flaccida (Dillwyn) Fries
Elachista fucicola (Velley) Areschoug
Elachista intermedia P.L. Crouan & H.M. Crouan
**Elachista intermedia* var. *clavaeformis* Ercegovic
**Elachista jabukae* Ercegovic
**Elachista neglecta* Kuckuck
Elachista stellaris Areschoug
Eudesme virescens (Carmichael ex Berkeley) J. Agardh
Giraudia sphacelarioides Derbès & Solier
**Gontrania lubrica* Sauvageau
#Halothrix lumbricalis (Kützing) Reinke
**Hecatonema liagorae* (J. Feldmann) Hamel
Hecatonema terminale (Kützing) Kylin [=*Hecatonema maculans* (Collins) Sauvageau]
**Herponema graniferum* Kuckuck
Herponema solitarium (Sauvageau) Hamel
Herponema valiantei (Bornet ex Sauvageau) Hamel
Herponema velutinum (Greville) J. Agardh
Kuetzingiella battersii (Bornet ex Sauvageau) Kornmann
**Kuetzingiella battersii* var. *mediterranea* (Sauvageau) Gómez & Ribera

#*Leathesia marina* (Lyngbye) Decaisne (=*Leathesia difformis* Areschoug)
**Leathesia mucosa* J. Feldmann
**Leathesia mucosa* var. *condensata* J. Feldmann
Leptonematella fasciculata (Reinke) Silva
**Leptonematella neapolitana* (Schussnig) Cormaci & Furnari
Liebmannia leveillei J. Agardh
Lithosiphon laminariae (Lyngbye) Harvey (=*Streblonema oligosporum* Strömfelt; =*Streblonema thuretii* Sauvageau)
Mesogloia lanosa P.L. Crouan & H.M. Crouan
Mesogloia vermiculata (Smith) Gray
Microcoryne ocellata Strömfelt
Microspongium gelatinosum Reinke
Microspongium tenuissimum (Hauck) A.F. Peters (=*Streblonema tenuissimum* Hauck)
Mikrosyphar polysiphoniae Kuckuck
Myriactula arabica (Kützing) J. Feldmann
**Myriactula elongata* (Sauvageau) Hamel
**Myriactula gracilis* van der Ben
**Myriactula rigida* (Sauvageau) Hamel
Myriactula rivulariae (Suhr) J. Feldmann
Myriactula stellulata (Harvey) Levring
#*Myriogloea sciurus* (Harvey) Kuckuck ex Oltmanns
**Myrionema conchicola* (J. Feldmann) Boudouresque
Myrionema liechtensternii Hauck
Myrionema magnusii (Sauvageau) Loiseaux
Myrionema strangulans Greville
Myriotrichia adriatica Hauck
Myriotrichia repens Hauck (=*Myriotrichia clavaeformis* Harvey?)
**Nemacystus flexuosus* (C. Agardh) Kylin var. *giraudyi* (J. Agardh) De Jong (=*Nemacystus ramulosus* Derbès & Solier)
Nemacystus hispanicus (Sauvageau) Kylin
Petrospongium berkeleyi (Greville) Nägeli ex Kützing
**Phaeostroma bertholdii* Kuckuck
**Protasperococcus myriotrichiiformis* Sauvageau
Protectocarpus speciosus (Boergesen) Kornmann
Punctaria latifolia Greville
#*Punctaria tenuissima* (C. Agardh) Greville (=*Streblonema effusum* Kylin)
Sauvageaugloia griffithsiana (Griffiths & Harvey) Hamel & Kylin *(=Myriocladia chordariaeformis* P.L. Crouan & H.M. Crouan; =*Cladosiphon chordariaeformis* P.L. Crouan & H.M. Crouan)
Spermatochnus paradoxus (Roth) Kützing
Spongonema tomentosum Hudson) Kützing
Stictyosiphon adriaticus Kützing
Stictyosiphon soriferus (Reinke) Rosenvinge
Stictyosiphon tortilis (Gobi) Reinke
Stilophora tenella (Esper) Silva [=*Stilophora rhizodes* (C. Agardh) J. Agardh]
Streblonema infestans (Gran) Batters
Streblonema parasiticum (Sauvageau) De Toni
Streblonema sphaericum (Derbès & Solier) Thuret
Streblonema stilophorae (P.L. Crouan & H.M. Crouan) Kylin
**Streblonemopsis irritans* Valiante
Sphaerotrichia divaricata (C. Agardh) Kylin
#*Sphaerotrichia firma* (Gepp) Zinova
Strepsithalia liagorae Sauvageau
Strepsithalia liebmanniae Miranda

Striaria attenuata (Greville) Greville [=*Striaria attenuata* f. *crinita* (J. Agardh) Hauck; =*Striaria attenuata* f. *ramosissima* (Kützing) Hauck]
**Zosterocarpus oedogonium* (Meneghini) Bornet

Family Ectocarpaceae
Asterocladon rhodochortonoides (Boergesen) Uwai, Nagasato, Motomura & Kogame (=*Ectocarpus rhodochortonoides* Boergesen)
Ectocarpus fasciculatus Harvey
Ectocarpus fasciculatus var. *abbreviatus* (Kützing) Sauvageau
Ectocarpus fasciculatus var. *pycnocarpus* (Rosenvinge) Cardinal
Ectocarpus commensalis Setchell & Gardner [=*Ectocarpus parvus* (Saunders) Hollenberg]
Ectocarpus siliculosus (Dillwyn) Lyngbye (=*Ectocarpus confervoides* Le Jolis; =*Ectocarpus siliculosus* var. *penicillatus* C. Agardh)
**Ectocarpus siliculosus* var. *adriaticus* (Ercegovic) Cormaci & Furnari
Ectocarpus siliculosus var. *arctus* (Kützing) Gallardo
Ectocarpus siliculosus var. *crouaniorum* (Thuret) Gallardo
Ectocarpus siliculosus var. *dasycarpus* (Kuckuck) Gallardo [=var. *crassus* (Kjellman) Gallardo]
#*Ectocarpus siliculosus* var. *hiemalis* (P.L. Crouan & H.M. Crouan ex Kjellman) Gallardo
Ectocarpus siliculosus var. *pygmaeus* (Areschoug) G. Russell
Ectocarpus siliculosus var. *subulatus* (Kützing) Gallardo
**Ectocarpus siliculosus* var. *venetus* (Kützing) Gallardo
Ectocarpus virescens Thuret ex Sauvageau
Kuckuckia spinosa (Kützing) Kornmann (=*Kuckuckia kylinii* Cardinal)
Pilinia rimosa Kützing

Family Pylaiellaceae
Bachelotia antillarum (Grunow) Gerloff
#*Pylaiella littoralis* (Linnaeus) Kjellman

Order Fucales

Family Cystoseiraceae
Cystoseira abies-marina (Gmelin) C. Agardh
**Cystoseira algeriensis* J. Feldmann
**Cystoseira amentacea* (C. Agardh) Bory
**Cystoseira amentacea* var. *spicata* (Ercegovic) Giaccone (=*Cystoseira spicata* Ercegovic)
**Cystoseira amentacea* var. *stricta* Montagne [=*Cystoseira stricta* (Montagne) Sauvageau]
Cystoseira baccata (Gmelin) Silva
**Cystoseira balearica* Sauvageau [=*Cystoseira brachycarpa* J. Agardh var. *balearica* (Sauvageau) Giaccone][3]
**Cystoseira balearica* var. *claudiae* Giaccone
Cystoseira barbata (Stackhouse) C. Agardh
**Cystoseira barbata* f. *repens* Zinova & Kalugina
**Cystoseira barbata* f. *insularum* Ercegovic
**Cystoseira barbata* var. *tophuloidea* (Ercegovic) Giaccone
**Cystoseira barbatula* Kützing (=*Cystoseira graeca* Schiffner ex Gerloff & Nizamuddin)
**Cystoseira brachycarpa* J. Agardh
**Cystoseira caespitosa* Sauvageau[4]
Cystoseira compressa (Esper) Gerloff & Nizamuddin [=*Cystoseira compressa* f. *rosetta* (Ercegovic) Cormaci, Furnari, Scammacca & Serio]
**Cystoseira compressa* f. *plana* (Ercegovic) Cormaci, Furnari, Scammacca & Serio
**Cystoseira compressa* var. *pustulata* Ercegovic[5]
**Cystoseira corniculata* (Turner) Zanardini[6]

**Cystoseira crinita* Duby
**Cystoseira crinitophylla* Ercegovic
**Cystoseira dubia* Valiante
**Cystoseira elegans* Sauvageau
Cystoseira foeniculacea (Linnaeus) Greville [=*Cystoseira ercegovicii* Giaccone; =*Cystoseira discors* (Linnaeus) C. Agardh]
**Cystoseira foeniculacea* f. *latiramosa* (Ercegovic) Gómez-Garreta, Barceló, Ribera & Rull
**Cystoseira foeniculacea* f. *tenuiramosa* (Ercegovic) Gómez-Garreta, Barceló, Ribera & Rull
*Cystoseira foeniculacea f. schiffneri (Hamel) Gómez-Garreta, Barceló, Ribera & Rull
**Cystoseira funkii* Schiffner ex Gerloff & Nizamuddin[7]
Cystoseira humilis Schousboe ex Kützing
Cystoseira humilis var. *myriophylloides* (Sauvageau) Price & John
**Cystoseira hyblaea* Giaccone
**Cystoseira jabukae* Ercegovic
**Cystoseira jabukae* f. *tenuissima* (Ercegovic) Cormaci, Furnari, Giaccone, Scammacca & Serio
Cystoseira mauritanica Sauvageau [=*Cystoseira gibraltarica* (Sauvageau) Dangeard?][8]
**Cystoseira mediterranea* Sauvageau
Cystoseira nodicaulis (Withering) Roberts
**Cystoseira pelagosae* Ercegovic
**Cystoseira rayssiae* Ramon
**Cystoseira sauvageauana* Hamel[9]
**Cystoseira sedoides* (Desfontaines) C. Agardh
**Cystoseira spinosa* Sauvageau (=*Cystoseira adriatica* Sauvageau)
**Cystoseira spinosa* var. *compressa* (Ercegovic) Cormaci, Furnari, Giaccone, Scammacca & Serio (=*Cystoseira platyramosa* Ercegovic)
**Cystoseira spinosa* var. *tenuior* (Ercegovic) Cormaci, Furnari, Giaccone, Scammacca & Serio
**Cystoseira squarrosa* De Notaris
**Cystoseira susanensis* Nizamuddin
Cystoseira tamariscifolia (Hudson) Papenfuss
Cystoseira usneoides (Linnaeus) Roberts
**Cystoseira zosteroides* (Turner) C. Agardh (=*Cystoseira opuntioides* Bory ex Montagne)[10]

Family Fucaceae
Fucus spiralis Linnaeus
Fucus vesiculosus Linnaeus
**Fucus virsoides* J. Agardh

Family Sargassaceae
Sargassum acinarium (Linnaeus) Setchell
Sargassum desfontainesii (Turner) C. Agardh
Sargassum flavifolium Kützing
Sargassum furcatum Kützing
**Sargassum hornschuchii* C. Agardh
#*Sargassum muticum* (Fensholt) Yendo
**Sargassum trichocarpum* J. Agardh
Sargassum vulgare C. Agardh

Order Laminariales

Family Alariaceae
#*Undaria pinnatifida* (Harvey) Suringar

Family Chordaceae
#Chorda filum (Linnaeus) Stackhouse

Family Laminariaceae
Laminaria ochroleuca Bachelot de la Pylaie
**Laminaria rodriguezii* Bornet
#Saccharina japonica (Areschoug) Lane, Mayes, Druehl & Saunders (=*Laminaria japonica* Areschoug)

Order Nemodermatales

Family Nemodermataceae
Nemoderma tingitanum Schousboe ex Bornet

Order Onslowiales

Family Onslowiaceae
**Verosphacela silvae Alongi, Cormaci & Furnari*

Order Ralfsiales

Family Ralfsiaceae
Hapalospongidion macrocarpum (J. Feldmann) León Álvarez & González (=*Mesospora mediterranea* J. Feldmann)
Pseudolithoderma adriaticum (Hauck) Verlaque (=*Lithoderma adriaticum* Hauck)
Pseudolithoderma extensum (P.L. Crouan & H.M. Crouan) Lund
Ralfsia verrucosa (Areschoug) Areschoug

Family Neoralfsiaceae
Neoralfsia expansa (J. Agardh) Lim & Kawai [=*Ralfsia expansa* (J. Agardh) J. Agardh]

Order Scytosiphonales

Family Scytosiphonaceae
#Colpomenia peregrina Sauvageau
Colpomenia sinuosa (Mertens ex Roth) Derbès & Solier
Compsonema gracile Kuckuck
Compsonema minutum (C. Agardh) Kornmann
Hydroclathrus clathratus (C. Agardh) Howe
Petalonia fascia (O.F. Müller) Kuntze
Petalonia zosterifolia (Reinke) Kuntze
Rosenvingea intricata (J. Agardh) Boergesen
#Scytosiphon dotyi Wynne
Scytosiphon lomentaria (Lyngbye) Link
Stragularia clavata (Harvey) Hamel (=*Ralfsia disciformis* P.L. Crouan & H.M. Crouan)

Order Sphacelariales

Family Choristocarpaceae
**Choristocarpus tenellus* Zanardini
Discosporangium mesarthrocarpum (Meneghini) Hauck

Family Sphacelariaceae
Cladostephus spongiosus (Hudson) C. Agardh

Cladostephus spongiosus f. *verticillatus* (Lightfoot) Prud'homme van Reine [=*Cladostephus hirsutus* (Linnaeus) Boudouresque & Perret-Boudouresque]
Sphacelaria brachygonia Montagne
Sphacelaria cirrosa (Roth) C. Agardh (=*Sphacelaria hystrix* Suhr ex Reinke)
Sphacelaria fusca (Hudson) Gray
Sphacelaria nana Nägeli ex Kützing
Sphacelaria plumula Zanardini
Sphacelaria rigidula Kützing
Sphacelaria tribuloides Meneghini
Sphacella subtilissima Reinke

Family Stypocaulaceae
Halopteris filicina (Grateloup) Kützing
Stypocaulon scoparium (Linnaeus) Kützing

Order Sporochnales

Family Sporochnaceae
Carpomitra costata (Stackhouse) Batters
**Carpomitra costata* var. *mediterranea* J. Feldmann
Nereia filiformis (J. Agardh) Zanardini
Sporochnus gaertnera (Gmelin) C. Agardh
Sporochnus pedunculatus (Hudson) C. Agardh
Stilopsis lejolisii (Thuret) Kuckuck & Nienburg ex Hamel

Order Tilopteridales

Family Phyllariaceae
Phyllariopsis brevipes (C. Agardh) Henry & South [=*Phyllaria reniformis* (Lamouroux) Rostafinsky]
Phyllariopsis purpurascens (C. Agardh) Henry & South
Saccorhiza polyschides (Lightfoot) Batters

Notes

1. Rull et al. (2007) reported *Dictyota ciliolata* Sonder ex Kützing from the Northwestern Mediterranean but recent molecular examination of the collected specimens suggests that it is another, still unidentified, species.
2. We follow Algaebase in not considering *Ascocyclus orbicularis* (J. Agardh) Kjellman as synonym of *Myrionema magnusii* (Sauvageau) Loiseaux.
3. We prefer to maintain the specific category of *Cystoseira balearica* Sauvageau awaiting molecular evidences for its inclusion within *Cystoseira brachycarpa* J. Agardh.
4. We prefer to maintain the specific category of *Cystoseira caespitosa* Sauvageau awaiting molecular evidences indicating its identity with *Cystoseira balearica* Sauvageau.
5. Awaiting molecular evidences, we consider *Cystoseira compressa* (Esper) Gerloff & Nizamuddin var. *pustulata* Ercegovic (=*Cystoseira epiphytica* Schiffner ex Gerloff & Nizamuddin) to be a different taxa from *Cystoseira humilis* Kützing var. *humilis*.
6. This species is considered here to be a Mediterranean endemics. In our opinion, records from the Indian Ocean (Silva et al. 1996) need reexamination.
7. See Verlaque et al. (1999) for the differences between this species and *Cystoseira jabukae* Ercegovic.

8. Synonymy between *Cystoseira mauritanica* Sauvageau and *Cystoseira gibraltarica* (Sauvageau) Dangeard needs reexamination.
9. Includes *Cystoseira sauvageauana* var. *polyoedematis* (Sauvageau) Hamel. *C. sauvageauana* is considered here as endemic. In our opinion, records from the Atlantic Ocean (Prud'homme van Reine et al. 2005) need reexamination.
10. This species is considered here to be a Mediterranean endemic. In our opinion, records from the Indian Ocean (Silva et al. 1996) need reexamination.

Taxa inquirenda (see also Ribera et al. 1992)

Cystoseira mediterranea var. *valiantei* Sauvageau: see Verlaque et al. (1999).
Ectocarpus elegans Meneghini ex Ardissone: see Furnari et al. (2003).
Leathesia cervicornis Berthold: see Furnari et al. (2003).
Sphacelaria olivacea (Smith) C. Agardh: see Furnari et al. (2003).

Taxa excludenda (see also Ribera et al. 1992)

Cystoseira myrica (Gmelin) C. Agardh: see Zenetos et al. (2005).
Dictyota ciliolata Sonder ex Kützing: Molecular examination of specimens identified as *Dictyota ciliolata* in the Northwestern Mediterranean (Rull et al. 2007) suggest that they do not belong to this species (J. Rull, pers. comm.).
Sargassum latifolium (Turner) C. Agardh: unsupported records (Zenetos et al. 2008).
Sorocarpus sp.: Specimens tentatively identified as *Sorocarpus* sp. correspond to *Botrytella parva* (Takamatsu) Kim (Zenetos et al. 2008).
Spatoglossum asperum J. Agardh: see Zenetos et al. (2005)

References

Alongi G, Cormaci M, Furnari G. 2007. *Verosphacela silvae* sp. nov. (Onslowiaceae, Phaeophyceae) from the Mediterranean Sea. *Phycological Research* 55: 42-46.

Benhissoune S, Boudouresque CF, Verlaque M. 2002. A checklist of the seaweeds of the Mediterranean and Atlantic coasts of Morocco. II. Phaeophyceae. *Botanica Marina* 45: 217-230.

Boudouresque CF, Verlaque M. 2002. Biological pollution in the Mediterranean Sea: invasive versus introduced macrophytes. *Marine Pollution Bulletin* 44: 32-38.

Cormaci M, Furnari G, Alongi G, Serio D, Petrocelli A, Cecere E. 2001. Censimento delle macroalghe marine bentoniche delle coste pugliesi. *Thalassia Salentina* 25: 75-158.

Cormaci M, Furnari G, Pizzuto F. 1994. *Taonia lacheana* sp. nov. (Dictyotales, Phaeophyta), from the Mediterranean Sea. *Nordic Journal of Botany* 14: 463-466.

Furnari G, Giaccone G, Cormaci M, Alongi G, Serio D. 2003. Biodiversità marina delle coste italiane: catalogo del macrofitobentos. *Biologia Marina Mediterranea* 10(1): 1-482.

Prud'homme van Reine WF, Haroun RJ, Kostermans LBT. 2005. Checklists on seaweeds in the Atlantic Ocean and in the Cape Verde Archipelago. In: *IV Simposio Fauna e Flora das Ilhas Atlanticas*, Praia 9-13 setembro 2002: 13-26. Ministério do Ambiente, Agricultura e Pescas, República de Cabo Verde.

Ramon E. 2000. *Cystoseira rayssiae*: a new *Cystoseira* (Cystoseiraceae, Fucophyceae) from the shores of Israel, Eastern Mediterranean Sea. *Israel Journal of Plant Sciences* 48: 59-65.

Ribera MA, Gómez-Garreta AM, Gallardo T, Cormaci M, Furnari G, Giaccone G. 1992. Check-list of Mediterranean seaweeds I. Fucophyceae (Warming, 1884). *Botanica Marina* 35: 109-130.

Ribera MA, Gómez-Garreta A, Pérez-Ruzafa I, Barceló MC, Rull J. 2005. A new species of *Dictyopteris* (Dictyotales, Phaeophyceae) from the Iberian Peninsula: *Dictyopteris lucida* sp. nov. *Phycologia* 44: 651-657.

Rindi F, Sartoni G, Cinelli F. 2002. A floristic account of the benthic marine algae of Tuscany (Western Mediterranean Sea). *Nova Hedwigia* 74: 201-250.

Rull J, Ballesteros E, Barceló MC, Gómez-Garreta A, Ribera MA. 2007. *Dictyota ciliolata* Sonder ex Kützing (Phaeophyceae, Dictyotales) in the Mediterraean Sea. *Cryptogamie Algologie* 28: 89-97.

Silva PC, Basson PW, Moe RL. 1996. Catalogue of the benthic marine algae of the Indian Ocean. *University of California Publications in Botany* 79: 1-1259.

Taskin E, Wynne MJ, Özturk M. 2010. *Cylindrocarpus kuckuckii* sp. nov. (Chordariaceae, Phaeophyceae), a newly recognized species from the Aegean Sea (Turkey). *Nova Hedwigia* 90: 263-270.

Verlaque M, Ballesteros E, Sala E, Garrabou J. 1999. *Cystoseira jabukae* (Cystoseiraceae, Fucophyceae) from Corsica (Mediterranean) with notes on the previously misunderstood species *C. funkii*. *Phycologia* 38: 77-86.

Verlaque M, Ruitton S, Mineur F, Boudouresque CF. in press. 4. Macrophytes. In: Briand F (ed), *CIESM Atlas of Exotic species in the Mediterranean*. CIESM Publishers. Monaco.

Zenetos A, Çinar ME, Pancucci-Papadopoulou MA, Harmelin JG, Furnari G, Andaloro F, Bellou N, Streftaris N, Zibrowius H. 2005. Annotated list of marine alien species in the Mediterranean with records of the worst invasive species. *Mediterranean Marine Science* 6: 63-118.

Zenetos A, Meriç E, Verlaque M, Galil P, Boudouresque CF, Giangrande A, Çinar ME, Bilecenoglu M. 2008. Additions to the annotated list of marine alien biota in the Mediterranean with special emphasis on Foraminifera and Parasites. *Mediterranean Marine Science* 9: 119-165.

Table S10. Checklist of the phylum Rhodophyta and comments to the checklist

Algae belonging to the phylum Rhodophyta (Kingdom Plantae) have been classified by Classes, Orders, Families, Species and other infraspecific levels (subspecies, varieties and forms). Ordination is alphabetical. When no infraspecific level is indicated the taxa corresponds to the type variety.

This list has been made using local checklists from Morocco (Benhissoune et al. 2002, 2003), Algeria (Perret-Boudouresque & Seridi 1989), Tunisia (Ben Maiz et al. 1987), Libya (Nizamuddin et al. 1979), Syria (Mayhoub 1976), Aegean Sea (Athanasiadis 1987), Italy (Furnari et al. 2003), Adriatic Sea (Giaccone 1978; Furnari et al. 1999), Corsica (Boudouresque & Perret-Boudouresque 1987), Albères coast (France) (Boudouresque et al. 1984; Knoepffler et al. 1990), Catalonia (Ballesteros 1990), Andalusia (Conde et al. 1996) and Spain (Gallardo et al. 1985), as well as a large number of smaller contributions. When Mediterranean revisions were already available for some taxonomic groups they have been used with some updates and modifications: Ceramiales (Gómez-Garreta et al. 2001), Corallinales (Bressan & Babbini-Benussi 1996, 2003), Acrochaetiaceae (Conde 1991), *Laurencia*-complex (Furnari et al. 2001; Furnari et al. 2002; Serio et al. 2004, 2008, 2010), *Gracilaria* (Gargiulo et al. 1992), and *Nemastoma* (Rodriguez et al. 2004). Lists of Mediterranean introduced species have also been considered (e.g. Boudouresque & Verlaque 2002; Zenetos et al. 2005, 2008; Verlaque 2001; Verlaque et al. in press) as well as some specific papers (e.g. Alongi et al. 2007, 2008; Athanasiadis 1999, 2002; Cormaci et al. 1993; Gargiulo et al. 1986, 1990; Perrone & Delle Foglie 2006; Rodriguez-Prieto & De Clerck 2009). Black Sea is not included.

Taxonomy follows Algaebase (www.algaebase.org) if not otherwise indicated. Endemic species (found only in the Mediterranean basin, Black Sea included) are preceded by the symbol *. A careful and critical examination of the existing records of every species from the available literature has been performed in order to consider a species as endemic. Introduced species are preceded by the symbol #. As it is not always easy to detect introduced species from the distributional records, we mainly follow the criteria by other authors specialized in this issue. Superscript numbers refer to notes. Some of the commonest synonyms found in Mediterranean literature (if any) are sometimes placed after the currently accepted name. Other synonyms can be found at Algaebase. A list of *taxa inquirenda* as well as a list of *taxa excludenda* is also given at the end of the list; species of the Order Ceramiales considered as *taxa inquirenda* or *taxa excludenda* in Gómez-Garreta et al. (2001) are not stated again.

Kingdom Plantae

Phylum Rhodophyta

Class Bangiophyceae

Order Bangiales

Family Bangiaceae[1]
Bangia fuscopurpurea (Dillwyn) Lyngbye
Porphyra atropurpurea (Olivi) De Toni
Porphyra dioica Brodie & Irvine
Porphyra leucosticta Thuret
Porphyra linearis Greville
Porphyra purpurea (Roth) C. Agardh
Porphyra umbilicalis Kützing
#*Porphyra yezoensis* Ueda

Class Compsopogonophyceae

Order Compsopogonales

Family Compsopogonaceae
**Comsopogon aegyptiacus* Aleem
Compsopogon coeruleus (Balbis ex C. Agardh) Montagne

Order Erythropeltidales

Family Erythrotrichiaceae[2]
Erythrocladia irregularis Rosenvinge
Erythrocladia polystromatica Dangeard
Erythrocladia violacea Dangeard
Erythropeltis discigera (Berthold) Schmitz
Erythrotrichia bertholdii Batters
Erythrotrichia carnea (Dillwyn) J. Agardh [=*Erythrotrichia biseriata* Tanaka; =*Erythrotrichia ceramicola* (Lyngbye) Areschoug]
Erythrotrichia investiens (Zanardini) Bornet
Erythrotrichia reflexa (P.L. Crouan & H.M. Crouan) Thuret ex De Toni
**Erythrotrichia rosea* Dangeard
Erythrotrichia simplex Dangeard

Porphyrostromium boryanum (Montagne) Silva [=*Erythrotrichia boryana* (Montagne) Berthold]
Porphyrostromium ciliare (Carmichael) Wynne [= *Erythrotrichia ciliaris* (Carmichael) Thuret; =*Erythrotrichia obscura* Berthold]
Porphyrostromium obscurum (Berthold) Kornmann (=*Erythrocladia grisea Dangeard*)
Sahlingia subintegra (Rosenvinge) Kornmann

Order Rhodochaetales

Family Rhodochaetaceae
Rhodochaete pulchella Thuret ex Bornet (=*Rhodochaete parvula* Thuret)

Class Florideophyceae

Order Acrochaetiales

Family Acrochaetiaceae[2]
Acrochaetium alariae (Jónsson) Bornet
**Acrochaetium boergesenii* Schiffner
**Acrochaetium caesareae* J. Feldmann[3]

#Acrochaetium codicola Borgesen [=*Rhodothamniella codicola* (Borgesen) Bidoux & Magne]
Acrochaetium codii (P.L. Crouan & H.M. Crouan) Hamel [=*Rhodothamniella codii* (P.L. Crouan & H.M. Crouan) J. Feldmann]
Acrochaetium corymbiferum (Thuret) Batters
**Acrochaetium duboscqii* J. Feldmann
Acrochaetium endozoicum (Darbishire) Batters
Acrochaetium gynandrum (Rosenvinge) Hamel
**Acrochaetium hamelii* J. Feldmann[3]
**Acrochaetium hauckii* Schiffner [=*Rhodochorton hauckii* (Schiffner) Hamel]
Acrochaetium humile (Rosenvinge) Borgesen
**Acrochaetium incrassatum* Ercegovic
Acrochaetium infestans Howe & Hoyt
Acrochaetium leptonema (Rosenvinge) Borgesen
Acrochaetium maluinum Hamel
**Acrochaetium mediterraneum* (Levring) Athanasiadis
Acrochaetium microscopicum (Nägeli ex Kützing) Nägeli [=*Acrochaetium crassipes* (Boergesen) Boergesen]

**Acrochaetium minutum* (Suhr) Hamel [=*Acrochaetium minutissimum* (Kützing) Nägeli]

**Acrochaetium molinieri* Coppejans & Boudouresque

Acrochaetium moniliforme (Rosenvinge) Borgesen (=*Acrochaetium mahumetanum* Hamel)
Acrochaetium nemalii (De Notaris ex Dufour) Bornet
Acrochaetium parvulum (Kylin) Hoyt
Acrochaetium reductum (Rosenvinge) Hamel
#*Acrochaetium robustum* Borgesen (=*Acrochaetium sargassicola* Boergesen)
Acrochaetium rosulatum (Rosenvinge) Papenfuss

Acrochaetium savianum (Meneghini) Nägeli [=*Acrochaetium thuretii* (Bornet) Collins & Hervey]
Acrochaetium secundatum (Lyngbye) Nägeli [=*Acrochaetium virgatulum* (Harvey) Batters; =*Acrochaetium rhipidandrum* (Rosenvinge) Hamel]
#*Acrochaetium spathoglossi* Borgesen
Acrochaetium subpinnatum Bornet ex Hamel
#*Acrochaetium subseriatum* Borgesen
Acrochaetium subtilissimum (Kützing) Hamel
Acrochaetium trifilum (Buffham) Batters
Colaconema bonnemaisoniae Batters [=*Acrochaetium bonnemaisoniae* (Batters) J. Feldmann & G. Feldmann]
Colaconema caespitosum (J. Agardh) Jackelman, Stegenga & Bolton [=*Acrochaetium caespitosum* (J. Agardh) Nageli]
Colaconema chylocladiae Batters [=*Acrochaetium chylocladiae* (Batters) Batters]
Colaconema daviesii (Dillwyn) Stegenga [=*Acrochaetium daviesii* (Dillwyn) Nägeli]
Colaconema garbaryi Gabrielson
Colaconema gracile (Boergesen) Ateweberhan & Prud'homme van Reine (=*Acrochaetium gracile* Boergesen)
Colaconema hallandicum (Kylin) Afonso-Carrillo, Sansón, Sangil & Diaz-Villa [=*Acrochaetium hallandicum* (Kylin) Hamel f. *harmoricum* Hamel]
Colaconema membranaceum (Magnus) Woelkerling [=*Audouinella membranacea* (Magnus) Papenfuss]
Rhodochorton purpureum (Lightfoot) Rosenvinge [=*Rhodochorton rothii* (Turton) Nägeli; =*Audouinella purpurea* (Lightfoot) Woelkerling]
Rhodochorton velutinum (Hauck) Hamel
Rhodothamniella floridula (Dillwyn) J. Feldmann
Schmitziella endophloea Bornet & Batters

Order Acrosymphytales

Family Acrosymphytaceae
Acrosymphyton purpuriferum (J. Agardh) Sjösted [=*Hymenoclonium serpens* (P.L. Crouan & H.M. Crouan) Batters]
Schimmelmannia schousboei (J. Agardh) J. Agardh

Order Bonnemaisoniales

Family Bonnemaisoniaceae
#*Asparagopsis armata* Harvey [=*Falkenbergia rufolanosa* (Harvey) Schmitz]

#*Asparagopsis taxiformis* (Delile) Trevisan [=*Falkenbergia hillebrandii* (Bornet) Falkenberg]
Bonnemaisonia asparagoides (Woodward) C. Agardh [=*Hymenoclonium serpens* (P.L. Crouan & H.M. Crouan) Batters]
Bonnemaisonia clavata Hamel
#*Bonnemaisonia hamifera* Hariot (=*Trailliella intricata* Batters)

Family Naccariaceae
Naccaria wiggii (Turner) Endlicher

Order Ceramiales

Family Ceramiaceae
#*Acrothamnion pressii* (Sonder) Wollaston
Aglaothamnion bipinnatum (P.L. Crouan & H.M. Crouan) J. Feldmann & G. Feldmann
**Aglaothamnion caudatum* (J. Agardh) Feldmann-Mazoyer
Aglaothamnion cordatum (Boergesen) Feldmann-Mazoyer
#*Aglaothamnion feldmanniae* Halos
Aglaothamnion gallicum (Nägeli) L'Hardy-Halos & Ardré
Aglaothamnion scopulorum (C. Agardh) Feldmann-Mazoyer
Aglaothamnion tenuissimum (Bonnemaison) Feldmann-Mazoyer
**Aglaothamnion tenuissimum* var. *mazoyerae* Furnari, L'Hardy-Halos, Rueness & Serio
Aglaothamnion tripinnatum (C. Agardh) Feldman-Mazoyer
Anotrichium barbatum (C. Agardh) Nägeli
Anotrichium furcellatum (J. Agardh) Baldock
#*Anotrichium okamurae* Baldock
Anotrichium tenue (C. Agardh) Nägeli
#*Antithamnion amphigeneum* A. Millar
**Antithamnion compactum* (Grunow) Schiffner
Antithamnion cruciatum (C. Agardh) Nägeli
Antithamnion decipiens (J. Agardh) Athanasiadis (=*Antithamnion ogdeniae* Abbott)
**Antithamnion heterocladum* Funk
#*Antithamnion hubbsii* Dawson[4]
**Antithamnion piliferum* Cormaci & Furnari
**Antithamnion tenuissimum* (Hauck) Schiffner
#*Antithamnionella boergesenii* (Cormaci & Furnari) Athanasiadis
#*Antithamnionella elegans* (Berthold) Price & John
#*Antithamnionella spirographidis* (Schiffner) Wollaston
#*Antithamnionella sublittoralis* (Setchell & Gardner) Athanasiadis (=*Antithamnionella elegans* var. *decussata* Cormaci & Furnari)
#*Antithamnionella ternifolia* (Hooker & Harvey) Lyle
**Balliella cladoderma* (Zanardini) Athanasiadis
Bornetia secundiflora (J. Agardh) Thuret
Callithamniella tingitana (Schousboe ex Bornet) Feldmann- Mazoyer
Callithamnion corymbosum (Smith) Lyngbye
Callithamnion granulatum (Ducluzeau) C. Agardh
Callithamnion tetragonum (Withering) Gray
Callithamnion tetricum (Dillwyn) Gray[5]
**Ceramium bertholdii* Funk
#*Ceramium bisporum* Ballantine
Ceramium ciliatum (Ellis) Ducluzeau
Ceramium ciliatum var. *robustum* (J. Agardh) Feldmann-Mazoyer
Ceramium cimbricum Petersen
Ceramium cimbricum f. *flaccidum* (Petersen) Furnari & Serio
Ceramium circinatum (Kützing) J. Agardh
Ceramium codii (H. Richards) Feldmann-Mazoyer
Ceramium comptum Boergesen
Ceramium deslongchampsii Chauvin ex Duby

Ceramium diaphanum (Lightfoot) Roth
Ceramium echionotum J. Agardh
**Ceramium echionotum* var. *mediterraneum* Feldmann-Mazoyer
Ceramium gaditanum (Clemente) Cremades (=*Ceramium flabelligerum* J. Agardh)
**Ceramium gaditanum* var. *mediterraneum* (Debray) Cremades
**Ceramium giacconei* Cormaci & Furnari
**Ceramium graecum* Lazaridou & Boudouresque
**Ceramium incospicuum* Zanardini
**Ceramium petitii* Feldmann-Mazoyer
Ceramium secundatum Lyngbye
Ceramium siliquosum (Kützing) Maggs & Hommersand
Ceramium siliquosum var. *elegans* (Roth) Furnari
Ceramium siliquosum var. *lophophorum* (Feldmann-Mazoyer) Serio
Ceramium siliquosum var. *zostericola* (Feldmann-Mazoyer) Furnari
**Ceramium siliquosum* var. *zostericola* f. *acrocarpum* (Feldmann-Mazoyer) Furnari
**Ceramium siliquosum* var. *zostericola* f. *minusculum* (Feldmann-Mazoyer) Gómez-Garreta, Gallardo, Ribera, Cormaci, Furnari, Giaccone & Boudouresque
#*Ceramium strobiliforme* Lawson & John
Ceramium tenerrimum (Martens) Okamura
**Ceramium tenerrimum* var. *brevizonatum* (Petersen) Feldmann-Mazoyer
Ceramium virgatum Roth (=*Ceramium rubrum* auct.)
**Ceramium virgatum* var. *implexo-contortum* (Solier) Furnari
**Ceramium virgatum* var. *tenue* (C. Agardh) Furnari
Compsothamnion gracillimum De Toni
Compsothamnion thuyoides (Smith) Nägeli
Corallophila cinnabarina (Grateloup ex Bory) R.E. Norris
Crouania attenuata (C. Agardh) J. Agardh [inc. var. *bispora* (P.L. Crouan & H.M. Crouan) Hauck]
Crouania francescoi Cormaci, Furnari & Scammaca
**Crouania ischiana* (Funk) Boudouresque & M. Perret (=*Pseudocrouania ischiana* Funk)
**Dohrniella nana* Mayhoub
**Dohrniella neapolitana* Funk
Gayliella flaccida (Harvey ex Kützing) T.O. Cho & L.J. McIvor [=*Ceramium flaccidum* (Kützing) Ardissone]
#*Griffithsia corallinoides* (Linnaeus) Trevisan
**Griffithsia genovefae* J. Feldmann
Griffithsia opuntioides J. Agardh
Griffithsia phyllamphora J. Agardh
Griffithsia schousboei Montagne
**Griffithsia schousboei* var. *minor* J. Feldmann ex Feldmann-Mazoyer
**Gulsonia nodulosa* (Ercegovic) J. Feldmann & Feldmann-Mazoyer
Gymnothamnion elegans (Schousboe ex C. Agardh) J. Agardh
**Halosia elisae* Cormaci & Furnari
Halurus equisetifolius (Lightfoot) Kützing
Halurus flosculosus (Ellis) Maggs & Hommersand
**Halurus flosculosus* var. *irregularis* (C. Agardh) Gómez-Garreta, Gallardo, Ribera, Cormaci, Furnari, Giaccone & Boudouresque
**Halurus flosculosus* var. *sphaericus* (Schousboe ex C. Agardh) Gómez-Garreta, Gallardo, Ribera, Cormaci, Furnari, Giaccone & Boudouresque
Lejolisia mediterranea Bornet
Microcladia glandulosa (Solander ex Turner) Greville
Monosporus pedicellatus (Smith) Solier
Monosporus pedicellatus var. *tenuis* (Feldmann-Mazoyer) Huisman & Kraft
Pleonosporium borreri (Smith) Nägeli

Pterothamnion crispum (Ducluzeau) Nägeli
Pterothamnion plumula (Ellis) Nägeli
**Pterothamnion plumula* ssp. *haplokladion* Athanasiadis
Pterothamnion plumula ssp. *verticillatum* Athanasiadis
Pterothamnion polyacanthum (Kützing) Nägeli
**Ptilocladiopsis horrida* Berthold
Ptilothamnion pluma (Dillwyn) Thuret
**Seirospora apiculata* (Meneghini) Feldmann-Mazoyer
**Seirospora giraudyi* (Kützing) De Toni
Seirospora interrupta (Smith) Schmitz
**Seirospora sphaerospora* J. Feldmann
Spermothamnion flabellatum Bornet
**Spermothamnion flabellatum* f. *disporum* Feldmann-Mazoyer
Spermothamnion irregulare (J. Agardh) Ardissone
**Spermothamnion johannis* Feldmann-Mazoyer
Spermothamnion repens (Dillwyn) Rosenvinge
Spermothamnion repens var. *flagelliferum* (De Notaris) Feldmann-Mazoyer
**Spermothamnion repens* var. *variabile* (C. Agardh) Feldmann-Mazoyer
Spermothamnion strictum (C. Agardh) Ardissone
Sphondylothamnion multifidum (Hudson) Nägeli
Sphondylothamnion multifidum f. *distichum* Feldmann-Mazoyer
#Spongoclonium caribaeum (Boergesen) Wynne [=*Pleonosporium caribaeum* (Boergesen) R.E. Norris]
Spyridia filamentosa (Wulfen) Harvey
Spyridia hypnoides (Bory) Papenfuss
Tiffaniella capitata (Schousboe ex Bornet) Doty & Meñez
**Tiffaniella feldmanniae* (P. Huvé) Gillis & Coppejans
Vickersia baccata (J. Agardh) Karsakoff
**Woelkerlingia minuta* Alongi, Cormari & Furnari
Wrangelia penicillata (C. Agardh) C. Agardh

Family Dasyaceae
Dasya baillouviana (Gmelin) Montagne
Dasya corymbifera J. Agardh
Dasya hutchinsiae Harvey
Dasya ocellata (Grateloup) Harvey
**Dasya penicillata* Zanardini [=*Eupogodon penicillatus* (Zanardini) Silva]
Dasya punicea (Zanardini) Meneghini ex Zanardini
**Dasya rigescens* Zanardini
Dasya rigidula (Kützing) Ardissone
#Dasya sessilis Yamada
**Dasyella gracilis* Falkenberg
#Dasysiphonia sp.[6]
Eupogodon planus (C. Agardh) Kützing [=*Eupogodon spinellus* (C. Agardh) Kützing; =*Eupogodon cervicornis* (J. Agardh) Kützing]
Halydictyon mirabile Zanardini
Heterosiphonia crispella (C. Agardh) Wynne
Heterosiphonia crispella var. *laxa* (Boergesen) Wynne
Heterosiphonia plumosa (Ellis) Batters

Family Delesseriaceae
Acrosorium ciliolatum (Harvey) Kylin [=*Acrosorium venulosum* (Zanardini) Kylin][7]
#Apoglossum gregarium (Dawson) Wynne

Apoglossum ruscifolium (Turner) J. Agardh
**Arachnophyllum confervaceum* (Meneghini) Zanardini[8]
Cottoniella filamentosa (M. Howe) Boergesen [=*Cottoniella filamentosa* var. *fusiformis* (Boergesen) Cormaci & Furnari]
Cottoniella filamentosa var. *algeriensis* (Schotter) Cormaci & Furnari
**Cottoniella libyensis* Nizamuddin & Godeh
Cryptopleura ramosa (Hudson) Kylin ex L. Newton[7]
**Erythroglossum balearicum* J. Agardh ex Kylin
Erythroglossum laciniatum (Lightfoot) Maggs & Hommersand [=*Polyneura gmelinii* (Lamouroux) Kylin]
Erythroglossum sandrianum (Kützing) Kylin
Haraldia lenormandii (Derbès & Solier) J. Feldmann
Hypoglossum hypoglossoides (Stackhouse) Collins & Hervey
**Myriogramme carnea* (J.J. Rodríguez) Kylin[9]
**Myriogramme distromatica* J.J. Rodriguez ex Boudouresque[9]
Myriogramme minuta Kylin[9]
**Myriogramme tristromatica* (J.J. Rodríguez ex Mazza) Boudouresque[9]
**Myriogramme unistromatica* Coppejans, nomen nudum[9]
**Nitophyllum albidum* Ardissone
**Nitophyllum flabellatum* Ercegovic
**Nitophyllum micropunctatum* Funk
Nitophyllum punctatum (Stackhouse) Greville
#*Nithophyllum stellato-corticatum* Okamura
**Radicilingua adriatica* (Kylin) Papenfuss
Radicilingua reptans (Kylin) Papenfuss
Radicilingua thysanorhizans (Holmes) Papenfuss
Taenioma nanum (Kützing) Papenfuss
Taenioma perpusillum (J. Agardh) J. Agardh

Family Rhodomelaceae
#*Acanthophora nayadiformis* (Delile) Papenfuss
Alsidium corallinum C. Agardh
**Alsidium helminthochorton* (Schwendimann) Kützing
Aphanocladia stichidiosa (Funk) Ardré
**Boergeseniella deludens* (Falkenberg) Kylin
Boergeseniella fruticulosa (Wulfen) Kylin
Boergeseniella thuyoides (Harvey) Kylin
Bostrychia scorpioides (Hudson) Montagne ex Kützing
Brongniartella byssoides (Goodenough & Woodward) Schmitz
**Chondria boryana* (J. Agardh) De Toni
Chondria capillaris (Hudson) Wynne
#*Chondria coerulescens* (J. Agardh) Falkenberg
#*Chondria curvilineata* Collins & Hervey
Chondria dasyphylla (Woodward) C. Agardh
Chondria mairei Feldmann-Mazoyer
#*Chondria pygmaea* Garbary & Vandermeulen
Chondria scintillans Feldmann-Mazoyer
Digenea simplex (Wulfen) C. Agardh
Dipterosiphonia dendritica (C. Agardh) Schmitz
Dipterosiphonia rigens (Schousboe ex C. Agardh) Falkenberg
Erythrocystis montagnei (Derbès & Solier) Silva

Halopithys incurva (Hudson) Batters
#Herposiphonia parca Setchell
Herposiphonia secunda (C. Agardh) Ambronn
Herposiphonia secunda f. *tenella* (C. Agardh) Wynne
Janczewskia verrucaeformis Solms-Laubach
#Laurencia caduciramulosa Masuda & Kawaguchi
Laurencia chondrioides Boergesen
**Laurencia epiphylla* Boisset & Lino
Laurencia glandulifera (Kützing) Kützing
Laurencia intricata Lamouroux
Laurencia majuscula (Harvey) Lucas
Laurencia microcladia Kützing
**Laurencia minuta* Vandermeulen, Garbary & Guiry ssp. *scammaccae* Furnari & Cormaci
Laurencia obtusa (Hudson) Lamouroux
#Laurencia okamurae Yamada
Laurencia pyramidalis Bory ex Kützing
Leptosiphonia schousboei (Thuret) Kylin[5]
#Lophocladia lallemandii (Montagne) Schmitz[8]
Lophocladia trichoclados (C. Agardh) J. Agardh[8]
Lophosiphonia cristata Falkenberg
Lophosiphonia obscura (C. Agardh) Falkenberg [=*Lophosiphonia subadunca* (Kützing) Falkenberg]
Lophosiphonia reptabunda (Suhr) Kylin
Neosiphonia elongella (Harvey) Kim & Lee (=*Polysiphonia elongella* Harvey)
Neosiphonia ferulacea (Suhr ex J. Agardh) Guimaraes & Fujii (=*Polysiphonia ferulacea* Suhr ex J. Agardh)
#Neosiphonia harveyi (Bailey) Kim, Choi, Guiry & Saunders (=*Polysiphonia harveyi* Bailey; =*Polysiphonia mottei* Lauret)
Neosiphonia sphaerocarpa (Boergesen) Kim & Lee (=*Polysiphonia sphaerocarpa* Boergesen)
Ophidocladus simpliciusculus (P.L. Crouan & H.M. Crouan) Falkenberg
Osmundaria volubilis (Linnaeus) J. Agardh
**Osmundea maggsiana* Serio, Cormaci & Furnari
Osmundea oederi (Gunnerus) Furnari [=*Osmundea ramosissima* (Oeder) Athanasiadis]
**Osmundea pelagiensis* Furnari
**Osmundea pelagosae* (Schiffner) K.W. Nam
Osmundea pinnatifida (Hudson) Stackhouse
Osmundea truncata (Kützing) K.W. Nam & Maggs
**Osmundea verlaquei* Furnari
Palisada maris-rubri (K.W. Nam & Saito) K.W. Nam
Palisada papillosa (C. Agardh) K.W. Nam [=*Chondrophycus papillosus* (C. Agardh) Garbary & Harper]
Palisada patentiramea (Montagne) Cassano, Sentíes, Gil-Rodriguez & M.T. Fujii [=*Chondrophycus patentirameus* (Montagne) K.W. Nam]
Palisada tenerrima (Cremades) Serio, Cormaci, Furnari & Boisset [=*Chondrophycus tenerrimus* (Cremades) Furnari, Boisset, Cormaci & Serio]
Palisada thuyoides (Kützing) Cassano, Sentíes, Gil-Rodriguez & M.T. Fujii [=*Laurencia paniculata* (C. Agardh) J. Agardh]
**Polysiphonia arachnoidea* (C. Agardh) Zanardini[10]
#Polysiphonia atlantica Kapraun & J. Norris (=*Polysiphonia macrocarpa* Harvey)
**Polysiphonia atra* Zanardini
**Polysiphonia banyulensis* Coppejans
**Polysiphonia biformis* Zanardini (=*Dasya corallicola* Funk)
Polysiphonia breviarticulata (C. Agardh) Zanardini

Polysiphonia brodiei (Dillwyn) Sprengel
Polysiphonia ceramiaeformis P.L. & H.M. Crouan
**Polysiphonia cladorhiza* Ardissone
Polysiphonia denudata (Dillwyn) Greville ex Harvey
**Polysiphonia derbesii* Solier ex Kützing
**Polysiphonia deusta* (Roth) Sprengel
**Polysiphonia dichotoma* Kützing
Polysiphonia elongata (Hudson) Sprengel
Polysiphonia fibrillosa (Dillwyn) Sprengel
Polysiphonia flexella (C. Agardh) J. Agardh
Polysiphonia flocculosa (C. Agardh) Endlicher
**Polysiphonia foeniculacea* (C. Agardh) Sprengel
#*Polysiphonia fucoides* (Hudson) Greville
Polysiphonia funebris De Notaris ex J. Agardh
Polysiphonia furcellata (C. Agardh) Harvey
#*Polysiphonia morrowii* Harvey
Polysiphonia opaca (C. Agardh) Moris & De Notaris
**Polysiphonia ornata* J. Agardh
Polysiphonia orthocarpa Rosenvinge
#*Polysiphonia paniculata* Montagne
**Polysiphonia perforans* Cormaci, Furnari, Pizzuto & Serio
Polysiphonia polyspora (C. Agardh) Montagne
Polysiphonia sanguinea (C. Agardh) Zanardini
Polysiphonia scopulorum Harvey [=*Lophosiphonia scopulorum* (Harvey) Womersley]
Polysiphonia sertularioides (Grateloup) J. Agardh
**Polysiphonia setigera* Kützing
Polysiphonia spinosa (C. Agardh) J. Agardh
Polysiphonia stricta (Dillwyn) Greville [=*Polysiphonia urceolata* (Lightfoot ex Dillwyn) Greville]
Polysiphonia stuposa Zanardini ex Kützing (=*Polysiphonia foetidissima* Cocks ex Bornet)[8]
Polysiphonia subtilissima Montagne
Polysiphonia subulata (Ducluzeau) P.L. Crouan & H.M. Crouan
Polysiphonia subulifera (C. Agardh) Harvey
Polysiphonia tenerrima Kützing
Polysiphonia tripinnata J. Agardh
Pterosiphonia ardreana Maggs & Hommersand[8]
Pterosiphonia complanata (Clemente) Falkenberg
Pterosiphonia parasitica (Hudson) Falkenberg
Pterosiphonia pennata (C. Agardh) Sauvageau
Pterosiphonia pinnulata (Kützing) Maggs & Hommersand
#*Pterosiphonia tanakae* Uwai & Masuda
**Rodriguezella bornetii* (J.J. Rodriguez) Schmitz ex J.J. Rodriguez
**Rodriguezella ligulata* J. Feldmann, nomen nudum
**Rodriguezella pinnata* (Kützing) Schmitz ex Falkenberg
**Rodriguezella strafforelloi* Schmitz ex J.J. Rodriguez
Rytiphlaea tinctoria (Clemente) C. Agardh
Stichothamnion cymatophilum Boergesen
Streblocladia collabens (C. Agardh) Falkenberg
#*Symphyocladia marchantioides* (Harvey) Falkenberg
#*Womersleyella setacea* (Hollenberg) R.E. Norris (=*Polysiphonia setacea* Hollenberg)

Order Corallinales

Family Corallinaceae
Amphiroa beauvoisii Lamouroux
Amphiroa cryptarthrodia Zanardini [=*Amphiroa rubra* (Philippi) Woelkerling; =*Amphiroa verruculosa* auct. med.]
Amphiroa fragilissima (Linnaeus) Lamouroux
Amphiroa rigida Lamouroux
Corallina caespitosa Walker, Brodie & Irvine
Corallina elongata Ellis & Solander (=*Corallina mediterranea* Areschoug)
Corallina officinalis Linnaeus
**Haliptilon attenuatum* (Kützing) Garbary & Johansen
Haliptilon virgatum (Zanardini) Garbary & Johansen (=*Corallina granifera* Ellis & Solander)
Hydrolithon boreale (Foslie) Chamberlain (=*Melobesia farinosa* var. *borealis* Lemoine)
Hydrolithon cruciatum (Bressan) Chamberlain (=*Fosliella cruciata* Bressan)
Hydrolithon farinosum (Lamouroux) Penrose & Chamberlain [=*Melobesia farinosa* Lamouroux; =*Fosliella farinosa* (Lamouroux) Howe]
Hydrolithon farinosum var. *chalicodictyum* (Taylor) Serio
Jania adhaerens Lamouroux
Jania longifurca Zanardini
Jania rubens (Linnaeus) Lamouroux
Jania rubens var. *corniculata* (Linnaeus) Yendo [=*Jania nitidula* Meslin; =*Jania corniculata* (Linnaeus) Lamouroux]
Jania squamata (Linnaeus) Kim, Guiry & Choi [=*Haliptilon squamatum* (Linnaeus) Johansen, Irvine & Webster]
Lithophyllum byssoides (Lamarck) Foslie (=*Lithophyllum lichenoides* Philippi; =*Lithophyllum tortuosum* auct. non Esper)
**Lithophyllum cabiochae* (Boudouresque & Verlaque) Athanasiadis (=*Pseudolithophyllum cabiochae* Boudouresque & Verlaque)
Lithophyllum corallinae (P.L. Crouan & H.M. Crouan) Heydrich [=*Dermatolithon corallinae* (P.L. Crouan & H.M. Crouan) Foslie]
Lithophyllum cystoseirae (Hauck) Heydrich [=*Dermatolithon cystoseirae* (Hauck) H. Huvé]
Lithophyllum decussatum (Ellis & Solander) Philippi
Lithophyllum dentatum (Kützing) Foslie
Lithophyllum fasciculatum (Lamarck) Foslie
Lithophyllum incrustans Philippi
Lithophyllum lobatum Lemoine in Boergesen
Lithophyllum orbiculatum (Foslie) Foslie [=*Lithothamnion subtenellum* (Foslie) Lemoine]
Lithophyllum papillosum Zanardini ex Hauck [=*Goniolithon papillosum* (Zanardini ex Hauck) Boergesen]
Lithophyllum pustulatum (Lamouroux) Foslie [=*Lithophyllum hapalidioides* (P.L. Crouan & H.M. Crouan) Hariot; =*Titanoderma confine* (P.L. Crouan & H.M. Crouan) Price, John & Lawson; =*Dermatolithon litorale* (Suneson) Hamel & Lemoine]
Lithophyllum racemus (Lamarck) Foslie
Lithophyllum stictaeforme (Areschoug in J. Agardh) Hauck [=*Pseudolithophyllum expansum* auct., pro parte; *Lithophyllum frondosum* (Dufour) Furnari, Cormaci & Alongi]
#*Lithophyllum yessoense* Foslie
Neogoniolithon brassica-florida (Harvey) Setchell & Mason [=*Neogoniolithon notarisii* (Dufour) Hamel & Lemoine]
Neogoniolithon mamillosum (Hauck) Setchell & Mason [=*Lithophyllum hauckii* (Rothpletz) Lemoine]
Pneophyllum confervicola (Kützing) Chamberlain [=*Fosliella minutula* (Foslie) Ganesan; =*Melobesia confervicola* (Kützing) Foslie]
Pneophyllum coronatum (Rosanoff) Penrose [=*Pneophyllum caulerpae* (Foslie) Jones & Woelkerling; =*Pneophyllum rosanoffii* Chamberlain]
Pneophyllum fragile Kützing [=*Fosliella lejolisii* (Rosanoff) Howe]

Pneophyllum zonale (P.L. Crouan & H.M. Crouan) Chamberlain
Spongites fruticulosa Kützing [=*Lithothamnion ramulosum* Philippi; =*Lithothamnion fruticulosum* (Kützing) Foslie]
**Tenarea tortuosa* (Esper) Lemoine; [=*Tenarea undulosa* Bory; *Lithophyllum tortuosum* (Esper) Foslie][11]
Titanoderma mediterraneum (Foslie) Woelkerling (=*Litholepis mediterranea* Foslie)
**Titanoderma ramosissimum* (Heydrich) Bressan & Cabioch[12]
**Titanoderma trochanter* (Bory) Benhissoune, Boudouresque, Perret-Boudouresque & Verlaque[12]

Family Hapalidiaceae
Boreolithon van-heurckii (Heydrich in Chalon) A.S. Harvey & Woelkerling
Choreonema thuretii (Bornet) Schmitz
Leptophytum bornetii (Foslie) Adey (=*Lithothamnion bornetii* Foslie)
Lithothamnion corallioides (P.L. Crouan & H.M. Crouan) P.L. Crouan & H.M. Crouan [=*Lithothamnion solutum* (Foslie) Lemoine]
Lithothamnion crispatum Hauck
**Lithothamnion minervae* Basso (=*Lithothamnion fruticulosum* auct., pro parte)
Lithothamnion philippi Foslie
**Lithothamnion propontidis* Foslie
Lithothamnion sonderi Hauck
**Lithothamnion valens* Foslie
Melobesia membranacea (Esper) Lamouroux
Mesophyllum alternans (Foslie) Cabioch & Mendoza[13]
Mesophyllum expansum (Philippi) Cabioch & Mendoza[14]
Mesophyllum lichenoides (Ellis) Lemoine[13]
**Mesophyllum macedonis* Athanasiadis
Mesophyllum macroblastum (Foslie) Adey
Phymatolithon calcareum (Pallas) Adey & McKibbin [=*Lithothamnion calcareum* (Pallas) Areschoug]
Phymatolithon lenormandii (Areschoug) Adey [=*Lithothamnion lenormandii* (Areschoug) Foslie]
Phymatolithon purpureum (P.L. Crouan & H.M. Crouan) Woelkerling & Irvine [=*Phymatolithon polymorphum* (Linnaeus) Foslie]
Phymatolithon tenuissimum (Foslie) Adey (=*Lithothamnion tenuissimum* Foslie)

Family Sporolithaceae
Sporolithon ptychoides Heydrich (=*Sporolithon mediterraneum* Heydrich)[15]

Order Gelidiales

Family Gelidiaceae
Gelidiella lubrica (Kutzing) J. Feldmann & Hamel
**Gelidiella nigrescens* (J. Feldmann) J. Feldmann & Hamel
Gelidiella ramellosa (Kutzing) J. Feldmann & Hamel
Gelidiella sanctarum J. Feldmann & Hamel[5]
**Gelidiocolax christianae* J. Feldmann & G. Feldmann
Gelidium bipectinatum Furnari (=*Gelidium pectinatum* Schousboe ex Montagne)
Gelidium corneum (Hudson) Lamouroux [=*Gelidium sesquipedale* (Clemente) Thuret]
Gelidium crinale (Hare ex Turner) Gaillon
Gelidium microdon Kützing[5]
Gelidium minusculum (Weber van Bosse) R.E. Norris (=*Gelidium pusillum* var. *minusculum* Weber van Bosse)
Gelidium pulchellum (Turner) Kützing [=*Gelidium pulchellum* var. *claviferum* (Turner) Kützing]

Gelidium pusillum (Stackhouse) Le Jolis
Gelidium reptans (Suhr) Kylin[5]
Gelidium spathulatum (Kutzing) Bornet
Gelidium spinosum (Gmelin) Silva (=*Gelidium latifolium* Bornet ex Hauck)
**Gelidium spinosum* (Gmelin) Silva var. *hystrix* (J. Agardh) Furnari
Parviphycus antipai (Celan) Santelices (=*Gelidiella antipai* Celan)
**Parviphycus felicinii* Perrone & Delle Foglie
Parviphycus adnatus (Dawson) Santelices (=*Gelidiella tenuissima* J. Feldmann & Hamel; =*Gelidiella pannosa* J. Feldmann & Hamel)
Pterocladiella capillacea (Gmelin) Santelices & Hommersand [=*Pterocladia capillacea* (Gmelin) Bornet]
Pterocladiella melanoidea (Schousboe ex Bornet) Santelices & Hommersand (=*Gelidium melanoideum* Schousboe ex Bornet)
Pterocladiella melanoidea var. *filamentosa* (Schousboe ex Bornet) Wynne
**Pterocladiella melanoidea* var. *gracilis* (J. Feldmann & Hamel) Wynne
**Ptilophora mediterranea* (Huvé) R.E. Norris (=*Beckerella mediterranea* H. Huvé)

Order Gigartinales

Family Areschougiaceae
#Agardhiella subulata (C. Agardh) Kraft & Wynne
#Sarconema filiforme (Sonder) Kylin
#Sarconema scinaioides Borgesen

Family Calosiphoniaceae
Calosiphonia vermicularis (J. Agardh) Schmitz [=*Calosiphonia dalmatica* (Kützing) Bornet & Flahault]
Schmitzia neapolitana (Berthold) Lagerheim ex Silva [=*Bertholdia neapolitana* (Berthold) Schmitz]

Family Caulacanthaceae
Catenella caespitosa (Withering) Irvine
Caulacanthus ustulatus (Mertens ex Turner) Kützing
#Feldmannophycus okamurae (Yamada) Mineur, Maggs & Verlaque
Feldmannophycus rayssiae (J. Feldmann & G. Feldmann) Augier & Boudouresque

Family Cruoriaceae
Cruoria cruoriaeformis (P.L. Crouan & H.M. Crouan) Denizot (=*Cruoria purpurea* P.L. Crouan & H.M. Crouan)

Family Cystocloniaceae[16]
Calliblepharis ciliata (Hudson) Kützing
Calliblepharis jubata (Goodenough & Woodward) Kützing
#Hypnea cornuta (Kützing) J. Agardh
#Hypnea flagelliformis Graville ex J. Agardh
**Hypnea furnariana* Cormaci, Alongi & Dinaro
Hypnea musciformis (Wulfen) Lamouroux
#Hypnea spinella (C. Agardh) Kützing (=*Hypnea cervicornis* J. Agardh)
#Hypnea valentiae (Turner) Montagne
Rhodophyllis divaricata (Stackhouse) Papenfuss
**Rhodophyllis strafforelloi* Ardissone

Family Dumontiaceae

Dudresnaya verticillata (Withering) Le Jolis

Family Furcellariaceae

Furcellaria lumbricalis (Hudson) Lamouroux[17]
Halarachnion ligulatum (Woodward) Kützing
**Neurocaulon foliosum* (Meneghini) Zanardini [=*Neurocaulon reniforme* (Postels & Ruprecht) Zanardini]

Family Gigartinaceae

Chondracanthus acicularis (Roth) Fredericq [=*Gigartina acicularis* (Roth) Lamouroux]
Chondracanthus teedii (Mertens ex Roth) Kützing [=*Gigartina teedii* (Mertens ex Roth) Lamouroux]
#*Chondrus giganteus* Yendo f. *flabellatus* Mikami
Gigartina pistillata (Gmelin) Stackhouse[18]

Family Gloiosiphoniaceae

Gloiosiphonia capillaris (Hudson) Carmichael
Thuretella schousboei (Thuret) Schmitz

Family Kallymeniaceae

Callophyllis laciniata (Hudson) Kützing
Kallymenia feldmannii Codomier
**Kallymenia lacerata* J. Feldmann
**Kallymenia patens* (J. Agardh) Parkinson
Kallymenia reniformis (Turner) J. Agardh
Kallymenia requienii (J. Agardh) J. Agardh
**Kallymenia spathulata* (J. Agardh) Codomier ex Parkinson
Meredithia microphylla (J. Agardh) J. Agardh (=*Kallymenia microphylla* J. Agardh)

Family Peyssonneliaceae

**Ethelia van bosseae* J. Feldmann
**Metapeyssonnelia feldmanni* Boudouresque, Coppejans & Marcot-Coqueugniot
Peyssonnelia armorica (P.L. Crouan & H.M. Crouan) Weber van Bosse (=*Cruoriella armorica* P.L. Crouan & H.M. Crouan; =*Cruoriopsis cruciata* Dufour; =*Cruoriopsis rosenvingei* Boergesen)
Peyssonnelia atropurpurea P.L. Crouan & H.M. Crouan
**Peyssonnelia bornetii* Boudouresque & Denizot
Peyssonnelia coriacea J. Feldmann
**Peyssonnelia crispata* Boudouresque & Denizot
Peyssonnelia dubyi P.L. Crouan & H.M. Crouan [=*Cruoriella dubyi* P.L. Crouan & H.M. Crouan ex Kützing; =*Peyssonnelia codana* (Rosenvinge) Denizot]
Peyssonnelia harveyana P.L. Crouan & H.M. Crouan ex J. Agardh (=*Peyssonnelia adriatica* Hauck)
**Peyssonnelia hongii* Marcot-Coqueugniot[19]
Peyssonnelia immersa Maggs & Irvine[20]
Peyssonnelia inamoena Pilger
Peyssonnelia magna Ercegovic
Peyssonnelia orientalis (Weber van Bosse) Cormaci & Furnari
Peyssonnelia polymorpha (Zanardini) Schmitz
**Peyssonnelia rara-avis* Marcot & Boudouresque
**Peyssonnelia rosa marina* Boudouresque & Denizot
Peyssonnelia rosa-marina Boudouresque & Denizot f. *saxicola* Boudouresque & Denizot
Peyssonnelia rubra (Greville) J. Agardh
Peyssonnelia squamaria (Gmelin) Decaisne
**Peyssonnelia stoechas* Boudouresque & Denizot

Polystrata compacta (Foslie) Denizot
Polystrata fosliei (Weber van Bosse) Denizot

Family Phyllophoraceae

Ahnfeltiopsis devoniensis (Greville) Silva & DeCew [=*Gymnogongrus devoniensis* (Greville) Schotter][21]
#*Ahnfeltiopsis flabelliformis* (Harvey) Masuda
Ahnfeltiopsis pusilla (Montagne) Silva & DeCew [=*Gymnogongrus pusillus* (Montagne) J. Feldmann & Mazoyer]
Coccotylus truncatus (Pallas) Wynne & Heine [=*Phyllophora truncata* (Pallas) Zinova]
Gymnogongrus crenulatus (Turner) J. Agardh [=*Gymnogongrus norvegicus* (Gunnerus) J. Agardh]
Gymnogongrus griffithsiae (Turner) Martius (=*Actinococcus aggregatus* Schmitz)
Gymnogongrus patens (Goodenough & Woodward) J. Agardh[22]
Phyllophora crispa (Hudson) Dixon [=*Phyllophora nervosa* (De Candolle) Greville]
Phyllophora heredia (Clemente) J. Agardh
Phyllophora pseudoceranoïdes (Gmelin) Newroth & A.R.A. Taylor[23]
Phyllophora sicula (Kützing) Guiry & Irvine (=*Phyllophora palmettoides* J. Agardh)
Schottera nicaeënsis (Lamouroux ex Duby) Guiry & Hollenberg [=*Petroglossum nicaeense* (Lamouroux ex Duby) Schotter]
Stenogramme interrupta (C. Agardh) Montagne ex Harvey[5]

Family Rhizophyllidaceae
**Contarinia peyssonneliaeformis* Zanardini (=*Rhizophyllis codii* J. Feldmann)
Contarinia squamariae (Meneghini) Denizot

Family Rissoëllaceae
Rissoëlla verruculosa (Bertoloni) J. Agardh

Family Sarcodiaceae
**Chondrymenia lobata* (Meneghini) Zanardini

Famly Solieriaceae
#*Solieria dura* (Zanardini) Schmitz
#*Solieria filiformis* (Kützing) Gabrielson
Wurdermannia miniata (Sprengel) J. Feldmann & Hamel

Family Sphaerococcacae
Sphaerococcus coronopifolius (Goodenough & Woodward) Stackhouse (=*Haematocelis fissurata* P.L. Crouan & H.M. Crouan)
**Sphaerococcus rhizophylloides* J.J. Rodriguez

Order Gracilariales

Family Gracilariaceae[2]
#*Gracilaria arcuata* Zanardini
Gracilaria armata (C. Agardh) J. Agardh
Gracilaria bursa-pastoris (Gmelin) Silva [=*Gracilaria compressa* (C. Agardh) Greville]
Gracilaria cervicornis (Turner) J. Agardh
Gracilaria conferta (Schousboe ex Montagne) Montagne
**Gracilaria corallicola* Zanardini
**Gracilaria dendroides* Gargiulo, De Masi & Tripodi

Gracilaria dura (C. Agardh) J. Agardh
Gracilaria foliifera (Forsskal) Borgesen
Gracilaria gracilis (Stackhouse) Steentoft, Irvine & Farnham [=*Gracilaria verrucosa* (Hudson) Papenfuss; =*Gracilaria confervoides* (Linnaeus) Greville]
**Gracilaria heteroclada* (Montagne) J. Feldmann & G. Feldmann
Gracilaria longa Gargiulo, De Masi & Tripodi
Gracilaria multipartita (Clemente) Harvey
Gracilariopsis longissima (Gmelin) Steentoft, Irvine & Farnham

Order Halymeniales

Family Halymeniaceae
**Acrodiscus vidovichii* (Meneghini) Zanardini
**Aeodes marginata* (Roussel ex Montagne) Schmitz
Cryptonemia lomation (Bertoloni) J. Agardh
Cryptonemia seminervis (C. Agardh) J. Agardh[24]
**Cryptonemia tunaeformis* (Bertoloni) Zanardini
#*Grateloupia asiatica* Kawaguchi & Wang
**Grateloupia cosentinii* Kützing
Grateloupia dichotoma J. Agardh
Grateloupia doryphora (Montagne) Howe
**Grateloupia filicina* (Lamouroux) C. Agardh[25]
#*Grateloupia lanceolata* (Okamura) Kawaguchi
#*Grateloupia minima* P.L. Crouan & H.M. Crouan[26]
#*Grateloupia patens* (Okamura) Kawaguchi & Wang (=*Prionitis patens* Okamura)
Grateloupia proteus Kützing
#*Grateloupia subpectinata* Holmes [=*Grateloupia luxurians* (A. Gepp & E.S. Gepp) Wilkes, McIvor & Guiry]
#*Grateloupia turuturu* Yamada
**Halymenia asymetrica* Gargiulo, De Masi & Tripodi
Halymenia elongata C. Agardh [=*Halymenia trigona* (Clemente) C. Agardh]
**Halymenia elongata* var. *decipiens* (J. Agardh) Cremades
**Halymenia elongata* var. *plana* (Codomier) Cremades
Halymenia floresii (Clemente) C. Agardh
**Halymenia floresii* var. *pinnata* Codomier
**Halymenia floresii* var. *ulvoidea* Codomier
Halymenia latifolia P.L. Crouan & H.M. Crouan ex Kützing (=*Halymenia trabeculata* Ercegovic)

Order Hildenbrandiales

Family Hildenbrandiaceae
Hildenbrandia crouaniorum J. Agardh (=*Hildenbrandia canariensis* Boergesen)
Hildenbrandia occidentalis Setchell (=*Hildenbrandia occidentalis* var. *lusitanica* André)
Hildenbrandia rubra (Sommerfelt) Meneghini (=*Hildenbrandia prototypus* Nardo)

Order Nemaliales

Family Galaxauraceae
#*Galaxaura rugosa* (Ellis & Solander) Lamouroux
Tricleocarpa fragilis (Linné) Huisman & Townsend [=*Galaxaura oblongata* (Ellis & Solander) Lamouroux; =*Galaxaura adriatica* Zanardini]

Family Liagoraceae
#Ganonema farinosum (Lamouroux) Fan & Wang (=*Liagora farinosa* Lamouroux)
Helminthocladia agardhiana Dixon [=*Helminthocladia hudsonii* (C. Agardh) J. Agardh]
Helminthora divaricata (C. Agardh) J. Agardh [=*Helminthora stackhousei* (Clemente) Cremades & Pérez-Cirera]
Liagora ceranoides Lamouroux
Liagora distenta (Mertens ex Roth) Lamouroux
Liagora tetrasporifera Borgesen
Liagora viscida (Forsskal) C. Agardh
Nemalion helminthoides (Velley) Batters
#Nemalion vermiculare Suringar

Family Scinaiaceae
Scinaia furcellata (Turner) J. Agardh
Scinaia interrupta (De Candolle) Wynne [=*Scinaia turgida* Chemin; =*Scinaia subcostata* (J. Agardh) Chemin ex Hamel]
Scinaia complanata (Collins) Cotton
Scinaia complanata var. *intermedia* Boergesen

Order Nemastomatales

Family Nemastomataceae
Nemastoma dichotomum J. Agardh
**Nemastoma dichotomum* J. Agardh var. *caulescens* (Kützing) Rodriguez-Prieto, Verlaque & Verges (=*Nemastoma constrictum* Ercegovic)
**Nemastoma dichotomum* var. *biasolettianum* (Kützing) Rodriguez-Prieto, Verlaque & Verges
**Nemastoma dichotomum* var. *incrassatum* (Kützing) Rodriguez-Prieto, Verlaque & Verges
**Nemastoma dumontioides* J. Agardh
Predaea ollivieri J. Feldmann (=*Yadranella adriatica* Ercegovic)
Predaea pusilla (Berthold) J. Feldmann
**Predaea pusilla* f. *alboranensis* Conde, López-Mielgo & Flores-Moya

Family Schizymeniaceae
Itonoa marginifera (J. Agardh) Masuda & Guiry [=*Platoma marginiferum* (J. Agardh) Schmitz]
Platoma cyclocolpum (Montagne) Schmitz
Schizymenia dubyi (Chauvin ex Duby) J. Agardh (=*Haematocelis rubens* J. Agardh)

Order Palmariales

Family Rhodophysemataceae
Rhodophysema georgii Batters

Order Plocamiales

Family Plocamiaceae
Plocamium cartilagineum (Linnaeus) Dixon (=*Plocamium vulgare* Lamouroux)
Plocamium raphelisianum Dangeard[22]
#Plocamium secundatum (Kützing) Kützing

Order Sebdeniales

Family Sebdeniaceae

Sebdenia dichotoma Berthold (=*Sebdenia feldmannii* Codomier)
**Sebdenia monardiana* (Montagne) Berthold
Sebdenia rodrigueziana (J. Feldmann) Codomier ex Parkinson (=*Halymenia mucosa* Ercegovic)

Order Rhodymeniales

Family Champiaceae
Champia parvula (C. Agardh) Harvey
**Chylocladia pelagosae* Ercegovic
Chylocladia verticillata (Lightfoot) Bliding [=*Chylocladia pygmaea* (Funk) Kylin; =*Chylocladia squarrosa* (Kützing) Thuret]
**Chylocladia verticillata* var. *kaliformis-unistratosa* (Ercegovic) Cormaci & Furnari
**Chylocladia verticillata* var. *kaliformis-unistratosa* f. *breviarticulata* (Ercegovic) Cormaci & Furnari
**Chylocladia wynnei* Alongi, Furnari & Cormaci
Gastroclonium clavatum (Roth) Ardissone
Gastroclonium ovatum (Hudson) Papenfuss[22]
Gastroclonium reflexum (Chauvin) Kützing

Family Faucheaceae
Gloiocladia furcata (C. Agardh) J. Agardh
Gloiocladia microspora (Bornet in J.J. Rodriguez) Sánchez & Rodriguez-Prieto (=*Fauchea microspora* Bornet)
Gloiocladia repens (C. Agardh) Sánchez & Rodriguez-Prieto [=*Fauchea repens* (C. Agardh) Montagne & Bory]
**Leptofauchea coralligena* Rodriguez-Prieto & De Clerck

Family Lomentariaceae
Lomentaria articulata (Hudson) Lyngbye
Lomentaria articulata (Hudson) Lyngbye var. *linearis* Zanardini
Lomentaria chylocladiella Funk
**Lomentaria clavaeformis* Ercegovic
Lomentaria clavellosa (Turner) Gaillon
**Lomentaria clavellosa* f. *reducta* Ercegovic
Lomentaria clavellosa var. *conferta* (Meneghini) J. Feldmann
**Lomentaria compressa* (Kützing) Kylin
**Lomentaria ercegovicii* Verlaque, Boudouresque, Meinesz, Giraud & Marcot-Coqueugniot (=*Lomentaria tenera* Ercegovic)
Lomentaria firma (J. Agardh) Kylin
**Lomentaria firma* f. *compressa* Ercegovic
#*Lomentaria flaccida* Tanaka
#*Lomentaria hakodatensis* Yendo
**Lomentaria jabukae* Ercegovic
Lomentaria subdichotoma Ercegovic
Lomentaria uncinata Meneghini ex Zanardini
**Lomentaria verticillata* Funk

Family Rhodymeniaceae
Botryocladia botryoides (Wulfen) J. Feldmann
Botryocladia chiajeana (Meneghini) Kylin
#*Botryocladia madagascariensis* G. Feldmann
Botryocladia microphysa (Hauck) Kylin
Cordylecladia erecta (Greville) J. Agardh[27]

Cordylecladia guiry Gargiulo, Furnari & Cormaci
Chrysymenia ventricosa (Lamouroux) J. Agardh
#*Chrysymenia wrightii* (Harvey) Yamada
Irvinea boergesenii (J. Feldmann) Wilkes, McIvor & Guiry (=*Botryocladia boergesenii* J. Feldmann)
Rhodymenia ardissonei (Kuntze) J. Feldmann
Rhodymenia caespitosa P. Dangeard[5]
Rhodymenia delicatula Dangeard
#*Rhodymenia erythraea* Zanardini
Rhodymenia ligulata Zanardini
Rhodymenia pseudopalmata (Lamouroux) Silva [=*Rhodymenia palmetta* (Stackhouse) Greville]
**Rhodymeniocolax mediterraneus* Verges, Izquierdo & Verlaque

Class Porphyridiophyceae

Order Porphyridiales

Family Phragmonemataceae
#*Goniotrichopsis sublittoralis* Smith

Class Stylonematophyceae

Order Stylonematales

Family Stylonemataceae
Chroodactylon ornatum (C. Agardh) Basson [=*Asterocytis ornata* (C. Agardh) Hamel]
Rhodosorus marinus Geitler[28]
Stylonema alsidii (Zanardini) K.M. Drew [=*Goniotrichum alsidii* (Zanardini) Howe]
Stylonema cornu-cervi Reinsch [=*Goniotrichum cornu-cervi* (Reinsch) Hauck]
Stylonema subcoeruleum (Dangeard) Wynne (=*Goniotrichum subcoeruleum* Dangeard)[29]

Notes

1. Some species from the genus *Porphyra* require confirmation.
2. Requires nomenclatural and taxonomical re-investigation.
3. Known only from the type description (Feldmann 1931). Requires taxonomical re-investigation.
4. According to Athanasiadis (2009), Mediterranean records of *Antithamnion nipponicum* Yamada & Inagaki and *Antithamnion pectinatum* (Montagne) Brauner ex Athanasiadis & Tittley correspond to *Antithamnion hubbsii*.
5. An Atlantic species recorded by Kazzaz (1989) in the Strait of Gibraltar.
6. See Verlaque (2001).
7. See comments by Gómez-Garreta et al. (2001) concerning taxonomical and nomenclatural problems with entities recorded as *Acrosorium reptans* (P.L. Crouan & H.M. Crouan) Kylin and *Acrosorium uncinatum* (Turner) Kylin.
8. See Gómez-Garreta et al. (2001).
9. Requires nomenclatural and taxonomical re-investigation (Gómez-Garreta et al. 2001).
10. Genus *Polysiphonia* Greville requires nomenclatural and taxonomical re-investigation.
11. According to Algaebase this entity should be named *Lithophyllum tortuosum* (Esper) Foslie. We follow Bressan & Babbini-Benussi (2003) for nomenclature.
12. See Bressan & Cabioch (2004) for circumscription of *Titanoderma trochanter* and *Titanoderma ramosissimum*.

13. See Cabioch & Mendoza (1998).
14. See Cabioch & Mendoza (2003).
15. See Alongi et al. (1996).
16. Due to taxonomical complexity and probable misidentifications in the genus *Hypnea*, we only list the two autochtonous species *Hypnea musciformis* and *Hypnea furnariana*, as well as the introduced species reported by Verlaque et al. (in press). Thus, we do not consider the following species as being established in the Mediterranean: *Hypnea variabilis* Okamura (Zeybek et al. 1986; Taskin et al. 2008), *Hypnea nidifica* J. Agardh (not considered by Zenetos et al. 2005), *Hypnea esperi* Bory (not considered by Zenetos et al. 2005) and *Hypnea spicifera* (Suhr) Harvey (=*Hypnea harveyi* Kützing) reported by Boudouresque & Verlaque (2002).
17. Athanasiadis (1987) excludes *Furcellaria lumbricalis* from the Aegean Sea but according to Furnari et al. (2003) the species is present in Sicily and Sardinia. It has been also reported from southern Spain (Conde et al. 1996).
18. Athanasiadis (1987) and Furnari et al. (2003) exclude this species from the Aegean Sea and Sicily, respectively, but the species seems to be present in Algeria, Morocco and southern Spain (Perret-Boudouresque & Seridi 1989; Benhissoune et al. 2002; Conde et al. 1996).
19. Known for sure only from the type description (Marcot-Coqueugniot 1980; Verlaque 1987). Requires taxonomical re-investigation.
20. Apart from the single record by Athanasiadis (1987) there is no further evidence of the occurrence of this species in the Mediterranean.
21. Atlantic species, known from the Mediterranean coast of southern Spain (Fernández et al. 1983).
22. Atlantic species, reported only from the Mediterranean coast of Morocco and southern Spain, close to the strait of Gibraltar (Conde et al. 1996; Benhissoune et al. 2002).
23. Athanasiadis excludes this Atlantic species from the Aegean Sea, but it has also been reported from Turkey (Taskin et al. 2008) and Tunisia (Ben Maïz et al. 1987).
24. *Cryptonemia seminervis* is an Atlantic species closely related to *Cryptonemia lomation* and according to Athanasiadis (1987) the two entities may be conspecific. Mediterranean citations of *Cryptonemia seminervis* should be confirmed.
25. See de Clerk et al. (2005) regarding the cryptic diversity associated to this species. According to their conclusions the genuine *Grateloupia filicina* seems to be limited to the Mediterranean basin and, thus, considered here as endemic. Whether plants collected near Gibraltar belong to *Grateloupia filicina* or to the reinstated *Grateloupia minima* P.L. Crouan & H.M. Crouan requires further investigations.
26. Reported by Zenetos et al. (2008) as introduced, although the determination of the alien or native status of Mediterranean populations requires further investigations. See also note 25.
27. According to Gargiulo et al. (1990) further investigations are required to confirm the presence of *Cordylecladia erecta* in the Mediterranean Sea.
28. Reported by Fresnel & Billard (1995) from Corsica and Syria.
29. Reported only once from the Eastern Pyrenees (Boudouresque et al. 1984).

Taxa inquirenda (see also Gómez-Garreta et al. 2001)

Acrochaetium cheminii J. Feldmann, *nomen nudum*
Acrochaetium extensum Ercegovic: see Furnari et al. (2003).
Acrochaetium extensum var. *longicellulare* Ercegovic: entity of uncertain taxonomic position.
Acrochaetium griffithsianum Nägeli: entity of uncertain taxonomic position.
Acrochaetium lenormandii (Suhr ex Kützing) Nägeli: see Furnari et al. (2003)
Acrochaetium pallens (Zanardini) Nägeli: see Furnari et al. (2003).

Callithamnion piliferum Kützing: entity of uncertain taxonomic position (Furnari et al. 1999).
Chaetangium dichotomum Kützing: see Furnari et al. (2003).
Chylocladia breviramosa Solander: see Furnari et al. (2003).
Chylocladia scaliformis Harvey: see Furnari et al. (2003).
Fosliella ischiensis Coppejans, *nomen nudum*.
Gelidium affine Schiffner: entity of uncertain taxonomic position.
Gelidium claviferum Kützing: entity of uncertain taxonomic position.
Gelidium divergens J. Agardh: see Furnari et al. (2003).
Gelidium radicans Montagne: see Furnari et al. (2003).
Gelidium secundatum Zanardini ex Kützing: see Furnari et al. (2003)
Gelidium venetum Schiffner: see Furnari et al. (2003)
Goniotrichum alsidii (Zanardini) Howe var. *strictum* Schiffner: entity of uncertain taxonomic position.
Gymnogongrus dubius (Montagne) Schotter: entity of uncertain taxonomic position.
Halymenia hvari Ercegovic: entity of uncertain taxonomic position.
Halymenia pluriloba Ercegovic: entity of uncertain taxonomic position.
Halymenia rhodymenioides Ercegovic: entity of uncertain taxonomic position.
Helminthocladia stackhousei (Clemente) Cremades & Pérez-Cirera: see comments in Benhissoune et al. (2002).
Lithophyllum laeve Kützing: see Furnari et al. (2003).
Lithophyllum polycarpum Zanardini: entity of uncertain taxonomic position (Furnari et al. 1999).
Lithophyllum tarentinum Mastrorilli: see Furnari et al. (2003).
Lithoporella melobesioides (Foslie) Foslie: see Furnari et al. (2003) as *Melobesia melobesioides* (Foslie) Lemoine.
Lithothamnion elegans Zanardini, *nomen nudum* (Furnari et al. 2003).
Lithothamnion validum Foslie: entity of uncertain taxonomic position (Furnari et al. 1999).
Melobesia confervoides Funk: see Furnari et al. (2003).
Melobesia polycarpa Zanardini: entity of uncertain taxonomic position (Furnari et al. 1999).
Microgelidiopsis horrida Ercegovic, *nomen nudum*.
Nithophyllum magontanum J.J. Rodriguez, *nomen nudum*.
Phyllophora fimbriata Ercegovic: entity of uncertain taxonomic position.
Plocamium subtile Kützing [=*Plocamium coccineum* var. *uncinatum* (C. Agardh) J. Agardh].
Porphyra autumnalis Zanardini (=*Porphyra laciniata* C. Agardh var. *umbilicata* C. Agardh?): entity of uncertain taxonomic position (Furnari et al. 1999).
Rhodymenia leptofaucheoides P. & H. Huvé: described by Huvé & Huvé (1971) it has not been reported again and it is not included in the Tunisian checklist by Ben Maïz et al. (1987).
Turnerella rosacea (J. Agardh) Schmitz: entity of uncertain taxonomic position.

