"Not to be cited without prior reference to the author" ICES CM 2010/H:06

Assessing the ecological status within European transitional waters (northeast Atlantic): intercalibrating different benthic indices

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Abstract

The Water Framework Directive (WFD) has developed several methods to assess the benthic status of European marine waters. The WFD implementation requires the intercalibration of such methods, in order to ensure that the status classification is consistent and comparable across countries and water body types. A working group of 9 countries (Portugal, Spain, France, Belgium, Netherlands, Germany, Sweden, Ireland and the UK) has been established to intercalibrate methods in transitional (estuaries) waters, within the northeast Atlantic ecoregion. The following steps for intercalibration were agreed upon by this group: (i) to establish common waterbody types across Europe, based on salinity, tidal range, mixing conditions, intertidal area and estuary size (6 common types were identified); (ii) to compile a common dataset (9337 samples collated, from 59 estuaries and 8 countries, covering 5 out of the 6 types, and most of the ecotopes); (iii) to harmonise the taxonomy of the dataset (using ERMS, WoRMS and *Fauna Europaea*); (iv) to collate human pressures from each estuary; (v) to set reference conditions for each type; (vi) to calculate Ecological Quality Ratios for each of the 10 methods proposed for intercalibration (BAT, M-AMBI, BOPA, BO2A, QSB, MISS, BEQI, AETV, BQI, IQI); (vii) to interpret the response of these methods to different anthropogenic pressures; (viii) to determine boundaries for each of the 5 quality class (from bad to high status), using the 10 methods; and (ix) final agreement in the assessment and intercalibration. This contribution presents the steps already taken and the way forward in this intercalibration exercise.

Keywords: benthic indicators, intercalibration, transitional waters, ecological status, Water Framework Directive, northeast Atlantic

Introduction

The European Water Framework Directive (WFD; 2000/60/EC) establishes a framework for the protection and improvement of all European surface and ground waters (including transitional and coastal waters); its final objective is to achieve at least 'good quality status' for all waters bodies, by 2015. The WFD requires Member States (MSs) to assess the Ecological Status (ES) of water bodies, under a scale of five levels: high, good, moderate, poor and bad status. The ES will be assigned through the assessment of biological, hydromorphological and physico-chemical quality elements, by comparing data obtained from monitoring networks to reference (undisturbed or pristine) conditions, thereby deriving an Ecological Quality Ratio (EQR). This ratio shall be expressed as a numerical value between zero and one, with 'high' status represented by values close to one and 'bad' status by values close to zero. In coastal and transitional (estuaries and lagoons) waters, one of the biological quality elements to be considered is the benthic invertebrate fauna, an important component of which is the soft-bottom benthos.

The WFD defines the aspects of the biological quality elements that must be included in the ES assessment of a water body. Any proposed WFD classification scheme must, therefore, include methodologies that address those parameters defined for assessing the benthic quality status: 'the level of diversity and abundance of invertebrate taxa' and the proportion of 'disturbance-sensitive taxa'. Following these criteria, to date several methodologies have been proposed by MSs for the status assessment of the benthic component (see a summary for the whole Europe in Borja *et al.,* 2009).

Prior to the implementation of WFD assessment, any proposed methodology must be intercalibrated between the MSs within an ecoregion (Borja *et al.,* 2007). Each MS shall divide the EQR scale for their monitoring system into the abovementioned five ES classes, by assigning a numerical value to each of the class boundaries. The value for the 'high/good' and the 'good/moderate' class boundaries should be established through the intercalibration (IC) exercise. This is to ensure that the established class boundaries are consistent with the normative definitions of the WFD and are comparable between MSs.

As part of the official IC exercise, in the first phase (2005-2008), the working groups selected a range of coastal sites in surface water bodies in each ecoregion in the European Union (Borja *et al.,* 2007), with different gradients of human pressure, to be used as database for the IC. This exercise was completed in 2008, and the results of the boundaries for each method, type and ecoregion can be consulted in European Commission (2008) and Borja *et al.* (2009).

In the second phase of the IC exercise (2009-2011) a working group of 9 countries (Portugal, Spain, France, Belgium, Netherlands, Germany, Sweden, Ireland and the UK) has been established to intercalibrate methods in transitional waters, within the Northeast Atlantic (NEA) ecoregion. This contribution presents the steps already taken and the way forward in this IC exercise.

Steps to be covered during the second phase of intercalibration

The following steps for IC were agreed upon by this group: (i) to establish common water body types across Europe; (ii) to compile a common dataset; (iii) to harmonise the taxonomy of the dataset; (iv) to collate human pressures from each estuary; (v) to set reference conditions for each type; (vi) to calculate Ecological Quality Ratios for each of the methods proposed for IC; (vii) to interpret the response of these methods to

different anthropogenic pressures; (viii) to determine boundaries for each of the 5 quality class (from bad to high status), using all the selected methods; and (ix) final agreement in the assessment and intercalibration.

Current status of the IC exercise

Establishment of common types

The WFD defines until now only one transitional water type (estuaries). However, each country has developed their own national types, which can be seen in Table 1.

Table 1. National types for transitional waters within each European Atlantic country.

Country	National type definitions
Belgium	Mesotidal lowland estuary (Yser)
Belgium	Macrotidal lowland estuary (Zeeschelde)
France	Small estuary with small intertidal area and low turbidity
France	Small estuary with small intertidal area and medium-high turbidity
France	Small estuary with large intertidal area, high salinity and low turbidity
France	Small estuary with large intertidal area, medium-high salinity, low-medium turbidity
France	Small-medium estuary, macrotidal, with high salinity, medium river flow
France	Large estuary with medium-high salinity and high river flow
France	Large estuary with low salinity and high river flow
France	Mesotidal estuary, with low salinity and medium river flow
Germany	T2
Germany	T1
Portugal	A1- Mesotidal stratified estuary
Portugal	A2- Mesotidal well-mixed estuary with irregular river discharge
Spain	Subtidal-dominated estuary
Spain	Intertidal estuary with marine dominance
Spain	Tinto-Odiel estuary
Spain	Mesotidal estuary with irregular river flow
Spain	Small river-dominated estuaries
Spain	Lagoons
Sweden	25
The Netherlands	O2 Transitional water-mesotidal
UK & Republic of Ireland	TW4
UK & Republic of Ireland	TW1
UK & Republic of Ireland	TW2
UK & Republic of Ireland	TW3
UK & Republic of Ireland	TW6- Lagoons
UK & Republic of Ireland	TW5- Sea Lochs

From the characteristics of each national type, several common types across the NEA were determined (Table 2). These types were established taking into account common characteristics across national types, such as (i) salinity (tidal freshwater, oligohaline, mesohaline, polyhaline, euhaline); (ii) tidal range (micro-, meso- and macro-tidal); (iii) mixing conditions (permanently fully mixed, partly mixed, mixed, permanently stratified, partially stratified, stratified); (iv) intertidal area (<50%, >50% of the estuary); (v) estuary size (small <10 km^2, medium 10-50 km^2, large 50-200 km^2, very large >200 km^2); and (vi) mean annual river flow (low: <100 $m^3 s^{-1}$, medium 100-500 $m^3 s^{-1}$, high >500 $m^3 s^{-1}$).