Taxa excludenda (see also Gómez-Garreta et al. 2001)

Acanthophora muscoides (Linnaeus) Bory: unsupported records (Zenetos et al. 2008).
Acrochaetium balticum (Rosenvinge) Aleem & Schulz: misidentification (Zenetos et al. 2008).
Acrochaetium porphyrae (K.M. Drew) Smith: see discussion in Perret & Seridi (1989).
Acrochaetium radiatum Jao: see Furnari et al. (2003).
Aglaothamnion hookeri (Dillwyn) Maggs & Hommersand: see comments in Gómez-Garreta et al. (2001) and Furnari et al. (2003).
Anotrichium crinitum (Kützing) Bladock: see Furnari et al. (2003).
Antithamnion densum (Suhr) Howe: misidentification (Zenetos et al. 2008).

Antithamnion nipponicum Yamada & Inagaki: according to Athanasiadis (2009), this binomial is an heterotypic synonym of *Antithamnion pectinatum*.

Antithamnion pectinatum (Montagne) Brauner in Athanasiadis & Tittley: according to Athanasiadis (2009), Mediterranean records of *Antithamnion nipponicum* (=*Antithamnion pectinatum*) correspond to *Antithamnion hubbsii*.

Chondria collinsiana Howe: unsupported records (Zenetos et al. 2008).

Chondria polyrhiza Collins & Hervey: unsupported records (Zenetos et al. 2008).

Chondrus crispus Stackhouse: see Furnari et al. (2003) and Zenetos et al. (2008).

Corallina muscoides Kützing: see Furnari et al. (2003).

Gelidiopsis intricata (C. Agardh) Vickers: reported from the Adriatic Sea by Giaccone (1978) as *Gelidium intricatum* Kützing, with doubts.

Gelidium pteridifolium: see Furnari et al. (2003).

Gracilaria disticha (J. Agardh) J. Agardh: needs confirmation (Zenetos et al. 2005).

Gracilaria divergens (C. Agardh) J. Agardh: introduced species reported from Mare Piccolo (Italy), Furnari et al. (2003) considered it as "taxa excludenda". Not reported by Verlaque et al. (in press).

Gracilaria ornata Areschoug: reported only by Parenzan (1983); this record probably corresponds to a misidentification.

Grania efflorescens (J. Agardh) Kylin [=*Acrochaetium efflorescens* (J. Agardh) Nägeli]: reported by Gómez et al. (1981); this record probably corresponds to a misidentication.

Grateloupia lanceola (J. Agardh) J. Agardh: it is not clear whether this species has been reported from the Mediterranean coasts from southern Spain (see Conde et al. 1996).

Heterosiphonia japonica: Mediterranean records of this species correspond to *Dasysiphonia* sp. (Zenetos et al. 2008).

Hypnea esperi Bory: see Zenetos et al. (2005).

Hypnea nidifica J. Agardh: needs confirmation (Zenetos et al. 2005).

Hypnea spicifera (Suhr) Harvey: Mediterranean records of this species correspond to *Hypnea flagelliformis* Greville ex J. Agardh (Zenetos et al. 2008).

Hypnea variabilis Okamura: unsupported records (Zenetos et al. 2008).

Jania longiarthra Dawson: reported only by Ballesteros (1990); specimens probably correspond to *Jania longifurca*.

Laurencia japonica Yamada: misidentification (Zenetos et al. 2008).

Laurencia radicans (Kützing) Kützing: a Black Sea species reported from southern Italy and considered as "*taxa inquirenda*" by Furnari et al. (2003). Not reported in the Mediterranean checklist of species belonging to the *Laurencia* complex (Serio et al. 2008)

Lithophyllum glaciale Kjellman: reported only by Gómez-Menor & Fuertes (1982) from the island of Tabarca; unsupported record.

Lithophyllum vickersiae Lemoine: reported only by Gómez-Menor & Fuertes (1982) from the island of Tabarca; unsupported record.

Lithothamnion australe: see Furnari et al. (2003).

Mastocarpus stellatus (Stackhouse) Guiry: misidentification (Furnari et al. 2003; Zenetos et al. 2005).

Meiodiscus spetsbergensis (Kjellman) Saunders & McLachlan: A northern species whose record as south as Morocco requires confirmation (Benhissoune et al. 2002).

Metamastophora flabellata (Sonder) Setchell: see Furnari et al. (2003).

Nothogenia erinacea (Turner) Parkinson: see Furnari et al. (2003).

Palmaria palmata (Linnaeus) Kuntze: see Furnari et al. (2003).

Phyllophora traillii Holmes ex Batters: reported from Northeastern Spain (Ballesteros & Romero 1982); it requires confirmation (Athanasiadis 2002).

Phymatolithon brunneum Chamberlain: see Furnari et al. (2003).
Polyides rotundus (Hudson) Gaillon: see Conde et al. (1996) and Furnari et al. (2003).
Polysiphonia kampsaxii Boergesen: unsupported records (Zenetos et al. 2008).
Pterothamnion simile (Hooker & Harvey) Nägeli: misidentification (Zenetos et al. 2008).
Rhodophysema elegans (P.L. & H.M. Crouan ex J. Agardh) Dixon f. *polystromatica* (Batters) Dixon: see Furnari et al. (2003).
Rhodymenia holmesii Ardissone: This Atlantic species was reported from Tuscany by Papi et al. (1992) but it probably is a misidentification.
Spongites absimile (Foslie) Howe: reported only by Gómez-Menor & Fuertes (1982) from the island of Tabarca; unsupported record.
Sporolithon molle (Heydrich) Heydrich: see Alongi et al. (1996).
Turnerella pennyi (Harvey) Schmitz: see Furnari et al. (2003).

References

Alongi G, Cormaci M, Furnari G. 1996. On the occurrence of *Sporolithon ptychoides* Heydrich (Corallinales, Sporolithaceae, Rhodophyta) in the Mediterranean Sea. *Cryptogamie Algologie* 17: 131-137.

Alongi G, Cormaci M, Furnari G. 2007. *Woelkerlingia minuta* gen. et sp. nov. from the Mediterranean Sea and a reassessment of the genus *Lomathamnion*, with a description of two genera: *Hommersandiella* gen. nov. and *Stegengaea* gen. nov. *Cryptogamie Algologie* 28: 311-324.

Alongi G, Cormaci M, Furnari G. 2008. *Chylocladia wynnei* sp. nov. (Champiaceae, Rhodophyta) from the Mediterranean Sea. *Botanica Marina* 51: 145-150.

Athanasiadis A. 1987. *A survey of the seaweeds of the Aegean Sea with taxonomic studies on species of the tribe Antithamnieae (Rhodophyta)*. Göterna, Kungälv, 174 pp.

Athanasiadis A. 1999. *Mesophyllum macedonis* sp. nov. (Rhodophyta, Corallinales), a putative Tethyan relic in the north Aegean Sea. *European Journal of Phycology* 34: 239-252.

Athanasiadis A. 2002. Taxonomy and systematics of Rhodophyta with reference to the Mediterranean taxa. *Flora Mediterranea* 12: 93-167.

Athanasiadis A. 2009. Typification of *Antithamnion nipponicum* Yamada & Inagaki (Antithamnieae, Ceramioideae, Ceramiaceae, Ceramiales, Rhodophyta). *Botanica Marina* 52: 256-261.

Ballesteros E. 1990. Check-list of benthic marine algae from Catalonia (Northwestern Mediterranean). *Treballs Institut Botànic de Barcelona* 13: 1-52.

Ballesteros E, Romero J. 1982. Catálogo de las algas bentónicas (con exclusión de las diatomeas) de la costa catalana. *Collectanea Botanica* 13: 723-765.

Ben Maïz N, Boudouresque CF, Ouahchi F. 1987. Inventaire des algues et phanérogames marines benthiques de la Tunisie. *Giornale Botanico Italiano* 121: 259-304.

Benhissoune S, Boudouresque CF, Perret-Boudouresque M, Verlaque M. 2002. A checklist of the seaweeds of the Mediterranean and Atlantic coasts of Morocco. III. Rhodophyceae (excluding Ceramiales). *Botanica Marina* 45: 391-412

Benhissoune S, Boudouresque CF, Perret-Boudouresque M, Verlaque M. 2003. A checklist of the seaweeds of the Mediterranean and Atlantic coasts of Morocco. IV. Rhodophyceae-Ceramiales. *Botanica Marina* 46: 55-68.

Boudouresque CF, Perret-Boudouresque M. 1987. *A checklist of the benthic marine algae of Corsica*. GIS Posidonie Pubblication. Marseille. 121 pp.

Boudouresque CF, Perret-Boudouresque M, Knoepffler-Péguy M. 1984. Inventaire des algues marines benthiques dans les Pyrénées Orientales (Méditerranée, France). *Vie Milieu* 34: 41-59.

Boudouresque CF, Verlaque M. 2002. Biological pollution in the Mediterranean Sea: invasive versus introduced macrophytes. *Marine Pollution Bulletin* 44: 32-38.

Bressan G, Babbini-Benussi L. 1996. Phytoceanographical observations on coralline algae (Corallinales) in the Mediterranean Sea. *Rendiconti Accademia Lincei Scienze Fisiche e Naturali* 9(7): 179-207.

Bressan G, Babbini-Benussi L. 2003. Corallinales del Mar Mediterraneo: guida alla determinazione. *Biologia Marina Mediterranea* 10 (suppl. 2): 1-237.

Bressan G, Cabioch J. 2004. *Titanoderma trochanter* (Bory) Benhissoune, Boudouresque, Perret Boudouresque & Verlaque, et *Titanoderma ramosissimum* (Heydrich) comb. nov. (Corallinales, Rhodophytes), une rédefinition. *Cahiers de Biologie Marine* 45: 225-242.

Cabioch J, Mendoza ML. 1998. *Mesophyllum alternans* (Foslie) comb. nov. (Corallinales, Rhodophyta), a mediterraneo-atlantic species and new considerations on the *Lithothamnion philippi* Foslie complex. *Phycologia* 37: 208-221.

Cabioch J, Mendoza ML. 2003. *Mesophyllum expansum* (Philippi) comb. nov. (Corallinales, Rhodophytes), et mise au point sur les *Mesophyllum* des mers d'Europe. *Cahiers de Biologie Marine* 44: 257-273.

Conde F. 1991. Catálogo y comentarios sobre el "complejo *Audouinella*" (Acrochaetiaceae, Rhodophyceae) en el Mediterráneo. *Cryptogamie Algologie* 12: 163-170.

Conde F, Flores-Moya A, Altamirano M, Sánchez A. 1996. Check-list of Andalusia (S. Spain) seaweeds. III. Rhodophyceae. *Acta Botanica Malacitana* 21: 7-33.

Cormaci M, Alongi G, Dinaro R. 1993. *Hypnea furnariana* sp. nov. (Hypneaceae, Rhodophyta) from eastern Sicily (Mediterranean Sea). *Nordic Journal of Botany* 13: 227-231.

De Clerck O, Gavio B, Fredericq S, Bárbara I, Coppejans E. 2005. Systematics of *Grateloupia filicina* (Halymeniaceae, Rhodophyta), based on rbcL sequence analyses and morphological evidence, including the reinstatement of *G. minima* and the description of *G. capensis* sp. nov. *Journal of Phycology* 41: 391-410.

Feldmann J. 1931. Contribution à la flore algologique marine de l'Algérie. Les algues de Cherchell. *Bulletin de la Societé d'Histoire Naturelle de l'Afrique du Nord* 22: 179-254.

Fernández JA, Niell FX, Conde F. 1983. Sobre la entidad taxonómica de los *Gymnogongrus* Martius, 1928, foliosos en las costas de Málaga y Cádiz (SE de la Península Ibérica. *Investigación Pesquera* 47: 161-165.

Fresnel J, Brillard C. 1995. Une nouvelle microalgue rouge marine: *Rhodosorus magnei* sp. nov. (Rhodophyceae, Porphyridiales). *Cryptogamie Algologie* 16: 63-75.

Furnari G, Cormaci M, Serio D. 1999. Catalogue of the benthic marine macroalgae of the Italian coast of the Adriatic Sea. *Bocconea* 12: 1-214.

Furnari G, Cormaci M, Serio D. 2001. The *Laurencia* complex (Rhodophyta, Rhodomelaceae) in the Mediterranean Sea: an overview. *Cryptogamie Algologie* 22: 331-373.

Furnari G, Boisset F, Cormaci M, Serio D. 2002. The characterization of *Chondrophycus tenerrimus* (Cremades) comb. nov. (Ceramiales, Rhodophyta), a species often misidentified as *C. papillosus* (C. Agardh) Garbary et J. Harper in the Mediterranean Sea. *Cryptogamie Algologie* 23: 223-235.

Furnari G, Giaccone G, Cormaci M, Alongi G, Serio D. 2003. Biodiversità marina delle coste italiane: catalogo del macrofitobentos. *Biologia Marina Mediterranea* 10(1): 1-482.

Gallardo T, Gómez-Garreta A, Ribera MA, Álvarez M, Conde F. 1985. *A preliminary checklist of Iberian benthic marine algae*. Real Jardín Botánico Madrid. 83 pp.

Gargiulo GM, De Masi F, Tripodi F. 1986. Structure and reproduction of *Halymenia asymmetrica* sp. nov. (Rhodophyta) from the Mediterranean Sea. *Phycologia* 25: 144-151.

Gargiulo GM, De Masi F, Tripodi G. 1992. Morphology, reproduction and taxonomy of the Mediterranean species of *Gracilaria* (Gracilariales, Rhodophyta). *Phycologia* 31: 53-80.

Gargiulo GM, Furnari G, Cormaci M. 1990. Structure and reproduction of *Cordylecladia guiry* sp. nov. (Rhodophyta, Rhodymeniales) from the Mediterranean Sea. *Giornale Botanico Italiano* 124: 631-640.

Giaccone G. 1978. Revisione della flora marina del mare Adriatico. *Annuario Parco Marino di Miramare (supplemento)* 6(19): 1- 118.

Gómez-Garreta A, Gallardo T, Ribera MA, Cormaci M, Furnari G, Giaccone G, Boudouresque CF. 2001. Checklist of Mediterranean seaweeds III. Rhodophyceae Rabenh. 1. Ceramiales Oltm. *Botanica Marina* 44: 425-460.

Gómez A, Ribera MA, Romero J. 1981. Addicions a la flora algològica del Principat de Catalunya. *Butlletí de la Institució Catalana d'Història Natural* 46: 75-78.

Gómez-Menor JM, Fuertes E. 1982. Contribución al estudio de las algas rojas de la isla de Tabarca (Alicante). *Collectanea Botanica* 13: 865-872.

Huvé P, Huvé H. 1971. Une nouvelle espèce de *Rhodymenia* des côtes orientales de Tunisie: *Rhodymenia leptofaucheoides* nov. sp. (Rhodophycées, Rhodyméniales, Rhodyméniacées). *Bulletin Societé Botanique de France* 16: 51-60.

Kazzaz M. 1989. *Contribution à l'étude de la flore algale marine de la région ouest de la Méditerranée.* Thèse 3ème cycle, Université Mohammed V, Faculté des Sciences de Rabat, Morocco, 246 pp.

Knoepffler M, Noailles MC, Boudouresque CF, Abelard C. 1990. Phytobenthos des Pyrénées Orientales: complément à l'inventaire-présence d'espèces non indigènes (*Sargassum* et *Undaria*). *Bulletin Societé Zoologique de France* 115: 37-43.

Marcot-Coqueugniot J. 1980. Recherches sur le genre *Peyssonnelia*. XIII. Sur un *Peyssonnelia* du complexe "*harveyana*". *Botanica Marina* 23: 35-39.

Mayhoub H. 1976. *Recherches sur la végétation marine de la côte syrienne. Étude expérimentale sur la morphogénèse et le développement de quelques espèces peu connues.* Thèse de Sciences Naturelles, Université de Caen. 286 pp.

Nizamuddin M, West JE, Meñez EG. 1979. A list of marine algae from Libya. *Botanica Marina* 22: 465-476.

Papi I, Pardi G, Lenzini S, Benedetti Cecchi L, Cinelli F. 1992. Benthic marine flora in the Tuscan Archipelago. A first contribution: Isles of Capraia, Elba, Formiche di Grosseto, Scoglio d'Africa, Montecristo and Giannutri. *Giornale Botanico Italiano* 126: 549-593.

Parenzan P. 1983. *Fondo a Gracilaria. In: Puglia marittima. Aspetti geologici e biologia marina*. Congedo, Galatina (Lecce) vol II: 469-472.

Perret-Boudouresque M, Seridi H. 1989. *Inventaire des algues marines benthiques d'Algerie*. GIS Posidonie Pubblication. 116 pp.

Perrone C, Delle Foglie CI. 2006. *Parviphycus felicinii* sp. nov. (Gelidiales, Rhodophyta) from south-east Italy. *Cryptogamie Algologie* 27: 199-209.

Rodriguez-Prieto C, De Clerck O. 2009. *Leptofauchea coralligena* (Faucheaceae, Rhodophyta), a new species from the Mediterranean Sea. *European Journal of Phycology* 44: 107-121.

Rodriguez-Prieto C, Verges A, Sánchez N, Polo L, Verlaque M. 2004. The morphology and reproductive structures of Mediterranean species of the genus *Nemastoma* J. Agardh, nom. cons. (Nemastomataceae, Nemastomatales): *Nemastoma dichotomum* and *N. dumontioides*. *Botanica Marina* 47: 38-52.

Serio D, Furnari G, Cormaci M. 2004. On the occurrence of *Laurencia pyramidalis* Bory ex Kützing (Rhodophyta, Rhodomelaceae) in the Mediterranean Sea. *Cryptogamie Algologie* 25: 329-336.

Serio D, Petrocelli A, Cormaci M, Cecere E, Furnari G. 2008. First record of *Osmundea oederi* (Gunnerus) G. Furnari comb. nov. (Rhodomelaceae, Rhodophyta) from the Mediterranean Sea. *Cryptogamie Algologie* 29: 119-127.
Serio D, Cormaci M, Furnari G, Boisset F. 2010. First record of *Palisada maris-rubri* (Ceramiales, Rhodophyta) from the Mediterranean Sea along with three proposed transfers to the genus *Palisada*. *Phycological Research* 58: 9-16.
Taskin E, Özturk M, Kurt O, Özturk M. 2008. *The check-list of the marine algae of Turkey*. Manisa, Turkey. Ecem Kirtasiye. 87 pp.
Verlaque M. 1987. *Contribution à l'étude du phytobenthos d'un ecosystème photophile thermophile en Méditerranée Occidentale*. Thèse d'État. Université d'Aix-Marseille II. Luminy. 389 pp.
Verlaque M. 2001. Checklist of the macroalgae of the Thau lagoon (Hérault, France), a hot spot of marine species introduction in Europe. *Oceanologica Acta* 24: 29-49.
Verlaque M, Ruitton S, Mineur F, Boudouresque CF. in press. 4. Macrophytes. In: Briand F (ed), *CIESM Atlas of Exotic species in the Mediterranean*. CIESM Publishers. Monaco.
Zenetos A, Çinar ME, Pancucci-Papadopoulou MA, Harmelin JG, Furnari G, Andaloro F, Bellou N, Streftaris N, Zibrowius H. 2005. Annotated list of marine alien species in the Mediterranean with records of the worst invasive species. *Mediterranean Marine Science* 6: 63-118.
Zenetos A, Meriç E, Verlaque M, Galli P, Boudouresque CF, Giangrande A, Çinar ME, Bilecenoglu M. 2008. Additions to the annotated list of marine alien biota in the Mediterranean with special emphasis on Foraminifera and Parasites. *Mediterranean Marine Science* 9: 119-165.

Table S11. Checklist of the phylum Chlorophyta and comments to the checklist

Algae belonging to the phylum Chlorophyta (Kingdom Plantae) have been classified by Classes, Orders, Families, Species and other infraspecific levels (subspecies, varieties and forms). Ordination is alphabetical. When no infraspecific level is indicated the taxa corresponds to the type variety.

This list is based in the check-list by Gallardo et al. (1993), with some updates and modifications. Particular attention has been devoted to local checklists published after the revision by Gallardo et al. (1993): Puglia (Southern Italy) (Cormaci et al., 2001), Tuscany (Northwestern Italy) (Rindi et al. 2002), Morocco (Benhissoune et al. 2001) and Italian coasts (Furnari et al. 2003). Lists of Mediterranean introduced species have also been considered (e.g. Verlaque 2001; Boudouresque & Verlaque 2002; Zenetos et al. 2005, 2008; Verlaque et al. in press). Black Sea is not included.

Taxonomy follows Algaebase (www.algaebase.org) if not otherwise indicated. Endemic species (found only in the Mediterranean basin, Black Sea included) are preceded by the symbol *. A careful and critical examination of the existing records of every species from the available literature has been performed in order to consider a species as endemic. Introduced species are preceded by the symbol #. As it is not always easy to detect introduced species from the distributional records, we mainly follow the criteria by other authors specialized in this issue.

Superscript numbers refer to notes. Some of the commonest synonyms found in Mediterranean literature (if any) are sometimes placed after the currently accepted name. Other synonyms can be found at Algaebase. A list of *taxa inquirenda* as well as a list of *taxa excludenda* is also given at the end of the list; species considered as *taxa inquirenda* or *taxa excludenda* in Gallardo et al. (1993) are not stated again.

Phylum Chlorophyta

Class Bryopsidophyceae

Order Bryopsidales

Family Bryopsidaceae[1]
Blastophysa rhizopus Reinke (=*Blastophysa polymorpha* Kjellman)
Bryopsidella neglecta (Berthold) Rietema [=*Derbesia neglecta* Berthold; *Bryopsidella halymeniae* (Berthold) J. Feldmann]
**Bryopsidella ostreobiformis* Calderón-Sáenz & Schnetter
Bryopsis adriatica (J. Agardh) Frauenfeld
Bryopsis corymbosa J. Agardh
Bryopsis cupressina Lamouroux (=*Bryopsis penicillata* Kützing)
**Bryopsis dichotoma* De Notaris
Bryopsis duplex De Notaris [=*Bryopsis balbisiana* Lamouroux; =*Bryopsis disticha* (J. Agardh) Kützing]
Bryopsis feldmannii Gallardo & Furnari (=Bryopsis *cupressoides* J. Feldmann)
Bryopsis hypnoides Lamouroux (=*Bryopsis monoica* Berthold ex Funk)
Bryopsis muscosa Lamouroux
**Bryopsis penicillum* Meneghini
Bryopsis pennata Lamouroux
Bryopsis plumosa (Hudson) C. Agardh
**Bryopsis secunda* J. Agardh
Pseudobryopsis myura (J. Agardh) Berthold [=*Trichosolen myurus* (J. Agardh) Taylor]

Family Caulerpaceae
#Caulerpa mexicana Sonder ex Kützing
Caulerpa prolifera (Forsskal) Lamouroux (=*Caulerpa ollivieri* Dostál)[2]
#Caulerpa racemosa (Forsskal) J. Agardh var. *cylindracea* (Sonder) Verlaque, Huisman & Boudouresque[3,4]
#Caulerpa racemosa var. *lamourouxii* (Turner) Weber van Bosse f. *requienii* (Montagne) Weber van Bosse
#Caulerpa racemosa var. *turbinata* (J. Agardh) Eubank/*uvifera* (C. Agardh) J. Agardh
#Caulerpa scalpelliformis (Brown ex Turner) C. Agardh
#Caulerpa taxifolia (Vahl) C. Agardh

Family Chaetosiphonaceae
Chaetosiphon moniliformis Huber

Family Codiaceae
Codium adhaerens C. Agardh[5]
Codium bursa (Linnaeus) C. Agardh
**Codium coralloides* (Kützing) Silva
Codium decorticatum (Woodward) Howe [=*Codium elongatum* (Turner) C. Agardh]

Codium effusum (Rafinesque) Delle Chiaje (=*Codium difforme* Kützing)
#*Codium fragile* (Suringar) Hariot ssp. *tomentosoides* (van Goor) Silva[6]
#*Codium taylorii* Silva
Codium tomentosum Stackhouse
Codium vermilara (Olivi) Delle Chiajei

Family Derbesiaceae
#*Derbesia boergesenii* (Iyengar & Ramanathan) Mayhoub
**Derbesia corallicola* Funk
#*Derbesia rhizophora* Yamada
Derbesia tenuissima (Moris & De Notaris) P.L. Crouan & H.M. Crouan (=*Halicystis parvula* Schmitz ex Murray)
Pedobesia simplex (Meneghini ex Kützing) Wynne & Leliaert (=*Pedobesia lamourouxii* (J. Agardh) J. Feldmann, Loreau, Codomier & Couté)
Pedobesia solieri J. Feldmann ex Abélard & Knoepffler

Family Ostreobiaceae
Ostreobium quekettii Bornet & Flahault

Family Udoteaceae
Flabellia petiolata (Turra) Nizamuddin [=*Udotea petiolata* (Turra) Boergesen]
Halimeda tuna (Ellis & Solander) Lamouroux [=*Halimeda tuna* var. *platydisca* (Decaisne) Barton; =*Halimeda tuna* f. *albertisii* Piccone]
Penicillus capitatus Lamarck (=*Espera mediterranea* Decaisne)
Pseudochlorodesmis furcellata (Zanardini) Boergesen
Pseudochlorodesmis furcellata var. *canariensis* Boergesen
**Pseudochlorodesmis tenuis* Ercegovic

Order Dasycladales

Family Polyphysaceae
Acetabularia acetabulum (Linnaeus) Silva (=*Acetabularia mediterranea* Lamouroux)
Acetabularia calyculus Lamouroux
Parvocaulis parvulus (Solms-Laubach) Berger, Fettweiss, Gleissberg, Liddle, Richter, Sawitsky & Zuccarello (=*Acetabularia parvula* Solms-Laubach)

Family Dasycladaceae
#*Batophora* sp.[7]
Dasycladus vermicularis (Scopoli) Kraser
#*Neomeris annulata* Dickie

Class Chlorophyceae

Order Chlorococcales

Family Chlorochytriaceae
Chlorochytrium cohnii Wright
Chlorochytrium lemnae Cohn (=*Chlorochytrium willei* Printz)

Order Chaetophorales

Family Chaetophoraceae

**Didymosporangium repens* Lambert
Stromatella monostromatica (Dangeard) Kornmann & Sahling
Stromatella papillosa (Dangeard) Kornmann & Sahling

Order Tetrasporales

Family Palmellopsidaceae
Palmophyllum crassum (Naccari) Rabenhorst [=*Palmophyllum crassum* f. *gestroi* (Piccone) Giaccone; =*Palmophyllum crassum* var. *orbiculare* (Bornet) J. Feldmann]

Family Tetrasporaceae
Tetraspora gelatinosa (Vaucher) Desvaux

Order Volvocales

Family Carteriaceae
Carteria feldmannii Conrad & Kufferath[8]

Family Chlamydomonadaceae
Brachiomonas submarina Bohlin (=*Brachiomonas gracilis* Bohlin; =*Brachiomonas westiana* Pascher)[8]
Oltmannsiella lineata Zimmermann[8]

Family Dunaliellaceae
Asteromonas gracilis Artari[8]
Dunaliella salina (Dunal) Teodoresco[8]

Class Prasinophyceae

Order Chlorodendrales

Family Chlorodendraceae
Prasinocladus lubricus Kuckuck f. *subsalsus* (Davis) Zimmermann
**Tetraselmis fontiana* (Margalef) R.E. Norris, Hohi & Chihara (=*Platymonas fontiana* Margalef)[8]
Tetraselmis tetrathele (West) Bucher (=*Platymonas tetrathele* West)[8]

Order Pyramimonadales

Family Pyramimonadaceae
Halosphaera viridis Schmitz[8]
Pyramimonas amylifera Conrad[8]
Pyramimonas octociliata N. Carter[8]

Class Trebouxiophyceae

Order Prasiolales

Family Prasiolaceae
Prasiola crispa (Lightfoot) Kützing
Prasiola stipitata Suhr ex Jessen
Rosenvingiella polyrhiza (Rosenvinge) Silva

Class Ulvophyceae

Order Cladophorales

Family Anadyomenaceae
Anadyomene stellata (Wulfen) C. Agardh
Microdictyon tenuius Gray

Family Cladophoraceae
Aegagropila linnaei Kützing (=*Cladophora aegagropila* (Linnaeus) Trevisan)
Chaetomorpha gracilis Kützing
Chaetomorpha ligustica (Kützing) Kützing [=*Rhizoclonium lubricum* Setchell & Gardner; *Rhizoclonium tortuosum* (Dillwyn) Kützing][9,10]
Chaetomorpha linum (O.F. Müller) Kützing [=*Chaetomorpha aerea* (Dillwyn) Kützing; =*Chaetomorpha crassa* (C. Agardh) Kützing]
Chaetomorpha mediterranea (Kützing) Kützing[9,10]
**Chaetomorpha mediterranea* var. *crispa* (J. Feldmann) Gallardo, Gómez-Garreta, Ribera, Cormaci, Furnari, Giaccone & Boudouresque[9, 10]
Chaetomorpha pachynema (Montagne) Kützing
Cladophora albida (Nees) Kützing
Cladophora battersii Hoek
Cladophora coelothrix Kützing
Cladophora dalmatica Kützing
Cladophora echinus (Biasoletto) Kützing
Cladophora feredayi Harvey
Cladophora flexuosa (O.F. Müller) Kützing
Cladophora fracta (O.F. Müller ex Vahl) Kützing
Cladophora globulina (Kützing) Kützing
Cladophora glomerata (Linnaeus) Kützing
Cladophora glomerata var. *crassior* (C. Agardh) Hoek
#Cladophora herpestica (Montagne) Kützing [=*Cladophoropsis zollingerii* (Kützing) Reinbold; =*Cladophoropsis javanica* (Kützing) Silva]
Cladophora hutchinsiae (Dillwyn) Kützing
Cladophora laetevirens (Dillwyn) Kützing
Cladophora lehmanniana (Lindenberg) Kützing
Cladophora liebetruthii Grunow
Cladophora liniformis Kützing
Cladophora nigrescens Zanardini ex Frauenfeld
#Cladophora patentiramea (Montagne) Kützing
Cladophora pellucida (Hudson) Kützing
Cladophora prolifera (Roth) Kützing
Cladophora retroflexa (Bonnemaison ex P.L. Crouan & H.M. Crouan) Hamel
Cladophora ruchingeri (C. Agardh) Kützing
Cladophora rupestris (Linnaeus) Kützing
Cladophora sericea (Hudson) Kützing
Cladophora socialis Kützing
Cladophora vadorum (Areschoug) Kützing
Cladophora vagabunda (Linnaeus) Hoek
Cladophoropsis membranacea (Hofman Bang ex C. Agardh) Boergesen (=*Cladophoropsis gerloffii* Nizamuddin; *Cladophoropsis modonensis* auct. non (Kützing) Reinbold]
Rhizoclonium riparium (Roth) Harvey [=*Rhizoclonium implexum* (Dillwyn) Kützing; =*Rhizoclonium kerneri* Stockmayer; =*Rhizoclonium kochianum* Kützing][10]

Order Oltmannsiellopsidales

Family Oltmannsiellopsidaceae
Dangemannia microcystis (Dangeard) T. Friedl & C.J. O'Kelly [=*Planophila microcystis* (Dangeard) Kornmann & Sahling]

Order Siphonocladales

Family Siphonocladaceae
**Siphonocladus pusillus* (C. Agardh ex Kützing) Hauck

Family Valoniaceae
Valonia aegagropila C. Agardh
Valonia macrophysa Kützing
Valonia utricularis (Roth) C. Agardh
Valonia ventricosa J. Agardh [*Ventricaria ventricosa* (J. Agardh) Olsen & West]

Order Ulothricales

Family Gomontiaceae
Eugomontia sacculata Kornmann[11]
Gomontia polyrhiza (Lagerheim) Bornet & Flahault

Family Ulothricaceae
Spongomorpha aeruginosa (Linnaeus) Hoek [=*Spongomorpha lanosa* (Roth) Kützing]
Ulothrix flacca (Dillwyn) Thuret (=*Ulothrix pseudoflacca* Wille)[10]
Ulothrix implexa (Kützing) Kützing[10]
Ulothrix subflaccida Wille[10]
Urospora penicilliformis (Roth) Areschoug (=*Urospora mirabilis* Areschoug)

Order Ulvales

Family Bolbocoleonaceae
Bolbocoleon piliferum Pringsheim

Family Capsosiphonaceae
Capsosiphon fulvescens (C. Agardh) Setchell & Gardner

Family Gayraliaceae
Gayralia oxysperma (Kützing) Vinogradova ex Scagel, Gabrielson, Garbary, Golden, Hawkes, Lindstrom, Oliveira & Widdowson
Gayralia oxysperma f. *wittrockii* (Bornet) Bliding

Family Kornmanniaceae[12]
Blidingia chadefaudii (J. Feldmann) Bliding
Blidingia marginata (J. Agardh) Dangeard
Blidingia minima (Nägeli ex Kützing) Kylin
Blidingia ramifera (Bliding) Garbary & Barkhouse (=*Blidingia minima* var. *ramifera* Bliding)
Blidingia subsalsa (Kjellman) Kornmann & Sahling ex Scagel, Gabrielson, Garbary, Golden, Hawkes, Lindstrom, Oliveira & Widdowson
Pseudendoclonium submarinum Wille

Family Phaeophilaceae
Phaeophila dendroides (P.L. Crouan & H.M. Crouan) Batters
**Phaeophila hirsuta* (Ercegovic) R. Nielsen

Family Ulvaceae[13]
Ochlochaete hystrix Thwaites (=*Ochlochaete ferox* Huber)
Percusaria percusa (C. Agardh) Rosenvinge
Tellamia contorta Batters (=*Tellamia intricata* Batters)
**Ulva adriatica* (Bliding) Ballesteros (=*Enteromorpha adriatica* Bliding)
**Ulva aragoënsis* (Bliding) Ballesteros (=*Enteromorpha aragoënsis* Bliding)
Ulva bifrons André
Ulva clathrata (Roth) C. Agardh [=*Enteromorpha clathrata* (Roth) Greville; =*Enteromorpha ramulosa* (Smith) Carmichael][14]
Ulva compressa Linnaeus [=*Enteromorpha compressa* (Linnaeus) Nees; =*Enteromorpha compressa* var. *usneoides* (Bonnemaison ex J. Agardh) Bliding]
Ulva curvata (Kützing) De Toni
#*Ulva fasciata* Delile
Ulva flexuosa Wulfen [=*Enteromorpha flexuosa* (Wulfen) J. Agardh]
Ulva flexuosa ssp. *linziformis* (Bliding) Ballesteros
Ulva flexuosa ssp. *paradoxa* (C. Agardh) Wynne
Ulva flexuosa ssp. *pilifera* (Kützing) Wynne
Ulva intestinalis Linnaeus [=*Enteromorpha intestinalis* (Linnaeus) Nees]
Ulva intestinalis f. *cornucopiae* (Lyngbye) Ballesteros
**Ulva jugoslavica* (Bliding) Ballesteros (=*Enteromorpha jugoslavica* Bliding)
Ulva kylinii (Bliding) Hayden, Blomster, Maggs, Silva, Stanhope & Waaland (=*Enteromorpha kylinii* Bliding)
Ulva lactuca Linnaeus
Ulva linearis Dangeard
Ulva linza Linnaeus [=*Enteromorpha linza* (Linnaeus) J. Agardh; =*Enteromorpha ahlneriana* Bliding]
Ulva multiramosa (Bliding) Ballesteros (=*Enteromorpha multiramosa* Bliding)[15]
**Ulva neapolitana* Bliding
#*Ulva pertusa* Kjellman
Ulva prolifera O.F. Müller [=*Enteromorpha prolifera* (O.F. Müller) J. Agardh]
Ulva prolifera ssp. *gullmariensis* (Bliding) Taskin
Ulva pseudolinza (Koeman & Hoek) Hayden, Blomster, Maggs, Silva, Stanhope & Waaland (=*Enteromorpha pseudolinza* Koeman & Hoek)
Ulva radiata (J. Agardh) Hayden, Blomster, Maggs, Silva, Stanhope & Waaland (=*Enteromorpha radiata* J. Agardh)
Ulva ralfsii (Harvey) Le Jolis (=*Enteromorpha ralfsii* Harvey)
Ulva rigida C. Agardh (=*Ulva scandinavica* Bliding)
Ulva rotundata Bliding
Ulva simplex (Vinogradova) Hayden, Blomster, Maggs, Silva, Stanhope & Waaland [=*Enteromorpha simplex* (Vinogradova) Koeman & Hoek]
**Ulva stipitata* (Dangeard) Ballesteros var. *linzoides* (Bliding) Ballesteros (=*Enteromorpha stipitata* Dangeard var. *linzoides* Bliding)
Ulva torta (Mertens) Trevisan [=*Enteromorpha torta* (Mertens) Reinbold]
#*Ulvaria obscura* (Kützing) Gayral ex Bliding [=*Monostroma obscurum* (Kützing) J. Agardh]
Umbraulva olivascens (Dangeard) Furnari

Family Ulvellaceae
Acrochaete flustrae (Reinke) O'Kelly (=*Epicladia flustrae* Reinke)

Acrochaete geniculata (N.L. Gardner) O'Kelly
Acrochaete inflata (Ercegovic) Gallardo, Gómez-Garreta, Ribera, Cormaci, Furnari, Giaccone & Boudouresque (=*Pseudodictyon inflatum* Ercegovic)
Acrochaete leptochaete (Huber) Nielsen
Acrochaete repens Pringsheim
Acrochaete viridis (Reinke) R. Nielsen (=*Entocladia viridis* Reinke)
Acrochaete wittrockii (Wille) R. Nielsen (=*Entocladia wittrockii* Wille)
**Entocladia endolithica* (Ercegovic) R. Nielsen
Entocladia major (J. Feldmann) R. Nielsen (=*Endoderma majus* J. Feldmann)
**Entocladia pennata* (J. Feldmann) R. Nielsen
Epicladia perforans (Huber) R. Nielsen
**Pringsheimiella conchyliophila* J. Feldmann
Pringsheimiella scutata (Reinke) Marchewianka
Pseudopringsheimia confluens (Rosenvinge) Wille (=*Ulvella confluens* Rosenvinge)
Ulvella acervus Dangeard
Ulvella lens P.L. Crouan & H.M. Crouan
Ulvella setchellii Dangeard

Notes

1. Genus *Bryopsis* Lamouroux requires nomenclatural and taxonomical re-investigation.
2. We agree with González Henríquez & Santos Guerra (1983) in considering that *Caulerpa prolifera* and *Caulerpa ollivieri* are conspecific.
3. Delimitation of *Caulerpa racemosa* varieties follows Verlaque et al. (2000) amended by Verlaque et al. (2003).
4. *Caulerpa racemosa* var. *cylindracea* was first reported as *Caulerpa racemosa* aff. var. *occidentalis* (J. Agardh) Boergesen (Verlaque et al. 2000).
5. *Codium adhaerens* C. Agardh is present in the Mediterranean (Alboran Sea) (Benhissoune et al. 2001; Ballesteros pers. obs., confirmed by PC Silva).
6. The subspecies of *Codium fragile* that has been introduced in the Mediterranean has been usually identified as ssp. *tomentosoides* (e.g. Gallardo et al. 1993; Boudouresque & Verlaque 2002; Zenetos et al. 2005). However, Verlaque et al. (in press) only report ssp. *fragile*.
7. Reported by Bottalico et al. (2006).
8. Planktonic flagellates, not benthic.
9. We do not follow John et al. (2004) nor Algaebase in considering *Chaetomorpha ligustica* (Kützing) Kützing and *Chaetomorpha mediterranea* (Kützing) Kützing as synonyms.
10. Requires nomenclatural and taxonomical re-investigation.
11. See Verlaque (2001).
12. Genus *Blidingia* requires nomenclatural and taxonomical re-investigation.
13. Taxonomy of Mediterranean species of *Ulva* requires further research.
14. Blomster et al. (1999) consider *Enteromorpha ramulosa* (Smith) Carmichael, *Enteromorpha muscoides* (Clemente) Cremades and *Enteromorpha crinita* Nees to be heterotypic synonyms of *Enteromorpha clathrata* (Roth) Greville. We maintain the synonymy although in our opinion distinction between these entities at a Mediterranean level should be reassessed.
15. John et al. (2004) note that, according to Hayden et al. (2003), the species is invalid because Bliding (1960) did not cite the type.

Taxa inquirenda (see also Gallardo et al. 1993)

Cladophora hutchinsioides Hoek & Womersley: see Zenetos et al. (2008) regarding the identification of this species.

Cladophora suhriana Kützing: see Furnari et al. (2003).
Enteromorpha prolifera (O.F. Müller) J. Agardh var. *crispatissima* Schiffner: see Furnari et al. (2003).
Enteromorpha prolifera (O.F. Müller) J. Agardh var. *tenuis* Schiffner: see Furnari et al. (2003).
Flabellia minima (Ernst) Nizamuddin.
Ulothrix mucosa Oltmanns: see Furnari et al. (2003).
Ulva lactuca Linnaeus f. *laciniata* (J. Agardh) De Toni: see Furnari et al. (2003).

Taxa excludenda (see also Gallardo et al. 1993)

Caulerpa racemosa (Forsskal) J. Agardh var. *racemosa*: see Verlaque et al. (2000).
Caulerpa sertularioides (Gmelin) Howe: doubtful record; its presence in the Mediterranean should be confirmed (Gallardo et al. 1993).
Microdictyon laxereticulatum Setchell: included in the Mediterranean checklist (Gallardo et al. 1993), it is based on a supposed record by Setchell (1929) from Italy. This species is not reported in the Italian checklist by Furnari et al. (2003).
Sphaeroplea braunii Kützing: reported by Güven & Öztig (1971), it is a freshwater species.
Ulva flexuosa Wulfen ssp. *biflagellata* (Bliding) Ballesteros, comb. nov.: reported as *Enteromorpha flexuosa* ssp. *biflagellata* by Sfriso (1987). The taxonomy of the complex *flexuosa* is so complicated that, in our opinion, the presence of this subspecies in the Mediterranean needs to be confirmed.
Ulva flexuosa Wulfen ssp. *paradoxa* (C. Agardh) Wynne var. *profunda* (Bliding) Ballesteros, comb. nov.: reported as *Enteromorpha flexuosa* ssp. *paradoxa* var. *profunda* by Sfriso (1987). The taxonomy of the complex *flexuosa* is so complicated that, in our opinion, the presence of this variety in the Mediterranean needs to be confirmed.
Ulva hendayensis (Dangeard & Parriaud) Ballesteros comb. nov.: reported from southern Spain by Conde (1984) as *Enteromorpha hendayensis*. According to Gallardo et al. (1993) the presence of this species in the Mediterranean needs to be confirmed.
Ulothrix zonata (Weber & Mohr) Kützing: reported from southern Italy (Giaccone et al. 1985), it is a freshwater species.

Nomenclatural changes

According to Hayden *et al*. (2003) the genus *Enteromorpha* should be included in *Ulva*. Therefore the following new combinations are proposed:

Ulva adriatica (Bliding) Ballesteros comb. nov. [Basionym: *Enteromorpha adriatica* Bliding (1960, *Botaniska Notiser* 113, p. 174, fig. 3)].

Ulva aragoënsis (Bliding) Ballesteros comb. nov. [Basionym: *Enteromorpha aragoënsis* Bliding (1960, *Botaniska Notiser* 113, p. 174, fig. 2a-f)].

Ulva flexuosa Wulfen ssp. *biflagellata* (Bliding) Ballesteros comb. nov. [Basionym: *Enteromorpha biflagellata* Bliding (1944, *Botaniska Notiser* 1944, p. 346, figs. 19-23). Homotypic synonym: *Enteromorpha flexuosa* (Wulfen) C. Agardh ssp. *biflagellata* Bliding (1963, *Opera Botanica* 8(3), p. 88)].

Ulva flexuosa Wulfen ssp. *paradoxa* (C. Agardh) Wynne var. *profunda* (Bliding) Ballesteros comb. nov. [Basionym: *Enteromorpha flexuosa* (Wulfen) C. Agardh ssp. *paradoxa* (Dillwyn) Bliding var. *profunda* Bliding (1963, *Opera Botanica* 8(3), p. 85, figs. 46-47)].

Ulva flexuosa Wulfen ssp. *linziformis* (Bliding) Ballesteros comb. nov. [Basionym: *Enteromorpha linziformis* Bliding (1960, *Botaniska Notiser* 113, p. 181, figs. 8-9). Homotypic synonym: *Enteromorpha flexuosa* (Wulfen) C. Agardh ssp. *linziformis* (Bliding) Bliding (1963, *Opera Botanica* 8(3), p. 87)].

Ulva hendayensis (Dangeard & Parriaud) Ballesteros comb. nov. [Basionym: *Enteromorpha hendayensis* Dangeard & Parriaud (1960, Comptes Rendus des Séances de l'Académie des Sciences 250, p. 2972, figs. 1-2)].

Ulva intestinalis Linnaeus f. *cornucopiae* (Lyngbye) Ballesteros comb. nov. [Basionym: *Scytosiphon intestinalis* c *cornucopiae* Lyngbye (1819, *Tentamen hydrophytologiae danicae; continens omnia hydrophyta cryptogama Daniae, Holsatiae, Faeroae, Islandiae, Groenlandiae hucusqve cognita, systematice disposita, descripta et iconibus illustrata, adjectis simul speciebus norvegicis,* Hafniae, Copenhagen, p. 67). Homotypic synonym: *Enteromorpha intestinalis* (Linnaeus) Nees f. *cornucopiae* (Lyngbye) J. Agardh].

Ulva jugoslavica (Bliding) Ballesteros comb. nov. [Basionym: *Enteromorpha jugoslavica* Bliding (1960, *Botaniska Notiser* 113, p. 172, fig. 1)].

Ulva multiramosa (Bliding) Ballesteros comb. nov. [Basionym: *Enteromorpha multiramosa* Bliding (1960, *Botaniska Notiser* 113, p. 177, figs. 4-5)].

Ulva stipitata (Dangeard) Ballesteros comb. nov. [Basionym: *Enteromorpha stipitata* P. Dangeard (1959, *Botaniste* 42, p. 42, figs. 16-17)].

Ulva stipitata (Dangeard) Ballesteros var. *linzoides* (Bliding) Ballesteros comb. nov. [Basionym: *Enteromorpha stipitata* Dangeard var. *linzoides* Bliding (1960, *Botaniska Notiser* 113, p. 179)].

References

Benhissoune S, Boudouresque CF, Verlaque M. 2001. A checklist of marine seaweeds of the Mediterranean and Atlantic coasts of Morocco I. Chlorophyceae Wille s.l. *Botanica Marina* 44: 171-182.

Bliding C. 1944. Zur Systematik der schwedischen Enteromorphen. *Botaniska Notiser* 1944: 331-356.

Bliding C. 1960. A preliminary report on some new Mediterranean green algae. *Botaniska Notiser* 113: 172-184.

Bliding C. 1963. A critical survey of European taxa in Ulvales. Part I. *Capsosiphon*, *Percusaria*, *Blidingia*, *Enteromorpha*. *Opera Botanica* 8(3): 1-160.

Blomster J, Maggs CA, Stanhope MJ. 1999. Extensive intraspecific morphological variation in *Enteromorpha muscoides* (Chlorophyta) revealed by molecular analysis. *Journal of Phycology* 35: 575-586.

Bottalico A, Delle Foglie CI, Perrone C, 2006. New records along the Apulian coasts. In: *Proceedings of the Second Mediterranean Symposium on Marine Vegetation* (Athens, 12-13 December 2003): 77-82. RAC-SPA edit., Tunis.

Boudouresque CF, Verlaque M. 2002. Biological pollution in the Mediterranean Sea: invasive versus introduced macrophytes. *Marine Pollution Bulletin* 44: 32-38.

Conde F. 1984. Catálogo de las algas macrobentónicas marinas de Málaga. *Acta Botanica Malacitana* 9: 47-78.

Cormaci M, Furnari G, Alongi G, Serio D, Petrocelli A, Cecere E. 2001. Censimento delle macroalghe marine bentoniche delle coste pugliesi. *Thalassia Salentina* 25: 75-158.

Gallardo T, Gómez-Garreta A, Ribera MA, Cormaci M, Furnari G, Giaccone G, Boudouresque CF. 1993. Checklist of Mediterranean seaweeds II. Chlorophyceae Wille s.l. *Botanica Marina* 36: 399-421.

González Henríquez N, Santos Guerra A. 1983. El género *Caulerpa* Lamouroux en las islas Canarias. *Botanica Macaronesica* 11: 3-24.

Dangeard P. 1959. Observations sur queques Ulvacées du Maroc. *Botaniste* 42: 5-63.

Dangeard P., Parriaud H. 1960. Sur une Entéromorphe nouvelle (*E. hendayensis* nov. sp.) à développement du type *tubulosa*. *Comptes Rendus de l'Académie des Sciences* 250: 2970-2973.

Furnari G, Giaccone G, Cormaci M, Alongi G, Serio D. 2003. Biodiversità marina delle coste italiane: catalogo del macrofitobentos. *Biologia Marina Mediterranea* 10(1): 1-482.

Giaccone G, Colonna P, Graziano C, Mannino AM, Tornatore E, Cormaci M, Furnari G, Scammacca B. 1985. Revisione della flora marina di Sicilia e isole minori. *Bollettino della Accademia Gioenia Scienze Naturale di Catania* 18: 537-781.

Güven KC, Öztig F. 1971. Über die marinen Algen an den Küsten der Türkei. *Botanica Marina* 14: 121-128.

Hayden HS, Blomster J, Maggs CA, Silva PC, Stanhope MJ, Waaland JR. 2003. Linnaeus was right all along: *Ulva* and *Enteromorpha* are not distinct genera. *European Journal of Phycology* 38: 277-294.

John DM, Prud'homme van Reine WF, Lawson GW, Kostermans TB, Price JH. 2004. A taxonomic geographical catalogue of the seaweeds of the western coast of Africa and adjacent islands. *Nova Hedwigia* 127: 1-339.

Lyngbye HC. 1819. *Tentamen hydrophytologiae danicae; continens omnia hydrophyta cryptogama Daniae, Holsatiae, Faeroae, Islandiae, Groenlandiae hucusqve cognita, systematice disposita, descripta et iconibus illustrata, adjectis simul speciebus norvegicis,* Hafniae, Copenhagen, 248 pp.

Rindi F, Sartoni G, Cinelli F. 2002. A floristic account of the benthic marine algae of Tuscany (Western Mediterranean Sea). *Nova Hedwigia* 74: 201-250.

Setchell WA. 1929. The genus *Microdictyon*. *University of California Publications in Botany* 14: 453-588.

Sfriso A. 1987. Flora and vertical distribution of macroalgae in the lagoon of Venice: a comparison with previous studies. *Giornale Botanico Italiano* 121: 69-85.

Verlaque M. 2001. Checklist of the macroalgae of the Thau lagoon (Hérault, France), a hot spot of marine species introduction in Europe. *Oceanologica Acta* 24: 29-49.

Verlaque M, Boudouresque CF, Meinesz A, Gravez V. 2000. The *Caulerpa racemosa* complex (Caulerpales, Ulvophyceae) in the Mediterranean Sea. *Botanica Marina* 43: 49-68.

Verlaque M, Durand C, Huisman JM, Boudouresque CF, Le Parco Y. 2003. On the identity and origin of the Mediterranean invasive *Caulerpa racemosa* (Caulerpales, Chlorophyta). *European Journal of Phycology* 38: 325-339.

Verlaque M, Ruitton S, Mineur F, Boudouresque CF. in press. 4. Macrophytes. In: Briand F (ed), *CIESM Atlas of Exotic species in the Mediterranean*. CIESM Publishers. Monaco.
Zenetos A, Çinar ME, Pancucci-Papadopoulou MA, Harmelin JG, Furnari G, Andaloro F, Bellou N, Streftaris N, Zibrowius H. 2005. Annotated list of marine alien species in the Mediterranean with records of the worst invasive species. *Mediterranean Marine Science* 6: 63-118.
Zenetos A, Meriç E, Verlaque M, Galli P, Boudouresque CF, Giangrande A, Çinar ME, Bilecenoglu M. 2008. Additions to the annotated list of marine alien biota in the Mediterranean with special emphasis on Foraminifera and Parasites. *Mediterranean Marine Science* 9: 119-165.

Table S12. Checklist of the phylum Magnoliophyta and comments to the checklist

Flowering plants (phylum Magnoliophyta, Kingdom Plantae) have been classified by Classes, Orders, Families and Species. Ordination is alphabetical.

This list is based in the previous knowledge on seagrass distribution (e.g. Phillips & Meñez 1988; Green & Short 2003). Two other species thriving in brackish waters that can be occasionally found in extremely sheltered and shallow bays and lagoons have also been listed. Black Sea is not included.

Taxonomy follows *Flora Europaea* (Tutin et al. 1964). Endemic species (found only in the Mediterranean basin) are preceded by the symbol *. Introduced species are preceded by the symbol #. Some of the commonest synonyms found in Mediterranean literature (if any) are sometimes placed after the currently accepted name.

Phylum Magnoliophyta

Class Angiospermae

Order Potamogetonales

Family Cymodoceae
Cymodocea nodosa (Ucria) Ascherson

Family Posidoniaceae
**Posidonia oceanica* (Linnaeus) Delile

Family Ruppiaceae
Ruppia cirrhosa (Petagna) Grande
Ruppia maritima Linnaeus

Family Zosteraceae
Zostera marina Linnaeus
Zostera noltii Hornemann [=*Nanozostera noltii* (Hornemann) Tomlinson & Posluzny]

Order Hydrocharitales

Family Hydrocharitaceae
#*Halophila stipulacea* (Forsskal) Ascherson

References

Green EP, Short FT. 2003. *World atlas of seagrasses*. University of California, Berkeley, Los Angeles & London. 298 pp.

Phillips RC, Meñez EG. 1998. *Seagrasses*. *Smithsonian Contributions to the Marine Sciences* 34: 1-104.

Tutin TG, Heywood VH, Burges NA, Valentine DH, Walters SM, Webb DA (eds). 1964. *Flora Europaea, volume 5*. Cambridge University, Cambridge, 452 pp.

Sponges (by Eleni Voultsiadou & Thanos Dailianis)

Figure S1. Mediterranean percentages of the world sponge families and genera for each demosponge order

The total numbers of Mediterranean families (F), genera (G) and species (S) are given.

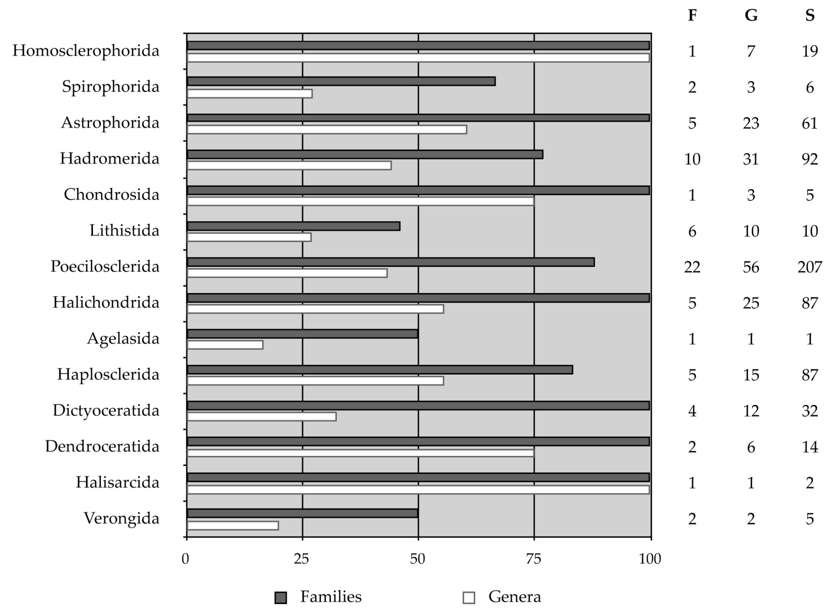
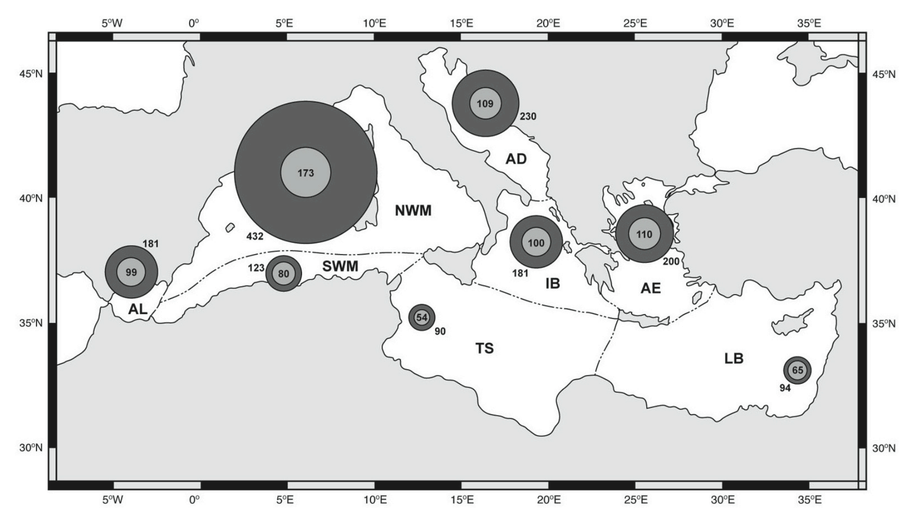


Figure S2. Distribution of the recorded demosponge species (outer circle) and genera (inner circle) richness in distinct zoogeographic areas of the Mediterranean

Numbers of species for each area are given outside the outer circle and number of genera inside the inner circle. AD: Adriatic Sea, AE: Aegean Sea, AL: Alboran Sea, IB: Ionian Basin, LB: Levantine Basin, NWM: north-western Mediterranean, SWM: south-western Mediterranean, TS: Tunisian Plateau/Gulf of Sidra [for the division of the Mediterranean we consulted 1,2,3].



References

1. Por FD, Dimentman C (2006) Mare Nostrum: Neogene and anthropic natural history of the Mediterranean basin, with emphasis on the Levant. Bulgaria: Pensof Publishers.
2. Spalding MD, Fox HE, Halpern BS, McManus MA, Molnar J, et al. (2007) Marine ecoregions of the world: A bioregionalization of coastal and shelf areas. Bioscience 57: 573-583.
3. Voultsiadou E (2009) Reevaluating sponge diversity and distribution in the Mediterranean Sea. Hydrobiologia 628: 1-12.

Anthozoans (by Dimitris Vafidis)

Table S13. Checklist of the Class Anthozoa (Phylum Cnidaria)

WB: Western basin; AD: Adriatic Sea; IB: Ionian basin; AS: Aegean Sea; LB: Levantine basin; BS: Black Sea; DZ: Depth zone; I: Infralittoral zone; C: Circalittoral zone; B: Bathyal zone; ZC: Zoogeographical characterization; AM: Atlanto-Mediterranean; E: Endemic; C: Cosmopolitan; AA: Amphi-Atlantic; B: Boreal; IP: Indo-Pacific.

Mediterranean species	WB	AD	IB	AS	LB	DZ	ZC
Order Stolonifera							
Family Cornulariidae							
Cornularia cornucopiae (Pallas, 1766)	x	x		x		I	AM
Cervera atlantica (Johnson, 1861)	x					I	AM
Family Clavulariidae							
Clavularia crassa (Milne Edwards, 1848)	x	x		x		I	E
Clavularia marioni Koch, 1891	x					C	AM
Clavularia carpediem Weinberg, 1986	x					I	E
Sarcodictyon catenatum Forbes, 1847	x					IC	AM
Rolandia coralloides De Lacaze-Duthiers, 1900	x	x		x		IC	AM
Scleranthelia rugosa (Pourtales, 1867)	x					CB	AA
Scleranthelia microsclera Lopez-Gonzales, Ocana & Garcia-Gomez, 1995	x					I	AM
Telestula septentrionalis Madsen, 1944	x					B	AM
Order Alcyonacea							
Family Alcyoniidae							
Alcyonium palmatum Pallas, 1766	x	x	x	x		IC	AM
Alcyonium acaule Marion, 1878	x	x		x		IC	AM
Alcyonium coralloides (Pallas, 1766)	x	x		x		IC	AM
Family Maasellidae							
Maasella edwardsi (Lacaze-Duthiers, 1888)	x	x	x			IC	E
Paralcyonium spinulosum (Delle Chiaje, 1822)	x			x		IC	AM
Order Gorgonacea							
Family Coralliidae							
Corallium rubrum (Linnaeus, 1758)	x	x	x	x	x	ICB	AM
Family Melithaeidae							
Acabaria erythraea (Ehrenberg,1834)					x	I	IP
Family Acanthogorgiidae							
Acanthogorgia hirsuta Gray, 1857	x		x			B	AM

Family Plexauridae							
Paramuricea clavata (Risso, 1826)	**x**	**x**		**x**		**C**	**E**
Paramuricea macrospina (Koch, 1882)	**x**	**x**	**x**	**x**		**C**	**E**
Bebryce mollis Philippi, 1842	**x**		**x**			**B**	**AM**
Spinimuricea atlantica (Johnson, 1862)	**x**					**C**	**AM**
Spinimuricea klavereni Carpine & Grasshoff, 1975	**x**			**x**		**C**	**E**
Muriceides lepida Carpine & Grasshoff, 1975	**x**					**CB**	**AM**
Placogorgia coronata Carpine & Grasshoff, 1975	**x**					**B**	**AM**
Placogorgia massiliensis Carpine & Grasshoff, 1975	**x**					**B**	**E**
Swiftia pallida Madsen, 1970	**x**			**x**		**B**	**AM**
Villogorgia bebrycoides (Koch, 1887)	**x**			**x**		**CB**	**AM**
Family Gorgoniidae							
Eunicella singularis (Esper, 1791)	**x**	**x**	**x**	**x**		**ICB**	**E**
Eunicella cavolini (Koch, 1887)	**x**	**x**	**x**	**x**		**ICB**	**E**
Eunicella verrucosa (Pallas, 1766)	**x**		**x**	**x**		**ICB**	**AM**
Eunicella filiformis Studer, 1901	**x**					**CB**	**AM**
Eunicella gazella Studer, 1901	**x**					**I**	**AM**
Eunicella labiata Thomson, 1927	**x**					**I**	**AM**
Leptogorgia sarmentosa Esper, 1789	**x**	**x**		**x**		**ICB**	**AM**
Leptogorgia viminalis (Pallas, 1766)	**x**					**C**	**AM**
Leptogorgia guineensis Grasshoff, 1988	**x**					**B**	**AM**
Family Ellisellidae							
Ellisella paraplexauroides Stiasny, 1936	**x**					**CB**	**AM**
Viminella flagellum (Johnson, 1863)	**x**					**C**	**AM**
Family Primnoidae							
Callogorgia verticillata (Pallas, 1766)	**x**		**x**	**x**		**CB**	**AM**
Family Isididae							
Isidella elongata (Esper, 1788)	**x**	**x**		**x**		**B**	**AM**
Order Pennatulacea							
Family Veretillidae							
Veretillum cynomorium (Pallas, 1766)	**x**	**x**	**x**	**x**		**CB**	**C**
Cavernularia pusilla (Philippi, 1835)	**x**			**x**		**CB**	**AM**
Family Kophobelemnidae							
Kophobelemnon stelliferum (O.F. Muller, 1776)	**x**		**x**	**x**		**CB**	**C**
Family Funiculinidae							
Funiculina quadrangularis (Pallas, 1766)	**x**	**x**	**x**	**x**	**x**	**CB**	**C**
Family Penatulidae							
Virgularia mirabilis (Linnaeus, 1758)	**x**	**x**		**x**		**CB**	**C**
Family Penatulidae							
Pennatula aculeata Danielsen, 1860	**x**					**B**	**B**
Pennatula phosphorea Linnaeus, 1758	**x**	**x**	**x**	**x**		**CB**	**C**
Pennatula rubra Pallas, 1766	**x**	**x**		**x**		**C**	**AM**
Pteroeides griseum (Linnaeus, 1767)	**x**	**x**	**x**	**x**		**CB**	**AM**

Crassophyllum thessalonicae Vafidis & Koukouras, 1991				x		**C**	**E**
Order Antipatharia							
Family Antipathidae							
Antipathes dichotoma Pallas, 1766	x			x		**CB**	**C**
Antipathes fragilis Gravier, 1918	x					**C**	**AM**
Parantipathes larix (Esper, 1790)	x			x		**B**	**AM**
Family Myriopathidae							
Antipathella subpinnata (Ellis & Solander, 1786)	x	x		x		**CB**	**AM**
Family Leiopathidae							
Leiopathes glaberrima (Esper, 1792)	x	x	x	x		**B**	**AA**
Order Ceriantharia							
Family Cerianthidae							
Cerianthus membranaceus (Spallanzani, 1784)	x	x		x	x	**IC**	**AM**
Cerianthus lloydii (Gosse, 1859)	x	x				**I**	**B**
Pachycerianthus solitarius (Rapp, 1829)	x	x		x	x	**IC**	**AM**
Pachycerianthus dohrni (van Beneden, 1923)	x					**IC**	**E**
Family Botrucnidiferiidae							
Cerianthula mediterranea van Beneden, 1897	x	x				**IC**	**AM**
Family Arachnactidae							
Arachnactis albida Sarsi, 1846	x					**I**	**AM**
Arachnanthus oligopodus (Cerfontaine, 1891)	x			x	x	**I**	**E**
Order Actiniaria							
Family Gonactiniidae							
Gonactinia prolifera (Sars, 1835)		x				**IC**	**AA**
Protanthea simplex (Carlgren, 1891)	x					**ICB**	**AM**
Family Edwardsiidae							
Edwardsia claparedii (Panceri, 1869)	x	x		x		**IC**	**AM**
Scolanthus callimorphus (Gosse, 1853)	x			x		**I**	**AM**
Family Halcampoididae							
Halcampoides purpurea (Studer, 1878)	x	x				**IC**	**B**
Family Haloclavidae							
Anemonactis mazeli (Jourdan,1880)	x	x				**IC**	**AM**
Mesacmaea mitchellii (Gosse, 1853)	x	x		x		**I**	**AM**
Peachia cylindrica (Reid, 1848)	x	x		x		**IC**	**AM**
Family Andresiidae							
Andresia partenopea (Andres, 1884)	x	x		x		**I**	**AM**
Family Boloceroididae							
Bunodeopsis strumosa Andres, 1881	x	x	x	x		**I**	**E**
Family Aliciidae							
Alicia mirabilis Johnson, 1861	x	x		x	x	**C**	**AM**

Family Condylanthidae							
Segonzactis hartogi Vafidis & Chintiroglou, 2002				**x**		**CB**	**E**
Family Actiniidae							
Actinia cari Delle Chiaje, 1825	**x**	**x**	**x**	**x**		**I**	**E**
Actinia equina mediterranea Schmidt, 1971	**x**	**x**	**x**	**x**	**x**	**I**	**C**
Actinia striata (Rizzi, 1907)	**x**	**x**		**x**		**IC**	**AM**
Paranemonia vouliagmeniensis Doumenc, England & Chintiroglou, 1987				**x**		**I**	**E**
Anemonia melanaster (Verrill, 1901)					**x**	**I**	**AM**
Anemonia viridis (Forskal, 1775)	**x**	**x**	**x**	**x**	**x**	**I**	**AM**
Anthopleura ballii (Cocks, 1850)	**x**	**x**			**x**	**IC**	**AM**
Anthopleura thallia (Gosse,1854)	**x**					**I**	**AM**
Paranemonia cinerea (Contarini, 1844)	**x**	**x**		**x**		**I**	**E**
Condylactis aurantiaca (Delle Chiaje, 1825)	**x**	**x**	**x**	**x**	**x**	**I**	**E**
Cribrinopsis crassa (Andres,1884)	**x**	**x**				**C**	**E**
Bunodactis rubripunctata (Grube, 1840)	**x**	**x**			**x**	**I**	**AM**
Bunodactis verrucosa (Pennant, 1777)	**x**	**x**		**x**		**I**	**AM**
Family Aurelianidae							
Aureliana heterocera (Thompson, 1853)	**x**	**x**				**C**	**AM**
Family Phymanthidae							
Phymanthus pulcher (Andres, 1883)	**x**	**x**		**x**		**IC**	**E**
Family Actinostolidae							
Paranthus rugosus (Andres,1881)	**x**	**x**				**I**	**E**
Family Isophellidae							
Telmatactis cricoides (Duchassaing, 1850)			**x**	**x**	**x**	**I**	**AM**
Telmatactis forskalii (Ehrenberg, 1834)	**x**	**x**	**x**	**x**	**x**	**I**	**AM**
Telmatactis solidago (Duchassaing & Michelotti, 1864)				**x**		**I**	**AM**
Family Hormathiidae							
Hormathia alba (Andres,1881)	**x**		**x**			**I**	**AM**
Hormathia coronata (Gosse, 1858)	**x**	**x**	**x**	**x**		**CB**	**AM**
Paractinia striata (Risso,1826)	**x**					**I**	**E**
Actinauge richardi (Marion, 1882)	**x**	**x**	**x**	**x**		**CB**	**AM**
Paracalliactis robusta Tur, 1991	**x**					**I**	**E**
Calliactis parasitica (Couch, 1842)	**x**	**x**	**x**	**x**	**x**	**ICB**	**AM**
Adamsia palliata (O.F. Muller, 1776)	**x**	**x**	**x**	**x**	**x**	**ICB**	**AM**
Amphianthus dohrnii (Koch, 1878)	**x**	**x**	**x**	**x**		**CB**	**AM**
Family Sagartiidae							
Sagartia elegans (Dalyell, 1848)	**x**	**x**		**x**		**IC**	**AM**
Sagartia troglodytes (Price, 1847)	**x**	**x**				**I**	**AM**
Cereus pedunculatus (Pennant, 1777)	**x**	**x**	**x**	**x**	**x**	**I**	**AM**
Actinothoe sphyrodeta (Gosse, 1860)	**x**					**I**	**AM**
Sagartiogeton entellae Schmidt, 1972		**x**				**C**	**E**
Sagartiogeton undatus (O.F. Muller, 1788)	**x**	**x**	**x**	**x**		**ICB**	**AM**

Kadophellia bathyalis Tur, 1991	**x**					**B**	**E**
Family Aiptasiidae							
Aiptasia diaphana (Rapp, 1829)	**x**	**x**	**x**	**x**	**x**	**I**	**AM**
Aiptasia mutabilis (Gravenhorst, 1831)	**x**	**x**	**x**	**x**	**x**	**I**	**AM**
Aiptasiogeton pellucidus (Hollard, 1848)	**x**	**x**		**x**	**x**	**I**	**AM**
Family Diadumenidae							
Diadumene cincta Stephenson, 1925		**x**				**I**	**AM**
Diadumene luciae (Verrill, 1898)	**x**	**x**			**x**	**I**	**C**
Order Corralimorpharia							
Family Diadumenidae							
Corynactis viridis Allman, 1846	**x**	**x**		**x**		**IC**	**AM**
Family Corralimorphidae							
*Sideractis glacialis*Danielssen, 1890	**x**					**B**	**AM**
Order Scleractinia							
Family Pocilloporidae							
Madracis pharensis (Heller, 1868)	**x**	**x**	**x**	**x**	**x**	**IC**	**AM**
Family Faviidae							
Cladocora caespitosa (Linnaeus, 1767)	**x**	**x**	**x**	**x**	**x**	**IC**	**AM**
Cladocora debilis Milne Edwards & Haime, 1849	**x**	**x**	**x**			**C**	**AA**
Family Oculinidae							
Oculina patagonica De Angelis, 1908	**x**				**x**	**I**	**AA**
Madrepora oculata Linnaeus, 1758	**x**	**x**	**x**	**x**	**x**	**B**	**C**
Family Caryophylliidae							
Caryophyllia cyathus (Ellis & Solander, 1786)	**x**	**x**				**CB**	**AM**
Caryophyllia smithii Stokes & Broderip, 1828	**x**	**x**	**x**	**x**		**ICB**	**AM**
Caryophyllia inornata (Duncan, 1878)	**x**	**x**	**x**	**x**	**x**	**IC**	**AA**
Caryophyllia calveri Duncan, 1873	**x**	**x**		**x**	**x**	**CB**	**AM**
Ceratotrochus magnaghii Cecchini, 1914	**x**	**x**	**x**			**ICB**	**AM**
Coenocyathus cylindricus Milne Edwards & Haime, 1848	**x**	**x**				**CB**	**AM**
Coenocyathus anthophyllites Milne Edwards & Haime, 1848	**x**	**x**				**CB**	**AM**
Paracyathus pulchellus (Philippi, 1842)	**x**	**x**	**x**	**x**	**x**	**CB**	**AA**
Polycyathus muellerae (Abel, 1959)	**x**	**x**	**x**	**x**	**x**	**IC**	**AM**
Sphenotrochus andrewianus Milne Edwards & Haime, 1848	**x**	**x**				**IC**	**AM**
Desmophyllum cristagalli Milne Edwards & Haime, 1848	**x**		**x**	**x**	**x**	**CB**	**C**
Thalamophyllia gasti (Doderlein, 1913)	**x**	**x**	**x**			**ICB**	**AM**
Hoplangia durotrix Gosse, 1860	**x**	**x**	**x**	**x**	**x**	**IC**	**AM**
Lophelia pertusa (Linnaeus, 1758)	**x**	**x**	**x**	**x**	**x**	**B**	**C**

Pourtalosmilia anthophyllites (Ellis & Solander, 1786)	x					B	AM
Phyllangia mouchezii (Lacaze-Duthiers, 1897)	x	x	x	x	x	IC	AM
Family Flabellidae							
Monomyces pygmaea (Risso, 1826)	x	x	x	x		IC	AM
Javania cailleti (Duchassaing & Michelotti, 1864)	x					B	C
Family Guyniidae							
Guynia annulata Duncan, 1872	x	x	x	x		CB	C
Stenocyathus vermiformis (Pourtales, 1868)	x		x	x	x	B	C
Family Dendrophylliidae							
Dendrophyllia ramea (Linnaeus, 1758)	x	x	x			C	AM
Dendrophyllia cornigera (Lamarck, 1816)	x		x	x	x	CB	AM
Cladopsammia rolandi Lacaze-Duthiers, 1897	x		x	x		IC	E
Balanophyllia europaea (Risso, 1826)	x	x	x	x	x	IC	AM
Balanophyllia regia Gosse, 1860	x	x		x		I	AM
Balanophyllia cellulosa Duncan, 1873	x					CB	AM
Leptopsammia pruvoti Lacaze-Duthiers, 1897	x	x	x	x	x	IC	AM
Astroides calycularis (Pallas, 1766)	x	x	x			C	AM
Order Zoantharia							
Family Parazoanthidae							
Parazoanthus axinellae (O. Schmidt, 1862)	x	x	x	x		ICB	AM
Parazoanthus axinellae adriaticus Pax, 1937		x				ICB	E
Parazoanthus axinellae liguricus Pax, 1937	x					CB	E
Parazoanthus axinellae muelleri Pax, 1957	x					IC	E
Parazoanthus axinellae brevitentacularis Abel, 1959	x	x				I	E
Savalia savaglia (Bertoloni, 1819)	x	x		x		C	AM
Family Epizoanthidae							
Epizoanthus arenaceus (Delle Chiaje, 1823)	x	x	x	x		ICB	AM
Epizoanthus arenaceus ingeborgae Pax, 1952	x	x				ICB	E
Epizoanthus incrustatus (Duben & Koren, 1847)	x					CB	AA
Epizoanthus paguricola (Roule, 1900)	x					CB	E
Epizoanthus paxii Abel,1955	x	x				I	E
Epizoanthus mediterraneus Carlgren, 1935	x	x				CB	E
Epizoanthus vagus Herberts, 1972	x					C	E
Epizoanthus univitatus (Lorenz, 1860)		x				C	E
Epizoanthus vatovai Pax & Louchter, 1935		x				IC	E

Mollusks (by José Templado & Roger Villanueva)

Table S14. Checklist of the Phylum Mollusca

Information based on Sabelli et al. [1] and Bello [2] and updated from CLEMAM database, Check List of the European Marine Mollusca: http://www.somali.asso.fr/clemam/index

E = exotic species (species introduced by humans)
P = species included in the Annex II of the Barcelona Agreement (list of endangered or threatened species)
Pl = planktoninc species

CAUDOFOVEATA

Chaetodermatidae
Chaetoderma strigisquamatum Salvini-Plawen, 1977
Falcidens aequabilis Salvini-Plawen, 1972
Falcidens gutturosus (Kowalewsky, 1901)
Limifossoridae
Psilodens elongatus (Salvini-Plawen, 1972)
Scutopus robustus Salvini-Plawen, 1970
Scutopus ventrolineatus Salvini-Plawen, 1968
Prochaetodermatidae
Prochaetoderma boucheti Scheltema & Ivanov, 2000
Prochaetoderma breve Salvini-Plawen, 1999
Prochaetoderma raduliferum (Kowalewsky, 1901)

SOLENOGASTRES

PHOLIDOSKEPIA
Dondersiidae
Dondersia festiva Hubrecht, 1888
Ichthyomenia ichthyoides (Pruvot, 1890)
Micromenia subrubra Salvini-Plawen, 2003
Nematomenia banyulensis (Pruvot, 1890)
Nematomenia corallophila (Kowalewsky, 1881)
Nematomenia flavens (Pruvot, 1890)
Stylomenia salvatori Pruvot, 1899
Lepidomeniidae
Lepidomenia hystrix Marion & Kowalewsky in Fischer, 1885
Lepidomenia swedmarki Salvini-Plawen, 1985
Tegulaherpia myodoryata Salvini-Plawen, 1988
Tegulaherpia stimulosa Salvini-Plawen, 1983
Macellomeniidae
Macellomenia aciculata Scheltema, 1999
Neomeniidae
Neomenia carinata Tullberg, 1875
CAVIBELONIA
Amphimeniidae
Amphimenia neapolitana Thiele, 1889

Paragymnomenia richardi Leloup, 1947
Pararrhopaliidae
Pararrhopalia pruvoti Simroth, 1893
Eleutheromenia carinata Salvini-Plawen & Öztürk, 2006
Eleutheromenia sierra (Pruvot, 1890)
Hypomenia nierstraszi Lummel, 1930
Pruvotina impexa (Pruvot, 1890)
Simrothiellidae
Kruppomenia minima Nierstrasz in Lo Bianco, 1903
Uncimenia neapolitana Nierstrasz, 1903
Pronomeniidae
Proneomenia desiderata (Kowalewsky & Marion, 1887)
Dorymenia vegans (Kowalewsky & Marion, 1887)
Rhopalomeniidae
Rhopalomenia aglaopheniae (Kowalewsky & Marion, 1887)
Pruvotia sopita (Pruvot, 1891)
Urgorria monoplicata Salvini-Plawen, 2003
Strophomeniidae
Strophomenia lacazei Pruvot, 1899
Anamenia gorgonophila (Kowalewsky, 1880)

MONOPLACOPHORA

Neopilinidae
Veleropilina zografi (Dautzenberg & Fischer H., 1896)

POLYPLACOPHORA

LEPIDOPLEURIDA
Leptochitonidae
Lepidopleurus cajetanus (Poli, 1791)
Leptochiton africanus (Nierstrasz, 1906)
Leptochiton algesirensis (Capellini, 1859)
Leptochiton asellus (Gmelin, 1791)
Leptochiton boettgeri Sulc, 1934
Leptochiton cancellatus (Sowerby G.B. II, 1840)
Leptochiton cimicoides (Monterosato, 1879)
Leptochiton geronensis Kaas & Van Belle, 1985
Leptochiton scabridus (Jeffreys, 1880)
Hanleyidae
Hanleya hanleyi (Bean in Thorpe, 1844)
Ichnochitonidae
Ischnochiton dolii Van Belle & Dell'Angelo, 1998
Ischnochiton rissoi (Payraudeau, 1826)
Ischnochiton tsekosi Koukouras & Karachle, 2005
Ischnochiton usticensis Dell'Angelo & Castriota, 1999
Ischnochiton vanbellei Kaas, 1985
Connexochiton platynomenus Kaas, 1979
Callistochiton pachylasmae (Monterosato, 1879)
Callochiton calcatus Dell'Angelo & Palazzi, 1994
Callochiton septemvalvis (Montagu, 1803)

Lepidochitona canariensis (Thiele, 1909)
Lepidochitona caprearum (Scacchi, 1836)
Lepidochitona cinerea (Linné, 1767)
Lepidochitona furtiva (Monterosato 1879)
Lepidochitona monterosatoi Kaas & Van Belle, 1981
Chitonidae
Chiton corallinus (Risso, 1826)
Chiton hululensis (Smith E.A., 1903) (E)
Chiton olivaceus Spengler, 1797
Chiton phaseolinus Monterosato, 1879
Acanthochitonidae
Acanthochitona crinita (Pennant, 1777)
Acanthochitona fascicularis (Linné, 1767)

GASTROPODA

DOCOGLOSSA
Patellidae
Patella caerulea Linné, 1758
Patella ferruginea Gmelin, 1791 (P)
Patella intermedia Murray in Knapp, 1857
Patella rustica Linné, 1758
Patella ulyssiponensis Gmelin, 1791
Ansates pellucida (Linné, 1758)
Cymbula nigra (da Costa, 1771) (P)
Nacellidae
Cellana rota (Gmelin, 1791) (E)
Lottiidae
Tectura virginea (Müller O.F., 1776)
Lepetidae
Iothia fulva (Müller O.F., 1776)
Propilidium exiguum (Thompson W., 1844)
Propilidium pertenue Jeffreys, 1883
Propilidium scabrosum Jeffreys, 1883
VETIGASTROPODA
Fissurellidae
Fissurella nubecula (Linné, 1758)
Diodora demartiniorum Buzzurro & Russo, 2005
Diodora dorsata (Monterosato, 1878)
Diodora gibberula (Lamarck, 1822)
Diodora graeca (Linné, 1758)
Diodora italica (Defrance, 1820)
Diodora producta (Monterosato, 1880)
Diodora ruppellii (Sowerby G.B. I, 1835) (E)
Emarginula adriatica Costa O.G., 1829
Emarginula bonfittoi Smriglio & Mariottini, 2001
Emarginula christiaensi Piani, 1985
Emarginula divae van Aartsen & Carrozza, 1995
Emarginula fissura (Linné, 1758)
Emarginula multistriata Jeffreys, 1882
Emarginula octaviana Coen, 1939

Emarginula punctulum Piani, 1980
Emarginula pustula Thiele in Küster, 1913
Emarginula rosea Bell T., 1824
Emarginula sicula Gray, 1825
Emarginula solidula Costa O.G., 1829
Emarginula tenera Locard, 1892
Emarginula tuberculosa Libassi, 1859
Emarginella huzardii (Payraudeau, 1826)
Fissurisepta granulosa Jeffreys, 1883
Puncturella noachina (Linné, 1771)
Puncturella piccirida Palazzi & Villari, 2001
Zeidora naufraga Watson, 1883
Scissurellidae
Scissurella costata d'Orbigny, 1824
Anatoma aspera (Philippi, 1844)
Anatoma crispata (Fleming, 1828)
Anatoma umbilicata (Jeffreys, 1883)
Sinezona cingulata (Costa O.G., 1861)
Haliotidae
Haliotis mykonosensis Owen, Hanavan & Hall, 2001
Haliotis pustulata Reeve, 1846 (E)
Haliotis stomatiaeformis Reeve, 1846
Haliotis tuberculata Linné, 1758
Lepetellidae
Lepetella barrajoni Dantart & Luque, 1994
Lepetella espinosae Dantart & Luque, 1994
Lepetella laterocompressa (de Rayneval & Ponzi, 1854)
Bogia labronica (Bogi, 1984)
Choristella nofronii McLean, 1992
Addisoniidae
Addisonia excentrica (Tiberi, 1855)
Pseudococculinidae
Copulabyssia corrugata (Jeffreys, 1883)
Pilus conicus (Verrill, 1884)
Trochidae
Trochus erithraeus Brocchi, 1821 (E)
Clanculus corallinus (Gmelin, 1791)
Clanculus cruciatus (Linné, 1758)
Clanculus jussieui (Payraudeau, 1826)
Clelandella miliaris (Brocchi, 1814)
Clelandella myriamae Gofas, 2005
Callumbonella suturalis (Philippi, 1836)
Gibbula adansonii (Payraudeau, 1826)
Gibbula adriatica (Philippi, 1844)
Gibbula albida (Gmelin, 1791)
Gibbula ardens (Salis, 1793)
Gibbula cineraria (Linné, 1758)
Gibbu*la divaricata* (Linné, 1758)
Gibbula drepanensis (Brugnone, 1873)
Gibbula fanulum (Gmelin, 1791)
Gibbula guttadauri (Philippi 1836)

Gibbula leucophaea (Philippi, 1836)
Gibbula magus (Linné, 1758)
Gibbula nivosa Adams A., 1851 (P)
Gibbula pennanti (Philippi 1846)
Gibbula philberti (Récluz, 1843)
Gibbula racketti (Payraudeau, 1826)
Gibbula rarilineata (Michaud, 1829)
Gibbula spratti (Forbes, 1844)
Gibbula tantilla Monterosato, 1890
Gibbula tingitana Pallary, 1901
Gibbula turbinoides (Deshayes, 1835)
Gibbula umbilicalis (da Costa, 1778)
Gibbula umbilicaris (Linné, 1758)
Gibbula varia (Linné, 1758)
Gibbula vimontiae Monterosato, 1884
Jujubinus baudoni (Monterosato, 1891)
Jujubinus catenatus Ardovini, 2006
Jujubinus curinii Bogi & Campani, 2006
Jujubinus dispar Curini-Galletti, 1982
Jujubinus exasperatus (Pennant, 1777)
Jujubinus gravinae (Dautzenberg 1881
Jujubinus karpathoensis Nordsieck, 1973
Jujubinus montagui (Wood W., 1828)
Jujubinus ruscurianus (Weinkauff, 1868)
Jujubinus striatus (Linné, 1758)
Jujubinus tumidulus (Aradas, 1846)
Jujubinus unidentatus (Philippi, 1844)
Osilinus articulatus (Lamarck, 1822)
Osilinus lineatus (da Costa, 1778)
Osilinus mutabilis (Philippi, 1846)
Osilinus richardi (Payraudeau, 1826)
Osilinus turbinatus (Born, 1778)
Stomatella impertusa (Burrow, 1815) (E)
Solariellidae
Pseudominolia nedyma (Melvill, 1897) (E)
Calliostomatidae
Calliostoma conulus (Linné, 1758)
Calliostoma granulatum (Born, 1778)
Calliostoma gualterianum (Philippi, 1848)
Calliostoma gubbiolii Nofroni, 1984
Calliostoma kochi Pallary, 1902
Calliostoma laugieri (Payraudeau, 1826)
Calliostoma virescens Coen, 1933
Calliostoma zizyphinum (Linné, 1758)
Chilodontidae
Calliotropis ottoi (Philippi, 1844)
Danilia tinei (Calcara, 1839)
Putzeysia wiseri (Calcara, 1842)
Turbinidae
Bolma rugosa (Linné, 1758)
Cantrainea peloritana (Cantraine, 1835)

Homalopoma carmelae Oliverio & Buzzurro, 1994
Homalopoma sanguineum (Linné, 1758)
Moelleria costulata (Møller, 1842)
Skeneidae
Skenea basistriata (Jeffreys, 1877)
Skenea catenoides (Monterosato, 1877)
Skenea divae Carrozza & van Aartsen, 2001
Skenea pelagia Nofroni & Valenti, 1987
Skenea serpuloides (Montagu, 1808)
Adeuomphalus ammoniformis Seguenza G., 1876
Akritogyra conspicua (Monterosato, 1880)
Cirsonella romettensis (Granata-Grillo, 1877)
Dasyskenea suavis Fasulo & Cretella, 2002
Dikoleps cutleriana (Clark W., 1848)
Dikoleps depressa (Monterosato, 1880)
Dikoleps marianae Rubio, Dantart & Luque, 1998
Dikoleps nitens (Philippi, 1844)
Dikoleps pruinosa (Chaster, 1896)
Dikoleps rolani Rubio, Dantart & Luque, 1998
Dikoleps templadoi Rubio, Dantart & Luque, 2004
Dikoleps umbilicostriata (Gaglini, 1987)
Granigyra granulifera Warén, 1992
Lissomphalia bithynoides (Monterosato, 1880)
Lissotesta gittenbergeri (van Aartsen & Bogi, 1988)
Lissotesta turrita (Gaglini, 1987)
Mikro giustii (Bogi & Nofroni, 1989)
Moelleriopsis messanensis (Seguenza G., 1876)
Palazzia ausonia (Palazzi, 1988)
Parviturbo alboranensis Peñas & Rolán, 2006
Parviturbo dibellai Buzzurro & Cecalupo, 2007
Pseudorbis granulum (Brugnone, 1873)
Skeneoides digeronimoi La Perna 1998
Skeneoides exilissima (Philippi, 1844)
Skeneoides jeffreysii (Monterosato, 1872)
Xenoskenea pellucida (Monterosato, 1874)
Tricoliidae
Tricolia algoidea (Pallary, 1920)
Tricolia deschampsi Gofas, 1993
Tricolia entomocheila Gofas, 1993
Tricolia landinii Bogi & Campani, 2007
Tricolia miniata (Monterosato, 1884)
Tricolia pullus (Linné, 1758)
Tricolia punctura Gofas, 1993
Tricolia speciosa (von Mühlfeld, 1824
Tricolia tenuis (Michaud, 1829)
Tricolia tingitana Gofas, 1982
Ataphridae
Trochaclis versiliensis Warén, 1992
Pendromidae
Rugulina monterosatoi (van Aartsen & Bogi, 1987)
COCCULINIFORMIA

Cocculinidae
Coccopigya viminensis (Rocchini, 1990)
Bathysciadiidae
Bathysciadium xylophagum Warén & Carrozzza, 1997
NERITIMORPHA
Neritidae
Nerita sanguinolenta Menke, 1829 (E)
Smaragdia souverbiana (Montrouzier, 1863 (E)
Smaragdia viridis (Linné, 1758)
CAENOGASTROPODA
Cerithiidae
Cerithium alucastrum (Brocchi, 1814)
Cerithium egenum Gould 1849 (E)
Cerithium lividulum Risso, 1826
Cerithium nesioticum Pilsbry & Vanatta, 1906 (E)
Cerithium protractum Bivona Ant., 1838
Cerithium renovatum Monterosato, 1884
Cerithium scabridum Philippi, 1848 (E)
Cerithium vulgatum Bruguière, 1792
Bittium circa Moreno, 2006
Bittium incile Watson, 1897
Bittium lacteum (Philippi, 1836)
Bittium latreillii (Payraudeau, 1826)
Bittium reticulatum (da Costa, 1778)
Bittium simplex (Jeffreys, 1867)
Bittium submamillatum (de Rayneval & Ponzi, 1854)
Cassiella abylensis Gofas, 1987
Clypeomorus bifasciatus (Sowerby G.B. II, 1855) (E)
Rhinoclavis kochi (Philippi, 1848) (E)
Dialidae
Diala varia Adams A., 1861 (E)
Litiopidae
Gibborissoa virgata (Philippi, 1849) (E)
Scaliolidae
Scaliola elata Issel, 1869) (E)
Clathrofenella diplax (Watson, 1886) (E)
Clathrofenella perparvula (Watson, 1886) (E)
Finella pupoides Adams A., 1860 (E)
Planaxidae
Planaxis savignyi Deshayes, 1844 (E)
Angiola punctostriata Smith E.A., 1872) (E)
Fossarus ambiguus (Linné, 1758)
Potamididae
Potamides conicus (de Blainville, 1829)
Siliquariidae
Petalopoma elisabettae Schiaparelli, 2002
Tenagodus obtusus (Schumacher, 1817)
Turritellidae
Turritella communis Risso, 1826
Turritella decipiens Monterosato, 1878
Turritella turbona Monterosato, 1877

Mesalia varia (Kiener, 1844)
Triphoridae
Cheirodonta pallescens (Jeffreys, 1867)
Cosmotriphora melanura (Adams C.B., 1850)
Marshallora adversa (Montagu, 1803)
Metaxia bacillum (Issel, 1869)
Metaxia metaxae (Delle Chiaje, 1828)
Monophorus alboranensis Rolán & Peñas, 2001
Monophorus erythrosoma (Bouchet & Guillemot, 1978)
Monophorus pantherinus Rolán & Peñas, 2001
Monophorus perversus (Linné, 1758)
Monophorus thiriotae Bouchet, 1985
Obesula marisnostri Bouchet, 1985
Pogonodon pseudocanaricus (Bouchet, 1985)
Similiphora similior (Bouchet & Guillemot, 1978)
Strobiligera brychia (Bouchet & Guillemot, 1978)
Strobiligera flammulata Bouchet & Warén, 1993
Cerithiopsidae
Cerithiopsis annae Cecalupo & Buzzurro, 2005
Cerithiopsis barleei Jeffreys, 1867
Cerithiopsis diadema Monterosato, 1874
Cerithiopsis fayalensis Watson, 1880
Cerithiopsis greppii Buzzurro & Cecalupo, 2005
Cerithiopsis horrida Monterosato, 1874
Cerithiopsis iudithae Reitano & Buzzurro, 2006
Cerithiopsis jeffreysi Watson, 1885
Cerithiopsis ladae Prkić & Buzzurro, 2007
Cerithiopsis minima (Brusina, 1865)
Cerithiopsis nofronii Amati, 1987
Cerithiopsis perlata Monterosato, 1889
Cerithiopsis pulchresculpta Cachia, Mifsud & Sammut, 2004
Cerithiopsis pulvis (Issel, 1869) (E)
Cerithiopsis scalaris Locard, 1892
Cerithiopsis tarruellasi Peñas & Rolán, 2006
Cerithiopsis tenthrenois (Melvill, 1896)
Cerithiopsis tubercularis (Montagu, 1803)
Cerithiella metula (Lovén, 1846)
Dizoniopsis coppolae (Aradas, 1870)
Dizoniopsis micalii Cecalupo & Villari, 1997
Krachia cossmanni (Dautzenberg & Fischer H., 1896)
Krachia cylindrata (Jeffreys, 1885)
Krachia guernei (Dautzenberg & Fischer H., 1896)
Krachia tiara (Monterosato, 1874)
Krachiopsis giannuzzii Smriglio & Mariottini, 1999
Onchodia valeriae (Giusti Fr., 1987)
Seila trilineata (Philippi, 1836)
Janthinidae
Janthina exigua Lamarck, 1816
Janthina globosa Swainson, 1822
Janthina janthina (Linné, 1758)
Janthina pallida Thompson W., 1840

Aclididae
Aclis ascaris (Turton, 1819)
Aclis attenuans Jeffreys, 1883
Aclis gulsonae (Clark W., 1850)
Aclis minor (Brown, 1827)
Aclis trilineata Watson, 1897
Epitoniidae
Epitonium algerianum (Weinkauff, 1866)
Epitonium brevissimum (Seguenza G., 1876)
Epitonium candidissimum (Monterosato, 1877)
Epitonium celesti (Aradas, 1854)
Epitonium clathratulum (Kanmacher, 1798)
Epitonium hispidulum (Monterosato, 1874)
Epitonium jolyi (Monterosato, 1878)
Epitonium linctum (de Boury & Monterosato, 1890)
Epitonium pseudonanum Bouchet & Warén, 1986
Epitonium pulchellum (Bivona Ant., 1832)
Epitonium striatissimum (Monterosato, 1878)
Epitonium tiberii (de Boury, 1890)
Epitonium tryoni (de Boury, 1913)
Epitonium turtonis (Turton, 1819)
Epitonium vittatum (Jeffreys, 1884)
Acirsa subdecussata (Cantraine, 1835)
Acrilloscala lamyi (de Boury, 1909)
Cirsotrema cochlea (Sowerby G.B. II, 1844)
Claviscala richardi (Dautzenberg & de Boury, 1897)
Cycloscala hyalina (Sowerby G.B. II, 1844) (E)
Epidendrium dendrophylliae (Bouchet & Warén, 1986)
Gregorioiscala sarsi (Kobelt, 1904)
Gyroscala lamellosa (Lamarck, 1822)
Iphitus marshalli (Sykes, 1925)
Iphitus tuberatus Jeffreys, 1883
Narrimania concinna (Sykes, 1925)
Opalia abbotti Clench & Turner, 1952
Opalia crenata (Linné, 1758)
Opalia hellenica (Forbes, 1844)
Papuliscala tavianii Bouchet & Warén, 1986
Punctiscala cerigottana (Sturany, 1896)
Eulimidae
Eulima altimirai Nordsieck, 1977
Eulima bilineata Alder, 1848
Eulima glabra (da Costa, 1778)
Eulima fuscozonata Bouchet & Waren, 1986
Eulima leptozona Dautzenberg & Fischer H., 1896
Auriculigerina miranda Dautzenberg, 1925
Bathycrinicola nacraensis Peñas & Giribet, 2003
Campylorhaphion famelicum (Watson, 1883)
Crinophtheiros comatulicola (Graff, 1875)
Crinophtheiros giustii Gaglini,1991
Curveulima beneitoi Peñas & Rolán, 2006
Curveulima devians (Monterosato, 1884)

Entoconcha mirabilis Müller J., 1852
Ersilia mediterranea (Monterosato, 1869)
Fusceulima minuta (Jeffreys, 1884)
Haliella stenostoma (Jeffreys, 1858)
Halielloides fragilis Bouchet & Warén, 1986
Melanella alba (da Costa, 1778)
Melanella boscii (Payraudeau, 1826)
Melanella crosseana (Brusina, 1886)
Melanella doederleini (Brusina, 1886)
Melanella frielei (Jordan, 1895)
Melanella glypta Bouchet & Warén, 1986
Melanella lineata (Monterosato, 1869)
Melanella lubrica (Monterosato, 1890)
Melanella microsculpta Bouchet & Warén, 1986
Melanella monterosatoi (Monterosato, 1890)
Melanella petitiana (Brusina, 1869)
Melanella polita (Linné, 1758)
Melanella praecurta (Pallary, 1904)
Melanella spiridioni (Dautzenberg & Fischer H., 1896)
Melanella stalioi (Brusina, 1869)
Melanella translucens (Monterosato, 1890)
Nanobalcis nana (Monterosato, 1878)
Oceanida confluens Bouchet & Warén, 1986
Parvioris ibizenca (Nordsieck, 1968)
Pelseneeria minor Koehler & Vaney, 1908
Sabinella piriformis Brugnone, 1873
Sticteulima jeffreysiana (Brusina, 1869)
Sticteulima lentiginosa (Adams A., 1861) (E)
Vitreolina antiflexa Monterosato, 1884
Vitreolina cionella (Monterosato, 1878)
Vitreolina curva (Monterosato, 1874)
Vitreolina incurva (Bucquoy, Dautzenberg & Dollfus, 1883)
Vitreolina levantina Oliverio, Buzzurro & Villa, 1994
Vitreolina perminima (Jeffreys, 1883)
Vitreolina philippi (de Rayneval & Ponzi, 1854)
Littorinidae
Littorina littorea (Linné, 1758)
Littorina obtusata (Linné, 1758)
Littorina saxatilis (Olivi, 1792)
Echinolittorina punctata (Gmelin, 1791)
Melarhaphe neritoides (Linné, 1758)
Skeneopsidae
Skeneopsis planorbis (Fabricius O., 1780)
Cingulopsidae
Eatonina cossurae (Calcara, 1841)
Eatonina fulgida (Adams J., 1797)
Eatonina ochroleuca (Brusina, 1869)
Eatonina pumila (Monterosato, 1884)
Tubbreva micrometrica (Aradas & Benoit, 1876)
Rissoidae
Rissoa aartseni Verduin, 1985

Rissoa alleryi (Nordsieck, 1972)
Rissoa angustior (Monterosato, 1917)
Rissoa auriformis Pallary, 1904
Rissoa auriscalpium (Linné, 1758)
Rissoa decorata Philippi, 1846
Rissoa frauenfeldiana Brusina, 1866
Rissoa guerinii Récluz, 1843
Rissoa italiensis Verduin, 1985
Rissoa lia (Monterosato, 1884)
Rissoa monodonta Philippi, 1836
Rissoa multicincta Smriglio & Mariottini, 1995
Rissoa panhormensis Verduin, 1985
Rissoa paradoxa (Monterosato, 1884)
Rissoa parva (da Costa, 1778)
Rissoa rodhensis Verduin, 1985
Rissoa scurra (Monterosato, 1917)
Rissoa similis Scacchi, 1836
Rissoa splendida Eichwald, 1830
Rissoa torquilla Pallary, 1912
Rissoa variabilis (von Mühlfeld, 1824)
Rissoa ventricosa Desmarest, 1814
Rissoa violacea Desmarest, 1814
Alvania aartseni Verduin, 1986
Alvania aeoliae Palazzi, 1988
Alvania alboranensis Peñas & Rolán, 2006
Alvania algeriana (Monterosato, 1877)
Alvania amatii Oliverio, 1986
Alvania aspera (Philippi, 1844)
Alvania balearica Oliver & Templado, 2009
Alvania beani (Hanley in Thorpe, 1844)
Alvania bicingulata (Seguenza L., 1903)
Alvania cancellata (da Costa, 1778)
Alvania carinata (da Costa, 1778)
Alvania cimex (Linné, 1758)
Alvania cimicoides (Forbes, 1844)
Alvania cingulata (Philippi, 1836)
Alvania clarae Nofroni & Pizzini, 1991
Alvania clathrella (Seguenza L., 1903)
Alvania claudioi Buzzurro & Landini, 2007
Alvania colossophilus Oberling, 1970
Alvania consociella Monterosato, 1884
Alvania corona Nordsieck, 1972
Alvania dalmatica Buzzurro & Prkić, 2007
Alvania datchaensis Amati & Oliverio, 1987
Alvania dianiensis Oliverio, 1988
Alvania dictyophora (Philippi, 1844)
Alvania dipacoi Giusti Fr. & Nofroni, 1989
Alvania discors (Allan, 1818)
Alvania disparilis Monterosato, 1890
Alvania dorbignyi (Audouin, 1826) (E)
Alvania electa (Monterosato, 1874)

Alvania elegantissima (Monterosato, 1875)
Alvania elisae Margelli, 2001
Alvania fischeri (Jeffreys, 1884)
Alvania fractospira Oberling, 1970
Alvania gagliniae Amati, 1985
Alvania garrafensis Peñas & Rolán, 2008
Alvania geryonia (Nardo, 1847)
Alvania hallgassi Amati & Oliverio, 1985
Alvania hirta (Monterosato, 1884)
Alvania hispidula (Monterosato, 1884)
Alvania imperspicua (Pallary, 1920)
Alvania josefoi Oliver & Templado, 2009
Alvania lactea (Michaud, 1830)
Alvania lanciae (Calcara, 1845)
Alvania lineata Risso, 1826
Alvania litoralis (Nordsieck, 1972)
Alvania lucinae Oberling, 1970
Alvania mamillata Risso, 1826
Alvania nestaresi Oliverio & Amati, 1990
Alvania oliverioi Buzzurro, 2003
Alvania pagodula (Bucquoy, Dautzenberg & Dollfus, 1884)
Alvania parvula (Jeffreys, 1884)
Alvania punctura (Montagu, 1803)
Alvania rudis Philippi, 1844)
Alvania scabra (Philippi, 1844)
Alvania schwartziana Brusina, 1866
Alvania sculptilis (Monterosato, 1877)
Alvania settepassii Amati & Nofroni, 1985
Alvania simulans Locard, 1886
Alvania sleursi (Amati, 1987)
Alvania sororcula Granata-Grillo, 1877
Alvania spinosa (Monterosato, 1890)
Alvania subareolata Monterosato, 1869
Alvania subcrenulata (Bucquoy, Dautzenberg & Dollfus, 1884)
Alvania subsoluta (Aradas, 1847)
Alvania tenera (Philippi, 1844)
Alvania tessellata Weinkauff, 1868
Alvania testae (Aradas & Maggiore, 1844)
Alvania vermaasi van Aartsen, 1975
Alvania villarii Micali, Tisselli & Giunchi, 2005
Alvania weinkauffi Weinkauff, 1868
Alvania zetlandica (Montagu, 1815)
Alvania zylensis Gofas & Warén, 1982
Benthonella tenella (Jeffreys 1869)
Botryphallus epidauricus (Brusina 1866)
Cingula trifasciata (Adams J., 1800)
Crisilla amphiglypha Bouchet & Warén, 1993
Crisilla beniamina (Monterosato, 1884)
Crisilla chiarellii (Cecalupo & Quadri, 1995)
Crisilla iunoniae (Palazzi, 1988)
Crisilla marioni (Fasulo & Gaglini, 1987)

Crisilla pseudocingulata (Nordsieck, 1972)
Crisilla semistriata (Montagu, 1808)
Crisilla spadix (Watson, 1897)
Manzonia crassa (Kanmacher, 1798
Obtusella intersecta (Wood S., 1857)
Obtusella macilenta (Monterosato, 1880)
Obtusella ovulata (Nordsieck, 1972)
Onoba aculeus (Gould, 1841)
Onoba dimassai Amati & Nofroni, 1991
Onoba gianninii (Nordsieck, 1974)
Onoba oliverioi Smriglio & Mariottini, 2000
Onoba semicostata (Montagu, 1803)
Peringiella denticulata Ponder, 1985
Peringiella elegans (Locard, 1892)
Plagyostila asturiana Fischer P. in de Folin, 1872
Pseudosetia ficaratiensis (Brugnone, 1876)
Pusillina benzi (Aradas & Maggiore, 1844)
Pusillina ehrenbergi (Philippi, 1844)
Pusillina inconspicua (Alder, 1844)
Pusillina lineolata (Michaud, 1830)
Pusillina marginata (Michaud, 1830)
Pusillina munda (Monterosato, 1884)
Pusillina philippi (Aradas & Maggiore, 1844)
Pusillina radiata (Philippi, 1836)
Pusillina sarsii (Lovén, 1846)
Pusillina testudae (Verduin, 1979)
Rissoina bertholleti Issel, 1869 (E)
Rissoina bruguieri (Payraudeau, 1826)
Setia alboranensis Peñas & Rolán, 2006
Setia amabilis (Locard, 1886)
Setia ambigua (Brugnone, 1873)
Setia antipolitana (van der Linden & Wagner, 1987)
Setia bruggeni (Verduin, 1984)
Setia fusca (Philippi, 1841)
Setia kuiperi Verduin, 1984)
Setia levantina Bogi & Galil, 2007
Setia maculata (Monterosato, 1869)
Setia scillae (Aradas & Benoit, 1876)
Setia turriculata Monterosato, 1884
Voorwindia tiberiana (Issel 1869) (E)
Anabathridae
Nodulus contortus (Jeffreys, 1856)
Pisinna glabrata (Megerle von Mühlfeld, 1824)
Assimineidae
Assiminea gittenbergeri van Aartsen, 2008
Assiminea grayana Fleming, 1828
Paludinella littorina (Delle Chiaje 1828)
Paludinella sicana (Brugnone 1876)
Barleeidae
Barleeia gougeti (Michaud, 1830)
Barleeia seminulum (Monterosato, 1877)

Barleeia unifasciata (Montagu, 1803)
Caecidae
Caecum armoricum de Folin, 1869
Caecum auriculatum de Folin, 1868
Caecum clarkii Carpenter, 1859
Caecum glabrum (Montagu, 1803)
Caecum subannulatum de Folin, 1870
Caecum trachea (Montagu, 1803)
Parastrophia asturiana de Folin, 1870
Elachisinidae
Laeviphitus verduini van Aartsen, Bogi & Giusti, 1989
Hydrobiidae
Hydrobia acuta (Draparnaud, 1805)
Hydrobia djerbaensis Wilke, Pfenninger & Davis, 2002
Ventrosia maritima (Milaschewitsch, 1916)
Ventrosia ventrosa (Montagu, 1803)
Heleobia stagnorum (Gmelin, 1791)
Iravadiidae
Ceratia proxima (Thompson, 1850)
Hyala vitrea (Montagu, 1803)
Tornidae
Tornus jullieni Adam & Knudsen, 1969
Tornus mienisi van Aartsen, Carrozza & Menkhorst, 1998
Tornus subcarinatus (Montagu, 1803)
Circulus striatus (Philipp,i 1836)
Circulus tricarinatus (Wood S., 1848)
Discopsis costulatus de Folin, 1870
Truncatellidae
Truncatella subcylindrica (Linné, 1767)
Vermetidae
Vermetus granulatus (Gravenhorst, 1831)
Vermetus rugulosus Monterosato, 1878
Vermetus semisurrectus Bivona Ant., 1832
Vermetus triquetrus Bivona Ant., 1832
Dendropoma anguliferum (Monterosato, 1884)
Dendropoma petraeum (Monterosato, 1884) (P)
Petaloconchus glomeratus (Linné, 1758)
Serpulorbis arenarius (Linné, 1767)
Strombidae
Strombus mutabilis Swainson, 1821 (E)
Strombus persicus Swainson, 1821 (E)
Aporrhaidae
Aporrhais pespelecani (Linné, 1758)
Aporrhais serresianus (Michaud, 1828)
Vanikoridae
Macromphalus abylensis Warén & Bouchet, 1988
Megalomphalus azonus (Brusina, 1865)
Megalomphalus disciformis (Granata-Grillo, 1877)
Megalomphalus petitianus (Tiberi, 1869)
Talassia dagueneti (de Folin, 1873)
Hipponicidae

Sabia conica (Schumacher, 1817) (E)
Xenophoridae
Xenophora crispa (Koenig, 1825)
Calyptraeidae
Calyptraea chinensis (Linné, 1758)
Crepidula aculeata (Gmelin, 1791) (E)
Crepidula fornicata (Linné, 1758) (E)
Crepidula moulinsii Michaud, 1829
Crepidula unguiformis Lamarck, 1822
Capulidae
Capulus ungaricus (Linné, 1758)
Torellia delicata (Philippi, 1844)
Velutinidae
Velutina undata Smith J., 1839
Velutina velutina (Müller O.F., 1776)
Lamellaria latens (Müller O.F., 1776)
Lamellaria perspicua (Linné, 1758)
Triviidae
Trivia arctica (Pulteney, 1799)
Trivia bitou Pallary, 1912
Trivia levantina Smriglio, Mariottini & Buzzurro, 1998
Trivia monacha (da Costa, 1778)
Trivia multilirata (Sowerby G.B. II, 1870)
Trivia pulex (Solander, 1828)
Trivia spongicola Monterosato, 1923
Erato voluta (Montagu, 1803)
Cypraeidae
Erosaria spurca (Linné, 1758) (P)
Erosaria turdus (Lamarck, 1810) (E)
Luria lurida (Linné, 1758) (P)
Purpuradusta gracilis notata (Gill, 1858) (E)
Palmadusta lentiginosa (Gray, 1825) (E)
Schilderia achatidea (Gray in Sowerby G.B. II, 1837) (P)
Zonaria pyrum (Gmelin, 1791) (P)
Ovulidae
Aperiovula adriatica (Sowerby G.B. I, 1828
Neosimnia illyrica Schilder, 1927
Neosimnia spelta (Linné, 1758)
Pseudosimnia carnea (Poiret, 1789)
Simnia nicaeensis Risso, 1826
Simnia purpurea Risso, 1826
Pedicularia sicula Swainson, 1840
Naticidae
Natica hebraea (Martyn, 1784)
Natica prietoi Hidalgo, 1873
Natica stercusmuscarum (Gmelin, 1791)
Natica vittata (Gmelin, 1791)
Cryptonatica operculata (Jeffreys, 1885)
Euspira catena (da Costa, 1778)
Euspira fusca (de Blainville, 1825)
Euspira grossularia (Marche-Marchad, 1957)

Euspira guillemini (Payraudeau, 1826)
Euspira macilenta (Philippi, 1844
Euspira pulchella (Risso, 1826)
Neverita josephinia Risso, 1826
Notocochlis dillwynii (Payraudeau, 1826)
Notocochlis gualteriana (Récluz, 1844)
Payraudeautia intricata (Donovan, 1804)
Polinices lacteus (Guilding, 1834)
Sinum bifasciatum (Récluz, 1851)
Tectonatica rizzae (Philippi, 1844)
Tectonatica sagraiana (d'Orbigny, 1842)
Tonnidae
Tonna galea (Linné, 1758) (P)
Eudolium bairdii (Verrill & Smith, 1881)
Eudolium crosseanum (Monterosato, 1869)
Galeodea echinophora (Linné, 1758)
Galeodea rugosa (Linné, 1771)
Oocorys sulcata Fischer P., 1883
Phalium granulatum (Born, 1778)
Phalium saburon (Bruguière, 1792)
Ranellidae
Ranella olearium (Linné, 1758) (P)
Cabestana cutacea (Linné, 1767)
Cabestana dolaria (Linné, 1767)
Charonia lampas (Linné, 1758) (P)
Charonia variegata (Lamarck, 1816) (P)
Cymatium corrugatum (Lamarck, 1816)
Cymatium parthenopeum (Salis, 1793)
Bursidae
Bursa scrobilator (Linné, 1758)
Pterotracheaidae
Pterotrachea coronata Forskål, 1775 (Pl)
Pterotrachea hippocampus Philippi, 1836 (Pl)
Pterotrachea scutata Gegenbaur, 1855 (Pl)
Firoloida desmarestia Lesueur, 1817 (Pl)
Carinariidae
Carinaria mediterranea de Blainville, 1824 (Pl)
Atlantidae
Atlanta fragilis Richter, 1993 (Pl)
Atlanta fusca Souleyet, 1852 (Pl)
Atlanta helicinoides Souleyet, 1852 (Pl)
Atlanta inclinata Souleyet, 1852 (Pl)
Atlanta inflata Souleyet, 1852 (Pl)
Atlanta lesueurii Souleyet, 1852 (Pl)
Atlanta peronii Lesueur, 1817 (Pl)
Oxygyrus keraudrenii (Lesueur, 1817) (Pl)
Protatlanta souleyeti (Smith E.A., 1888) (Pl)
Muricidae
Murex forskoehli Röding, 1798 (E)
Aspella anceps (Lamarck, 1822)
Babelomurex benoiti (Tiberi, 1855)

Babelomurex cariniferus (Sowerby G.B. II, 1834)
Babelomurex sentix (Bayer, 1971)
Bolinus brandaris (Linné, 1758)
Coralliophila brevis (de Blainville, 1832)
Coralliophila meyendorffii (Calcara, 1845)
Coralliophila panormitana (Monterosato, 1869)
Coralliophila richardi (Fischer P., 1882)
Coralliophila sofiae (Aradas & Benoit, 1876)
Coralliophila squamosa (Bivona Ant. in Bivona And., 1838)
Dermomurex scalaroides (de Blainville, 1829)
Ergalatax junionae Houart, 2008 (E)
Hadriania craticulata Bucquoy, Dautzenberg & Dollfus, 1882
Hexaplex pecchiolianus (d'Ancona, 1871) (E)
Hexaplex trunculus (Linné, 1758)
Muricopsis aradasii (Poirier, 1883)
Muricopsis cevikeri Houart, 2000
Muricopsis cristata (Brocchi, 1814)
Ocenebra erinaceus (Linné, 1758)
Ocinebrina aciculata (Lamarck, 1822)
Ocinebrina aciculata corallinoides Pallary, 1912
Ocinebrina edwardsii (Payraudeau, 1826)
Ocinebrina helleri (Brusina, 1865)
Ocinebrina hispidula Pallary, 1904
Ocinebrina hybrida (Aradas & Benoit, 1876)
Ocinebrina ingloria (Crosse, 1865)
Ocinebrina nicolai Monterosato, 1884
Ocinebrina paddeui Bonomolo & Buzzurro, 2006
Orania fusulus (Brocchi, 1814)
Pagodula echinata (Kiener, 1840)
Rapana venosa (Valenciennes, 1846) (E)
Stramonita haemastoma (Linné, 1767)
Thais sacellum (Gmelin, 1791) (E)
Trophonopsis alboranensis (Smriglio, Mariottini & Bonfitto, 1997) *Trophonopsis breviatus* (Jeffreys, 1882)
Trophonopsis muricatus (Montagu, 1803)
Typhinellus labiatus (de Cristofori & Jan, 1832)
Urosalpinx cinerea (Say, 1822)
Marginellidae
Volvarina mitrella (Risso, 1826)
Granulina boucheti Gofas, 1992
Granulina gofasi Smriglio & Mariottini, 1996
Granulina gubbiolii Smriglio & Mariottini, 1999
Granulina guttula La Perna, 1999
Granulina marginata (Bivona Ant., 1832)
Granulina melitensis Smriglio, Mariottini & Rufini, 1998
Granulina minusculina (Locard, 1897)
Granulina occulta (Monterosato, 1869)
Granulina pusaterii Giannuzzi-Savelli, Pusateri, Palmeri & Ebreo, 2003 *Granulina torosa* Gofas, 1992
Granulina vanhareni (van Aartsen, Menkhorst & Gittenberger, 1984)
Cystiscidae

Gibberula caelata (Monterosato, 1877)
Gibberula epigrus (Reeve, 1865)
Gibberula jansseni van Aartsen, Menkhorst & Gittenberger, 1984
Gibberula miliaria (Linné, 1758)
Gibberula oryza (Lamarck, 1822)
Gibberula philippii (Monterosato, 1878)
Gibberula recondita Monterosato, 1884
Gibberula secreta Monterosato, 1889
Gibberula simonae Smriglio, 2003
Gibberula turgidula (Locard & Caziot, 1900)
Mitridae
Mitra cornicula (Linné, 1758)
Mitra cornea Lamarck, 1811
Mitra zonata Marryat, 1818 (P)
Costellariidae
Vexillum ebenus (Lamarck, 1811)
Vexillum granum (Forbes, 1844)
Vexillum hypatiae (Pallary, 1912)
Vexillum savignyi (Payraudeau, 1826)
Vexillum tricolor (Gmelin, 1791)
Volutidae
Ampulla priamus (Gmelin, 1791)
Cymbium olla (Linné, 1758)
Buccinidae
Buccinum humphreysianum Bennet, 1824
Buccinum undatum Linné, 1758
Chauvetia affinis (Monterosato, 1889)
Chauvetia brunnea (Donovan, 1804)
Chauvetia candidissima (Philippi, 1836)
Chauvetia decorata Monterosato, 1889
Chauvetia giunchiorum Micali, 1999
Chauvetia lefebvrei (Maravigna, 1840)
Chauvetia lineolata (Tiberi, 1868)
Chauvetia mamillata (Risso, 1826)
Chauvetia procerula (Monterosato, 1889)
Chauvetia recondita (Brugnone, 1873)
Chauvetia retifera (Brugnone, 1880)
Chauvetia ventrosa Nordsieck, 1976
Colubraria reticulata (de Blainville, 1829)
Colus jeffreysianus (Fischer P., 1868)
Engina leucozona (Philippi, 1843)
Euthria cornea (Linné, 1758)
Kryptos koehleri (Locard, 1896)
Pisania striata (Gmelin, 1791)
Pollia dorbignyi (Payraudeau, 1826)
Pollia scabra Locard, 1892
Pollia scacchiana (Philippi, 1844)
Nassariidae
Nassarius circumcinctus (Adams A., 1852)
Nassarius coralligenus (Pallary, 1900)
Nassarius corniculum (Olivi, 1792)

Nassarius cuvierii (Payraudeau, 1826)
Nassarius denticulatus (Adams A., 1852)
Nassarius elatus (Gould, 1845)
Nassarius gibbosulus (Linné, 1758)
Nassarius granum (Lamarck, 1822)
Nassarius heynemanni (Maltzan, 1884)
Nassarius incrassatus (Ström, 1768)
Nassarius johni (Monterosato, 1889)
Nassarius lima (Dillwyn, 1817)
Nassarius louisi (Pallary, 1912)
Nassarius mutabilis (Linné, 1758)
Nassarius nitidus (Jeffreys, 1867)
Nassarius ovoideus (Locard, 1886)
Nassarius pfeifferi (Philippi, 1844)
Nassarius arcularia plicatus (Röding, 1798)
Nassarius pygmaeus (Lamarck, 1822)
Nassarius recidivus (Martens, 1876)
Nassarius reticulatus (Linné, 1758)
Nassarius robustus (Monterosato, 1890)
Nassarius tinei (Maravigna, 1840)
Nassarius tingitanus (Pallary, 1901)
Nassarius turulosus (Risso, 1826)
Nassarius unifasciatus (Kiener, 1834)
Nassarius vaucheri (Pallary, 1906)
Cyclope neritea (Linné, 1758)
Cyclope pellucida Risso, 1826
Demoulia obtusata (Link. 1807)
Columbellidae
Columbella rustica (Linné, 1758)
Amphissa acutecostata (Philippi, 1844)
Anachis aliceae (Pallary, 1900)
Mitrella broderipi (Sowerby G.B. I, 1844)
Mitrella bruggeni van Aartsen, Menkhorst & Gittenberger, 1984
Mitrella gervillii (Payraudeau, 1826)
Mitrella minor (Scacchi, 1836)
Mitrella pallaryi (Dautzenberg, 1927)
Mitrella psilla (Duclos, 1846) (E)
Mitrella scripta (Linné, 1758)
Zafra savignyi (Moazzo, 1939) (E)
Zafra selasphora (Melvill & Standen, 1901) (E)
Fasciolariidae
Fasciolaria lignaria (Linné, 1758)
Fusinus alternatus Buzzurro & Russo, 2007
Fusinus buzzurroi Prkić & Russo, 2008
Fusinus cretellai Buzzurro & Russo, 2008
Fusinus dimassai Buzzurro & Russo, 2007
Fusinus dimitrii Buzzurro & Ovalis, 2007
Fusinus eviae Buzzurro & Russo, 2007
Fusinus labronicus (Monterosato, 1884)
Fusinus margaritae Buzzurro & Russo, 2007
Fusinus parvulus (Monterosato, 1884)

Fusinus profetai Nofroni, 1982
Fusinus pulchellus (Philippi, 1844)
Fusinus rolani Buzzurro & Ovalis, 2005
Fusinus rostratus Olivi, 1792)
Fusinus rusticulus (Monterosato, 1880)
Fusinus syracusanus (Linné, 1758)
Fusinus verrucosus (Gmelin, 1791) (E)
Cancellariidae
Axelella minima (Reeve, 1856)
Bivetiella cancellata (Linné, 1767)
Bivetiella similis (Sowerby G.B. I, 1833)
Tribia coronata (Scacchi, 1835)
Conidae
Conus fumigatus Hwass, 1792 (E)
Conus mediterraneus Hwass, 1792
Conus vayssierei Pallary, 1903
Aphanitoma mariottinii Smriglio, Rufini & Martín Pérez, 2001
Bela brachystoma (Philippi, 1844)
Bela clarae Peñas & Rolán, 2008
Bela costulata (Risso, 1826)
Bela cycladensis (Reeve, 1845)
Bela decussata (Locard, 1892)
Bela fuscata (Deshayes 1835)
Bela laevigata Philippi 1836)
Bela menkhorsti van Aartsen, 1988
Bela nebula (Montagu, 1803)
Bela oceanica (Locard, 1892)
Bela powisiana (Dautzenberg, 1887)
Bela zonata (Locard, 1892)
Benthomangelia macra (Watson, 1881)
Brachycythara atlantidea (Knudsen, 1952)
Brachycythara beatriceae Mariottini, 2007
Clathromangelia granum (Philippi, 1844)
Clathromangelia loiselieri Oberling, 1970
Clathromangelia strigillata Pallary, 1904
Comarmondia gracilis (Montagu, 1803)
Conopleura aliena Smriglio, Mariottini & Calascibetta, 1999
Drilliola emendata (Monterosato, 1872)
Fehria taprurensis (Pallary, 1904)
Fehria zenetouae van Aartsen, 1988
Gymnobela abyssorum (Locard, 1897)
Gymnobela subaraneosa (Dautzenberg & Fischer H.,1896)
Lusitanops cingulatus Bouchet & Warén, 1980
Lusitanops hyaloides (Dautzenberg, 1925)
Mangelia attenuata (Montagu, 1803)
Mangelia barashi (van Aartsen & Fehr-de Wal, 1978)
Mangelia bertrandi (Payraudeau, 1826)
Mangelia brusinae van Aartsen & Fehr-de Wal, 1978
Mangelia caerulans (Philippi, 1844)
Mangelia callosa (Nordsieck, 1977)
Mangelia coarctata (Forbes, 1840)

Mangelia difficilis (Locard & casito, 1900)
Mangelia fieldeni (van Aartsen & Fehr-de Wal, 1978
Mangelia indistincta (Monterosato, 1875)
Mangelia jerbaensis Della Bella & Spada, 1997
Mangelia melitensis Cachia & Mifsud, 2008
Mangelia multilineolata (Deshayes, 1835)
Mangelia nuperrima (Tiberi, 1855)
Mangelia paciniana (Calcara, 1839)
Mangelia pallaryi (Nordsieck, 1977)
Mangelia payraudeaui (Deshayes, 1835)
Mangelia pontica Milaschewitsch, 1908
Mangelia sandrii (Brusina, 1865)
Mangelia scabrida Monterosato, 1890
Mangelia secreta (van Aartsen & Fehr-de Wal, 1978)
Mangelia serga (Dall, 1881)
Mangelia sicula Reeve, 1846
Mangelia stossiciana Brusina, 1869
Mangelia taeniata (Deshayes, 1835)
Mangelia tenuicostata (Brugnone, 1868)
Mangelia unifasciata (Deshayes, 1835)
Mangelia vauquelini (Payraudeau, 1826)
Microdrillia loprestiana (Calcara, 1841)
Mitromorpha crenipicta (Dautzenberg, 1889)
Mitromorpha karpathoensis (Nordsieck, 1969)
Mitromorpha mediterranea Mifsud, 2001
Mitromorpha melitensis (Mifsud, 1993)
Mitromorpha olivoidea (Cantraine, 1835)
Mitromorpha wilhelminae (van Aartsen, Menkhorst & Gittenberger, 1984)
Pleurotomella coelorhaphe (Dautzenberg & Fischer H., 1896)
Pleurotomella demosia (Dautzenberg & Fischer H., 1896)
Pleurotomella eurybrocha (Dautzenberg & Fischer H., 1896)
Pleurotomella gibbera Bouchet & Warén, 1980
Pleurotomella packardi Verrill, 1872
Raphitoma aequalis (Jeffreys, 1867)
Raphitoma alternans (Monterosato, 1884)
Raphitoma arnoldi (Pallary, 1906)
Raphitoma atropurpurea (Locard & Casito, 1900)
Raphitoma bofilliana (Sulliotti, 1889)
Raphitoma bracteata (Pallary, 1904)
Raphitoma concinna (Scacchi, 1836)
Raphitoma corbis (Potiez & Michaud, 1838)
Raphitoma cordieri (Payraudeau, 1826)
Raphitoma cylindracea (Locard & Casito, 1900)
Raphitoma densa (Monterosato, 1884)
Raphitoma divae Carrozza, 1984
Raphitoma echinata (Brocchi, 1814)
Raphitoma erronea (Monterosato, 1884)
Raphitoma histrix Bellardi, 1847
Raphitoma horrida (Monterosato, 1884)
Raphitoma leufroyi (Michaud, 1828)
Raphitoma linearis (Montagu, 1803)

Raphitoma mirabilis (Pallary, 1904)
Raphitoma nivea (Marshall in Sykes, 1906)
Raphitoma papillosa (Pallary, 1904)
Raphitoma philberti (Michaud, 1829)
Raphitoma pruinosa (Pallary, 1906)
Raphitoma pseudohystrix (Sykes, 1906)
Raphitoma pupoides (Monterosato, 1884)
Raphitoma purpurea (Montagu, 1803)
Raphitoma villaria Pusateri & Giannuzzi-Savelli, 2008
Taranis laevisculpta Monterosato, 1880
Taranis moerchi (Malm, 1861)
Teretia teres (Reeve, 1844)
Typhlomangelia nivalis (Lovén, 1846)
Drilliidae
Crassopleura maravignae (Bivona Ant., 1838)
Spirotropis modiolus (de Cristofori & Jan, 1832)
Turridae
Fusiturris similis (Bivona Ant., 1838
Fusiturris undatiruga (Bivona Ant., 1838)
Haedropleura flexicosta Monterosato, 1884
Haedropleura septangularis (Montagu, 1803)
Lienardia mighelsi Iredale & Tomlin, 1917 (E)
Micropleurotoma spirotropoides (Thiele, 1925)
HETEROSTROPHA
Architectonicidae
Basisulcata lepida (Bayer, 1942)
Discotectonica discus (Philippi, 1844)
Heliacus contextus (Seguenza L., 1903)
Heliacus fallaciosus (Tiberi, 1872)
Heliacus jeffreysianus (Tiberi, 1867)
Philippia hybrida (Linné, 1758)
Pseudomalaxis zanclaeus (Philippi, 1844)
Pseudotorinia architae (Costa O.G., 1841)
Solatisonax alleryi (Seguenza G., 1876)
Solatisonax bannocki (Melone & Taviani, 1980)
Solatisonax bannocki (Melone & Taviani, 1980)
Spirolaxis centrifugus (Monterosato, 1890)
Spirolaxis clenchi Jaume & Borro, 1916
Spirolaxis lamelliferus (Rehder, 1935)
Mathildidae
Mathilda bieleri Smriglio & Mariottini, 2007
Mathilda cochlaeformis Brugnone, 1873
Mathilda coronata Monterosato, 1875
Mathilda gemmulata Semper, 1865
Mathilda letei Prkić & Smriglio, 2007
Mathilda quadricarinata (Brocchi, 1814)
Mathilda retusa Brugnone, 1873
Tuba jeffreysi (Dall, 1889)
Rissoellidae
Rissoella diaphana (Alder, 1848)
Rissoella globularis (Forbes & Hanley, 1853)

Rissoella inflata (Monterosato, 1880)
Rissoella opalina (Jeffreys, 1848)
Omalogyridae
Omalogyra atomus (Philippi, 1841)
Omalogyra simplex (Costa O.G., 1861)
Ammonicera fischeriana (Monterosato, 1869)
Ammonicera rota (Thompson, 1850)
Retrotortina fuscata Chaster, 1896
Xylodisculidae
Xylodiscula boucheti Warén, 1992
Xylodiscula lens Warén, 1992
Xylodiscula wareni Bogi & Bartolini, 2008
Cornirostridae
Tomura depressa (Granata-Grillo, 1877)
Hyalogyrinidae
Hyalogyra zibrowii Warén, 1997
Hyalogyrina amphorae Warén, Carrozza & Rocchini, 1997
Xenoskenea pellucida (Monterosato, 1874)
Cimidae
Cima cuticulata Warén, 1993
Cima cylindrica (Jeffreys, 1856)
Cima melitensis Mifsud, 1998
Cima minima (Jeffreys, 1858)
Graphis albida (Kanmacher, 1798)
Graphis barashi van Aartsen, 2002
Graphis gracilis (Monterosato, 1874)
Graphis striata (Jeffreys, 1884)
Murchisonella columna (Hedley, 1907) (E)
Orbitestellidae
Orbitestella dariae (Liuzzi & Zucchi Stolfa, 1979)
Lurifax vitreus Warén & Bouchet, 2001
Tjaernoiidae
Tjaernoeia exquisita (Jeffreys, 1883)
Tjaernoeia unisulcata (Chaster, 1897)
Pyramidellidae
Bacteridium carinatum (de Folin, 1870)
Careliopsis modesta (de Folin, 1870)
Chrysallida angulosa (Monterosato, 1889)
Chrysallida brattstroemi Warén, 1991
Chrysallida brevicula (Jeffreys, 1883)
Chrysallida clathrata (Jeffreys, 1848)
Chrysallida dantarti Peñas & Rolán, 2008
Chrysallida decussata (Montagu, 1803)
Chrysallida dollfusi (Kobelt, 1903)
Chrysallida elegans (de Folin, 1870)
Chrysallida emaciata (Brusina, 1866)
Chrysallida excavata (Philippi, 1836)
Chrysallida eximia (Jeffreys, 1849)
Chrysallida fenestrata (Jeffreys, 1848)
Chrysallida fischeri (Hornung & Mermod, 1925) (E)
Chrysallida flexuosa (Monterosato, 1874)

Chrysallida ghisottii (van Aartsen, 1984)
Chrysallida incerta (Milaschewitsch, 1916)
Chrysallida indistincta (Montagu, 1808)
Chrysallida intermixta (Monterosato, 1884)
Chrysallida interstincta (Adams J., 1797)
Chrysallida jeffreysiana (Monterosato, 1884)
Chrysallida juliae (de Folin, 1872)
Chrysallida limitum (Brusina, 1876)
Chrysallida maiae (Hornung & Mermod, 1924) (E)
Chrysallida micronana Öztürk & van Aartsen, 2006 (E)
Chrysallida monozona (Brusina, 1869)
Chrysallida monterosatii (Clessin, 1900)
Chrysallida moolenbeeki Amati, 1987
Chrysallida multicostata (Jeffreys, 1884)
Chrysallida nivosa (Montagu, 1803)
Chrysallida palazzii Micali, 1984
Chrysallida pellucida (Dillwyn, 1817)
Chrysallida penchynati (Bucquoy, Dautzenberg & Dollfus, 1883)
Chrysallida pirinthella (Melvill, 1910) (E)
Chrysallida rinaldii Micali & Nofroni, 2004
Chrysallida sigmoidea (Monterosato, 1880)
Chrysallida stefanisi (Jeffreys, 1869)
Chrysallida suturalis (Philippi, 1844)
Chrysallida terebellum (Philippi, 1844)
Cingulina isseli (Tryon, 1886) (E)
Eulimella acicula (Philippi, 1836)
Eulimella ataktos Warén, 1991
Eulimella bogii van Aartsen, 1995
Eulimella carminae Peñas & Micali, 1999
Eulimella cerullii (Cossmann, 1916)
Eulimella cossignaniorum van Aartsen, 1995
Eulimella neoattenuata Gaglini, 1992
Eulimella oliveri Peñas & Rolán, 2006
Eulimella scillae (Scacchi, 1835)
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Euparthenia bulinea (Lowe, 1841)
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Liostomia hansgei Warén, 1991
Liostomia mamoi Mifsud, 1993
Monotigma lauta (Adams A., 1853) (E)
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Kejdonia cachiai (Mifsud, 1998)
Odostomella bicincta (Tiberi, 1868)
Odostomella doliolum (Philippi, 1844)

Ondina anceps Gaglini, 1992
Ondina crystallina Locard, 1892
Ondina diaphana (Jeffreys, 1848)
Ondina dilucida (Monterosato, 1884)
Ondina divisa (Adams J., 1797)
Ondina modiola (Monterosato, 1884)
Ondina obliqua (Alder, 1844)
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Ondina vitrea (Brusina, 1866)
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Odostomia aartseni Nofroni, 1988
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Odostomia bulimulus Monterosato, 1875
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Odostomia conoidea (Brocchi, 1814)
Odostomia conspicua Alder, 1850
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Odostomia eulimoides Hanley, 1844
Odostomia fusulus Monterosato, 1878
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Odostomia turrita Hanley, 1844
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Oscilla jocosa Melvill, 1904 (E)
Styloptygma beatrix Melvill, 1911 (E)
Syrnola cinctella Adams A., 1860 (E)
Syrnola fasciata Jickeli, 1882 (E)
Syrnola lendix (Adams A., 1863) (E)
Tiberia minuscula (Monterosato, 1880)
Turbonilla abrardi Fischer-Piette & Nicles, 1946
Turbonilla acutissima Monterosato, 1884
Turbonilla acuta (Donovan, 1804)
Turbonilla amoena (Monterosato, 1878)
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Turbonilla edgarii (Melvill, 1896) (E)

Turbonilla fulgidula (Jeffreys, 1884)
Turbonilla gradata Bucquoy, Dautzenberg & Dollfus, 1883
Turbonilla hamata Nordsieck, 1972
Turbonilla internodula (Wood S., 1848)
Turbonilla jeffreysii (Thompson, 1850)
Turbonilla lactea (Linné, 1758)
Turbonilla magnifica Seguenza G., 1879
Turbonilla micans (Monterosato, 1875)
Turbonilla mirifica Pallary , 1904
Turbonilla multilirata (Monterosato, 1875)
Turbonilla obliquata (Philippi, 1844)
Turbonilla paucistriata (Jeffreys, 1884)
Turbonilla postacuticostata Sacco, 1892
Turbonilla pumila Seguenza G., 1876
Turbonilla pusilla (Philippi, 1844)
Turbonilla rectogallica Sacco, 1892
Turbonilla rosewateri Corgan & van Aartsen, 1993
Turbonilla rufa (Philippi, 1836)
Turbonilla sinuosa (Jeffreys, 1884)
Turbonilla striatula (Linné, 1758)
Turbonilla subulina Monterosato, 1889
Turbonilla syrtensis van Aartsen, 1981
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Amathina tricarinata (Linné, 1767) (E)
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Leucotina eva Thiele, 1925 (E)
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Ringiculidae
Ringicula auriculata (Ménard, 1811)
Ringicula ciommeii Mariottini, Smriglio & Oliverio, 2000
Ringicula conformis Monterosato, 1877
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Callostracon tyrrhenicum Smriglio & Mariottini, 1996
Crenilabium exile (Forbes in Jeffreys, 1870)
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Diaphana lactea (Jeffreys, 1877)
Diaphana minuta Brown, 1827
Colobocephalus striatulus (Monterosato, 1874)

Colpodaspis pusilla M. Sars, 1870
Rhinodiaphana ventricosa (Jeffreys, 1865)
Retusidae
Retusa candidula (Locard, 1892)
Retusa leptoeneilema (Brusina, 1865)
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Retusa minutissima (Monterosato, 1878)
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Retusa pellucida G. O. Sars, 1878
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Cylichnina crebrisculpta (Monterosato, 1884)
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Cylichnina girardi (Audouin, 1826) (E)
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Cylichna crossei (Bucquoy, Dautzenberg & Dolfus, 1886)
Cylichna parvula Jeffreys, 1883
Cylichna propecylindracea (De Gregorio, 1890)
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Scaphandridae
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Scaphander lignarius (Linné, 1758)
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Philine denticulata (Adams J., 1800)
Philine intricata Monterosato, 1884
Philine iris Tringali, 2001
Philine lima (Brown, 1827)
Philine monterosati Monterosato, 1874
Philine punctata (J. Adams, 1800)
Philine quadrata Wood, 1839
Philine scabra (O. F. Müller, 1776)
Philine striatula Monterosato, 1874
Johania retifera (Forbes 1844)
Laona finmarchica (Sars M., 1858)
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Philinoglossidae
Philinoglossa helgolandica Hertling, 1932
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Aglaja tricolorata Renier, 1807
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Chelidonura fulvipunctata Baba, 1938 (E)
Chelidonura orchidaea Perrone, 1990
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Haminoea orteai Talavera, Murillo and Templado, 1987
Haminoea templadoi García, Pérez-Hurtado & García-Gómez, 1991
Haminoea exigua Schaefer, 1992
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Runcina brenkoae Thompson T., 1980
Runcina capreensis Mazarelli, 1892
Runcina coronata (Quatrefages, 1844)
Runcina elongata Schmekel & Cappellato, 2002
Runcina falciforme Ortea, Rodríguez and Valdés, 1990
Runcina ferruginea Kress, 1977
Runcina hansbechi Schmekel & Cappellato, 2001
Runcina hornae Schmekel & Cappellato, 2002
Runcina kressae Schmekel & Cappellato, 2001
Runcina langei Schmekel & Cappellato, 2001
Runcina macrodenticulata García, García-Gómez & López, 1990
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Aplysia punctata Cuvier, 1803
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Elysia flava Verrill, 1901
Elysia gordanae Thompson & Jaklin, 1988
Elysia grandifolia Kelaart, 1858 (E)
Elysia hetta Perrone, 1990
Elysia margaritae Fez, 1974
Elysia timida (Risso, 1818)
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Elysia translucens Pruvot-Fol, 1957
Elysia viridis (Montagu, 1804)
Thuridilla hopei (Vérany, 1853)
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Bosellia mimetica Trinchese, 1891
Polybranchiidae
Polybranchia borgnini (Trinchese, 1896)

Caliphylla mediterranea A. Costa, 1867
Cyerce cristallina (Trinchese, 1881)
Cyerce graeca Thompson T., 1988
Hermaeidae
Aplysiopsis elegans (Deshayes, 1854)
Hermaea bifida (Montagu, 1815)
Hermaea cruciata A. A. Gould, 1870
Hermaea paucicirra Pruvot-Fol, 1953
Hermaeopsis variopicta A. Costa, 1869
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Limapontia capitata Müller O. F., 1774
Limapontia senestra (Quatrefages, 1844)
Alderella comosa (Costa A., 1867)
Alderia modesta (Lovén, 1844)
Calliopaea bellula D'Orbigny, 1837
Calliopaea souleyeti Vérany 1846
Costasiella virescens Pruvot-Fol, 1951
Ercolania coerulea Trinchese, 1892
Ercolania funerea (A. Costa, 1867)
Ercolania lozanoi Ortea, 1981
Ercolania viridis (A. Costa, 1866)
Placida cremoniana Trinchese, 1892
Placida dendritica (Alder & Hancock, 1843)
Placida saronica (Thompson T., 1988)
Placida tardyi (Trinchese, 1873)
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Stiliger llerae Ortea, 1981
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Onchidoris depressa (Alder & Hancock, 1842)
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Onchidoris sparsa (Alder and Hancock, 1846)

Acanthodoris pilosa (Abildgaard in Müller, 1789)
Adalaria proxima (Alder & Hancock, 1854)
Diaphorodoris luteocincta (Sars, 1870)
Diaphorodoris papillata Portmann & Sandmeier, 1960
Goniodorididae
Goniodoris barroisi Vayssière, 1901
Goniodoris castanea Alder & Hancock, 1845
Goniodoris nodosa (Montagu, 1808)
Ancula gibbosa (Risso, 1818)
Okenia cupella (Vogel & Schultz, 1970)
Okenia elegans (Leuckart, 1828)
Okenia hispanica Valdés & Ortea, 1995
Okenia mediterranea (Ihering, 1886)
Trapania fusca (Lafont, 1874)
Trapania hispalensis Cervera & García-Gómez, 1989
Trapania lineata Haefelfinger, 1960
Trapania maculata Haefelfinger, 1960
Trapania pallida Kress, 1968
Trapania tartanella (Ihering, 1885)
Polyceridae
Polycera aurantiomarginata García-Gómez & Bobo, 1984
Polycera dubia Sars, 1829
Polycera elegans Bergh, 1894
Polycera faeroensis Lemche, 1929
Polycera hedgpethi Marcus Er., 1964
Polycera maculata Pruvot-Fol, 1951
Polycera quadrilineata (O.F. Müller, 1776)
Crimora papillata Alder & Hancock, 1862
Kaloplocamus ramosus (Cantraine, 1835)
Limacia clavigera (O.F. Müller, 1776)
Plocamopherus ocellatus Rüppell & Leuckart, 1828 (E)
Polycerella emertoni Verrill, 1880 (E)
Roboastra europaea García-Gómez, 1985
Tambja ceutae García-Gómez & Ortea, 1988
Tambja marbellensis Schick & Cervera, 1998
Thecacera pennigera (Montagu, 1815)
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Aegires leuckarti Vérany, 1853
Aegires palensis Ortea, Luque & Templado, 1990
Aegires punctilucens (D'Orbigny, 1837)
Aegires sublaevis Odhner, 1931
Chromodorididae
Chromodoris annulata Eliot, 1904 (E)
Chromodoris britoi Ortea & Pérez, 1983
Chromodoris elegantula (Philippi, 1844)
Chromodoris krohni (Vérany, 1846)
Chromodoris luteopunctata (Gantès, 1962)
Chromodoris luteorosea (Rapp, 1827)
Chromodoris purpurea (Laurillard, 1831)
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Cadlina excavata (Pruvot-Fol 1951)

Cadlina laevis (Linnaeus, 1767)
Cadlina pellucida (Risso, 1826)
Hypselodoris bilineata (Pruvot-Fol, 1953)
Hypselodoris cantabrica Bouchet & Ortea, 1980
Hypselodoris fontandraui (Pruvot-Fol, 1951)
Hypselodoris infucata (Rüppell & Leuckart, 1830) (E)
Hypselodoris malacitana Luque, 1986
Hypselodoris midatlantica Gosliner, 1990
Hypselodoris orsinii (Vérany, 1846)
Hypselodoris picta (Schultz, 1836)
Hypselodoris villafranca (Risso, 1818)
Dorididae
Doris (?) alboranica Bouchet, 1977
Doris bertheloti (d'Orbigny, 1839)
Doris bicolor (Bergh, 1884)
Doris marmorata Risso, 1818
Doris ocelligera (Bergh, 1881)
Doris pseudoargus Rapp, 1827
Doris pseudoverrucosa (Ihering, 1886)
Doris sticta (Iredale and O'Donoghue, 1923)
Doris verrucosa Linnaeus, 1758
Aldisa banyulensis Pruvot-Fol, 1951
Aldisa binotata Pruvot-Fol, 1953
Anisodoris marmorata (Bergh, 1881)
Atagema gibba Pruvot-Fol, 1951
Atagema rugosa Pruvot-Fol, 1951
Sclerodoris tuberculata Eliot, 1903
Discodorididae
Discodoris (?) *rosi* Ortea, 1979
Discodoris confusa Ballesteros, Llera & Ortea, 1985
Discodoris erubescens Bergh, 1884
Discodoris lilacina (Gould, 1852) (E)
Discodoris maculosa Bergh, 1884
Discodoris maculosa Bergh, 1884
Discodoris patriziae Perrone, 1991
Discodoris porri (Vérany, 1846)
Discodoris rubens Vayssière, 1919
Discodoris sordii (Perrone, 1990)
Discodoris stellifera (Vayssière, 1904)
Baptodoris cinnabarina Bergh,1884
Baptodoris perezi Llera & Ortea, 1982
Carminodoris boucheti Ortea, 1979
Geitodoris baccalladoi Ortea, 1990
Geitodoris bonosi Ortea and Ballesteros, 1981
Geitodoris joubini (Vayssière, 1919)
Geitodoris planata (Alder & Hancock, 1846)
Geitodoris portmanni (Schmekel, 1972)
Geitodoris pusae (Marcus, 1955)
Jorunna luisae Marcus Ev., 1976
Jorunna onubensis Cervera, García-Gómez & García, 1986
Jorunna tomentosa (Cuvier, 1804)

Paradoris indecora Bergh, 1881
Peltodoris atromaculata Bergh, 1880
Platydoris argo (Linnaeus, 1767)
Rostanga anthelia Perrone, 1991
Rostanga rubra (Risso, 1818)
Taringa armata Swennen, 1961
Taringa faba Ballesteros, Llera & Ortea, 1985
Taringa oleica Ortea, Perez & Llera, 1982
Taringa pinoi Perrone, 1985
Thordisa aurea Pruvot-Fol, 1951
Thordisa filix Pruvot-Fol, 1951
Thordisa pallida Bergh, 1884
Phyllidiidae
Phyllidia flava (Aradas, 1847)
Phyllidiopsis bayi (Bouchet, 1983)
Dendrodorididae
Dendrodoris fumata (Rüppell & Leuckart, 1830) (E)
Dendrodoris grandiflora (Rapp, 1827)
Dendrodoris herytra Valdés & Ortea, 1996
Dendrodoris limbata (Cuvier, 1804)
Doriopsilla areolata Bergh, 1880
Doriopsilla pelseneeri Oliveira, 1895
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Tritonia hombergi Cuvier, 1803
Tritonia manicata Deshayes, 1853
Tritonia nilsodhneri Marcus, 1983
Tritonia plebeia Johnston, 1828
Tritonia striata (Haefelfinger, 1963)
Marionia blainvillea (Risso, 1818)
Tritoniopsis cincta (Pruvot-Fol, 1937)
Scyllaeidae
Scyllaea pelagica Linné, 1758 (Pl)
Hancockiidae
Hancockia uncinata (Hesse, 1872)
Lomanotidae
Lomanotus barlettai García-Gómez, López González & García, 1990
Lomanotus genei Vérany, 1846
Lomanotus marmoratus (Alder and Hancock, 1845)
Tethyidae
Tethys fimbria Linnaeus, 1767
Melibe viridis (Kelaart, 1858) (E)
Phylliroidae
Phylliroe atlantica Bergh, 1871 (Pl)
Phylliroe bucephalum Lamarck, 1822 (Pl)
Cephalopyge trematoides (Chun, 1889) (Pl)
Dotidae
Doto acuta Schmekel & Kress, 1977
Doto acuta Schmekel & Kress, 1977
Doto cervicenigra Ortea & Bouchet, 1989
Doto cinerea Trinchese, 1881
Doto coronata (Gmelin, 1791)

Doto cuspidata Alder & Hancock, 1862
Doto dunnei Lemche, 1976
Doto floridicola Simroth, 1888
Doto fragaria Ortea & Bouchet, 1989
Doto furva García-Gómez & Ortea, 1983
Doto koenneckeri Lemche, 1976
Doto leopardina Vicente 1967
Doto paulinae Trinchese, 1881
Doto pontica Swennen 1961
Doto rosea Trinchese 1881
Doto rosea Trinchese, 1881
Doto ungis Ortea & Rodríguez, 1989
Arminidae
Armina maculata Rafinesque, 1814
Armina tigrina Rafinesque, 1814
Armina neapolitana (Delle Chiaje, 1824)
Armina tricuspidata Thompson, Cattaneo & Wong, 1990
Linguella elfortiana de Blainville, 1823
Linguella quadrilateralis (Bergh, 1860)
Madrellidae
Madrella aurantiaca Vayssiére, 1902
Eliotia souleyeti Vayssière 1909
Proctonotidae
Proctonotus mucroniferus (Alder & Hancock, 1844)
Janolus cristatus (Delle Chiaje, 1841)
Janolus hyalinus (Alder and Hancock, 1854)
Heroidae
Hero blanchardi Vayssière, 1888
Flabellinidae
Flabellina affinis (Gmelin, 1791)
Flabellina babai Schmekel, 1972
Flabellina baetica García-Gómez, 1984
Flabellina ischitana Hirano & Thompson, 1990
Flabellina lineata (Lovén, 1848)
Flabellina pedata (Montagu, 1815)
Flabellina pellucida (Alder & Hancock, 1843)
Calmella cavolini (Vérany, 1846)
Piseinotecidae
Piseinotecus gabinierei (Vicente, 1975)
Piseinotecus sphaeriferus (Schmekel, 1965)
Facelinidae
Facelina annulicornis (Chamisso & Eisenhart, 1821)
Facelina bostoniensis (Couthouy, 1838)
Facelina coronata (Forbes and Goodsir, 1839)
Facelina dubia Pruvot-Fol, 1948)
Facelina fusca Schmekel, 1966
Facelina quatrefagesi Vayssière, 1888
Facelina rubrovittata (A. Costa, 1866)
Facelina rutila Pruvot-Fol, 1951
Facelina schwobi (Labbé, 1923)
Flabellina rubrolineata (O'Donoghue, 1929) (E)

Antonietta luteorufa Schmekel, 1966
Babakina anadoni (Ortea, 1979)
Caloria elegans (Alder & Hancock, 1845)
Caloria indica (Bergh, 1896) (E)
Cratena peregrina (Gmelin, 1791)
Dicata odhneri Schmekel, 1967
Dondice banyulensis Portman & Sandmeier, 1960
Facelinopsis marioni (Vayssière, 1888)
Favorinus branchialis (Rathke, 1806)
Favorinus vitreus Ortea, 1982
Pruvotfolia pselliotes (Labbé, 1923)
Rolandia hispanica Pruvot-Fol, 1951
Aeolidiidae
Aeolidia papillosa (Linné, 1761)
Aeolidiella alderi (Cocks, 1852)
Aeolidiella indica Bergh, 1888 exótica
Aeolidiella rubra (Cantraine, 1835)
Aeolidiella sanguinea (Normann, 1877)
Berghia caerulescens (Laurillard, 1830)
Berghia columbina (García-Gómez & Thompson, 1990)
Berghia verrucicornis (Costa, 1867)
Limenandra nodosa Haefelfinger & Stamm, 1958
Phidiana lynceus Bergh, 1867 (E)
Spurilla neapolitana (Delle Chiaje, 1823)
Spurilla vayssierei Garcia J.C. & Cervera, 1985
Eubranchidae
Eubranchus cingulatus (Alder & Hancock, 1847)
Eubranchus doriae (Trinchese, 1874)
Eubranchus exiguus (Alder & Hancock, 1848)
Eubranchus farrani (Alder & Hancock, 1844)
Eubranchus pallidus (Alder & Hancock, 1842)
Eubranchus prietoi Llera & Ortea, 1981
Eubranchus tricolor Forbes, 1838
Eubranchus vittatus (Alder & Hancock, 1842)
Calmidae
Calma glaucoides (Alder and Hancock, 1854)
Calma gobioophaga Calado & Urgorri, 2002
Glaucidae
Glaucus atlanticus Forster, 1777 (Pl)
Tergipedidae
Tergipes tergipes (Forskal, 1775)
Catriona gymnota (Couthouy, 1838)
Catriona maua (Marcus & Marcus, 1960)
Cuthona albopunctata (Schmekel, 1968)
Cuthona amoena (Alder & Hancock, 1845)
Cuthona caerulea (Montagu, 1804)
Cuthona foliata (Forbes & Goodsir, 1838)
Cuthona genovae (O'Donoghue, 1929)
Cuthona granosa (Schmekel, 1966)
Cuthona ilonae (Schmekel, 1968)
Cuthona leopardina (Vayssière, 1888)

Cuthona miniostriata (Schmekel, 1968)
Cuthona ocellata (Schmekel, 1966)
Cuthona pallida (Eliot, 1906)
Cuthona perca (Marcus Er., 1958) (E)
Cuthona thompsoni García, López González & García-Gómez, 1991
Tenellia adspersa (Nordmann, 1845)
Fionidae
Fiona pinnata (Eschscholtz, 1831) (Pl)
Embletoniidae
Embletonia pulchra Alder and Hancock, 1851

PULMONATA
Siphonariidae
Siphonaria crenata de Blainville, 1827 (E)
Siphonaria pectinata (Linné, 1758)
Williamia gussonii (Costa O.G., 1829)
Trimusculidae
Trimusculus mammilaris (Linné, 1758)
Ellobiidae
Auriculinella bidentata (Montagu, 1808)
Myosotella denticulata (Montagu, 1803)
Myosotella myosotis (Draparnaud, 1801)
Ovatella firminii (Payraudeau, 1826)
Pseudomelampus exiguus (Lowe, 1832)

BIVALVIA

PROTOBRANCHIA
SOLEMYOIDA
Solemyidae
Solemya togata (Poli, 1795)
NUCULOIDA
Nuculidae
Nucula decipiens Philippi, 1844
Nucula hanleyi Winckworth, 1931
Nucula nitidiosa Winckworth, 1930
Nucula nucleus (Linné, 1758)
Nucula recondita Gofas & Salas, 1996
Nucula sulcata Bronn, 1831
Nucula tumidula Malm, 1860
Ennucula aegeensis (Forbes, 1844)
Ennucula corbuloides Seguenza G., 1877
Ennucula tenuis (Montagu, 1808)
Nuculanidae
Nuculana illirica Carrozza, 1987
Nuculana minuta (Müller O.F., 1776)
Ledella marisnostri La Perna, 2004
Ledella messanensis (Jeffreys, 1870
Saccella commutata (Philippi, 1844)
Malletidae
Katadesmia cuneata (Jeffreys, 1876)

Pseudomalletia obtusa Sars G.O, 1872
Neilonellidae
Neilonella latior (Jeffreys, 1876)
Yoldiidae
Yoldia minima Seguenza G., 1877
Microgloma guilonardi (Hoeksema, 1993)
Microgloma pusilla (Jeffreys, 1879)
Microgloma tumidula (Monterosato, 1880)
Yoldiella lucida (Lovén, 1846)
Yoldiella nana (Sars M., 1865)
Yoldiella philippiana (Nyst, 1845)
Yoldiella ovulum La Perna, 2004
Yoldiella triolatae (Brugnone, 1876)
Yoldiella wareni La Perna, 2004
Siliculidae
Silicula fragilis Jeffreys 1879

PTEROMORPHIA
ARCOIDA
Arcidae
Arca noae Linné, 1758
Arca tetragona Poli, 1795
Anadara corbuloides (Monterosato, 1878)
Anadara demiri (Piani, 1981) (E)
Anadara inaequivalvis (Bruguière, 1789) (E)
Anadara natalensis (Krauss, 1848) (E)
Anadara polii (Mayer, 1868)
Asperarca magdalenae La Perna, 1998
Asperarca nodulosa (Müller O.F., 1776)
Asperarca secreta La Perna, 1998
Barbatia barbata (Linné, 1758)
Barbatia clathrata (Defrance, 1816)
*Barbatia plicata (*Dillwyn, 1817) (E)
Bathyarca glacialis (Gray J.E., 1824)
Bathyarca pectunculoides (Scacchi, 1834)
Bathyarca philippiana (Nyst, 1848)
Noetiidae
Striarca lactea (Linné, 1758)
Limopsidae
Limopsis angusta (Jeffreys, 1879)
Limopsis aurita (Brocchi, 1814)
Limopsis friedbergi Glibert & van de Poel, 1965
Limopsis minuta (Philippi, 1836)
Limopsis multistriata (Forskål, 1775) (E)
Limopsis tenuis Seguenza G., 1876
Glycymeridae
Glycymeris arabica (Adams H., 1870) (E)
Glycymeris bimaculata (Poli, 1795)
Glycymeris glycymeris (Linné, 1758)
Glycymeris violascens (Lamarck, 1819)
MYTILOIDA

Mytilidae
Mytilus galloprovincialis Lamarck, 1819
Amygdalum agglutinans (Cantraine, 1835)
Amygdalum politum (Verrill & Smith, 1880)
Brachidontes pharaonis (Fischer P., 1870) (E)
Crenella arenaria Monterosato, 1875
Crenella pellucida (Jeffreys, 1850)
Dacrydium hyalinum Monterosato, 1875
Gregariella petagnae (Scacchi, 1832)
Gregariella semigranata (Reeve, 1858)
Idas ghisottii Warén & Carrozza, 1990
Idas modiolaeformis (Sturany, 1896)
Idas simpsoni (Marshall, 1900)
Lithophaga lithophaga (Linné, 1758) (P)
Modiolarca subpicta (Cantraine, 1835)
Modiolula phaseolina (Philippi, 1844)
Modiolus adriaticus (Lamarck, 1819)
Modiolus auriculatus Krauss, 1848 (E)
Modiolus barbatus (Linné, 1758)
Modiolus lulat (Dautzenberg, 1891)
Modiolus martorelli (Hidalgo, 1878)
Musculista perfragilis (Dunker, 1857) (E)
Musculista senhousia (Benson in Cantor, 1842) (E)
Musculus costulatus (Risso, 1826)
Musculus discors (Linné, 1767)
Myoforceps aristatus (Dillwyn, 1817)
Mytilaster lineatus (Gmelin, 1791)
Mytilaster marioni (Locard, 1889)
Mytilaster minimus (Poli, 1795)
Mytilaster solidus Monterosato, 1872
Perna perna (Linné, 1758)
Rhomboidella prideauxi (Leach, 1815)
Septifer forskali Dunker, 1855 (E)
Xenostrobus securis (Lamarck, 1819) (E)
Pinnidae
Pinna nobilis Linné, 1758 (P)
Pinna rudis Linné, 1758 (P)
Atrina fragilis (Pennant, 1777)
PTERIOIDA
Pteriidae
Pteria hirundo (Linné, 1758)
Pinctada margaritifera (Linné, 1758) (E)
Pinctada radiata (Leach, 1814) (E)
Electroma vexillum (Reeve, 1857) (E)
Malleidae
Malvufundus regula (Forskål, 1775) (E)
Pectinidae
Aequipecten commutatus (Monterosato, 1875)
Aequipecten opercularis (Linné, 1758)
Crassadoma multistriata (Poli, 1795)
Crassadoma pusio (Linné, 1758)

Chlamys flexuosa (Poli, 1795)
Chlamys glabra (Linné, 1758)
Chlamys lischkei (Dunker, 1850) (E)
Chlamys pesfelis (Linné, 1758)
Chlamys proteus (Solander, 1817)
Chlamys varia (Linné, 1758)
Delectopecten vitreus (Gmelin, 1791)
Lissopecten hyalinum (Poli, 1795)
Palliolum incomparabile (Risso, 1826)
Palliolum striatum (Müller O.F., 1776)
Palliolum tigerinum (Müller O.F., 1776)
Pecten jacobeus (Linné, 1758)
Pecten maximum (Linné, 1758)
Pseudamussium clavatum (Poli, 1795)
Pseudamussium peslutrae (Linné, 1771)
Pseudamussium sulcatum (Müller O.F., 1776)
Propeamussiidae
Propeamussium lucidum (Wyville-Thompson, 1873)
Parvamussium fenestratum (Forbes, 1844)
Cyclopecten antiquatus (Philippi, 1844)
Cyclopecten brundisiensis Smriglio & Mariottini, 1990
Cyclopecten hoskynsi (Forbes, 1844)
Similipecten similis (Laskey, 1811)
Spondylidae
Spondylus gaederopus Linné, 1758
Spondylus groschi Lamprell & Kilburn, 1995 (E)
Spondylus gussoni Costa O.G., 1829
Spondylus multisetosus Reeve, 1856 (E)
Spondylus spinosus Schreibers, 1793 (E)
Anomiidae
Anomia ephippium Linné, 1758
Heteranomia squamula (Linné, 1758)
Pododesmus patelliformis (Linné, 1758)
Pododesmus squama (Gmelin, 1791)
Limidae
Lima lima (Linné, 1758)
Lima marioni Fischer P., 1888
Acesta excavata (Fabricius J.C., 1779)
Limaria hians (Gmelin, 1791)
Limaria tuberculata (Olivi, 1792)
Limatula gwyni (Sykes, 1903)
Limatula subauriculata (Montagu, 1808)
Limatula subovata (Jeffreys, 1876)
Limea loscombi (Sowerby G.B. I, 1823)
Notolimea clandestina Salas, 1994
Notolimea crassa (Forbes, 1844)

OSTREOIDA

Ostreidae
Ostrea edulis Linné, 1758
Crassostrea gigas (Thunberg, 1793) (E)
Dendrostrea crenulifera (Sowerby, G.B. II,, 1871) (E)

Dendrostrea frons (Linné, 1758) (E)
Nanostrea exigua Harry, 1985 (E)
Ostreola stentina (Payraudeau, 1826)
Saccostrea commercialis (Iredale & Roughley, 1933) (E)
Saccostrea cucullata (Born, 1778) (E)
Gryphaeidae
Neopycnodonte cochlear (Poli, 1795)
Neopycnodonte zibrowii (Gofas, Salas & Taviani, 2009)

HETERODONTA
VENEROIDA
Lucinidae
Anodontia fragilis (Philippi, 1836)
Ctena decussata (Costa O.G., 1829)
Divalinga arabica Dekker & Goud, 1995 (E)
Loripes lacteus (Linné, 1758)
Lucinella divaricata (Linné, 1758)
Lucinoma boreale (Linné, 1758)
Lucinoma kazami (Salas & Woodside, 2002)
Lucinoma spelaeum Palazzi & Villari, 2001
Megaxinus unguiculinus Pallary, 1904
Myrtea amorpha (Sturany, 1896)
Myrtea spinifera (Montagu, 1803)
Thyasiridae
Thyasira alleni Carozza, 1981
Thyasira biplicata (Philippi, 1836)
Axinulus croulinensis (Jeffreys, 1847)
Thyasira oblonga (Monterosato, 1878)
Thyasira obsoleta (Verrill & Bush, 1898)
Thyasira planata (Jeffreys, 1882)
Thyasira perplicata Salas, 1996
Thyasira striata (Sturany, 1896)
Thyasira subovata Jeffreys, 1881
Thyasira succisa (Jeffreys, 1876)
Thyasira granulosa (Monterosato, 1874)
Axinulus eumyarius (Sars M., 1870)
Mendicula ferruginosa (Forbes, 1844)
Ungulinidae
Ungulina cuneata (Spengler, 1798)
Diplodonta bogii Van Aartsen, 2004 (E)
Diplodonta brocchi (Deshayes, 1850)
Diplodonta intermedia Biondi, 1859
Diplodonta rotundata (Montagu, 1803)
Diplodonta trigona (Scacchi, 1835)
Chamidae
Chama aspersa Reeve, 1846
Chama circinata Monterosato, 1878
Chama gryphoides Linné, 1758
Chama pacifica Broderip, 1834 (E)
Pseudochama corbieri (Jonas, 1846) (E)
Pseudochama gryphina (Lamarck, 1819)

Galeommatidae
Galeomma turtoni Turton, 1825
Vasconiella jeffreysiana (Fischer P., 1873)
Kellidae
Kellia suborbicularis (Montagu, 1803)
Pseudopythina macandrewi (Fischer P., 1867)
Bornia geoffroyi (Payraudeau, 1826)
Bornia sebetia (Costa O.G., 1829)
Lasaeidae
Lasaea adansoni (Gmelin, 1791)
Scacchia oblonga (Philippi, 1836)
Leptonidae
Lepton squamosum (Montagu, 1803)
Lepton subtrigonum Jeffreys, 1873
Arculus sykesi (Chaster, 1895)
Hemilepton nitidum (Turton, 1822)
Hemilepton solidulum (Gaglini, 1992)
Litigiella corgani Van Aartsen, 1997
Litigiella glabra (Fischer P., 1873)
Montacutidae
Montacuta goudi Van Aartsen, 1996
Montacuta substriata (Montagu, 1808)
Montacuta voeringi (Friele, 1879)
Coracuta obliquata (Chaster, 1897)
Devonia perrieri (Malard, 1904)
Epilepton clarkiae (Clark W., 1852)
Epilepton parrussetensis Giribet & Peñas, 1998
Kelliopsis jozinae Van Aartsen & Carrozza, 1997
Kurtiella bidentata (Montagu, 1803)
Kurtiella ovata (Jeffreys, 1881)
Kurtiella pellucida (Jeffreys, 1881)
Kurtiella tumidula (Jeffreys, 1866)
Mioerycina coarctata (Wood S.W., 1851)
Planktomya prima (Locard, 1899)
Tellimya ferruginosa (Montagu, 1808)
Tellimya semirubra (Gaglini, 1992)
Tellimya tenella (Lovén, 1846)
Sportellidae
Sportella recondita (Fischer P., 1872)
Neoleptonidae
Neolepton discriminatum Palazzi & Villari, 2001
Neolepton sulcatulum (Jeffreys, 1859)
Carditidae
Cardita calyculata (Linné, 1758)
Cardites akabana (Sturany, 1899) (E)
Glans aculeata (Poli, 1795)
Glans trapezia (Linné, 1758)
Pteromeris jozinae Van Aartsen, 1984
Pteromeris corbis (Philippi, 1836)
Venericardia antiquata (Linné, 1758)

Crassatellidae
Crassatina modesta (Adams H., 1869)
Astartidae
Astarte fusca (Poli, 1795)
Astarte sulcata (Da Costa, 1778)
Digitaria digitaria (Linné, 1758)
Gonilia calliglypta (Dall, 1903)
Goodallia micalii Giribet & Peñas, 1999
Goodallia pusilla (Forbes, 1844)
Goodallia triangularis (Montagu, 1803)
Cardiidae
Cardium indicum Lamarck, 1818
Acanthocardia aculeata (Linné, 1758)
Acanthocardia deshayesii (Payraudeau, 1826)
Acanthocardia echinata (Linné, 1758)
Acanthocardia paucicostata (Sowerby G.B. II, 1841)
Acanthocardia spinosa (Solander, 1786)
Acanthocardia tuberculata (Linné, 1758)
Afrocardium richardi (Audouin, 1826) (E)
Cerastoderma edule (Linné, 1758)
Cerastoderma glaucum (Poiret, 1789)
Fulvia australis (Sowerby G.B. I, 1834) (E)
Fulvia fragilis (Forskål, 1775) (E)
Laevicardium crassum (Gmelin, 1791)
Laevicardium oblongum (Gmelin, 1791)
Papillicardium papillosum (Poli, 1795)
Parvicardium carrozzai Van Aartsen & Goud, 2001
Parvicardium exiguum (Gmelin, 1791)
Parvicardium minimum (Philippi, 1836)
Parvicardium scabrum (Philippi, 1844)
Parvicardium scriptum (Bucquoy, Dautzenberg & Dollfus, 1892)
Parvicardium trapezium Cecalupo & Quadri, 1996
Parvicardium vroomi Van Aartsen, Menkhorst & Gittenberger, 1984
Mactridae
Mactra glauca Von Born, 1778
Mactra lilacea Lamarck, 1818 (E)
Mactra olorina Philippi, 1846 (E)
Mactra stultorum (Linné, 1758)
Spisula elliptica gracilis (Locard, 1890)
Spisula solida (Linné, 1758)
Spisula subtruncatula (Da Costa, 1778)
Lutraria angustior Philippi, 1844
Lutraria lutraria (Linné, 1758)
Lutraria magna (Da Costa, 1778)
Eastonia rugosa (Helbling, 1779)
Mesodesmatidae
Donacilla cornea (Poli, 1795)
Atactodea glabrata (Gmelin, 1791) (E)
Solenidae
Solen marginatus Pulteney, 1799

Pharidae
Pharus legumen (Linné, 1758)
Ensis arcuatus (Jeffreys, 1865)
Ensis ensis (Linné, 1758)
Ensis minor (Chenu, 1843)
Phaxas pellucidus (Pennant, 1777)
Tellinidae
Tellina compressa Brocchi, 1814
Tellina distorta Poli, 1791
Tellina donacina Linné, 1758
Tellina fabula Gmelin, 1791
Tellina incarnata Linné, 1758
Tellina nitida Poli, 1791
Tellina planata (Linné, 1767)
Tellina pulchella Lamarck, 1818
Tellina pygmaea Lovén, 1846
Tellina serrata Brocchi, 1814
Tellina tenuis Da Costa, 1778
Tellina valtonis Hanley, 1844 (E)
Arcopagia balaustina Linné, 1758
Arcopagia crassa Pennant, 1777
Macoma balthica (Linné, 1758)
Macoma cumana (Costa O.G., 1829)
Macoma melo (Sowerby G.B. III, 1866)
Gastrana fragilis (Linné, 1758)
Psammotreta praerupta (Salisbury, 1934) (E)
Scrobiculariidae
Scrobicularia cottardi (Payraudeau, 1826)
Scrobicularia plana (Da Costa, 1778)
Semelidae
Abra alba (Wood W., 1802)
Abra longicallus (Scacchi, 1834)
Abra nitida (Müller O.F., 1776)
Abra prismatica (Montagu, 1808)
Abra segmentum (Récluz, 1843)
Abra tenuis (Montagu, 1803)
Ervilia castanea (Montagu, 1803)
Psammobiidae
Gari costulata Turton, 1822
Gari depressa (Pennant, 1777)
Gari fervensis (Gmelin, 1791)
Gari intermedia (Deshayes, 1855)
Gari pseudoweinkauffi Von Cosel, 1989
Gari tellinella Lamarck, 1818
Hiatula ruppelliana (Reeve, 1857) (E)
Soletellina subradiata (Deshayes in Reeve, 1857) (E)
Solecurtidae
Solecurtus multistriatus (Scacchi, 1834)
Solecurtus scopula (Turton, 1822)
Solecurtus strigillatus (Linné, 1758)
Azorinus chamasolen (Da Costa, 1778)

Donacidae
Donax semistriatus Poli, 1795
Donax trunculus Linné, 1758
Donax venustus Poli, 1795
Donax vittatus (Da Costa, 1778)
Capsella variegata Gmelin, 1791
Arcticidae
Arctica islandica (Linné, 1767)
Glossidae
Glossus humanus (Linné, 1758)
Kelliellidae
Kelliella abyssicola (Forbes, 1844)
Trapeziidae
Trapezium oblongum (Linné, 1758) (E)
Coralliophaga lithophagella (Lamarck, 1819)
Vesicomyidae
Isorropodon perplexum Sturany, 1896
Veneridae
Venus casina Linné, 1758
Venus nux Gmelin, 1791
Venus verrucosa Linné, 1758
Antigona lamellaris (Schumacher, 1817) (E)
Callista chione (Linné, 1758)
Chamelea gallina (Linné, 1758)
Chamelea striatula (Da Costa, 1778)
Circenita callipyga (Born, 1778) (E)
Clausinella fasciata (Da Costa, 1778)
Clementia papyracea (Gmelin, 1791) (E)
Dosinia erythraea Romer, 1860 (E)
Dosinia exoleta (Linné, 1758)
Dosinia lupinus (Linné, 1758)
Gafrarium pectinatum (Linné, 1758) (E)
Globivenus effossa (Philippi, 1836)
*Gouldia minim*a (Montagu, 1803)
Irus irus (Linné, 1758)
Mercenaria mercenaria (Linné, 1758) (E)
Paphia textile (Gmelin, 1791) (E)
Pitar mediterranea (Dautzenberg, 1891)
Pitar rudis (Poli, 1795)
Ruditapes decussatus (Linné, 1758)
Ruditapes philippinarum (Adams & Reeve, 1850) (E)
Tapes rhomboides (Pennant, 1777)
Timoclea ovata (Pennant, 1777)
Timoclea roemeriana (Issel, 1869) (E)
Venerupis aurea (Gmelin, 1791)]
Venerupis corrugata (Gmelin, 1791)
Venerupis lucens Locard, 1886
Venerupis senegalensis (Gmelin, 1791)
Turtoniidae
Turtonia minuta (Fabricius O., 1780)

Petricolidae
Petricola hemprichi Issel, 1869 (E)
Petricola lajonkairii (Payraudeau, 1826)
Petricola lithophaga (Retzius, 1786)
Petricola pholadiformis Lamarck, 1818 (E)
Mysia undata (Pennant, 1777)
MYOIDA
Myidae
Mya arenaria Linné, 1758 (E)
Sphenia binghami Turton, 1822
Sphenia rueppellii Adams A., 1850 (E)
Corbulidae
Corbula gibba (Olivi, 1792)
Corbula physoides Deshayes, 1848
Lentidium mediterraneum (Costa O.G., 1829)
Gastrochaenidae
Gastrochaena cymbium (Spengler, 1783) (E)
Gastrochaena dubia (Pennant, 1777)
Hiatellidae
Hiatella arctica (Linné, 1767)
Hiatella rugosa (Linné, 1767)
Panopea glycimeris (Von Born, 1778)
Panomya norvegica (Spengler, 1793)
Saxicavella jeffreysi Winckworth, 1930
Pholadidae
Pholas dactylus Linné, 1758 (P)
Barnea candida (Linné, 1758)
Barnea parva (Pennant, 1777)
Pholadidea loscombiana Goodall, 1819
Xylophagidae
Xylophaga dorsalis (Turton, 1819)
Xylophaga praestans Smith E.A., 1885
Teredinidae
Teredo bartschi Clapp, 1923
Teredo navalis Linné, 1758
Lyrodus pedicellatus (Quatrefages, 1849)
Psiloteredo megotara (Hanley, 1848)
Psiloteredo senegalensis (Blainville, 1824)
Teredora malleolus (Turton, 1822)
Bankia carinata (Gray J.E., 1827)
Nototeredo norvagica (Spengler, 1792)

ANOMALODESMATA
PHOLADOMYOIDA
Pholadomyidae
Panacca loveni (Jeffreys, 1882)
Thraciidae
Thracia convexa (Wood W., 1815)
Thracia corbuloides Deshayes, 1830
Thracia distorta (Montagu, 1803)
Thracia gracilis (Jeffreys, 1865)

Thracia papyracea (Poli, 1791)
Thracia pubescens (Pulteney, 1799)
Thracia villosiuscula (Mac Gillivray, 1827)
Laternulidae
Laternula anatina (Linné, 1758) (E)
Periplomatidae
Cochlodesma praetenue (Pulteney, 1799)
Cochlodesma tenerum (Fischer P., 1882)
Lyonsiidae
Lyonsia norwegica (Gmelin, 1791)
Allogramma formosa Jeffreys, 1882
Pandoridae
Pandora inaequivalvis (Linné, 1758)
Pandora pinna (Montagu, 1803)
Clavagellidae
Clavagella aperta Sowerby G.B. I, 1823
Clavagella balanorum Scacchi, 1841
Clavagella melitensis Broderip, 1835
Poromyidae
Poromya granulata (Nyst & Westendorp, 1839)
Poromya neaeroides Seguenza G., 1877
Cuspidariidae
Cuspidaria cuspidata (Olivi, 1792)
Cuspidaria elliptica Di Geronimo, 1974
Cuspidaria jugosa (Wood S., 1856)
Cuspidaria obesa (Lovén, 1846)
Cuspidaria rostrata (Spengler, 1793)
Cardiomya costellata (Deshayes, 1835)
Halonympha depressa (Jeffreys, 1882)
Tropidomia abbreviata (Forbes, 1843)
Verticordiidae
Verticordia acuticostata (Philippi, 1844)
Verticordia granulata Seguenza G., 1860
Verticordia quadrata Smith, 1885
Verticordia trapezoidea Seguenza G., 1876
Halicardia axinoides (Seguenza G., 1976)
Lyonsiella compressa (Locard, 1898)
Polycordia gemma (Verrill, 1880)

SCAPHOPODA

Dentaliidae
Antalis agilis (Sars M.,1872)
Antalis dentalis (Linné, 1758)
Antalis entalis (Linné, 1758)
Antalis inaequicostata (Dautzenberg, 1891)
Antalis panorma (Chenu, 1843)
Antalis rossati (Caprotti, 1966)
Antalis vulgaris (da Costa, 1778)
Fustiariidae
Fustiaria rubescens (Deshayes, 1825)

Gadilinidae
Episiphon filum (Sowerby G.B. II, 1860)
Entalinidae
Entalina tetragona (Brocchi, 1814)
Pulsellidae
Pulsellum lofotense (Sars M., 1865)
Gadilidae
Cadulus jeffreysi (Monterosato, 1875)
Cadulus subfusiformis (Sars M., 1865)
Dischides politus (Wood S., 1842)

Cephalopoda

Based on Bello [2]

P = Panoceanic; A = Atlantic; AA = Amphiatlantic; EA = Eastern Atlantic; QE = Quasi-endemic; E = Endemic; L = Lessepsian migrant; T = Passively transported. Occurrence in different Mediterranean regions: WM = West Mediterranean; EM = East Mediterranean; AS = Adriatic Sea.