Table 2. Characteristics of the common types, determined for transitional waters, in the North East Atlantic, for intercalibration (IC). Countries: BE-Belgium, DE-Germany, ES-Spain, FR-France, NL-Netherlands, PT-Portugal, RoI-Republic of Ireland, SE-Sweden, UK-United Kingdom.

Common IC Type	Common type Characteristics	Countries sharing common type
A	Lagoons	UK, RoI, ES
B	Freshwater-oligohaline; medium river flow	BE, FR, ES
C	Mesotidal estuary with irregular river flow	PT, ES
D	Large Estuaries	NL, FR, UK, RoI, DE, ES
E	Small-medium estuary with >50% intertidal area	FR, ES, UK, RoI, DE, FR
F	Small-medium estuary with <50% intertidal area	BE, ES, PT, UK, RoI, SE, FR

Common dataset

During the last months, most of the efforts have been addressed to build a common dataset for IC, including data from 59 NEA estuaries, totalising 9,337 samples and 74,257 species records (Table 3).

Table 3. Samples and species records collated by each country, for the intercalibration dataset.

Country	Samples	Species records
Portugal	2325	23937
Spain	487	4437
France	1204	6435
Belgium	495	2125
Netherlands	3461	20967
Germany	748	4137
UK	529	10608
Sweden	88	1611
TOTAL	9337	74257

From the datasets obtained, it was decided not to intercalibrate type A (insufficient data) and type B (insufficient data and assessment methods), at least in this moment. Then, in a first step, types D and C are going to be merged, due to the few data available in type C. In case that the IC exercise determines that they are very different, they will be separated again. Hence, at this moment, the group has between 638 and 6,795 samples available for IC, depending on the types, which are shared by a number of countries ranging from 4 to 7 (Table 4).

Taking into account the salinity, the type of sediment and the tide level, a good representation of samples is available by each ecotope and common type (Table 4). However, samples from tidal freshwater and oligohaline ecotopes are less frequent than samples from mesohaline and polyhaline (even euhaline) ecotopes (Table 4).

Table 4. Samples and species records collated by each common type and countries sharing the type. The number of water bodies, countries and samples, by each of the compiled ecotopes per type are also shown.

	Types C-D			Type E			Type F		
	NL, BE, FR, DE, UK, ES, PT			FR, DE, UK, ES			FR, SE, PT, BE, FR, UK, ES		
Compiled ecotope	**Water bodies**	**Countries**	**Samples**	**Water bodies**	**Countries**	**Samples**	**Water bodies**	**Countries**	**Samples**
Euhaline Intertidal Mud	4	2	266	2	1	10			
Euhaline Intertidal Sand	3	2	128	2	1	17			
Euhaline Subtidal Mud	5	2	127	1	1	18	2	1	28
Euhaline Subtidal Sand	6	2	227				1	1	189
Polyhaline Intertidal Mud	8	5	591	12	3	199	2	2	121
Polyhaline Intertidal Sand	6	4	972	3	3	53	3	3	70
Polyhaline Subtidal Mud	12	5	463	5	2	94	9	6	512
Polyhaline Subtidal Sand	9	4	1489	3	3	41	5	5	380
Mesohaline Intertidal mud	8	6	786	7	3	74	1	1	5
Mesohaline Intertidal Sand	4	3	225	2	1	9	2	1	55
Mesohaline Subtidal Gravel	1	1	7						
Mesohaline Subtidal Mud	9	6	405	1	1	25	1	1	5
Mesohaline Subtidal Sand	10	5	521	2	2	76	2	2	235
Oligohaline Intertidal mud	3	3	90	3	1	22			
Oligohaline Intertidal Sand	1	1	41						
Oligohaline Subtidal mud	3	3	159						
Oligohaline Subtidal Sand	4	2	229				1	1	304
Fresh Intertidal Mud	1	1	29						
Fresh Intertidal Sand	1	1	6						
Fresh Subtidal Sand	4	2	34						
Total samples			6795			638			1904

Harmonisation of the taxonomy

The original taxa list was standardized and harmonised, by using the European Register of Marine Species (ERMS, http://www.marbef.org/data/erms.php) and the World Register of Marine Species (WoRMS, http://www.marinespecies.org/about.php). Oligohaline taxa were checked against the register of freshwater list *Fauna Europaea* (www.faunaeur.org).

Truncation of the data for this exercise was carried out to remove (i) non benthic invertebrate taxa e.g. fish and algae; (ii) inconsistencies in the level of identification between laboratories; and (iii) removal of non-soft sediment taxa; required due to inconsistencies in recording epibiota between laboratories. The standardised taxon list includes Benthic Quality Index (BQI, Rosenberg *et al.,* 2004) sensitivity scores and AZTI's Marine Biotic Index (AMBI, Borja *et al.,* 2000) ecological group for each species. A total of 1,939 harmonised taxa, for the NEA estuaries, can be consulted in Annex 1.

Human pressures

In order to check the response of different benthic assessment methods to human pressures, a table, containing the main significant pressures and sources, within the

NEA, was built, based upon Borja *et al.* (2006) (Table 5). Now, information from each estuary from which data were obtained, is being collated. This will allow the group to determine a semiquantitative (low, moderate, high) level of pressure at each sampling location and water body.

Table 5. Types of pressures and potential sources of pressure, within the NEA.

Category	Pressure type	Pressure	Source (background examples)
1	**Chemical pressures**		
1.1.	**Eutrophication (nutrients)**		
1.1.1.		River water / river load/ sluices	Agriculture, industry, urban
1.1.2.		Sewage water, waste water discharges	Industry, urban, aquaculture
1.1.3.		Atmospheric deposition (organ. micropoll.)	Industry, traffic
1.1.4.		Oxygen depletion	Nutrients, low water exchange
1.2.	**Hazardous substances**		
1.2.1.		River water / river load/ sluices	Industry, urban, agriculture
1.2.2.		Sewage water, waste water discharges	Industry, urban
1.2.3.		Contaminated sediments	All sources, legacy of pollution
1.2.4.		Shipping	Anti-fouling, oil; organic micropollutants, littering
1.2.5.		Accidental spills	Spill of chemicals, ships, platforms, pipes, harbours
1.2.6.		Atmospheric deposition	Industry, power plants
2	**Biological pressures**		
2.1.		Exotic species (partly invasive)	Shipping, aquaculture, climate change
2.2.		Exotic diseases (bacteria, parasites)	Shipping, aquaculture, climate change
2.3.		Food web alteration	Fisheries, hunting, decline of consumers, shipping
3.	**Physical pressures**		
3.1.		Loss of area, habitats	Land reclamation by constructions, urbanisation, agriculture, flood protection, tourism, hydromorphological alteration, fisheries, shift of brackish zones
3.2.		Change of benthic parameters and habitats	Shipping lane development, hydromorphologic alteration, tidal amplitude, increased stream velocity, sediments
3.0.1		Sediment and structural impact	Bottom trawling, shellfish, fish, shrimp fisheries
3.0.2		Waterflow regulation	Dams, weirs, sluices
3.0.3		Dredging	Sand extraction, deepening, harbour maintenance
3.0.4		Disposal of dredged material	Harbour dredged sediments disposal, deepening
3.0.5		Oxygen depletion	Hydromorphological alteration, suspended solids increase
3.0.6		Suspension increase	Tidal pumping, flood dominance, oversized shipping channel
3.0.7		Salinity alteration	Shift of brackish zones, intrusion of salt or fresh water
4	**Others**		
4.1.		Water abstraction	Intakes of industry, power plants
4.2.		Cooling water discharge, warming	Industry, power plants
4.3.		Climate change	Industry, traffic, agriculture
4.4.		Noise	Construction, shipping, maintenance, harbours, military

Reference conditions setting for each type

The WFD requires the comparison of data against reference conditions, for each type and method. Although some methods have published the setting of the reference conditions (see Borja *et al.* (2004, 2007), Muxika *et al.* (2007), etc., and Table 6), during this second phase of the IC, some analyses are being done to set reference conditions by type and ecotope.

Deriving Ecological Quality Ratios for each method

The NEA group has proposed 10 national methods to be intercalibrated during this second phase (Table 6). Some countries are sharing the same method, but here only the MS proposing the method is mentioned. After setting the reference conditions in the previous step, the methods will be applied to the dataset, in order to obtain the respective EQR and the ES classification, depending on the national boundaries.

Table 6. Methods selected by each country to be intercalibrated in transitional waters, within the NEA.

Method	Full name	Author	Member State	Notes
BAT	Benthic Assessment Tool	Teixeira *et al.,* 2009	PT	
BOPA	Benthic Opportunistic Annelida Amphipod	Dauvin and Ruellet, 2007	ES (Andalucía)	Euhaline only
BO2A	Benthic Opportunistic Annelida Amphipod adapted	Dauvin and Ruellet, 2007	ES (Andalucía)	Oligohaline-Polyhaline only
QSB	Quality of Soft Bottoms	Puente *et al.,* 2010	ES (Cantabria)	Reference conditions for type E
M-AMBI	Multivariate AMBI	Borja *et al.,* 2004, Muxika *et al.,* 2007	ES (Basque Country)	Reference conditions for types E and F
MISS	Macrobenthic Index of Sheltered Systems	Lavesque *et al.,* 2009	FR	Reference conditions for all types
BEQI	Benthic Ecosystem Quality Index	Van Hoey *et al.,* 2007	NL, BE	Reference conditions for types E and F
AETV	Estuarine Type Method		DE	Reference conditions for low salinity type D
IQI	Infaunal Quality Index	Prior *et al.,* 2004	UK, RoI	Reference conditions modelled from data sets
BQI	Benthic Quality Index	Rosenberg *et al.,* 2004	SE	Reference conditions for type F

Response to pressures, boundaries and final agreement in the assessment

Initial comparisons will carried out as pairwise comparisons, by means of linear regressions. The extent of agreement between pairs of MSs will be then quantified, based on national boundaries. This reported the boundary match/mismatch ('High/Good' and 'Good/Moderate') between countries and the calculation allowed investigation into the consequences of changing boundaries. Following this, multiple boundary ('high' to 'bad') comparisons will be investigated, as done in coastal areas (Borja *et al.,* 2007). This exercise will provide the agreement after modifying each of the national boundaries.

To analyse the agreement between MSs, a Kappa analysis will be undertake (Cohen, 1960; Landis and Koch, 1977). The level of agreement between the methods will be established, based upon the equivalence table from Monserud and Leemans (1992). As the importance of misclassification is not the same between close categories (e.g. between high and good, or poor and bad) as between further categories (e.g. between high and moderate, or high and bad), Fleiss-Cohen weights will be applied to the analysis (Fleiss and Cohen, 1973), as it was done in coastal areas (Borja *et al.,* 2007).

All this process of IC will be based upon the "Guidance on the intercalibration process" approved by the European Commission (2009).

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Annex 1. Standardized taxa list, from the European North East Atlantic estuaries.