O. Spirulida		**WM**	**EM**	**AS**
Spirulidae				
Spirula spirula (Linnaeus, 1758)	P	+	-	-
O. Sepiida				
Sepiidae				
Sepia elegans Blainville, 1827	EA	+	+	+
Sepia officinalis Linnaeus, 1758	EA	+	+	+
Sepia orbignyana Férussac, 1826	EA	+	+	+
Sepia pharaonis Ehrenberg, 1831	L	-	+	-
O. Sepiolida				
Sepiolidae				
Sepiola affinis Naef, 1912	E	+	+	+
Sepiola aurantiaca Jatta, 1896	EA	+	-	-
Sepiola intermedia Naef, 1912	QE	+	+	+
Sepiola ligulata Naef, 1912	QE	+	+	+
Sepiola robusta Naef, 1912	E	+	+	+
Sepiola rondeletii Leach, 1817	EA	+	+	+
Sepiola steenstrupiana Levy, 1912	E	+	+	+
Sepietta neglecta Naef, 1916	EA	+	+	+
Sepietta obscura Naef, 1916	QE	+	+	+
Sepietta oweniana (d'Orbigny, 1841)	EA	+	+	+
Rondeletiola minor (Naef, 1912)	EA	+	+	+
Heteroteuthis dispar (Rüppell, 1844)	A	+	+	+
Stoloteuthis leucoptera (Verrill, 1878)	AA	+	-	-
Rossia macrosoma (Delle Chiaje, 1830)	EA	+	+	+
Neorossia caroli (Joubin, 1902)	EA	+	+	+

O. TEUTHIDA

Loliginidae				
Loligo forbesii Steenstrup, 1856	EA	+	+	+
Loligo vulgaris Lamarck, 1798	EA	+	+	+
Alloteuthis media (Linnaeus, 1758)	EA	+	+	+
Alloteuthis subulata (Lamarck, 1798)	EA	+	+	+
Sepioteuthis lessoniana Férussac, 1830	L	-	+	-
Chtenopterygidae				
Chtenopteryx sicula (Verany, 1851)	P	+	+	-
Thysanoteuthidae				
Thysanoteuthis rhombus Troschel, 1857	P	+	+	+
Architeuthidae				
Architeuthis sp.	A?	+	-	-
Brachioteuthidae				
Brachioteuthis riisei (Steenstrup, 1882)	P	+	+	+
Pyroteuthidae				
Pyroteuthis margaritifera (Rüppell, 1844)	P	+	+	-
Pterygioteuthis giardi Fischer, 1895	P	+	+	-
Enoploteuthidae				
Abralia verany (Rüppell, 1844)	AA	+	+	+
Abraliopsis morisii (Verany, 1839) (= *A. pfefferi* Joubin,1896)	A	+	+	-
Onychoteuthidae				
Onychoteuthis banksii (Leach, 1817)	P	+	+	+
Ancistroteuthis lichtensteinii (Férussac, 1835)	A	+	+	+
Ommastrephidae				
Ommastrephes bartramii (Lesueur, 1821)	P	+	+	+
Illex coindetii (Verany, 1839)	AA	+	+	+
Todaropsis eblanae (Ball, 1841)	P	+	+	+
Todarodes sagittatus (Lamarck, 1798)	EA	+	+	+
Bathyteuthidae				
Bathyteuthis abyssicola Hoyle, 1885	P	-	+	-
Histioteuhidae				
Histioteuthis bonnellii (Férussac, 1835)	P	+	+	+

Histioteuthis reversa (Verrill, 1880)	A	+	+	+
Ancistrocheiridae				
Ancistrocheirus lesueurii (d'Orbigny, 1842)	P	+	+	+
Octopoteuthidae				
Octopoteuthis sicula Rüppell, 1844	P	+	+	-
Cycloteuthidae				
Cycloteuthis sirventi Joubin, 1919	A	+	-	-
Chiroteuhidae				
Chiroteuthis veranii (Férussac, 1835)	P	+	+	+
Cranchiidae				
Cranchia scabra Leach, 1817	P	+	-	-
Galiteuthis armata Joubin, 1898	P	+	+	-
Megalocranchia sp.	A?	+	-	-
Teuthowenia megalops (Prosch, 1847)	A	+	-	-
O. OCTOPODA				
Opisthoteuthidae				
Opisthoteuthis calypso Villanueva, Collins, Sánchez & Voss, 2002	EA	+	-	-
Octopodidae				
Octopus cf. aegina Gray, 1849 / *kagoshimensis* Ortmann, 1888	L	-	+	-
Octopus defilippi Verany, 1851	P	+	+	+
Octopus macropus Risso, 1826	P	+	+	+
Octopus salutii Verany, 1839	QE	+	+	+
Octopus vulgaris Cuvier, 1797	P	+	+	+
Scaeurgus unicirrhus (Delle Chiaje, 1841)	P	+	+	+
Pteroctopus tetracirrhus (Delle Chiaje, 1830)	AA	-	+	+
Eledone cirrhosa (Lamarck, 1798)	EA	+	+	+
Eledone moschata (Lamarck, 1798)	QE	+	+	+
Bathypolypus sponsalis (P. Fischer & H. Fischer, 1892)	EA	+	+	-
Argonautidae				
Argonauta argo Linnaeus, 1758	P	+	+	+
Ocythoidae				
Ocythoe tuberculata Rafinesque, 1814	P	+	+	+

Tremoctopodidae				
Tremoctopus violaceus Delle Chiaje, 1830	P	+	+	+
Tremoctopus gracilis (Eydoux & Souleyet, 1852)	T (L)	+	-	+

Table S15. Number of Mediterranean species of each of the eight mollusks classes

Class	Total	Benthic	Planktonic	Nektonic
CAUDOFOVEATA	9	9	-	-
SOLENOGASTRES	29	29	-	-
POLYPLACOPHORA	31	31	-	-
MONOPLACOPHORA	1	1	-	-
GASTROPODA	1564	1495	69	-
BIVALVIA	400	400	-	-
SCAPHOPODA	14	14	-	-
CEPHALOPODA	65	20	-	45
Totals	2113	1999	69	45

References

1. Sabelli B, Giannuzzi-Savelli R, Bedulli D (1990) Catalogo annotato dei molluschi marini del Mediterraneo. Bologna: Libreria Naturalistica Bolognese. 348 p.
2. Bello G (2004) The biogeography of Mediterranean cephalopods. Biogeographia 24: 201–217.

Polychaetes (by Daniel Martín & João Gil)

Table S16. Checklist of the Class Polychaeta (Phylum Annelida)

Scientific name	Authority	species	Genera	Family	Branch III	Branch II	Branch I
Aeolosoma maritimum	Westheide & Bunke, 1970	*maritimum*	*Aeolosoma*	Aeolosomatidae	Polychaeta	Polychaeta	Polychaeta
Stygocapitella subterranea	Knöllner, 1934	*subterranea*	*Stygocapitella*	Parergodrilidae	Polychaeta	Polychaeta	Polychaeta
Chloeia venusta	Quatrefages, 1866	*venusta*	*Chloeia*	Amphinomidae	Eunicida	Aciculata	Palpata
Chloenopsis atlantica	(McIntosh, 1885)	*atlantica*	*Chloenopsis*	Amphinomidae	Eunicida	Aciculata	Palpata
Eurythoe complanata	(Pallas, 1766)	*complanata*	*Eurythoe*	Amphinomidae	Eunicida	Aciculata	Palpata
Eurythoe syriaca	Kinberg, 1857	*syriaca*	*Eurythoe*	Amphinomidae	Eunicida	Aciculata	Palpata
Eurythoe turcica	Çinar, 2008	*turcica*	*Eurythoe*	Amphinomidae	Eunicida	Aciculata	Palpata
Hermodice carunculata	(Pallas, 1766)	*carunculata*	*Hermodice*	Amphinomidae	Eunicida	Aciculata	Palpata
Notopygos megalops	McIntosh, 1885	*megalops*	*Notopygos*	Amphinomidae	Eunicida	Aciculata	Palpata
Paraeurythoe borealis	(M. Sars, 1862)	*borealis*	*Paraeurythoe*	Amphinomidae	Eunicida	Aciculata	Palpata
Apharyngtus punicus	Westheide, 1971	*punicus*	*Apharyngtus*	Dorvilleidae	Eunicida	Aciculata	Palpata
Dinophilus gyrociliatus	Schmidt, 1857	*gyrociliatus*	*Dinophilus*	Dorvilleidae	Eunicida	Aciculata	Palpata
Diurodrilus benazzi	Gerlach, 1952	*benazzi*	*Diurodrilus*	Dorvilleidae	Eunicida	Aciculata	Palpata
Diurodrilus dohrni	Gerlach, 1953	*dohrni*	*Diurodrilus*	Dorvilleidae	Eunicida	Aciculata	Palpata
Diurodrilus minimus	Remane, 1925	*minimus*	*Diurodrilus*	Dorvilleidae	Eunicida	Aciculata	Palpata
Diurodrilus subterraneus	Remane, 1934	*subterraneus*	*Diurodrilus*	Dorvilleidae	Eunicida	Aciculata	Palpata
Dorvillea rubrovittata	(Grube, 1855)	*rubrovittata*	*Dorvillea*	Dorvilleidae	Eunicida	Aciculata	Palpata
Iphitime cuenoti	Fauvel, 1914	*cuenoti*	*Iphitime*	Dorvilleidae	Eunicida	Aciculata	Palpata
Ophryotrocha adherens	Paavo, Bailey-Brock & Åkesson, 2000	*adherens*	*Ophryotrocha*	Dorvilleidae	Eunicida	Aciculata	Palpata
Ophryotrocha hartmanni	Huth, 1934	*hartmanni*	*Ophryotrocha*	Dorvilleidae	Eunicida	Aciculata	Palpata
Ophryotrocha labronica	La Greca & Bacci, 1962	*labronica*	*Ophryotrocha*	Dorvilleidae	Eunicida	Aciculata	Palpata
Ophryotrocha mediterranea	Martin, Abelló & Cartes, 1991	*mediterranea*	*Ophryotrocha*	Dorvilleidae	Eunicida	Aciculata	Palpata
Ophryotrocha puerilis puerilis	Claparède & Mecznikow, 1869	*puerilis puerilis*	*Ophryotrocha*	Dorvilleidae	Eunicida	Aciculata	Palpata
Parougia albomaculata	(Åkesson & Rice, 1992)	*albomaculata*	*Parougia*	Dorvilleidae	Eunicida	Aciculata	Palpata
Parougia caeca	(Webster & Benedict, 1884)	*caeca*	*Parougia*	Dorvilleidae	Eunicida	Aciculata	Palpata

Pettiboneia urciensis	Campoy & San Martin, 1980	*urciensis*	*Pettiboneia*	Dorvilleidae	Eunicida	Aciculata	Palpata
Protodorvillea atlantica	(McIntosh, 1885)	*atlantica*	*Protodorvillea*	Dorvilleidae	Eunicida	Aciculata	Palpata
Protodorvillea egena	(Ehlers, 1913)	*egena*	*Protodorvillea*	Dorvilleidae	Eunicida	Aciculata	Palpata
Protodorvillea kefersteini	(McIntosh, 1869)	*kefersteini*	*Protodorvillea*	Dorvilleidae	Eunicida	Aciculata	Palpata
Schistomeringos neglecta	(Fauvel, 1923)	*neglecta*	*Schistomeringos*	Dorvilleidae	Eunicida	Aciculata	Palpata
Schistomeringos rudolphi	(delle Chiaje, 1828)	*rudolphi*	*Schistomeringos*	Dorvilleidae	Eunicida	Aciculata	Palpata
Trilobodrilus heideri	Remane, 1925	*heideri*	*Trilobodrilus*	Dorvilleidae	Eunicida	Aciculata	Palpata
Eunice annulicornis	Johnston, 1865	*annulicornis*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice antennata	(Savigny in Lamarck, 1818)	*antennata*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice dubitata	Fauchald, 1974	*dubitata*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice harassii	Audouin & Milne Edwards, 1833	*harassii*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice laurillardi	Quatrefages, 1866	*laurillardi*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice limosa	Ehlers, 1868	*limosa*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice norvegica	(Linnaeus, 1767)	*norvegica*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice pennata	(O.F. Müller, 1776)	*pennata*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice purpurea	Grube, 1866	*purpurea*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice roussaei	Quatrefages, 1866	*roussaei*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice rubrocincta	Ehlers, 1868	*rubrocincta*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice schizobranchia	Claparède, 1870	*schizobranchia*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice torquata	Quatrefages, 1866	*torquata*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Eunice vittata	(Delle Chiaje, 1829)	*vittata*	*Eunice*	Eunicidae	Eunicida	Aciculata	Palpata
Euniphysa italica	Cantone & Gravina, 1991	*italica*	*Euniphysa*	Eunicidae	Eunicida	Aciculata	Palpata
Lysidice collaris	Ehrenberg & Grube *in* Grube, 1870	*collaris*	*Lysidice*	Eunicidae	Eunicida	Aciculata	Palpata
Lysidice ninetta	Audouin & Milne-Edwards, 1833	*ninetta*	*Lysidice*	Eunicidae	Eunicida	Aciculata	Palpata
Marphysa bellii	(Audouin & Milne-Edwards, 1833)	*bellii*	*Marphysa*	Eunicidae	Eunicida	Aciculata	Palpata
Marphysa fallax	Marion & Bobretzky, 1875	*fallax*	*Marphysa*	Eunicidae	Eunicida	Aciculata	Palpata
Marphysa kinbergi	McIntosh, 1910	*kinbergi*	*Marphysa*	Eunicidae	Eunicida	Aciculata	Palpata
Marphysa sanguinea	(Montagu, 1815)	*sanguinea*	*Marphysa*	Eunicidae	Eunicida	Aciculata	Palpata
Nematonereis unicornis	(Grube, 1840)	*unicornis*	*Nematonereis*	Eunicidae	Eunicida	Aciculata	Palpata
Palola ebranchiata	(Quatrefages, 1866)	*ebranchiata*	*Palola*	Eunicidae	Eunicida	Aciculata	Palpata

Palola siciliensis	Baird, 1869	*siciliensis*	*Palola*	Eunicidae	Eunicida	Aciculata	Palpata
Euphrosine armadillo	M.Sars, 1851	*armadillo*	*Euphrosine*	Euphrosinidae	Eunicida	Aciculata	Palpata
Euphrosine foliosa	Audouin & Milne-Edwards, 1833	*foliosa*	*Euphrosine*	Euphrosinidae	Eunicida	Aciculata	Palpata
Euphrosine myrtosa	Savigny in Lamarck, 1818	*myrtosa*	*Euphrosine*	Euphrosinidae	Eunicida	Aciculata	Palpata
Abyssoninoe abyssorum	(McIntosh, 1885)	*abyssorum*	*Abyssoninoe*	Lumbrineridae	Eunicida	Aciculata	Palpata
Abyssoninoe hibernica	(Mc Intosh, 1903)	*hibernica*	*Abyssoninoe*	Lumbrineridae	Eunicida	Aciculata	Palpata
Aotearia paradoxa	(Saint-Joseph, 1888)	*paradoxa*	*Aotearia*	Lumbrineridae	Eunicida	Aciculata	Palpata
Augeneria tentaculata	Monro, 1930	*tentaculata*	*Augeneria*	Lumbrineridae	Eunicida	Aciculata	Palpata
Hilbigneris gracilis	(Ehler 1868)	*gracilis*	*Hilbigneris*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbricalus adriatica	(Fauvel, 1940)	*adriatica*	*Lumbricalus*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbrinerides carpinei	(Ramos, 1976)	*carpinei*	*Lumbrinerides*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbrinerides neogesae	Miura, 1980	*neogesae*	*Lumbrinerides*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbrineris cingulata	(Ehlers, 1897)	*cingulata*	*Lumbrineris*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbrineris coccinea	(Renier, 1804)	*coccinea*	*Lumbrineris*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbrineris inflata	Moore, 1911	*inflata*	*Lumbrineris*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbrineris latreilli	(Audouin & Milne Edwards, 1833)	*latreilli*	*Lumbrineris*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbrineris longipodiata	Cantone, 1990	*longipodiata*	*Lumbrineris*	Lumbrineridae	Eunicida	Aciculata	Palpata
Lumbrineris nonatoi	Ramos, 1976	*nonatoi*	*Lumbrineris*	Lumbrineridae	Eunicida	Aciculata	Palpata
Ninoe armoricana	Glémarec, 1968	*armoricana*	*Ninoe*	Lumbrineridae	Eunicida	Aciculata	Palpata
Scoletoma fragilis	(O.F. Müller, 1776)	*fragilis*	*Scoletoma*	Lumbrineridae	Eunicida	Aciculata	Palpata
Scoletoma funchalensis	(Kinberg, 1865)	*funchalensis*	*Scoletoma*	Lumbrineridae	Eunicida	Aciculata	Palpata
Scoletoma tetraura	(Schmarda, 1861)	*tetraura*	*Scoletoma*	Lumbrineridae	Eunicida	Aciculata	Palpata
Scoletoma rovignensis	(Fauvel, 1940)	*rovignensis*	*Scoletoma*	Lumbrineridae	Eunicida	Aciculata	Palpata
Arabella coeca	Fauvel, 1940	*coeca*	*Arabella*	Oenonidae	Eunicida	Aciculata	Palpata
Arabella geniculata	(Claparède, 1868)	*geniculata*	*Arabella*	Oenonidae	Eunicida	Aciculata	Palpata
Arabella iricolor	(Montagu, 1804)	*iricolor*	*Arabella*	Oenonidae	Eunicida	Aciculata	Palpata
Drilonereis filum	(Claparède, 1868)	*filum*	*Drilonereis*	Oenonidae	Eunicida	Aciculata	Palpata
Halla parthenopeia	(Delle Chiaje, 1828)	*parthenopeia*	*Halla*	Oenonidae	Eunicida	Aciculata	Palpata
Labrorostratus jonicus	Tenerelli, 1961	*jonicus*	*Labrorostratus*	Oenonidae	Eunicida	Aciculata	Palpata
Notocirrus scoticus	McIntosh, 1869	*scoticus*	*Notocirrus*	Oenonidae	Eunicida	Aciculata	Palpata

Oenone fulgida	(Savigny in Lamarck, 1818)	*fulgida*	*Oenone*	Oenonidae	Eunicida	Aciculata	Palpata
Oligognathus bonelliae	Spengel, 1882	*bonelliae*	*Oligognathus*	Oenonidae	Eunicida	Aciculata	Palpata
Oligognathus parasiticus	Cerruti, 1909	*parasiticus*	*Oligognathus*	Oenonidae	Eunicida	Aciculata	Palpata
Aponuphis bilineata	(Baird, 1869)	*bilineata*	*Aponuphis*	Onuphidae	Eunicida	Aciculata	Palpata
Aponuphis brementi	(Fauvel, 1916)	*brementi*	*Aponuphis*	Onuphidae	Eunicida	Aciculata	Palpata
Aponuphis fauveli	(Rioja, 1918)	*fauveli*	*Aponuphis*	Onuphidae	Eunicida	Aciculata	Palpata
Aponuphis rigida	(Claparède, 1868)	*rigida*	*Aponuphis*	Onuphidae	Eunicida	Aciculata	Palpata
Aponuphis willsiei	Cantone & Bellan, 1994	*willsiei*	*Aponuphis*	Onuphidae	Eunicida	Aciculata	Palpata
Diopatra neapolitana	Delle Chiaje, 1841	*neapolitana*	*Diopatra*	Onuphidae	Eunicida	Aciculata	Palpata
Epidiopatra hupferiana monroi	Day, 1957	*hupferiana monroi*	*Epidiopatra*	Onuphidae	Eunicida	Aciculata	Palpata
Hyalinoecia tubicola	(O.F. Müller, 1776)	*tubicola*	*Hyalinoecia*	Onuphidae	Eunicida	Aciculata	Palpata
Longibrachium atlanticum	(Day, 1973)	*atlanticum*	*Longibrachium*	Onuphidae	Eunicida	Aciculata	Palpata
Nothria conchylega	(Sars, 1835)	*conchylega*	*Nothria*	Onuphidae	Eunicida	Aciculata	Palpata
Onuphis eremita	Audouin & Milne Edwards, 1833	*eremita*	*Onuphis*	Onuphidae	Eunicida	Aciculata	Palpata
Onuphis falesia	Castelli, 1982	*falesia*	*Onuphis*	Onuphidae	Eunicida	Aciculata	Palpata
Paradiopatra calliopae	Arvantidis & Koukouras, 1997	*calliopae*	*Paradiopatra*	Onuphidae	Eunicida	Aciculata	Palpata
Paradiopatra quadricuspis	(M. Sars in G.O. Sars, 1872)	*quadricuspis*	*Paradiopatra*	Onuphidae	Eunicida	Aciculata	Palpata
Rhamphobrachium brevibrachiatum	(Ehlers, 1874)	*brevibrachiatum*	*Rhamphobrachium*	Onuphidae	Eunicida	Aciculata	Palpata
Aberranta banyulensis	Mackie, Pleijel & Rouse, 2005	*banyulensis*	*Aberranta*	Aberrantidae	Aciculata	Aciculata	Palpata
Mesonerilla intermedia	Wilke, 1953	*intermedia*	*Mesonerilla*	Nerillidae	Aciculata	Aciculata	Palpata
Nerilla antennata	O. Schmidt, 1848	*antennata*	*Nerilla*	Nerillidae	Aciculata	Aciculata	Palpata
Nerilla mediterranea	Schlieper, 1925	*mediterranea*	*Nerilla*	Nerillidae	Aciculata	Aciculata	Palpata
Nerilla marginalis	Tilzer, 1970	*marginalis*	*Nerilla*	Nerillidae	Aciculata	Aciculata	Palpata
Nerilla stygicola	Ax, 1957	*stygicola*	*Nerilla*	Nerillidae	Aciculata	Aciculata	Palpata
Nerilla taurica	Skulari, 1997	*taurica*	*Nerilla*	Nerillidae	Aciculata	Aciculata	Palpata
Nerillidum mediterraneum	Remane, 1928	*mediterraneum*	*Nerillidum*	Nerillidae	Aciculata	Aciculata	Palpata
Spinther arcticus	(M. Sars, 1851)	*arcticus*	*Spinther*	Spintheridae	Aciculata	Aciculata	Palpata
Euarche tubifex	Ehlers, 1887	*tubifex*	*Euarche*	Acoetidae	Phyllodocida	Aciculata	Palpata
Eupanthalis kinbergi	McIntosh, 1876	*kinbergi*	*Eupanthalis*	Acoetidae	Phyllodocida	Aciculata	Palpata
Eupolydontes gulo	(Grube, 1855)	*gulo*	*Eupolydontes*	Acoetidae	Phyllodocida	Aciculata	Palpata

Panthalis oerstedi	Kinberg, 1856	*oerstedi*	*Panthalis*	Acoetidae	Phyllodocida	Aciculata	Palpata
Polyodontes maxillosus	(Ranzani, 1817)	*maxillosus*	*Polyodontes*	Acoetidae	Phyllodocida	Aciculata	Palpata
Aphrodita aculeata	Linnaeus, 1758	*aculeata*	*Aphrodita*	Aphroditidae	Phyllodocida	Aciculata	Palpata
Aphrodita alta	Kinberg, 1856	*alta*	*Aphrodita*	Aphroditidae	Phyllodocida	Aciculata	Palpata
Aphrodita perarmata	Roule, 1898	*perarmata*	*Aphrodita*	Aphroditidae	Phyllodocida	Aciculata	Palpata
Laetmonice filicornis	Kinberg, 1856	*filicornis*	*Laetmonice*	Aphroditidae	Phyllodocida	Aciculata	Palpata
Laetmonice hystrix	(Savigny in Lamarck, 1818)	*hystrix*	*Laetmonice*	Aphroditidae	Phyllodocida	Aciculata	Palpata
Pontogenia chrysocoma	(Baird, 1865)	*chrysocoma*	*Pontogenia*	Aphroditidae	Phyllodocida	Aciculata	Palpata
Arichlidon reyssi	(Katzmann, Laubier & Ramos, 1974)	*reyssi*	*Arichlidon*	Chrysopetalidae	Phyllodocida	Aciculata	Palpata
Bhawania goodei	Webster, 1884	*goodei*	*Bhawania*	Chrysopetalidae	Phyllodocida	Aciculata	Palpata
Chrysopetalum debile	(Grube, 1855)	*debile*	*Chrysopetalum*	Chrysopetalidae	Phyllodocida	Aciculata	Palpata
Dysponetus bipapillatus	Dahlgren, 1996	*bipapillatus*	*Dysponetus*	Chrysopetalidae	Phyllodocida	Aciculata	Palpata
Dysponetus caecus	(Langerhans, 1880)	*caecus*	*Dysponetus*	Chrysopetalidae	Phyllodocida	Aciculata	Palpata
Paleanotus chrysolepis	Schmarda, 1861	*chrysolepis*	*Paleanotus*	Chrysopetalidae	Phyllodocida	Aciculata	Palpata
Vigtorniella zaikai	(Kisseleva, 1992)	*zaikai*	*Vigtorniella*	Chrysopetalidae	Phyllodocida	Aciculata	Palpata
Grubeulepis augeneri	Pettibone, 1969	*augeneri*	*Grubeulepis*	Eulepethidae	Phyllodocida	Aciculata	Palpata
Grubeulepis katzmanni	Pettibone, 1986	*katzmanni*	*Grubeulepis*	Eulepethidae	Phyllodocida	Aciculata	Palpata
Glycera alba	(O.F. Müller, 1776)	*alba*	*Glycera*	Glyceridae	Phyllodocida	Aciculata	Palpata
Glycera celtica	O'Connor, 1987	*celtica*	*Glycera*	Glyceridae	Phyllodocida	Aciculata	Palpata
Glycera fallax	Quatrefages, 1850	*fallax*	*Glycera*	Glyceridae	Phyllodocida	Aciculata	Palpata
Glycera lapidum	Quatrefages, 1866	*lapidum*	*Glycera*	Glyceridae	Phyllodocida	Aciculata	Palpata
Glycera oxycephala	Ehlers, 1887	*oxycephala*	*Glycera*	Glyceridae	Phyllodocida	Aciculata	Palpata
Glycera tesselata	Grube, 1863	*tesselata*	*Glycera*	Glyceridae	Phyllodocida	Aciculata	Palpata
Glycera tridactyla	Schmarda, 1861	*tridactyla*	*Glycera*	Glyceridae	Phyllodocida	Aciculata	Palpata
Glycera unicornis	Savigny in Lamarck, 1818	*unicornis*	*Glycera*	Glyceridae	Phyllodocida	Aciculata	Palpata
Glycinde nordmanni	(Malmgren, 1866)	*nordmanni*	*Glycinde*	Goniadidae	Phyllodocida	Aciculata	Palpata
Goniada emerita	Audouin & Milne-Edwards, 1833	*emerita*	*Goniada*	Goniadidae	Phyllodocida	Aciculata	Palpata
Goniada gigantea	(Verrill, 1885)	*gigantea*	*Goniada*	Goniadidae	Phyllodocida	Aciculata	Palpata
Goniada hexadentes	Böggemann & Eibye-Jacobsen, 2002	*hexadentes*	*Goniada*	Goniadidae	Phyllodocida	Aciculata	Palpata
Goniada maculata	Örsted, 1843	*maculata*	*Goniada*	Goniadidae	Phyllodocida	Aciculata	Palpata

Goniada norvegica	Örsted, 1845	*norvegica*	*Goniada*	Goniadidae	Phyllodocida	Aciculata	Palpata
Goniada vorax	(Kinberg, 1866)	*vorax*	*Goniada*	Goniadidae	Phyllodocida	Aciculata	Palpata
Goniadella galaica	(Rioja, 1923)	*galaica*	*Goniadella*	Goniadidae	Phyllodocida	Aciculata	Palpata
Goniadella gracilis	(Verrill, 1873)	*gracilis*	*Goniadella*	Goniadidae	Phyllodocida	Aciculata	Palpata
Amphiduros fuscescens	(Marenzeller, 1875)	*fuscescens*	*Amphiduros*	Hesionidae	Phyllodocida	Aciculata	Palpata
Dalhousiella carpenteri	McIntosh, 1901	*carpenteri*	*Dalhousiella*	Hesionidae	Phyllodocida	Aciculata	Palpata
Gyptis mediterranea	Pleijel, 1993	*mediterranea*	*Gyptis*	Hesionidae	Phyllodocida	Aciculata	Palpata
Gyptis propinqua	Marion & Bobretzky, 1875	*propinqua*	*Gyptis*	Hesionidae	Phyllodocida	Aciculata	Palpata
Hesione festiva	Savigny in Lamarck, 1818	*festiva*	*Hesione*	Hesionidae	Phyllodocida	Aciculata	Palpata
Hesione pantherina	Risso, 1826	*pantherina*	*Hesione*	Hesionidae	Phyllodocida	Aciculata	Palpata
Hesione splendida	Savigny in Lamarck, 1818	*splendida*	*Hesione*	Hesionidae	Phyllodocida	Aciculata	Palpata
Hesionides arenaria	Friedrich, 1937	*arenaria*	*Hesionides*	Hesionidae	Phyllodocida	Aciculata	Palpata
Hesionides gohari	Hartmann-Schröder, 1960	*gohari*	*Hesionides*	Hesionidae	Phyllodocida	Aciculata	Palpata
Hesionides maxima	Westheide, 1967	*maxima*	*Hesionides*	Hesionidae	Phyllodocida	Aciculata	Palpata
Hesiospina aurantiaca	(M. Sars, 1862)	*aurantiaca*	*Hesiospina*	Hesionidae	Phyllodocida	Aciculata	Palpata
Leocrates atlanticus	(McIntosh, 1885)	*atlanticus*	*Leocrates*	Hesionidae	Phyllodocida	Aciculata	Palpata
Leocrates claparedii	(Costa in Claparède, 1868)	*claparedii*	*Leocrates*	Hesionidae	Phyllodocida	Aciculata	Palpata
Microphthalmus fragilis	Bobretzky, 1870	*fragilis*	*Microphthalmus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Microphthalmus pettiboneae	Riser, 2000	*pettiboneae*	*Microphthalmus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Microphthalmus pseudoaberrans	Campoy & Vieitez, 1982	*pseudoaberrans*	*Microphthalmus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Microphthalmus sczelkowii	Metschnikow, 1865	*sczelkowii*	*Microphthalmus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Microphthalmus similis	Bobretzky, 1870	*similis*	*Microphthalmus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Microphthalmus tyrrhenicus	Zunarelli-Vandini, 1967	*tyrrhenicus*	*Microphthalmus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Nereimyra punctata	(O.F. Müller, 1788)	*punctata*	*Nereimyra*	Hesionidae	Phyllodocida	Aciculata	Palpata
Ophiodromus agilis	(Ehlers, 1864)	*agilis*	*Ophiodromus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Ophiodromus flexuosus	(Delle Chiaje, 1827)	*flexuosus*	*Ophiodromus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Ophiodromus pallidus	(Claparède, 1864)	*pallidus*	*Ophiodromus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Ophiodromus pellagicus	Rioja, 1923	*pellagicus*	*Ophiodromus*	Hesionidae	Phyllodocida	Aciculata	Palpata
Podarkeopsis arenicolus	(La Greca, 1947)	*arenicolus*	*Podarkeopsis*	Hesionidae	Phyllodocida	Aciculata	Palpata
Podarkeopsis capensis	(Day, 1963)	*capensis*	*Podarkeopsis*	Hesionidae	Phyllodocida	Aciculata	Palpata

Psamathe fusca	Johnston, 1836	*fusca*	*Psamathe*	Hesionidae	Phyllodocida	Aciculata	Palpata
Syllidia armata	Quatrefages, 1866	*armata*	*Syllidia*	Hesionidae	Phyllodocida	Aciculata	Palpata
Ichthyotomus sanguinarius	Eisig, 1906	*sanguinarius*	*Ichthyotomus*	Ichthyotomidae	Phyllodocida	Aciculata	Palpata
Iospilus phalacroides	Viguier, 1886	*phalacroides*	*Iospilus*	Iospilidae	Phyllodocida	Aciculata	Palpata
Paraiospilus affinis	Viguier, 1911	*affinis*	*Paraiospilus*	Iospilidae	Phyllodocida	Aciculata	Palpata
Phalacrophorus pictus	Greeff, 1879	*pictus*	*Phalacrophorus*	Iospilidae	Phyllodocida	Aciculata	Palpata
Lacydonia laureci	Laubier, 1975	*laureci*	*Lacydonia*	Lacydoniidae	Phyllodocida	Aciculata	Palpata
Lacydonia miranda	Marion & Bobretzky *in* Marion, 1874	*miranda*	*Lacydonia*	Lacydoniidae	Phyllodocida	Aciculata	Palpata
Lopadorrhynchus appendiculatus	Southern, 1909	*appendiculatus*	*Lopadorrhynchus*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Lopadorrhynchus brevis	Grube, 1855	*brevis*	*Lopadorrhynchus*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Lopadorrhynchus krohni	(Claparède, 1870)	*krohni*	*Lopadorrhynchus*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Lopadorrhynchus uncinatus	Fauvel, 1915	*uncinatus*	*Lopadorrhynchus*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Maupasia coeca	Viguier, 1886	*coeca*	*Maupasia*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Maupasia isochaeta	(Reibisch, 1895)	*isochaeta*	*Maupasia*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Pedinosoma curtum	Reibisch, 1895	*curtum*	*Pedinosoma*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Pelagobia longicirrata	Greeff, 1879	*longicirrata*	*Pelagobia*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Pelagobia serrata	Southern, 1909	*serrata*	*Pelagobia*	Lopadorrhynchidae	Phyllodocida	Aciculata	Palpata
Myzostoma alatum	Graff, 1884	*alatum*	*Myzostoma*	Myzostomidae	Phyllodocida	Aciculata	Palpata
Myzostoma cirriferum	Leuckart, 1836	*cirriferum*	*Myzostoma*	Myzostomidae	Phyllodocida	Aciculata	Palpata
Myzostoma glabrum	Leuckart in Graff, 1877	*glabrum*	*Myzostoma*	Myzostomidae	Phyllodocida	Aciculata	Palpata
Pulvinomyzostomum pulvinar	(Graff, 1884)	*pulvinar*	*Myzostoma*	Myzostomidae	Phyllodocida	Aciculata	Palpata
Aglaophamus agilis	(Langerhans, 1880)	*agilis*	*Aglaophamus*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Aglaophamus malmgreni	Théel, 1879	*malmgreni*	*Aglaophamus*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Aglaophamus rubella	(Michaelsen, 1896)	*rubella*	*Aglaophamus*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Inermonephtys inermis	(Ehlers, 1887)	*inermis*	*Inermonephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Micronephthys maryae	San Martín, 1982	*maryae*	*Micronephthys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Micronephthys sphaerocirrata	(Wesenberg-Lund, 1949)	*sphaerocirrata*	*Micronephthys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Micronephthys stammeri	(Augener, 1932)	*stammeri*	*Micronephthys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys assimilis	Örsted, 1843	*assimilis*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys caeca	(Fabricius, 1780)	*caeca*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata

Nephtys ciliata	(O.F. Müller, 1776)	*ciliata*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys cirrosa	Ehlers, 1868	*cirrosa*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys hombergii	Savigny in Lamarck, 1818	*hombergii*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys hystricis	McIntosh, 1900	*hystricis*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys incisa	Malmgren, 1865	*incisa*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys kersivalensis	McIntosh, 1908	*kersivalensis*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys longosetosa	Örsted, 1842	*longosetosa*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Nephtys paradoxa	Malm, 1874	*paradoxa*	*Nephtys*	Nephtyidae	Phyllodocida	Aciculata	Palpata
Alitta succinea	(Leuckart, 1847)	*succinea*	*Alitta*	Nereididae	Phyllodocida	Aciculata	Palpata
Alitta virens	(M. Sars, 1835)	*virens*	*Alitta*	Nereididae	Phyllodocida	Aciculata	Palpata
Ceratonereis mirabilis	Kinberg, 1865	*mirabilis*	*Ceratonereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Composetia costae	(Grube, 1840)	*costae*	*Composetia*	Nereididae	Phyllodocida	Aciculata	Palpata
Composetia hircinicola	(Eisig, 1870)	*hircinicola*	*Composetia*	Nereididae	Phyllodocida	Aciculata	Palpata
Composetia vittata	(Langerhans, 1884)	*vittata*	*Composetia*	Nereididae	Phyllodocida	Aciculata	Palpata
Eunereis longissima	(Johnston, 1840)	*longissima*	*Eunereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Hediste diversicolor	(O.F. Müller, 1776)	*diversicolor*	*Hediste*	Nereididae	Phyllodocida	Aciculata	Palpata
Hediste gilchristi	(Day, 1967)	*gilchristi*	*Hediste*	Nereididae	Phyllodocida	Aciculata	Palpata
Leonnates decipiens	Fauvel, 1929	*decipiens*	*Leonnates*	Nereididae	Phyllodocida	Aciculata	Palpata
Leonnates indicus	Kinberg, 1866	*indicus*	*Leonnates*	Nereididae	Phyllodocida	Aciculata	Palpata
Leonnates persicus	Wesenberg-Lund, 1949	*persicus*	*Leonnates*	Nereididae	Phyllodocida	Aciculata	Palpata
Micronereis bansei	(Hartmann-Schröder, 1979)	*bansei*	*Micronereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Micronereis variegata	Claparède, 1863	*variegata*	*Micronereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Namanereis littoralis	(Grube, 1872)	*littoralis*	*Namanereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Namanereis pontica	(Bobretzky, 1872)	*pontica*	*Namanereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Neanthes agulhana	Day, 1963	*agulhana*	*Neanthes*	Nereididae	Phyllodocida	Aciculata	Palpata
Neanthes caudata	(Delle Chiaje, 1822)	*caudata*	*Neanthes*	Nereididae	Phyllodocida	Aciculata	Palpata
Neanthes flavipes	(Ehlers, 1868)	*flavipes*	*Neanthes*	Nereididae	Phyllodocida	Aciculata	Palpata
Neanthes fucata	(Savigny, 1822)	*fucata*	*Neanthes*	Nereididae	Phyllodocida	Aciculata	Palpata
Neanthes kerguelensis	(McIntosh, 1885)	*kerguelensis*	*Neanthes*	Nereididae	Phyllodocida	Aciculata	Palpata
Neanthes nubila	(Quatrefages, 1866)	*nubila*	*Neanthes*	Nereididae	Phyllodocida	Aciculata	Palpata

Neanthes rubicunda	(Ehlers, 1868)	*rubicunda*	*Neanthes*	Nereididae	Phyllodocida	Aciculata	Palpata
Neanthes willeyi	(Day, 1934)	*willeyi*	*Neanthes*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis funchalensis	(Langerhans, 1880)	*funchalensis*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis lamellosa	Ehlers, 1868	*lamellosa*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis pelagica	Linnaeus, 1758	*pelagica*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis perivisceralis	Claparède, 1868	*perivisceralis*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis persica	Fauvel, 1911	*persica*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis pulsatoria	(Savigny, 1822)	*pulsatoria*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis rava	Ehlers, 1868	*rava*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis splendida	Grube, 1840	*splendida*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Nereis usticensis	Cantone, Catalano & Badalamenti, 2003	*usticensis*	*Nereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Perinereis cultrifera	(Grube, 1840)	*cultrifera*	*Perinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Perinereis macropus	(Claparède, 1870)	*macropus*	*Perinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Perinereis macropus conodonta	Fauvel, 1924	*macropus conodonta*	*Perinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Perinereis marionii	(Audouin & Milne Edwards, 1833)	*marionii*	*Perinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Perinereis nuntia	(Savigny in Lamarck, 1818)	*nuntia*	*Perinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Perinereis oliveirae	Horst, 1889	*oliveirae*	*Perinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Perinereis rullieri	Pilato, 1974	*rullieri*	*Perinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Perinereis tenuisetis	Fauvel, 1915	*tenuisetis*	*Perinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Platynereis australis	(Schmarda, 1861)	*australis*	*Platynereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Platynereis coccinea	(Delle Chiaje, 1827)	*coccinea*	*Platynereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Platynereis dumerilli	(Audouin & Milne Edwards, 1833)	*dumeriii*	*Platynereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Platynereis massiliensis	(Moquin-Tandon, 1869)	*massiliensis*	*Platynereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Platynereis nadiae	Abbiati & Castelli, 1992	*nadiae*	*Platynereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Pseudonereis anomala	Gravier, 1901	*anomala*	*Pseudonereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Rullierinereis anoculata	Cantone, 1982	*anoculata*	*Rullierinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Websterinereis glauca	(Claparède, 1870)	*glauca*	*Websterinereis*	Nereididae	Phyllodocida	Aciculata	Palpata
Paralacydonia paradoxa	Fauvel, 1913	*paradoxa*	*Paralacydonia*	Paralacydoniidae	Phyllodocida	Aciculata	Palpata
Pholoe fauveli	Kirkegaard, 1983	*fauveli*	*Pholoe*	Pholoidae	Phyllodocida	Aciculata	Palpata
Pholoe inornata	Johnston, 1839	*inornata*	*Pholoe*	Pholoidae	Phyllodocida	Aciculata	Palpata

Pholoides dorsipapillatus	(Marenzeller, 1893)	*dorsipapillatus*	*Pholoides*	Pholoidae	Phyllodocida	Aciculata	Palpata
Alciopina parasitica	Claparède & Panceri, 1867	*parasitica*	*Alciopina*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Chaetoparia nilssoni	Malmgren, 1867	*nilssoni*	*Chaetoparia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eteone flava	(Fabricius, 1780)	*flava*	*Eteone*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eteone foliosa	Quatrefages, 1866	*foliosa*	*Eteone*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eteone longa	(Fabricius, 1780)	*longa*	*Eteone*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eteone picta	Quatrefagues, 1866	*picta*	*Eteone*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eteone siphodonta	(Delle Chiaje, 1830)	*siphodonta*	*Eteone*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eulalia aurea	Gravier, 1896	*aurea*	*Eulalia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eulalia bilineata	(Johnston, 1840)	*bilineata*	*Eulalia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eulalia brunnea	(Hartmann-Schröder, 1963)	*brunnea*	*Eulalia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eulalia clavigera	(Audouin & Milne Edwards, 1833)	*clavigera*	*Eulalia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eulalia expusilla	Pleijel, 1987	*expusilla*	*Eulalia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eulalia mustela	Pleijel, 1987	*mustela*	*Eulalia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eulalia tripunctata	McIntosh, 1874	*tripunctata*	*Eulalia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eulalia viridis	(Linnaeus, 1767)	*viridis*	*Eulalia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eumida sanguinea	(Örsted, 1843)	*sanguinea*	*Eumida*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Eumida venustissima	(Banse, 1959)	*venustissima*	*Eumida*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Hesionura coineaui	(Laubier, 1962)	*coineaui*	*Hesionura*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Hesionura elongata	(Southern, 1914)	*elongata*	*Hesionura*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Hesionura serrata	(Hartmann-Schröder, 1960)	*serrata*	*Hesionura*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Krohnia lepidota lepidota	(Krohn, 1845)	*lepidota lepidota*	*Krohnia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Krohnia lepidota krohnii	(Greeff, 1879)	*lepidota krohnii*	*Krohnia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Lugia pterophora	(Ehlers, 1864)	*pterophora*	*Lugia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Mystides borealis	Théel, 1879	*borealis*	*Mystides*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Mystides caeca	Langerhans, 1880	*caeca*	*Mystides*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Naiades cantrainii	Delle Chiaje, 1828	*cantrainii*	*Naiades*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Nereiphylla paretti	Blainville, 1828	*paretti*	*Nereiphylla*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Nereiphylla pusilla	(Claparède, 1870)	*pusilla*	*Nereiphylla*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Nereiphylla rubiginosa	(Saint-Joseph, 1888)	*rubiginosa*	*Nereiphylla*	Phyllodocidae	Phyllodocida	Aciculata	Palpata

Notophyllum foliosum	(Sars, 1835)	*foliosum*	*Notophyllum*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Paranaitis kosteriensis	(Malmgren, 1867)	*kosteriensis*	*Paranaitis*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Paranaitis wahlbergi	(Malmgren, 1865)	*wahlbergi*	*Paranaitis*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Phyllodoce laminosa	Savigny in Lamarck, 1818	*laminosa*	*Phyllodoce*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Phyllodoce lineata	(Claparède, 1870)	*lineata*	*Phyllodoce*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Phyllodoce longipes	Kinberg, 1866	*longipes*	*Phyllodoce*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Phyllodoce maculata	(Linnaeus, 1767)	*maculata*	*Phyllodoce*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Phyllodoce madeirensis	Langerhans, 1880	*madeirensis*	*Phyllodoce*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Phyllodoce mucosa	Örsted, 1843	*mucosa*	*Phyllodoce*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Phyllodoce rosea	(McIntosh, 1877)	*rosea*	*Phyllodoce*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Pirakia punctifera	(Grube, 1860)	*punctifera*	*Pirakia*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Plotohelmis capitata	(Greeff, 1876)	*capitata*	*Plotohelmis*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Plotohelmis tenuis	(Apstein, 1900)	*tenuis*	*Plotohelmis*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Protomystides bidentata	Lagerhans, 1880	*bidentata*	*Protomystides*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Pseudomystides limbata	(Saint-Joseph, 1888)	*limbata*	*Pseudomystides*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Pseudomystides spinachia	Petersen & Pleijel in Pleijel, 1993	*spinachia*	*Pseudomystides*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Pterocirros macroceros	(Grube, 1860)	*macroceros*	*Pterocirros*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Rhynchonereella gracilis	Costa, 1864	*gracilis*	*Rhynchonereella*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Rhynchonereella moebii	(Apstein, 1893)	*moebii*	*Rhynchonereella*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Rhynchonereella petersii	(Langerhans, 1880)	*petersii*	*Rhynchonereella*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Sige fusigera	Malmgren, 1865	*fusigera*	*Sige*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Torrea candida	(Delle Chiaje, 1841)	*candida*	*Torrea*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Vanadis crystallina	Greeff, 1876	*crystallina*	*Vanadis*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Vanadis formosa	Claparède, 1870	*formosa*	*Vanadis*	Phyllodocidae	Phyllodocida	Aciculata	Palpata
Ancistrosyllis groenlandica	McIntosh, 1878	*groenlandica*	*Ancistrosyllis*	Pilargidae	Phyllodocida	Aciculata	Palpata
Ancistrosyllis hamata	(Hartman, 1960)	*hamata*	*Ancistrosyllis*	Pilargidae	Phyllodocida	Aciculata	Palpata
Glyphohesione klatti	Friedrich, 1950	*klatti*	*Glyphohesione*	Pilargidae	Phyllodocida	Aciculata	Palpata
Litocorsa stremma	Pearson, 1970	*stremma*	*Litocorsa*	Pilargidae	Phyllodocida	Aciculata	Palpata
Otopsis chardyi	Katzmann, Laubier & Ramos, 1974	*chardyi*	*Otopsis*	Pilargidae	Phyllodocida	Aciculata	Palpata
Pilargis verrucosa	Saint-Joseph, 1899	*verrucosa*	*Pilargis*	Pilargidae	Phyllodocida	Aciculata	Palpata

Pseudoexogone dineti	(Katzmann, Laubier & Ramos, 1974)	*dineti*	*Pseudoexogone*	Pilargidae	Phyllodocida	Aciculata	Palpata
Sigambra constricta	(Southern, 1921)	*constricta*	*Sigambra*	Pilargidae	Phyllodocida	Aciculata	Palpata
Sigambra parva	(Day, 1963)	*parva*	*Sigambra*	Pilargidae	Phyllodocida	Aciculata	Palpata
Sigambra tentaculata	(Treadwell, 1941)	*tentaculata*	*Sigambra*	Pilargidae	Phyllodocida	Aciculata	Palpata
Synelmis albini	(Langerhans, 1881)	*albini*	*Synelmis*	Pilargidae	Phyllodocida	Aciculata	Palpata
Pisione puzae	Siewing, 1953	*puzae*	*Pisione*	Pisionidae	Phyllodocida	Aciculata	Palpata
Pisione remota	(Southern, 1914)	*remota*	*Pisione*	Pisionidae	Phyllodocida	Aciculata	Palpata
Acanthicolepis asperrima	(M. Sars, 1861)	*asperrima*	*Acanthicolepis*	Polynoidae	Phyllodocida	Aciculata	Palpata
Acholoe astericola	(Delle Chiaje, 1841)	*astericola*	*Acholoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Adyte assimilis	(McIntosh, 1874)	*assimilis*	*Adyte*	Polynoidae	Phyllodocida	Aciculata	Palpata
Alentia gelatinosa	(M. Sars, 1835)	*gelatinosa*	*Alentia*	Polynoidae	Phyllodocida	Aciculata	Palpata
Bathyfauvelia affinis	(Fauvel, 1914)	*affinis*	*Bathyfauvelia*	Polynoidae	Phyllodocida	Aciculata	Palpata
Eunoe nodosa	(M. Sars, 1861)	*nodosa*	*Eunoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Eunoe tuerkayi	Barnich & Fiege, 2003	*tuerkayi*	*Eunoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Gattyana cirrhosa	(Pallas, 1766)	*cirrhosa*	*Gattyana*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe aequespina	(Langerhans, 1884)	*aequespina*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe antilopes	McIntosh, 1876	*antilopes*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe areolata	(Grube, 1860)	*areolata*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe aspera	(Hansen, 1879)	*aspera*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe bellani	Barnich & Fiege, 2000	*bellani*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe clavigera	(M. Sars, 1863)	*clavigera*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe extenuata	(Grube, 1840)	*extenuata*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe fragilis	Moore, 1910	*fragilis*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe fraserthomsoni	McIntosh, 1896	*fraserthomsoni*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe gilchristi	Day, 1960	*gilchristi*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe imbricata	(Linnaeus, 1767)	*imbricata*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe impar	(Johnston, 1839)	*impar*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe longisetis	(Grube, 1863)	*longisetis*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe pokoui	Intes & Le Loeuff, 1975	*pokoui*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Harmothoe serrata	Day, 1963	*serrata*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata

Harmothoe spinifera	(Ehlers, 1864)	*spinifera*	*Harmothoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Lepidasthenia brunnea	Day, 1960	*brunnea*	*Lepidasthenia*	Polynoidae	Phyllodocida	Aciculata	Palpata
Lepidasthenia elegans	(Grube, 1840)	*elegans*	*Lepidasthenia*	Polynoidae	Phyllodocida	Aciculata	Palpata
Lepidasthenia grimaldii	(Marenzeller, 1892)	*grimaldii*	*Lepidasthenia*	Polynoidae	Phyllodocida	Aciculata	Palpata
Lepidonotus carinulatus	(Grube, 1870)	*carinulatus*	*Lepidonotus*	Polynoidae	Phyllodocida	Aciculata	Palpata
Lepidonotus clava	(Montagu, 1808)	*clava*	*Lepidonotus*	Polynoidae	Phyllodocida	Aciculata	Palpata
Lepidonotus squamatus	(Linnaeus, 1758)	*squamatus*	*Lepidonotus*	Polynoidae	Phyllodocida	Aciculata	Palpata
Lepidonotus tenuisetosus	(Gravier, 1902)	*tenuisetosus*	*Lepidonotus*	Polynoidae	Phyllodocida	Aciculata	Palpata
Leucia nivea	(M. Sars, 1863)	*nivea*	*Leucia*	Polynoidae	Phyllodocida	Aciculata	Palpata
Macellicephala laubieri	Reyss, 1971	*laubieri*	*Macellicephala*	Polynoidae	Phyllodocida	Aciculata	Palpata
Malmgreniella andreapolis	(McIntosh, 1874)	*andreapolis*	*Malmgreniella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Malmgreniella castanea	(McIntosh, 1876)	*castanea*	*Malmgreniella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Malmgreniella darbouxi	Pettibone, 1993	*darbouxi*	*Malmgreniella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Malmgreniella lilianae	Petttibone, 1993	*lilianae*	*Malmgreniella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Malmgreniella ljungmani	(Malmgren, 1867)	*ljungmani*	*Malmgreniella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Malmgreniella lunulata	(Delle Chiaje, 1830)	*lunulata*	*Malmgreniella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Malmgreniella marphysae	(McIntosh, 1876)	*marphysae*	*Malmgreniella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Malmgreniella polypapillata	Barnich & Fiege, 2001	*polypapillata*	*Malmgreniella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Neolagisca drachi	(Reyss, 1961)	*drachi*	*Neolagisca*	Polynoidae	Phyllodocida	Aciculata	Palpata
Paradyte crinoidicola	(Potts, 1910)	*crinoidicola*	*Paradyte*	Polynoidae	Phyllodocida	Aciculata	Palpata
Polaruschakov reyssi	Pettibone, 1976	*reyssi*	*Polaruschakov*	Polynoidae	Phyllodocida	Aciculata	Palpata
Polynoe scolopendrina	Savigny, 1822	*scolopendrina*	*Polynoe*	Polynoidae	Phyllodocida	Aciculata	Palpata
Robertianella synophthalma	McIntosh, 1885	*synophthalma*	*Robertianella*	Polynoidae	Phyllodocida	Aciculata	Palpata
Subadyte pellucida	(Ehlers, 1864)	*pellucida*	*Subadyte*	Polynoidae	Phyllodocida	Aciculata	Palpata
Pontodora pelagica	Greeff, 1879	*pelagica*	*Pontodora*	Pontodoridae	Phyllodocida	Aciculata	Palpata
Claparedepelogenia inclusa	(Claparède, 1868)	*inclusa*	*Claparedepelogenia*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Euthalenessa oculata	(Peters, 1854)	*oculata*	*Euthalenessa*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Fimbriosthenelais longipinnis	(Grube, 1870)	*longipinnis*	*Fimbriosthenelais*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Fimbriosthenelais minor	(Pruvot & Racovitza, 1895)	*minor*	*Fimbriosthenelais*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Fimbriosthenelais zetlandica	(McIntosh, 1876)	*zetlandica*	*Fimbriosthenelais*	Sigalionidae	Phyllodocida	Aciculata	Palpata

Labioleanira yhleni	(Malmgren, 1867)	*yhleni*	*Labioleanira*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Neoleanira tetragona	(Örsted, 1845)	*tetragona*	*Neoleanira*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Pelogenia arenosa	(Delle Chiaje, 1830)	*arenosa*	*Pelogenia*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Sigalion mathildae	Audouin & Milne Edwards in Cuvier, 1830	*mathildae*	*Sigalion*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Sigalion squamosum	Delle Chiaje, 1830	*squamosum*	*Sigalion*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Sthenelais boa	(Johnston, 1833)	*boa*	*Sthenelais*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Sthenelais limicola	(Ehlers, 1864)	*limicola*	*Sthenelais*	Sigalionidae	Phyllodocida	Aciculata	Palpata
Clavodorum adriaticum	Katzmann, 1973	*adriaticum*	*Clavodorum*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Ephesiella abyssorum	(Hansen, 1878)	*abyssorum*	*Ephesiella*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Ephesiella cantonei	Mòllica, 1994	*cantonei*	*Ephesiella*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Euritmia hamulisetosa	Sarda-Borroy, 1987	*hamulisetosa*	*Euritmia*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Sphaerodoridium claparedii	(Greeff, 1866)	*claparedii*	*Sphaerodoridium*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Sphaerodoropsis balticum	(Reimers, 1933)	*balticum*	*Sphaerodoropsis*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Sphaerodoropsis longiparapodium	(Katzmann, 1973)	*longiparapodium*	*Sphaerodoropsis*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Sphaerodoropsis minuta	(Webster & Benedict, 1887)	*minuta*	*Sphaerodoropsis*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Sphaerodoropsis philippi	(Fauvel, 1911)	*philippi*	*Sphaerodoropsis*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Sphaerodoropsis sphaerulifer	(Moore, 1909)	*sphaerulifer*	*Sphaerodoropsis*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Sphaerodorum gracilis	(Rathke, 1843)	*gracilis*	*Sphaerodorum*	Sphaerodoridae	Phyllodocida	Aciculata	Palpata
Amblyosyllis formosa	(Claparède, 1863)	*formosa*	*Amblyosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Amblyosyllis madeirensis	Langerhans, 1879	*madeirensis*	*Amblyosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Anoplosyllis edentula	Claparède, 1868	*edentula*	*Anoplosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Branchiosyllis exilis	(Gravier, 1900)	*exilis*	*Branchiosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Brania arminii	(Langerhans, 1880)	*arminii*	*Brania*	Syllidae	Phyllodocida	Aciculata	Palpata
Brania pusilla	(Dujardin, 1851)	*pusilla*	*Brania*	Syllidae	Phyllodocida	Aciculata	Palpata
Brevicirrosyllis weismanni	(Langerhans, 1879)	*weismanni*	*Brevicirrosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Dioplosyllis cirrosa	Gidholm, 1962	*cirrosa*	*Dioplosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Epigamia macrophthalma	(Marenzeller, 1875)	*macrophthalma*	*Epigamia*	Syllidae	Phyllodocida	Aciculata	Palpata
Erinaceusyllis belizensis	(Russel, 1989)	*belizensis*	*Erinaceusyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Erinaceusyllis cryptica	(Ben-Eliahu, 1977)	*cryptica*	*Erinaceusyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Erinaceusyllis erinaceus	(Claparède, 1863)	*erinaceus*	*Erinaceusyllis*	Syllidae	Phyllodocida	Aciculata	Palpata

Erinaceusyllis serratosetosa	(Hartmann-Schröder, 1982)	*serratosetosa*	*Erinaceusyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Eurysyllis tuberculata	Ehlers, 1864	*tuberculata*	*Eurysyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Eusyllis assimilis	Marenzeller, 1875	*assimilis*	*Eusyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Eusyllis blomstrandi	Malmgren, 1867	*blomstrandi*	*Eusyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Eusyllis lamelligera	Marion & Bobretzky, 1875	*lamelligera*	*Eusyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Eusyllis kuppferi	Langerhans, 1879	*kuppferi*	*Eusyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone acerata	San Martín & Parapar, 1990	*acerata*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone brevipes	(Claparède, 1864)	*brevipes*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone campoyi	San Martín, Ceberio & Aguirrezabalaga, 1996	*campoyi*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone canyonincolae	Sardá, Gil, Taboada & Gili, 2009	*canyonincolae*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone caribensis	San Martín, 1991	*caribensis*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone cognetti	Castelli, Badalamenti & Lardicci, 1987	*cognetti*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone dispar	(Webster, 1879)	*dispar*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone fauveli	Cognetti, 1961	*fauveli*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone gambiae	Lanera, Sordino & San Martín, 1994	*gambiae*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone hebes	(Webster & Benedict, 1884)	*hebes*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone lopezi	San Martín, Ceberio & Aguirrezabalaga, 1996	*lopezi*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone meridionalis	Cognetti, 1955	*meridionalis*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone naidina	Örsted, 1845	*naidina*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone rostrata	Naville, 1933	*rostrata*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone sorbei	San Martín, Ceberio & Aguirrezabalaga, 1996	*sorbei*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone torulosa	(Claparède, 1864)	*torulosa*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone verugera	(Claparède, 1868)	*verugera*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Exogone wolfi	San Martín, 1991	*wolfi*	*Exogone*	Syllidae	Phyllodocida	Aciculata	Palpata
Haplosyllis granulosa	(Lattig, San Martín & Martin, 2007)	*granulosa*	*Geminosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Haplosyllis chamaeleon	Laubier, 1960	*chamaeleon*	*Haplosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Haplosyllis spongicola	(Grube, 1855)	*spongicola*	*Haplosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Inermosyllis balearica	(San Martín, 1982)	*balearica*	*Inermosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Levidorum pori	(Ben-Eliahu, 1977)	*pori*	*Levidorum*	Syllidae	Phyllodocida	Aciculata	Palpata
Miscellania dentata	Martin, Alós & Sardá, 1990	*dentata*	*Miscellania*	Syllidae	Phyllodocida	Aciculata	Palpata

Myrianida brachycephala	(Marenzeller, 1874)	*brachycephala*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida convoluta	(Cognetti, 1953)	*convoluta*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida dentalia	(Imajima, 1966)	*dentalia*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida edwarsi	(Saint-Joseph, 1887)	*edwarsi*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida hesperidium	(Claparède, 1868)	*hesperidium*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida inermis	(Saint Joseph, 1887)	*inermis*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida langerhansi	(Gidholm, 1967)	*langerhansi*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida longoprimicirrata	(López, San Martín & Jiménez, 1997)	*longoprimicirrata*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida pinnigera	(Montagu, 1808)	*pinnigera*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida prolifera	(O.F. Müller, 1788)	*prolifera*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida quindecimdentata	(Langerhans, 1884)	*quindecimdentata*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Myrianida rubropunctata	(Grube, 1860)	*rubropunctata*	*Myrianida*	Syllidae	Phyllodocida	Aciculata	Palpata
Neopetitia amphophthalma	(Siewing, 1955)	*amphophthalma*	*Neopetitia*	Syllidae	Phyllodocida	Aciculata	Palpata
Nudisyllis divaricata	(Keferstein, 1862)	*divaricata*	*Nudisyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Nudisyllis pulligera	(Krohn, 1852)	*pulligera*	*Nudisyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Odontosyllis ctenostoma	Claparède, 1868	*ctenostoma*	*Odontosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Odontosyllis dugesiana	Claparède, 1864	*dugesiana*	*Odontosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Odontosyllis fulgurans	(Audouin & Milne-Edward, 1833)	*fulgurans*	*Odontosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Odontosyllis gibba	Claparède, 1863	*gibba*	*Odontosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Opisthodonta longocirrata	(Saint-Joseph, 1887)	*longocirrata*	*Opisthodonta*	Syllidae	Phyllodocida	Aciculata	Palpata
Opisthodonta morena	Langerhans, 1879	*morena*	*Opisthodonta*	Syllidae	Phyllodocida	Aciculata	Palpata
Opisthodonta serratisetosa	(López, San Martín & Jiménez, 1997)	*serratisetosa*	*Opisthodonta*	Syllidae	Phyllodocida	Aciculata	Palpata
Opisthosyllis brunnea	Langerhans, 1879	*brunnea*	*Opisthosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Palposyllis prosostoma	Hartmann-Schröder, 1977	*prosostoma*	*Palposyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Paraehlersia ferrugina	(Langerhans, 1881)	*ferrugina*	*Paraehlersia*	Syllidae	Phyllodocida	Aciculata	Palpata
Parapionosyllis brevicirra	Day, 1954	*brevicirra*	*Parapionosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Parapionosyllis elegans	(Pierantoni, 1903)	*elegans*	*Parapionosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Parapionosyllis gestans	(Pierantoni, 1903)	*gestans*	*Parapionosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Parapionosyllis labronica	Cognetti, 1965	*labronica*	*Parapionosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Parapionosyllis minuta	(Pierantoni, 1903)	*minuta*	*Parapionosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata

Paraprocerastea crocantinae	San Martín & Alós, 1989	*crocantinae*	*Paraprocerastea*	Syllidae	Phyllodocida	Aciculata	Palpata
Paratyposyllis peresi	Laubier, 1968	*peresi*	*Paratyposyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Perkinsyllis anophthalma	(Capaccioni & San Martín, 1989)	*anophthalma*	*Perkinsyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Pionosyllis dionisi	Núñez & San Martín, 1991	*dionisi*	*Pionosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Plakosyllis brevipes	Hartmann-Schröder, 1956	*brevipes*	*Plakosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Proceraea aurantiaca	Claparède, 1868	*aurantiaca*	*Proceraea*	Syllidae	Phyllodocida	Aciculata	Palpata
Proceraea paraurantiaca	Nygren, 2004	*paraurantiaca*	*Proceraea*	Syllidae	Phyllodocida	Aciculata	Palpata
Proceraea picta	Ehlers, 1864	*picta*	*Proceraea*	Syllidae	Phyllodocida	Aciculata	Palpata
Proceraea scapularis	(Claparède, 1864)	*scapularis*	*Proceraea*	Syllidae	Phyllodocida	Aciculata	Palpata
Procerastea halleziana	Malaquin, 1893	*halleziana*	*Procerastea*	Syllidae	Phyllodocida	Aciculata	Palpata
Procerastea nematodes	Langerhans, 1884	*nematodes*	*Procerastea*	Syllidae	Phyllodocida	Aciculata	Palpata
Prosphaerosyllis adelae	(San Martín, 1984)	*adelae*	*Prosphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Prosphaerosyllis brandhorsti	(Hartmann-Schröder, 1965)	*brandhorsti*	*Prosphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Prosphaerosyllis brevicirra	(Hartmann-Schröder, 1960)	*brevicirra*	*Prosphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Prosphaerosyllis campoyi	(San Martín, Acero, Contonente & Gómez, 1982)	*campoyi*	*Prosphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Prosphaerosyllis giandoi	(Somaschini & San Martín, 1994)	*giandoi*	*Prosphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Prosphaerosyllis longipapillata	(Hartmann-Schröder, 1979)	*longipapillata*	*Prosphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Prosphaerosyllis tetralix	(Eliason, 1920)	*tetralix*	*Prosphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Prosphaerosyllis xarifae	(Hartmann-Schröder, 1960)	*xarifae*	*Prosphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria alvaradoi	(San Martín, 1984)	*alvaradoi*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria celiae	(Parapar & San Martín, 1992)	*celiae*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria clavata	(Claparède, 1863)	*clavata*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria euritmica	(Sardá, 1984)	*euritmica*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria limbata	(Claparède, 1868)	*limbata*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria neapolitana	(Goodrich, 1930)	*neapolitana*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria swedmarki	(Gidholm, 1962)	*swedmarki*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria tenuicirrata	(Claparède, 1864)	*tenuicirrata*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria vieitezi	(San Martín, 1984)	*vieitezi*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Salvatoria yraidae	(San Martín, 1984)	*yraidae*	*Salvatoria*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis austriaca	Banse, 1959	*austriaca*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata

Sphaerosyllis boeroi	Musco, Çinar & Giangrande, 2005	*boeroi*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis bulbosa	Southern, 1914	*bulbosa*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis capensis	Day, 1953	*capensis*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis claparedii	Ehlers, 1864	*claparedii*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis glandulata	Perkins, 1981	*glandulata*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis gravinae	Somaschini & San Martín, 1994	*gravinae*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis hystrix	Claparède, 1863	*hystrix*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis ovigera	Langerhans, 1879	*ovigera*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis pirifera	Claparède, 1868	*pirifera*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis piriferopsis	Perkins, 1981	*piriferopsis*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis taylori	Perkins, 1981	*taylori*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Sphaerosyllis thomasi	San Martín, 1984	*thomasi*	*Sphaerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Streptodonta pterochaeta	(Southern, 1914)	*pterochaeta*	*Streptodonta*	Syllidae	Phyllodocida	Aciculata	Palpata
Streptosyllis arenae	Webster & Benedict, 1884	*arenae*	*Streptosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Streptosyllis bidentata	Southern, 1914	*bidentata*	*Streptosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Streptosyllis templadoi	San Martín, 1984	*templadoi*	*Streptosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Streptosyllis websteri	Southern, 1914	*websteri*	*Streptosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllides articulosus	Ehlers, 1897	*articulosus*	*Syllides*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllides bansei	Perkins, 1981	*bansei*	*Syllides*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllides convolutus	Webster & Benedict, 1884	*convolutus*	*Syllides*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllides edentatus	Westheide, 1974	*edentatus*	*Syllides*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllides fulvus	(Marion & Bobretzky, 1875)	*fulvus*	*Syllides*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllides longocirratus	Örsted, 1845	*longocirratus*	*Syllides*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllides japonicus	Imajima, 1966	*japonicus*	*Syllides*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis alternata	Moore, 1908	*alternata*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis amica	Quatrefages, 1866	*amica*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis anoculata	(Hartmann-Schröder, 1962)	*anoculata*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis armillaris	(O.F. Müller, 1776)	*armillaris*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis beneliahuae	(Campoy, 1982)	*beneliahuae*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis caeca	(Katzmann, 1973)	*caeca*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata

Syllis compacta	Gravier, 1900	*compacta*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis corallicola	Verrill, 1900	*corallicola*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis cornuta	Rathke, 1843	*cornuta*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis cruzi	Núñez & San Martín, 1991	*cruzi*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis ferrani	Alós & San Martín, 1987	*ferrani*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis garciai	(Campoy, 1982)	*garciai*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis gerlachi	(Hartmann-Schröder, 1960)	*gerlachi*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis gerundensis	(Alós & Campoy, 1981)	*gerundensis*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis golfonovensis	(Hartmann-Schröder, 1962)	*golfonovensis*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis gracilis	Grube, 1840	*gracilis*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis hyalina	Grube, 1863	*hyalina*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis jorgei	San Martín & López, 2000	*jorgei*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis kabilica	Ben-Eliahu, 1977	*kabilica*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis krohni	Ehlers, 1864	*krohni*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis magna	(Westheide, 1974)	*magna*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis nigricirris	Grube, 1863	*nigricirris*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis nuchalis	(Hartmann-Schröder, 1960)	*nuchalis*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis parapari	San Martín & López, 2000	*parapari*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis pectinans	Haswell, 1920	*pectinans*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis pontxioi	San Martín & López, 2000	*pontxioi*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis prolifera	Krohn, 1852	*prolifera*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis pulvinata	(Langerhans, 1881)	*pulvinata*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis rosea	Langerhans, 1879	*rosea*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis schulzi	(Hartmann-Schröder, 1960)	*schulzi*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis torquata	Marion & Bobretzky *in* Bobretzky, 1874	*torquata*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis tyrrhena	(Licher & Kuper, 1998)	*tyrrhena*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis variegata	Grube, 1860	*variegata*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis vittata	Grube, 1840	*vittata*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis vivipara	Krohn, 1869	*vivipara*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Syllis westheidei	San Martín, 1984	*westheidei*	*Syllis*	Syllidae	Phyllodocida	Aciculata	Palpata

Synmerosyllis lamelligera	(Saint-Joseph, 1887)	*lamelligera*	*Synmerosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Trypanosyllis aeolis	Langerhans, 1879	*aeolis*	*Trypanosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Trypanosyllis coeliaca	Claparède, 1868	*coeliaca*	*Trypanosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Trypanosyllis gigantea	(McIntosh, 1885)	*gigantea*	*Trypanosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Trypanosyllis sanmartini	Çinar, 2007	*sanmartini*	*Trypanosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Trypanosyllis zebra	(Grube, 1860)	*zebra*	*Trypanosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Virchowia clavata	Langerhans, 1879	*clavata*	*Virchowia*	Syllidae	Phyllodocida	Aciculata	Palpata
Xenosyllis scabra	(Ehlers, 1864)	*scabra*	*Xenosyllis*	Syllidae	Phyllodocida	Aciculata	Palpata
Enapteris euchaeta	(Chun, 1888)	*euchaeta*	*Enapteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris biancoi	Terio, 1947	*biancoi*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris carolii	Terio, 1947	*carolii*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris catharina	Gosse, 1851	*catharina*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris cavallii	Rosa, 1907	*cavallii*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris duccii	Rosa, 1907	*duccii*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris dunckeri	Rosa, 1908	*dunckeri*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris elegans	Chun, 1888	*elegans*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris espansa	Caroli, 1932	*espansa*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris helgolandica	Greeff, 1879	*helgolandica*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris kefersteinii	Greeff, 1879	*kefersteinii*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris ligulata	Rosa, 1908	*ligulata*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris marginata	Caroli, 1932	*marginata*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris messania	Terio, 1952	*messania*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris miriaglandulata	Terio, 1947	*miriaglandulata*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris nationalis	Apstein, 1900	*nationalis*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris nisseni	Rosa, 1908	*nisseni*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris partenopea	Caroli, 1928	*partenopea*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris pediculosa	Terio, 1947	*pediculosa*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris pierantonii	Terio, 1947	*pierantonii*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris planktonis	Apstein, 1900	*planktonis*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris poliglandulata	Caroli, 1932	*poliglandulata*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata

Tomopteris sanzoi	Caroli, 1928	*sanzoi*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris septentrionalis	Quatrefages, 1866	*septentrionalis*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris spartai	Terio, 1950	*spartai*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Tomopteris stefanellii	Terio, 1947	*stefanellii*	*Tomopteris*	Tomopteridae	Phyllodocida	Aciculata	Palpata
Sagitella kowalewskii	Wagner, 1872	*kowalewskii*	*Sagitella*	Typhloscolecidae	Phyllodocida	Aciculata	Palpata
Travisiopsis lanceolata	Southern, 1910	*lanceolata*	*Travisiopsis*	Typhloscolecidae	Phyllodocida	Aciculata	Palpata
Travisiopsis lobifera	Levinsen, 1885	*lobifera*	*Travisiopsis*	Typhloscolecidae	Phyllodocida	Aciculata	Palpata
Typhloscolex muelleri	Busch, 1851	*muelleri*	*Typhloscolex*	Typhloscolecidae	Phyllodocida	Aciculata	Palpata
Polygordius appendiculatus	Fraipont, 1887	*appendiculatus*	*Polygordius*	Polygordiidae	Canalipalpata	Canalipalpata	Palpata
Polygordius lacteus	Schneider, 1868	*lacteus*	*Polygordius*	Polygordiidae	Canalipalpata	Canalipalpata	Palpata
Polygordius neapolitanus	Fraipont, 1884	*neapolitanus*	*Polygordius*	Polygordiidae	Canalipalpata	Canalipalpata	Palpata
Polygordius ponticus	Salensky, 1907	*ponticus*	*Polygordius*	Polygordiidae	Canalipalpata	Canalipalpata	Palpata
Polygordius triestinus	Hempelmann, 1906	*triestinus*	*Polygordius*	Polygordiidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus adhaerens	Jägersten, 1952	*adhaerens*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus affinis	Jouin, 1968	*affinis*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus albicans	Jouin, 1970	*albicans*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus brevis	Jouin, 1970	*brevis*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus ciliatus	Jägersten, 1952	*ciliatus*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus flavocapitatus	(Uljanin, 1877)	*flavocapitatus*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus gracilis	von Nordheim, 1989	*gracilis*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus hatscheki	Pierantoni, 1908	*hatscheki*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus leuckarti	Hatschek, 1880	*leuckarti*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus oculifer	Pierantoni, 1908	*oculifer*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus purpureus	(Schneider, 1868)	*purpureus*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus similis	Jouin, 1970	*similis*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus spongioides	Pierantoni, 1903	*spongioides*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodrilus ypoleucus	Armenante, 1903	*ypoleucus*	*Protodrilus*	Protodrilidae	Canalipalpata	Canalipalpata	Palpata
Protodriloides chaetifer	(Remane, 1926)	*chaetifer*	*Protodriloides*	Protodriloididae	Canalipalpata	Canalipalpata	Palpata
Saccocirrus goodrichi	Jouin-Toulmond & Gambi, 2007	*goodrichi*	*Saccocirrus*	Saccocirridae	Canalipalpata	Canalipalpata	Palpata
Saccocirrus major	Perantoni, 1907	*major*	*Saccocirrus*	Saccocirridae	Canalipalpata	Canalipalpata	Palpata

Saccocirrus papillocercus	Bobretzky, 1872	*papillocercus*	*Saccocirrus*	Saccocirridae	Canalipalpata	Canalipalpata	Palpata
Saccocirrus parvus	Gerlach, 1953	*parvus*	*Saccocirrus*	Saccocirridae	Canalipalpata	Canalipalpata	Palpata
Galathowenia fragilis	(Nielson & Holthe, 1985)	*fragilis*	*Galathowenia*	Oweniidae	Sabellida	Canalipalpata	Palpata
Galathowenia oculata	(Zachs, 1922)	*oculata*	*Galathowenia*	Oweniidae	Sabellida	Canalipalpata	Palpata
Myriochele danielsseni	Hansen, 1879	*danielsseni*	*Galathowenia*	Oweniidae	Sabellida	Canalipalpata	Palpata
Myriochele heeri	Malmgren, 1867	*heeri*	*Myriochele*	Oweniidae	Sabellida	Canalipalpata	Palpata
Owenia fusiformis	Delle Chiaje, 1844	*fusiformis*	*Owenia*	Oweniidae	Sabellida	Canalipalpata	Palpata
Lygdamis muratus	(Allen, 1904)	*muratus*	*Lygdamis*	Sabellariidae	Sabellida	Canalipalpata	Palpata
Phalacrostemma cidariophillum	Marenzeller, 1895	*cidariophillum*	*Phalacrostemma*	Sabellariidae	Sabellida	Canalipalpata	Palpata
Sabellaria alveolata	(Linnaeus, 1767)	*alveolata*	*Sabellaria*	Sabellariidae	Sabellida	Canalipalpata	Palpata
Sabellaria spinulosa	Leuckart, 1849	*spinulosa*	*Sabellaria*	Sabellariidae	Sabellida	Canalipalpata	Palpata
Sabellaria taurica	(Rathke, 1837)	*taurica*	*Sabellaria*	Sabellariidae	Sabellida	Canalipalpata	Palpata
Amphicorina armandi	(Claparède, 1864)	*armandi*	*Amphicorina*	Sabellidae	Sabellida	Canalipalpata	Palpata
Amphicorina eimeri	(Langerhans, 1880)	*eimeri*	*Amphicorina*	Sabellidae	Sabellida	Canalipalpata	Palpata
Amphicorina grahamensis	Giangrande, Montanaro & Castelli, 1999	*grahamensis*	*Amphicorina*	Sabellidae	Sabellida	Canalipalpata	Palpata
Amphicorina pectinata	(Banse, 1957)	*pectinata*	*Amphicorina*	Sabellidae	Sabellida	Canalipalpata	Palpata
Amphicorina persinosa	(Ben-Eliahu, 1975)	*persinosa*	*Amphicorina*	Sabellidae	Sabellida	Canalipalpata	Palpata
Amphicorina triangulata	López & Tena, 1999	*triangulata*	*Amphicorina*	Sabellidae	Sabellida	Canalipalpata	Palpata
Amphiglena mediterranea	(Leydig, 1851)	*mediterranea*	*Amphiglena*	Sabellidae	Sabellida	Canalipalpata	Palpata
Augeneriella dubia	Hartmann-Schröder, 1965	*dubia*	*Augeneriella*	Sabellidae	Sabellida	Canalipalpata	Palpata
Augeneriella lagunai	Gitay, 1970	*lagunai*	*Augeneriella*	Sabellidae	Sabellida	Canalipalpata	Palpata
Bispira crassicornis	(Sars, 1851)	*crassicornis*	*Bispira*	Sabellidae	Sabellida	Canalipalpata	Palpata
Bispira mariae	Lo Bianco, 1893	*mariae*	*Bispira*	Sabellidae	Sabellida	Canalipalpata	Palpata
Bispira viola	(Grube, 1863)	*viola*	*Bispira*	Sabellidae	Sabellida	Canalipalpata	Palpata
Bispira volutacornis	(Montagu, 1804)	*volutacornis*	*Bispira*	Sabellidae	Sabellida	Canalipalpata	Palpata
Branchiomma boholense	(Grube, 1878)	*boholense*	*Branchiomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Branchiomma bombyx	(Dalyell, 1853)	*bombyx*	*Branchiomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Branchiomma luctuosum	(Grube, 1870)	*luctuosum*	*Branchiomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Branchiomma lucullanum	(Delle Chiaje, 1828)	*lucullanum*	*Branchiomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Branchiomma maerli	Licciano & Giangrande, 2008	*maerli*	*Branchiomma*	Sabellidae	Sabellida	Canalipalpata	Palpata