Abarenicola
Abarenicola claparedei
Abludomelita gladiosa
Abludomelita obtusata
Abra
Abra alba
Abra longicallus
Abra nitida
Abra ovata
Abra prismatica
Abra tenuis
Abyssoninoe hibernica
Acanthicolepis asperrima
Acanthocardia
Acanthocardia echinata
Acanthocardia paucicostata
Acanthocardia tuberculata
Acanthochitona crinita
ACARIFORMES
Acarina
Acartia (Acartiura) clausi
Achelia
Achelia echinata
Achelia laevis
Achelia longipes
Acidostoma obesum
Acoetes
Acrocirrus frontifilis
Acrocnida brachiata
Acteon tornatilis
Actinia
Actinia equina
ACTINIARIA
Actiniidae
Adontorhina similis
Aeolosoma hemprichi
Aeolosoma litorale
Aeolosoma quaternarium
Aeolosoma variegatum
Aequipecten opercularis
Aglaophamus malmgreni
Aglaophamus rubella
Akera
Akera bullata
Aktedrilus monospermathecus
Alcyonidium
Alcyonidium mytili
Alcyonidium parasiticum
Alderia modesta
Alitta succinea
Alitta virens
Alkmaria romijni
Allomelita pellucida
Alpheus glaber
Alvania abyssicola
Alvania beanii
Amaeana trilobata
Amage auricula
Amathia lendigera
Amblyosyllis formosa
Ammodytes tobianus
Ammothea hilgendorfi
Ampelisca
Ampelisca brevicornis
Ampelisca diadema
Ampelisca eschrichtii
Ampelisca gibba
Ampelisca macrocephala
Ampelisca remora
Ampelisca sarsi
Ampelisca spinifer
Ampelisca spinimana
Ampelisca spinipes
Ampelisca tenuicornis
Ampelisca truncata
Ampelisca typica
Ampharete
Ampharete baltica
Ampharete falcata
Ampharete finmarchica
Ampharete goesi
Ampharete grubei
Ampharete lindstroemi
Ampharetidae
Amphichaeta leydigii
Amphichaeta sannio
Amphicteis gunneri
Amphicteis midas
Amphictene auricoma
Amphiglena mediterranea
Amphilepis norvegica
Amphilochidae
Amphilochus brunneus
Amphilochus manudens
Amphilochus neapolitanus
Amphilochus spencebatei
Amphipholis squamata
Amphipoda
Amphitrite
Amphitrite cirrata
Amphitritides gracilis
Amphiura
Amphiura chiajei
Amphiura filiformis
Amphiuridae
Ampithoe
Ampithoe ferox
Ampithoe gammaroides
Ampithoe helleri
Ampithoe ramondi
Ampithoe rubricata
Ampithoe valida
Amythasides macroglossus
Anaitides
Anaitides groenlandica
Anaitides lineata
Anaitides longipes
Anaitides maculata
Anaitides mucosa
Anaitides rosea
Anapagurus
Anapagurus bicorniger
Anapagurus chiroacanthus
Anapagurus hyndmanni
Anapagurus laevis
Ancistrosyllis
Ancistrosyllis groenlandica
Anguilla anguilla
Anguinella palmata
Angulus tenuis
ANNELIDA
Anobothrus gracilis
Anodontia fragilis
Anomia ephippium
Anomiidae
Anomura
Anoplodactylus petiolatus
Anoplodactylus pygmaeus
Antalis
Antalis entalis
Antennella
Anthura gracilis
Anthuridae
Antinoella finmarchica
Aonides oxycephala
Aonides paucibranchiata
Aora gracilis
Aora spinicornis
Aora typica
Aoridae
Aphelochaeta
Aphelochaeta filiformis
Aphelochaeta marioni
Aphelochaeta mcintoshi
Aphelochaeta multibranchiis
Aphelochaeta serrata
Apherusa bispinosa
Apherusa chiereghinii
Apherusa clevei
Apherusa jurinei
Apherusa ovalipes
Aphrodita aculeata
Aphroditidae
Apionsoma murinae
Apistobranchus tenuis
Apistobranchus tullbergi
Aplysia depilans
Apocorophium acutum
Apocorophium lacustre
Aponuphis bilineata
Aponuphis brementi
Aporrhais pespelecani
Apseudes
Apseudes latreillii
Apseudes spinosus
Apseudes talpa
Arachnida
Arachnidium
Arctica islandica
Arcturella
Arcturella dilatata
Arenicola
Arenicola defodiens
Arenicola marina
Arenicolidae
Argissa hamatipes
Aricidea
Aricidea albatrossae
Aricidea capensis
Aricidea catherinae
Aricidea cerrutii
Aricidea claudiae
Aricidea jeffreysi
Aricidea laubieri
Aricidea minuta
Aricidea roberti
Aricidea simonae
Aricidea suecica
Aricidea wassi
Armandia
Armandia cirrhosa
Armandia polyophthalma
Arrhis phyllonyx
Artacama proboscidea
Ascidia
Ascidia conchilega
Ascidia mentula
ASCIDIACEA
Ascidiella aspersa
Ascidiella scabra
Asellus aquaticus
Aspidelectra melolontha
Aspidosiphon muelleri
Assiminea grayana
Astacidae
Astacilla longicornis
Astarte crenata
Astarte sulcata
Asterias rubens
Astropecten irregularis
Atelecyclus rotundatus
Atelecyclus undecimdentatus
Athanas nitescens
Atyaephyra desmarestii
Atylus falcatus
Atylus guttatus
Atylus massiliensis
Atylus swammerdamei
Atylus vedlomensis
Augeneria tentaculata
Aulodrilus pluriseta
Aulophorus furcatus
Austropotamobius pallipes
Autolytus
Autolytus aurantiacus
Autolytus brachycephalus
Autolytus edwarsi
Autolytus inermis
Autolytus langerhansi
Autolytus prolifera
Autonoe longipes
Autonoe megacheir
Axinulus croulinensis
Axinulus eumyaria
Axius stirhynchus
Balanidae
Balanus
Balanus balanus
Balanus crenatus
Balanus improvisus
Barentsia
Barnea candida
Barnea parva
Bathyarca pectunculoides
Bathymedon longimanus
Bathyporeia
Bathyporeia elegans
Bathyporeia guilliamsoniana
Bathyporeia nana
Bathyporeia pelagica
Bathyporeia phaiophthalma
Bathyporeia pilosa
Bathyporeia sarsi
Bathyporeia tenuipes
Bembidion
Bembidion laterale
Bhawania goodei
Bicellariella ciliata
Bithynia
Bithynia tentaculata
Bittium
Bittium latreillii
Bittium reticulatum
Boccardia
Boccardia polybranchia
Boccardia redeki
Boccardia semibranchiata
Boccardiella
Boccardiella ligerica
Bodotria
Bodotria arenosa
Bodotria pulchella
Bodotria scorpioides
Bodotriidae
Botryllus schlosseri
Bougainvillia ramosa
Bougainvilliidae
Bowerbankia
Bowerbankia imbricata
Brachycentridae
Brachydiastylis resima
Brachynotus sexdentatus
Brada villosa
Branchiomma
Branchiomma bombyx
Branchiomma vesiculosum
Branchiostoma lanceolatum
Branchiura
Branchiura sowerbyi
Brania
Brania arminii
Brania limbata
Brania pusilla
Brissopsis lyrifera
BRYOPHYTA
BRYOZOA
Buccinidae
Buccinum undatum
Bugula
Bulla striata
Bunodactis verrucosa
Byblis crassicornis
Byblis gaimardii
Caenidae
Caenis
Calanus helgolandicus
Calathura brachiata
Callianassa
Callianassa subterranea
Callipallene
Callipallene emaciata
Callista chione
Callochiton septemvalvis
Calocaris macandreae
Calopteryx
Calycella gracilis
Calycella syringa
Calyptraea chinensis
Campanulariidae
Campanulina pumila
Campylaspis costata
Campylaspis glabra
Campylaspis rubicunda
Campylaspis undata
Capitella
Capitella capitata
Capitella perarmata
Capitellidae
Capitellides giardi
Capitomastus
Capitomastus minimus
Caprella
Caprella acanthifera
Caprella equilibra
Caprella linearis
Caprella penantis
Caprellidae
Carcinus
Carcinus maenas
Cardiidae
Cardita calyculata
Carinoma
Caulleriella
Caulleriella alata
Caulleriella bioculata
Caulleriella viridis
Cavernularia pusilla
Cellaria
Cellaria salicornioides
Cellepora pumicosa
Centropages
Ceradocus semiserratus
Ceramium
Cerastoderma
Cerastoderma edule
Cerastoderma glaucum
Ceratia proxima
Ceratocephale loveni
Ceratopogonidae
Cerebratulus
Cerebratulus marginatus
Cereus pedunculatus
CERIANTHARIA
Cerianthus
Cerianthus lloydii
Cerithiopsis tubercularis
Chaetoderma nitidulum
Chaetogaster diastrophus
Chaetogaster setosus
CHAETOGNATHA
Chaetomorpha
Chaetopleura (Chaetopleura) angulata
Chaetopteridae
Chaetopterus norvegicus
Chaetopterus variopedatus
Chaetozone
Chaetozone christiei
Chaetozone gibber
Chaetozone setosa
Chaetozone vivipara
Chaetozone zetlandica
Chamelea gallina
Chamelea striatula
Chaoboridae
Chartella papyracea
Chauvetia
Chauvetia brunnea
Cheirocratus
Cheirocratus intermedius
Cheirocratus sundevallii
Cheliocorophium curvispinum
Chirimia biceps
Chironomidae
Chironomus
Chironomus aprilinus
Chironomus plumosus
Chironomus salinarius
Chironomus tentans
Chlamys varia
Chloeia venusta
Chone
Chone acustica
Chone collaris
Chone duneri
Chone filicaudata
Chone infundibuliformis
Chone longocirrata
Chordata
Chrysallida decussata
Chrysallida interstincta
Chrysallida terebellum
Chthamalus montagui
Chthamalus stellatus
Circomphalus casina
Cirolana cranchii
Cirolanidae
Cirratulidae
Cirratulus
Cirratulus cirratus
Cirriformia
Cirriformia tentaculata
Cirrophorus branchiatus
Cirrophorus furcatus
Cladophora
Cladotanytarsus
Clausinella fasciata
Clausocalanus
Cliona
Cliona celata
Clitellio arenarius
Clymenura borealis
Clymenura clypeata
Clytia
Clytia hemisphaerica
CNIDARIA
Cochliopidae
Cochlodesma praetenue
COLEOPTERA
COLLEMBOLA
Colomastix pusilla
Commensodorum commensalis
Conchoecia
Conopeum reticulum
Conopeum seurati
COPEPODA
Corallinaceae
Corbicula
Corbicula fluminea
Corbula gibba
Cordylophora caspia
Corella parallelogramma
Corixidae
Corophium
Corophium annulatum
Corophium arenarium
Corophium multisetosum
Corophium orientale
Corophium rotundirostre
Corophium runcicorne
Corophium volutator
Corynidae
Corystes cassivelaunus
Cossura
Cossura coasta
Cossura longocirrata
Cossura pygodactyla
Cossura soyeri
Cossurella
Crangon
Crangon crangon
Crassicorophium bonnellii
Crassicorophium crassicorne
Crassostrea
Crassostrea gigas
Crepidula fornicata
Cricotopus ornatus
Crisia
Crisia eburnea
Crustacea
Cryptochironomus
Cryptochironomus rostratus
Cryptosula pallasiana
Ctenodrilus serratus
CTENOPHORA
Cucumariidae