Branchiomma moebii	Knight-Jones, 1994	*moebii*	*Branchiomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone acustica	(Claparède, 1869)	*acustica*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone arenicola	Langerhans, 1880	*arenicola*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone collaris	Langerhans, 1880	*collaris*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone duneri	Malmgren, 1867	*duneri*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone dunerificta	Tovar-Hernández, Licciano & Giangrande, 2007	*dunerificta*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone filicaudata	Southern, 1914	*filicaudata*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone gambiae	Tovar-Hernández, Licciano & Giangrande, 2007	*gambiae*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone longiseta	Giangrande, 1992	*longiseta*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Chone usticensis	Giangrande, Licciano & Castriota, 2006	*usticensis*	*Chone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Claviramus candelus	(Grube, 1863)	*candelus*	*Claviramus*	Sabellidae	Sabellida	Canalipalpata	Palpata
Demonax brachychona	(Claparède, 1870)	*brachychona*	*Demonax*	Sabellidae	Sabellida	Canalipalpata	Palpata
Demonax langerhansi	Knight-Jones, 1983	*langerhansi*	*Demonax*	Sabellidae	Sabellida	Canalipalpata	Palpata
Demonax tenuicollaris	(Grube, 1870)	*tenuicollaris*	*Demonax*	Sabellidae	Sabellida	Canalipalpata	Palpata
Demonax tommasi	Giangrande, 1994	*tommasi*	*Demonax*	Sabellidae	Sabellida	Canalipalpata	Palpata
Desdemona ornata	Banse, 1957	*ornata*	*Desdemona*	Sabellidae	Sabellida	Canalipalpata	Palpata
Euchone capensis	Day, 1961	*capensis*	*Euchone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Euchone pararosea	Giangrande & Licciano, 2006	*pararosea*	*Euchone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Euchone pseudolimnicola	Giangrande & Licciano, 2006	*pseudolimnicola*	*Euchone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Euchone rosea	Langerhans, 1884	*rosea*	*Euchone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Euchone rubrocincta	(M. Sars, 1862)	*rubrocincta*	*Euchone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Euchone southerni	Banse, 1970	*southerni*	*Euchone*	Sabellidae	Sabellida	Canalipalpata	Palpata
Euratella salmacidis	(Claparède, 1869)	*salmacidis*	*Euratella*	Sabellidae	Sabellida	Canalipalpata	Palpata
Fabricia stellaris stellaris	(O. F. Müller, 1774)	*stellaris stellaris*	*Fabricia*	Sabellidae	Sabellida	Canalipalpata	Palpata
Fabricia stellaris adriatica	Banse, 1956	*stellaris adriatica*	*Fabricia*	Sabellidae	Sabellida	Canalipalpata	Palpata
Fabricia stellaris caspica	Zenkewitch, 1922	*stellaris caspica*	*Fabricia*	Sabellidae	Sabellida	Canalipalpata	Palpata
Fabriciola baltica	Friedrich, 1939	*baltica*	*Fabriciola*	Sabellidae	Sabellida	Canalipalpata	Palpata
Fabriciola ghardaqa	Banse, 1959	*ghardaqa*	*Fabriciola*	Sabellidae	Sabellida	Canalipalpata	Palpata
Fabriciola tonerella	Banse, 1956	*tonerella*	*Fabriciola*	Sabellidae	Sabellida	Canalipalpata	Palpata
Hypsicomus stichophthalmos	(Grube, 1863)	*stichophthalmos*	*Hypsicomus*	Sabellidae	Sabellida	Canalipalpata	Palpata

Jasmineira caudata	Langerhans, 1880	*caudata*	*Jasmineira*	Sabellidae	Sabellida	Canalipalpata	Palpata
Jasmineira elegans	Saint-Joseph, 1894	*elegans*	*Jasmineira*	Sabellidae	Sabellida	Canalipalpata	Palpata
Laonome kroyeri	Malmgren, 1866	*kroyeri*	*Laonome*	Sabellidae	Sabellida	Canalipalpata	Palpata
Manayunkia caspica	Annenkova, 1929	*caspica*	*Manayunkia*	Sabellidae	Sabellida	Canalipalpata	Palpata
Megalomma claparedei	(Gravier, 1906)	*claparedei*	*Megalomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Megalomma lanigera	(Grube, 1846)	*lanigera*	*Megalomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Megalomma messapicum	Giangrande & Licciano, 2008	*messapicum*	*Megalomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Megalomma vesiculosum	(Montagu, 1815)	*vesiculosum*	*Megalomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Megalomma vigilans	(Claparède, 1870)	*vigilans*	*Megalomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Myxicola aesthetica	(Claparède, 1870)	*aesthetica*	*Myxicola*	Sabellidae	Sabellida	Canalipalpata	Palpata
Myxicola infundibulum	(Montagu, 1808)	*infundibulum*	*Myxicola*	Sabellidae	Sabellida	Canalipalpata	Palpata
Notaulax phaeotaenia	(Schmarda, 1861)	*phaeotaenia*	*Notaulax*	Sabellidae	Sabellida	Canalipalpata	Palpata
Novafabricia infratorquata	(Fitzhugh, 1983)	*infratorquata*	*Novafabricia*	Sabellidae	Sabellida	Canalipalpata	Palpata
Novafabricia posidoniae	Licciano & Giangrande, 2006	*posidoniae*	*Novafabricia*	Sabellidae	Sabellida	Canalipalpata	Palpata
Perkinsiana rubra	(Langerhans, 1880)	*rubra*	*Perkinsiana*	Sabellidae	Sabellida	Canalipalpata	Palpata
Perkinsiana socialis	(Langerhans, 1884)	*socialis*	*Perkinsiana*	Sabellidae	Sabellida	Canalipalpata	Palpata
Potamilla neglecta	(M. Sars, 1851)	*neglecta*	*Potamilla*	Sabellidae	Sabellida	Canalipalpata	Palpata
Potamilla torelli	Malmgren, 1866	*torelli*	*Potamilla*	Sabellidae	Sabellida	Canalipalpata	Palpata
Pseudobranchiomma tarantoensis	Knight-Jones & Giangrande, 2003	*tarantoensis*	*Pseudobranchiomma*	Sabellidae	Sabellida	Canalipalpata	Palpata
Pseudofabricia aberrans	Cantone, 1972	*aberrans*	*Pseudofabricia*	Sabellidae	Sabellida	Canalipalpata	Palpata
Pseudofabriciola analis	Fitzhugh, Giangrande & Simboura, 1994	*analis*	*Pseudofabriciola*	Sabellidae	Sabellida	Canalipalpata	Palpata
Pseudofabriciola capensis	(Monro, 1937)	*capensis*	*Pseudofabriciola*	Sabellidae	Sabellida	Canalipalpata	Palpata
Pseudofabriciola logipyga	Fitzhugh, Giangrande & Simboura, 1994	*logipyga*	*Pseudofabriciola*	Sabellidae	Sabellida	Canalipalpata	Palpata
Pseudopotamilla ceresinae	(Grube, 1870)	*ceresinae*	*Pseudopotamilla*	Sabellidae	Sabellida	Canalipalpata	Palpata
Pseudopotamilla reniformis	(O.F. Müller, 1771)	*reniformis*	*Pseudopotamilla*	Sabellidae	Sabellida	Canalipalpata	Palpata
Sabella discifera	Grube 1874	*discifera*	*Sabella*	Sabellidae	Sabellida	Canalipalpata	Palpata
Sabella pavonina	Savigny, 1822	*pavonina*	*Sabella*	Sabellidae	Sabellida	Canalipalpata	Palpata
Sabella spallanzanii	(Gmelin *in* Linnaeus, 1791)	*spallanzanii*	*Sabella*	Sabellidae	Sabellida	Canalipalpata	Palpata
Apomatus ampulliferus	Philippi, 1844	*ampulliferus*	*Apomatus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Apomatus similis	Marion & Bobretzky, 1875	*similis*	*Apomatus*	Serpulidae	Sabellida	Canalipalpata	Palpata

Bathyvermilia langerhansi	(Fauvel, 1909)	*langerhansi*	*Bathyvermilia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Ditrupa arietina	(O.F. Müller, 1776)	*arietina*	*Ditrupa*	Serpulidae	Sabellida	Canalipalpata	Palpata
Ficopomatus enigmaticus	(Fauvel, 1923)	*enigmaticus*	*Ficopomatus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Filograna implexa	Berkeley, 1835	*implexa*	*Filograna*	Serpulidae	Sabellida	Canalipalpata	Palpata
Filogranula annulata	(O.G. Costa, 1861)	*annulata*	*Filogranula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Filogranula calyculata	(O.G. Costa, 1861)	*calyculata*	*Filogranula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Filogranula gracilis	Langerhans, 1884	*gracilis*	*Filogranula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Filogranula stellata	(Southward, 1963)	*stellata*	*Filogranula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hyalopomatus marenzelleri	Langerhans, 1884	*marenzelleri*	*Hyalopomatus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hyalopomatus variorugosus	Ben-Eliahu & Fiege, 1996	*variorugosus*	*Hyalopomatus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides albiceps	(Ehrenberg & Grube *in* Grube, 1870)	*albiceps*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides brachyacanthus	Rioja, 1941	*brachyacanthus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides dianthus	(Verrill, 1873)	*dianthus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides diramphus	Mörch, 1863	*diramphus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides elegans	(Haswell, 1883)	*elegans*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides grubei	Pillai, 1965	*grubei*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides helmatus	(Iroso, 1921)	*helmatus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides heterocerus	(Grube, 1868)	*heterocerus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides homoceros	Pixell, 1913	*homoceros*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides minax	(Grube, 1878)	*minax*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides niger	Zibrowius, 1971	*niger*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides norvegicus	Gunnerus, 1768	*norvegicus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides operculatus	(Treadwell, 1929)	*operculatus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides pseudouncinatus	Zibrowius, 1968	*pseudouncinatus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides pseudouncinatus africanus	Zibrowius, 1971	*pseudouncinatus africanus*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides steinitzi	Ben-Eliahu, 1972	*steinitzi*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Hydroides stoichadon	Zibrowius, 1971	*stoichadon*	*Hydroides*	Serpulidae	Sabellida	Canalipalpata	Palpata
Janita fimbriata	(Delle Chiaje, 1822)	*fimbriata*	*Janita*	Serpulidae	Sabellida	Canalipalpata	Palpata
Janua pagenstecheri	(Quatrefages, 1866)	*pagenstecheri*	*Janua*	Serpulidae	Sabellida	Canalipalpata	Palpata
Josephella marenzelleri	Caullery & Mesnil, 1896	*marenzelleri*	*Josephella*	Serpulidae	Sabellida	Canalipalpata	Palpata

Metavermilia multicristata	(Philippi, 1844)	*multicristata*	*Metavermilia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Neodexiospira pseudocorrugata	(Bush, 1904)	*pseudocorrugata*	*Neodexiospira*	Serpulidae	Sabellida	Canalipalpata	Palpata
Nidificaria clavus	(Harris, 1968)	*clavus*	*Nidificaria*	Serpulidae	Sabellida	Canalipalpata	Palpata
Pileolaria berkeleyana	(Rioja, 1942)	*berkeleyana*	*Pileolaria*	Serpulidae	Sabellida	Canalipalpata	Palpata
Pileolaria heteropoma	(Zibrowius, 1968)	*heteropoma*	*Pileolaria*	Serpulidae	Sabellida	Canalipalpata	Palpata
Pileolaria militaris	Claparède, 1870	*militaris*	*Pileolaria*	Serpulidae	Sabellida	Canalipalpata	Palpata
Placostegus crystallinus	(non Scacchi, 1836) sensu Zibrowius, 1968	*crystallinus*	*Placostegus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Placostegus tridentatus	(J.C. Fabricius, 1779)	*tridentatus*	*Placostegus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Pomatoceros lamarckii	(Quatrefages, 1866)	*lamarckii*	*Pomatoceros*	Serpulidae	Sabellida	Canalipalpata	Palpata
Pomatoceros triqueter	(Linnaeus, 1758)	*triqueter*	*Pomatoceros*	Serpulidae	Sabellida	Canalipalpata	Palpata
Pomatoleios kraussii	(Baird, 1865)	*kraussii*	*Pomatoleios*	Serpulidae	Sabellida	Canalipalpata	Palpata
Protis arctica	(Hansen, 1878)	*arctica*	*Protis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Protolaeospira striata	(Quiévreux, 1963)	*striata*	*Protolaeospira*	Serpulidae	Sabellida	Canalipalpata	Palpata
Protula intestinum	(Lamarck, 1818)	*intestinum*	*Protula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Protula tubularia	(Montagu, 1803)	*tubularia*	*Protula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Rhodopsis pusilla	Bush, 1904	*pusilla*	*Rhodopsis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Salmacina dysteri	(Huxley, 1855)	*dysteri*	*Salmacina*	Serpulidae	Sabellida	Canalipalpata	Palpata
Salmacina incrustans	Claparède, 1869	*incrustans*	*Salmacina*	Serpulidae	Sabellida	Canalipalpata	Palpata
Semivermilia agglutinata	(Marenzeller, 1893)	*agglutinata*	*Semivermilia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Semivermilia crenata	(O.G. Costa, 1861)	*crenata*	*Semivermilia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Semivermilia cribrata	(O.G. Costa, 1861)	*cribrata*	*Semivermilia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Semivermilia pomatostegoides	(Zibrowius, 1969)	*pomatostegoides*	*Semivermilia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Semivermilia torulosa	(Delle Chiaje, 1822)	*torulosa*	*Semivermilia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Serpula cavernicola	Fassari & Mòllica, 1991	*cavernicola*	*Serpula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Serpula concharum	Langerhans, 1880	*concharum*	*Serpula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Serpula israelitica	Amoureux, 1977	*israelitica*	*Serpula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Serpula lobiancoi	Rioja, 1917	*lobiancoi*	*Serpula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Serpula vermicularis	Linnaeus, 1767	*vermicularis*	*Serpula*	Serpulidae	Sabellida	Canalipalpata	Palpata
Simplaria pseudomilitaris	(Thiriot-Quiévreux, 1965)	*pseudomilitaris*	*Simplaria*	Serpulidae	Sabellida	Canalipalpata	Palpata
Spiraserpula massiliensis	(Zibrowius, 1968)	*massiliensis*	*Spiraserpula*	Serpulidae	Sabellida	Canalipalpata	Palpata

Spirobranchus lima	(Grube, 1862)	*lima*	*Spirobranchus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Spirobranchus polytrema	(Philippi, 1844)	*polytrema*	*Spirobranchus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Spirobranchus tetraceros	(Schmarda, 1861)	*tetraceros*	*Spirobranchus*	Serpulidae	Sabellida	Canalipalpata	Palpata
Spirorbis cuneatus	Gee, 1964	*cuneatus*	*Spirorbis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Spirorbis infundibulum	Harris & Knight-Jones, 1964	*infundibulum*	*Spirorbis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Spirorbis marioni	Caullery & Mesnil, 1897	*marioni*	*Spirorbis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Vermiliopsis infundibulum	(Philippi, 1844)	*infundibulum*	*Vermiliopsis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Vermiliopsis labiata	(O.G. Costa, 1861)	*labiata*	*Vermiliopsis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Vermiliopsis monodiscus	Zibrowius, 1968	*monodiscus*	*Vermiliopsis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Vermiliopsis striaticeps	(Grube, 1862)	*striaticeps*	*Vermiliopsis*	Serpulidae	Sabellida	Canalipalpata	Palpata
Vinearia endoumensis	(Zibrowius, 1968)	*endoumensis*	*Vinearia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Vinearia koehleri	(Caullery & Mesnil, 1897)	*koehleri*	*Vinearia*	Serpulidae	Sabellida	Canalipalpata	Palpata
Siboglinum carpinei	Ivanov, 1970	*carpinei*	*Siboglinum*	Siboglinidae	Sabellida	Canalipalpata	Palpata
Apistobranchus tullbergi	(Théel, 1879)	*tullbergi*	*Apistobranchus*	Apistobranchidae	Spionida	Canalipalpata	Palpata
Chaetopterus leuckartii	Quatrefages, 1866	*leuckartii*	*Chaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Chaetopterus variopedatus	(Renier, 1847)	*variopedatus*	*Chaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Mesochaetopterus rogeri	Martin, Gil, Carreras-Carbonell & Bhaud, 2008	*rogeri*	*Mesochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Mesochaetopterus sagittarius	(Claparède, 1870)	*sagittarius*	*Mesochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Phyllochaetopterus fallax	Claparède, 1869	*fallax*	*Phyllochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Phyllochaetopterus gracilis	Grube, 1863	*gracilis*	*Phyllochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Phyllochaetopterus major	Claparède, 1869	*major*	*Phyllochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Phyllochaetopterus socialis	Claparède, 1869	*socialis*	*Phyllochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Spiochaetopterus costarum	(Claparède, 1869)	*costarum*	*Spiochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Spiochaetopterus solitarius	(Rioja, 1917)	*solitarius*	*Spiochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Spiochaetopterus typicus	M. Sars, 1856	*typicus*	*Spiochaetopterus*	Chaetopteridae	Spionida	Canalipalpata	Palpata
Heterospio mediterranea	Laubier, Picard & Ramos, 1974	*mediterranea*	*Heterospio*	Longosomatidae	Spionida	Canalipalpata	Palpata
Heterospio reducta	Laubier, Picard & Ramos, 1974	*reducta*	*Heterospio*	Longosomatidae	Spionida	Canalipalpata	Palpata
Magelona alleni	Wilson, 1958	*alleni*	*Magelona*	Magelonidae	Spionida	Canalipalpata	Palpata
Magelona equilamellae	Harmelin, 1964	*equilamellae*	*Magelona*	Magelonidae	Spionida	Canalipalpata	Palpata
Magelona filiformis	Wilson, 1959	*filiformis*	*Magelona*	Magelonidae	Spionida	Canalipalpata	Palpata

Magelona johnstoni	Fiege, Licher & Mackie, 2000	*johnstoni*	*Magelona*	Magelonidae	Spionida	Canalipalpata	Palpata
Magelona minuta	Eliason, 1962	*minuta*	*Magelona*	Magelonidae	Spionida	Canalipalpata	Palpata
Magelona mirabilis	(Johnston, 1865)	*mirabilis*	*Magelona*	Magelonidae	Spionida	Canalipalpata	Palpata
Magelona wilsoni	Glémarec, 1966	*wilsoni*	*Magelona*	Magelonidae	Spionida	Canalipalpata	Palpata
Poecilochaetus fulgoris	Claparède in Ehlers, 1875	*fulgoris*	*Poecilochaetus*	Poecilochaetidae	Spionida	Canalipalpata	Palpata
Poecilochaetus mirabilis	(Laubier & Ramos, 1973)	*mirabilis*	*Poecilochaetus*	Poecilochaetidae	Spionida	Canalipalpata	Palpata
Poecilochaetus serpens	Allen, 1905	*serpens*	*Poecilochaetus*	Poecilochaetidae	Spionida	Canalipalpata	Palpata
Aonidella dayi	Maciolek *in* López-Jamar, 1989	*dayi*	*Aonidella*	Spionidae	Spionida	Canalipalpata	Palpata
Aonides oxycephala	(Sars, 1862)	*oxycephala*	*Aonides*	Spionidae	Spionida	Canalipalpata	Palpata
Aonides paucibranchiata	Southern, 1914	*paucibranchiata*	*Aonides*	Spionidae	Spionida	Canalipalpata	Palpata
Atherospio guillei	(Laubier & Ramos, 1974)	*guillei*	*Atherospio*	Spionidae	Spionida	Canalipalpata	Palpata
Aurospio banyulensis	(Laubier, 1968)	*banyulensis*	*Aurospio*	Spionidae	Spionida	Canalipalpata	Palpata
Boccardia polybranchia	(Haswell, 1885)	*polybranchia*	*Boccardia*	Spionidae	Spionida	Canalipalpata	Palpata
Boccardia semibranchiata	Guérin, 1990	*semibranchiata*	*Boccardia*	Spionidae	Spionida	Canalipalpata	Palpata
Dipolydora armata	(Langerhans, 1880)	*armata*	*Dipolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Dipolydora caulleryi	(Mesnil, 1897)	*caulleryi*	*Dipolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Dipolydora flava	(Claparède, 1870)	*flava*	*Dipolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Dipolydora giardi	(Mesnil, 1893)	*giardi*	*Dipolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Dipolydora langerhansi	(Mesnil, 1896)	*langerhansi*	*Dipolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Dipolydora quadrilobata	(Jacobi, 1883)	*quadrilobata*	*Dipolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Dipolydora saintjosephi	Eliason, 1920	*saintjosephi*	*Dipolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Dispio uncinata	Hartman, 1951	*uncinata*	*Dispio*	Spionidae	Spionida	Canalipalpata	Palpata
Laonice bahusiensis	Söderström, 1920	*bahusiensis*	*Laonice*	Spionidae	Spionida	Canalipalpata	Palpata
Laubieriellus salzi	(Laubier, 1970)	*salzi*	*Laubieriellus*	Spionidae	Spionida	Canalipalpata	Palpata
Malacoceros fuliginosus	(Claparède, 1869)	*fuliginosus*	*Malacoceros*	Spionidae	Spionida	Canalipalpata	Palpata
Malacoceros tetracerus	(Schmarda, 1861)	*tetracerus*	*Malacoceros*	Spionidae	Spionida	Canalipalpata	Palpata
Malacoceros vulgaris	(Johnston, 1827)	*vulgaris*	*Malacoceros*	Spionidae	Spionida	Canalipalpata	Palpata
Microspio mecznikowiana	(Claparède, 1869)	*mecznikowiana*	*Microspio*	Spionidae	Spionida	Canalipalpata	Palpata
Paraprionospio pinnata	(Ehlers, 1901)	*pinnata*	*Paraprionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Polydora agassizii	Claparède, 1869	*agassizii*	*Polydora*	Spionidae	Spionida	Canalipalpata	Palpata

Polydora ciliata	(Johnston, 1838)	*ciliata*	*Polydora*	Spionidae	Spionida	Canalipalpata	Palpata
Polydora colonia	Moore, 1907	*colonia*	*Polydora*	Spionidae	Spionida	Canalipalpata	Palpata
Polydora cornuta	Bosc, 1802	*cornuta*	*Polydora*	Spionidae	Spionida	Canalipalpata	Palpata
Polydora hoplura	Claparède, 1869	*hoplura*	*Polydora*	Spionidae	Spionida	Canalipalpata	Palpata
Polydora limicola	Annenkova, 1934	*limicola*	*Polydora*	Spionidae	Spionida	Canalipalpata	Palpata
Polydora spongicola	Berkeley & Berkeley, 1950	*spongicola*	*Polydora*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio caspersi	Laubier, 1962	*caspersi*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio cirrifera	Wirén, 1883	*cirrifera*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio dubia	Day, 1961	*dubia*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio ehlersi	Fauvel, 1928	*ehlersi*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio fallax	Söderström, 1920	*fallax*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio multibranchiata	Berkeley, 1927	*multibranchiata*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio pygmaea	Hartman, 1961	*pygmaea*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio saccifera	Mackie & Hartley, 1990	*saccifera*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio sexoculata	Augener, 1918	*sexoculata*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio steenstrupi	Malmgren, 1867	*steenstrupi*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Prionospio tripinnata	Maciolek, 1985	*tripinnata*	*Prionospio*	Spionidae	Spionida	Canalipalpata	Palpata
Pseudopolydora antennata	(Claparède, 1869)	*antennata*	*Pseudopolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Pseudopolydora pulchra	(Carazzi, 1895)	*pulchra*	*Pseudopolydora*	Spionidae	Spionida	Canalipalpata	Palpata
Pygospio elegans	Claparède, 1863	*elegans*	*Pygospio*	Spionidae	Spionida	Canalipalpata	Palpata
Scolelepis bonnieri	(Mesnil, 1896)	*bonnieri*	*Scolelepis*	Spionidae	Spionida	Canalipalpata	Palpata
Scolelepis cantabra	(Rioja, 1918)	*cantabra*	*Scolelepis*	Spionidae	Spionida	Canalipalpata	Palpata
Scolelepis foliosa	(Audouin & Milne Edwards, 1833)	*foliosa*	*Scolelepis*	Spionidae	Spionida	Canalipalpata	Palpata
Scolelepis gilchristi	(Day, 1961)	*gilchristi*	*Scolelepis*	Spionidae	Spionida	Canalipalpata	Palpata
Scolelepis mesnili	(Bellan & Lagardère, 1971)	*mesnili*	*Scolelepis*	Spionidae	Spionida	Canalipalpata	Palpata
Scolelepis squamata	(O.F. Muller, 1806)	*squamata*	*Scolelepis*	Spionidae	Spionida	Canalipalpata	Palpata
Scolelepis tridentata	(Southern, 1914)	*tridentata*	*Scolelepis*	Spionidae	Spionida	Canalipalpata	Palpata
Spio decoratus	Bobretzky, 1870	*decoratus*	*Spio*	Spionidae	Spionida	Canalipalpata	Palpata
Spio martinensis	Mesnil, 1896	*martinensis*	*Spio*	Spionidae	Spionida	Canalipalpata	Palpata
Spio multioculata	(Rioja, 1918)	*multioculata*	*Spio*	Spionidae	Spionida	Canalipalpata	Palpata

Spiophanes afer	Meißner, 2005	*afer*	*Spiophanes*	Spionidae	Spionida	Canalipalpata	Palpata
Spiophanes bombyx	(Claparède, 1870)	*bombyx*	*Spiophanes*	Spionidae	Spionida	Canalipalpata	Palpata
Spiophanes mediterraneus	Meißner, 2005	*mediterraneus*	*Spiophanes*	Spionidae	Spionida	Canalipalpata	Palpata
Spiophanes reyssi	Laubier, 1964	*reyssi*	*Spiophanes*	Spionidae	Spionida	Canalipalpata	Palpata
Streblospio gynobranchiata	Rice & Levin, 1998	*gynobranchiata*	*Streblospio*	Spionidae	Spionida	Canalipalpata	Palpata
Streblospio shrubsolii	(Buchanan, 1890)	*shrubsolii*	*Streblospio*	Spionidae	Spionida	Canalipalpata	Palpata
Acrocirrus frontifilis	(Grube, 1860)	*frontifilis*	*Acrocirrus*	Acrocirridae	Terebellida	Canalipalpata	Palpata
Flabelligella mediterranea	Kolmer, 1985	*mediterranea*	*Flabelligella*	Acrocirridae	Terebellida	Canalipalpata	Palpata
Macrochaeta clavicornis	(M. Sars, 1835)	*clavicornis*	*Macrochaeta*	Acrocirridae	Terebellida	Canalipalpata	Palpata
Adercodon pleijeli	Mackie, 1994	*pleijeli*	*Adercodon*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Amage adspersa	(Grube, 1863)	*adspersa*	*Amage*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Amage gallasii	Marion, 1875	*gallasii*	*Amage*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Ampharete acutifrons	(Grube, 1860)	*acutifrons*	*Ampharete*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Ampharete baltica	Eliason, 1955	*baltica*	*Ampharete*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Ampharete lindstroemi	Hessle, 1917	*lindstroemi*	*Ampharete*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Amphicteis gunneri	(M. Sars, 1835)	*gunneri*	*Amphicteis*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Amphicteis midas	(Gosse, 1855)	*midas*	*Amphicteis*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Anobotrus gracilis	(Malmgren, 1866)	*gracilis*	*Anobotrus*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Auchenoplax crinita	Ehlers, 1887	*crinita*	*Auchenoplax*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Eclysippe vanelli	(Fauvel, 1936)	*vanelli*	*Eclysippe*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Hypania invalida	(Grube, 1860)	*invalida*	*Hypania*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Hypaniola kowalewskii	(Grimm, 1877)	*kowalewskii*	*Hypaniola*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Isolda whydahensis	Augener, 1918	*whydahensis*	*Isolda*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Lysipe labiata	Malmgren, 1866	*labiata*	*Lysipe*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Melinna cristata	(M. Sars, 1851)	*cristata*	*Melinna*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Melinna monoceroides	Fauvel, 1936	*monoceroides*	*Melinna*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Melinna palmata	Grube, 1870	*palmata*	*Melinna*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Sabellides octocirrata	(M. Sars, 1835)	*octocirrata*	*Sabellides*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Sosane sulcata	Malmgren, 1866	*sulcata*	*Sosane*	Ampharetidae	Terebellida	Canalipalpata	Palpata
Uschakovius enigmaticus	Laubier, 1973	*enigmaticus*	*Uschakovius*	Ampharetidae	Terebellida	Canalipalpata	Palpata

Aphelochaeta filiformis	(Keferstein, 1862)	*filiformis*	*Aphelochaeta*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Aphelochaeta marioni	(Saint Joseph, 1894)	*marioni*	*Aphelochaeta*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Aphelochaeta multibranchis	(Grube, 1863)	*multibranchis*	*Aphelochaeta*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Caulleriella alata	(Southern, 1914)	*alata*	*Caulleriella*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Caulleriella bioculata	(Keferstein, 1862)	*bioculata*	*Caulleriella*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Chaetozone caputesocis	(Saint-Joseph, 1894)	*caputesocis*	*Chaetozone*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Chaetozone carpenteri	McIntosh, 1911	*carpenteri*	*Chaetozone*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Chaetozone corona	Berkeley & Berkeley, 1941	*corona*	*Chaetozone*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Chaetozone gibber	Woodham & Chambers, 1994	*gibber*	*Chaetozone*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Cirratulus cirratus	(O.F. Müller, 1776)	*cirratus*	*Cirratulus*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Cirriformia filigera	(Delle Chiaje, 1828)	*filigera*	*Cirriformia*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Cirriformia tentaculata	(Montagu, 1808)	*tentaculata*	*Cirriformia*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Dodecaceria concharum	Örsted, 1843	*concharum*	*Dodecaceria*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Dodecaceria saxicola	(Grube, 1855)	*saxicola*	*Dodecaceria*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Dodecaceria sextentaculata	(Delle Chiaje, 1828)	*sextentaculata*	*Dodecaceria*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Monticellina heterochaeta	Laubier, 1961	*heterochaeta*	*Monticellina*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Monticellina tesselata	(Hartman, 1960)	*tesselata*	*Monticellina*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Protocirrineris chrysoderma	(Claparède, 1869)	*chrysoderma*	*Protocirrineris*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Tharyx killariensis	(Southern, 1914)	*killariensis*	*Tharyx*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Timarete dollfusi	(Fauvel, 1928)	*dollfusi*	*Timarete*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Timarete punctata	(Grube, 1859)	*punctata*	*Timarete*	Cirratulidae	Terebellida	Canalipalpata	Palpata
Ctenodrilus serratus	(Schmidt, 1857)	*serratus*	*Ctenodrilus*	Ctenodrilidae	Terebellida	Canalipalpata	Palpata
Raphidrilus nemasoma	Monticelli, 1910	*nemasoma*	*Raphidrilus*	Ctenodrilidae	Terebellida	Canalipalpata	Palpata
Fauveliopsis adriatica	Katzmann & Laubier, 1974	*adriatica*	*Fauveliopsis*	Fauveliopsidae	Terebellida	Canalipalpata	Palpata
Fauveliopsis arabica	Hartman, 1976	*arabica*	*Fauveliopsis*	Fauveliopsidae	Terebellida	Canalipalpata	Palpata
Fauveliopsis fauchaldi	Katzmann & Laubier, 1974	*fauchaldi*	*Fauveliopsis*	Fauveliopsidae	Terebellida	Canalipalpata	Palpata
Laubieriopsis brevis	(Hartman, 1967)	*brevis*	*Laubieriopsis*	Fauveliopsidae	Terebellida	Canalipalpata	Palpata
Brada villosa	(Rathke, 1843)	*villosa*	*Brada*	Flabelligeridae	Terebellida	Canalipalpata	Palpata
Diplocirrus glaucus	(Malmgren, 1867)	*glaucus*	*Diplocirrus*	Flabelligeridae	Terebellida	Canalipalpata	Palpata
Flabelligera affinis	M. Sars, 1829	*affinis*	*Flabelligera*	Flabelligeridae	Terebellida	Canalipalpata	Palpata

Flabelligera diplochaitus	(Otto, 1821)	*diplochaitus*	*Flabelligera*	Flabelligeridae	Terebellida	Canalipalpata	Palpata
Pherusa monilifera	(Delle Chiaje, 1841)	*monilifera*	*Pherusa*	Flabelligeridae	Terebellida	Canalipalpata	Palpata
Pherusa plumosa	(O.F. Müller, 1776)	*plumosa*	*Pherusa*	Flabelligeridae	Terebellida	Canalipalpata	Palpata
Piromis eruca	(Claparède, 1869)	*eruca*	*Piromis*	Flabelligeridae	Terebellida	Canalipalpata	Palpata
Therochaeta flabellata	(M. Sars *in* G.O. Sars, 1872)	*flabellata*	*Therochaeta*	Flabelligeridae	Terebellida	Canalipalpata	Palpata
Amphictene auricoma	(O.F. Müller, 1776)	*auricoma*	*Amphictene*	Pectinariidae	Terebellida	Canalipalpata	Palpata
Amphictene auricoma mediterranea	Nilsson, 1918	*auricoma mediterranea*	*Amphictene*	Pectinariidae	Terebellida	Canalipalpata	Palpata
Lagis koreni	Malmgren, 1866	*koreni*	*Lagis*	Pectinariidae	Terebellida	Canalipalpata	Palpata
Lagis neapolitana	(Claparède, 1869)	*neapolitana*	*Lagis*	Pectinariidae	Terebellida	Canalipalpata	Palpata
Pectinaria belgica	(Pallas, 1766)	*belgica*	*Pectinaria*	Pectinariidae	Terebellida	Canalipalpata	Palpata
Petta pusilla	Malmgren, 1866	*pusilla*	*Petta*	Pectinariidae	Terebellida	Canalipalpata	Palpata
Sternaspis scutata	(Ranzani, 1817)	*scutata*	*Sternaspis*	Sternaspidae	Terebellida	Canalipalpata	Palpata
Amaena trilobata	(Sars, 1863)	*trilobata*	*Amaena*	Terebellidae	Terebellida	Canalipalpata	Palpata
Amphitrite cirrata	O.F. Müller, 1771	*cirrata*	*Amphitrite*	Terebellidae	Terebellida	Canalipalpata	Palpata
Amphitrite oculata	Hessle, 1917	*oculata*	*Amphitrite*	Terebellidae	Terebellida	Canalipalpata	Palpata
Amphitritides gracilis	(Grube, 1860)	*gracilis*	*Amphitritides*	Terebellidae	Terebellida	Canalipalpata	Palpata
Amphitritides kuehlmanni	Arvanitidis & Koukouras, 1995	*kuehlmanni*	*Amphitritides*	Terebellidae	Terebellida	Canalipalpata	Palpata
Eupolymnia nebulosa	(Montagu, 1818)	*nebulosa*	*Eupolymnia*	Terebellidae	Terebellida	Canalipalpata	Palpata
Eupolymnia nesidensis	(Delle Chiaje, 1828)	*nesidensis*	*Eupolymnia*	Terebellidae	Terebellida	Canalipalpata	Palpata
Lanice conchilega	(Pallas, 1766)	*conchilega*	*Lanice*	Terebellidae	Terebellida	Canalipalpata	Palpata
Loimia medusa	(Savigny, 1822)	*medusa*	*Loimia*	Terebellidae	Terebellida	Canalipalpata	Palpata
Lysilla loveni	Malmgren, 1866	*loveni*	*Lysilla*	Terebellidae	Terebellida	Canalipalpata	Palpata
Neoamphitrite edwardsii	(Quatrefages, 1866)	*edwardsii*	*Neoamphitrite*	Terebellidae	Terebellida	Canalipalpata	Palpata
Neoamphitrite figulus	(Dalyell, 1853)	*figulus*	*Neoamphitrite*	Terebellidae	Terebellida	Canalipalpata	Palpata
Neoamphitrite incana	(Claparède, 1870)	*incana*	*Neoamphitrite*	Terebellidae	Terebellida	Canalipalpata	Palpata
Neoamphitrite rubra	(Risso, 1826)	*rubra*	*Neoamphitrite*	Terebellidae	Terebellida	Canalipalpata	Palpata
Neoamphitrite variabilis	(Risso, 1826)	*variabilis*	*Neoamphitrite*	Terebellidae	Terebellida	Canalipalpata	Palpata
Nicolea venustula	(Montagu, 1818)	*venustula*	*Nicolea*	Terebellidae	Terebellida	Canalipalpata	Palpata
Nicolea zostericola	(Örsted, 1844)	*zostericola*	*Nicolea*	Terebellidae	Terebellida	Canalipalpata	Palpata
Parathelepus collaris	(Southern, 1914)	*collaris*	*Parathelepus*	Terebellidae	Terebellida	Canalipalpata	Palpata

Pista cretacea	(Grube, 1860)	*cretacea*	*Pista*	Terebellidae	Terebellida	Canalipalpata	Palpata
Pista cristata	(O.F. Müller, 1776)	*cristata*	*Pista*	Terebellidae	Terebellida	Canalipalpata	Palpata
Pista lornensis	(Pearson, 1969)	*lornensis*	*Pista*	Terebellidae	Terebellida	Canalipalpata	Palpata
Pista maculata	(Dalyell, 1853)	*maculata*	*Pista*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus aurantiacus	Grube, 1860	*aurantiacus*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus caliendrum	Claparède, 1869	*caliendrum*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus denticulatus	Saint-Joseph, 1894	*denticulatus*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus haematodes	(Claparède, 1864)	*haematodes*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus jubatus	Bobretzky, 1868	*jubatus*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus medusa	Grube, 1850	*medusa*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus pallidus	(Claparède, 1864)	*pallidus*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus plumosus	(Wollebaek, 1912)	*plumosus*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Polycirrus tenuisetis	Langerhans, 1880	*tenuisetis*	*Polycirrus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Proclea graffi	(Langerhans, 1884)	*graffi*	*Proclea*	Terebellidae	Terebellida	Canalipalpata	Palpata
Streblosoma bairdi	(Malmgren, 1866)	*bairdi*	*Streblosoma*	Terebellidae	Terebellida	Canalipalpata	Palpata
Streblosoma hesslei	Day, 1955	*hesslei*	*Streblosoma*	Terebellidae	Terebellida	Canalipalpata	Palpata
Terebella lapidaria	Linnaeus, 1767	*lapidaria*	*Terebella*	Terebellidae	Terebellida	Canalipalpata	Palpata
Thelepus cincinnatus	(Fabricius, 1780)	*cincinnatus*	*Thelepus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Thelepus setosus	(Quatrefages, 1866)	*setosus*	*Thelepus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Thelepus triserialis	(Grube, 1855)	*triserialis*	*Thelepus*	Terebellidae	Terebellida	Canalipalpata	Palpata
Octobranchus lingulatus	(Grube, 1863)	*lingulatus*	*Octobranchus*	Trichobranchidae	Terebellida	Canalipalpata	Palpata
Terebellides stroemii	Sars, 1835	*stroemii*	*Terebellides*	Trichobranchidae	Terebellida	Canalipalpata	Palpata
Trichobranchus glacialis	Malmgren, 1866	*glacialis*	*Trichobranchus*	Trichobranchidae	Terebellida	Canalipalpata	Palpata
Abanericola affinis africana	Wells, 1963	*affinis africana*	*Abanericola*	Arenicolidae	Scolecida	Scolecida	Scolecida
Abanericola claparedii	(Levinsen, 1883)	*claparedii*	*Abanericola*	Arenicolidae	Scolecida	Scolecida	Scolecida
Arenicola cristata	Stimpson, 1856	*cristata*	*Arenicola*	Arenicolidae	Scolecida	Scolecida	Scolecida
Arenicola marina	(Linnaeus, 1758)	*marina*	*Arenicola*	Arenicolidae	Scolecida	Scolecida	Scolecida
Arenicolides branchialis	(Audouin & Milne Edwards, 1833)	*branchialis*	*Arenicolides*	Arenicolidae	Scolecida	Scolecida	Scolecida
Arenicolides caudata	(Johnston, 1835)	*caudata*	*Arenicolides*	Arenicolidae	Scolecida	Scolecida	Scolecida
Branchiomaldane vincenti	Langerhans, 1881	*vincenti*	*Branchiomaldane*	Arenicolidae	Scolecida	Scolecida	Scolecida

Capitella capitata	(Fabricius, 1780)	*capitata*	*Capitella*	Capitellidae	Scolecida	Scolecida	Scolecida
Capitella giardi	(Mesnil, 1897)	*giardi*	*Capitella*	Capitellidae	Scolecida	Scolecida	Scolecida
Capitella hermaphrodita	Boletzky & Dohle, 1967	*hermaphrodita*	*Capitella*	Capitellidae	Scolecida	Scolecida	Scolecida
Capitella minima	Langerhans, 1880	*minima*	*Capitella*	Capitellidae	Scolecida	Scolecida	Scolecida
Capitellethus dispar	(Ehlers, 1907)	*dispar*	*Capitellethus*	Capitellidae	Scolecida	Scolecida	Scolecida
Dasybranchus caducus	(Grube, 1846)	*caducus*	*Dasybranchus*	Capitellidae	Scolecida	Scolecida	Scolecida
Dasybranchus carneus	Ehrenberg *in* Grube, 1870	*carneus*	*Dasybranchus*	Capitellidae	Scolecida	Scolecida	Scolecida
Dasybranchus gajolae	Eisig, 1887	*gajolae*	*Dasybranchus*	Capitellidae	Scolecida	Scolecida	Scolecida
Heteromastus filiformis	(Claparède, 1864)	*filiformis*	*Heteromastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Leiocapitella dollfusi	(Fauvel, 1936)	*dollfusi*	*Leiocapitella*	Capitellidae	Scolecida	Scolecida	Scolecida
Leiochrides australis	Augener, 1914	*australis*	*Leiochrides*	Capitellidae	Scolecida	Scolecida	Scolecida
Leiochrides fauveli	(Harmelin, 1964)	*fauveli*	*Leiochrides*	Capitellidae	Scolecida	Scolecida	Scolecida
Mastobranchus brasiliensis	(Rullier & Amoureux, 1979)	*brasiliensis*	*Mastobranchus*	Capitellidae	Scolecida	Scolecida	Scolecida
Mastobranchus trinchesii	Eisig, 1887	*trinchesii*	*Mastobranchus*	Capitellidae	Scolecida	Scolecida	Scolecida
Mediomastus capensis	Day, 1961	*capensis*	*Mediomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Mediomastus cirripes	Ben-Eliahu, 1976	*cirripes*	*Mediomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Mediomastus fragilis	Rasmussen, 1973	*fragilis*	*Mediomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Notomastus aberans	Day, 1957	*aberans*	*Notomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Notomastus formianus	Eisig, 1887	*formianus*	*Notomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Notomastus latericeus	Sars, 1851	*latericeus*	*Notomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Notomastus lineatus	Claparède, 1869	*lineatus*	*Notomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Notomastus mossambicus	Thomassin, 1970	*mossambicus*	*Notomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Notomastus profundus	(Eisig, 1887)	*profundus*	*Notomastus*	Capitellidae	Scolecida	Scolecida	Scolecida
Peresiella clymenoides	Harmelin, 1968	*clymenoides*	*Peresiella*	Capitellidae	Scolecida	Scolecida	Scolecida
Pseudocapitella incerta	Fauvel, 1913	*incerta*	*Pseudocapitella*	Capitellidae	Scolecida	Scolecida	Scolecida
Cossura coasta	Kitamori, 1960	*coasta*	*Cossura*	Cossuridae	Scolecida	Scolecida	Scolecida
Cossura soyeri	Laubier, 1963	*soyeri*	*Cossura*	Cossuridae	Scolecida	Scolecida	Scolecida
Axiothella constricta	(Claparède, 1869)	*constricta*	*Axiothella*	Maldanidae	Scolecida	Scolecida	Scolecida
Chirimia biceps	(M. Sars, 1862)	*biceps*	*Chirimia*	Maldanidae	Scolecida	Scolecida	Scolecida
Clymenura leiopygos	(Grube, 1860)	*leiopygos*	*Clymenura*	Maldanidae	Scolecida	Scolecida	Scolecida

Clymenura tenuis	(Day, 1957)	*tenuis*	*Clymenura*	Maldanidae	Scolecida	Scolecida	Scolecida
Clymenura tricirrata	(Bellan & Reys, 1967)	*tricirrata*	*Clymenura*	Maldanidae	Scolecida	Scolecida	Scolecida
Euclymene collaris	(Claparède, 1869)	*collaris*	*Euclymene*	Maldanidae	Scolecida	Scolecida	Scolecida
Euclymene lumbricoides	(Quatrefages, 1866)	*lumbricoides*	*Euclymene*	Maldanidae	Scolecida	Scolecida	Scolecida
Euclymene oerstedii	(Claparède, 1863)	*oerstedii*	*Euclymene*	Maldanidae	Scolecida	Scolecida	Scolecida
Euclymene palermitana	(Grube, 1840)	*palermitana*	*Euclymene*	Maldanidae	Scolecida	Scolecida	Scolecida
Euclymene robusta	(Arwidsson, 1906)	*robusta*	*Euclymene*	Maldanidae	Scolecida	Scolecida	Scolecida
Johnstonia clymenoides	Quatrefages, 1866	*clymenoides*	*Johnstonia*	Maldanidae	Scolecida	Scolecida	Scolecida
Lumbriclymene minor	Arwidsson, 1906	*minor*	*Lumbriclymene*	Maldanidae	Scolecida	Scolecida	Scolecida
Macroclymene santanderensis	(Rioja, 1917)	*santanderensis*	*Macroclymene*	Maldanidae	Scolecida	Scolecida	Scolecida
Maldane glebifex	Grube, 1860	*glebifex*	*Maldane*	Maldanidae	Scolecida	Scolecida	Scolecida
Maldane sarsi	Malmgren, 1865	*sarsi*	*Maldane*	Maldanidae	Scolecida	Scolecida	Scolecida
Metasychis gotoi	(Izuka, 1902)	*gotoi*	*Metasychis*	Maldanidae	Scolecida	Scolecida	Scolecida
Micromaldane ornitochaeta	Mesnil, 1897	*ornitochaeta*	*Micromaldane*	Maldanidae	Scolecida	Scolecida	Scolecida
Nicomache lumbricalis	(Fabricius, 1780)	*lumbricalis*	*Nicomache*	Maldanidae	Scolecida	Scolecida	Scolecida
Nicomache trispinata	Arwidsson, 1906	*trispinata*	*Nicomache*	Maldanidae	Scolecida	Scolecida	Scolecida
Notoproctus oculatus	Arwidsson, 1906	*oculatus*	*Notoproctus*	Maldanidae	Scolecida	Scolecida	Scolecida
Petaloproctus terricolus	Quatrefages, 1866	*terricolus*	*Petaloproctus*	Maldanidae	Scolecida	Scolecida	Scolecida
Praxillella affinis	(M. Sars in G.O. Sars, 1872)	*affinis*	*Praxillella*	Maldanidae	Scolecida	Scolecida	Scolecida
Praxillella gracilis	(M. Sars, 1862)	*gracilis*	*Praxillella*	Maldanidae	Scolecida	Scolecida	Scolecida
Praxillella gracilis borealis	Nolte, 1912	*gracilis borealis*	*Praxillella*	Maldanidae	Scolecida	Scolecida	Scolecida
Praxillella lophoseta	(Orlandi, 1898)	*lophoseta*	*Praxillella*	Maldanidae	Scolecida	Scolecida	Scolecida
Praxillella praetermissa	(Malmgren, 1865)	*praetermissa*	*Praxillella*	Maldanidae	Scolecida	Scolecida	Scolecida
Praxillella trifila	Hartman, 1960	*trifila*	*Praxillella*	Maldanidae	Scolecida	Scolecida	Scolecida
Rhodine gracilior	Tauber, 1879	*gracilior*	*Rhodine*	Maldanidae	Scolecida	Scolecida	Scolecida
Rhodine loveni	Malmgren, 1865	*loveni*	*Rhodine*	Maldanidae	Scolecida	Scolecida	Scolecida
Armandia cirrhosa	Filippi, 1861	*cirrhosa*	*Armandia*	Opheliidae	Scolecida	Scolecida	Scolecida
Armandia polyophthalma	Kükenthal, 1887	*polyophthalma*	*Armandia*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelia amoureuxi	Bellan & Costa, 1987	*amoureuxi*	*Ophelia*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelia barquii	Fauvel, 1927	*barquii*	*Ophelia*	Opheliidae	Scolecida	Scolecida	Scolecida

Ophelia bicornis	Savigny, 1822	*bicornis*	*Ophelia*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelia limacina	(Rathke, 1843)	*limacina*	*Ophelia*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelia neglecta	Schneider, 1892	*neglecta*	*Ophelia*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelia radiata	(Delle Chiaje, 1827)	*radiata*	*Ophelia*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelia roscoffensis	Augener, 1910	*roscoffensis*	*Ophelia*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelia translucens	(Katzmann, 1973)	*translucens*	*Ophelia*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelina abranchiata	Støp-Bowitz, 1948	*abranchiata*	*Ophelina*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelina acuminata	Örsted, 1843	*acuminata*	*Ophelina*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelina cylindricaudata	(Hansen, 1878)	*cylindricaudata*	*Ophelina*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelina margaleffi	Sardá, Gil, Taboada & Gili, 2009	*margaleffi*	*Ophelina*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelina modesta	Støp-Bowitz, 1958	*modesta*	*Ophelina*	Opheliidae	Scolecida	Scolecida	Scolecida
Ophelina norvegica	Støp-Bowitz, 1945	*norvegica*	*Ophelina*	Opheliidae	Scolecida	Scolecida	Scolecida
Polyophthalmus pictus	(Dujardin, 1839)	*pictus*	*Polyophthalmus*	Opheliidae	Scolecida	Scolecida	Scolecida
Trachytrypane jeffreysii	McIntosh, 1878	*jeffreysii*	*Trachytrypane*	Opheliidae	Scolecida	Scolecida	Scolecida
Leodamas chevalieri candiensis	Harmelin 1969	*chevalieri candiensis*	*Leodamas*	Orbiniidae	Scolecida	Scolecida	Scolecida
Naineris laevigata	(Grube, 1855)	*laevigata*	*Naineris*	Orbiniidae	Scolecida	Scolecida	Scolecida
Naineris quadraticeps	Day, 1965	*quadraticeps*	*Naineris*	Orbiniidae	Scolecida	Scolecida	Scolecida
Naineris quadricuspida	(Fabricius, 1780)	*quadricuspida*	*Naineris*	Orbiniidae	Scolecida	Scolecida	Scolecida
Orbinia latreillii	(Audouin & Milne-Edwards, 1833)	*latreillii*	*Orbinia*	Orbiniidae	Scolecida	Scolecida	Scolecida
Orbinia sertulata	(Savigny, 1822)	*sertulata*	*Orbinia*	Orbiniidae	Scolecida	Scolecida	Scolecida
Phylo foetida	(Claparède, 1869)	*foetida*	*Phylo*	Orbiniidae	Scolecida	Scolecida	Scolecida
Phylo foetida adjimensis	(Fauvel, 1924)	*foetida adjimensis*	*Phylo*	Orbiniidae	Scolecida	Scolecida	Scolecida
Phylo foetida atlantica	(Fauvel, 1924)	*foetida atlantica*	*Phylo*	Orbiniidae	Scolecida	Scolecida	Scolecida
Phylo foetida imitans	(Eisig, 1914)	*foetida imitans*	*Phylo*	Orbiniidae	Scolecida	Scolecida	Scolecida
Phylo foetida ligustica	(Orlandi, 1896)	*foetida ligustica*	*Phylo*	Orbiniidae	Scolecida	Scolecida	Scolecida
Phylo grubei	(McIntosh, 1910)	*grubei*	*Phylo*	Orbiniidae	Scolecida	Scolecida	Scolecida
Phylo kupfferi	(Ehlers, 1874)	*kupfferi*	*Phylo*	Orbiniidae	Scolecida	Scolecida	Scolecida
Phylo norvegica	(M. Sars *in* G.O. Sars, 1872)	*norvegica*	*Phylo*	Orbiniidae	Scolecida	Scolecida	Scolecida
Protoaricia oerstedi	(Claparède, 1864)	*oerstedi*	*Protoaricia*	Orbiniidae	Scolecida	Scolecida	Scolecida
Schroederella laubieri	Badalamenti & Castelli, 1990	*laubieri*	*Schroederella*	Orbiniidae	Scolecida	Scolecida	Scolecida

Scoloplos armiger	(O.F. Müller, 1776)	*armiger*	*Scoloplos*	Orbiniidae	Scolecida	Scolecida	Scolecida
Scoloplos haasi	(Monro, 1937)	*haasi*	*Scoloplos*	Orbiniidae	Scolecida	Scolecida	Scolecida
Scoloplos typicus	(Eisig, 1914)	*typicus*	*Scoloplos*	Orbiniidae	Scolecida	Scolecida	Scolecida
Aricidea aberrans	Laubier & Ramos, 1974	*aberrans*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea abyssalis	Laubier & Ramos, 1974	*abyssalis*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea assimilis	Tebble, 1959	*assimilis*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea capensis bansei	Laubier & Ramos, 1974	*capensis bansei*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea catherinae	Laubier, 1967	*catherinae*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea cerrutii	Laubier, 1966	*cerrutii*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea claudiae	Laubier, 1967	*claudiae*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea fragilis	Webster, 1879	*fragilis*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea longisetosa	Sardá, Gil, Taboada & Gili, 2009	*longisetosa*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea lopezi	Berkeley & Berkeley, 1956	*lopezi*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea mariannae	Katzmann & Laubier, 1975	*mariannae*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea mediterranea	(Laubier & Ramos, 1974)	*mediterranea*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea minuta	Southward, 1956	*minuta*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea monicae	Laubier, 1967	*monicae*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea pseudannae	Katzmann & Laubier, 1975	*pseudannae*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea pseudoarticulata	Hobson, 1972	*pseudoarticulata*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea quadrilobata	Webster & Benedict, 1887	*quadrilobata*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea simonae	Laubier & Ramos, 1974	*simonae*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea simplex	Day, 1963	*simplex*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea suecica meridionalis	Laubier & Ramos, 1974	*suecica meridionalis*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea trilobata	Laubier & Ramos, 1974	*trilobata*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Aricidea wassi	Pettibone, 1965	*wassi*	*Aricidea*	Paraonidae	Scolecida	Scolecida	Scolecida
Cirrophorus branchiatus	Ehlers, 1908	*branchiatus*	*Cirrophorus*	Paraonidae	Scolecida	Scolecida	Scolecida
Cirrophorus furcatus	(Hartman, 1957)	*furcatus*	*Cirrophorus*	Paraonidae	Scolecida	Scolecida	Scolecida
Levinsenia gracilis	(Tauber, 1879)	*gracilis*	*Levinsenia*	Paraonidae	Scolecida	Scolecida	Scolecida
Levinsenia oculata	(Hartman, 1957)	*oculata*	*Levinsenia*	Paraonidae	Scolecida	Scolecida	Scolecida
Paradoneis armata	Glémarec, 1966	*armata*	*Paradoneis*	Paraonidae	Scolecida	Scolecida	Scolecida

Paradoneis drachi	Laubier & Ramos, 1974	*drachi*	*Paradoneis*	Paraonidae	Scolecida	Scolecida	Scolecida
Paradoneis harpagonea	(Storch, 1967)	*harpagonea*	*Paradoneis*	Paraonidae	Scolecida	Scolecida	Scolecida
Paradoneis hirsuta	Sardá, Gil, Taboada & Gili, 2009	*hirsuta*	*Paradoneis*	Paraonidae	Scolecida	Scolecida	Scolecida
Paradoneis ilvana	Castelli, 1985	*ilvana*	*Paradoneis*	Paraonidae	Scolecida	Scolecida	Scolecida
Paradoneis lyra	(Southern, 1914)	*lyra*	*Paradoneis*	Paraonidae	Scolecida	Scolecida	Scolecida
Paraonides myriamae	Katzmann & Laubier, 1975	*myriamae*	*Paraonides*	Paraonidae	Scolecida	Scolecida	Scolecida
Paraonides neapolitana	(Cerruti, 1909)	*neapolitana*	*Paraonides*	Paraonidae	Scolecida	Scolecida	Scolecida
Paraonis fulgens	(Levinsen, 1883)	*fulgens*	*Paraonis*	Paraonidae	Scolecida	Scolecida	Scolecida
Questa mediterranea	Giere & Erséus, 1998	*mediterranea*	*Questa*	Questidae	Scolecida	Scolecida	Scolecida
Asclerocheilus intermedius	(Saint-Joseph, 1894)	*intermedius*	*Asclerocheilus*	Scalibregmatidae	Scolecida	Scolecida	Scolecida
Hyboscolex longiseta	Schmarda, 1861	*longiseta*	*Hyboscolex*	Scalibregmatidae	Scolecida	Scolecida	Scolecida
Lipobranchius jeffreysii	(McIntosh, 1869)	*jeffreysii*	*Lipobranchius*	Scalibregmatidae	Scolecida	Scolecida	Scolecida
Polyphysia crassa	(Örsted, 1843)	*crassa*	*Polyphysia*	Scalibregmatidae	Scolecida	Scolecida	Scolecida
Polyphysia crassa fauveli	(Laubier, 1959)	*crassa fauveli*	*Polyphysia*	Scalibregmatidae	Scolecida	Scolecida	Scolecida
Scalibregma celticum	Mackie, 1991	*celticum*	*Scalibregma*	Scalibregmatidae	Scolecida	Scolecida	Scolecida
Sclerocheilus minutus	Grube, 1863	*minutus*	*Sclerocheilus*	Scalibregmatidae	Scolecida	Scolecida	Scolecida
Speleobregma minuta	(Hartman, 1967)	*minuta*	*Speleobregma*	Scalibregmatidae	Scolecida	Scolecida	Scolecida

Cumaceans (by Jordi Corbera)

Table S17. Checklist of the Order Cumacea (Phylum Arthropoda), with enumeration of references in each region of the Mediterranean Sea

Codes for references were ordered following the date of publication. AL: Alboran Sea; SW: south-western Mediterranean; NW: north-western Mediterranean; TS: Tyrrhenian Sea; AD: Adriatic Sea; IO: Ionian Sea; TP/GS: Tunissian Plateau/Gulf of Sintra; AE: Aegean Sea; LS: Levantine Sea; (*): endemic species.

	Western Mediterranean				Eastern Mediterranean				
Species	**AL**	**SW**	**NW**	**TS**	**AD**	**IO**	**TP/GS**	**AE**	**LS**
Family Lampropidae									
Hemilamprops cristatus (Sars, 1870)			34, 40	5		54			
Hemilamprops normani Bonnier, 1896			11,					23	
Mesolamprops denticulatus Ledoyer, 1983	31	47	30						
Platysympus typicus (Sars, 1870)	31	8, 22, 31, 47	22, 30, 31, 34, 39, 40	4, 5		46, 54	14	23	44
Family Bodotriidae									
Bodotria arenosa leloeuffi Corbera & Garcia-Rubies, 1998			24, 41						
Bodotria arenosa mediterranea (Steuer, 1936)	36		21, 33, 37	28				29	
Bodotria gibba (Sars, 1878)		1	17, 33, 37	55					56
Bodotria intermedia Le Loeuff & Intes, 1977									24
Bodotria parvui Petrescu, 2008								53	
Bodotria pulchella (Sars, 1878)			2, 6, 17, 36, 37, 43	1, 28				29	56
Bodotria scorpioides (Montagu, 1804)			2, 9, 17, 30, 33, 36, 41, 43, 52	1	3, 26			29, 48	10
Cyclaspis longicaudata Sars, 1865	31	8, 22, 31, 47	22, 31, 34, 40, 39	5, 4, 19		23, 54	14	23	44, 54
Eocuma ferox (Fischer, 1872)		1	9, 17, 33, 36, 37, 41					29, 49	
Eocuma rosae Corbera & Galil, 2007									51
Eocuma sarsii (Kossmann, 1880)			2a, 6, 17, 33					29, 49	10
Iphinoe acutirostris Ledoyer, 1965			15, 17, 33, 41						
Iphinoe adriatica Bacescu, 1988					32				

**Iphinoe armata* Ledoyer, 1965			15, 17, 20, 37						
Iphinoe crassipes Hansen, 1895			35						14
**Iphinoe douniae* Ledoyer, 1965			15, 17, 20, 33, 36, 41, 43					27, 29	56
Iphinoe elisae Bacescu, 1950	45								
**Iphinoe inermis* Sars, 1878		1	9, 17, 21, 37						
**Iphinoe maculata* Ledoyer, 1965	45		15, 17, 33, 36, 37, 41						
Iphinoe maeotica (Sowinsky, 1894)								29	
**Iphinoe rhodaniensis* Ledoyer, 1965			37, 15, 17, 41, 36, 30, 33						
Iphinoe serrata Norman, 1867	31, 45		2, 37, 17, 52, 30, 26, 13, 21		12			29	14
Iphinoe tenella Sars, 1878	45	1	37, 17, 41, 9, 36, 21, 33	28	3			2	10
Bathycuma brevirostre (Norman, 1879)	31	22, 31, 47	34, 40, 31, 22, 41, 33	5, 4		23, 46, 54		23	54
Cumopsis goodsir (van Beneden, 1861)		1	17, 33, 36, 37, 43, 50	1, 28				29	56
Cumopsis longipes (Dohrn, 1869)			17, 20, 33	1					
Vaunthompsonia cristata Bate, 1858		22	6, 9, 17, 21, 22, 30, 33, 36, 41	1, 28				29, 49	
Family Leuconidae									
**Eudorella gottliebi* Bacescu, 1961									14
**Eudorella nana* Sars, 1879	31	22	13, 19, 21, 30, 33, 37	1, 28		54		23	
Eudorella truncatula (Bate, 1859)	31	22, 47	16, 21, 30, 34, 37, 40, 52		3	46		23	14
Leucon (*Crymoleucon*) cf *tener* Hansen, 1920		47	40						
Leucon (*Crymoleucon*) *macrorhinus* Fage, 1951	31	47	13, 34, 39, 40	19		46, 54			54
Leucon (*Epileucon*) *ensis* (Bishop, 1981)			34, 40						44
Leucon (*Epileucon*) *longirostris* Sars, 1871	14, 31	22	11, 13, 16, 19, 22, 34, 39, 40	4, 5, 19		46, 54			54
Leucon (*Leucon*) *affinis* Fage, 1951	31	47	11, 13, 30, 34, 37, 39,	55, 19		54			54

			40						
Leucon (*Leucon*) cf *serratus* Norman, 1879			40						
Leucon (*Leucon*) *fulvus* Sars, 1865									54
**Leucon* (*Leucon*) *mediterraneus* Sars, 1879	31		37, 52, 30, 21, 33	1, 55, 28	3, 26	54		23	
Leucon (*Leucon*) *profundus* Hansen, 1920		47							
Leucon (*Macrauloleucon*) *siphonatus* Calman, 1905	31		11, 13, 16, 30, 34, 37, 39, 40	5, 55		26, 46, 54			14, 54
Family Nannastacidae									
**Campylaspis aegypta* Mühlenhardt-Siegel, 2009									54
Campylaspis alba Hansen, 1920						54			54
Campylaspis cf *nitens* Bonnier, 1896		31	31						
Campylaspis cf *paeneglabra* Stebbing, 1912									54
Campylaspis glabra Sars, 1879	31	22, 47	17, 19, 22, 30, 31, 34, 40	1, 5, 55, 28	3	23		23, 29	14, 44
Campylaspis horridoides Stephensen, 1915		8, 22, 47	22, 34, 40			46			54
Campylaspis legendrei Fage, 1951	31, 36		17, 30, 33	28				29, 49	
Campylaspis macrophthalma Sars, 1879	31		30	1, 4, 5				23, 29	
Campylaspis rostrata Calman, 1905	31		11, 40						
Campylaspis spinosa Calman, 1906	31	22	22, 31, 34	5					
Campylaspis squamifera Fage, 1929	31		30, 31, 34, 40						
Campylaspis sulcata Sars, 1870	31	47	17, 30, 40	4, 5, 28					54
Campylaspis verrucosa Sars, 1866	31	47	30	4, 5				23	
Campylaspis vitrea Calman, 1906		8, 47	19, 31, 34	5		54		23	54,
Cumella limicola Sars, 1879	42, 36	1	9, 17, 33, 36, 37, 41, 43	1, 28	3, 26			29, 48, 49	14
Cumella pygmaea Sars, 1865		1	2, 17, 33, 36, 41	1, 28				29	
Cumellopsis puritani Calman, 1906		47	22, 34, 40			46			
Nannastacus atlanticus (Bacesu & Muradian, 1972)			30b						54
**Nannastacus brevicaudatus* Calman, 1905				28					
Nannastacus ungiculatus (Bate, 1859)	31, 36, 42		17, 40, 41, 9, 6, 36, 33	1, 28				29, 49	
Procampylaspis armata Bonnier, 1896	31	8, 22, 31, 47	22, 30, 31, 34, 39, 40	4, 5		23, 46, 54		23	44, 54
**Procampylaspis bacescoi* Reyss & Soyer, 1966		22	16					23	
Procampylaspis bonnieri Calman, 1906		22, 47	22, 34, 39,	5		46, 54		23	44, 54

			40						
**Procampylaspis mediterranea* Ledoyer, 1987	31	31	31, 40						44
Schizocuma spinoculatum (Jones, 1984)			34, 40						
Scherocumella gurneyi (Calman 1927)									51
Scherocumella longirostris Sars, 1879	31, 36, 42		2, 9, 17, 33, 37, 41	1, 28				29, 49	14
Styloptocuma gracillimum (Calman, 1905)		47	30, 34, 40			46, 54			44
Family Diastylidae									
Diastylis cornuta (Boeck, 1864)	31	8	17, 30	5		46, 54		29, 49	
**Diastylis jonesi* Reyss, 1972	31	22, 47	22, 30, 31, 34, 40						
Diastylis laevis Norman, 1869									54,
**Diastylis neapolitana* Sars, 1879			11	1				29	14,
Diastylis rugosa Sars, 1865			2, 17, 21, 30, 33, 37, 41, 52	1, 55, 28	3			29, 49	56
**Diastylis vemae* Bacescu, 1961	14								
**Diastyloides becescoi* Fage, 1940	31		2, 11, 30, 33	55				27, 29	
Diastyloides biplicatus (Sars, 1865)	31		17, 30						54
**Diastyloides carpinei* Bacescu, 1969	31	31	18, 19, 22, 31, 34	18		54,			54
Diastyloides serratus (Sars, 1865)	31	22, 47	13, 16, 30, 39, 40, 52	4, 5, 55	26	23, 46	14	23, 29	44
Ekleptostylis walkeri (Calman, 1907)	31		11, 30	28				27, 29	
Leptostylis bacescoi Reyss, 1972		22	22, 40			54			
**Leptostylis gamoi* Reyss, 1972		22	22, 31, 40			54			44, 54
Leptostylis macrura Sars, 1869	31	47	30, 40	4, 5				23	
Makrokylindrus (*Adiastylis*) *insignis* (Sars, 1871)			34	4, 5					
Makrokylindrus (*Adiastylis*) *longipes* (Sars, 1871)	31	8, 22, 47	19, 22, 30, 31, 34, 39, 40	19		23, 46,		23,	44
**Makrokylindrus* (*Makrokylindrus*) *aegaeus* Reyss, 1974								23	
Makrokylindrus (*Makrokylindrus*) *spiniventris* Hansen, 1920						54,			54
Makrokylindrus (*Makrokylindrus*) *stebbingi* Stephensen, 1915	8		19, 34	19					
**Vemakylindrus charcoti* (Reyss, 1974)	31				26	54,		23	54
**Vemakylindrus gibraltarensis* (Bacescu, 1961)	14	47							
Vemakylindrus hastatus (Hansen, 1920)			19, 34, 40						

**Vemakylindrus doryphora* (Fage, 1940)			11, 33, 52	55	26				
Family Pseudocumatidae									
**Fontainella mediterranea* Bacescu & Muradian, 1978	38						25		
Pseudocuma ciliatum Sars, 1879		1	9, 36, 37, 43	28					
Pseudocuma longicorne (Bate, 1858)		1	2, 9, 17, 20, 33, 36, 37, 41, 43	1, 28	3			29	14
Pseudocuma simile Sars, 1900			9, 17, 33, 36, 37, 41	28				27, 29	
Total number of publications considered	7	5	27	6	4	4	2	6	6

[a] Walker (1901) recorded *Cyclaspoides cornigera* but Calman (1907) studing the same material assignet it to *Eocuma sarsii*

[b] Ledoyer (1983) recorded *Nannastacus ungiculatus*, however the examination of the material deposed in the MNHN-Paris confirms that it belongs actually to *N. atlanticus*. Deepest records of *N. ungiculatus* must be revised.

1: Sars, 1878-79; 2: Walker, 1901; 3: Graeffe, 1902; 4: Lo Bianco, 1903; 5: Calman, 1906; 6: Calman, 1907; 7: Calman, 1910; 8: Stephensen, 1915; 9: Fage, 1933; 10: Steuer, 1936, 1938; 11: Fage, 1940; 12: Zimmer, 1942; 13: Fage, 1951; 14: Bacescu, 1961; 15: Ledoyer, 1965; 16: Reyss & Soyer, 1966; 17: Ledoyer, 1968; 18: Bacescu, 1969; 19: Carpine, 1970; 20: Massé, 1972; 21: Desbruyeres et al., 1972-73; 22: Reyss, 1972; 23: Reyss, 1974; 24: Le Loeuff & Intes, 1977; 25: Bacescu & Muradian, 1978; 26: Klepal & Kastner, 1980; 27: Katagan, 1982; 28: Valentin, 1982; 29: Katagan, 1983; 30: Ledoyer, 1983; 31: Ledoyer, 1987; 32: Bacescu, 1988; 33: Macquart-Moulin, 1991; 34: Cartes & Sorbe, 1993; 35: Corbera, 1994; 36: Corbera, 1995; 37: Corbera & Cardell, 1995; 38: López-Gonzalez et al., 1996; 39: Cartes & Sorbe, 1996; 40: Cartes & Sorbe, 1997; 41: Corbera & Garcia-Rubies, 1998; 42: Alfonso et al., 1998; 43: San Vicente & Sorbe, 1999; 44: Corbera & Galil, 2001; 45: Sánchez Moyano et al., 2001; 46: Madurell & Cartes, 2003; 47: Cartes et al., 2003; 48: Kirkim et al., 2005; 49: Bakir & Katagan, 2005; 50: Munilla & San Vicente, 2005; 51: Corbera & Galil, 2007; 52: Cartes et al., 2007; 53: Petrescu, 2008; 54: Mühlenhardt-Siegel, 2009; 55: Fanelli et al., 2009; 56: Corbera & Galil, unpubl. data.

Notes:

In addition to the species listed above, there are some other species that were recorded sometimes from the Mediterranean Sea but they were not included because they are not actually Mediterranean species.

Lo Bianco (1903) recorded *Diastylis spinulosa*, *Leucon nasica* and *Campylaspis undata* from the Italian coast, however Calman (1906) that studied the same material, found no specimens of these species suggesting doubts about that identifications. As theses species have not been recorded since then, they were not included as Mediterranean species.

Iphinoe trispinosa was recorded by Graeffe (1902) and Fage (1940), however after the revision of the genus *Iphinoe* by Ledoyer (1965), it has not been registered again except for the record of Ayari & Afli (2003) from the gulf of Tunis. Very probably *I. trispinosa* is not present in the Mediterranean and it may be confused with *Iphinoe douniae*.

The record of *Leucon pallidus* by Calman (1906) was discussed by Hansen (1920) and Zimmer (1933) who cast doubt this identification (see also comments in Fage 1951) and was not included.

Leucon fulvus was recorded by Fage (1940) but the same author (Fage, 1951) emended his determination and described these specimens as *Leucon affinis*. However, *Leucon fulvus* has been recorded later again (Mühlenhardt-Siegel, 2009) and consequently it was maintained in the list.

Finally some species (*Leucon* cf *serratus*, *Leucon* cf *tener*, *Campylaspis* cf *nitens* and *Campylaspis* cf *paeneglabra*) remain doubtful and they must be confirmed as Mediterranean, meantime they are tentatively included.

Table S18. Species number of cumaceans known in different Mediterranean regions

Endemics and percentage for each family are also indicated. AL: Alboran Sea; SW:, south-western Mediterranean; NW: north-western Mediterranean; TS: Tyrrhenian Sea; WM: Western Basin; AD: Adriatic Sea; IO: Ionian Sea; TP/GS: Tunissian Plateau/Gulf of Sintra; AE: Aegean Sea; LS: Levantine Sea; EM: Eastern Basin; TM: Total Mediterranean.

	AL	SW	NW	TS	WM	AD	IO	TP/ GS	AE	LS	EM	TM	End emic	%
F. Lampropidae	2	2	4	2	**4**	0	3	1	2	1	**3**	**4**	1	25
F. Bodotriidae	7	9	21	12	**22**	4	2	1	14	13	**19**	**27**	13	48,1
F. Leuconidae	7	7	10	7	**11**	2	7	0	3	8	**10**	**13**	3	23,1
F. Nannastacidae	13	13	23	14	**24**	2	8	0	12	15	**22**	**28**	4	14,3
F. Diastylidae	13	9	17	12	**20**	4	8	1	10	10	**17**	**23**	10	43,5
F. Pseudocumatidae	1	2	3	3	**4**	1	0	1	2	1	**3**	**4**	1	25
Total	43	42	78	50	**85**	13	28	4	43	48	**74**	**99**	32	32,3

References

Alfonso M, Bandera M, López-González PJ, García-Gómez JC (1998) The cumacean community associated with a seaweed as a bioindicator of environmental conditions in the Algeciras Bay (Strait of Gibraltar). Cahiers de Biologie Marine, 39(2): 197-205.

Ayari R, Afli A (2003) Bionomie benthique du petit golfe de Tunis. Bulletin de l'Institut National des Sciences et Technologies de la Mer de Salambô 30: 79-90.

Bacescu M (1961) Contributions a l'etude des cumacés de la mediterranée et particulierment des côtes d'Israel. Rapports V Re. CIESMM 16: 459-502.

Bacescu M (1969) Deux cumacés nouveaux: *Diastyloides carpinei* n. sp. dans le Méditerrannée et *Hemilamprops lotusae* dans l'Atlantique argentin. Revue Roumaine de Biologie 14(3): 163-171.

Bacescu M (1988) Cumacea I. (Fam. Archaeocumatidae, Lampropidae, Bodotriidae, Leuconidae), Crustaceorum Catalogous 7. SPB Academic Publishing, The Hague.

Bacescu M and Muradian Z (1978) *Fontainella mediterranea* gen. n., sp. n., cumacé (Pseudocumidae) trouvé en Méditerranée orientale. Revue Roumaine de Biologie, série de Biologie Animale 23(1): 3-7.

Bakir K, Katagan T (2005) Crustacean diversity of the coralligenous beds of Markiz Island (Aegean coast of Turkey). Crustaceana 78(7): 873-883.

Calman WT (1906) The cumacea of the Puritan expedition. Mitteilungen aus der Zoologischen Statation zu Neapel 17: 411-432.

Calman WT (1907) Sur quelques cumacés des côtes de France. Bulletin du Muséum National d'Histoire Naturelle 13: 116-123.

Calman WT (1910) Les cumacés des expeditions du Travailleur et du Talisman. Bulletin du Muséum National d'Histoire Naturelle 16: 180-182.

Carpine C (1970) Écologie de l'étage bathyal dans la Méditerranée occidentale. Mémoires de l'Instute Océanographique, Monaco 2: 1-146.

Cartes JE, Jaume D, Madurell T (2003) Local changes in the composition and community structure of suprabenthic peracarid crustaceans on the bathyal Mediterranean: influence of environmental factors. Marine Biology 143(4): 745-758.

Cartes JE, Papiol V, Palanques A, Guillén J, Demestre M (2007) Dynamics of suprabenthos off the Ebro Delta (Catalan Sea: western Mediterranean): Spatial 13 and temporal patterns and relationships with environmental factors. Estuarine, Coastal and Shelf Science 75(4): 501-515.

Cartes JE, Sorbe JC (1993) Les communautés suprabenthiques bathyales de la Mer Catalane (Méditerranée occidentale): Données préliminaires sur la répartition bathymétrique et l'abondance des Crustacés Péracarides. Crustaceana 64(2): 155-171.

Cartes JE, Sorbe JC (1996) Temporal population structure of deep-water cumaceans from the western Mediterranean slope. Deep-Sea Research Part I 43(9): 1423-1438.

Cartes JE, Sorbe JC (1997) Bathyal cumaceans of the Catalan Sea (north-western Mediterranean): faunistic composition, diversity and near-bottom distribution along the slope (between 389 and 1859 m). Journal of Natural History 31(7): 1041-1054.

Corbera J (1994) A new record of *Iphinoe crassipes* Hansen, 1895 (Cumacea, Bodotriidae) from Catalonian coast (NE Spain). Scientia Marina 58(3): 272-276.

Corbera J (1995) Check-list of the Cumacea from the Iberian waters. Miscel·lania Zoologica 18: 57-75.

Corbera J, Cardell MJ (1995) Cumaceans as indicators of eutrophication on soft bottoms. Scientia Marina 59: 63-69.

Corbera J, Galil BS (2001) Cumaceans (Crustacea, Peracarida) from the lower slope of the northern Israel coast, with a discussion on the status of *Platysympus typicus*. Israel Journal of Zoology 47(2): 135-146.

Corbera J, Galil BS (2007) Colonisation of the eastern Mediterranean by Red Sea cumaceans, with the description of a new species. Scientia Marina 71(1): 29-36.

Corbera J, Garcia-Rubies A (1998) Cumaceans (Crustacea) of the Medes Islands (Catalonia, Spain) with special attention to the genera *Bodotria* and *Iphinoe*. Scientia Marina 62(1-2): 101-112.

Desbruyères D, Guille A, Ramos J (1972) Bionomie benthique du plateau continental de la côte catalane espagnole. Vie et Milieu 23(2B): 335-363.

Fage L (1933) Pêches plantoniques á la lumière efetuées á banyuls et á concarneau. III Crustacés. Archives de Zoologie experimental et géneral 76: 105-248.

Fage L (1940) Les Cumacés de la Méditerranée. Remarques systématiques et biologiques. Bulletin de l'Institute océanographique, Monaco 37(783): 1-14.

Fage L (1951). Cumacés. Faune de France 54. P. Lechevalier, Paris.

Fanelli E, Cartes JE, Badalamenti F, Rumolo P, Sprovieri M (2009). Trophodynamics of suprabenthic fauna on coastal muddy bottoms of the southern Tyrrhenian Sea (western Mediterranean). Journal of Sea Research 61(3): 174-187.

Graeffe E (1902) Uebersicht der Fauna des Golfes von Triest nebst Notizen iber Vorkommen, Lebensweise, Erscheinungs-und Laichzeit der einzelnen Arten. Arbeiten aus dem Zoologischen Institut der Universitiit Wien und der Zoologischen Station in Triest 13: 33-80.

Hansen H (1920) Crustacea Malacostraca 4. Cumacea. The Danish Ingolf-Expedition 3(6): 1-86.

Katagan T (1982) Cumacés nouveaux pour la Méditerranée oriental. Crustaceana 43(3): 313-315.

Katagan T (1983) Recherches systematiques et écologiques sur les cumacés (Peracarida, Crustacea) littoraux de la mer Egee de Turquie. Egean University, Faculty of Sciences Journal, Ser. B 6: 9-18.

Kirkim F, Kocatas A, Katagan T, Sezgin M, Ates AS (2005) Crustacean biodiversity of *Padina pavonia* (L.) facies along the Aegean Coast of Turkey. Turkish Journal of Zoology 29: 159-166.

Klepal W, Kastner R (1980) Morphology and differentiation of non-sensory cuticular structures in Mysidacea, Cumacea and Tanaidacea (Crustacea, Peracarida). Zoologica Scripta 9(1-4): 271-281.

Le Loeuff P, Intès A (1977) Les *Bodotria* (Crustacea, Cumacea) des mers d'Europe et des côtes occidentales de l'Afrique tropicale. Bulletin du Muséum National d'Histoire Naturelle 498: 1137-1164.

Ledoyer M (1965) Sur quelques espèces nouvelles d'*Iphinoe* (Crustacea Cumacea). Discussion et description comparative des espèces européennes déja connues. Recueil des Travaux de la Station Marine d'Endoume 39(55): 253-294.

Ledoyer M (1968) Ecologie de la faune vagile des biotopes méditerranéens accessibles en scaphandre autonome (Région de Marseille principalement) IV Synthese de l'étude écologique. Recueil des Travaux de la Station Marine d'Endoume 60: 125-295.

Ledoyer M (1987) Les cumacés mediterranees profonds (Crustacea) des campagnes Biomedes I et II et Balgim. Synthese de la distribution bathyale du groupe en Mediterranee occidentale. Mesogée 47: 59-70.

Ledoyer M (1983) Contribution à l'étude de l'écologie de la faune vagile profonde de la Méditerranée nord-occidentale. II: Les cumacés (Crustacea). Tethys 11(1): 67-81.

Lo Bianco S (1903) Le pesche abissali eseguite da FA Krupp col Yacht "Puritan" nelle adiacenze di Capri ed in altre localita del Mediterraneo. Mitteilungen aus der Zoologischen Statation zu Neapel 16: 109-279.

López-González P, Bandera M, Alfonso M, Garcia-Gomez J (1996) A rare mediterranean cumacean, *Fontainella mediterranea* (Crustacea), at the threshold of the Atlantic Ocean. Cahiers de Biologie Marine 37(2): 113-120.

Macquart-Moulin C (1991) The nocturnal pelagic phases of cumaceans. Journal of Plankton Research 13(2): 313-337.

Madurell T, Cartes JE (2003) The suprabenthic peracarid fauna collected at bathyal depths in the Ionian Sea (eastern Mediterranean). Crustaceana 76(5): 611-624.

Masse H (1972) Quantitative investigations of sand-bottom macrofauna along the Mediterranean north-west coast. Marine Biology 15(3): 209-220.

Mühlenhardt-Siegel U (2009) Cumacea (Crustacea, Peracarida) in the deep mediterranean, with the description of one new species. Zootaxa 2096: 413-432.

Munilla T, San Vicente C (2005) Suprabenthic biodiversity of Catalan beaches (NW Mediterranean). Acta Oecologica 27(2): 81-91.

Petrescu I (2008) *Bodotria parvui* n. sp. (crustacea: Peracarida) from the turkish waters of the aegean sea [results of "focida" - 2006 expedition]. Travaux du Muséum Nationale d'Histoire Naturelle "Grigore Antipa" 51: 327-334.

Reyss D (1972) Résultats scientifiques de la campagne du NO "Jean Charcot" en Méditerranée occidentale, mai-juin-juillet 1970 Cumacés. Crustaceana Supplement 3: 362-377.

Reyss D (1974) Cumacés Résultats scientifiques de la campagne "Polymède II" du NO "Jean Charcot" en Mer Ionienne et en Mer Égée (Avril-Mai 1972). Crustaceana 27(2): 216-222.

Reyss D, Soyer J (1966) Cumacés recueillis lors de la campagne de la Calypso Port-Vendres en aout-septembre 1964. Bulletin de l'Institute océanographique, Monaco 66(1372): 1-11.

San Vicente C, Sorbe J (1999) Spatio-temporal structure of the suprabenthic community from Creixell beach (western Mediterranean). Acta Oecologica 20(4): 377-389.

Sánchez-Moyano J, García-Adiego E, Estacio F, García-Gómez J (2001) On the composition of the macrofauna in a meadow in Algeciras Bay (southern Spain). Ciencias Marinas 27(1): 47-71.

Sars GO (1978-79) Nye Bidrah til Kundskaben om Middelhavets Invertebratfauna. II. Middelhavets Cumaceer. Archiv for Mathematik og Naturvidenskabs-Selskabet i Christiania 3: 461-512; 4: 1-134.

Stephensen K (1915) Isopoda, Tanaidacea, Cumacea, Amphipoda (excl. Hyperida). Report of the Danish Oceanographic Expedition 1908-10 to the Mediterranean and adjacent Seas 2(D1): 29-34.

Steuer A (1936) Cumacea und Stomatopoda von Alexandrien in Ägypten. Note Ist. Italo-Germ. Biol. mar. Rovigno, 21: 1-19.

Steuer A (1938) The fishery grounds near Alexandria, XVI Cumacea, Stomatopoda, Leptostraca. Hydrobiology and Fisheries Directorate Notes and Memoirs (Cairo) 26: 1-16.

Valentin C (1982) Zur Biozönik und Substratpräferenz der Cumaceen (Crustacea Peracarida) aus dem Küstenbereich der Insel Ischia (Golf von Neaple). Teil I: Problemstellung, untersuchungsgebiet und methoden. Mitteilungen aus der Zoologischen Museum Universitat Kiel, 1(10): 1-20

Walker A (1901) Contributions to the Malacostracan Fauna of the Mediterranean. Journal of the Linnean Society of London, Zoology 28(182): 290-306.

Zimmer C (1933) Cumacea. In Grimpe, G. and Wagler, E., eds, Die tierwelt der Nord- und ostsee, pp. 70-120. Leipzig.

Zimmer C (1942) Die Gattung *Iphinoe* (Ord. Cumacea, Fam. Bodotriidae). Zoologischer Anzeiger 139: 190-200.