CUMACEA
Cumella pygmaea
Cumopsis goodsiri
Cumopsis longipes
Cuspidaria cuspidata
Cuspidaria lamellosa
Cuspidaria obesa
Cyathura carinata
Cyclope neritea
Cylichna cylindracea
Cymodoce truncata
Dacrydium ockelmanni
Dacrydium vitreum
Daphnia
Dasychone
DECAPODA
Decipula tenella
Delectopecten vitreus
Dendrodoa grossularia
Dendrotion spinosum
Dentalium
Dentalium novemcostatum
Dero digitata
Desdemona ornata
Dexamine
Dexamine spinosa
Dexamine thea
Dexaminidae
Diaphana minuta
Diastylis
Diastylis bradyi
Diastylis cornuta
Diastylis laevis
Diastylis lucifera
Diastylis rathkei
Diastylis rugosa
Diastylis tumida
Diastyloides biplicata
Diastyloides serrata
Dicrotendipes nervosus
Didemnidae
Digitaria digitaria
Diogenes pugilator
Diopatra neapolitana
Dioplosyllis cirrosa
Diplocirrus glaucus
DIPTERA
Dispio uncinata
Ditrupa arietina
Dodecaceria
Dodecaceria concharum
Dolichopodidae
Donax semistriatus
Donax vittatus
Dorvillea
Dorvillea rubrovittata
Dorvilleidae
Dosinia
Dosinia exoleta
Dosinia lupinus
Dreissena polymorpha
Drilonereis filum
Dynamene bidentata
Dynamene magnitorata
Dyopedos monacanthus
Dyopedos porrectus
Dytiscidae
Ebala nitidissima
Ebalia
Ebalia deshayesi
Ebalia tuberosa
Ebalia tumefacta
Echiichthys vipera
Echinocardium cordatum
Echinocardium flavescens
Echinocardium mediterraneum
Echinocucumis hispida
Echinocyamus pusillus
Echinogammarus
Echinogammarus olivii
ECHINOIDEA
Echinus esculentus
ECHIUROIDEA
Echiurus echiurus
Eclysippe vanelli
Ecnomidae
Edwardsia
Edwardsia claparedii
Edwardsia danica
Edwardsia longicornis
Edwardsiidae
Ehlersia ferrugina
Electra crustulenta
Electra monostachys
Electra pilosa
Elmidae
Elminius
Elminius modestus
Empididae
Enchytraeidae
Enchytraeus
Enchytraeus albidus
Enipo kinbergi
Ensis
Ensis americanus
Ensis arcuatus
Ensis directus
Ensis ensis
Entalina quinquangularis
Enteromorpha
ENTEROPNEUSTA
Eocuma dollfusi
Eocuma ferox
Ephemerella
Ephemeroptera
Ephesiella peripatus
Ephoron virgo
Ephydridae
Epilepton clarkiae
Epitonium clathratulum
Epitonium clathrus
Epitonium pulchellum
Epizoanthus
Epizoanthus couchii
Epizoanthus incrustatus
Ericthonius brasiliensis
Ericthonius difformis
Ericthonius punctatus
Eriocheir sinensis
Eriopisa elongata
Ervilia castanea
Erycinacea
Escharella immersa
Eteone
Eteone flava
Eteone longa
Eualus occultus
Eualus pusiolus
Euchone
Euchone analis
Euchone incolor
Euchone papillosa
Euchone southerni
Euclymene
Euclymene droebachiensis
Euclymene lindrothi
Euclymene lumbricoides
Euclymene oerstedii
Euclymene palermitana
Eucratea loricata
Eudendrium
Eudendrium album
Eudendrium capillare
Eudendrium ramosum
Eudorella
Eudorella emarginata
Eudorella truncatula
Eudorellopsis deformis
Eugyra arenosa
Eulalia
Eulalia aurea
Eulalia bilineata
Eulalia mustela
Eulalia ornata
Eulalia viridis
Eulimella laevis
Eumida
Eumida bahusiensis
Eumida ockelmanni
Eumida sanguinea
Eunereis longissima
Eunice pennata
Eunice vittata
EUNICIDA
Eunicidae
Euphausiacea
Eupolymnia nebulosa
Eupolymnia nesidensis
Eurydice
Eurydice naylori
Eurydice pulchra
Eurydice spinigera
Eurydice truncata
Eurynome aspera
Eusarsiella zostericola
Euspira
Euspira guillemini
Eusyllinae
Eusyllis blomstrandi
Exogone
Exogone hebes
Exogone naidina
Exogone verugera
Fabricia stellaris
Fabriciinae
Fabulina compressa
Fabulina fabula
Farrella repens
Fecampia erythrocephala
Ficopomatus enigmaticus
Filograna implexa
Fimbriosthenelais minor
Fissurellidae
Flabelligera affinis
Flabelligeridae
Flustra foliacea
FORAMINIFERIDA
Galathea intermedia
Galathowenia fragilis
Galathowenia oculata
Gammarella fucicola
Gammaridae
Gammaropsis
Gammaropsis cornuta
Gammaropsis maculata
Gammaropsis palmata
Gammaropsis sophiae
Gammarus
Gammarus chevreuxi
Gammarus crinicornis
Gammarus duebeni
Gammarus insensibilis
Gammarus lacustris
Gammarus locusta
Gammarus salinus
Gammarus tigrinus
Gammarus zaddachi
Gari costulata
Gari depressa
Gari fervensis
Garveia nutans
Gastrana fragilis
GASTROPODA
Gastrosaccus
Gastrosaccus sanctus
Gastrosaccus spinifer
Gattyana amondseni
Gattyana cirrhosa
Gerridae
Gibbula
Gibbula cineraria
Gibbula magus
Gibbula umbilicalis
Gitana sarsi
Glycera
Glycera alba
Glycera capitata
Glycera dayi
Glycera fallax
Glycera lapidum
Glycera oxycephala
Glycera rouxii
Glycera tesselata
Glycera tridactyla
Glycera unicornis
Glyceridae
Glycinde nordmanni
Glycymeris glycymeris
Glyphanostomum pallescens
Glyphohesione klatti
Glyptotendipes pallens
Gnathia
Gnathia oxyuraea
Gnathia vorax
Gnathiidae
Golfingia
Golfingia elongata
Golfingia margaritacea
Golfingia vulgaris
Goneplax rhomboides
Goniada emerita
Goniada maculata
Goniada norvegica
Goniadella
Goniadella bobretzkii
Goniadella galaica
Goniadella gracilis
Gonothyraea loveni
Goodallia triangularis
Gouldia minima
Gracilaria
Guernea coalita
Gymnocephalus cernuus
Gyptis
Gyptis propinqua
Gyptis rosea
Gyraulus
Gyrinidae
Halacaridae
Halcampa chrysanthellum
Halecium
Halecium beanii
Haliclona
Halicryptus spinulosus
Haliplus
Halocladius
Haminoea
Haminoea hydatis
Haminoea navicula
Haploops setosa
Haploops tubicola
Harmothoe
Harmothoe antilopes
Harmothoe benthophila
Harmothoe borealis
Harmothoe elisabethae
Harmothoe extenuata
Harmothoe fragilis
Harmothoe fraserthomsoni
Harmothoe imbricata
Harmothoe impar
Harpinia
Harpinia antennaria
Harpinia crenulata
Harpinia dellavallei
Harpinia laevis
Harpinia mucronata
Harpinia pectinata
Harpinia serrata
Harrimania kupfferi
Harrimanidae
Hartlaubella gelatinosa
Hauchiella tribullata
Haustorius arenarius
Hediste
Hediste diversicolor
Helophorus
HEMICHORDATA
Hemigrapsus penicillatus
Hemigrapsus takanoi
Hemilamprops rosea
Hemilepton nitidum
Heptageniidae
Hermonia hystrix
Hesionidae
Hesionura elongata
Heteranomia squamula
Heterochaeta costata
Heteroclymene robusta
Heteromastus
Heteromastus filiformis
Heteromysis microps
Heterotanais oerstedi
HEXACORALLIA
Hiatella
Hiatella arctica
Hinia
Hinia argenteus
Hinia incrassata
Hinia pygmaea
Hinia reticulata
Hippolytidae
Hippomedon denticulatus
Hippomedon massiliensis
Hippoporina pertusa
HIRUDINEA
Holothuria
HOPLONEMERTEA
Hyala vitrea
Hyale prevostii
Hyalinoecia tubicola
Hyas araneus
Hydra oligactis
Hydrallmania falcata
Hydrobia
Hydrobia ulvae
Hydrobiidae
Hydroides
Hydroides ezoensis
Hydroides norvegica
Hydrophilidae
Hydroptilidae
HYMENOPTERA
Hypereteone foliosa
Idotea
Idotea baltica
Idotea chelipes
Idotea emarginata
Idotea granulosa
Idotea linearis
Idotea metallica
Idotea pelagica
Idoteidae
Ilyarachna coronata
Ilyarachna longicornis
Inachus
Inachus communissimus
Inachus dorsettensis
Incisocalliope aestuarius
INSECTA
Iphinoe
Iphinoe serrata
Iphinoe tenella
Iphinoe trispinosa
Isaeidae
Ischnomesus bispinosus
Ischyroceridae
Isopoda
Jaera
Jaera albifrons
Jaera nordmanni
Janira maculosa
Jasmineira
Jasmineira candela
Jasmineira caudata
Jasmineira elegans
Jassa
Jassa falcata
Jassa marmorata
Jassa ocia
Jujubinus striatus
Jupiteria minuta
Kellia suborbicularis
Kelliella abyssicola
Kelliella miliaris
Kloosia pusilla
Labidoplax buskii
Labidoplax digitata
Labioleanira yhleni
Laetmatophilus tuberculatus
Laetmonice filicornis
Laevicardium crassum
Lagis
Lagis koreni
Lagotia viridis
Lamprops fasciata
Lanassa venusta
Lanice conchilega
Laomedea calceolifera
Laonice
Laonice bahusiensis
Laonice cirrata
Laonice sarsi
Laonome kroyeri
Laphania boecki
Lasaea adansoni
Lekanesphaera
Lekanesphaera hookeri
Lekanesphaera levii
Lekanesphaera rugicauda
Lembos
Lembos spiniventris
Lepidepecreum longicorne
Lepidochitona cinerea
Lepidonotus squamatus
Leptoceridae
Leptocheirus pectinatus
Leptocheirus pilosus
Leptochelia
Leptochelia dubai
Leptocheliidae
Leptochiton asellus
Leptochiton cancellatus
Leptognathiidae
Lepton squamosum
Leptopentacta elongata
Leptopentacta tergestina
Leptostylis longimana
Leptostylis villosa
Leptosynapta
Leptosynapta bergensis
Leptosynapta gallienii
Leptosynapta inhaerens
Leuckartiara octona
Leucon
Leucon (Macrauloleucon) siphonatus
Leucon acutirostris
Leucon nasica
Leucosolenia
Leucothoe
Leucothoe incisa
Leucothoe lilljeborgi
Leucothoe richiardii
Levinsenia gracilis
Liljeborgia fissicornis
Liljeborgia pallida
Limapontia
Limapontia depressa
Limatula gwyni
Limatula subauriculata
Limnodriloides
Limnodrilus
Limnodrilus claparedianus
Limnodrilus hoffmeisteri
Limnodrilus profundicola
Limnodrilus udekemianus
Limnoria quadripunctata
Limopsis cristata
Limopsis minuta
Lineus
Lineus ruber
Liocarcinus
Liocarcinus corrugatus
Liocarcinus depurator
Liocarcinus holsatus