Mysidaceans (by Carles San Vicente)

Table S19. Checklist of the orders Mysida and Lophogastrida (Phylum Arthropoda) known in the different Mediterranean regions considered

AL: Alboran Sea; SW: south-western Mediterranean; NW: north-western Mediterranean; TY: Tyrrhenian Sea; AD: Adriatic Sea; IO: Ionian Sea; AE: Aegean Sea; LS: Levantine Sea; WM: Western Basin; EM: Eastern Basin; TM: Total Mediterranean. Endemics and depth ranges for each species were also indicated.

	AL	SW	NW	TY	AD	IO	AE	LE	WB	EB	TM	Endemic	Depth range (m)
Order LOPHOGASTRIDA Sars, 1870													
Family LOPHOGASTRIDAE Sars, 1870													
Lophogaster affinis Colosi, 1930									+		+		50-1800
Lophogaster typicus Sars, M., 1857	+		+	+	+			+	+	+	+		32-500
Family GNATHOPHAUSIIDAE Udrescu, 1984													
Gnathophausia zoea Willemoes-Suhm, 1875			+								+		400-6050
Family EUCOPIIDAE Sars, 1885													
Eucopia grimaldii Nouvel, 1942											+		300-2600
Eucopia hanseni Nouvel, 1942			+		+				+	+	+		200-4829
Eucopia major Hansen, 1910			+?						+?		+?		1310-5100
Eucopia unguiculata (Willemoes-Suhm, 1875)			+						+		+		100-6500
ORDER MYSIDA Haworth, 1825													
FAMILY MYSIDAE Haworth, 1825													
SUBFAMILY RHOPALOPHTHALMINAE Hansen, 1910													
Rhopalophthalmus mediterraneus Nouvel, 1960		+							+		+	+	3-6
SUBFAMILY BOREOMYSINAE Holt & Tattersall, 1905													
Boreomysis arctica Krøyer, 1861			+	+				+	+	+	+		300-1900
Boreomysis megalops Sars, 1872			+	+	+				+	+	+		140-450
Boreomysis semicoeca Hansen, 1905		+							+		+		200-2800
SUBFAMILY GASTROSACCINAE Norman, 1892													
Anchialina agilis (Sars, 1877)			+	+	+			+	+	+	+		0-420
Anchialina oculata Hoenigman, 1960				+				+	+	+	+	+	littoral
Gastrosaccus mediterraneus Bacescu, 1970			+	+	+			+	+	+	+	+	0.2-0.5m
Gastrosaccus roscoffensis Bacescu, 1970			+						+		+	+	0.1-0.5m
Gastrosaccus sanctus (van Beneden, 1861)			+	+	+			+	+	+	+		0-200
Gastrosaccus spinifer (Goes, 1864)			+						+		+		0-260
Haplostylus bacescui Hatzakis, 1977				+			+		+	+	+	+	30-100
Haplostylus lobatus (Nouvel, 1951)				+	+			+	+	+	+		0-420
Haplostylus magnilobatus (Bacescu & Schiecke, 1974)				+			+		+	+	+	+	120-130
Haplostylus normani (Sars, 1877)			+	+				+	+	+	+		0-406
SUBFAMILY SIRIELLINAE Czerniavsky, 1882													
Siriella adriatica Hoenigman, 1960					+					+	+	+	littoral
Siriella armata (Milne-Edwards, 1837)			+	+	+			+	+	+	+		coastal
Siriella castellabatensis Ariani & Spagnuolo, 1975				+					+		+	+	littoral
Siriella clausi Sars, 1877			+	+	+		+	+	+	+	+		4-30
Siriella gracilipes (Nouvel, 1942)				+					+		+	+	coastal
Siriella jaltensis Czerniavsky, 1868			+	+	+			+	+	+	+		0.5-4
Siriella norvegica Sars, 1869	+		+	+	+			+	+	+	+		20-400
Siriella thompsonii (Milne-Edwards, 1837)			+		+	+			+	+	+		0-550
SUBFAMILY ERYTHROPINAE Hansen, 1910													

Arachnomysis leuckarti Chun, 1887			+	+				+	+	+		58-770
Calyptomma puritani W. Tattersall, 1909		+			+			+	+	+	+	600-1860
Erythrops africana Tattersall, 1955	+							+		+		63-250
Erythrops alborana Bacescu, 1989	+							+		+	+	3000
Erythrops elegans (Sars, 1863)		+	+	+				+	+	+		0-50
Erythrops erythrophthalma (Goës, 1864)		+	+				+	+	+	+		12-275
Erythrops neapolitanus Colosi, 1929		+	+		+			+	+	+	+	120-1355
Erythrops peterdohrni Bacescu & Schiecke, 1974			+					+		+	+	120-130
Erythrops serrata (Sars 1863)			+					+		+		100-500
Euchaetomera glyphidophthalmica Illig, 1906			+					+		+		0-370
Euchaetomera intermedia Nouvel, 1942										+		?
Euchaetomera richardi Nouvel, 1945		+						+		+	+	1500-1800
Euchaetomera tenuis Sars, 1884			+					+		+		50-5000
Euchaetomera typica Sars, 1884										+		0-300
Euchaetomeropsis merolepis (Illig, 1908)			+		+			+	+	+		0-800
Hypererythrops richardi Bacescu, 1941		+	+					+		+	+	40-130
Hypererythrops zimmeri Ii, 1937			+					+		+		30-80
Paramblyops rostrata Holt & Tattersall, 1905		+	+					+		+		280-2650
Parapseudomma calloplura (Holt & Tattersall, 1905)	+	+	+					+		+		94-1200
Parerythrops lobiancoi W. Tattersall, 1909			+					+		+	+	950-1200
Parerythrops obesa (Sars, 1864)	+							+		+		80-3000
Pseudomma affine Sars, 1870		+						+		+		70-1300
Pseudomma chattoni Bacescu, 1941		+						+		+	+	220-300
Pseudomma kruppi Tattersall, 1909		+	+					+		+		300-1250
Pseudomma nanum Holt & Tattersall, 1906					+				+	+		360-1500
SUBFAMILY HETEROMYSINAE Norman, 1892												
Burrimysis palmeri Jaume & Garcia, 1993		+						+		+	+	20
Harmelinella mariannae Ledoyer, 1989		+						+		+	+	littoral
Heteromysis (Heteromysis) arianii Wittmann, 2000			+					+		+	+	11-22
Heteromysis (Heteromysis) eideri Bacescu, 1941		+					+	+	+	+	+	30-100
Heteromysis (Heteromysis) lybiana Bacescu, 1976							+		+	+	+	70
Heteromysis (Heteromysis) microps (Sars, 1877)			+				+	+	+	+		11
Heteromysis (Heteromysis) norvegica Sars, 1883		+						+		+		0-400
Heteromysis (Heteromysis) riedli Wittmann, 2001			+					+		+	+	11-25
Heteromysis (Neoheteromysis) muelleri Bacescu, 1976							+		+	+	+	75
Mysidetes farrani (Holt & Tattersall, 1905)			+					+		+		235-1105
Retromysis nura Wittmann, 2004		+	+					+		+	+	2-5
SUB-FAMILY MYSIDELLINAE												
Mysidella typica Sars, 1872			+					+		+		90-540
Mysidella biscayensis Lagardère & Nouvel, 1980		+						+		+		190-400
SUBFAMILY MYSINAE Haworth, 1825												
Acanthomysis longicornis (Milne-Edwards, 1837)		+	+	+			+	+	+	+		2-100
Acanthomysis strauchi (Czerniavsky, 1882)										+		1.5-10
Diamysis bacescui Wittmann & Ariani (1998)			+	+		+		+	+	+	+	shallow
Diamysis bahirensis (Sars, 1877)		+	+	+			+	+	+	+		shallow
Diamysis lagunaris Ariani & Wittmann (2000)		+	+					+		+		0.3-1.5
Diamysis mesohalobia Ariani & Wittmann (2000)				+					+	+	+	0-1
Hemimysis abyssicola Sars, 1869		+						+		+		100-600
Hemimysis anomala Sars, 1907		+						+		+		0-20
Hemimysis lamornae lamornae (Couch, 1856)		+		+				+	+	+		0-100
Hemimysis margalefi Alcaraz, Riera & Gili, 1986		+	+	+				+	+	+	+	12
Hemimysis speluncola Ledoyer, 1963		+	+					+		+	+	0-30
Kainomatomysis foxi Tattersall, 1927							+		+	+		22
Mesopodopsis aegyptica Wittmann, 1992			+				+	+	+	+	+	0-3
Mesopodopsis slabberi (van Beneden, 1861)		+	+	+		+	+	+	+	+		0-<50

Neomysis integer (Leach, 1815)			+						+		+		<0.5
Paramysis arenosa (Sars, 1877)			+	+	+				+	+	+		0-20
Paramysis festae Colosi, 1920								+		+	+	+	littoral
Paramysis helleri (Sars, 1877)			+	+	+			+	+	+	+		littoral
Schistomysis assimilis (Sars, 1877)			+	+				+	+	+	+	+	littoral
SUBFAMILY LEPTOMYSINAE Hansen, 1910													
Leptomysis buergii Bacescu, 1966			+	+		+		+	+	+	+	+	0-15
Leptomysis gracilis (Sars, 1864)	+		+	+	+				+	+	+		5-500
Leptomysis heterophila Wittmann, 1986			+	+	+				+	+	+		4-17
Leptomysis lingvura lingvura (Sars, 1866)			+	+	+				+	+	+		0-50
Leptomysis mediterranea Sars, 1877			+	+	+			+	+	+	+		2-10
Leptomysis megalops Zimmer, 1915	+		+	+	+				+	+	+		60-400
Leptomysis posidoniae Wittmann, 1986			+	+		+			+	+	+	+	2-35
Leptomysis truncata (Heller, 1863)									+	+	+	+	shallow
Mysideis parva Zimmer, 1915			+	+					+		+		50-420
Mysidopsis angusta (Sars, 1864)			+	+	+				+	+	+		8-50
Mysidopsis didelphys (Norman, 1863)	+		+	+					+		+		11-293
Mysidopsis gibbosa Sars, 1864			+	+	+			+	+	+	+		0-100
Paraleptomysis apiops (Sars, 1877)			+	+	+			+	+	+	+		5-85
Paraleptomysis banyulensis (Bacescu, 1966)			+	+	+			+	+	+	+	+	4-34
Pyroleptomysis peresi (Bacescu, 1966)			+	+					+		+	+	15
Pyroleptomysis rubra Wittmann, 1985				+	+				+	+	+		4-24

Notes:

This appendix gives information on the 102 mysidacean species (orders Lophogastrida and Mysida) hitherto reported from the Mediterranean Sea.

The classification of the mysidaceans in the present chapter is that drawn up by Nouvel *et al.* (1999), with the separation of the orders Mysida and Lophogastrida accepted by Martin & Davis (2001) and the new taxonomic revision of the subfamilies and tribes of Meland & Willanssen (2007).

The Lophogastrida contains the families Lophogastridae and Eucopiidae. The family Gnathophausiidae has additionally been separated from the Lophogastridae (Udrescu, 1984). The order Stygiomysida is a small group of cavernicoulus mysids without known representation in the Mediterranean marine waters. Between the order Lophogastrida, Eucopiidae is the most specious family (4 species), followed by Lophogastridae (2 species) and Gnathophausiidae (1 species).

The order Mysida includes the families Petalophthalmidae (without Mediterranean Sea representation) and Mysidae. The classification of the family Mysidae, defined by the presence of uropodal statocysts, includes 10 subfamilies. The Mysinae tribes (Erythropini, Heteromysini, Leptomysini, Mysini, etc.) are now considered as subfamilies of the family Mysidae (Meland & Willanssen, 2007) and the genus *Mysidetes* is transfered from Leptomysinae to the Heteromysinae (Murano, 1999; Meland & Willanssen, 2007).

The Mysidae is the most specious Mediterranean Sea family (95 species). Nine of the ten Mysidae subfamilies are present in the Mediterranean Sea, lacking the subfamily Mancomysinae the species of which are restricted to marine caves from western Pacific and the Caribbean Sea. The Erythropinae is the most specious subfamily (25 species), followed by the subfamilies Mysinae and Leptomysinae (19 and 16 species, respectively). The subfamilies Heteromysinae, Gastrosaccinae and Siriellinae are represented by 11, 10 and 8 species, respectively, while the subfamilies Boreomysinae, Mysidellinae and Rhopalophthalminae include 3, 2 and 1 species, respectively.

There are not endemic species of the order Lophogastrida but the level of endemics is relatively high in the order Mysida (38.9% for the whole Mediterranean Sea, with 37 species).

A list of all species with their geographic occurrence, habitat, depth distribution and references are provided based on current information. A complete bibliography reporting Mediterranean mysidaceans and a table summarizing all the data obtained are also included.

Mediterranean lophogastrids

Order LOPHOGASTRIDA Sars, 1870

Family LOPHOGASTRIDAE Sars, 1870

Lophogaster affinis Colosi, 1930
Distribution: E-Atlantic. Red Sea (Elat, Gulf of Aqaba). Madagascar. Western Mediterranean Sea.
Depth range: 50-1800m.
Habitat: mesopelagic.
References: Colosi (1930); Fage (1942).

Lophogaster typicus Sars, M., 1857
Distribution: Atlantic (Bay of Biscay to W-Africa). Indian Ocean. Western and eastern Mediterranean Sea (Alboran Sea; Iberian Peninsula Mediterranean coasts; Banyuls-sur-Mer, Marseille; Gulf of Naples, Messina, central western coasts of Italy, Adriatic Sea; Bosphorus).
Depth range: 32-500m.
Habitat: appears to be a benthic species.
References: Lo Bianco (1903); Tattersall (1909); Colosi (1922; 1930); Bacescu (1941; 1976); Fage (1942); Tattersall & Tattersall (1951); Hoenigman (1955, 1963); Bacescu & Mayer (1961); Macquart-Moulin (1965, 1975); Torchio (1968); Casanova (1970); Bacescu & Schiecke (1974); Jukic (1978); MacPherson (1978); Katagan (1985); Caragitsou & Papaconstantinou (1994); Redon *et al.* (1994); Bozzano *et al.* (1997); Abelló *et al.* (2002); Morte *et al.* (2002); Santic *et al.* (2003, 2004, 2005); Jardas *et al.* (2004); Carpentieri *et al.* (2005); Mallol Martínez (2005); Sobrino *et al.* (2005); Innocenti (2006); Vassilopoulou (2006).

Family GNATHOPHAUSIIDAE Udrescu, 1984

Gnathophausia zoea Willemoes-Suhm, 1875
Distribution: Known from all the oceans of the world: NE-Atlantic; Bay of Biscay; Mauritania; Tristan da Cunha; Gulf of Mexico; W-America (Lower California); Zanzibar; South Africa; Ascension Is.; Philippines; Indonesia; China Sea; Hawaii. Western Mediterranean Sea (Catalan Sea).
Depth range: 400-6050m.
Habitat: bathypelagic.
References: Alcaraz (1986)

Family EUCOPIIDAE Sars, 1885

Eucopia grimaldii Nouvel, 1942
Distribution: The species is widely distributed in the north and south Atlantic, Pacific and Indian Oceans; also Alaska and Antarctica. Mediterranean Sea.
Depth range: 300-2600m (most commonly in about 2000m).
Habitat: meso- and bathypelagic; over bottom sediments composed of silts and clays.
References: Muller (1993).

Eucopia hanseni Nouvel, 1942
Distribution: Atlantic Ocean: Golfe de Gascogne to Canary Islands, Azores; Gulf of Mexico. Western and eastern Mediterranean Sea (Alboran Sea, Catalan Sea, gulf of Lyon, Adriatic Sea).
Depth range: 200-4829m.
Habitat: meso- and bathypelagic; suprabenthos.
References: Dion & Nouvel (1960); Furnestin (1960); Hoenigman (1955, 1963); Casanova (1970); Stefanescu & Cartes (1992); Cartes (1993); Cartes & Sorbe (1995).

Eucopia major Hansen, 1910
Distribution: Atlantic Ocean: Golfe de Gascogne to Canary Islands and W-africa. Pacific Sea from Bering Sea to Japan and Galápagos Archipiélago. Indian Ocean (Arabia). Nortwestern Mediterranean (gulf of Lyon).
Depth range: 1310-5100m.
Habitat: bathypelagic
References: Furnestin (1960).
Remarks: doubtful record?

Eucopia unguiculata (Willemoes-Suhm, 1875)
Distribution: Widely distributed in the world oceans in tropical and temperate areas. Atlantic, Indo-Pacific, Antarctica, Philippines. Northwestern Mediterranean Sea.
Depth range: 100-6500m.
Habitat: bathypelagic, young specimens live in considerably higher levels than adults.
References: Tattersall (1909); Colosi (1922; 1930); Denis (1929); Tattersall & Tattersall (1951); Andersen & Sardou (1992); Macquart-Moulin (1993); Macquart-Moulin & Patriti (1996); Andersen *et al*. (1998)**.**

Mediterranean mysids

ORDER MYSIDA Haworth, 1825

FAMILY MYSIDAE Haworth, 1825

SUBFAMILY RHOPALOPHTHALMINAE Hansen, 1910

Rhopalophthalmus mediterraneus Nouvel, 1960
Distribution: South western Mediterranean Sea (Algeria).
Depth range: coastal (3-6m).
Habitat: Muddy sand bottom with plant detritus.
References: Nouvel (1960).

SUBFAMILY BOREOMYSINAE Holt & Tattersall, 1905

Boreomysis arctica Krøyer, 1861
Distribution: E- and N-Atlantic (Greenland to Portugal and Azores). N-Indo-Pacific (Bering Sea; California, Okkotsk Sea). Western and eastern Mediterranean Sea (Gulf of Valencia; Catalan Sea; Balearic Islands; France; Italy, off Capri Island; gulf of Naples; Sea of Marmara).
Depth range: 300-1900m.
Habitat: mesopelagic.
References: Lo Bianco (1903); Tattersall (1909); Colosi (1922; 1930); Bacescu (1941); Tattersall & Tattersall (1951); Bacescu & Mayer (1961); Cartes & Abelló (1992); Cartes & Sorbe (1993, 1995); Katagan & Kocatas (1995); Macquart-Moulin & Patriti (1996); Cartes & Sorbe (1999); Cartes & Maynou (2001); Cartes et al. *(2001ab); Carrassón & Cartes (2002); Carrassón & Matallanas (2001, 2002); Morte* et al. *(2002); Innocenti (2006); Fanelli* et al. *(2009).*

Boreomysis megalops Sars, 1872

Distribution: N-Atlantic (Norway to Bay of Biscay). Western and eastern Mediterranean Sea (Gulf of Valencia; Catalan Sea; Italy, gul of Naples, off Sardinia; Adriatic Sea).
Depth range: 140-450m.
Habitat: mesopelagic, above sandy bottom.
References: Zimmer (1915); Colosi (1922, 1930); Bacescu (1941); Tattersall & Tattersall (1951); Hoenigman (1955, 1963); MacPherson (1979); Ariani *et al.* (1993); Cartes & Sorbe (1995); Morte *et al.* (2002); Innocenti (2006).

Boreomysis semicoeca Hansen, 1905
Distribution: N-Pacific and W-Indian Ocean. Southwestern Mediterraean
Depth range: 200-2800m.
Habitat: bathypelagic.
References: Casanova (1970).

SUBFAMILY GASTROSACCINAE Norman, 1892

Anchialina agilis (Sars, 1877)
Distribution: NW-Atlantic (North Sea to Bay of Biscay) and W-Africa (Cape Verde Islands); off French Guinea. Western and eastern Mediterranean Sea (Southeast Iberian coast; gulf of Valencia; Catalan Sea; France: Banyuls-sur-Mer, Marseille; Cannes, Monaco, Menton; Italy: gulf of Naples, gulf of Salerno, mouth of river Tiber, Tyrrhenian Sea, Sardinia; northern Adriatic Sea; Aegean Sea; Libya; Turkey).
Depth range: 0-420m.
Habitat: coastal; lives usually close to the bottom, over sand; migrates to surface at night.
References: Sars (1877); Czerniavsky (1882ab); Lo Bianco (1903); Tattersall (1909); Colosi (1922); Bacescu (1941, 1976); Furnestin (1960); Tattersall & Tattersall (1951); Hoenigman (1953, 1963); Macquart-Moulin (1965, 1975); Vives (1966, 1968); Champalbert & Macquart-Moulin (1970); Bacescu & Schiecke (1974); Ariani & Spagnuolo (1975); Wittmann (1977, 2001); Hong (1980); Katagan (1985); Maj & Taramelli (1989); Schlacher *et al.* (1992); Ariani *et al.* (1993); Macquart-Moulin & Patriti (1993, 1996); Redon *et al.* (1994); Cartes & Sorbe (1995); Macquart-Moulin & Ribera (1995); Aguirre (2000); San Vicente & Munilla (2000); Barberá Cebrián *et al.* (2001); Morte *et al.* (2001, 2002); Barberá Cebrián (2002); Bakir & Katagan (2005); Innocenti (2006); Cartes *et al.* (2007, 2009); Ligas *et al.* (2007); Dogan *et al.* (2008); Fanelli *et al.* (2009).

Anchialina oculata Hoenigman, 1960
Distribution: Western and eastern Mediterranean Sea (Italy: gulf of Naples, gulf of Salerno; Turkey).
Depth range: litoral.
Habitat: epipelagic.
References: Hoenigman (1960); Ariani & Spagnuolo (1975); Katagan (1985); Schlacher *et al.* (1992); Ariani *et al.* (1993); Wittmann (2001).

Gastrosaccus mediterraneus Bacescu, 1970
Distribution: Western and eastern Mediterranean Sea (Spain; Marseille; Italy: gulf of Naples, gulf of Salerno; Tunisia, Libanon, Yugoslavia, Turkey).
Depth range: littoral (0.2-0.5m).
Habitat: sandy bottoms.
References: Bacescu (1970); Macquart-Moulin (1977); Katagan (1985); Schlacher *et al.* (1992); Ariani *et al.* (1993); Wittmann (2001).

Gastrosaccus roscoffensis Bacescu, 1970
Distribution: Western Mediterranean Sea (Catalonia; France).
Depth range: littoral (0.1-0.5m).
Habitat: sandy beaches.
References: Bacescu (1970); San Vicente (1996); San Vicente & Sorbe (1999); San Vicente & Munilla (2000).

Gastrosaccus sanctus (van Beneden, 1861)

Distribution: Atlantic coasts of southern Europe and Great Britain; Black Sea; Sea of Azhov; Suez Canal; Sierra Leone Estuary; Cape Verde Islands; Liberia (off Monrovia); S-Africa. Western and eastern Mediterranean Sea (Catalonia; France: Banyuls, Elne, Argelès, Nice, Monaco, Menton; Italy: Tyrrhenian Sea; gulf of Naples, gul of Salerno, mouth of river Tiber; Turkey; Adriatic Sea; Israel).
Depth range: coastal (0-200m).
Habitat: burrows in muddy or sandy bottoms close to shore.
Remarks: The species is gregarious and is markedly euryhaline and eurythermic.
References: Sars (1877); Czerniavsky (1882ab);Colosi (1922); Bacescu (1941, 1970); Tattersall & Tattersall (1951); Hoenigman (1961, 1964); Ariani (1967); Fishelson & Loya (1968); Moran & Fishelson (1971); Moran (1972); Katagan (1985); Schlacher *et al.* (1992); Ariani *et al.* (1993); Macquart-Moulin & Ribera (1995); San Vicente (1996); Cardinale *et al.* (1997); San Vicente & Sorbe (1999); San Vicente & Munilla (2000); Wittmann (2001); Innocenti (2006).

Gastrosaccus spinifer (Goes, 1864)
Distribution: Norway to Cameroon, including North Sea; "French West Africa"; Sierra Leone Estuary. Nortestern Mediterranean Sea (gulf of Valencia; Catalan Sea, Marseille).
Depth range: 0-260m.
Habitat: lives close to the bottom and burrows in mud or sand; also among *Zostera* seagrass.
References: Tattersall & Tattersall (1951); Macquart-Moulin (1977); Macquart-Moulin & Ribera (1995); San Vicente (1996); San Vicente & Sorbe (1999); San Vicente & Munilla (2000); Morte *et al.* (2001, 2002).

Haplostylus bacescui Hatzakis, 1977
Distribution: Western and eastern Mediterranean Sea (Greece; Italy: Gulf of Naples, gulf of Salerno, Tyrrhenian Sea).
Depth range: 30-100m.
Habitat: planktonic at nigth.
References: Hatzakis (1977); Schlacher *et al.* 1992; Ariani *et al.* (1993); Wittmann (2001).

Haplostylus lobatus (Nouvel, 1951)
Distribution: NE-Atlantic (Britain; Ireland); Morocco; Sierra Leone Estuary; off Ghana. Western and eastern Mediterranean Sea (Catalan Sea; France: Marseille; Italy: gulf of Neaples, gulf of Salerno, mouth of the river Tiber, northern Adriatic Sea; Aegean Sea; Turkey)
Depth range: 0-420m.
Habitat: coastal; over sand and mud.
References: Furnestin (1960); Hoenigman (1955, 1963); Ariani (1967); Champalbert & Macquart-Moulin (1970); Ariani & Spagnuolo (1975); Macquart-Moulin (1975); Ariani *et al.* (1993); Macquart-Moulin & Patriti (1993, 1996); Macquart-Moulin & Ribera (1995); Wittmann (2001); Bakir & Katagan (2005); Cartes *et al.* (2007); Ligas *et al.* (2007); Dogan *et al.* (2008).

Haplostylus magnilobatus (Bacescu & Schiecke, 1974)
Distribution: Western and eastern Mediterranean Sea (gulf of Naples; Greece).
Depth range: 120-130m.
Habitat: sandy-muddy bottom with rests of *Posidonia*.
References: Bascecu (1976); Bacescu & Schiecke (1974); Hatzakis (1977); Ariani *et al.* (1993); Wittmann (2001).

Haplostylus normani (Sars, 1877)
Distribution: E-Atlantic (Golfe de Gascogne); Black Sea; Sierra Leone Estuary; Red Sea. Western and eastern Mediterranean Sea (gulf of Valencia; Catalan Sea; France: Banyuls-sur-Mer, Marseille, Nice, Monaco, Menton; Italy: gulf of Naples, gulf of Salerno, Tyrrhenian Sea; Lybia; Turkey).
Depth range: coastal and slope (0-406m).
Habitat: on sandy bottoms.
References: Sars (1877); Czerniavsky (1882a); Lo Bianco (1903); Tattersall (1909); Colosi (1922); Fage (1932, 1933); Bacescu (1941, 1976); Tattersall & Tattersall (1951); Furnestin (1960); Macquart-Moulin (1965, 1975); Champalbert & Macquart-Moulin (1970); Ariani & Spagnuolo (1975); Ariani *et al.* (1993);

Redon *et al.* (1994); Cartes & Sorbe (1995); Macquart-Moulin & Ribera (1995); Aguirre (2000); Morte *et al.* (2001, 2002); Wittmann (2001); Innocenti (2006); Cartes *et al.* (2007, 2009); Fanelli *et al.*(2009).

SUBFAMILY SIRIELLINAE Czerniavsky, 1882

Siriella adriatica Hoenigman, 1960
Distribution: Eastern Mediterranean Sea (Adriatic Sea).
Depth range: littoral
Habitat: coastal
Reference: Hoenigman (1960)

Siriella armata (Milne-Edwards, 1837)
Distribution: NE-Atlantic. Western and eastern Mediterranean Sea (southeast Iberian coast: Alicante; gulf of Valencia; Catalan Sea; France: Banyuls-sur-Mer, Elne, Marseille, Nice, Monaco, Menton; Italy: gulf of Naples, gulf of Salerno, mouth of the river Tiber, Sardinia, Sicily; Adriatic Sea; Turkey).
Depth range: shallow waters.
Habitat: the species lives near the bottom, among *Ulva* and *Posidonia*. In northern waters the species lives in swarms in shallow water and among weeds, and in pools with hard bottoms or under overhanging rocks without mud. During the breeding season the specimens migrate to the surface at darkness.
References: Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Macquart-Moulin (1965); Ariani (1967); Wittmann (1977, 2001); Katagan (1985); Maj & Taramelli (1989); Ariani *et al.* (1993); Birmelin *et al.* (1995); San Vicente (1996); San Vicente & Sorbe (1999); San Vicente & Munilla (2000); Campolmi *et al.*(2001); Barberá Cebrián (2002); Barberá Cebrián *et al.* (2001, 2002); Morte *et al*. (2001); Remerie *et al.* (2004); Innocenti (2006); Meland & Willassen (2007).

Siriella castellabatensis Ariani & Spagnuolo, 1975
Distribution: Western Mediterranean Sea (Italy: gulf of Naples, gulf of Salerno).
Depth range: littoral.
Habitat: sandy beaches.
References: Ariani & Spagnuolo (1975); Ariani *et al.* (1993); Wittmann (2001).

Siriella clausi Sars, 1877
Distribution: Atlantic; Black Sea. Western and eastern Mediterranean Sea (Southeast Iberian coast; gulf of Valencia; Catalan Sea; France: Banyuls-sur-Mer, Marseille, Elne, Argelès, Villefranche, Monaco, Baie de Carnolès; Italy: Naples; Salerno; Sardinia, Sicily; Adriatic Sea; Aegen Sea; Turkey).
Depth range: 4-30m.
Habitat: coastal; near the bottom, among *Posidonia*; pools and among weeds on gravel, rocky and sandy bottoms.
References: Sars (1877); Lo Bianco (1903); Colosi (1922); Fage (1933); Bacescu (1941); Tattersall & Tattersall (1951); Macquart-Moulin (1965, 1975); Ariani (1967); Champalbert & Macquart-Moulin (1970); Ariani & Spagnuolo (1975); Hong (1980); Katagan (1985); Alcaraz (1986); Maj & Taramelli (1989); Mazzella *et al.* (1989)Schlacher *et al.* (1992); Ariani *et al.* (1993); Macquart-Moulin & Patriti (1993, 1996); San Vicente & Munilla (2000); Barberá Cebrián *et al.* (2001, 2002); Campolmi *et al.*(2001); Fossi *et al.* (2001); Morte *et al.* (2001, 2002); Wittmann (2001); Barberá Cebrián (2002)Remerie *et al.* (2004); Innocenti (2006); Meland & Willassen (2007).

Siriella gracilipes (Nouvel, 1942)
Distribution: Western Mediterranean Sea (Italy: gulf of Naples, gulf of Salerno)
Depth range: coastal
Habitat: algae in rocky shore
References: Ariani *et al.* (1993); Wittmann (2001).

Siriella jaltensis Czerniavsky, 1868
Distribution: Atlantic; Black Sea; Suez Canal (Port Said); West and South Africa. Western and eastern Mediterranean Sea (gulf of Valencia; Catalan Sea; France: Banyuls-sur-Mer à Marseille, Nice, Baie de Roquebrune et Menton; Italy: Naples, Salerno; Adriatic Sea; Aegean Sea; Turkey)

Depth range: coastal (0.5-4m).
Habitat: algae on rocky shore.
References: Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Hoenigman (1958ac); Macquart-Moulin (1965, 1975); Ariani (1967); Ariani & Spagnuolo (1975); Hong (1980); Wittmann (1977, 1981a); Katagan (1985); Schlacher *et al.* (1992); San Vicente (1996); San Vicente & Sorbe (1999); Morte *et al.* (2001, 2002); Remerie *et al.* (2004); Innocenti (2006); Meland & Willassen (2007); Moscatello & Belmonte (2007); Dogan *et al.* (2008).

Siriella norvegica Sars, 1869
Distribution: Atlantic (Norway to Morocco); Western and eastern Mediterranean Sea (Gibraltar; Catalan Sea; France: Banyuls-sur-Mer, Marseille, Monaco; Italy: Naples; Salerno, Tyrrhenian Sea; Adriatic Sea, Turkey).
Depth range: 20-400m.
Habitat: diurnal benthic habitat.
References: Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Furnestin (1960); Hoenigman (1955, 1958ac, 1963); Macquart-Moulin (1965, 1975); Champalbert & Macquart-Moulin (1970); Ariani & Spagnuolo (1975); Katagan (1985); Ariani *et al.* (1993); Macquart-Moulin & Patriti (1996); Aguirre (2000); Wittmann (2001); Innocenti (2006); Cartes *et al.* (2007); Fanelli *et al.* (2009).

Siriella thompsonii (Milne-Edwards, 1837)
Distribution: Widely distributed in tropical and temperate waters of the world. Gulf of Mexico; Straits of Florida; off Mississippi; Bahamas; off Bermuda; Brazil (Pernambuco; Rio de Janeiro); Red Sea; Gulf of Aden; Philippines; Sulu Archipelago; Galapagos; Hawaii; W- and SE-Africa; Antarctica. Western and eastern Mediterranean Sea (Alboran Sea, France; Adriatic Sea; Ionian Sea)
Depth range: 0-550m.
Habitat: surface plankton in offshore waters; polyhaline
References: Dion & Nouvel (1960; Hoenigman (1960; 1963); Bacescu & Mayer (1961); Innocenti (2006); Macquart-Moulin & Patriti (1996).

SUBFAMILY ERYTHROPINAE Hansen, 1910

Arachnomysis leuckarti Chun, 1887
Distribution: Indo-Pacific, Atlantic, Western an eastern Mediterranean Sea (Italy: off Capri Is., gulf of Naples; Adriatic Sea).
Depth range: 58-770m.
Habitat: meso-and bathypelagic.
References: Lo Bianco (1903); Tattersall (1909); Colosi (1922); Tattersall & Tattersall (1951); Hoenigman (1955, 1963); Innocenti (2006).

Calyptomma puritani W. Tattersall, 1909
Distribution: Western and eastern Mediterranean Sea (Catalan Sea, Italy, Ionian Sea).
Habitat: mesopelagic.
Depth range: 600-1860m.
References: Tattersall (1909); Colosi (1929) Cartes & Sorbe (1995); Madurell & Cartes (2003).

Erythrops africana Tattersall, 1955
Distribution: W-Africa (off Cape Lopez). Western Mediterranean Sea (Alboran Sea)
Depth range: 63-250m.
Habitat: Detritic bottom.
References: Bacescu (1989).

Erythrops alborana Bacescu, 1989
Distribution: Western Mediterranean Sea (Alboran Sea).
Depth range: 3000m.
Habitat: Detritic bottom.
References: Bacescu (1989).

Erythrops elegans (Sars, 1863)
Distribution: N-Atlantic. Western and eastern Mediterranean Sea (Alboran Sea; gulf of Valencia; Catalonia; Monaco; Marseille; Italy: Messina, gulf of Naples, gulf of Salerno, Tyrrhenian Sea; northern Adriatic Sea).
Depth range: 0-50m.
Habitat: a bottom-living species, on mud, sand or shall gravel.
References: Sars (1877); Czerniavsky (1882a);Tattersall (1909); Zimmer (1915);Colosi (1922); Bacescu (1941, 1989); Tattersall & Tattersall (1951); Hoenigman (1955); Macquart-Moulin (1965, 1975); Champalbert & Macquart-Moulin (1970); Schlacher *et al.* (1992); Ariani *et al.* (1993); San Vicente & Munilla (2000); Morte *et al.* (2001, 2002); Wittman (2001); Innocenti (2006); Cartes *et al.* (2007, 2009); Ligas et al. (2007); Fanelli *et al.* (2009).

Erythrops erythrophthalma (Goës, 1864)
Distribution: N-Atlantic; Spitzbergen; Greenland. Western and eastern Mediterranean Sea (gulf of Valencia; France: Banyuls-sur-Mer; Marseille, Nice, Monaco, Menton; Thyrrenian Sea; Turkey).
Depth range: 12-275m.
Habitat: an offshore species, that lives near the bottom; above mud and silt.
References: Lo Bianco (1903); Bacescu (1941); Macquart-Moulin (1965); Katagan (1985); Morte *et al.* (2002).

Erythrops neapolitana Colosi, 1929
Distribution: Western and eastern Mediterranean Sea (France; Italy: Gulf of Naples; Catalan Sea; Ionian Sea).
Depth range: 120-1355m.
Habitat: coastal and slope, suprabenthos.
References: Zimmer (1915); Colosi (1929); Bacescu (1941); MacPherson (1978); Ariani *et al.* (1993); Cartes & Sorbe (1995); Madurell & Cartes (2003); Innocenti (2006).

Erythrops peterdohrni Bacescu & Schiecke, 1974
Distribution: Western Mediterranean (north of Capri, gulf of Naples).
Depth range: 120-130m.
Habitat: sandy-muddy bottoms with rests of *Posidonia*.
References: Bacescu & Schiecke (1974); Wittmann (2001).

Erythrops serrata (G.O. Sars, 1863)
Distribution: NE-Atlantic. Western Mediterranean (eastern coast of Spain; Tyrrhenian Sea)
Depth range: 100-500m.
Habitat: bottom-living.
References: Redon *et al.* (1994); Fanelli *et al.* (2009).

Euchaetomera glyphidophthalmica Illig, 1906
Distribution: Tropical and temperate regions. E-Atlantic and Indo-Pacific; Gulf of Aden; India. Western Mediterranean (Italy).
Depth range: 0-370m.
Habitat: mesopelagic.
References: Colosi (1922).

Euchaetomera intermedia Nouvel, 1942
Distribution: E- and W-Africa; Canary Islands; Cape Verde Islands; Falkland Islands; Uruguay; South Africa; Madagascar. Mediterranean Sea.
Depth range:
Habitat: mesopelagic?
References: Muller (1993).

Euchaetomera richardi Nouvel, 1945
Distribution: Western Mediterranean (Monaco).

Depth range: 1500-1800m.
Habitat: bathypelagic
References: Nouvel (1945).

Euchaetomera tenuis Sars, 1884
Distribution: Bermuda; Straits of Florida; North of Bahama Bank; Galápagos; E- and SAtlantic; South Pacific; south of 40ºN in the North Pacific. Western Mediterranean (Italy: off Capri Is., gulf of Naples).
Depth range: 50-5000m.
Habitat: in offshore plankton.
References: Lo Bianco (1903); Tattersall (1909); Colosi (1922); Tattersall & Tattersall (1951); Innocenti (2006).

Euchaetomera typica Sars, 1884
Distribution: widely distributed in tropical and temperate regions of the Indo-Pacific, Atlantic; Bermuda; E-Atlantic; N of New Zealand; Panamá Pacific; Galápagos. Mediterranean.
Depth range: surface-300m.
Habitat: oceanic.
References: Colosi (1920).

Euchaetomeropsis merolepis (Illig, 1908)
Distribution: almost cosmopolitan; tropical and temperate regions of the world oceans; E-Atlantic; Indo-Pacific. Western and eastern Mediterranean (Italy: off Capri Is., gulf of Naples; Ionian Sea).
Depth range: 0-800m.
Habitat: mesopelagic
References: Tattersall (1909); Colosi (1922); Casanova (1970); Madurell & Cartes (2003); Innocenti (2006).

Hypererythrops richardi Bacescu, 1941
Distribution: Western Mediterranean (Nice; Italy: gulf of Naples).
Depth range: 40-130m.
Habitat: sandy-muddy bottom with rests of *Posidonia*.
References: Bacescu (1941); Bacescu & Schiecke (1974).

Hypererythrops zimmeri Ii, 1937
Distribution: Japan. Western Mediterranean Sea (Italy);
Depth range: 30-80m.
Habitat: muddy sand; sandy mud.
References:Murano (1970).

Paramblyops rostrata Holt & Tattersall, 1905
Distribution: N-Atlantic (Island to Maroc; E-coast of U.S.A.). Western Mediterranean (Catalan Sea, Italy).
Depth range: 280-2650m.
Habitat: bottom-living form
References: Colosi (1922, 1929, 930); Tattersall (1909); Tattersall & Tattersall (1951); Cartes & Sorbe (1995).

Parapseudomma calloplura (Holt & Tattersall, 1905)
Distribution: Atlantic; Indo-Pacific; Japan. Western Mediterranean (Alboran Sea; gulf of Valencia; Catalan Sea; Monaco; France: Golfe de Lion; Italy: Naples).
Depth range: 94-1200m.
Habitat: usually bathypelagic.
References: Tattersall (1909); Colosi (1922; , 1929, 1930); Bacescu (1941, 1989); Tattersall & Tattersall (1951); Reys (1960); Cartes & Sorbe (1995); Cartes *et al.* (2001b); Morte *et al.* (2001, 2002).

Parerythrops lobiancoi W. Tattersall, 1909
Distribution: Western Mediterranean (Italy: south of Capri).
Depth range: bathy-mesopelagic (950-1200m).

Habitat: deep water form
References: Tattersall (1909); Colosi (1922).

Parerythrops obesa (Sars, 1864)
Distribution: NE-Atlantic (Norway south to Canary Islands); Indian Ocean. Western Mediterranean (Alboran Sea, Thyrrenian Sea)
Depth range: 80-3000m.
Habitat: found in large swarms on or near the sea bottom.
References: Lo Bianco (1903); Bacescu (1941, 1989); Tattersall & Tattersall (1951).

Pseudomma affine Sars, 1870
Distribution: N-Atlantic, from north of Norway to Bay of Biscay, also Iceland, Greenland and eastcoast of NAmerica. Western Mediterranean (Catalan Sea, Thyrrenian Sea)
Depth range: 70-1300m.
Habitat: on bottoms with large amount of fine particles (silts, clays fine sands); sometimes on coarse sand bottom.
References: Lo Bianco (1903); Cartes & Sorbe (1995).

Pseudomma chattoni Bacescu, 1941
Distribution: Western Mediterranean Sea (Monaco).
Depth range: 220-300m.
Habitat: muddy bottoms.
References: Bacescu (1941).

Pseudomma kruppi Tattersall, 1909
Distribution: N-Atlantic. Western Mediterranean (Catalan Sea; Italy: Naples).
Depth range: 300-1250m.
Habitat: suprabenthic species.
References: Tattersall (1909); Colosi (1922, 1930); Cartes & Sorbe (1995).

Pseudomma nanum Holt & Tattersall, 1906
Distribution: W-Ireland; Faroe Channel; Golfe de Gascogne. Eastern Mediterranean (Ionian Sea)
Depth range: 360-1500m.
Habitat: bathypelagic
References: Madurell & Cartes (2003).

SUBFAMILY HETEROMYSINAE Norman, 1892

Burrimysis palmeri Jaume & Garcia, 1993
Distribution: Western Mediterranean Sea (Cabrera, Balearic Islands).
Depth range: 20m.
Habitat: anchialine cave lake.
References: Jaume & Garcia (1993).

Harmelinella mariannae Ledoyer, 1989
Distribution: Western Mediterranean Sea (Marseille).
Depth range: littoral
Habitat: marine caves.
References: Ledoyer (1989).

Heteromysis (Heteromysis) arianii Wittmann, 2000
Distribution: Western Mediterranean Sea (gulf of Naples).
Depth range: 11-22 m.
Habitat: coralloid habitats with rocks, coarse sediments, bryozoans and gorgonians,
References: Wittmann (2000, 2001).

Heteromysis (Heteromysis) eideri Bacescu, 1941
Distribution: Mediterranean Sea (France: Monaco; Turkey).
Depth range: 30-100m.
Habitat: on muddy bottoms with shells and debris; several records.
References: Bacescu (1941); Katagan (1985).

Heteromysis (Heteromysis) lybiana Bacescu, 1976
Distribution: Eastern Mediterranean Sea (Libya).
Depth range: 70m.
Habitat: corraloid bottoms
References: Bacescu (1976).
.
Heteromysis (Heteromysis) microps (Sars, 1877)
Distribution: NE-Atlantic; Mediterranean (Italy: gulf of Naples; Tunisia).
Depth range: 11m.
Habitat: coastal.
References: Sars (1877); Wittmann (2001).

Heteromysis (Heteromysis) norvegica Sars, 1883
Distribution: Coasts of eastern United States from New England to Gulf of Mexico; west coast of Norway; British Isles; English Channel; north and west coasts of France. Mediterranean (off Monaco).
Depth range: 0-400m.
Habitat: hypoplanktonic and polyhaline; on bottoms of shell gravel and coarse shell sand, among seaweeds, large shells, stones, and debris. During daylight sheltering in shells or vegetation, at night becoming pelagic.
References: Bacescu (1941).

Heteromysis (Heteromysis) riedli Wittmann, 2001
Distribution: Mediterranean Sea (Gulf of Naples).
Depth range: 11-25 m
Habitat: meadows of *Posidonia oceanica*
References: Wittmann (2001).

Heteromysis (Neoheteromysis) muelleri Bacescu, 1976
Distribution: Eastern Mediterranen Sea (Libya).
Depth range: 75m.
Habitat: "commensal de la grande éponge *Cacospongia scalaris*".
References: Bacescu (1976)

Mysidetes farrani (Holt & Tattersall, 1905)
Distribution: NE-Atlantic (Ireland to Morocco). Western Mediterranean Sea (Italy: Naples).
Depth range: 235-1105m.
Habitat: bottom-living.
References: Tattersall (1909); Colosi (1922).

Retromysis nura Wittmann, 2004
Distribution: Western Mediterranean (Balearic Islands; Italy: Naples).
Depth range: 2-5m.
Habitat: marine caves.
References: Wittmann (2004).

SUB-FAMILY MYSIDELLINAE Czerniavsky, 1882

Mysidella typica Sars, 1872
Distribution: NE-Atlantic (Norway to Golfe de Gascogne). Western Mediterranean Sea (Catalan Sea; Monaco; Italy: Naples; Capri).
Depth range: 90-540m.

Habitat: near the bottom.
References: Tattersall (1909); Zimmer (1915); Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Aguirre (2000).

Mysidella biscayensis Lagardère & Nouvel, 1980
Distribution: NE-Atlantic (Golfe de Gascogne). Western Mediterranean Sea (Catalan Sea)
Depth range: 190-400m.
Habitat: near the bottom.
References: Cartes & Sorbe (1995)

SUBFAMILY MYSINAE Haworth, 1825

Acanthomysis longicornis (Milne-Edwards, 1837)
Distribution: Suez Canal; Indo-Pacific (Japan, Korea). Western and eastern Mediterranean Sea (Catalonia; France; Italy: gulf of Naples, gulf of Salerno, Tyrrhenian Sea; Adriatic Sea; Turkey).
Depth range: 2-100m.
Habitat: lives close to the bottom.
References: Sars (1877); Czerniavsky (1882a); Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Hoenigman (1963); Ariani (1967); Champalbert & Macquart-Moulin (1970); Macquart-Moulin (1975); Katagan (1985); Ariani *et al.* (1993); San Vicente & Munilla (2000); Wittmann (2001); Fanelli *et al.* (2009).

Acanthomysis strauchi (Czerniavsky, 1882)
Distribution: Black Sea, Mediterranean .
Depth range: 1.5-10m.
Habitat: coastal, also in brackish water.
References: Muller (1993).

Diamysis bacescui Wittmann & Ariani (1998)
Distribution: Mediterranean (Tyrrhenian, Adriatic, and Aegean seas)
Depth range: shallow water.
Habitat: coastal.
References: Wittmann & Ariani (1998); Wittmann (2001).

Diamysis bahirensis (Sars, 1877)
Distribution: NW Portugal (Ria de Aveiro); Black and Azov Sea; Israel; Suez.Canal. Mediterranean Sea (Catalonia; Banyuls-sur-Mer; Italy, Sicily; Adritic Sea, Egypt, Tunisia,Turkey);
Depth range: shallow water.
Habitat: coastal; occasionally in fresh water and oligohaline rivers.
References: Sars (1877); Tattersall (1927);Bacescu (1941); Hoenigman (1958ac, 1963); Almeida Prado-Port *et al.* (1981); Katagan (1985); Ariani *et al.* (1993); Cunha *et al.* (1999); San Vicente & Munilla (2000); Campolmi *et al.* (2001); Ariani & Wittmann (2004).

Diamysis lagunaris Ariani & Wittmann (2000)
Distribution: NE Atlantic. W-Mediterranean (Golfe du Lion, Ligurian, Tyrrhenian and Sardinian seas);
Depth range: 0.3-1.5 m
Habitat: poly- to euhaline (rarely metahaline) lagoons, also marine.
References: Ariani & Wittmann (2000).

Diamysis mesohalobia Ariani & Wittmann (2000)
Distribution: E-Mediterranean (Italy: Adriatic Sea)
Depth range: 0-1 m
Habitat: Meso- to euhaline lagoons and estuaries.
References: Ariani & Wittmann (2000); Remerie *et al.* (2004); Meland & Willassen (2007).
Remarks: Three subspecies: *D. mesohalobia gracilipes* Ariani & Wittmann, 2000; *D. mesohalobia heterandra* Ariani & Wittmann, 2000 and *D. mesohalobia mesohalobia* Ariani & Wittmann, 2000.

Hemimysis abyssicola Sars, 1869
Distribution: Norway to Golfe de Gascogne (44º-70ºN); Black Sea. Mediterranean (Catalan Sea).
Depth range: 100-600.
Habitat: Suprabenthos.
References: Bacescu (1941); Cartes & Sorbe (1995).

Hemimysis anomala Sars, 1907
Distribution: Black Sea and Caspian Sea. Northwestern Mediterranean (Rhône delta)
Depth range: littoral-20m.
Habitat: marine, but occasionally found in freshwater.
References: Wittmann & Ariani (2009).

Hemimysis lamornae lamornae (Couch, 1856)
Distribution: Atlantic, Mediterranean Sea (Marseille, Adriatic) and Black Sea.
Depth range: 0-100m.
Habitat: coastal near the bottom, often in the shade of weeds and rocks, marine caves.
References: Tattersall & Tattersall (1951); Hoenigman (1960); Hong (1980).

Hemimysis margalefi Alcaraz, Riera & Gili, 1986
Distribution: Mediterranean (NE-coast of Mallorca Island; continental coast of Europe from Marseilles to Naples, Corsica, Malta and the Croatian coast of the Adriatic Sea).
Depth range: 12m.
Habitat: dark submarine caves.
References: Alcaraz et al. (1986); Wittmann (2001); Chevaldonné & Lejeusne (2003); Lejeusne & Chevaldonné (2005, 2006); Lejeusne *et al.*, (2006); Moscatello & Belmonte (2007).

Hemimysis speluncola Ledoyer, 1963
Distribution: Catalonia (Medes Is.); France (Gulf of Marseille); Italy (gulf of Naples).
Depth range: 0-30m.
Habitat: in and near marine caves.
References: Ledoyer (1963); Macquart-Moulin (1979); Macquart-Moulin & Patritti (1966); Wittmann (1968, 1978, 1981a, 2001); Gaudy & Guerin (1979); Gaudy *et al.* (1980); Bourdillon *et al.* (1980); Hong (1980); Macquart-Moulin & Passelaigue (1982); Passelaigue & Bourdillon (1985; 1986); Riera *et al.* (1985, 1991); Carola *et al.* (1993); Ribes *et al.* (1996); Coma *et al.,* (1997).

Kainomatomysis foxi Tattersall, 1927
Distribution: Red Sea (Suez Canal; Elat, Gulf of Aqaba). Eastern Mediterranean Sea (Port Said)
Depth range: 22m.
Habitat: coastal; on fine sand.
References: Tattersall (1927).

Mesopodopsis aegyptica Wittmann, 1992
Distribution: "Marine waters in all major parts of the Mediterranean . Brackish to marine waters in the Nile Delta area, but not the Nile itself. In the Suez Canal, it is found in the entrance area at Port Said" ; Italy (Gulf of Salerno).
Depth range: surface to 3m.
Habitat: "Dense and compact schools over sandy bottom in 2-3m depth, in moderately turbid waters near the surf zone. At night planktonic, widely dispersed between bottom and surface" (Wittmann).
References: Wittmann (1992, 2001).
Remarks: Salinity range is 10-39psu.

Mesopodopsis slabberi (van Beneden, 1861)
Distribution: NE-Atlantic, from Scandinavia to W-Africa, including North Sea; Black Sea; Sierra Leone Estuary; Suez Canal; NE- to South Africa. Mediterranean (southeast Iberian coast (El Campello, Alicante, Catalonia: Ebro delta; France: Canal d'Arles à Port-de-Bouc, Marseille, Nice, Côte monégasque, Menton.

Italy: Venezia; gulf of Naples, gulf of Salerno, Sicily; Adriatic Sea; Aegean Sea; Turkey).
Depth range: littoral (0-<50m).
Habitat: The species shows a great adaptability of surviving in varying degrees of salinity. It may occur in almost fresh water. Found in in shallow brackish and estuarine waters, sometimes offshore; shows diurnal vertical migrations.
References: Sars (1877); Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Furnestin (1960); Macquart-Moulin (1965, 1975); Vives (1966); Ariani (1967); Katagan (1985); Alcaraz (1986); Wittmann (1977,1992, 2001); Ariani *et al.* (1993); Munilla & Corrales (1995); San Vicente (1996); Delgado *et al.* (1997); San Vicente & Sorbe (1999); Kevrekidis *et al.* (2000); San Vicente & Munilla (2000); Barberá Cebrián *et al.* (2001, 2002); Campolmi *et al.* (2001); Barberá Cebrián (2002); Remerie *et al.* (2005); Innocenti (2006); Cartes *et al.* (2007); Ponti *et al.* (2007).

Neomysis integer (Leach, 1815)
Distribution: NE-Atlantic, W- and N-Europe; Mediterranean (France: Canal d'Arles à Port-de-Bouc, entre Marseille et les Bouches-du-Rhône, Rhône delta; Catalonia: Roses beach: juvenile individuals).
Depth range: <0.5m.
Habitat: brackish water; occasionally found in fresh water or in the open sea; also in hypersaline pools.
References: Bacescu (1941); Munilla & Corrales (1995); Wittmann & Ariani (2009).

Paramysis arenosa (Sars, 1877)
Distribution: NE-Atlantic; Black Sea, Sea of Azov, off Roumanian coast to the south of the Danube delta. Mediterranean Sea (Catalonia; Italy: gulf of Naples, gulf of Salerno; Goletta, Syracuse, Spezia, Goletta, Gulf of Trieste, mouth of the river Tiber; France: Banyuls-sur-Mer, Marseille),
Depth range: littoral-20m.
Habitat: a coastal species found in swarms among *Zostera* weeds close to the shore.
References: Sars (1877); Colosi (1922); Tattersall & Tattersall (1951); Hoenigman (1961); Macquart-Moulin (1965); Ariani *et al.* (1993); San Vicente (1996); San Vicente & Sorbe (1999); San Vicente & Munilla (2000); Wittmann (2001); Innocenti (2006).

Paramysis festae Colosi, 1920
Distribution: Eastern Mediterranean Sea (South Sicily; Lybia: Cirenaica).
Depth range: littoral.
Habitat: coastal lagoon.
References: Colosi (1921, 1922); Audzijonyte *et al.* (2008).

Paramysis helleri (Sars, 1877)
Distribution: Western Europe and Mediterranean Sea (southeast Iberian coast: El Campello, Alicante; Catalonia; Italy; gulf of Naples, gulf of Salaerno, Adriatic Sea (Gulf of Trieste); eastern coast of Greece; Turkey).
Depth range: littoral.
Habitat: Euryhaline and eurythermic. Coastal, occasionally found in freshwater.
References: Sars (1877); Czerniavsky (1883); Graeffe (1902); Fage (1933); Tattersall & Tattersall (1951); Labat (1953); Ariani (1967); Macquart-Moulin (1975); Wittmann (1977, 1981a, 2001); Katagan (1985); Schlacher *et al.* (1992); Ariani *et al.* (1993); Caragitsou & Papaconstantinou (1994); Politou & Papaconstantinou (1994); San Vicente & Sorbe (1999); San Vicente & Munilla (2000); Barberá Cebrián (2002); Barberá Cebrián *et al.* (2001, 2002); Audzijonyte *et al.* (2008).

Schistomysis assimilis (Sars, 1877)
Distribution: Mediterranean (Catalonia; France; Italy: gulf of Salerno, Tyrrhenian Sea, gulf of Venice; Port Said, Tunis).
Depth range: littoral.
Habitat: sandy bottom.
References: Sars (1877); Bacescu (1941); Schlacher *et al.* (1992); Ariani *et al.* (1993); San Vicente (1996); San Vicente & Sorbe (1999; 2003); San Vicente & Munilla (2000); Wittmann (2001); Wittmann & Ariani (2008).

SUBFAMILY LEPTOMYSINAE Hansen, 1910

Leptomysis buergii Bacescu, 1966
Distribution: throughout the Mediterranean Sea (Southeast Iberian coast; Catalonia: cala Sant Francesc, off Barcelona; France, Banyuls-sur-Mer; Italy: gulf of Naples, gulf of Salerno;Turkey; Ionian Sea: Gulf of Taranto).
Depth range: shallow subtidal-15m.
Habitat: in submarine caves; sand-flats in *Posidonia*-meadows; sand; *Cymodocea* seagrass.
References: Bacescu (1966); Wittmann (1978, 1981b, 1986; 2001); Katagan (1985); Schlacher *et al.* (1992); Ariani *et al.* (1993); Barberá Cebrián (2002); Barberá Cebrián *et al.* (2001, 2002); unpublished data.

Leptomysis gracilis (Sars, 1864)
Distribution: NE-Atlantic (Shetlands to Morocco); Mediterranean (Alboran Sea; gulf of Valencia; Catalan Sea; France: Banyuls-sur-Mer, Villefranche, Marseille; Monaco, Baie de Roquebrunne; Italy: gulf of Naples, Tyrrhenian Sea; northern Adriatic Sea).
Depth range: 5-500m.
Habitat: close to the bottom or somewhat pelagic; shows a tendency to migrate away from the shore; also found in estuaries.
References: Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Hoenigman (1953, 1963); Nouvel & Hoenigman (1955); Furnestin (1960); Macquart-Moulin (1965, 1975); Vives (1966); Champalbert & Macquart-Moulin (1970); Wittmann (1977, 1986b, 2001); Macquart-Moulin & Patriti (1993, 1996); Redon *et al.* (1994); Cartes & Sorbe (1995); Dauby (1995); Aguirre (2000); San Vicente & Munilla (2000); Morte *et al.* (2001, 2002); Innocenti (2006); Cartes *et al.* (2007, 2009); Ligas *et al.* (2007); Fanelli *et al.* (2009); Villanueva *et al.* (2009).

Leptomysis heterophila Wittmann, 1986
Distribution: NE-Atlantic (Ireland) to Mediterranean Sea (gulf of Naples; Adriatic Sea; Korsika)
Depth range: 4-17m.
Habitat: near rocks; rocks and sand.
References: Wittmann (1986); Ariani *et al.* (1993); Dauby (1995);Wittmann (2001).

Leptomysis lingvura lingvura (Sars, 1866)
Distribution: NE-Atlantic; Mediterranean (Catalonia; Banyuls-sur-Mer, Corsica; Marseille, Nice; Italy: Naples, Sardinia; Adriatic Sea).
Depth range: 0-50m.
Habitat: a common littoral species; inhabits rocky shores and is found among algae and in associations with sea anemones.
References: Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Hoenigman (1955, 1958b); Macquart-Moulin (1965, 1973, 1979); Wittmann (1977, 1978, 1981ab, 1986); Gaudy *et al.* (1980, 1991); Dauby (1980, 1981ab, 1983, 1995); Macquart-Moulin & Passelaigue (1982); San Vicente (1996); San Vicente & Sorbe (1999); San Vicente & Munilla (2000); Patzner (2004); Innocenti (2006); Meland & Willassen (2007).

Leptomysis mediterranea Sars, 1877
Distribution: NE-Atlantic; Suez Canal. Mediterranean Sea (gulf of Valencia; Catalonia; France: Banyuls-sur-Mer, Nice, Eze, Baie de Carnolès; Italy: gulf of Naples, gulf of Salerno; Adriatic Sea; Turkey).
Depth range: littoral (2-10m).
Habitat: primarily a benthic species, living close to the bottom; among *Cymodocea* and *Zostera* seagrass; also in brackish water, mouths of rivers and lagoons.
References: Sars (1877); Colosi (1922); Bacescu (1941; 1966); Tattersall & Tattersall (1951); Ariani (1967); Wittmann (1977,1986); Lucu (1977, 1978); Katagan (1985); Ariani *et al.* (1993); Redon *et al.* (1994); San Vicente (1996); Lucu *et al.* (1998); San Vicente & Sorbe (1999); San Vicente & Munilla (2000); Morte *et al.* (2001, 2002); Wittmann (2001); Innocenti (2006).

Leptomysis megalops Zimmer, 1915

Distribution: E-Atlantic (Golfe de Gascogne to S-Africa). Western and eastern Mediterranean Sea (Alboran Sea; France: Monaco, Baie de Roquebrune; Italy: gulf of Naples; Adriatic Sea).
Depth range: 60-400m.
Habitat: sandy bottoms
References: Zimmer (1915); Colosi (1922); Bacescu (1941, 1989); Hoenigman (1955, 1960, 1963); Wittmann (2001); Innocenti (2006).

Leptomysis posidoniae Wittmann, 1986
Distribution: Mediterranean Sea (Southeast Iberian coast); Ionian Sea (gulf of Taranto); Italy (Gulf of Naples; from Adria to Gulf of Naples and Corsica).
Depth range: 2-35m.
Habitat: over sand-flat in *Posidonia*-seagrass and in crevices of rocks.
References: Schlacher et al. *(1992); Ariani* et al. *(1993); Dauby (1995); Barberá Cebrián (2002); Barberá Cebrián* et al. *(2001; 2002); Wittmann (1986a; 2001).*

Leptomysis truncata (Heller, 1863)
Distribution: widely distributed in the Mediterranean Sea.
Depth range: shallow subtidal.
Habitat: among vegatation (*Cystoseira*, *Cymodocea*-meadows), also associated with *Anemonia sulcata*.
References: Sars (1877); Hoenigman (1955); Katagan (1985); Wittmann (1978, 1981a, 1986, 2001); Ariani *et al.* (1993).
Remarks: Three subspecies, *L. truncata truncata* (Heller, 1863); *L. truncata sardica* Sars, 1877 and *L. truncata pontica* Czerniavsky,1882 .

Mysideis parva Zimmer, 1915
Distribution: NE-Atlantic (Golfe de Gascogne). Western Mediterranean Sea (gulf of Valencia; Catalan Sea; France: Banyuls-sur-Mer, Monaco. Italy: gulf of Naples).
Depth range: 50-420m.
Habitat: mesopelagic.
References: Zimmer (1915); Colosi (1922); Bacescu (1941); Bacescu & Schiecke (1974) Cartes & Sorbe (1995); Morte *et al.* (2001, 2002); Innocenti (2006).

Mysidopsis angusta (Sars, 1864)
Distribution: NE-Atlantic (Norway to Golfe de Gascogne); Western and eastern Mediterranean (gulf of Valencia; Catalan Sea; France: Banyuls-sur-Mer; Monaco; Italy: gulf of Naples, gulf of Salerno, Tyrrhenian Sea; northern Adriatic Sea).
Depth range: 8-50m.
Habitat: lives close to the bottom by day in 4-20m; at night it migrates to higher levels; lives in swarms, mainly over sandy bottoms.
References: Sars (1877); Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Macquart-Moulin (1965); Ledoyer (1968); Champalbert & Macquart-Moulin (1970); Morte *et al.* (2001); Wittmann (2001); Cartes *et al.* (2007); Ligas *et al.* (2007); Fanelli *et al.* (2009).

Mysidopsis didelphys (Norman, 1863)
Distribution: common in in off-shore waters of N-Europe (Iceland; Norway; Oresund, Skagerack; North Sea; English Channel; Bay of Biscay; Golfe de Gascogne; Great Britain). Western Mediterranean (Alboran Sea; Catalonia; France; Italy: gulf of Naples).
Depth range: 11-293m, abundant at 60-120m.
Habitat: bottom-living, but apparently performs diurnal vertical migrations; most common somewhat offshore.
References: Bacescu (1941, 1989); Reys (1960); San Vicente & Munilla (2000); Wittmann (2001).

Mysidopsis gibbosa Sars, 1864
Distribution: North Sea from Oslo to west Norway; Denmark; Belgium; southern coasts of Scotland; England; Ireland; Channel Islands; Golfe de Gasogne; Morocco. Mediterranean (Southeast Iberian coast;

Catalonia; France: Banyuls-sur-Mer, Cannes, Marseille; Monaco; Goletta; Malta; Sicily; gulf of Naples, gulf of Salerno, Tyrrhenian Sea, Sardinia, Sicily; northern Adriatic Sea, Trieste; Messina; Turkey).
Depth range: 0-100m; most abundant in 1-20m.
Habitat: lives close to the bottom in shallow water; an in-shore species, rarely taken far from shore; shows diurnal vertical migrations.
References: Sars (1877); Walker (1901); Lo Bianco (1903); Colosi (1922); Bacescu (1941); Tattersall & Tattersall (1951); Macquart-Moulin (1965, 1975); Ariani (1967); Champalbert & Macquart-Moulin (1970); Hong (1980); Katagan (1985); Maj & Taranelli (1989); San Vicente & Munilla (2000); Campolmi *et al.*(2001); Barberá Cebrián (2002); Barberá Cebrián *et al.* (2001; 2002); Wittmann (2001); Innocenti (2006); Cartes *et al.* (2007); Ligas *et al.* (2007); Fanelli *et al.* (2009).

Paraleptomysis apiops (Sars, 1877)
Distribution: E-Atlantic; Mediterranean (Catalan Sea; France: Banyuls-sur-Mer, Monaco. Italy: gulf of Naples; Adriatic Sea; Turkey).
Depth range: 5-85m.
Habitat: sandy bottoms.
References: Sars (1877); Colosi (1922); Bacescu (1941, 1966); Hoenigman (1958c); Champalbert & Macquart-Moulin (1970); Macquart-Moulin (1975); Katagan (1985); Wittmann (1986, 2001); Innocenti (2006); Cartes *et al.* (2007).

Paraleptomysis banyulensis (Bacescu, 1966)
Distribution: Mediterranean, from Spain to Turkey; northern Adriatic Sea.
Depth range: 4-34m.
Habitat: mud and between rocks; often associated with biogenic structures such as burrows of *Squilla* sp. and clumps formed by Porifera and Ascidia (*Microcosmus* sp.).
References: Bacescu (1966); Wittmann (1986); Schlacher *et al.* (1992); Wittmann & Ariani (1992); Ariani *et al.* (1993); Wittmann (2001); Cartes *et al.* (2007); Ligas *et al.* (2007).

Pyroleptomysis peresi (Bacescu, 1966)
Distribution: Western Mediterranean (France, Banyuls-sur-Mer; Italy: gulf of Naples).
Depth range: 15m.
Habitat: submarine caves.
References: Bacescu (1966); Wittmann (1985, 2001).

Pyroleptomysis rubra Wittmann, 1985
Distribution: Red Sea. Mediterranean (Gulf of Naples; Adriatic; gulf of Trieste).
Depth range: 4-24m.
Habitat: over rocky susbstrate.
References: Wittmann (1985, 2001); Schlacher *et al.* (1992); Ariani *et al.* (1993).

Table S20. Species number of mysidaceans known in the world and in the Mediterranean Sea

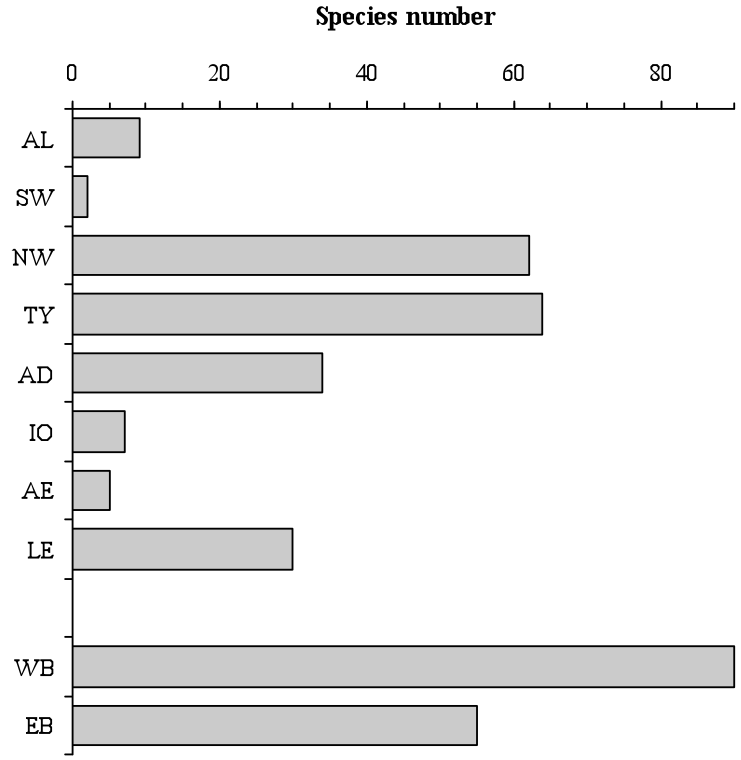
Endemics and its percentage for each family are also indicated.

	World-wide scale	Mediterranean Sea	Endemic	Endemic (%)
ORDER LOPHOGASTRIDA Boas, 1883				
Family Lophogastridae G.O. Sars, 1870	34	2	0	-
Family Gnathophausiidae Udrescu, 1984	11	1	0	-
Family Eucopiidae G.O. Sars, 1885	10	4	0	-
ORDER MYSIDA Haworth, 1825				
Familiy Mysidae Haworth, 1825	1063	95	37	38.9
Subfamily **Rhopalophthalminae** Hansen,	23	1	1	100

1910				
Subfamily **Boreomysinae** Holt &Tattersall, 1905	39	3	0	-
Subfamily **Gastrosaccinae** Norman, 1892	93	10	5	50
Subfamily **Siriellinae** Czerniavsky, 1882	90	8	3	37.5
Subfamily **Erythropinae** Hansen, 1910	219	25	8	32
Subfamily **Heteromysinae** Norman, 1892	117	11	8	72.7
Subfamily **Mysidellinae** Czerniavsky, 1882	16	2	0	-
Subfamily **Mysinae** Haworth, 1825	299	19	7	36.8
Subfamily **Leptomysinae** Hansen, 1910	163	16	5	31.3

Figure S3. Number of mysidacean species recorded in each of the main biogeographical zones of the Mediterranean Sea

AL: Alboran Sea; SW: south-western Mediterranean; NW: north-western Mediterranean; TY: Tyrrhenian Sea; AD: Adriatic Sea; IO: Ionian Sea; AE: Aegean Sea; LS: Levantine Sea; WM: Western Basin; EM: Eastern Basin.



References

Abelló, P., A. Carbonell, & P. Torres (2002) Biogeography of epibenthic crustaceans on the shelf and upper slope off the Iberian Peninsula Mediterranean coasts: implications for the establishment of natural management areas. *Scientia Marina,* 66 (Suppl. 2):183–198.

Aguirre, H. (2000) *Aspectos Biológicos y Ecológicos del Salmonete de Fango* Mullus barbatus *L., 1758 y del Salmonete de Roca* Mullus surmuletus *L., 1758, del Mediterráneo Nordoccidental.* Thesis, Universitat Politécnica de Catalunya: 261 pp.

Alcaraz, M. (1986) Els Misidacis. In: *Historia Natural dels Països Catalans (9) Artròpodes (I)*. J. Armengol (ed.). Fundació Enciclopedia Catalana, Barcelona: 292–297.

Alcaraz, M., T. Riera & J.M. Gili (1986) *Hemimysis margalefi* sp. nov. (Mysidacea) from a submarine cave of Mallorca Island, western Mediterranean. *Crustaceana,* 50 (2): 199–203.

Almeida Prado-Por, M.S., R. Ortal, & F.D. Por (1981) *Diamysis* from the brackish river Nahal Taninim in Israel, and its associated fauna. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 27 (4): 181–182.

Andersen, V. & J. Jacques Sardou (1992) The diel migrations and vertical distributions of zooplankton and micronekton in the Northwestern Mediterranean Sea. 1. Euphausiids, mysids, decapods and fishes. *Journal of Plankton Research,* 14 (8):1129–1154.

Andersen, V., F. François, J. Sardou, M. Picheral, M. Scotto & P. Nival (1998) Vertical distributions of macroplankton and micronekton in the Ligurian and Tyrrhenian seas (northwestern Mediterranean). *Oceanologica Acta,* 21(5): 655–676.

Anderson, G. (2008a) Mysida Classification, September, 2008. Available from *http://peracarida.usm.edu/MysidaTaxa.pdf* (accessed 30 July 2009).

Anderson, G. (2008b) Lophogastrida Classification, October, 2008. Available from *http://peracarida.usm.edu/Lophogastrida Taxa.pdf* (accessed 30 July 2009).

Ariani A.P. (1967) Osservazioni su Misidacei della costa adriatica pugliese. *Annuario dell´Istituto e Museo di Zoología dell ´Università di Napoli,* 18 (5): 1–39.

Ariani, A.P. & G. Spagnuolo 1975. Ricerche sulla misidofauna del Parco di Santa Maria di Castellabate (Salerno) con descrizione di una nuova specie di *Siriella*. *Bollettino della Società di Naturalisti in Napoli,* 84: 441–481.

Ariani A.P., K.J. Wittmann & E. Franco (1993) A Comparative Study of Static Bodies in Mysid Crustaceans: Evolutionary Implications of Crystallographic Characteristics. *The Biological Bulletin,* 185: 393–404.

Ariani A.P. & K.J. Wittmann (2000) Interbreeding versus morphological and ecological differentiation in Mediterranian *Diamysis* (Crustacea, Mysidacea), with description of four new taxa. *Hydrobiologia,* 441: 185–236.

Ariani A.P. & K.J. Wittmann (2004) Mysidacea (Crustacea) as ecological and biogeographical markers in Mediterranean brakish environments. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 37: 479.

Audzijonyte, A., M.E. Daneliya, N. Mugue & R. Väïnölä (2008) Phylogeny of Paramysis (Crustacea: Mysida) and the origin of Ponto-Caspian endemic diversity: Resolving power from nuclear protein-coding genes. *Molecular Phylogenetics and Evolution,* 46: 738–759.

Bacescu, M. (1941) Les Mysidacés des eaux méditerranéennes de la France (spécialment de Banyuls) et des eaux de Monaco. *Bulletin de l´Institut Océanographique*, 795: 1–46.

Bacescu, M. (1966) Contribution a l'etude du genre *Leptomysis* de trois taxons nouveaux: *Leptomysis peresi* n.sp., *L. apiops banyulensis* n. ssp. et *L. bürgii* n.sp. *Viet et Milieu,* 17: 121–142.

Bacescu, M. (1970) Contributions à l'étude morphoécologique des Gastrosaccinae (Crustacea, Mysidacea) du versant est de l'Atlantique et de la Mediterranee. Description de *G. mediterraneus* n.sp., *G. olivae* n.sp. et *G. roscoffensis* n.sp. *Revue Roumaine de Biologie. Serie de Zoologie,* 15: 217–234.

Bacescu, M. (1976) Contribution à la connaisance des Mysidacées (Crustacées) de la Côte Lybienne, avec la description de deux nouvelles espèces, *Neoheteromysis mülleri* n.sg. n.sp. et *Heteromysis lybiana* n.sp. *Revue Roumaine de Biologie. Série de Biologie Animale,* 21 (2): 85–91.

Bacescu, M. (1989) Contributions a l'etude du genre Erythrops (Crustacea, Mysidacea) du voisinage du Detroit de Gibraltar. *Travaux du Muséum d´Histoire Naturelle "Grigore Antipa",* 30: 119–127.

Bacescu, M., & R. Mayer (1961) Malacostracés (Mysidacea, Euphausiacea, Decapoda, Stomatopoda) du plancton diurne de la Méditerranée étude basée sur le matériel du Lamont Géological Observatory-Washington. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 16 (2): 183– 202.

Bacescu, M. & U. Schiecke (1974) *Gastrosaccus magnilobatus* n.sp., and *Erythrops peterdohrni* n.sp. (Mysidacea) - new surprises from the Mediterranean benthos. *Crustaceana,* 27 (2): 113–118.

Bakir, K. & T. Katagan (2005) Crustacean diversity of the coralligenous beds of Markiz Island (Aegean coast of Turkey). *Crustaceana,* 78 (7): 873-883

Barberá Cebrián, C. (2002) *Misidáceos (Crustacea, Peracarida) asociados a fanerógamas marinas en el sudeste ibérico*. Tesis Doctoral, Univ. Alacant: 248 pp.

Barberá Cebrián, C., M. Ribeiro da Cunha, P. Sánchez Jerez & A. A. Ramos Esplá (2001) Misidáceos asociados a fanerógamas marinas en el sudeste ibérico. *Boetín del Instuto Español de Oceanografia,* 17 (1 y 2). 2001: 97–106

Barberá, Cebrián, C.,P. Sánchez-Jerez & A.A. Ramos-Esplá (2002). Fragmented seagrass habitats on the Mediterranean coast, and distribution and abundance of mysid assemblages. *Marine Biology*, 141: 405–413.

Birmelin, C., J. Cuzin-Roudy, M. Roméo, M. Gnassia-Barelli & S. Puiseux-Dao (1995). The mysid *Siriella armata* as a test organism in toxicology: Effects of cadmium. *Marine Environmental Research,* 39 (1–4): 317–320.

Bourdillon, A., C. Castelbon, & C. Macquart-Moulin (1980) Ecophysiology comparée des mysidacés *Hemimysis speluncola* Ledoyer (cavernicole) et *Leptomysis lingvura* G.O. Sars (non-cavernicole). L´orientation à la lumière: tests de longe durée-étude expérimentale des mouvements nycthéméraux. *Journal of Experimental Marine Biology and Ecology* 43 (1): 61–86.

Bozzano, A. L. Recasens & P. Sartor (1997). Diet of the european hake *Merluccius merluccius* (Pisces: Merlucciidae) in the Western Mediterranean (Gulf of Lions). *Scientia Marina*, 61(1): 1–8.

Campolmi, M., A. Vaccaro & A. Mazzola (2001) First data on the Mysid community in the "Stagnone di Marsala" (Western Sicily). In: *Mediterranean ecosystems: structures and proceses*. Ed.E.M. Faranda, L. Guglielmo, G. Spezie (eds).Springer-Verlag Italia, Milano (20): 149–154.

Caragitsou, E. & C. Papaconstantinou (1994) Feeding habits of piper (*Trigla lyra*) in the Saronikos Gulf (Greece). *Journal of Applied Ichthyology*, 10 (2–3): 104 – 113.

Cardinale, M., F. Colloca, & G.D. Ardizzone (1997) Feeding ecology of Mediterranean razorfish *Xyrichthys novacula* in the Tyrrhenian Sea (central Mediterranean Sea). *Journal of Applied Ichthyology*, 13 (3): 105–111.

Carola, M., R. Coma, T. Riera & M. Zabala (1993) Fecal pellets collection as a method for assessing egesta of the marine cave-dwelling mysid *Hemimysis speluncola. Scientia Marina,* 57(1): 51–63.

Carpentieri, C., F. Colloca, M. Cardinale, A. Belluscio & G.D. Ardizzone (2005). Feeding habits of European hake (*Merluccius merluccius*) in the central Mediterranean Sea. *Fishery Bulletin,* (103): 411–416

Carrasson, M. & J.E. Cartes (2002) Trophic relationships in a Mediterranean deep-sea fish community: partition of food resources, dietary overlap and connections within the benthic boundary layer. *Marine Ecology Progress Series,* Vol. 241: 41–55.

Carrassón, M. & J. Matallanas (2002). Diets of deep-sea macrourid fishes in the western Mediterranean. *Marine Ecology Progress Series*, Vol. 234: 215–228.

Carrassón, M. & J. Matallanas (2001) Feeding ecology of the Mediterranean spiderfish, *Bathypterois mediterraneus* , on the western Mediterranean slope. *Fishery Bulletin*, 99: 266–274.

Cartes, J.E. (1993) Feeding habits of oplophorid shrimps in the deep western Mediterranean. *Journal of the Marine Biological Association of the United Kingdom*, 73 : 193–206.

Cartes, J.E. & P. Abelló (1992) Comparative feeding habits of polychelid lobsters in the Western Mediterranean deep-sea communities. *Marine Ecology Progress Series,* 84: 139–150,

Cartes, J.E., M. Elizalde & J.C. Sorbe (2001) Contrasting life-histories, secondary production, and trophic structure of Peracarid assemblages of the bathyal suprabenthos from the Bay of Biscay (NE Atlantic) and the Catalan Sea (NW Mediterranean). *Deep Sea Research I,* 48: 2209–2232

Cartes, J.E., A. Ligas, A.M. De Biasi, L. Pacciardi & P. Sartor (2009) Small-spatial scale changes in productivity of suprabenthic and infaunal crustaceans at the continental shelf of Ebro Delta (western Mediterranean). *Journal of Experimental Marine Biology and Ecology*, 378 (2009): 40–49.

Cartes, J.E. & F. Maynou (2001). Trophodynamics of the deep-water suprabenthic mysid *Boreomysis arctica* in the Catalan Sea (western Mediterranean). *Marine Ecology Progress Series,* Vol. 211: 225–234,

Cartes, J.E., F. Maynou, B. Morales-Nin, E. Massutí, J. Moranta (2001). Trophic structure of a bathyal benthopelagic boundary layer community south of the Balearic Islands (southwestern Mediterranean). *Marine Ecology Progress Series,* Vol. 215: 23–35.

Cartes, J.E., V. Papiol, A. Palanques, J. Guillén & M. Demestre (2007) Dynamics of suprabenthos off the Ebro Delta (Catalan Sea: western Mediterranean): Spatial 13 and temporal patterns and relationships with environmental factor. *Estuarine, Coastal and Shelf Science*, 75 (4): 501–515.

Cartes, J.E., V. Papiol, A. Palanques, J. Guillén & M. Demestre (2008) Erratum to "Dynamics of suprabenthos off the Ebro Delta (Catalan Sea: western Mediterranean): Spatial and temporal patterns and relationships with environmental factor". *Estuarine, Coastal and Shelf Science*, 77 (4): 763.

Cartes, J.E., & J.C. Sorbe (1993) Les communautés suprabenthiques bathyales de la Mer Catalane (Méditerranée Occidentale): Données préliminaires sur la répartition bathymétrique et l´abondance des Crustacés Péracarides. *Crustaceana* 64 (2): 155–171.
Cartes, J.E., & J.C. Sorbe (1995) Deep-water mysids of the Catalan Sea: species composition, bathymetric and near-bottom distribution. *Journal of the Marine Biological Association of the United Kingdom,* 75: 187–197.
Cartes, J.E., & J.C. Sorbe (1999) Estimating secondary production in bathyal suprabenthic peracarid crustaceans from the Catalan Sea slope (western Mediterranean; 391–1255 m). *Journal of Experimental Marine Biology and Ecology*, 239: 195–210
Casanova, J.P. (1970) Essai de classement bathymetrique des formes zooplanctoniques en Mediterranee. *Revue des Travaux de l´Institut des Pêches Maritimes,* 31 (1): 45–58.
Champalbert, G. & C. Macquart-Moulin (1970) Les peracarides de l'hyponeuston nocturne du Golfe de Marseille. *Cahiers de Biologie Marine*, XI: 1–29.
Chevaldonné P. & C. Lejeusne (2003) Regional warminginduced species shift in north-west Mediterranean marine caves. *Ecology Letters,* 6:371–379
Cunha, M.R., M.H. Moreira, & J.C. Sorbe (1999) *Diamysis bahirensis*: a mysid species new to the Portuguese fauna and first record from the west European coast. In: *Vaupel Klein, J.C. von, & F.R. Schram (eds), The Biodiversity Crisis and Crustacea: Proceedings of the Fourth International Crustacean Congress, Amsterdam, The Netherlands, July 20-24, 1998. A.A. Balkema, Rotterdam*: 139–152.
Colosi, G. (1921) Missione zoologica del Dott. E. Festa in Cirenaica, pt. II. Crostacei. *Bollettino del Musei di Zoologia ed Anatomia comparata della R. Università di Torino,* 739(26): 2-7
Colosi, G. (1922a) Eufausiacei e misidacei raccolti nella campagna del 1920. *Memoria - Comitato Talassografico Italiano*, no. 96: 1–12.
Colosi, G. (1922b) Eufausiacei e misidacei dello Stretto di Messina. *Memoria - Comitato Talassografico Italiano*, 98: 1–22.
Colosi, G. (1929) I Misidacei del Golfo di Napoli. *Pubblicazioni della Stazione Zoologica di Napoli,* 9(3): 405–441.
Colosi, G. 1930. Remarques sur la distribution horizontale et verticale des mysidés méditerranéens. *Bulletin de la Société d´Océanographie de France*, 10 (54): 983–985.
Coma, R., M. Carola, M. Zabala, & T. Riera (1997). Horizontal transfer of matter by a cave-dwelling mysid. *PSZNI Marine Ecology*, 18 (3) 1997: 211–226.
Czerniavsky, V. (1882a). Monographia mysidarum inprimis imperii Rossici (marin. lacustr. et fluviatilium). Fasc. 1. *Trudy S.-Peterburgskago Obshchestva Estestvoispytatelei,* 12 (2): 1–170.
Czerniavsky, V. (1882b). Monographia mysidarum inprimis Imperii Rossici (marin., lacustr. et fluviatilium). Fasc. 2. *Trudy Sanky-Peterburgskago Obshchestva Estestvoispytatelei,* 13: 1–85.
Czerniavsky, V. 1883 (1887). Monographia mysidarum inprimis imperii Rossici (marin, lacustr. et fluviatilium). Fasc. 3. *Trudy S.-Peterburgskago Obshchestva Estestvoispytatelei,* 18: 1–102.
Dauby, P. (1980) Quelques observations sur les essaims du mysidace *Leptomysis lingvura* de la Baie de Calvi. *Bulletin de la Société Royale des Sciences de Liège*, 49 (1–2): 84–88
Dauby, P. (1981a) Approche de la dynamique des populations du mysidace *Leptomysis lingvura* (Sars) dans la Baie de Calvi. *Bulletin de la Société Royale des Sciences de Liège*, 51 (11–12): 407–411.
Dauby, P. (1981b) Evolution annuelle de la biomasse du mysidace Leptomysis lingvura le long d´une bande rocheuse cotiere (Calvi-Corse). *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 27 (7): 191–192.
Dauby, P. (1983) Variations annuelles de la localistation spatiale et de la composition des essaims de *Leptomysis lingvura* en baie de Calvi (Corse). *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 28 (9): 147–148.
Dauby, P.A. (1995) A ∂13C study of the feeding habits in four Mediterranean *Leptomysis* species (Crustacea: Mysidacea). *PSZNI Marine Ecology*, 16: 93–102.
Delgado, L., G. Guerao, & C. Ribera (1997) Biology of the mysid *Mesopodopsis slabberi* (van Beneden, 1861) (Crustacea, Mysidacea) in a coastal lagoon of the Ebro delta (NW Mediterranean). *Hydrobiologia* 357: 27–35.
Denis, J. R. (1929) Sur les Crustacés bathypélagiques de Banyuls-Sur-Mer I. Euphausiacés et Mysidacés (pp.). *Archives de Zoologie Expérimentale et Genérale*, 69 (2): 69–74.

Dion, Y. & H. Nouvel (1960) Mysidacés et Euphausiacés recoltes en Mediterranée occidentale par le Navire Oceanographique "Président-Théodore-Tissier" en 1949. Presence de l´Ellobiopsidae *Amallocystis fagei* Boschma en Mediterranée et sur un hôte nouveau. *Bull. Trav. Publ. Stat. Aquicult. Pêche Castiglione,* 10, 1958-1959: 11-19.

Dogan, A., M. Sezgin, T. Katagan & M. Önen (2008) Seasonal trends of soft bottom crustaceans of Izmir Bay (Aegean Sea). *Crustaceana,* 81 (7): 781-795

Fage, L. (1932) La migration verticale saisonnière des mysidacés. *Comptes Rendus Hebdomadaires des Séances de l´Académie des Sciences,* 194: 313–315.

Fage, L. (1933) Pêches planctoniques à la lumière effectuées à Banyuls-sur-Mer et à Concarneau. III. Crustacés. *Archives de Zoologie Expérimentale et Générale*, 76 (3): 105–248.

Fage, L. (1942) Mysidacea Lophogastrida. II. The Carlsberg Foundation's oceanographical expedition round the world 1928-1930 and previous "Dana"-expeditions under the leadership of Prof. Johannes Schmidt. *Dana Report,* 4 (23) 1–67.

Fanelli, E., J.E.Cartes, P. Rumolo & M. Sprovieri (2009) Food-web structure and trophodynamics of mesopelagic–suprabenthic bathyal macrofauna of the Algerian Basin Based on stable isotopes of carbon and nitrogen. *Deep-Sea Research,* I 56: 1504–1520.

Fanelli, E., J.E. Cartes, F. Badalamenti, P. Rumolo and M. Sprovieri (2009) Trophodynamics of suprabenthic fauna on coastal muddy bottoms of the southern Tyrrhenian Sea (western Mediterranean). *Journal of Sea Research*, 61: 174–187.

Fishelson, L. & Y. Loya (1968). Preliminary observations on a population of *Gastrosaccus sanctus* (van Beneden) (Mysidacea, Gastrosaccinae) on a Mediterranean sand beach of Israel. *Crustaceana*, 10. 149–152.

Fossi, M.C., R. Minutoli & L. Guglielmo (2001) Preliminary Results of Biomarker Responses in Zooplankton of Brackish Environments. *Marine Pollution Bulletin,* 42(9): 745–748.

Furnestin, M.L. (1960). Zooplancton du Golfe de Lyon et de la côte orientale de Corse. *Revue des Travaux de l´Institut des Pêches Maritimes,* 24 (2): 153–252.

Gaudy, R. & J.P. Guerin (1979). Écophysiologie comparée des Mysidacés *Hemimysis speluncola* Ledoyer (cavernicole) et *Leptomysis lingvura* G.O. Sars (non-cavernicole). Respiration et excrétion. J*ournal of Experimental Marine Biology and Ecology,* 44: 29–46.

Gaudy, R., J.P. Guerin & M. Pagano (1980). Écophysiologie comparée des Mysidacés *Hemimysis speluncola* Ledoyer (cavernicole) et *Leptomysis lingvura* G.O. Sars (non-cavernicole). L´orientation à la lumière: Tests ponctuels. J*ournal of Experimental Marine Biology and Ecology,* 38 (3): 287–299.

Gaudy, R., J.P. Guérin & P. Kerambrun (1991) Sublethal effects of cadmium on respiratory metabolism, nutrition, excretion and hydrolase activity in *Leptomysis lingvura* (Crustacea: Mysidacea). *Marine Biology* 109 (3): 493–501.

Graeffe, E. (1902) Uebersicht der Fauna des Golfes von Triest nebst Notizen über Vorkommen, Lebensweise, Erscheinungs- und Laichzeit der einzelnen Arten. *Arbeiten aus dem Zoologischen Instituten der Universität Wien und der Zoologischen Station in Triest*, 13 (1): 33–80.

Hatzakis, A. (1977) Contribution a l'étude des Gastrosaccinae (Crustacea, Mysidacea) de la Méditerranée. Description de *Haplostylus bacescui* n.sp. et revision de la nomenclature des *Haplostylus* et *Gastrosaccus* méditerranéens. *Biologia Gallo-Helenica,* 6: 271–286.

Hoenigman, J. (1953) Présence de deux espèces de Mysidacés dans l´Adriatique: *Anchialina agilis* G.O. Sars 1877. *Leptomysis gracilis* G.O. Sars 1864. *Biljeske Notes,* (8): 1–8.

Hoenigman, J. (1955) Contribution a la connaissance des especes zooplanctoniques dans l´Atriatique. *Bulletin Scientifique (Conseil des Académies de la RPF Yougoslavie)*, 2 (2): 49–50.

Hoenigman, J. (1958a) Sur la découverte de quelques espèces zooplanctoniques nouvelles pour l´Adriatique, de deux épeibiontes nouveaux pour les Mysidacés, et de deux espèces de parasites nouvelles pour le domaine Méditerranéen. *Rapports et Procès Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 14: 263–4.

Hoenigman, J. (1958b). Quelques observations sur les "zoocourants" dans l´Adriatique. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea)* 14: 261–2.

Hoenigman, J. (1958c). Sur la découverte de quelques espèces zooplanctoniques nouvelles pour l´Adriatique, de deux épeibiontes nouveaux pour les Mysidacés, et de deux espèces de parasites nouvelles pour le domaine Méditerranéen. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea)* 14: 263–4.

Hoenigman, J. (1960) Faits nouveaux concernant les mysidaces (Crustacea) et leurs epibiontes dans l'Adriatique. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 15: 339–343.

Hoenigman, J. (1961) Sur quelques espèces nouvelles pour l´Adriatique. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 16: 217–218.

Hoenigman, J. (1963) Mysidacea de l'expedition "Nvar" (1948-1949) dans l'Adriatique. *Extrait des Rapports et Proces-verbaux des reunions de la C./.E.S.M.M.*, vol. XVII (2): 603–616.

Hoenigman, J. (1964) *Gastrosaccus sanctus* (Van Beneden) (Crust. Mysidaces) et sa relation possible avec la genese de l'Adriatique. *Acta Adriatica,* XI (19): 135–143.

Hoenigman, J. (1968) Sur les Mysidacés des eaux ouvertes de l'Adriatique septentrionale. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 19 (3): 449.

Hong, J.S. (1980) *Étude faunistique d'un fond de concrétionnement de type coralligène soumis à un gradient de pollution en Méditerranée nord-occidentale (Golfe de Fos)*. Thèse de Doctorat . Université d'Aix -Marseille II: 134 pp.

Innocenti, G. (2006) Collections of the Natural History Museum, Zoological Section "La Specola" of the University of Florence. XXV. Crustacea, class Malacostraca, subclass Phyllocarida, order Leptostraca; subclass Eumalacostraca, superorder Peracarida, orders Lophogastrida, Mysida, and Cumacea. *Atti Della Società Toscana di Scienze Naturali. Memorie*, Serie B 113: 19–26.

Jardas, I., M. Santic, & A. Pallaoro (2004) Diet composition and feeding intensity of horse mackerel, *Trachurus trachurus* (Osteichthyes: Carangidae) in the eastern Adriatic. *Marine Biology* 144 (6): 1051–1056.

Jaume, D. & L. Garcia (1993) *Burrimysis palmeri*, a new genus and species of Heteromysini (Crustacea: Mysidacea) from an anchihaline cave lake of Cabrera (Balearic Islands, Mediterranean). *Bijdragen tot de Dierkunde,* 62 (4): 227–235.

Jukic, S. (1978) Contribution to the knowledge of the relationship between formation of deep scattering layer (DSL) and biological components in the central Adriatic. *Acta Adriática,* 19: 3–15.

Katagan, T. (1985) Mysidacees et cumacees des cotes Egeenes de Turquie. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea),* 29(5): 287–288.

Katagan, T. & A. Kocatas (1995). *Boreomysis arctica* (Kroyer), espece nouvelle pour la Mer de Marmara, Turquie (Mysidacea). *Crustaceana,* 68(3): 395–296.

Kevrekidis, T., A. Mogias & N. Gouvis (2000) Interannual changes in the composition of the macrobenthic fauna of Drana lagoon (Evros Delta, n. Aegean Sea): preliminary note. *Belgian Journal of Zoology,* 130 (1): 101–107.

Labat, R. (1953) *Paramysis nouveli* n. sp. et *Paramysis bacescoi* n. sp. deux espèces de Mysidacés confondues, jusquà présent, avec *Paramysis helleri* (GO Sars, 1877). *Bulletin de l´Institut Océanographique,* 1034:1–24.

Ledoyer, M. (1963) *Hemimysis speluncola* n.sp. Mysidacé nouvelle des grottes sous-marines obscures. *Recueil des Travaux de la Station Marine d´Endoume. Faculté des Sciences de Marseille,* 30: 77–81.

Ledoyer, M. (1968) Écologie de la faune vagile des biotopes méditerranéens, accessibles en scaphandre autonome (région de Marseille principalemant) IV.- Synthèse de l´étude écologique. *Recueil Travaux de la Station Marine d´Endoume. Faculté des Sciences de Marseille*, 44: 126–295.

Ledoyer, M. (1989) Les Mysidacés (Crustacea) des grottes sous-marines obscures de Méditerranée nord-occidentale et due proche Atlantique (Portugal et Madère). *Marine Nature*, 2(1):39–62.

Lejeusne, C. & P. Chevaldonné (2005) Population structure and life history of *Hemimysis margalefi* (Crustacea: Mysidacea), a 'thermophilic' cave-dwelling species benefiting from the warming of the NW Mediterranean. *Marine Ecology Progress Series*, 287: 189–199.

Lejeusne, C. & P. Chevaldonné (2006) Brooding crustaceans in a highly fragmented habitat: the genetic structure of Mediterranean marine cave-dwelling mysid populations. *Molecular Ecology*,15: 4123–4140.

Lejeusne, C., T. Pérez, V. Sarrazin, & P. Chevaldonné (2006) Baseline expression of heat-shock proteins (HSPs) of a "thermotolerant" Mediterranean marine species largely influenced by natural temperature fluctuations. *Canadian Journal of Fisheries & Aquatic Sciences*, 63 (9): 2028–2037.

Ligas. A., P. Sartor, M. Sartini, A.Vannucci, S. De Ranieri & J.E. Cartes (2007) Hyperbenthic Mysidae Haworth, 1825 (Peracarida, Mysida) from the continental shelf of the northern Adriatic Sea. *Crustaceana,* 80 (8): 969–977.

Lo Bianco, S. 1903. Le pesche abissali eseguite da F.A. Krupp col yacht Puritan nelle adiacenze de Capri ed in altre località del Mediterraneo. *Mittheilungen der Zoologischen Station zu Neapel*, 16: 109–280.

Lucu, C. (1977) Sodium balance and salinity tolerance of the mysid *Leptomysis mediterranea. Rapports et Procès- Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea)*, N.S., 24(6): 75.

Lucu, C. (1978) Sodium balance and salinity tolerance of the mysid *Leptomysis mediterranea*. In: *Physiology and behaviour of marine organisms* (McClusky, D.S., & A.J. Berry, eds.), Pergamon Press, Oxford: 95–103.

Lucu, C., J. Pavicic, M. Skreblin & M. Mastrovic (1980) Toxicological effects of biocide Slimicide C-30 on some marine invertebrates. Marine Pollution Bulletin, 11 (10): 294–296.

MacPherson, E. (1978) Régimen alimentario de *Phycis blennoides* (Brünich) y *Antonogadus egalokynodon* (Kolombatovic) (Pisces: Gadidae) en el Mediterráneo occidental. Investigación Pesquera, 42: 455–466.

MacPherson, E. (1979) Ecological overlap between macrourids in the western Mediterranean Sea. *Marine Biology,* 53: 149–159.

Macquart-Moulin, C. (1965) Les Mysidacés bentho-planctoniques du Golfe de Marseille. *Recueil des Travaux de la Station Marine d´Endoume. Faculté des Sciences de Marseille* 38 (54): 129–253.

Macquart-Moulin, C. (1973) Le comportement d´essaim chez les Mysidacés: Influence de l´intensité lumineuse sur la formation, le maintien et la dissociation des essaims de *Leptomysis linguura*. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea*) 21: 499–501.

Macquart-Moulin, C (1975) *Les Péracarides Benthiques dans le Plancton Amphipodes, Cumacés, Isopodes, Mysidacés.Analyse des comportements migratoires dans le Golfe de Marseille. Recherches expérimentales sur l´origine des migrations et le contrôle de la distribution des espèces.* Thèse Doctoral d´Etat Université, Aix-Marseille II, France: 297 pp.

Macquart-Moulin, C. (1977) Le contrôle de l´émergence et des nages nocturnes chez les Péracarides des plages de Méditerranée. *Eurydice affinis* Hansen (Isopoda), *Gastrosaccus mediterraneus* Bacescu, *Gastrosaccus spinifer* (Goës) (Mysidacea). *Journal of Experimental Biology and Ecology,* 27: 61–81.

Macquart-Moulin, C. (1979) Écophysiologie comparée des Mysidacés *Hemimysis speluncola* Ledoyer (cavernicole) et *Leptomysis lingvura* G.O. Sars (non-cavernicole). L´orientation à la lumière: Tests ponctuels. J*ournal of Experimental Marine Biology and Ecology,* 38 (3): 287–299.

Macquart-Moulin, C. (1993) Repartition verticale, migrations et stratifications superficielles des Mysidaces et Amphipodes pelagiques sur les marges mediterraneenne et atlantique francaises. *Journal of Plankton Research*, 15 (10): 1149–1170.

Macquart-Moulin, C. & G. Patriti (1966) Remarque sur la biologie d´*Hemimysis speluncola* Ledoyer, mysidace sciaphile des grottes sous-marines obscures de la région de Marseille. *Recueil des Travaux de la Station Marine d´Endoume. Faculté des Sciences de Marseille*, 56: 253–259.

Macquart-Moulin, C. & G. Patriti (1993) Canyons sous-marins et advection vers le talus continental du plancton néritique. *Oceanologica Acta,* 16 (2): 179–189.

Macquart-Moulin, C. & F. Passelaigue (1982) Mouvements nycthéméraux de *Hemimysis speluncola* Ledoyer, espèce cavernicole, et de *Leptomysis lingvura* G.O. Sars, espèce non cavernicole (Crustacea, Mysidacea). *Tethys*, 10 (3): 221– 228.

Macquart-Moulin, C. & E. Ribera (1995) Inshore and offshore diel migrations in European benthopelagic mysids, genera *Gastrosaccus*, *Anchialina* and *Hoplostylus* (Crustacea, Mysidacea). *Journal of Plankton Research*, 17(3): 531–555.

Macquart-Moulin, C. & G. Patriti (1996) Accumulation of migratory micronekton crustaceans over the upper slope and submarine canyons of the northwestern Mediterranean. *Deep-Sea Research*, I. Vol. 43. No. 5:. 579–601.

Madurell, T. & J.E. Cartes (2003) The suprabenthic peracarid fauna collected at bathyal depths in the Ionian Sea (eastern Mediterranean). *Crustaceana,* (76): 611–624.

Maj, R.L.C. & E.Taramelli (1989) Mysidacea of *Posidonia oceanica* (L.) Delile beds in Torvaldiga (Latium) and Porto Conte (Sardinia). In: *Boudouresque CF, Meinesz A, Fresi E, Gravez V (eds) International workshop on Posidonia beds. GIS Posidonie:* 203–206.

Mallol Martínez, S. (2005) *Anàlisi dels descartaments efectuats per la flota d'arrossegament en el golf de Lleó*. Tesis Doctoral, Universitat de Girona: 279 pp.

Martin, J.V. & G.E. Davis (2001) *An updated classification of the Recent Crustacea.* Natural History Museum of Los Angeles County, Sciencie Series, 39: 1–124.

Mauchline, J. & M. Murano (1977) World list of the Mysidacea, Crustacea. *Journal of the Tokyo University of Fisheries*, 64: 39- 88.

Mazzella L, Scipione MB, Buia MC (1989) Spatio-temporal distribution of algal and animal communities in a *Posidonia oceanica* meadow. *PSZNI Marine Ecology,* 10:107–129.

Meland, K. & E. Willaseen (2007) The disunity of "Mysidacea (Crustacea). *Molecular Phylogenetics and Evolution*, 44: 1083–1104.

Moran, S. (1972) Ecology of distribution of the sand-dwelling mysid *Gastrosaccus sanctus* (van Beneden, 1861) along the Mediterranean sandy shore of Israel. *Crustaceana,* Supplement 3: 357–361.

Moran, S. & L. Fishelson (1971) Predation of a sand-dwelling mysid crustacean *Gastrosaccus sanctus* by plover birds (Charadriidae). *Marine Biology* 9: 63–64.

Morte, M.S., M.J. Redon, & A. Sanz-Brau (2001) Feeding habits of *Trisopterus minutus capelanus* (Gadidae) off the eastern coast of Spain (western Mediterranean). *PSZNI Marine Ecology,* 22 (3): 215–229.

Morte, M.S., M.J. Redon, & A. Sanz-Brau (2002) Diet of *Phycis blennoides* (Gadidae) in relation to fish size and season in the western Mediterranean (Spain). *PSZNI Marine Ecology,* 23 (2): 141–155.

Moscatello, S. & Belmonte, G. (2007) The plankton of a shallow submarine cave ('Grotta di Ciolo', Salento Peninsula, SE Italy). *PSZNI Marine Ecology*, 28 (1): 47–59.

Muller, H.G. (1993) *World catalogue and Bibliography of the recent Mysidacea*. Wissenschaftlicher Verlang H.-G- Müller. Wetzlar: 1–491.

Munilla, T., & M.J. Corrales (1995) Suprabentos de la playa de Rosas (Gerona, Mediterraneo occidental). *Orsis,*10: 83–90.

Murano, M. (1970) Systematic and ecological studies on Mysidacea collected by the bottom-net. *Journal of the Oceanographical Society of Japan*, 26 (3): 137–150.

Murano, M. (1999) *Mysidacea. South American Zooplankton.* vol. 2, (D. Boltovskoy, ed). Leiden, Netherlands: Backhuys, :1099–1140.

Nouvel, H. (1945) Sur une petite collection de Mysidacés récoltés au large de Monaco avec description d'une espèce nouvelle: *Euchaetomera richardi. Bulletin de l'Institut Océanographique*, 889: 1–11.

Nouvel, H. (1960) Présence en Méditerranée d'un Mysidae de la sous-famille Rhopalophthalminae: *Rhopalophthalmus mediterraneus* n.sp. *Bulletin de la Société d'Histoire Naturelle de Toulouse,* 95 (3/4): 225–231.

Nouvel, H. & J. Hoenigman (1955) *Amallocystis boschma*i Nouvel 1954 Ellobiopsidé parasite du Mysidacé *Leptomysis gracilis* G.O. Sars. *Vie Milieu,* Suppl., 26: 17–18.

Nouvel, H., J.P. Casanova, & J.P. Lagardere (1999) Ordre des Mysidacés (Mysidacea Boas, 1883). *Mémoires de l'Institut Océanographique (Monaco),* 19: 39–86.

Passelaigue, F. & A. Bourdillon (1985) Les migrations nycthemerales du mysidace cavernicole *Hemimysis speluncola* Ledoyer. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea)*, 29 (5): 157–158.

Passelaigue, F. & A. Bourdillon (1986) Distribution and circadian migrations of the caverniculous mysid *Hemimysis speluncola* Ledoyer. *Stygologia*, 2 (1–2): 112–118.

Patzner, R.A. (2004) Associations with sea anemones in the Mediterranean Sea: A review. *Ophelia* 58 (1): 1–11.

Politou, C.Y. & C. Papaconstantinou (1994) Feeding ecology of Mediterranean poor cod, *Trisopterus minutus capelanus* (Lacepede), from the eastern coast of Greece. *Fisheries Research,* 19 (3/4): 269–292.

Ponti, M., M.A. Colangelo & V.U. Ceccherelli (2007) Composition, biomass and secondary production of the macrobenthic invertebrate assemblages in a coastal lagoon exploited for extensive aquaculture: Valle Smarlacca (northern Adriatic Sea). *Estuarine, Coastal and Shelf Science*, 75: 79–89.

Redon, M.J., M. S. Morte & A. Sanz-Brau (1994) Feeding habits of the spotted flounder *Citharus linguatula* off the eastern coast of Spain. *Marine Biology,* (120):197–201

Remerie, T., B. Bulckaen, J. Calderon, T. Deprez, J. Mees, J. VanXeteren, A. Vanreusel, A. Vierstraete, M. Vincx, K.J. Wittmann & T. Wooldridge (2004) Phylogenetic relationships within the Mysidae (Crustacea, Peracarida, Mysida) based on nuclear 18S ribosomal RNA sequences. *Molecular Phylogenetics and Evolution,* 32 (3): 770–777.

Remerie, T., T. Bourgois & A. Vanreusel (2005) Morphological differentiation between geographically separated populations of *Neomysis integer* and *Mesopodopsis slabberi* (Crustacea, Mysida). *Hidrobiologia,* 549:239–250.

Reys, J.P. (1960) Etude de la nourriture de quelques poissons démersaux du golfe du Lion. *Recueil des Travaux de la Station Marine d´Endoume. Faculté des Sciences de Marseille*, 20: 65–97.

Ribes, M., Coma, R. M. Zabala & J.M. Gili (1996) Small-scale spatial heterogeneity and seasonal variation in a population of a cave-dwelling Mediterranean mysid. *Journal of Plankton Research*: 1183–1194.

Riera, T., M. Alcaraz, J.M. Gili, & M. Zabala (1985) Etude quantitative d´une population de Mysidaces des grottes. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea)* 29 (5): 159–162.

Riera, T., M. Zabala & J. Peñuelas (1991) Mysids from a submarine cave emerge each night to feed. *Scientia Marina,* 55(4) : 605–609.

Santic, M., I. Jardas, & A. Pallaoro (2003) Feeding habits of Mediterranean horse mackerel, *Trachurus mediterraneus* (Carangidae), in the central Adriatic Sea. *Cybium* 27 (4): 247–253.

Santic, M., I. Jardas, & A. Pallaoro (2004) Diet composition and feeding intensity of Mediterranean horse mackerel, *Trachurus mediterraneus* (Osteichthyes: Carangidae), in the central Adriatic Sea. *Acta Adriatica*, 45 (1): 43–50.

Santic, M., I. Jardas, & A. Pallaoro (2005) Feeding habits of horse mackerel, *Trachurus trachurus* (Linneaus, 1758), from the central Adriatic Sea. *Journal of Applied Ichthyology*, 21: 125–130.

San Vicente, C. (1996) *Contribución al conocimiento de las comunidades y poblaciones suprabentónicas en habitats seleccionados del litoral del golfo de Vizcaya y del Mediterraneo noroccidental.* Tesis Doctoral, Univ. Barcelona: 457 pp.

San Vicente, C. & T. Munilla (2000) Misidáceos suprabentónicos de las playas catalanas (Mediterraneo nordoccidental). *Orsis*,15: 45–55.

San Vicente, C. & J.C. Sorbe (1999) Spatio-temporal structure of the suprabenthic community from Creixell beach (western Mediterranean). *Acta Oecologica* 20 (4): 377–389.

San Vicente, C. & J.C. Sorbe (2003) Biology of the suprabenthic mysid *Schistomysis assimilis* (Sars, 1877) on Creixell beach, Tarragona (northwestern Mediterranean). *Boletín Instituto Español de Oceanografía*, 19 (1–4): 391–406.

Sars, G.O. (1877) Nye Bidrag til Kundskaben om Middelhavets Invertebratfauna I. Middelhavets Mysider. *Archiv for Mathematik og Naturvidenskab* 2: 10–119.

Schlacher, T.A., K.J. Wittmann, & A.P. Ariani (1992) Comparative morphology and actuopalaeontology of mysid statoliths (Crustacea, Mysidacea). *Zoomorphology,* 112: 67–79.

Sobrino, I., C. Silva, M. Sbrana, & K. Kapiris (2005). A review of the biology and fisheries of the deep water rose shrimp, *Parapenaeus longirostris*, in European Atlantic and Mediterranean waters (Decapoda, Dendrobranchiata, Penaeidae). *Crustaceana,* 78 (10): 1153–1184.

Stefanescu C. & J.E. Cartes (1992) Benthopelagic habits of adult specimens of *Lampanyctus crocodilus* (Risso, 1810) (Osteichthyes, Myctophidae) in the western Mediterranean deep slope. *Scientia Marina,* 56(1): 69–74.

Tattersal, W.M. (1909) The Schizopoda collected by the Maia and Puritan in the Mediterranean. *Mittheilungen aus der Zoologischen Station zu Neapel,* 19 (2) 117–143.

Tattersall, W.M. (1927) XI. Report on the Crustacea Mysidacea. In: Zoological results of the Cambridge expedition to the Suez Canal, 1924. *Transactions of the Zoological Society of London,* 22: 185–198.

Tattersall, W.M. & O.S. Tattersall (1951) *The British Mysidacea.* Ray Society, London: 1–460.

Torchio, M. (1968) Observazioni e considerazioni sugli spostamenti di alcuni malacostraci in Mediterraneo. *Natura (Milano)* 59: 61–74.

Udrescu, A. (1984) Transpecific evolution (family level) within Lophogastrida. A new family Gnathophausiidae (Lophogastrida, Mysidacea). *Travaux du Muséum d´Histoire Naturelle "Grigore Antipa",* 25: 59–77.

Vassilopoulou, V. (2006) Dietary habits of the deep-sea flatfish *Lepidorhombus boscii* in north-eastern Mediterranean waters. *Journal of Fish Biology,* 69(4): 1202–1220.

Villanueva, R., J.M. Escudero, R. Deulofeu, A. Bozzano & C. Casoliva (2009) Vitamin A and E content in early stages of cephalopods and their dietary effects in *Octopus vulgaris* paralarvae. *Aquaculture,* 286: 277–282.

Vives, F. (1966) Zooplancton nerítico de las aguas de Castellón (Mediterráneo occidental). *Investigación Pesquera*, 30: 49–166.

Vives, F. (1968) Sur les Malacostracés planctoniques des mers Tyrrhénienne et Catalane. *Rapports et Procès-Verbaux des Réunions (International Commission for the Scientific Exploration of the Mediterranean Sea)*, 19 (3): 459–461.

Walker, A.O. (1901) Contribution to the malacostracan fauna of the Mediterranean. *The Journal of the Linnean Society of London. Zoology*, 28: 290–307.

Wittmann, K.J. (1977) Modification of association and swarming in North Adriatic Mysidacea in relation to habitat and interacting species. In: Keegan, B.F., P. O. Ceidigh, & P.J.S. Boaden (eds.), *Biology of Benthic Organisms, Proceedings of the Eleventh European Marine Biology Symposium. Pergamon Press, New York:* 605–612.

Wittmann, K.J. (1978) Adoption, replacement, and identification of young in marine Mysidacea (Crustacea). *Journal of Experimental Marine Biology and Ecology,* 32: 259–274.

Wittmann, K.J. (1981a) Comparative biology and morphology of marsupial development in *Leptomysis* and other Mediterranean Mysidacea (Crustacea). *Journal of Experimental Marine Biology and Ecology,* 52 (2/3): 243–270.

Wittmann, K.J. (1981b) On the breeding biology and physiology of marsupial development in Mediterranean *Leptomysis* (Mysidacea: Crustacea), with special reference to the effects of temperature and egg size. *Journal of Experimental Marine Biology and Ecology*, 53 (2–3): 261–279.

Wittmann, K.J. (1985) Freilanduntersuchungen zur Lebensweise von *Pyroleptomysis rubra*, einer neuen bentho-pelagischen Mysidacee aus dem Mittelmeer und dem Roten Meer. *Crustaceana,* 48 (2): 152–166.

Wittmann, K.J. (1986a) A revision of the genus *Paraleptomysis* Liu & Wang (Crustacea: Mysidacea). *Sarsia,* 71: 147–160.

Wittmann, K.J. (1986b) Saisonale und morphogeographische Differenzierung bei *Leptomysis lingvura* und zwei verwandten Spezies (Crustacea, Mysidacea). *Annalen des Naturhistorischen Museums in Wien. Serie B, Für Botanik und Zoologie,* 87 (B): 265–294.

Wittmann, K.J. (1992) Morphogeographic variations in the genus *Mesopodopsis* Czerniavsky with descriptions of three new species (Crustacea, Mysidacea). *Hydrobiologia,* 241: 71–89.

Wittmann, K.J. (2000) Heteromysis arianii sp.n., a new benthic mysid (Crustacea, Mysidacea) from coralloid habitats in the Gulf of Naples (Mediterranean Sea). *Annalen des Naturhistorischen Museums in Wien. Serie B, Für Botanik und Zoologie,* 102(B): 279–290.

Wittmann, K.J. (2001) Centennial changes in the near-shore mysid fauna of the Gulf of Naples (Mediterranean Sea), with description of *Heteromysis riedli* sp n. (Crustacea, Mysidacea). *PSZNI Marine Ecology,* 22: 85–110.

Wittmann, K.J. (2004) *Retromysis nura* new genus and species (Mysidacea, Mysidae, Heteromysini) from a superficial marine cave in Minorca (Balearic Islands, Mediterranean Sea). *Crustaceana,* 77 (7): 769–783.

Wittmann, K. J. & A. P. Ariani (1998) *Diamysis bacescui* n. sp., a new benthopelagic mysid (Crustacea: Peracarida) from Mediterranean,seagrass meadows: description and comments on statolith composition. *Travaux du Muséum d´Histoire Naturelle "Grigore Antipa",* 40: 35–49.

Wittmann, K. J. & A. P. Ariani (2008) Some Aspects of Fluorite and Vaterite Precipitation in Marine Environments. *PSZNI Marine Ecology,* 17(1–3): 213–219.

Wittmann, K.J. & A.P. Ariani (2009) Reappraisal and range extension of non-indigenous Mysidae (Crustacea, Mysida) in continental and coastal waters of eastern France. *Biological Invasions*, 11(2): 401–407.

Zimmer, C. (1915) Zur Kenntnis der Schizopodenfauna Neapels. *Mittheilungen aus der Zoologischen Station zu Neapel,* 22: 313–327.

Decapods (by Carlo Froglia)

Table S21. Checklist of the Mediterranean endemic species of the Order Decapoda (Phylum Arthropoda), known geographic distribution and bathymetric range

Species	Distribution	Depth range (m)
Odontozona addaia Pretus, 1990	Balearic Islands	5
Odontozona minoica Dounas & Koukouras, 1989	Aegean Sea: off Crete	125 - 330
Richardina fredericii Lo Bianco, 1903	Western Mediterranean	400 – 1000
Bresilia corsicana Forest & Cals, 1977	Western Mediterranean: off Capraia Is.	450
Balssia noeli Bruce, 1998	Western Mediterranean: off Banyuls (France)	unknown
Periclimenes amethysteus (Risso, 1827)	Mediterranean	1 – 10
Periclimenes granulatus Holthuis, 1950	Mediterranean	100 - 800
Periclimenes eleftherioui Koukouras & Türkay, 1996	Aegean Sea: between Aspronisi and Tera	40 – 73
Periclimenes aegylios Grippa & d'Udekem d'Acoz, 1996	Western Mediterranean, Adriatic Sea	1.5 – 20
**Urocaridella pulchella* Jokes & Galil, 2006	Eastern Mediteranean, Kaş (Turkey)	12
Hippolyte holthuisi Zariquiey Alvarez, 1953	Western Mediterranean, Adriatic Sea, Ionian Sea	may-30
Hippolyte niezabitowskii d'Udekem d'Acoz, 1996	Adriatic Sea, Ionian Sea	0.5 – 10
Hippolyte sapphica d'Udekem d'Acoz, 1993	Mediterranean	0.5 1.5
Eualus drachi Noël, 1978	Mediterranean	30 – 95
Automate branchialis Holthuis & Gottlieb, 1958	Mediterranean	18 – 73
Salmoneus erasimorum Dworschak, Anker &Abed-Navandi, 2000	Adriatic Sea: Kvarner Gulf, Levantine Sea ?	1.5
Salmoneus sketi Fransen, 1991	Adriatic Sea: Kornati Islands	7 – 20
**Salmoneus kekovae* Grippa, 2006	Eastern Mediterranean, Bay of Kekova (Turkey)	3
Levantocaris hornungae Galil & Clark, 1993	Levantine Sea: off Haifa (Israel)	1400
Necallianassa acanthura (Caroli, 1946)	Mediterranean	0.5 – 4
Pestarella whitei (Sakai, 1999)	Northern Adriatic Sea	0.5 - 4
Calliax lobata (De Gaillande &Lagardère, 1966)	Mediterranean	2 – 21
Calliaxina punica (De Saint Laurent &Manning, 1982)	Mediterranean	0.5 – 1
Upogebia tipica (Nardo, 1869)	Mediterranean	9 – 70
Paguristes streaensis Pastore, 1984	Central Mediteranean, Adriatic Sea, Aegean Sea	0.5 – 3
Paguristes syrtensis De Saint Laurent, 1971	Central Mediterranean	3 - ?250
Anapagurus petiti Dechancé & Forest, 1962	Mediterranean	10 – 92
Anapagurus smythi Ingle, 1993	Central Mediterranean: Adventure Bank	168
Munidopsis marionis (A. Milne Edwards, 1882)	Mediterranean	450 – 1000
Macropodia longirostris (Fabricius, 1775)	Mediterranean	5 – 130
Inachus parvirostris (Risso, 1816)	Mediterranean	60 - 445
Maja squinado (Herbst, 1788)	Mediterranean	1 – 100

Pisa hirticornis (Herbst, 1804)	Mediterranean	5 – 40
Pisa muscosa (Linnaeus, 1758)	Mediterranean	4 – 130
Chaceon mediterraneus Manning & Holthuis, 1989	Mediterranean	1700 – 3028
Zariquieyon inflatus Manning & Holthuis, 1989	Western Mediterranean: 37°56.7'N 7°31.6'E	2830
Carcinus aestuarii Nardo, 1847	Mediterranean	0 - 20
Portumnus lysianassa (Herbst, 1801)	Mediterranean	0.5 – 5
Brachynotus foresti Zariquiey Alvarez, 1968	Mediterranean	0.5 – 5
Brachynotus gemmellari (Rizza, 1840)	Mediterranean	5 – 20

* possibly a Lessepsian immigrant not yet recorded in its region of origin

Bryozoans (by Carlos Mª López-Fé de la Cuadra)

Text S3. References for Mediterranean bryozoan species

Álvarez, J.A., 1992a. Sobre algunas especies de la familia Lichenoporidae Smitt, 1866 (Bryozoa, Cyclostomida) en la región Atlanto-Mediterránea. Parte I: género Disporella Gray, 1848. Cah. Biol. Mar., 33: 201-243.

Álvarez, J.A., 1992b. Briozoos de la Campaña Fauna I. Parte Primera: Ctenostomida y Cheilostomida Anascina. Cah. Biol. Mar., 33: 273-297.

Álvarez, J.A., 1993. Sobre algunas especies de la familia Lichenoporidae Smitt, 1866 (Bryozoa, Cyclostomida) en la región Atlanto-Mediterránea. Parte II: estudio preliminar del género Lichenopora Defrance, 1823. Cah. Biol. Mar., 34: 261-288.

Álvarez, J.A., 1994a. La famille des Lichenoporidae (Bryozoa, Cyclostomida) dans les provinces Atlanto-Méditerarnéenne et Boréale. Partie III: étude des collections du Muséum National d´Histoire Naturelle de Paris. Cah. Biol. Mar., 35: 491-509.

Álvarez, J.A., 1994b. Briozoos de la Campaña Fauna I. Parte II: Cheilostomida Ascophorina y Cyclostomida. Graellsia, 50: 129-145.

Canu, F. and Bassler, R.S., 1930. Bryozoaires marines de Tunisie. Ann. St. Océan. Salambo, 5: 1-91.

Gautier, Y.V., 1962. Recherches écologiques sur les Bryozoaires Chilostomes en Méditerranée Occidentale. Rec. Trav. Stat. Mar. Endoume, 38(24): 1-434.

Geraci, S., 1973. Popolamenti di substrati artificiali posti in fonds a "coralligeno" e in una prateria de Posidonia, II: I Briozoi. Publ. Staz Zool. Napoli, 40 suppl.: 53-68.

Geraci, S. and Relini, G., 1970. Osservazioni sistematico ecologiche sui Briozoi del fouling portuale di Genova. Boll.Mus. Ist. Biol. Univ. Genova, 38:103-139.

Harmelin, J.G., 1968. Bryozoaires récoltés au cours de la campagne du Jean Charcot en Méditerranée orientale (août-septembre 1967). I. Dragages. Bull. Mus. natl. Hist. nat., Paris, 2e sér., 40(6): 1179-1208.

Harmelin, J.G., 1969. Bryozoaires des grotes sous-marines obscures de la région Marsellaise. Faunistique et écologie. Tethys, 1 (3): 793-806.

Harmeli, J.G., 1976. Le sous-ordre des Tubuliporina (Bryozoa Cyclostomata) en Méditerranée. Systematique et écologie. Mem. Inst. Océan. Monaco, 10: 1-326.

Harmelin, J.G., 1977. Briozoaires des Iles d'Hyères: Cryptofaune des valves vides de Pinna nobilis rencontrés dans les harbiers de posidonies. Trav. sci. Parc nation. Port Cros, 3: 143-157.

Harmelin, J.G., 1978. Briozoaires des Iles d'Hyères: II - Inventaire des fonds détritiques. Trav. sci. Parc nation. Port Cros, 4: 127-147.

Harmelin, J.G., 1990. Deep-water Crisiids (Bryozoa: Cyclostomata) from the northeast Atlantic Ocean. J. Nat. Hist., 24: 1597-1616.

Harmelin, J.G. and Arístegui, J., 1988. New Cribrilinidae (Bryozoa, Cheilostomata) from the upper bathyal of the Atlanto-Mediterranean region. J. Nat. Hist., 22: 507-535.

Harmelin, J.G. and d'Hondt, J.L., 1992. Bryozoaires del parages de Gibraltar (campagne océanographique BALGIM, 1984). 1 — Cheilostomes. Bull. Mus. natl. Hist. nat., Paris, 4e sér., 14, sect. A, nº 1: 23-67.

Harmelin, J.G. and d'Hondt, J.L., 1992. Bryozoaires del parages de Gibraltar (campagne océanographique BALGIM, 1984). 2 — Ctenostomes et Cyclostomes. Bull. Mus. natl. Hist. nat., Paris, 4e sér., 14, sect. A, nos 3-4: 605-621.

Hayward, P.J. and McKinney, F.K., 2002. Northern Adriatic Bryozoa from the vicinity of Rovinj, Croatia. Bull Am. Mus. Nat. Hist., 270: 1-139.

Hondt, J.-L. d', 1983. Tabular keys for the identification of Recent Ctenostomatous Bryozoa. Mem. Inst. Océan. Monaco, 14: 1-134.

Hondt, J.-L. d', 1988. Bryozoa from the coast of Israel. Boll. Zool., 3: 191-203.

López de la Cuadra, C.M. and García Gómez, J.C., 1988. Briozoos queilostomados del Estrecho de Gibraltar y áreas próximas. Cah. Biol. Mar., 29: 21-36.

López de la Cuadra, C.M. and García Gómez, J.C., 1993. Little-known Atlantic Cheilostome Bryozoans at the entrance to the Mediterranean. J. Nat. Hist., 27: 457-469.

López de la Cuadra, C.M. and García Gómez, J.C., 1994. Zoogeographical study of the Cheilostomatida from the Straits of Gibraltar. Pp. 107-112 in: P.J. Hayward, J.S. Ryland and P.D. Taylor (eds.), Biology nad Palaeobiology of Bryozoans. Olsen & Olsen, Fredensborg.

López de la Cuadra, C.M. and García Gómez, J.C., 2001. New and little-known bryozoans from the Western Mediterranean, collected by 'Fauna Ibérica' expeditions. J. Nat. Hist. 35: 1717-1732.

López-Fé, C.M. and García Gómez, J.C., 2004. Foronídeos, Braquiópodos y Briozoos. Fauna Andaluza. Pp. 51-70 in: J.A. Tinaut and F. Pascual (eds.), Proyecto Andalucía. Naturaleza XV. Zoología III. Publicaciones Comunitarias, S.L., Sevilla.

Occhipinti Ambrogi, A., 1981. Briozoi lagunari. Cons. Naz. delle Ricerche, Genova. 145 pp.

Perez, T., Garrabou, J., Sartoretto, S., Harmelin, J.G., Francour, P. and Vacelet, J., 2000. Mortalité massive dínvertébrés marins: un événement sans précédent en Méditerranée nord-occidentale. C. R. Acad. Sci. Paris, Sciences de la Vie, 323: 853-865.

Prenant, M. and Bobin, G., 1956. Bryozoaires, 1ère partie. Entoproctes, Phylactolémes, Ctènostomes. Faune de France, 60: 1-398.

Prenant, M. and Bobin, G., 1966. Bryozoaires, 2ème partie. Cheilostomes Anasca. Faune de France, 68: 1-647.

Zabala, M., 1986. Fauna dels Briozous dels Paisos Catalans. Arxius de la Secció de Ciències 84. Institut d'Estudis Catalans, Barcelona. 833 pp.

Zabala, M. and Maluquer, P., 1988. Illustrated keys for the classification of Mediterranean Bryozoa. Treballs del Museu de Zoologia 4. 294pp.

Table S22. Checklist of the Phylum Bryozoa

Cyclostomata

**Annectocyma arcuata* (Harmelin)
A. indistincta (Canu & Bassler)
A. major (Johnston)
A. tubulosa (Busk)
**Cardioecia watersi* (O'Donogue & De Wateville)
Crisia aculeata (Hassall)
C. cuneata (Maplestone)
C. denticulata (Lamouroux)
C. fistulosa (Heller)
C. kerguelensis (Busk)
C. occidentalis (Trask)
**C. oranensis* (Waters)
C. ramosa (Harmer)
**Crisia recurva* (Heller)
**C. sigmoidea* (Waters)
Diplosolen obelium (Johnston)
**Disporella alboranensis* (Álvarez)
D. hispida (Fleming)
D. piramidata (Álvarez)
**D. robusta* (Álvarez)
Entalophoroecia deflexa (Couch)
E. gracilis (Harmelin)
**E. robusta* (Harmelin)
**Eurystrotos occulta* (Harmelin)
E. compacta (Norman)
Exidmonea triforis (Heller)
**E. coerulea* (Harmelin)
Filicrisia geniculata (Milne-Edwards)
Frondipora verrucosa (Lamouroux)
Hornera frondiculata Lamouroux
H. lichenoides (Linnaeus)
Idmidronea atlantica (Forbes in Johnston)
Liripora amphorae (Harmelin)
**L. violacea* (Harmelin)
Mecynoecia delicatula (Busk)
**Patinella distincta* (Álvarez)
P. radiata (Audouin)
P. verrucaria (Linnaeus)
Plagioecia dorsalis (Waters)
**P. inoedificata* (Jullien)
P. patina (Lamarck)
**P. platydiscus* (Harmelin)
P. sarniensis (Norman)
**Platonea stoechas* (Harmelin)
Stomatopora gingrina (Jullien)
Tervia irregularis (Meneghini)
Tubulipora aperta (Harmer)
**T. hemiphragmata* (Harmelin)
T. liliacea (Pallas)
T. notomale (Busk)
T. phalangea (Couch)
T. plumosa (Harmer)
**T. ziczac* (Harmelin)

Ctenostomata
Alcyonidium albidum (Alder)
A. cellarioides (Calvet)
A. diaphanum (Hudson)
A. gelatinosum (Linnaeus)
A. mytili (Dalyell)
A. variegatum (Prouho)
Amathia lendigera (Linnaeus)
A. pruvoti (Calvet)
A. semiconvoluta (Lamouroux)
A. vidovici (Heller)
Arachnidium hippothoides (Hincks)
**Arachnoidea annosciae* (d'Hondt & Geraci)
Ascorhiza mawatarii (d'Hondt)
**Benedenipora catenata* (Pergens)
B. delicatula (d'Hondt & Geraci)
Bowerbankia gracilis (Leidy)
B. imbricata (Adans)
B. pustulosa (Ellis & Solander)
Buskia nitens (Alder)
B. socialis (Hincks)
**Clavopora hystricis* (Busk)
Farrella repens (Farre)
Hypophorella expansa (Ehlers)
Immergentia orbignyana (Fischer)
Lobiancopora hyalina (Pergens)
Paludicella articulata (Ehrenberg)
**Penetrantia brevis* (Silen)
Pherusella tubulosa (Ellis & Solander)
Metalcyonidium gautieri (d'Hondt)
Mimosella gracilis (Hincks)
M. verticillata (Heller)
Nolella dilatata (Hincks)
N. stipata (Gosse)
Spathipora comma (Soule)
S. sertum (Fischer)
Tanganella muelleri (Kraepelin)
Triticella flava (Dalyell)
T. pedicellata (Alder)
**Triticellopsis tissieri* (Gautier)
Vesicularia spinosa (Linnaeus)
Victorella pavida Saville (Kent)
Walkeria tuberosa (Heller)
Walkeria uva (Linnaeus)
Zoobotryon verticillatum (Ellis & Solander)

Cheilostomata
**Adeonella calveti* (Canu & Bassler)
**A. pallasii* (Heller)
Adeonellopsis distoma (Busk)
Aetea anguina (Linnaeus)
A. longicollis (Jullien)
A. sica (Couch)
A. truncata (Landsborough)
Alderina imbellis (Hincks)

Amphiblestrum flemingii (Busk)
A. lyrulatum (Calvet)
Anarthropora monodon (Busk)
**Aplousina capriensis* (Waters)
A. filum (Jullien)
Arthropoma cecilii (Audouin)
Beania cylindrica (Hincks)
B. hirtissima (Heller)
B. magellanica (Busk)
B. mirabilis (Johnston)
B. robusta (Hincks)
Bicellariella ciliata (Linnaeus)
Buchneria fayalensis (Waters)
Buffonellaria divergens (Smitt)
**Bugula aperta* (Hincks)
B. avicularia (Linnaeus)
B. calathus (Norman)
B. flabellata (Thompson en Gray)
B. fulva (Ryland)
**B. gautieri* (Ryland)
**B. germanae* (Calvet)
B. gracilis (Busk)
B. neritina (Linnaeus)
B. plumosa (Pallas)
B. simplex (Hincks)
**B. spicata* (Hincks)
B. stolonifera (Ryland)
B. turbinata (Alder)
Buskea dichotoma (Hincks)
B. nitida (Heller)
Caberea boryi (Audouin)
Callopora depressa (Cook)
C. dumerilii (Audouin)
C. lineata (Linnaeus)
**C. minuta* (Harmelin)
C. rylandi (Bobin & Prenant)
Calloporina decorata (Reuss)
Calpensia nobilis (Esper)
Calyptotheca obscura (Harmelin, López de la Cuadra & García Gómez)
**C. rugosa* (Hayward)
Carbasea carbasea (Ellis and Solander)
Cellaria fistulosa (Linnaeus)
C. salicornioides (Lamouroux)
C. sinuosa (Hassall)
**Cellepora adriatica* (Hayward & McKinney)
**C. posidoniae* (Hayward)
C. pumicosa (Pallas)
Celleporella hyalina (Linnaeus)
**Celleporina caminata* (Waters)
C. canariensis (Arístegui)
C. decipiens (Hayward)
C. hassallii (Johnston)
C. lucida (Hincks)
C. siphuncula (Hayward & McKinney)
C. tubulosa (Hincks)

Chaperiopsis annulus (Manzoni)
**Characodoma bifurcatum* (Waters)
C. oranense (Waters)
C. porcellanum (Busk)
Chartella calveti (Guérin-Ganivet)
C. papyracea (Ellis **&** Solander)
**C. papyrea* (Pallas)
**C. tenella* (Hincks)
**Cheiloporina circumcincta* (Neviani)
Chlidonia pyriformis (Bertoloni)
Chorizopora brongniartii (Audouin)
**Cigclisula turrita* (Smitt)
Collarina balzaci (Audouin)
Conopeum reticulum (Linnaeus)
C. seurati (Canu)
Copidozoum exiguum (Barroso)
C. planum (Hincks)
C. tenuirostre (Hincks)
**Coronellina fagei* (Gautier)
**Cosciniopsis ambita* (Hayward)
Crassimarginatella crassimarginata (Hincks)
C. maderensis (Waters)
C. solidula (Hincks)
Cribellopora trichotoma (Waters)
Cribrilina punctata (Hassall)
Cryptosula pallasiana (Moll)
Cupuladria biporosa (Canu & Bassler)
C. canariensis (Busk)
C. doma (D'Orbigny)
C. multispinata (Canu & Bassler)
Cylindroporella tubulosa (Norman)
**Dentiporella sardonica* (Waters)
Diporula verrucosa (Peach)
Distansescharella seguenzai (Cipolla)
Electra tenella (Hincks)
E. monostachys (Busk)
E. pilosa (Linnaeus)
**E. posidoniae* (Gautier)
Ellisina antarctica (Hastings)
E. gautieri (Fernández Pulpeiro & Reverter Gil)
Epistomia bursaria (Linnaeus)
Escharella octodentata (Hincks)
E. praealta (Calvet)
**E. rylandi* (Geraci)
E. variolosa (Johnston)
E. ventricosa (Hassall)
Escharina dutertrei (Audouin)
E. hyndmanni (Johnston)
E. johnstoni (Quelch)
E. vulgaris (Moll)
Escharoides coccinea (Abildgaard)
E. mamillata (Wood)
Exechonella antillea (Osburn)
**Fenestrulina barrosoi* (Alvarez)
**F. joannae* (Calvet)
F. malusii (Audouin)

Figularia figularis (Johnston)
**Hagiosynodos hadros* (Hayward & McKinney)
**H. kirchenpaueri* (Heller)
H. latus (Busk)
Haplopoma bimucronatum (Moll)
H. graniferum (Johnston)
H. impressum (Audouin)
**H. sciaphilum* (Silén & Harmelin)
**Hemicyclopora dentata* (López de la Cuadra & García Gómez)
H. multispinata (Busk)
Hincksina flustroides (Hincks)
Hincksinoflustra elongata (Cook)
H. octodon (Busk)
**Hippellozoon mediterraneum* (Waters)
**Hippaliosina depressa* (Busk)
Hippomenella mucronelliformis (Waters)
**Hippopleurifera pulchra* (Manzoni)
Hippopodina feegeensis (Busk)
Hippoporidra picardi (Gautier)
Hippoporina pertusa (Esper)
Hippothoa divaricata (Lamouroux)
H. flagellum (Manzini)
Jaculina blanchardi (Jullien)
**J. paralellata* (Waters)
Klugerella marcusi (Cook)
Lagenipora lepralioides (Norman)
Margaretta cereoides* (Ellis **& Solander)
Membranipora membranacea (Linnaeus)
M. tenuis (Desor)
Membraniporella nitida (Johnston)
Metroperiella lepralioides (Calvet)
Micropora coriacea (Johnston)
M. normani (Levinsen)
Microporella appendiculata (Heller)
M. ciliata (Pallas)
**M. flabelligera* (Levinsen)
M. marsupiata (Busk)
M. orientalis (Harmer)
M. umbracula (Audouin)
**Mollia circumcincta* (Heller)
**M. fagei* (Gautier)
M. multijuncta (Waters)
M. patellaria (Moll)
Monoporella nodulifera (Hincks)
Myriapora truncata (Pallas)
Neolagenipora eximia (Hincks)
Omalosecosa ramulosa (Linnaeus)
Onychocella marioni(Jullien)
**O. vibraculifera* (Neviani)
Palmicellaria elegans (Alder)
Palmiskenea skenei (Ellis & Solander)
Parasmittina raigii (Audouin)
**P. rouvillei* (Calvet)
Parellisina curvirostris (Hincks)
Pentapora fascialis (Pallas)
P. ottomulleriana (Moll)

Phoceana columnaris (Jullien & Calvet)
**P. tubulifera* (Heller)
Porella concinna (Busk)
P. minuta (Norman)
P. tubulata (Busk)
Porelloides laevis (Fleming)
Prenantia cheilostoma (Manzoni)
**P. inerma* (Calvet)
Puellina arrecta (Bishop & Househam)
P. cassidainsis (Harmelin)
P. corbula (Bishop & Househam)
P. gattyae (Landsborough)
**P. hincksi* (Friedl)
P. innominata (Couch)
**P. minima* (Harmelin)
P. orientalis (Harmelin & Arístegui)
**P. pedunculata* (Gautier)
P. picardi (Harmelin)
P. radiata (Moll)
P. setiformis (Harmelin & Arístegui)
P. setosa (Waters)
P. scripta (Reuss)
P. venusta (Canu & Bassler)
Pyripora catenularia (Fleming)
**Rectonychocella disjuncta* (Canu & Bassler)
Reptadeonella insidiosa (Jullien)
R. violacea (Johnston)
**Reteporella aporosa* (Waters)
R. beaniana (King)
**R. complanata* (Waters)
R. couchii (Hincks)
**R. elegans* (Harmelin)
**R. feuerbornii* (Hass)
R. grimaldii (Jullien)
**R. harmeri* (Hass)
**R. mediterranea* (Hass)
R. sudbourniensis (Gautier)
**Reteporellina delicatula* (Hayward)
Rhamphostomella argentea (Hincks)
Rhynchozoon bispinosum (Johnston)
R. digitatum (Waters)
**R. neapolitanum* (Gautier)
**R. pseudodigitatum* (Zabala & Maluquer)
**R. quadrispinatum* (Zabala & Maluquer)
R. revelatus (Hayward & McKinney)
Rosseliana beticaensis (Alvarez)
R. rossellii (Audouin)
Savignyella lafontii (Audouin)
Schizobrachiella sanguinea (Norman)
Schizomavella auriculata (Hassall)
S. discoidea (Busk)
S. fischeri (Jullien)
**S. halimedae* (Gautier)
S. hastata (Hincks)
S. linearis (Hassall)
S. mamillata (Gautier)

S. marsupifera (Busk)
S. monoecensis (Calvet)
S. rudis (Manzoni)
Schizoporella dunkeri (Reuss)
S. errata (Waters)
S. magnifica (Hincks)
S. mutabilis (Calvet)
S. neptuni (Jullien)
S. tetragona (Reuss)
S. unicornis (Johnston en Wood)
Schizoretepora imperati (Busk)
S. longisetae (Canu & Bassler)
**S. solanderia* (Risso)
Schizotheca fissa (Busk)
S. serratimargo (Hincks)
Scruparia ambigua (d'Orbigny)
S. chelata (Linnaeus)
**Scrupocellaria aegeensis* (Harmelin)
S. bertholleti (Audouin)
S. delilii (Audouin)
**S. incurvata* (Waters)
**S. macrorhyncha* (Gautier)
S. maderensis (Busk)
S. reptans (Linnaeus)
S. scrupea (Busk)
S. scruposa (Linnaeus)
Securiflustra securifrons (Pallas)
Sertulipora guttata (Harmelin **&** d'Hondt)
Sessibugula barrosoi (López de la Cuadra & García Gómez)
**Setosella cavernicola* (Harmelin)
S. folini (Jullien)
S. vulnerata (Busk)
**Setosellina capriensis* (Waters)
Smittina affinis (Hincks)
S. cervicornis (Pallas)
S. colletti (Jullien)
S. crystallina (Norman)
S. landsborovii (Johnston)
S. remotorostrata (Canu & Bassler)
**S. tubulifera* (Heller)
Smittoidea marmorea (Hincks)
**S. ophidiana* (Waters)
S. reticulata (MacGillivray)
Spiralaria gregaria (Heller)
Stephanollona armata (Hincks)
Synnotum aegyptiacum (Audouin)
Tessaradoma boreale (Busk)
**Trypostega claviculata* (Hincks)
T. venusta (Norman)
Turbicellepora avicularis (Hincks)
**T. camera* (Hayward)
T. cantabra (Barroso)
T. coronopus (Woods)
T. coronopusoida (Calvet)
**T. crenulata* (Hayward)
T. magnicostata (Barroso)

**T. torquata* (Hayward)
T. tubigera (Busk)
Umbonula ovicellata (Hastings)
Watersipora complanata (Norman)
W. subovoidea (d'Orbigny)

Echinoderms (by Athanasios Koukouras & Miltiadis-Spyridon Kitsos)

Text S4. References for Mediterranean echinoderms diversity

Achituv Y, 1969. Studies on the reproduction and distribution of Asterina burtoni Gray and A. wega Perrier (Asteroidea) in the Red Sea and the Eastern Mediterranean. Israel journal of zoology, 18: 329-342.

Achituv Y, 1973. On the distribution and variability of the Indo-Pacific sea star Asterina wega Echinodermata: Asteroidea) in the Mediterranean Sea. Marine Biology, 18: 333-336.

Achituv Y, Sheer E, 1991. Sexual reproduction and fission in the sea star Asterina burtoni from the Mediterranean coast of Israel. Bulletin of Marine Science, 48: 670-678.

Antoniadou C, Vafidis D, 2009. Updated distribution of the holothuroid Synaptula reciprocans (Forskal, 1775) in the Mediterranean: does it follow shallow-water circulation patterns? Aquatic Invasions, 4(2): 361-363.

Borrero-Perez GH, Perez-Ruzafa A, Marcos C Gonzalez Wanguemert M, 2009. The taxonomic status of some Atlanto-Mediterranean species in the subgenus Holothuria (Echinodermata: Holothuroidea: Holothuriidae) based on molecular evidence. Zoological Journal of the Linnean Society, 157(1): 53-69.

Cherbonnier G, 1956. Les échinodermes de Tunisie. Bulletin de la station océanographique de Salammbô, 53: 1-23.

Cherbonnier G, 1958. Faune marine des Pyrénées-Orientales. 2. Echinodermes. Université de Paris: 1-67.

Cherbonnier G, 1968. Considérations sur l'Holothurie apode Leptosynapta makrankyra (Ludwing). Bulletin du muséum national d'histoire naturelle, Paris, 39: 1214-1218.

Cherbonnier G, 1972. Neocnus incubans nouveau genre et nouvelle espèce d'Holothurie dendrochirote incubatrice de Méditerranée. Comptes rendus des séances de l'académie de science de Paris, 275: 225-227.

Cherbonnier G, Guille A, 1967. Complément à la faune des échinodermes de la mer de Banyuls. Vie et Milieu, XVIII(2B): 317-330.

Cherbonnier G, Guille A, 1968. Sur une nouvelle holothurie dendrochirote de Méditerranée: Phyllophorus drachi nov. sp. Bulletin du muséum national d'histoire naturelle, Paris, 40: 630-633.

Delépine R, Boudouresque CF, Frada-Orestano C, Noailles MC, Asensi A, 1987. Algues et autres vegetaux marines. In: Fischer W, Bauchot ML, Schneider M, eds. Fishes FAO d' identification des espèces pour les besoins de la pêche (Revision, 1), Mediterranèe et mer noire, zone de pêche 37. FAO, Rome: 1-136.

Demetropoulos A, Hadjichristophorou M, 1976. Echinodermata of Cyprus. Fisheries bulletin of the fisheries department, Cyprus, 4: 1-83.

Despalatović M, Grubelić I, Piccinetti C, Cvitković I, Antolić B, Žuljević A, Nikolić V, 2009. Distribution of echinoderms on continental shelf in open waters of the northern and middle Adriatic Sea. Journal of the Marine Association of the United Kingdom, 89 (3): 585-591.

Fiege D, Liao Y, 1996. Penilpidia ludwigi (Marenzeller, 1893) (Holothurioidea: Elpidiidae) rediscovered from the Eastern Mediterranean Sea. In: Uiblein F, Ott J, Stachowitsch M, eds. Deep-sea and extreme shallow-water habitats: affinities and adaptations. Biosystematics and ecology series, 11: 61-66.

Kaspiris P, Tortonese E, 1982. Echinoderms from the western seas of Greece. Thalassographica, 2: 27-32.

Koukouras A, Sinis AI, Bobori D, Kazantzidis S, Kitsos MS, 2007. The echinoderm (Deuterostomia) fauna of the Aegean Sea, and comparison with those of the neighbouring seas. Journal of Biological Research 7: 67 – 92.

Özaydin O, Katagan T, Ünsal S, 1995. The Echinoderms of the Turkish seas. Israel journal of zoology, 41: 57-68.

Pagès F., Martín J., Palanques A., Puig P. Gili JM, 2007. High occurrence of the elasipodid holothurian Penilpidia ludwigi (von Marenzeller, 1893) in bathyal sediment traps moored in a western Mediterranean submarine canyon. Deep Sea Research part I, 54: 2170-2180.

Pancucci MA, Zenetos A, 1989. Infralittoral macrobenthos of the Patras gulf and Ionian Sea. II-Echinodermata. Cahiers de Biologie Marine, 30: 217-226.

Pérez-Ruzafa A, López-Ibor A, 1986. Presencia de Holothuria (Vaneyothuria) lentiginosa lentiginosa Marenzeller, 1983 (Echinodermata: Holothuroidea) en el mar de Alborán (Mediterráneo Occidental). Boletín del instituto español de oceanografía, 3: 105-109.

Por FD, 1978. Lessepsian Migration. The influx of Red Sea biota into the Mediterranean by way of

Salvini-Plawen L, 1972. Die nordatlantische Labidoplax buski (Holothuroidea-Synaptidae) in der Adria. Zoologischer anzeiger, zugleich organ der deutschen zoologischen gesellschaft. Leipzig, 188S: 301-304.

Salvini-Plawen L, 1977. Caudofoveata (Mollusca), Priapulida und apode Holothurien (Labidoplax, Myriotrochus) bei Banyuls und im Mittelmeer allgemein. Vie et Milieu, 27: 55-81.

Schembri PJ, 1978. Recent echinoids (Echinodermata: Echinoidea) from the Maltese Islands and surrounding waters. Animalia, 5: 123-132.

Tanti CM, Schembri PJ, 2006. A synthesys of the echinoderm fauna of the Maltese islands. Journal of the Marine Association of the United Kingdom, 86: 163-165.

Tortonese E, 1952. Gli Echinodermi del Mar Ligure e delle zone vicine. Atti dell'accademia ligure di scienze e lettere, 8: 163-242.

Tortonese E, 1956. Catalogo degli Echinodermi della collezione E. Tortonese. Annali di museo civico di storia naturale di Genova, LXVIII: 177-233.

Tortonese E, 1965. Fauna d'Italia. Echinodermata. Edizioni Calderini, Bologna.

Tortonese E, 1979. Review of present status of knowledge of the Mediterranean Echinoderms. Proceedings of the european colloquium on echinoderms, Brussels: 141-149.

Tortonese E, Demir M, 1960. The Echinoderm fauna of the Sea of Marmara and the Bosporus. Hydrobiologi Istanbul, 5: 1-16.

Tortonese E, Vadon C, 1987. Oursins et Holothuries (Echinodermes). In: Fischer W, Bauchot ML, Schneider M, eds. Fishes FAO d' identification des espèces pour les besoins de la pêche (Revision, 1), Mediterranèe et mer noire, zone de pêche 37. FAO, Rome: 715-739.

Yokes B, Galil BS, 2006. The first record of the needle-spined urchin Diadema setosum (Leske, 1778) (Echinodermata: Echinoidea: Diadematidae) from the Mediterranean Sea. Aquatic Invasions, 1(3): 188-190.

Zaitsev Y, Öztürk B, 2001. Exotic species in the Aegean, Marmara, Black, Azov and Caspian Seas. Turkish marine research foundation, Istanbul, publication No. 8.

Zavodnik D, 1960. Echinodermata der Insel Krk. Acta adriatica, 9: 1-20.

Zavodnik D, 1972. Peculiarities of geographical distribution of Adriatic echinoderms. Thalassia jugoslavica, 8: 321-330.

Zavodnik D, 1979. Ergänzungen zur Echinodermenfauna des Adriatischen Meeres. Zoologischer anzeiger, Jena, 203: 122-128.

Zavodnik D, 1980. Distribution of Echinodermata in the north Adriatic insular region. Acta adriatica, 21: 437-468.

Zavodnik D, 1995. Additions to Adriatic Sea ophiuroid fauna and its diversity. Natura croatica, 4: 107-111.

Zibrowius H, 1991. Ongoing modification of the Mediterranean marine fauna and flora by the establishment of exotic species. Mésogée, 51: 83-107.

Zibrowius H, Bitar G, 2003. Invertébrés marins exotiques sur la côte du Liban. Lebanese Science Journal, 4: 67-74.

Table S23. Checklist of the Phylum Echinodermata, and their distribution in the geographical areas of the Mediterranean with reference to their presence in the Atlantic and the Indo-Pacific Oceans

WM: Western Mediterranean; CM: Central Mediterranean; AD: Adriatic Sea; AS: Aegean Sea; LB: Levantine Basin; AO: Atlantic Ocean; IP: Indo-Pacific Ocean. Zoogeographical characterization (ZC) AM, Atlanto-Mediterranean; C, Cosmopolitan; E, Possibly endemic; IP, Indo-Pacific; LM, Lessepsian migrant. VD, vertical distribution.

Mediterranean species	WM	CM	AD	AS	LB	AO	IP	ZC	VD (m)
Crinoidea									
Antedon bifida (Pennant, 1777)	+					+		AM	5-200
Antedon mediterranea (Lamarck, 1816)	+	+	+	+	+			E	1-420
Leptometra celtica (Barrett & McAndrew, 1858)	+					+		AM	46-1279
Leptometra phalangium (J. Müller, 1841)	+	+	+	+				E	40-1300

Neocomatella europaea (A.H. Clark, 1931)	+					+		AM	400-1710
Eleutherozoa									
Asteroidea									
Anseropoda lobiancoi (Ludwig, 1897)	+							E	40-100
Anseropoda placenta (Pennant, 1777)	+	+	+	+	+	+		AM	5-600
Aquilonastra burtoni (Gray, 1840)					+		+	LM	8 - 10
Asterina gibbosa (Pennant, 1777)	+	+	+	+	+	+		AM	0-126
Asterina ocellifera (Gray, 1847)	+	+				+		AM	6-200
Asterina panceri (Gasco, 1870)	+	+	+	+	+			E	0-40
Asterina phylactica Emson & Crump, 1979	+		+			+		AM	0-2
Astropecten aranciacus (Linnaeus, 1758)	+	+	+	+	+	+		AM	1-110
Astropecten bispinosus (Otto, 1823)	+	+	+	+	+	+		AM	1-245
Astropecten irregularis pentacanthus (Delle Chiaje, 1825)	+	+	+	+	+	+		AM	1-1829
Astropecten irregularis irregularis (Pennant, 1777)	+					+		AM	3-900
Astropecten jonstoni (Delle Chiaje, 1825)	+	+	+	+	+			E	1 - 90
Astropecten platyacanthus (Philippi, 1837)	+	+	+	+	+			E	1 - 64
Astropecten spinulosus (Philippi, 1837)	+	+	+	+	+			E	1 - 55
Ceramaster grenadensis grenadensis (Perrier, 1881)	+	+		+		+		AM	200-2210
Chaetaster longipes (Retzius, 1805)	+	+	+	+	+	+		AM	30-1139
Coscinasterias tenuispina (Lamarck, 1816)	+	+	+	+	+	+		AM	0-79
Echinaster (Echinaster) sepositus sepositus (Retzius, 1783)	+	+	+	+	+	+		AM	0-250
Hacelia attenuata (Gray, 1840)	+	+	+	+	+	+		AM	1-190
Henricia cylindrella (Sladen, 1883)	+					+		AM	530-1400
Hymenodiscus coronata (G.O. Sars, 1871)	+	+	+	+	+	+		AM	100-2904
Luidia ciliaris (Philippi, 1837)	+	+	+	+	+	+		AM	1-400
Luidia sarsi sarsi Düben & Koren, in Düben, 1845	+	+	+	+	+	+		AM	10-1292
Mar*ginaster capreensis* (Gasco, 1876)	+			+		+		AM	49-2487
Marthasterias glacialis (Linnaeus, 1758)	+	+	+	+	+	+		AM	0-180
Nymphaster arenatus (Perrier, 1881)	+					+		AM	225-2790
Odontaster mediterraneus (Marenzeller, 1893)	+		+	+	+	+		AM	24-1804
Ophidiaster ophidianus (Lamarck, 1816)	+	+	+	+	+	+		AM	0-100
Peltaster placenta (J. Müller & Troschel, 1842)	+	+	+	+	+	+		AM	10-500
*Plutonaster bifron*s (W. Thompson, 1873)	+	+				+		AM	106-2525
Sclerasterias neglecta (Perrier, 1891)	+		+	+		+		AM	160-485

Sclerasterias richardi (Perrier, 1882)	+	+		+		+		AM	100-710
Tethyaster subinermis (Philippi, 1837)	+	+	+	+	+	+		AM	40-1400
Cryptosyringida									
Ophiuroidea									
Acrocnida brachiata (Montagu, 1804)	+	+	+	+	+	+		AM	5 - 40
Amphilepis norvegica (Ljungman, 1865)	+		+	+		+		AM	70-2940
Amphioplus (Lymanella) laevis (Lyman, 1874)					+		+	LM	0-40
Amphipholis squamata (Delle Chiaje, 1828)	+	+	+	+	+	+	+	C	0-740
Amphiura cherbonnieri Guille, 1972	+	+	+	+				E	12-130
Amphiura chiajei Forbes, 1843	+	+	+	+	+	+		AM	2-1200
Amphiura delamarei Cherbonnier, 1958	+							E	43-200
Amphiura filiformis (O. F. Müller, 1776)	+	+	+	+	+	+		AM	5-1200
Amphiura (Amphiura) grandisquama Lyman, 1869	+		+	+		+		AM	2-170
Amphiura incana Lyman, 1879	+					+		AM	18-58
Amphiura lacazei Guille, 1976	+	+		+				E	20-175
Amphiura mediterranea Lyman, 1882	+	+	+	+	+			E	0-90
Amphiura (Ophiopeltis) securigera (Düben & Koren, 1846)	+		+			+		AM	40-600
Astrospartus mediterraneus (Risso, 1826)	+	+	+	+		+	+	C	50-188
Cryptopelta brevispina (Ludwig, 1879)	+							E	20-145
Ophiacantha setosa (Retzius, 1805)	+	+	+	+		+		AM	5-1480
Ophiactis balli (W. Thompson, 1840)	+					+		AM	50-1765
Ophiactis macrolepidota Marktanner-Turneretscher, 1887					+		+	LM	0-200
Ophiactis savignyi (J. Müller & Troschel, 1842)	+			+	+	+	+	C	2-518
Ophiactis virens (M. Sars, 1857)	+	+	+		+	+		AM	0-90
Ophiocomina nigra (Abildgaard, in O. F. Müller, 1789)	+	+				+		AM	0-400
Ophioconis forbesi (Heller, 1863)	+	+	+	+		+		AM	20-200
Ophiocten abyssicolum Marenzeller, 1893	+	+	+	+		+		AM	40-620
Ophioderma longicaudum (Retzius, 1805)	+	+	+	+	+	+		AM	0-70
Ophiomyxa pentagona (Lamarck, 1816)	+	+	+	+	+	+		AM	0-260
Ophiopsila annulosa (M. Sars, 1857)	+	+	+	+		+		AM	10-100
Ophiopsila aranea Forbes, 1843	+	+	+	+	+	+		AM	9-185
Ophiopsila aff. guineensis Koehler, 1914	+		+			+		AM	27-175
Ophiothrix fragilis (Abildgaard, in O. F. Müller, 1789)	+	+	+	+	+	+		AM	0-1244
Ophiura albida Forbes, 1839	+	+	+	+	+	+		AM	2-850
Ophiura (Dictenophiura) carnea Lütken, 1858 ex M. Sars MS	+			+		+		AM	30-1260

Ophiura grubei Heller, 1863	+	+	+	+	+	+		AM	1-187
Ophiura ophiura (Linnaeus, 1758)	+	+	+	+	+	+		AM	0-685
Pectinura vestita Forbes, 1843				+				E	160
Echinozoa									
Echinoidea									
Arbacia lixula (Linnaeus, 1758)	+	+	+	+	+	+		AM	0-50
Arbaciella elegans Mortensen, 1910	+	+		+		+		AM	1 - 40
Brissopsis lyrifera (Forbes, 1841)	+	+	+	+	+	+		AM	4-1500
Brissopsis atlantica mediterranea Mortensen, 1913	+		+	+		+		AM	0 - 250
Brissus unicolor (Leske, 1778)	+	+	+	+	+	+		AM	0-250
Centrostephanus longispinus (Philippi, 1845)	+	+	+	+	+	+		AM	40-363
Cidaris cidaris (Linnaeus, 1758)	+	+	+	+	+	+		AM	20-2000
Diadema setosum (Leske, 1778)					+		+	LM?	15-18
Echinocardium cordatum (Pennant, 1777)	+	+	+	+	+	+	+	C	0-230
Echinocardium fenauxi Péquignat, 1963	+	+	+	+				E	20-125
Echinocardium flavescens (O. F. Müller, 1776)	+	+	+	+		+		AM	5-360
Echinocardium mediterraneum (Forbes, 1843)	+	+	+	+	+	+		AM	2 - 40
Echinocardium mortenseni Thiéry, 1909	+							E	10 -70
Echinocyamus pusillus (O. F. Müller, 1776)	+	+	+	+	+	+		AM	0-1250
Echinus acutus Lamarck, 1816	+	+	+	+	+	+		AM	3-1280
Echinus melo Lamarck, 1816	+	+	+	+		+		AM	20-1100
Eucidaris tribuloides (Lamarck, 1816)		+				+		AM	3 -10
Genocidaris maculata A. Agassiz, 1869	+	+	+	+	+	+		AM	12-500
Hemiaster expergitus Lovén, 1874	+			+		+		AM	400-3120
Neolampas rostellata A. Agassiz, 1869	+	+				+		AM	95-1260
Paracentrotus lividus (Lamarck, 1816)	+	+	+	+	+	+		AM	0-90
Plagiobrissus costai (Gasco, 1876)	+	+		+	+	+		AM	20-200
Psammechinus microtuberculatus (Blainville, 1825) Heller, 1868	+	+	+	+	+			E	1-685
Schizaster canaliferus (Lamarck, 1816)	+	+	+	+	+			E	9-105
Spatangus inermis Mortensen, 1913	+			+				E	20-350
Spatangus purpureus (O. F. Müller, 1776)	+	+	+	+	+	+		AM	15-969
Sphaerechinus granularis (Lamarck, 1816)	+	+	+	+	+	+		AM	2-120
Stylocidaris affinis (Philippi, 1845)	+	+	+	+	+	+		AM	5-1000
Holothuroidea									

Aslia lefevrei (Barrois, 1882)	+					+		AM	6 -20
Havelockia inermis (Heller, 1868)	+	+	+	+		+		AM	6-180
Hedingia mediterranea (Bartolini-Baldelli, 1914) Tortonese, 1965	+							E	800-1005
Holothuria (Panningothuria) forskali Delle Chiaje, 1823	+	+	+	+	+	+		AM	1-125
Holothuria (Holothuria) helleri Marenzeller, 1878	+	+	+	+				E	0-80
Holothuria (Thymiosycia) impatiens (Forskål, 1775)	+	+	+	+	+	+	+	C	0-30
Holothuria (Vaneyothuria) lentiginosa Marenzeller, 1892	+					+		AM	100-250
Holothuria (Holothuria) mammata Grube, 1840	+	+	+	+		+		AM	1 - 77
Holothuria (Roweothuria) poli Delle Chiaje, 1823	+	+	+	+	+	+		AM	0-250
Holothuria (Platyperona) sanctori Delle Chiaje, 1823	+	+	+	+	+	+		AM	2 - 30
Holothuria (Holothuria) tubulosa Gmelin, 1788	+	+	+	+	+	+		AM	0-123
Labidoplax buskii (McIntosh, 1866)	+	+	+	+		+		AM	10-540
Labidoplax digitata (Montagu, 1815)	+	+	+	+	+	+		AM	0-268
Labidoplax media Östergren, 1905	+		+	+		+		AM	5 - 95
Labidoplax thomsoni (Herapath, 1865)	+	+	+	+				E	7 - 70
Leptopentacta elongata (Düben & Koren, 1844)	+	+	+	+	+	+		AM	0-150
Leptopentacta tergestina (M. Sars, 1857)	+	+	+	+		+		AM	8-170
Leptosynapta decaria (Östergren, 1905)			+			+		AM	2 - 70
Leptosynapta galliennii (Herapath, 1865)		+	+			+		AM	5 - 30
Leptosynapta inhaerens (O. F. Müller, 1776)	+	+	+	+	+	+		AM	2-173
Leptosynapta makrankyra (Ludwig, 1898)	+	+	+	+	+			E	1 - 36
Leptosynapta minuta (Becher, 1906)	+	+		+		+		AM	3 - 50
Meseres occultatus (Marenzeller, 1893)	+	+		+		+	+	C	232-5300
Mesothuria intestinalis (Ascanius, 1805) Östergren, 1896	+	+	+	+	+	+		AM	18-4255
Mesothuria verrilli (Théel, 1886)	+					+	+	C	280-2520
Molpadia musculus Risso, 1826	+	+				+		AM	25-2098
Myriotrochus geminiradiatus Salvini-Plawen, 1972			+					E	70-225
Neocnus incubans Cherbonnier, 1972	+							E	1-?
Neocucumis atlantica (Ludwig & Heding, 1935)	+					+		AM	50-300
Neocucumis marioni (Marenzeller, 1878)	+		+	+		+		AM	25-560
Ocnus grubei (Marenzeller, 1874)	+		+		+			E	3 - 40
Ocnus koellikeri (Semper, 1868)	+			+		+		AM	50-685
Ocnus lacteus (Forbes & Goodsir, 1839)	+		+			+		AM	0-100
Ocnus petiti (Cherbonnier, 1958)	+							E	30-35
Ocnus planci (Brandt, 1835)	+	+	+	+		+		AM	5-250

Ocnus syracusanus (Grube, 1840) Panning, 1949	+	+	+	+	+			E	7-100
Panningia hyndmanni (W. Thompson, 1840)	+		+	+		+		AM	7-1152
Parastichopus regalis (Cuvier, 1817)	+	+	+	+	+	+		AM	5-1200
Pawsonia saxicola (Brady & Robertson, 1871)	+					+		AM	0-130
Penilpidia ludwigi (Marenzeller, 1893)	+	+		+	+			E	755-4766
Phyllophorus drachi Cherbonnier & Guille, 1968	+							E	?-90
Phyllophorus granulatus (Grube, 1840)	+	+		+				E	3 - 15
Phyllophorus (Phyllophorus) urna Grube, 1840	+		+	+				E	2-150
Prototrochus meridionalis (Salvini-Plawen, 1977)	+							E	?-540
Pseudothyone raphanus (Düben & Koren, 1846)	+		+			+		AM	7-1050
Pseudothyone sculponea Cherbonnier, 1958	+		+					E	25-120
Stereoderma kirchsbergii (Heller, 1868) Panning, 1949	+	+	+	+		+		AM	30-80
Synaptula reciprocans (Forskål, 1775)				+	+		+	LM	0-20
Thyone cherbonnieri Reys, 1960	+		+	+				E	3 - 63
Thyone fusus mediterranea Madsen, 1941	+	+	+	+	+			E	20-150
Thyone gadeana R. Perrier, 1902	+					+		AM	562-1045
Trochodota furcipraedita Salvini-Plawen, 1972	+							E	4 - 5
Trochodota venusta (Semon, 1887)	+	+						E	1 - 13
Ypsilothuria bitentaculata (Ludwig, 1893)	+					+		AM	200-4000
Total number of species in the Mediterranean Sea: **154**	**144**	**98**	**101**	**107**	**73**				

Figure S4. Distribution of the known species of echinoderms in the main geographical areas of the Mediterranean

The bars present real numbers (parentheses) and percentages of the total Mediterranean species. WM: Western Mediterranean; CM: Central Mediterranean; AD: Adriatic Sea; AS: Aegean Sea; LB: Levantine Basin.

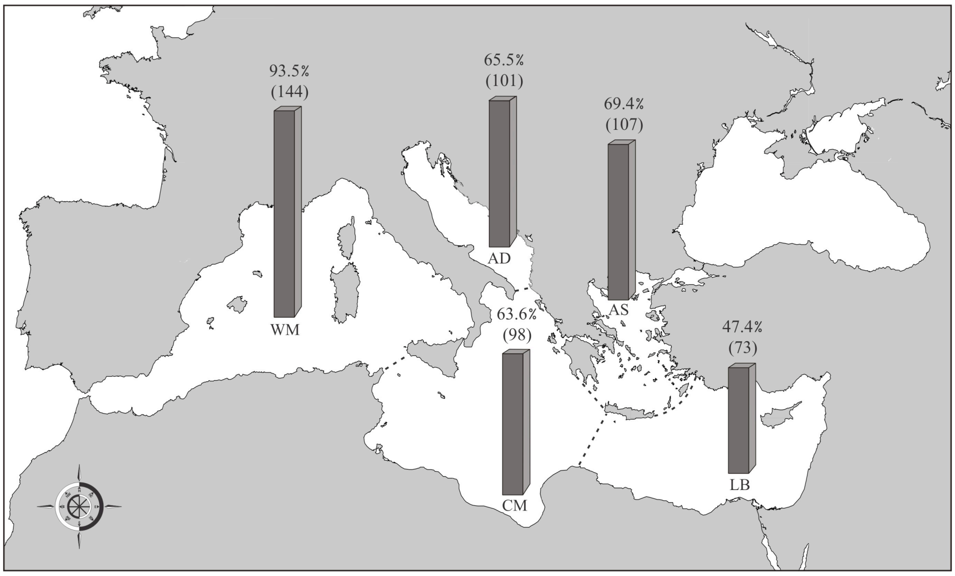
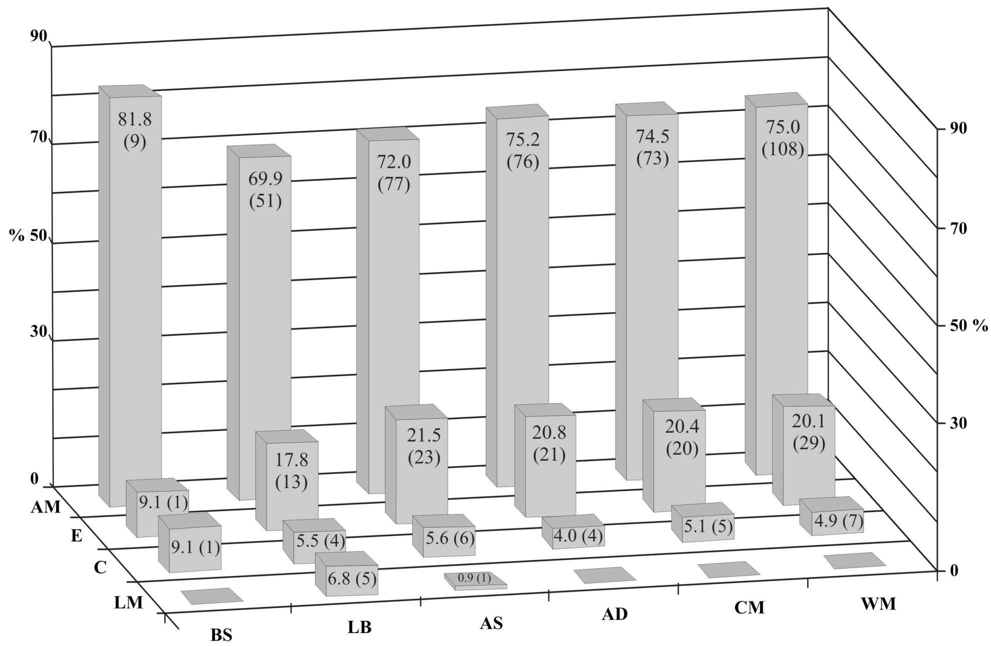


Figure S5. Percentages of the four zoogeographical categories in the Mediterranean territorial areas and the Black Sea

Calculations were made for the total number of species known from each area (species numbers in parentheses). AM: Atlanto-Mediterranean; E: possibly endemic; C: cosmopolitan; LM: Lessepsian migrant. Other abbreviations as in Figure S4.