Liocarcinus marmoreus
Liocarcinus navigator
Liocarcinus pusillus
Liocarcinus vernalis
Liocarcinus zariquieyi
Lipobranchius jeffreysii
Listriella picta
Littorina
Littorina littorea
Littorina obtusata
Littorina saxatilis
Lophogastridae
Loripes lacteus
Lovenella clausa
Loxosomella
Lucinella divaricata
Lucinidae
Lucinoma borealis
Lumbricillus lineatus
Lumbriclymene minor
Lumbriculus variegatus
Lumbrineridae
Lumbrineriopsis paradoxa
Lumbrineris
Lumbrineris aniara
Lumbrineris cingulata
Lumbrineris coccinea
Lumbrineris gracilis
Lumbrineris latreilli
Lumbrineris mixochaeta
Lumbrineris nonatoi
Lutraria
Lutraria angustior
Lutraria lutraria
Lutraria magna
Lygdamis muratus
Lymnaeidae
Lyonsia norwegica
Lysianassa ceratina
Lysianassa insperata
Lysianassa plumosa
Lysianassidae
Lysidice ninetta
Lysilla loveni
Lysippe labiata
Macoma
Macoma balthica
Macoma calcarea
Macoma cumana
Macropodia
Macropodia parva
Macropodia rostrata
Mactra stultorum
Maera grossimana
Maera loveni
Maera othonis
Magelona
Magelona alleni
Magelona equilamellae
Magelona filiformis
Magelona johnstoni
Magelona minuta
Magelona mirabilis
Malacobdella grossa
Malacoceros
Malacoceros fuliginosus
Malacoceros tetracerus
Malacoceros vulgaris
Maldane glebifex
Maldane sarsi
Maldanidae
Malmgreniella
Malmgreniella andreapolis
Malmgreniella arenicolae
Malmgreniella castanea
Malmgreniella glabra
Malmgreniella ljungmani
Malmgreniella marphysae
Manayunkia aestuarina
Mangelia
Mangelia attenuata
Mangelia brachystoma
Mangelia coarctata
Mangelia nebula
Mangelia smithii
Marenzelleria
Marenzelleria neglecta
Marenzelleria viridis
Marenzelleria wireni
Marionina
Marionina argentea
Marionina riparia
Marphysa bellii
Marphysa sanguinea
Marthasterias glacialis
MAXILLOPODA
Medicorophium affine
Mediomastus
Mediomastus capensis
Mediomastus fragilis
Medorippe lanata
Megalomma vesiculosum
Megaluropus agilis
Megamphopus
Meganyctiphanes norvegica
Melicertus kerathurus
Melinna cristata
Melinna palmata
Melita
Melita nitida
Melita palmata
Melitidae
Mendicula ferruginosa
Mercenaria mercenaria
Mesidotea entomon
Mesopodopsis slabberi
Metaphoxus simplex
Metasychis gotoi
Microdeutopus
Microdeutopus algicola
Microdeutopus anomalus
Microdeutopus damnoniensis
Microdeutopus gryllotalpa
Microdeutopus stationis
Microdeutopus versiculatus
Microjassa cumbrensis
Micromaldane ornithochaeta
Micronephthys maryae
Micronephthys minuta
Microphthalmus
Microphthalmus aberrans
Microphthalmus fragilis
Microphthalmus sczelkowii
Microphthalmus similis
Microprotopus
Microprotopus maculatus
Microspio
Microspio atlantica
Microspio meczinikowianus
Micrura baltica
Minuspio
Minuspio cirrifera
Minuspio multibranchiata
Mitrella
Modiolarca subpicta
Modiolarca tumida
Modiolula phaseolina
Modiolus
Modiolus adriaticus
Modiolus barbatus
Modiolus modiolus
Moerella donacina
Moerella pygmaea
Molgula
Molgula manhattensis
Molgula occulta
Mollusca
Monocorophium acherusicum
Monocorophium insidiosum
Monocorophium sextonae
Monoculodes gibbosus
Monoculodes packardi
Monoculodes subnudus
Monoculodes tenuirostratus
Monopylephorus irroratus
Montacuta substriata
Monticellina
Monticellina dorsobranchialis
Monticellina heterochaeta
Mugga wahrbergi
Munna
Munna minuta
Musculista senhousia
Musculus
Musculus costulatus
Musculus discors
Musculus niger
Mya arenaria
Mya truncata
MYODOCOPIDA
Myosotella myosotis
Myrianida
Myrianida brachycephala
Myriapoda
Myriochele
Myriochele danielsseni
Myriochele heeri
Myrtea spinifera
Mysella
Mysella bidentata
Mysia undata
MYSIDACEA
Mysidae
Mysis
Mysta barbata
Mysta picta
Mytilaster minimus
Mytilidae
MYTILOIDA
Mytilus
Mytilus edulis
Mytilus galloprovincialis
Myxicola infundibulum
Naidinae
Nais
Nais communis
Nais elinguis
Nassarius
Nassarius nitidus
Natatolana borealis
Neanthes
Neanthes caudata
Neanthes fucata
Neanthes irrorata
Nebalia
Nebalia bipes
NEMATODA
Nematonereis unicornis
NEMERTEA
Nemertes
Nemouridae
Neoamphitrite
Neoamphitrite affinis
Neoamphitrite edwardsi
Neoamphitrite figulus
Neohela monstrosa
Neoleanira tetragona
NEOLORICATA
Neomysis integer
Nephasoma minutum
Nephrops norvegicus
Nephtyidae
Nephtys
Nephtys assimilis
Nephtys caeca
Nephtys ciliata
Nephtys cirrosa
Nephtys hombergii
Nephtys hystricis
Nephtys incisa
Nephtys kersivalensis
Nephtys longosetosa
Nephtys paradoxa
Nepinnotheres pinnotheres
Nereididae
Nereimyra punctata
Nereiphylla paretti
Nereis
Nereis lamellosa
Nereis rava
Nereis zonata
Nicolea venustula
Nicomache
Nicomache lumbricalis
Noemiamea dolioliformis
Nolella
Nothria conchylega