Sipunculans (by José Ignacio Saiz-Salinas)

Table S24. Checklist of the Phylum Sipuncula

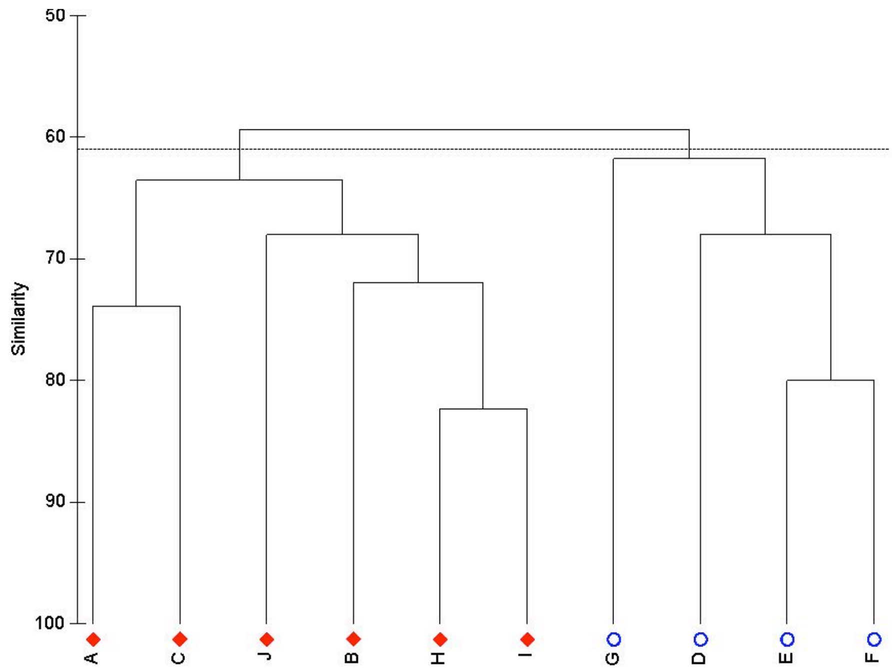
Asterisks indicate unpublished identifications from the author J.I. Saiz. *N.* sp. cf. *flagriferum* (43º02.83'N; 9º41.06'E; depth: 454 m). *P. turnerae* (41º07'N; 2º25'E; depth: 1100 m).

Family Sipunculidae Rafinesque, 1814
Genus *Sipunculus* Linnaeus, 1766
Sipunculus (Sipunculus) norvegicus Danielssen, 1869
Sipunculus (Sipunculus) nudus Linnaeus, 1766
Family Golfingiidae Stephen & Edmonds, 1972
Genus *Golfingia* Lankester, 1885
Golfingia (Golfingia) elongata (Keferstein, 1862)
Golfingia (Golfingia) margaritacea (Sars, 1851)
Golfingia (Golfingia) vulgaris vulgaris (De Blainville, 1827)
Golfingia (Golfingia) vulgaris antonellae Murina, 2002
Genus *Nephasoma* Pergament, 1946
Nephasoma (Nephasoma) abyssorum abyssorum (Koren & Danielssen, 1876)
Nephasoma (Nephasoma) capilleforme (Murina, 1973)
Nephasoma (Nephasoma) confusum (Sluiter, 1902)
Nephasoma (Nephasoma) constricticervix (Cutler, 1969)
Nephasoma (Nephasoma) constrictum (Southern, 1913)
Nephasoma (Nephasoma) diaphanes diaphanes (Gerould, 1913)
Nephasoma (Nephasoma) diaphanes corrugatum Cutler & Cutler, 1986
* *Nephasoma (Nephasoma)* sp. cf. *flagriferum* (Selenka, 1885)
Nephasoma (Nephasoma) lilljeborgi (Danielssen & Koren, 1880)
Nephasoma (Nephasoma) rimicola (Gibbs, 1973)
Genus *Thysanocardia* (Fisher, 1950)
Thysanocardia catharinae (Grube, 1868)
Thysanocardia procera (Möbius, 1875)
Family Phascolionidae Cutler & Gibbs, 1985
Genus *Phascolion* Théel, 1875
Phascolion (Phascolion) strombus strombus (Montagu, 1804)
Phascolion (Isomya) convestitum Sluiter, 1902
Phascolion (Isomya) tuberculosum Théel, 1875
Genus *Onchnesoma* Koren & Danielssen, 1876
Onchnesoma squamatum squamatum (Koren & Danielssen, 1876)
Onchnesoma steenstrupii steenstrupii Koren & Danielssen, 1876
Family Phascolosomatidae Stephen & Edmonds, 1972
Genus *Phascolosoma* Leuckart, 1828
Phascolosoma (Phascolosoma) agassizii agassizii Keferstein, 1866
Phascolosoma (Phascolosoma) granulatum Leuckart, 1828
Phascolosoma (Phascolosoma) perlucens Baird, 1868
Phascolosoma (Phascolosoma) scolops (Selenka & De Man, 1883)
Phascolosoma (Phascolosoma) stephensoni (Stephen, 1942)

* *Phascolosoma (Phascolosoma) turnerae* Rice, 1985
Genus *Apionsoma* Sluiter, 1902
Apionsoma (Apionsoma) misakianum (Ikeda, 1904)
Apionsoma (Apionsoma) murinae murinae (Cutler, 1969)
Apionsoma (Apionsoma) murinae bilobatae (Cutler, 1969)
Apionsoma (Apionsoma) trichocephalus Sluiter, 1902
Family Aspidosiphonidae De Quatrefages, 1865
Genus *Aspidosiphon* Diesing, 1851
Aspidosiphon (Aspidosiphon) elegans (De Chamisso & Eysenhardt, 1821)
Aspidosiphon (Aspidosiphon) misakiensis Ikeda, 1904
Aspidosiphon (Aspidosiphon) muelleri muelleri Diesing, 1851
Aspidosiphon (Aspidosiphon) muelleri kovalevskii Murina, 1964
Aspidosiphon (Akrikos) mexicanus (Murina, 1967)

Figure S6. Cluster analysis of sipunculan species of the Mediterranean Sea by biogeographic sectors as proposed by Bianchi and Morri [1]

A: Alboran Sea, B: Algeria and southern Spain, C: Balearic Sea to Tyrrhenian Sea, D: Gulf of Lyon and Ligurian Sea, E: North Adriatic, F: Central Adriatic, G: South Adriatic, H: North Aegean, I: Ionian Sea and South Aegean, J: Gulf of Gabes to Levantine Sea.



References

1. Bianchi CN, Morri C (2000) Marine biodiversity of the Mediterranean Sea: Situation, problems and prospects for future research. Marine Pollution Bulletin 40: 367-376.

Meiobenthos (by Nikolaos Lampadariou)

Text S5. References for Mediterranean Nematodes

Allgen CA (1942) Die freilebenden Nematoden des mittelmeeres. Eine zusammenstellung sämtlicher aus dem Mittelmeer bekannten Nematoden. Zool. Jb. (Systematik) Band 76, Heft 1/2: 1-102.

Balsamo M, Fregni E, Tongiorgi P (1994) Marine and freshwater Gastrotricha from the Island of Montecristo (Tuscan Archipelago, Italy), with the description of new species. Italian Journal of Zoology 61: 217–227.

Balsamo M, Fregni E, Tongiorgi P (1996) Marine Gastrotricha from Sicily with the description of a new species of Chaetonotus. Italian Journal of Zoology 63: 173–183.

Betouhim-El T, Kahan D (1972) Tisbe pori n. sp.(Copepoda: Harpacticoida) from the Mediterranean coast of Israel and its cultivation in the laboratory. Marine Biology 16: 201–209.

Bodin P (1977) Les peuplements de copépodes harpacticoides (Crustacea) des sédiments meubles de la zone intertidale des côtes charentaises (Atlantique). Mémoires du Museum Nationale d' Histoire Naturelle serie A 104: 1-120.

Boucher G (1970a) Deux especes nouvelles de Nematodes de la vase terrigene cotiere de Banyuls-Sur-Mer. Bulletin du Museum National d'Histoire Naturelle, Serie 2 42: 975-983.

Boucher G (1970b) Paramesacanthion catellus n. sp. nouvelle espece d' Enoplidae (Nematode) de la vase Terrigene cotiere de Banyuls-Sur-Mer. Bulletin du Museum National d'Histoire Naturelle, Serie 2 42: 570-576.

Boucher G (1971) Deux especes nouvelles de Monhysterida (Nematodes) de la vase terrigene cotiere de Banyuls-Sur-Mer. Extrait du Bulletin de la Societe Zoologique de France 96: 557-562.

Boucher G (1972a) Redescription de neuf especes de Nematodes libres marins de la baie de Banyuls-sur-mer. Bulletin du Museum National d'Histoire Naturelle, Serie 3 40: 449-474.

Boucher G (1972b) Premieres donnees ecologiques sur les nematodes libres marins d'une station de vase cotiere de Banyuls. Vie et Milieu 23: 69-100.

Boucher G (1972c) Distribution quantitative et qualitative des nematodes d'une station de vase terrigene cotiere de Banyuls-Sur-Mer. Cahiers de Biologie Marine 13: 457-474.

Boucher G, de Bovée F (1971) Trochamus carinatus gen. et sp. n. et Adeuchromadora megaphida gen. et sp. n. Chromadoridae (Nematoda) a dix soies cephaliques de la vase terrigene cotiere de Banyuls-Sur-Mer. Vie et Milieu 22: 231-242.

Boucher G, de Bovée F (1972) Trochamus carinatus gen. et sp. n. et Adeuchromadora megamphida gen. et sp. n. Chromadoridae (Nematoda) a dix soies cephaliques de la vase terrigene cotiere de Banyuls-sur-Mer. Vie et Milieu 22: 231-242.

Buchholz TG, Lampadariou N (2002) Changes in composition and diversity of the malia bay nematode community (crete, greece) in relationship to sediment parameters. In: Bright M, Dworschak PC, Stachowitsch M, editors. The vienna school of marine biology: a tribute to jorg ott. Facultas Universitatsverlag, Wien. pp. 33-52.

Cimerman F, Langer M (1991) Mediterranean foraminifera: Umetnosti, Akademia Scientiarum et Artium Slovenica. 118 p.

Cottarelli V (1988-89) A new harpacticoid (Crustacea, Copepoda) from the island of Maddalena (Sardinia): Parastenocaris ima n. sp.). Ann. Mus.Civ. Stor. Nat. Giacomo Doria 88: 285-296.

Cottarelli V, Forniz C, Bascherini S (1992) Benthic and interstitial Laophontidae (Copepoda, Harpacticoida) from Ischia, Naples, Italy, with the description of Echinolaophonte veniliae n. sp. Crustaceana 62: 283-299.

Danovaro R, Gambi C (2002) Biodiversity and trophic structure of nematode assemblages in seagrass systems: evidence for a coupling with changes in food availability. Marine Biology 141: 667-677.

de Bovée F (1988) Dynamique des peuplements meiobenthiques sublittoraux. II. Le peuplement des nematodes libres marins. Vie et Milieu 38: 115-122.

de Leonardis C, Sandulli R, Vanaverbeke J, Vincx M, de Zio S (2008) Meiofauna and nematode diversity in some Mediterranean subtidal areas of the Adriatic and Ionian Sea. Scientia Marina 72: 5-13.

Galassi DP (1997) Little known harpacticoid copepods from Italy, and description of Parastenocaris crenobia n. sp. (Copepoda, harpacticoida). Crustaceana 70: 694 – 709.

Gerlach SA, Riemann F (1973) The Bremerhaven checklist of aquatic nematodes. A catalogue of Nematoda Adenophorea excluding the Dorylaimida. Veröffentlichungen des Instituts für Meeresforschung in Bremerhaven, Supplement 4, Heft 1. 1-404 p.

Gerlach SA, Riemann F (1974) The Bremerhaven checklist of aquatic nematodes. A catalogue of Nematoda Adenophorea excluding the Dorylaimida. Veröffentlichungen des Instituts für Meeresforschung in Bremerhaven, Supplement 4, Heft 2. 405-736 p.

Gheskiere T, Vincx M, Urban-Malinga B, Rossano C, Scapini F et al. (2005) Nematodes from wave-dominated sandy beaches: diversity, zonation patterns and testing of the isocommunities concept. Estuarine and Coastal Marine Science 62: 365-375.

Hicks GRF, Coull BC (1983) The ecology of marine meiobenthic harpacticoid copepods. Oceanography and Marine Biology. An Annual Review 21: 67-175.

Hofrichter R (2002) El Mar Mediterráneo. Fauna, Flora, Ecología. II/1. Guía Sistemática y de Identificación. Barcelona: Ediciones Omega. 849 p.

Hummon WD (2001) Global database for marine Gastrotricha on CD (hummon@ohio.edu). Ohio University Zoological Collections, Athens.

Hummon WD, Roidou E (1995) Marine Gastrotricha of Greece. A preliminary report. Biologia Gallo-Helenica 22: 279-289.

Hummon WD, Todaro MA, Balsamo M, Tongiorgi P (1990) Effects of pollution on marine Gastrotricha in the Northwestern Adriatic Sea. Marine Pollution Bulletin 21: 241-243.

Hummon WD, Todaro MA, Balsamo M, Tongiorgi P (1996) Italian marine Gastrotricha: III. Four new pentancrous species of the genus Tetranchyroderma (Macrodasyida, Thaumastodermatidae). Italian Journal of Zoology 63: 73–79.

Hummon WD, Todaro MA, Tongiorgi P (1993) Italian marine Gastrotricha. II: One new genus and ten new species of Macrodasyida. Bollettino di Zoologia 60: 109–127.

Hummon WD, Todaro MA, Tongiorgi P, Balsamo M (1998) Italian marine Gastrotricha: V. Four new and one redescribed species of Macrodasyida in the Dactylopodolidae and Thaumastodermatidae. Italian Journal of Zoology 65: 109–119.

Hyams O, Almogi-Labin A, Benjaminia C (2002) Larger foraminifera of the southeastern Mediterranean shallow continental shelf off Israel. Israel Journal of Earth Sciences 51: 169-179.

Jaume D (1997) First record of Superornatiremidae (Copepoda: Harpacticoida) from Mediterranean waters, with description of three new species from Balearic anchihaline caves. Scientia Marina 61: 131–152.

Kahan D, Bar-El T (1982) Schizopera elatensis n. sp. (Copepoda, Harpacticoida) from Elat, Israel. Crustaceana 42: 308-314.

Keller M (1986) Structure des peuplements meiobenthiques dans le secteur pollue par le rejet en mer de l'egout de Marseille. Ann. Inst. oceanogr. Paris 62: 13-36.

Lampadariou N (1993) Meiobenthos of the littoral zone from the Gulf of Heraklion with a special emphasis on nematodes. MSc Thesis, Msc thesis, biology department, University of Crete, Heraklion, 62 pages.

Lampadariou N (2001) Study of the meiobenthic ecosystem of the Aegean Sea with a special emphasis on nematodes. PhD Thesis, Biology department, University of Crete, Heraklion, 216 pages.

Lampadariou N, Austen MC, Robertson N, Vlachonis G (1997) Analysis of meiobenthic community structure in relation to pollution and disturbance in Iraklion harbour, Greece. Vie et Milieu 47: 9-24.

Marcotte BM, Coull BC (1974) Polution, diversity and meiobenthic communities in the North Adriatic (Bay of Piran, Yugoslavia). Vie et Milieu 24: 281-300.

Milker Y, Schmiedl G, Betzler C, Römer M, Jaramillo-Vogel D et al. (2009) Distribution of recent benthic foraminifera in shelf carbonate environments of the Western Mediterranean Sea. Marine Micropaleontology 73: 207-225.

Mirto S, La Rosa T, Gambi C, Danovaro R, Mazzola A (2002) Nematode community response to fish-farm impact in the western Mediterranean. Environmental Pollution 116: 203-214.

Mitwally H, Montagna PA (2001) Egyptian interstitial Copepoda Harpacticoida with the description of two new species and one new subspecies. Crustaceana : 513–544.

Mojtahid M, Jorissen F, Lansard B, Fontanier C, Bombled B et al. (2009) Spatial distribution of live benthic foraminifera in the Rhône prodelta: Faunal response to a continental–marine organic matter gradient. Marine Micropaleontology 70(3-4): 177-200.

Moodley L, Heip CHR, Middelburg JJ (1998) Benthic activity in sediments of the northwestern Adriatic Sea: sediment oxygen consumption, macro-and meiofauna dynamics. Journal of Sea Research 40(3-4): 263-280.

Parker F (1958) Eastern Mediterranean foraminifera. Swedish Deep-Sea Expedition 8: 219-283.

Rieder K (2001) Spatial and temporal variabilities of nematodes in the eulittoral zone of a sandy beach on northern Crete, Greece. MSc Thesis, Msc thesis, faculty of biological sciences, University of Rostock, Rostock, 65 pages.

Robertson N, Otegui A, Austen M, Lampadariou N (1994) Nematode community response to sediment copper contamination in an experimental microcosm system. Institute of Marine Biology of Crete, Heraklion. 1-27 pp.

Samir AM, Abdou HF, Zazou SM, El-Menhawey WH (2003) Cluster analysis of recent benthic foraminifera from the northwestern Mediterranean coast of Egypt. Revue de Micropaléontologie 46(2): 111-130.

Schuurmans Stekhoven Jr JH (1942) The free living nematodes of the Mediterranean. II. The Camargue. Zool. Mededeel 23: 217-228.

Schuurmans Stekhoven Jr JH (1950) The freeliving marine nemas of the Mediterranean. I. The Bay of Villefranche. Mémoires Institut Royal des Sciences Naturelles de Belgique 37: 1-220.

Sevastou K (2005) On the ecology of meiofauna of the sandy shores of Crete. Distribution patterns of meiobenthic copepods over space and time. PhD Thesis, Biology department, University of Crete, Heraklion, 233 pages.

Soyer J (1970) Bionomie benthique du plateau continental de la côte catalane française. III. Les peuplements de Copepodes harpacticoides (Crustacea). Vie et Milieu 21: 337–511.

Steuer A (1943) Variabilit\ät und Verbreitung einiger Copepoda Harpacticoida der Gattungen Ameira und Mesochra aus dem \östlichen Mittelmeer (Alexandrien). Thalassia 6: 1–19.

Stobbe K (2001) Temporal and spatial variabilities of harpacticoid copepods in the eulittoral zone of a sandy beach on Crete, Greece. MSc Thesis, Msc thesis, faculty of biological sciences, University of Rostock, Rostock, 63 pages.

Thiel H (1983) Meiobenthos and nanobenthos of the deep-sea. In: Rowe G, editor. Deep-sea biology. Wiley, New York. pp. 167-230.

Thiermann F, Akoumianaki I, Hughes JA, Giere O (1997) Benthic fauna of a shallow-water gaseohydrothermal vent area in the Aegean Sea (Milos, Greece). Marine Biology 128: 149-159.

Todaro MA (1992) Contribution to the study of the Mediterranean meiofauna: Gastrotricha from the Island of Ponza, Italy. Bollettino di Zoologia 59: 321–333.

Travizi A, Vidakovic J (1998) Nematofauna in the Adriatic Sea: review and check-list of free-living nematode species. Helgoland Marine Research 51: 503-519.

Vitiello P (1969a) Linhomoeidae (Nematoda) des vases profondes du golfe du Lion. Tethys 1: 493-526.

Vitiello P (1969b) Hopperia, nouveau genre de Nematode libre marin (Comesomatidae). Tethys 1: 485-491.

Vitiello P (1970a) Nematodes libres marins des vases profondes du golfe du Lion. III. Monhysterida, Araeolaimida, Desmodorida. Tethys 2: 647-690.

Vitiello P (1970b) Nematodes libres marins des vases profondes du golfe du Lion. II. Chromadorida. Tethys 2: 449-500.

Vitiello P (1970c) Nematodes libres marins des vases profondes du golfe du Lion. 1. Enoplida. Tethys 2: 139-210.

Vitiello P (1974) Marine nematodes associations in the muddy bottoms of Provence. I. Muddy sediments in sheltered areas and terrigenous coastal muds. Annales de l' Institut Océanographique Masson 50: 145-172.

Wieser W (1954) Untersuchungen über die algenbewohnende Mikrofauna mariner Hartböden III. Zur Systematik der freilebenden Nematoden des Mittelmeeres. Mit einer ökologischen Untersuchung über die Beziehung zwischen Nematoden-besiedlung und Sedimentreichtum des Habitats . Hydrobiologia 6: 144-217.

Wieser W (1955) Eine sammlung mariner nematoden aus Piraeus (Griechenland). Osterreichische Zoologische Zeitschrift 6: 597-631.

Wieser W (1959) Zur Ökologie der Fauna mariner Algen mit besonderer Berücksichtigung-des Mittelmeeres. International Revue der Gesamten Hydrobiologie 44: 137-180.

Willems KA, Claeys D, Fiers F (1987) Syrticola mediterraneus n. sp., a harpacticoid copepod from the Bay of Calvi, Corsica. Hydrobiologia 153: 71-78.

Zenetos A, Meriç E, Verlaque M, Galli P, Boudouresque CF et al. (2008) Additions to the annotated list of marine alien biota in the Mediterranean with special emphasis on Foraminifera and Parasites. Mediterranean Marine Science 9(1): 119-165.

Ascidians (by Xavier Turon)

Table S25. Check-list of the Class Ascidiacea (Subphylum Uranochordata, Phylum Cordata)

S/C: solitary or colonial species. Distribution: M, Mediterranean (both basins); WM, western Mediterranean; EM, eastern Mediterranean; AM, Atlantic-Mediterranean (present in both Mediterranean basins); AWM, Atlantic and western Mediterranean; AEM, Atlantic and eastern Mediterranean; C, circumtropical or cosmopolitan; L, possible Lessepsian migrant, present at least in Red Sea and eastern Mediterranean. Species marked with asterisk are possible recent introductions in the Mediterranean.

Species	Authority	S/C	M	WM	EM	AM	AWM	AEM	C	L
O. Enterogona										
SO. Aplousobranchiata										
F. Clavelinidae										
Clavelina dellavallei	(Zirpolo 1925)	C	x							
Clavelina gemmae	Turon 2005	C		x						
Clavelina lepadiformis	(Müller 1776)	C				x				
Clavelina phlegrea	Salfi 1927	C	x							
Clavelina sabbadini	Brunetti 1987	C	x							
Pycnoclavella aurilucens	Garstang 1891	C					x			
Pycnoclavella brava	Pérez-Portela et al 2007	C		x						
Pycnoclavella communis	Pérez-Portela et al 2007	C					x			
Pycnoclavella nana	(Lahille 1890)	C			x					
Pycnoclavella neapolitana	(Julin 1904)	C		x						
Pycnoclavella taureanensis	Brunetti 1991	C		x						
F. Polycitoridae										
Archidistoma aggregatum	Garstang 1891	C							x	
Cystodytes dellechiajei	(Della Valle 1877)	C							x	
Cystodytes durus	Von Drasche 1883	C			x					
Cystodytes philippinensis *	Herdman 1886	C							x	
Cystodytes tunisiensis	Méliane 2002	C			x					
Eudistoma banyulensis	(Brément 1912)	C	x							
Eudistoma costai	(Della Valle 1877)	C	x							
Eudistoma magnum	Médioni 1968	C	x							
Eudistoma mucosum	(Von Drasche 1883)	C	x							
Eudistoma paesslerioides	(Michaelsen 1914)	C							x	
Eudistoma planum	Pérès 1948	C				x				
Eudistoma plumbeum	(Della Valle 1877)	C	x							
Eudistoma posidoniarum	(Daumézon 1908)	C		x						
Eudistoma rubrum	(Savigny 1816)	C	x							
Eudistoma tridentatum	(Heiden 1894)	C	x							
Polycitor adriaticus	(Von Drasche 1883)	C				x				
Polycitor crystallinus	(Renier 1804)	C				x				
Rhombifera caerulea	Pérès 1956	C			x					
F. Holozoidae										

Distaplia bermudensis *	Van Name 1902	C				x			
Distaplia lubrica	Von Drasche 1883	C			x				
Distaplia lucillae	Mastrototaro & Brunetti 2006	C			x				
Distaplia magnilarva	(Della Valle 1881)	C				x			
Distaplia rosea	Della Valle 1881	C				x			
F. Didemnidae									
Didemnum amourouxi	Lafargue 1976	C	x						
Didemnum candidum	Savigny 1816	C							x
Didemnum coccineum	(Von Drasche 1883)	C	x						
Didemnum commune	(Della Valle 1877)	C	x						
Didemnum coriaceum	(Von Drasche 1883)	C							x
Didemnum drachi	Lafargue 1975	C				x			
Didemnum fulgens	(Milne Edwards 1841)	C				x			
Didemnum granulosum	(Von Drasche 1883)	C				x			
Didemnum lahillei	(Hartmeyer 1909)	C				x			
Didemnum maculosum	(Milne Edwards 1841)	C				x			
Didemnum obscurum	F Monniot 1969	C					x		
Didemnum perspicuum	Giard 1873	C					x		
Didemnum peyrefittense	Brément 1913	C	x						
Didemnum protectum	(Daumézon 1908)	C					x		
Didemnum pseudofulgens	Médioni 1970	C				x			
Diplosoma carnosum	Von Drasche 1883	C	x						
Diplosoma listerianum	(Milne Edwards 1841)	C							x
Diplosoma spongiforme	(Giard 1872)	C				x			
Lissoclinum perforatum	(Giard 1872)	C				x			
Lissoclinum weigelei	Lafargue 1968	C				x			
Polysyncraton amethysteum	(Van Name 1902)	C						x	
Polysyncraton bilobatum	Lafargue 1968	C				x			
Polysyncraton canetense	Brément 1913	C				x			
Polysyncraton haranti	Lafargue 1975	C	x						
Polysyncraton lacazei	(Giard, 1872)	C				x			
Trididemnum cereum	(Giard 1872)	C							x
Tridemnum duci	Harant 1930	C		x					
Trididemnum fallax	Lahille 1887	C				x			
Trididemnum graphicum	Lahille 1890	C				x			
Trididemnum inarmatum	(Von Drasche 1883)	C				x			
Trididemnum pedunculatum	Lafargue et al 1993	C		x					
Trididemnum savignyi	(Herdman 1886)	C							x
F. Polyclinidae									
Aplidium aegeaensis	(Hartmeyer 1904)	C			x				
Aplidium albicans	(Milne Edwards 1841)	C				x			
Aplidium asperum	Von Drasche 1883	C				x			
Aplidium blochmanni	(Heiden 1894)	C		x					
Aplidium brementi	(Harant 1925)	C	x						
Aplidum conicum	(Olivi 1792)	C				x			
Aplidium densum	(Giard 1872)	C				x			
Aplidium draschei	Brunetti 2007	C			x				
Aplidium duboscqui	(Harant 1927)	C	x						
Aplidium elegans	(Giard 1872)	C				x			
Aplidium fuscum	(Von Drasche 1883)	C	x						

Aplidium gelatinosum	Médioni 1970	C		x					
Aplidium gibbulosum	(Savigny 1816)	C		x					
Aplidium griseum	Lahille 1890	C	x						
Aplidium haouarianum	(Pérès 1956)	C	x						
Aplidium hyalinum	(Pérès 1956)	C	x						
Aplidium inversum	(Pèrès 1959)	C		x					
Aplidium lobatum *	Savigny 1816	C							x
Aplidium mediterraneum	(Hartmeyer 1909)	C				x			
Aplidium nema	F Monniot & C Monniot 1975	C			x				
Aplidium nordmanni	(Milne Edwards 1841)	C				x			
Aplidium ocellatum	C Monniot & F Monniot 1987	C		x					
Aplidium pallidum	(Verrill 1871)	C				x			
Aplidium proliferum	(Milne Edwards 1841)	C							x
Aplidium profundum	(Sluiter 1909)	C							x
Aplidium pseudolobatum	(Pèrès 1956)	C				x			
Aplidium punctum	(Giard, 1873)	C					x		
Aplidium tabarquensis	Ramos 1988	C	x						
Aplidium turbinatum	(Savigny 1816)	C				x			
Aplidiopsis vitreum	Lahille 1887	C	x						
Morchellium argus	(Milne Edwards 1841)	C					x		
Morchellium polytrema	(C Monniot & F Monniot 1983)	C		x					
Polyclinella azemai	Harant 1930	C	x						
Polyclinum aurantium	Milne Edwards 1841	C				x			
Sidneioides ivicense	Pérès 1957	C		x					
Synoicum blochmanni	(Heiden 1894)	C					x		
Synoicum calypsonis	(Pérès 1956)	C			x				
Synoicum duboscqui	(Harant 1927)	C				x			
Synoicum lacazei	(Pérès 1957)	C		x					
Synoicum pulmonaria	(Ellis & Solander 1786)	C							x
Synoicum vitreum	(Lahille 1890)	C		x					
F. Pseudodistomidae									
Pseudodistoma arnbacki	Pérès 1959	C		x					
Pseudodistoma crucigaster	Gaill 1972	C		x					
Pseudodistoma cyrnusense	Pérès 1952	C				x			
Pseudodistoma obscurum	Pérès 1959	C				x			
Pseudodistoma valeriae	Brunetti 2009	C			x				
SO. Phlebobranchiata									
F. Cionidae									
Ciona edwardsi	(Roule 1884)	S					x		
Ciona intestinalis	Linné 1767	S							x
Ciona roulei	Lahille 1887	S	x						
Ciona savignyi	Herdman 1882	S							x
Diazona violacea	Savigny 1816	C				x			
Pseudodiazona abyssa	C Monniot & F Monniot 1974	C						x	
Rhopalaea hartmeyeri	(Salfi 1927)	S	x						
Rhopalaea neapolitana	Philippi 1843	S				x			
Rhopalaea orientalis	Pérès 1958	S	x						
F. Corellidae									
Abyssascidia millari	F Monniot 1971	S					x		
Corella parallelogramma	(Müller 1776)	S				x			

Rhodosoma callense	(Lacaze-Duthiers 1865)	S	x						
Rhodosoma turcicum *	(Savigny 1816)	S							x
Rhodosoma verecundum	Ehrenberg 1828	S						x	
Xenobranchion tenue	C Monniot & F Monniot 1975	S			x				
F. Agneziidae									
Agnezia translucida	C Monniot 1965	S				x			
F. Octacnemidae									
Dicopia antirrhinum	C Monniot 1972	S					x		
F. Perophoridae									
Ecteinascidia herdmanni	(Lahille 1887)	C				x			
Ecteinascidia thurstoni *	(Herdman 1890)	C							x
Ecteinascidia turbinata	Herdman 1881	C						x	
Ecteinascidia styeloides *	(Traustedt 1882)	C						x	
Perophora listeri	Wiegmann 1835	C			x				
Perophora multiclathrata *	(Sluiter 1904)	C						x	
Perophora viridis	Verrill 1871	C						x	
F. Ascidiidae									
Ascidia cannelata *	Oken 1820	S							x
Ascidia colleta	C Monniot & F Monniot 1970	S	x						
Ascidia conchilega	Müller 1842	S			x				
Ascidia corelloides	Van Name	S				x			
Ascidia correi	C Monniot 1970	S				x			
Ascidia involuta	Heller 1875	S			x				
Ascidia malaca	(Traustedt 1883)	S						x	
Ascidia mentula	Müller 1776	S			x				
Ascidia muricata	Heller 1874	S			x				
Ascidia salvatoris	(Traustedt 1883)	S	x						
Ascidia virginea	Müller 1776	S			x				
Ascidiella aspersa	(Müller 1776)	S						x	
Ascidiella scabra	(Müller 1776)	S			x				
Phallusia fumigata	(Grübe 1864)	S			x				
Phallusia ingeria	Traustedt 1883	S			x				
Phallusia mammillata	(Cuvier 1815)	S			x				
Phallusia nigra *	Savigny 1816	S							x
O. Pleurogona									
SO. Stolidobranchiata									
F. Styelidae									
Botrylloides anceps	(Herdman 1891)	S							x
Botrylloides israeliense	Brunetti 2009	S		x					
Botrylloides leachi	(Savigny 1816)	C						x	
Botrylloides niger *	(Herdman 1886)	C						x	
Botrylloides violaceus *	Oka 1927	C						x	
Botryllus schlosseri	(Pallas 1776)	C						x	
Distomus hupferi	(Michaelsen 1904)	C			x				
Distomus variolosus	Gaertner 1774	C			x				
Eusynstyela hartmeyeri *	Michaelsen 1904	C							x
Polyandrocarpa zorritensis *	(Van Name 1931)	C						x	
Polycarpa caudata	C Monniot & F Monniot 1974	S	x						
Polycarpa comata	(Alder 1863)	S				x			
Polycarpa discoidea	Heller 1877	S			x				

Polycarpa fibrosa	(Stimpson 1852)	S				x				
Polycarpa gracilis	Heller 1877	S				x				
Polycarpa itera	C Monniot & F Monniot 1977	S					x			
Polycarpa kornogi	Glémarec & C Monniot 1966	S				x				
Polycarpa mamillaris	(Gaertner 1774)	S					x			
Polycarpa muelleri	Brunetti 2007	S				x				
Polycarpa pentarhiza	F Monniot 1965	S		x						
Polycarpa pomaria	(Savigny 1816)	S				x				
Polycarpa pusilla	Herdman 1884	S					x			
Polycarpa tenera	Lacaze-Duthiers & Délage 1892	S					x			
Polycarpa violacea	(Alder 1863)	S				x				
Psammostyela delamarei	Weinstein 1961	S					x			
Seriocarpa rhizoides	Diehl 1969	S					x			
Stolonica socialis	Hartmeyer 1903	C					x			
Styela adriatica	C Monniot & F Monniot 1975	S			x					
Styela clava *	Herdman 1881	S							x	
Styela canopus	Savigny 1816	S							x	
Styela plicata	(Lesueur 1823)	S							x	
Symplegma brakenhielmi *	(Michaelsen 1904)	C								x
Symplegma viride	Herdman 1886	C							x	
Tibitin probatus	C Monniot & F Monniot 1987	S		x						
F. Pyuridae										
Bolteniopsis prenanti	Harant 1927	S					x			
Cratostigma campoyi	Ramos et al 1988	S		x						
Cratostigma gravellophila	(Pérès 1955)	S		x						
Cratostigma regularis	C Monniot 1963	S		x						
Cratostigma vestigialis	Turon 1988	S		x						
Halocynthia papillosa	Linné 1767	S				x				
Herdmania momus *	(Savigny 1816)	S								x
Heterostigma fagei	C Monniot & F Monniot 1961	S		x						
Heterostigma gonochorica	F Monniot 1965	S			x					
Heterostigma melitensis	F Monniot & C Monniot 1975	S			x					
Heterostigma reptans	C Monniot & F Monniot 1963	S					x			
Heterostigma separ	Ärnbäck 1924	S					x			
Microcosmus claudicans	(Savigny 1816)	S				x				
Microcosmus exasperatus *	Heller 1878	S								x
Microcosmus nudistigma	C Monniot 1962	S				x				
Microcosmus polymorphus	Heller 1877	S				x				
Microcosmus sabatieri	Roule 1885	S				x				
Microcosmus savignyi	C Monniot 1962	S	x							
Microcosmus squamiger *	Michaelsen 1927	S							x	
Microcosmus vulgaris	Heller 1877	S				x				
Pyura corallina	(Roule 1885)	S		x						
Pyura dura	(Heller 1877)	S				x				
Pyura microcosmus	(Savigny 1816)	S				x				
Pyura squamulosa	(Alder 1863)	S				x				
Pyura tessellata	(Forbes 1848)	S				x				
F. Molgulidae										
Eugyra adriatica	Von Drasche 1884	S			x					
Eugyra arenosa	(Alder & Hancock 1848)	S				x				

Molgula amesophleba	(Codreanu & Mack-Fira 1956)	S	x							
Molgula appendiculata	Heller 1877	S				x				
Molgula bleizi	(Lacaze-Duthiers 1877)	S				x				
Molgula euprocta	(Von Drasche 1884)	S	x							
Molgula helleri	Von Drasche 1883	S	x							
Molgula manhattensis	(De Kay 1841)	S				x				
Molgula occidentalis	Traustedt 1883	S							x	
Molgula occulta	Kupffer 1875	S				x				
Molgula oculata	Forbes 1848	S					x			
Molgula pumila	F Monniot & C Monniot 1975	S			x					
Molgula rheophila	(Pèrès 1956)	S	x							
Molgula roulei	C Monniot 1969	S				x				
Molgula socialis	Alder 1863	S				x				
Molgula tethys	C Monniot & F Monniot 1974	S					x			
Molgula vara	C Monniot & F Monniot 1979	S					x			
TOTAL			**37**	**26**	**16**	**76**	**28**	**5**	**33**	**8**

Sources (*):

(*): whenever a compilatory work was available for an author, it was used in preference to previous publications by that author

Brunetti R (1978) *Polyandrocarpa zorritensis* (Van Name 1931) a colonial ascidian new to the Mediterranean record. Vie Milieu 28-29: 647-652.

Brunetti R (1979) Ascidians of the Venice Lagoon. I. Annotated inventory of species. Ann Inst océanogr, Paris 55: 95-109.

Brunetti R (1987) Species of *Clavelina* in the Mediterranean Sea. Ann Inst océanogr. Paris 63: 101-118.

Brunetti R (1991) *Pycnoclavella taureanensis* n. sp. (Ascidiacea) from the Mediterranean Sea. Vie Milieu 41: 245-248.

Brunetti R (1994) Ascidians of the northern Adriatic Sea. Aplousobranchia I. Boll Zool 61: 89-96.

Brunetti R (2009) *Pseudodistoma valeriae* a new species of aplousobranch ascidian from Mediterranean Sea (Tunicata, Ascidiacea). Boll Mus civ St nat Venezia 59:75-79.

Brunetti R (2009) Botryllid species (Tunicata, Ascidiacea) from the Mediterranean coast of Israel, with some considerations on the systematics of Botryllinae. Zootaxa 2289: 18-32

Brunetti R, Mastrototaro F (2004) The non-indigenous stolidobranch ascidian *Polyandrocarpa zorritensis* in the Mediterranean: description, larval morphology and pattern of vascular budding. Zootaxa 528: 1-8.

Capocaccia L (1964) Gli Ascidiacei del Golfo di Genova. Ann Mus civ St nat Genova 25: 1-12.

Çinar ME, Bileceneglou M, Öztürk B, Can A (2006) New records of alien species on the Levantine coast of Turkey. Aquatic Invasions 1: 84-90.

Davis MH, Davis ME (2008) First record of *Styela clava* (Tunicata, Ascidiacea) in the Mediterranean region. Aquatic Invasions 3:125-132.

Fiala-Médioni A (1974). Ascidies du benthos rocheux de Banyuls-sur-Mer. Inventaire faunistique et notes écologiques. Vie Milieu 24: 193-208.

Gaill F (1972) Répartition du genre *Pseudodistoma* (Tuniciers); description de deux espèces nouvelles. Cahiers Biologie Marine 13: 37-47.

Igic L (1982) Composition of fouling communities concerning the localities in the North Adriatic. Biosistematika 8: 19-41.

Izquierdo-Muñoz A, Díaz-Valdés M, Ramos-Esplá AA (2009) Recent non-indigeonous ascidians in the Mediterranean Sea. Aquatic Invasions 4 : 59-64.

Koukouras A, Voultsiadou-Koukoura E, Kevrekidis T, Vafidis D (1995) Ascidian fauna of the Aegean Sea with a check list of the eastern Mediterranean and Black Sea species. Ann Inst océanogr Paris 71: 19-34.

Lafargue F (1971) Note préliminaire concernant les Ascidies récoltées dans la region de Rovinj (Yougoslavie). Thalassia Jugoslavica 7: 515-524.

Lafargue F (1981) Les Didemnidae de Rovinj (Ascidies Aplousobranches). Thalassia Jugoslavica 17: 83-87.

Lafargue F, Fiala-Médioni A (1991) Complément à l'inventaire faunistique des ascidies du benthos rocheux de Banyuls-Sur-Mer. Vie Milieu 41: 271-274.

Lafargue F, Tursi A (1975) Contribution à la connaissance des Didemnidae (ascidies composées) des côtes des Pouilles (Mer Ionienne et Mer Adriatique). Vie Milieu 25: 33-48.

Lafargue F Wahl M (1987) The didemnid ascidian fauna of France. Ann Inst océanogr, Paris 63: 1-46.

Mastrototaro F, Brunetti R (2006) The non-indigenous ascidian *Distaplia bermudensis* in the Mediterranean: comparison with the native species *Distaplia magnilarva* and *Distaplia lucillae* sp. nov. Journal of the Marine Biological Association of the United Kingdom 86:181-185.

Mastrototaro F, D'Onghia G, Tursi A (2008) Spatial and seasonal distribution of ascidians in a semi-enclosed basin of the Mediterranean Sea. Journal of the Marine Biological Association of the United Kingdom 88:1053-1061.

Mastrototaro F, Tursi A (2001) Ascidiacei del fondo a *Cladophora* della riserva marina di Porto Cesareo (LE). Biol Mar Medit 8:613-616.

Mastrototaro F, Tursi A (2006) Ascidiacea. In: revisione della Checklist della fauna marina italiana. http://www.sibm.unige.it/CHECKLIST/principalechecklistfauna.htm

Mastrototaro F, Tursi A, Costantino G (2000) Ascidiacei della Riserva Marina di Ustica. Biol Mar Medit 7:691-694.

Méliane I (2002) Contribution to the knowledge of the ascidian fauna in the south east of Tunisia. MSc Thesis. University of Alicante, Spain.

Monniot C (1962) Les *Microcosmus* des côtes de France. Vie Milieu 12: 397-432.

Monniot C (1963) *Cratostigma regularis* n. sp. Ascidie des gravelles de la région de Marseille. Rec Trav St Mar Endoume 28: 55-59.

Monniot (1965a) Les blocs à *Microcosmus* des fonds chalutables de la région de Banyuls-Sur-Mer. Vie Milieu 26: 819-849.

Monniot C (1965b) Une espèce de Molgulidae nouvelle pour les côtes de France *Ctenicella amesophleba* Codreanu et Mack-Fira, 1956. Vie Milieu 26: 233.

Monniot C (1969) Les Molgulidae des mers européennes. Mem Mus natn Hist Nat Paris 60: 171-272.

Monniot C (1981) Apparition de l'ascidie *Microcosmus exasperatus* dans les ports méditerranéens. Tethys 10: 59-62.

Monniot C, Monniot F (1961) Recherches sur les ascidies interstitielles des gravelles à *Amphioxus* (2e note). Vie Milieu 12: 269-283.

Monniot C, Monniot F (1970) Quelques ascidies de l'Adriatique. Bull Mus natn Hist Nat Paris 42: 1189-1199.

Monniot C, Monniot F (1974) Ascidies abyssales de Méditerranée récoltées par le "Jean Charcot" (campagnes Polymède). Bull Mus natn Hist Nat Paris 251: 1353-1360.

Monniot C, Monniot F (1983) Ascidies des fonds meubles situés autour de l'Ille de Port-Cross. Trav Sci Parc Nat Port-Cross, Fr 9: 97-105.

Monniot C, Monniot F (1987) Discussion sur la valeur de deux genres d'ascidies à propos d'espèces nouvelles en Méditerranée. Ann Inst océanogr Paris 63: 119-130.

Monniot C, Monniot F (1988) Ascidies profondes de chaque côté du seuil de Gibraltar (Campagne BALGIM). Bull Mus natn Hist Nat 10: 415-428.

Monniot C, Monniot F (1990) Relationships between deep-sea tunicate populations west and east of the Straits of Gibraltar. Prog Oceanog 24: 289-296.
Monniot C, Zibrowius H (1999) Une ascidie du genre *Rhodosoma* (Phlebobranchia, Corellidae) enf orme de “boîte à clapet” redécouverte dans des grottes de Méditerranée. Zoosystema 21: 547-555.
Monniot F (1962) Recherches sur les gravies à Amphioxus de la région de Banyuls-Sur-Mer Vie Milieu 13: 231-322.
Monniot F (1965) Ascidies interstitielles des côtes d’Europe. Mem Mus natn Hist Nat 35: 1-153.
Monniot F, Monniot C (1975) Sept espèces d’ascidies profondes de Méditerranée. Bull Mus natn Hist Nat Paris 330: 1117-1133.
Naranjo S (1995) Taxonomía, zoogeografía y ecología de las ascidias del Estrecho de Gibraltar. Implicaciones de su distribución bionómica en la caracterización de áreas costeras. PhD Thesis. University of Sevilla, Spain.
Pérès JM (1958) Origine et affinités du peuplement en ascidies de la Méditerranée. Rapp P V réun Comm Int Expl Scien Mer Médit 14: 493-502.
Pérès JM (1959a) Campagne de la Calypso en Mer d’Alboran et dans la baie Ibéro-Marocaine (1958). I. Ascidies. Ann. Inst océanogr Paris 37: 295-313.
Pérès JM (1959b) Ascidies récoltées sur les côtes d’Algérie par le “Professeur Lcaze-Duthiers”, 1952. Vie Milieu 10: 189-194.
Pérès JM (1959c) Note sur deux asscidies des côtes de Provence dont une nouvelle pour la Méditerranée et pour la faune de France. Rec Trav Sta Mar Endoume 26: 149-150.
Pérez-Portela R, Duran S, Palacín C, Turon X (2007) The Genus *Pycnoclavella* (Ascidiacea) in the Atlanto-Mediterranean region: a combined molecular and morphological approach. Invertebrate Systematics 21: 187-206.
Ramos-Esplá AA (1988) Ascidias litorales del Mediterráneo ibérico. Faunística, ecología y biogeografía. Ph D Thesis. University of Barcelona, Spain.
Ramos-Esplá AA, Buencuerpo V, Vázquez E, Lafargue F. Distribución bionómica de las ascidias litorales del Estrecho de Gibraltar. Publ Espec Inst Esp Oceanogr 11: 185- et al 1993,
Shenkar N, Loya Y (2009) Non-indigenous ascidians (Chordata: Tunicata) along the Mediterranean coast of Israel. Marine Biodiversity Records, Online Publication DOI 10.1017/S1755267209990753.
Turon X (1987) Estudio de las ascidias de las costas de Cataluña e Islas Baleares. PhD Thesis. University of Barcelona. Spain.
Turon X. 2005. A new mode of colony multiplication by modified budding in ascidians: *Clavelina gemmae* n. sp. (Clavelinidae). Invertebrate Biology 124: 273-283.
Turon X, Rius M, Nishikawa T. 2007. Spread of *Microcosmus squamiger* (Ascidiacea: Pyuridae) in the Mediterranean Sea and adjacent waters. Journal of Experimental Marine Biology and Ecology 342: 185-188.
Tursi A (1976a) On four ascidian species new in the Ionian Sea. Bull Mus natn Hist Nat Paris 401: 975-986.
Tursi A (1976b) Ascidies de la mer Jonienne des parages du nouveau port Italsider (Taranto). Prèmiere note: campagne 1975. Oebalia 2: 153-163.
Tursi A (1980) Guide por il riconoscimiento delle specie animali delle acque lagunari e costiere italiane. 4. Ascidiacei. Consiglio Nazionale delle Ricerche 7-88.
Vázquez E, Ramos-Esplá AA, Turon X. 1995. The Genus *Polycarpa* Heller, 1877 (Ascidiacea, Styelidae) on the Atlantic and Mediterranean coasts of the Iberian Peninsular. Journal of Zoology 237: 346-356.
Wenstein F (1961) *Psammostyela delamarei* n.g., n. sp., ascidie interstitielle des sables à *Amphioxus*. C. R. séances Acad Sci 252: 1843-1844.

Fishes (by Frida Ben Rais Lasram)

Table S26. Checklist of the Class Chondrichthyes, Actinopterygii, Myxini and Hyperoartia (Subphylum Vertebrata, Phyllum Cordata)

This list excludes rare species recorded sporadically in the Mediterranean Sea. A: Atlantic origin, E: endemic, L: Lessepsian, NE: neither exotic nor endemic.

Scientific name	Origin
Abudefduf vaigiensis	L
Acanthocybium solandri	NE
Acantholabrus palloni	NE
Acanthurus monroviae	A
Acipenser gueldenstaedti	NE
Acipenser naccarii	E
Acipenser nudiventris	NE
Acipenser stellatus	E
Acipenser sturio	NE
Aidablennius sphynx	NE
Alectis alexandrinus	NE
Alepes djedaba	L
Alepocephalus rostratus	NE
Alopias vulpinus	NE
Alosa alosa	NE
Alosa fallax	NE
Anguilla anguilla	NE
Anthias anthias	NE
Antonogadus megalokynodon	NE
Aphanius dispar	NE
Aphanius fasciatus	E
Aphanius iberus	E
Aphia minuta	NE
Apletodon dentatus	NE
Apogon imberbis	NE
Apogon pharaonis	L
Apogon taeniatus	NE
Apterichthus anguiformis	NE
Apterichthus caecus	NE
Argentina sphyraena	NE
Argyropelecus hemigymnus	NE
Argyrosomus regius	NE
Ariosoma balearicum	NE
Arius parki	A
Arnoglossus imperialis	NE
Arnoglossus kessleri	E
Arnoglossus laterna	NE
Arnoglossus rueppelii	NE
Arnoglossus thori	NE
Aspitrigla cuculus	NE

Aspitrigla obscura	NE
Atherina boyeri	NE
Atherina hepsetus	NE
Atherina presbyter	NE
Atherinomorus lacunosus	L
Aulopus filamentosus	NE
Auxis rochei	NE
Balistes carolinensis	NE
Bathophilus nigerrimus	NE
Bathypterois dubius	NE
Bathypterois grallator	NE
Bathypterois mediterraneus	E
Bathysolea profundicola	NE
Bellottia apoda	NE
Belone gracilis	NE
Belone svetovidovi	NE
Benthocometes robustus	NE
Benthosema glaciale	NE
Beryx splendens	A
Blennius ocellaris	NE
Boops boops	NE
Bothus podas	NE
Brama brama	NE
Buenia affinis	E
Buenia jeffreysii	NE
Buglossidium luteum	NE
Callanthias ruber	NE
Callionymus fasciatus	NE
Callionymus filamentosus	L
Callionymus lyra	NE
Callionymus maculatus	NE
Callionymus pusillus	NE
Callionymus reticulatis	NE
Callionymus risso	NE
Campogramma glaycos	NE
Capros aper	NE
Caranx crysos	NE
Caranx hippos	NE
Caranx rhonchus	NE
Carapus acus	NE
Carcharhinus altimus	A
Carcharhinus brachyurus	A
Carcharhinus brevipinna	NE
Carcharhinus falciformis	A
Carcharhinus limbatus	NE
Carcharhinus melanopterus	NE
Carcharhinus obscurus	NE
Carcharhinus plumbeus	NE
Carcharias taurus	NE
Carcharodon carcharias	NE
Cataetyx aticeps	NE

Cataetyx alleni	NE
Centracanthus cirrus	NE
Centrolabrus exoletus	A
Centrolophus niger	NE
Centrophorus granulosus	NE
Centrophorus uyato	NE
Centroscymnus coelolepis	NE
Cepola macrophthalma	NE
Ceratoscopelus maderensis	NE
Cetorhinus maximus	NE
Chaetodon hoefleri	NE
Chauliodus sloani	NE
Chaunax pictus	A
Cheilopogon furcatus	A
Cheilopogon heterurus	NE
Cheimerius gibbosus	NE
Chelon labrosus	NE
Chilomycterus spilostylus	L
Chimaera monstrosa	NE
Chlopsis bicolor	NE
Chlorophthalmus agassizi	NE
Chlorophthalmus agassizii	NE
Chromis chromis	NE
Chromogobius quadrivittatus	E
Chromogobius zebratus	E
Citharus linguatula	NE
Clinitrachus argentatus	NE
Coelorhynchus occa	A
Conger conger	NE
Corcyrogobius liechtensteini	E
Coris julis	NE
Coryogalops ochetica	L
Coryphaena equiselis	NE
Coryphaena hippurus	NE
Coryphaenoides guentheri	NE
Coryphoblennius galerita	NE
Crenidens crenidens	L
Crystallogobius linearis	NE
Ctenolabrus rupestris	NE
Cubiceps capensis	NE
Cyclothone braueri	NE
Cyclothone pygmaea	E
Cynoglossus sinusarabici	L
Cynoponticus ferox	NE
Dactylopterus volitans	NE
Dalatias licha	NE
Dalophis imberbis	NE
Dasyatis centroura	NE
Dasyatis tortonesei	E
Dasyatis violacea	NE
Deltentosteus colonianus	NE

Deltentosteus quadrimaculatus	NE
Dentex dentex	NE
Dentex maroccanus	NE
Diaphus holti	NE
Diaphus metopoclampus	NE
Diaphus rafinesquii	NE
Dicentrarchus labrax	NE
Dicentrarchus punctatus	NE
Dicologoglossa cuneata	NE
Dicologoglossa hexophthalma	NE
Didogobius bentuvii	E
Didogobius schlieweni	E
Didogobius splechtnai	E
Diodon hystrix	A
Diogenichthys atlanticus	NE
Diplecogaster bimaculata	NE
Diplodus annularis	NE
Diplodus bellottii	A
Diplodus cervinus cervinus	NE
Diplodus puntazzo	NE
Diplodus sargus	E
Diplodus vulgaris	NE
Dussumieria acuta	NE
Dussumieria elopsoides	L
Dysomma brevirostre	NE
Echelus myrus	NE
Echeneis naucrates	NE
Echiichthys vipera	NE
Echinorhinus brucus	NE
Echiodon dentatus	NE
Elagatis bipinnulata	NE
Electrona risso	NE
Enchelycore anatina	A
Engraulis encrasicolus	NE
Entelurus aequoraeus	A
Ephippion guttiferum	A
Epigonus constanciae	NE
Epigonus denticulatus	NE
Epigonus telescopus	NE
Epinephelus aeneus	NE
Epinephelus alexandrinus	NE
Epinephelus caninus	NE
Epinephelus coïoïdes	L
Epinephelus guaza	NE
Epinephelus haifensis	NE
Epinephelus malabaricus	L
Eretmophorus kleinenbergi	NE
Etmopterus spinax	NE
Etrumeus teres	L
Euthynnus alletteratus	NE
Eutrigla gurnardus	E

Evermannella balbo	NE
Exocoetus obtusirostris	NE
Exocoetus volitans	NE
Fistularia commersonii	L
Fistularia petimba	A
Gadella maraldi	NE
Gadiculus argenteus	NE
Gaidropsarus granti	A
Gaidropsarus mediterraneus	NE
Gaidropsarus vulgaris	NE
Galeocerdo cuvier	A
Galeoides decadactylus	A
Galeorhinus galeus	NE
Galeus atlanticus	A
Galeus melastomus	NE
Gammogobius steinitzi	E
Gephyroberyx darwini	A
Glossanodon leioglossus	NE
Gnathophis mystax	NE
Gobius ater	E
Gobius auratus	NE
Gobius bucchichi	NE
Gobius cobitis	NE
Gobius couchi	A
Gobius cruentatus	NE
Gobius fallax	E
Gobius geniporus	E
Gobius luteus	NE
Gobius niger	NE
Gobius paganellus	NE
Gobius roulei	NE
Gobius strictus	E
Gobius vittatus	E
Gobius xanthophalus	E
Gonichthys coccoi	NE
Gonostoma denudatum	NE
Gouania wildenowi	E
Gymnammodytes cicerelus	E
Gymnammodytes semisquamatus	A
Gymnothorax unicolor	NE
Gymnura altavela	NE
Halobatrachus didactylus	NE
Halosaurus ovenii	A
Helicolenus dactylopterus	NE
Hemiramphus far	L
Heniochus intermedius	L
Heptranchias perlo	NE
Herklotsichthys punctatus	L
Hexanchus griseus	NE
Himantura uarnak	L
Hippocampus fuscus	L

Hippocampus hippocampus	NE
Hippocampus ramulosus	NE
Hoplostethus mediterraneus	NE
Huso huso	E
Hygophum benoiti	NE
Hygophum hygomii	NE
Hymenocephalus italicus	NE
Hyperoglyphe perciformis	A
Hypleurochilus bananensis	NE
Hyporhamphus affinis	L
Hyporhamphus picarti	NE
Ichthyococcus ovatus	NE
Isurus oxyrinchus	NE
Katsuwonus pelamis	NE
Knipowitschia panizzae	E
Kyphosus sectator	NE
Labetus guilleti	NE
Labrus bimaculatus	NE
Labrus merula	NE
Labrus viridis	NE
Laemonema latifrons	A
Lagocephalus sceleratus	L
Lagocephalus spadiceus	L
Lagocephalus suezensis	L
Lampanyctus crocodilus	NE
Lampanyctus intricarius	A
Lampanyctus pusillus	NE
Lampetra fluviatilis	NE
Lampris guttatus	NE
Lappanella fasciata	NE
Leiognathus klunzingeri	L
Lepadogaster candollei	NE
Lepadogaster gracilis	NE
Lepadogaster lepadogaster	E
Lepadogaster purpurea	NE
Lepidion guentheri	A
Lepidion lepidion	E
Lepidopus caudatus	NE
Lepidorhombus boscii	NE
Lepidorhombus whiffiagonis	NE
Lepidotrigla cavillone	NE
Lepidotrigla dieuzeidei	NE
Lestidiops jayakari	NE
Lesueurigobius friesii	NE
Lesueurigobius sanzoi	A
Lesueurigobius suerii	E
Leucoraja circularis	NE
Leucoraja fullonica	NE
Leucoraja naevus	NE
Lichia amia	NE
Lipophrys adriaticus	E

Lipophrys basiliscus	E
Lipophrys canevai	NE
Lipophrys dalmatinus	NE
Lipophrys nigriceps	E
Lipophrys pavo	NE
Lipophrys pholis	A
Lipophrys trigloides	NE
Lithognathus mormyrus	NE
Liza aurata	NE
Liza carinata	L
Liza ramada	NE
Liza saliens	NE
Lobianchia dofleini	NE
Lobianchia gemellarii	NE
Lophius budegassa	NE
Lophius piscatorius	NE
Lophotus lacepede	NE
Lutjanus argentimaculatus	L
Luvarus imperialis	NE
Macroramphosus scolopax	NE
Makaira indica	A
Maurolicus muelleri	NE
Merlangius merlangus	NE
Merluccius merluccius	NE
Microchirus azevia	NE
Microchirus boscanion	A
Microchirus hexophthalmus	A
Microchirus hispidus	NE
Microchirus ocellatus	NE
Microchirus variegatus	NE
Microichthys coccoi	E
Microichthys sanzoi	E
Micromesistius poutassou	NE
Microstoma microstoma	NE
Millerigobius macrocephalus	E
Minyichthys sentus	NE
Mobula mobular	NE
Mola mola	NE
Molva dypterygia	NE
Molva molva	NE
Mora moro	NE
Mugil cephalus	NE
Mullus barbatus	NE
Mullus surmuletus	NE
Muraena helena	NE
Muraenesox cinereus	L
Mustelus asterias	NE
Mustelus mustelus	NE
Mycteroperca rubra	NE
Myctophum punctatum	NE
Myliobatis aquila	NE

Myxine glutinosa	NE
Nansenia iberica	E
Nansenia oblita	NE
Naucrates ductor	NE
Nemichthys scolopaceus	NE
Nemipterus japonicus	L
Nerophis lumbriciformis	A
Nerophis maculatus	NE
Nerophis ophidion	NE
Nettastoma melanurum	NE
Nezumia aequalis	NE
Nezumia sclerorhynchus	NE
Notacanthus bonaparte	NE
Notoscopelus bolini	NE
Notoscopelus elongatus	E
Oblada melanura	NE
Odondebuenia balearica	E
Odontaspis ferox	NE
Oedalechilus labeo	NE
Oedalechilus labeo	NE
Oligopus ater	E
Omobranchus punctatus	L
Opeatogenys gracilis	E
Ophichthus rufus	E
Ophidion barbatum	NE
Ophidion rochei	E
Ophisurus serpens	NE
Orcynopsis unicolor	NE
Oxynotus centrina	NE
Oxyurichthys petersi	L
Pagellus acarne	NE
Pagellus bellottii	A
Pagellus bogaraveo	NE
Pagellus erythrinus	NE
Pagrus auriga	NE
Pagrus coeruleostictus	NE
Pagrus pagrus	NE
Panturichthys fowleri	E
Papilloculiceps longiceps	L
Parablennius gattorugine	NE
Parablennius incognitus	NE
Parablennius pilicornis	A
Parablennius rouxi	NE
Parablennius sanguinolentus	NE
Parablennius tentacularis	NE
Parablennius zvonimiri	E
Paralepis coregonoides	E
Paralepis speciosa	E
Paraliparis leptochirus	E
Paraliparis murieli	E
Parapristipoma octolineatum	A

Parexocoetus mento	L
Parophidion vassali	E
Pegusa lascaris	NE
Pegusa impar	NE
Pelates quadrilineatus	L
Pempehris vanicolensis	L
Peristedion cataphractum	NE
Petromyzon marinus	NE
Phycis blennoides	NE
Phycis phycis	NE
Physiculus dalwigki	NE
Pinguipes brasilianus	A
Pisodonophis semicinctus	A
Platichthys luscus	E
Platichthys luscus	NE
Platycephalus indicus	L
Plectorhinchus mediterraneus	NE
Pleuronectes platessa	NE
Plotosus lineatus	L
Polyprion americanus	NE
Polysteganus macrophthalmus	NE
Pomadasys incisus	NE
Pomadasys stridens	L
Pomatomus saltator	NE
Pomatoschistus bathi	E
Pomatoschistus canestrinii	E
Pomatoschistus knerii	E
Pomatoschistus marmoratus	NE
Pomatoschistus microps	NE
Pomatoschistus minutus	NE
Pomatoschistus norvegicus	NE
Pomatoschistus pictus	E
Pomatoschistus quagga	E
Pomatoschistus tortonesei	E
Pontinus kuhli	A
Priacanthus hamrur	L
Prionace glauca	NE
Pristis pectinata	A
Pristis pristis	NE
Psenes pellucidus	A
Psetta maxima	E
Pseudaphya ferreri	E
Pseudocaranx dentex	NE
Pseudupeneus prayensis	A
Pteragogus pelycus	L
Pterois miles	L
Pteromylaeus bovinus	NE
Pteroscirtes ancylodon	L
Rachycentron canadum	L
Raja asterias	NE
Raja clavata	NE

Raja melitensis	E
Raja miraletus	NE
Raja montagui	NE
Raja polystigma	E
Raja radula	NE
Raja rondeleti	E
Ranzania laevis	NE
Rastrelliger kanagurta	L
Regalecus glesne	NE
Remora brachyptera	NE
Remora osteochir	NE
Remora remora	NE
Rhabdosargus haffara	L
Rhinobatos cemiculus	NE
Rhinobatos rhinobatos	NE
Rhinoptera marginata	NE
Rhizoprionodon acutus	A
Rhynchoconger trewavasae	L
Rostroraja alba	NE
Ruvettus pretiosus	NE
Sarda sarda	NE
Sardina pilchardus	NE
Sardinella aurita	NE
Sardinella maderensis	NE
Sargocentrum rubrum	L
Sarpa salpa	NE
Saurida undosquamis	L
Scartella cristata	NE
Scarus ghobban	L
Schedophilus medusophagus	NE
Schedophilus ovalis	NE
Sciaena umbra	NE
Scomber japonicus	NE
Scomber scombrus	NE
Scomberesox saurus	NE
Scomberomorus commerson	L
Scomberomorus tritor	NE
Scophthalmus rhombus	NE
Scorpaena elongata	NE
Scorpaena loppei	NE
Scorpaena maderensis	NE
Scorpaena notata	NE
Scorpaena porcus	NE
Scorpaena scrofa	NE
Scorpaena stephanica	A
Scorpaenodes arenai	E
Scyliorhinus canicula	NE
Scyliorhinus stellaris	NE
Seriola carpenteri	A
Seriola dumerili	NE
Seriola fasciata	A

Seriola rivoliana	A
Serranus atricauda	A
Serranus cabrilla	NE
Serranus hepatus	NE
Serranus scriba	NE
Serrivomer brevidentatus	A
Siganus luridus	L
Siganus rivulatus	L
Silhouetta aegyptica	L
Sillago sihama	L
Solea aegyptiaca	E
Solea azevia	A
Solea impar	NE
Solea kleinii	NE
Solea lascaris	NE
Solea nasuta	NE
Solea senegalensis	A
Solea vulgaris	NE
Somniosus rostratus	NE
Sorsogona prionota	L
Sparisoma cretense	NE
Sparus aurata	NE
Speleogobius trigloides	E
Sphoeroides cutaneus	NE
Sphoeroides pachygaster	A
Sphoeroides spengleri	A
Sphyraena chrysotaenia	L
Sphyraena flavicauda	L
Sphyraena sphyraena	NE
Sphyraena viridensis	E
Sphyrna lewini	NE
Sphyrna mokarran	A
Sphyrna tudes	NE
Sphyrna zygaena	NE
Spicara flexuosa	NE
Spicara maena	NE
Spicara smaris	NE
Spondyliosoma cantharus	NE
Spratelloides delicatulus	L
Squalus acanthias	NE
Squalus blainville	NE
Squalus megalops	A
Squatina acuelata	NE
Squatina oculata	NE
Squatina squatina	NE
Stephanolepis diaspros	L
Stomias boa	NE
Straumateus fiatola	NE
Sudis hyalina	NE
Symbolophorus veranyi	NE
Symphodus bailloni	NE

Symphodus cinereus	E
Symphodus doderleini	E
Symphodus mediterraneus	NE
Symphodus melanocercus	E
Symphodus melops	NE
Symphodus ocellatus	NE
Symphodus roissali	NE
Symphodus rostratus	NE
Symphodus tinca	NE
Symphurus ligulatus	NE
Symphurus nigrescens	NE
Synaptura lusitanica	A
Synchiropus phaeton	NE
Syngnathus abaster	NE
Syngnathus acus	NE
Syngnathus phlegon	NE
Syngnathus rostellatus	A
Syngnathus taenionotus	E
Syngnathus tenuirostris	E
Syngnathus typhle	NE
Synodus saurus	NE
Taeniura grabata	NE
Taurulus bubalis	NE
Terapon puta	L
Tetragonurus cuvieri	NE
Tetrapturus albidus	NE
Tetrapturus belone	E
Tetrapturus georgei	A
Tetrosomus gibbosus	L
Thalassoma pavo	NE
Thorogobius ephippiatus	NE
Thorogobius macrolepis	E
Thunnus alalunga	NE
Thunnus thynnus	NE
Torpedo fuscomaculata	A
Torpedo marmorata	NE
Torpedo nobiliana	NE
Torpedo torpedo	NE
Torquigener flavimaculosus	L
Trachinotus ovatus	NE
Trachinus araneus	NE
Trachinus draco	NE
Trachinus radiatus	NE
Trachurus mediterraneus	NE
Trachurus picturatus	NE
Trachurus trachurus	NE
Trachyrincus scabrus	NE
Trachyscorpia cristulata echinata	A
Trichiurus lepturus	NE
Trigla lucerna	NE
Trigla lyra	NE

Trigloporus lastoviza	NE
Tripterygion delaisi	E
Tripterygion melanurus	E
Tripterygion tripteronotus	E
Trisopterus luscus	E
Ttrisopterus minutus	NE
Tylerius spinosissimus	L
Tylosorus choram	L
Tylosurus acus	NE
Umbrina canariensis	A
Umbrina cirrosa	NE
Umbrina ronchus	NE
Upeneus moluccensis	L
Upeneus pori	L
Uranoscopus scaber	NE
Valenciennellus tripunctulatus	NE
Vanneaugobius pruvoti	NE
Vinciguerria attenuata	NE
Vinciguerria poweriae	NE
Xiphia gladius	NE
Xyrichthys novacula	NE
Zebrus zebrus	NE
Zeus faber	NE
Zosterisessor ophiocephalus	E
Zu cristatus	NE

Seabirds, marine mammals, and sea turtles (by Daniel Oro & Chiara Piroddi)

Table S27. Checklist of the Class Aves (Subphylum Vertebrata, Phyllum Cordata)

Scientific name	English name	Occurrence	Status IUCN*	Observations	Main threats
Puffinus yelkouan	Mediterranean shearwater	Resident	NT	Endemic	By-catch in long lines; invasive predatory species; pollution
Puffinus mauretanicus	Balearic shearwater	Resident	CE	Endemic	By-catch in long lines; invasive predatory species; pollution
Calonectris diomedea	Cory's shearwater	Resident	LC		By-catch in long lines; pollution
Hydrobates pelagicus melitensis	Storm-petrel	Resident	LC	Endemic sub-species	Invasive predatory species; pollution
Phalacrocorax aristotelis desmarestii	Shag	Resident	LC	Endemic sub-species	By-catch in fishing gears
Larus michahellis	Yellow-legged gull	Resident	-		-
Larus audouinii	Audouin's gull	Resident	VU	Endemic	By-catch in fishing gears; pollution
Larus genei	Slender-billed gull	Resident	LC		Habitat loss
Larus melanocephalus	Mediterranean gull	Resident	LC		Habitat loss
Sterna nilotica	Gull-billed tern	Resident	LC		Habitat loss
Sterna sandvicensis	Sandwich tern	Resident	LC		Habitat loss
Sterna caspia	Caspian tern	Resident	LC		Habitat loss
Sterna hirundo	Common tern	Resident	-		Habitat loss
Sterna albifrons	Little tern	Resident	LC		Habitat loss
Sterna bengalensis	Lesser Crested tern	Resident	LC		Habitat loss

* DD= Data Deficient, NA=Not Assessed, LC =Least concern; NT =Near threatened, VU= Vulnerable, EN= Endangered, CE= Critically Endangered

Table S28. Checklist of the Class Mammalia (Subphylum Vertebrata, Phyllum Cordata)

Scientific names	English name	Distribution	Range	Status IUCN	Occurrence	Threats
Balaenoptera physalus	Fin whale	From Balearic islands to Ionian sea.. Mainly abundant in Corso-Ligurian Basin and Gulf of Lion	Pelagic water	DD*	Resident	Ship collisions, noise and vessel disturbance, pollution
Balaenoptera acutorostrata	Common minke whale	Sightings mainly in the western Mediterranean Sea		NA*	Transient	
Balaenoptera borealis	Sei whale	Sightings in Spain and France		NA*	Transient	
Delphinus delphis	Short-beaked common dolphin	Mainly abundant in Alboran Sea, Gulf of Vera, and Aegean Sea. Present in the north eastern Ionian Sea, Gulf of Corinth, Algeria, Tunisia, Malta. Isolated groups in Sardinia, Corsica and Ischia	Pelagic water - Neritic water	EN*	Resident	By-catch, climate change, pollution, prey depletion
Eubalaena glacialis	North Atlantic right whale	Sightings in Algeria and in Italy		NA*	Transient	
Hyperoodon ampullatus	Northern bottlenose whale	Sightings in France and in Spain		NA*	Transient	
Globicephala melas	Long-finned pilot whale	Mainly in Western Mediterranean Sea, particularly abundant in Alboran Sea and Gulf of Vedra	Pelagic water - Neritic water	DD*	Resident	By-catch; collisions with ships; ship noise and pollution
Grampus griseus	Risso's dolphin	Higher concentration in Ligurian-Corso-Provençal basin but present also in Balearic, Alboran Sea Ionian and Aegean Sea	Pelagic water	DD*	Resident	By-catch; ship noise and pollution
Kogia sima	Dwarf sperm whale	Two sightings in Italy		NA*	Transient	
Megaptera novaeangliae	Humpback whale	Sighting throughout the basin, particularly in Italy, Greece and France		NA*	Transient	
Mesoplodon bidens	Sowerby's beaked whale	Sightings in France and in Italy		NA*	Transient	
Mesoplodon densirostris	Blainville's beaked whale	Sightings in Spain		NA*	Transient	

Mesoplodon europaeus	Gervais' beaked whale	Sightings in Italy		NA*	Transient	
Monachus monachus	Mediterranean monk seal	Still occurring in the Aegean Sea and Turkey. Small groups in north eastern Ionian Sea, Morocco, Algeria and Croatia.	Neritic water	CR*	Resident	Habitat loss and degradation, deliberate killing, bycatch, prey depletion, pollution
Orcinus orca	Killer whale	Sightings mainly in the western Mediterranean Sea		NA*	Transient	
Phocoena phocoena	Harbour porpoise	Sightings in Spain, Italy and the Aegean Sea		NA*	Transient	
Physeter macrocephalus	Sperm whale	Widely distributed in Balearic Islands, Algerian-Ligurian basin, Tyrrhenian Sea, Ionian Sea and Aegean Sea	Pelagic water	EN*	Resident	By-catch, ship collisions, noise and vessel disturbance,
Pseudorca crassidens	False killer whale	Sightings throughout the basin		NA*	Transient	
Steno bredanensis	Rough-toothed dolphin	Sightings mainly in Israel and also in Italy, France and Greece		NA*	Transient	
Sousa chinensis	Indo-Pacific humpback dolphin	Sightings in Egypt and in Israel		NA*	Transient	
Stenella coeruleoalba	Striped dolphin	Widely distributed throughout the Mediterranean Sea	Pelagic water	VU*	Resident	By-catch, pollution, prey depletion
Tursiops truncatus	Common bottlenose dolphin	Widely distributed throughout the Mediterranean Sea	Pelagic water - Neritic water	VU*	Resident	By-catch, prey depletion, pollution, noise and vessel disturbance
Ziphius cavirostris	Cuvier's beaked whale	Relatively abundant in eastern Ligurian Sea, southwestern Crete. Present as well in the western Ligurian Sea, Hellenic Trench, southern Adriatic Sea, Spanish waters and Algeria	Pelagic water	DD*	Resident	Navy sonar, by-catch, plastic debris

* DD= Data Deficient, NA=Not Assessed, VU= Vulnerable, EN= Endangered, CR= Critically Endangered

Table S29. Checklist of the Class Reptilia (Subphylum Vertebrata, Phyllum Cordata)

Scientific names	English name	Distribution	Status IUCN	Occurrence	Threats
Caretta caretta	Loggerhead turtle	Throughout the Mediterranean Sea. Nesting: Eastern Mediterranean Sea	EN	Resident	Habitat loss and degradation, by-catch, plastic debris, boat strikes
Chelonia mydas	Green turtle	Mainly distributed in the eastern Mediterranean Sea, sightings records in western Mediterranean Sea. Nesting: Eastern Mediterranean Sea	EN	Resident	Habitat loss and degradation, by-catch, plastic debris, boat strikes
Dermochelys coriacea	Leatherback turtle	Sighting mainly in the western Mediterranean Sea; few observations in Ionian Sea, Aegean Sea, Turkey, Cyprus, Egypt and Israel	CR	Transient*	
Eretmochelys imbricata	Hawksbill turtle	Few sightings in Marseille, Albania, southern Sicilian coast, Malta	DD	Transient*	
Lepidochelys kempi	Kemp's Ridley turtle	Few sightings in Spanish waters, Malta and France	DD	Transient*	

* DD= Data Deficient, NA=Not Assessed, VU= Vulnerable, EN= Endangered, CR= Critically Endangered

The diversity of the past and temporal patterns (by Heike K. Lotze)

Table S30. Ecologically and economically important species of the Adriatic Sea for which long-term data were available and that were included in historical diversity trends

We considered 64 species or species groups belonging to 7 functional groups, 6 taxonomic groups, and 22 ecological guilds [data were adapted from ref. 1, where a complete list of references for the Adriatic Sea can be found in the Supporting Online Material].

Functional group	Taxonomic group	Ecological guild	Species or species group	Common and scientific names
LARGE CARNIVORES	Mammals	Large whales	Whales	Sperm whales (*Physeter macrocephalus*), fin whales (*Balaenoptera physalus*)
	Mammals	Small whales	Dolphins	Bottlenose dolphin (*Tursiops truncatus*), common dolphin (*Delphinus delphis*)
	Mammals	Pinnipeds	Monk seal	*Monachus monachus*
	Reptiles	Turtles	Sea turtles	Most abundant: Loggerhead (*Caretta caretta*), less abundant: Leathery Turtle (*Dermochelys coriacea*), Kemp turtle (*Lepidochelys kempii*)
	Fish	Diadromous fish	Sturgeons	Several species: Adriatic sturgeon (*Accipenser naccarii*, endemic), Beluga / Giant sturgeon (*Huso huso*), Europena sturgeon (*A. sturio*)
	Fish	Pelagics, large	Bluefin tuna	*Thunnus thynnus*
	Fish	Pelagics, large	Other tuna	Atlantic bonito (*Sarda sarda*), frigate tuna (*Auxis thazard*), skip-jack tuna (*Katsuwonus pelamis*), little tunny (*Euthynnus alletteratus*), plain bonito (*Orcynopsis unicolor*)
	Fish	Pelagics, large	Swordfish	*Xiphias gladius*
	Fish	Pelagics, large	White shark	*Carcharodon carcharias*
	Fish	Pelagics, large	Angular rough shark	*Oxynotus centrina*
	Fish	Pelagics, large	Soupfin shark	*Galeorhinus galeus*
	Fish	Pelagics, large	Sharpnore seven gill shark	*Heptranchias brucus*
	Fish	Pelagics, large	Other sharks	*Squalus* spp., *Scyliorhinus* spp.
	Fish	Groundfish, large	Rays	Sandy ray (*Leucoraja circularis)*
	Fish	Groundfish, large	White skate	*Dipturus alba*
	Fish	Groundfish, large	Common skate	*Dipturus batis*

	Fish	Groundfish, large	Grouper	Dusky grouper (*Epinephelus marginatu*s), other groupers (*Epinephelus* spp.)
	Fish	Groundfish, large	Sea bass	Common bass / European sea bass*: Dicentrarchus labrax*
	Fish	Groundfish, large	Adriatic / European hake	*Merluccius merluccius*
	Fish	Groundfish, large	Murena / moray eel	*Muraena helena*
	Birds	Raptors	Eagle	White-tailed eagle (*Haliaeetus albicilla*), spotted eagle (*Aquila clanga*)
	Birds	Seabirds	Pelicans	Dalmatian pelican (*Pelecanus crispus*), White pelican (*P. onocrotalus*)
	Birds	Waders	Flamingo	Greater flamingo (*Phoenicopterus ruber / roseus*)
	Birds	Waders	Crane	*Grus grus*
LARGE HERBIVORES	Reptiles	Turtles	Sea turtles	Green sea turtle (*Chelonia mydas*)
	Birds	Waterfowl	Geese, swans	Whooper swan (*Cygnus cygnus*)
SMALL CARNIVORES	Fish	Groundfish	Flatfish	Flounder (*Platichthys flesus)*, Commons sole (*Solea vulgaris*), brill (*Scophthalmus rhombus*)
	Fish	Groundfish	Turbot	*Psetta maxima*
	Fish	Groundfish	Red mullet	*Mullus barbatus*
	Fish	Groundfish	Grey mullets	*Mugil* spp., *Liza* spp.
	Fish	Groundfish	Sea bream	Gilthead seabream (*Sparus aurata*), Axillary seabream (*Pagellus acarne*)
	Fish	Groundfish	Pandora	Red or common pandora (*Pagellus erythrinus)*
	Fish	Groundfish	Anglerfish	*Lophius budegassa, Lophius piscatorius*
	Fish	Groundfish	Whiting	*Merlangius merlangus*
	Fish	Pelagics, small	Sprat	*Sprattus sprattus*
	Fish	Pelagics, small	Sardine	*Sardina pilchardus*
	Fish	Pelagics, small	Anchovies	*Engraulis encrasicolus*
	Fish	Pelagics, small	Jacks	Blue jack mackerel (*Trachurus picturatus*), Atlantic horse mackerel (*Trachurus trachurus*)
	Fish	Pelagics, small	Mackerel	Atlantic mackerel (*Scomber scombrus*)
	Fish	Diadromous	Eel	*Anguilla anguilla*
	Fish	Diadromous	Trout	Rainbow trout (*Oncorhynchus mykis*), endemic trout (*Salmo letnica*)

	Invertebrates	Cephalopods	Octopus, Squid, Cuttlefish	Horned octopus (*Eledone cirrhosa*), Musky octopus (*Eledone moschata*), Common cuttlefish (*Sepia officinalis*), European squid (*Loligo vulgaris*)
	Invertebrates	Crustaceans	Norway lobster	*Nephrops norvegicus*
	Invertebrates	Crustaceans	Shrimp	Deepwater rose shrimp (*Parapenaeus longirostris*), shrimp (*Penaeus kerathurus*)
	Invertebrates	Gastropods	Whelk	*Murex brandaris, M. trunculus*
	Birds	Shorebirds	Shorebirds	e.g. Wood sandpiper (*Tringa glareola*), black-winged stilt (*Himantopus himantopus*), avocet (Recurvirostra avosetta), Kentish plovers (*Charadrius alexandrinus*)
	Birds	Waders	Heron, egret, ibis	Night heron (*Nycticorax nycticorax*), little egret (*Egretta garzetta*), great white egret (*E. alba*), squacco heron (*Ardeola ralloides*), purple heron (*Ardea purpurea*), glossy ibis (*Plegadis falcinellus*)
	Birds	Waterfowl	Ducks	Great crested grebe (*Podiceps cristatus*), ducks: ruddy shelduck (*Tadorna ferruginea*), shelduck (*Tadorna tadorna*), goldeneye (*Bucephala clangula*), mergansers *(Mergus* spp.)
	Birds	Seabirds	Gulls	Mediterranean gull *(Larus melanocephalus),* slender-billed gull *(Larus genei),* herring gull *(Larus cachinnans),* Audouin's gull, great black-headed gull
	Birds	Seabirds	Cormorants	*Phalacrocorax carbo*, pygmy cormorant (*Phalacrocorax pygmeus*)
	Birds	Seabirds	Terns, shearwater	Common tern (*Sterna hirundo*), little tern (*Sterna albifrons*), sandwich tern (*Sterna sandvicensis*), gull-billed tern (*Gelochelidon nilotica*), Mediterranean shearwater
SMALL HERBIVORES	Birds	Waterfowl	Ducks	Wigeon (*Anas penelope*), marbled teal (*Anas angustirostris*), teal (*Anas crecca*), shoveler (*Anas clypeata*), gadwall (*Anas strepera*), pochard (*Aythia ferina*), pintail (*Anas acuta*), garganey (*A. querquedula*), coot *(Fulica atra*)
	Invertebrates	Echinoderms	Black sea urchin	*Paracentrotus lividus*
	Invertebrates	Gastropods	Limpets	*Patella coerulea, P. ulyssiponensis*
	Invertebrates	Gastropods	Top shells	*Gibbula adansoni, G. adriatica, G. ardens, G. varia*
SUSPENSION FEEDERS	Invertebrates	Oysters	Oyster	*Ostrea adriatica, O. edulis, O. Lamellosa*
	Invertebrates	Mussels	Scallops	Pectinid (*Pecten jacobaeus*)
	Invertebrates	Mussels	Mussels	Razor shells, clams, mussels (*Mytilus edulis, M. galloprovinzialis, M. marioni, Cerastoderma edule, Abra ovata, Loripes lacteus*)

	Invertebrates	Mussels	Striped Venus	*Venus (Chamelea) gallina*
	Invertebrates	Sponges	Sponges	e.g. Dalmatian sponge *(Spongia officinalis* [var. *adriatica* and var. *mollissima]), Spongia agaricina, Hippospongia communis*
	Invertebrates	Corals	Gorgonians	*Eunicella singularis, E. cavolinii, Paramuricea clavata, P. chameleon*
MACROPHYTES	Vegetation	Seagrass	Seagrass	*Posidonia oceanica* (endemic)
	Vegetation	Macroalgae	Rockweeds	*Cystoseira, Sargassum hornschuchi*
WETLANDS	Vegetation	Wetlands	Salt marshes	Salt marshes

Table S31. Timing of different cultural periods around the Adriatic Sea [after 1,2]

Time BC–AC	**Cultural period**
>100000 BC	Prehuman
100,000 – 6000 BC	Hunter gatherer
6000 – 900 BC	Agricultural
900 – 500 BC	Local market
500 BC – 600 AD	Classical period / Regional market
600 – 1500 AD	Medieval period
1500 – 1800 AD	Early modern
1800 – 1900 AD	Late modern / Industrial
1900 – 1950 AD	Early global period
1950 – 2000 AD	Late global period

References

1. Lotze HK, Lenihan HS, Bourque BJ, Bradbury RH, Cooke RG, et al. (2006) Depletion, degradation, and recovery potential of estuaries and coastal seas. Science 312: 1806-1809.
2. Haywood J (1997) Atlas of World History. Oxfordshire Abingdon, UK: Andromeda Oxford.

Current threats to diversity

Table S32. Ranking of current threats for various taxonomic groups in the Mediterranean Sea

Threats to diversity were ranked by experts of this synthesis from 0 to 5 (1: lowest in importance, 5: highest in importance) for 13 taxonomic groups, taking into account the relative importance of each threat to the biodiversity of the group.

		Pollution	Eutrophication	Habitat degradation	Exploitation	Aquaculture	Invasions	Climate change	Maritime traffic	Others
1	Seaweeds and seagrasses	4	4	5	2	1	2	1		
2	Porifera	2	1	3	2			2		
3	Anthozoa	3		3	2			2		
4	Mollusca	3	3	5	3	2	3	2	1	
5	Cumacea	2	2	4			1	1		
6	Decapoda	3	2	5	4	1	2	3	2	
7	Ascidiacea	1	2	5	2		3	3		
8	Sipuncula	3	3	3	3	1	2	3	1	
9	Nematoda	2	1	2		1		2		
10	Vertebrata (Pisces)	1	1	5	5	1	2	1	1	
11	Vertebrata (Mammalia)	2	2	2	3			2	2	2
12	Vertebrata (Reptilia)	3		3	3			2	2	
13	Vertebrata (Aves)	2		5	5		1	1		

Table S33. Ranking of future threats to diversity (considering 10 years from now) for various taxonomic groups in the Mediterranean Sea

Threats to diversity were ranked by experts of this synthesis from 0 to 5 (1: lowest in importance, 5: highest in importance) for 13 taxonomic groups, taking into account the potential impact of each threat on the biodiversity of the group.

		Pollution	Eutrophication	Habitat degradation	Exploitation	Aquaculture	Invasions	Climate change	Maritime traffic	Others
1	Seaweeds and seagrasses	3	3	5	2	1	2	1		
2	Porifera	2	1	4	2			3		
3	Anthozoa	3		4	3			3		
4	Mollusca	3	3	5	3	2	4	2	1	
5	Cumacea	3	3	5			2	2		
6	Decapoda	3	2	5	5	1	3	3	2	
7	Ascidiacea	1	3	5	2		2	2		
8	Sipuncula	3	3	4	3	1	3	3	2	
9	Nematoda	2	1	2		1		3		
10	Vertebrata (Pisces)	2	1	5	5	1	2	2	1	
11	Vertebrata (Mammalia)	4	4	3	4	1		3	2	2
12	Vertebrata (Reptilia)	4		4	4			3	2	
13	Vertebrata (Aves)	1		5	5		1	2		