Nothria geophiliformis
Notomastus
Notomastus latericeus
Notomastus lineatus
Notomastus profundus
Notophyllum foliosum
Nucula
Nucula hanleyi
Nucula nitidosa
Nucula nucleus
Nucula sulcata
Nucula tumidula
Nuculana pella
Nuculana pernula
Nuculidae
Nuculoma tenuis
Nudibranchia
Nymphon
Nymphon brevirostre
Obelia
Obelia bidentata
Obelia dichotoma
Obelia longissima
Ocenebra erinacea
Octobranchus floriceps
Odontosyllis ctenostoma
Odontosyllis fulgurans
Odontosyllis gibba
Odostomia
Odostomia acuta
Odostomia plicata
Odostomia turrita
Oenonidae
Oerstedia
Oerstedia dorsalis
OLIGOCHAETA
Oligoneuriella rhenana
Onchnesoma squamatum
Onchnesoma steenstrupi
Onoba
Onoba semicostata
Onuphidae
Ophelia
Ophelia bicornis
Ophelia borealis
Ophelia laubieri
Ophelia limacina
Ophelia neglecta
Ophelia rathkei
Opheliidae
Ophelina
Ophelina abranchiata
Ophelina acuminata
Ophelina cylindricaudata
Ophelina modesta
Ophelina norvegica
Ophiacantha bidentata
Ophiactis abyssicola
Ophiocten affinis
Ophiocten gracilis
Ophiodromus agilis
Ophiodromus flexuosus
Ophiodromus pallidus
Ophiopholis aculeata
Ophiothrix fragilis
Ophiura
Ophiura albida
Ophiura ophiura
Ophiura robusta
Ophiura sarsi
Ophiurida
Ophiuridae
OPHIUROIDEA
Ophryotrocha
Ophryotrocha bacci
Ophryotrocha hartmanni
Ophryotrocha labronica
Ophryotrocha longidentata
Ophryotrocha puerilis
Orbinia
Orbinia foetida
Orbinia grubei
Orbinia norvegica
Orbinia sertulata
Orbiniidae
Orchomene humilis
Orchomene massiliensis
Orchomenella nana
Oriopsis
Oriopsis armandi
OSTEICHTHYES
Ostracoda
Ostrea edulis
Ostreidae
OSTREOIDA
Ovatella myosotis
Owenia fusiformis
Pachygrapsus marmoratus
Paguridae
Pagurus
Pagurus bernhardus
Pagurus cuanensis
Pagurus prideaux
Palaemon
Palaemon adspersus
Palaemon elegans
Palaemon longirostris
Palaemon macrodactylus
Palaemon serratus
Palaemonetes antennarius
Palaemonetes varians
Palaemonidae
Paleanotus debilis
Pandora albida
Panthalis oerstedi
Paradiopatra fiordica
Paradiopatra quadricuspis
Paradoneis
Paradoneis armata
Paradoneis harpagonea
Paradoneis ilvana
Paradoneis lyra
Paragnathia formica
Parajassa pelagica
Paralacydonia paradoxa
Paraleptophlebia
Parametaphoxus fultoni
Paramphilochoides odontonyx
Paramphinome jeffreysii
Paramphitrite tetrabranchia
Paramysis
Paramysis nouveli
Paranais frici
Paranais litoralis
Paranaitis kosteriensis
Paraonidae
Paraonis
Paraonis fulgens
Paraphoxus
Paraphoxus oculatus
Parapionosyllis
Parapionosyllis brevicirra
Parapionosyllis cabezali
Parapionosyllis elegans
Parapionosyllis gestans
Parapionosyllis labronica
Parapionosyllis minuta
Parapleustes assimilis
Parapleustes bicuspis
Pariambus typicus
Parougia
Parougia caeca
Partulida pellucida
Parvicardium
Parvicardium exiguum
Parvicardium minimum
Parvicardium ovale
Parvicardium scabrum
Parvicardium scriptum
Parvipalpus capillaceus
Pectinaria
Pectinaria belgica
Pectinidae
Pedicellina
PELECYPODA
Pelogenia arenosa
Pennatula phosphorea
Peresiella clymenoides
Perinereis cultrifera
Perioculodes
Perioculodes longimanus
Pestarella tyrrhena
Petricola
Petricola pholadiformis
Pettiboneia
Phariellidae
Pharus legumen
Phascolion strombus
Phaxas
Phaxas adriacticus
Phaxas pellucidus
Pherusa flabellata
Pherusa monilifera
Pherusa plumosa
Phialella quadrata
Philine
Philine aperta
Philine catena
Philine denticulata
Philine quadrata
Philine scabra
Philocheras bispinosus
Philocheras monacanthus
Phisidia aurea
Pholadoidea
Pholas
Pholoe baltica (sensu petersen)
Pholoe inornata (sensu petersen)
Pholoe longa
Pholoe pallida
PHORONIDA
Phoronidae
Phoronis
Phoronis muelleri
Photis longicaudata
Photis longipes
Photis reinhardi
Phoxocephalus holbolli
Phtisica marina
Phyllochaetopterus
Phyllodoce
Phyllodoce laminosa
Phyllodocidae
Physa
Physella acuta
Pilargidae
Pilargis verrucosa
Pilumnus
Pilumnus hirtellus
Pinnotheres pisum
Pionosyllis
Pionosyllis pulligera
Pirakia punctifera
Piromis eruca
Pisidia longicornis
Pisidium
Pisidium amnicum
Pisidium casertanum
Pisidium henslowanum
Pisidium nitidum
Pisidium subtruncatum
Pisidium supinum
Pisione remota
Pista cristata
Pistella lornensis
Pitar rudis
Plagiocardium papillosum
PLANTAE

Platyhelminthes
Platynereis dumerilii
Plecoptera
Pleustidae
Pleusymtes glaber
Plocamium cartilagineum
Plumularia setacea
Podarkeopsis arenicola
Podarkeopsis capensis
Podoceridae
PODOCOPIDA
Podocoryne
Pododesmus patelliformis
Poecilochaetus serpens
Polinices montagui
Polinices pulchellus
Polybius henslowii
Polycarpa fibrosa
Polycentropodidae
POLYCHAETA
Polycirrus
Polycirrus arcticus
Polycirrus aurantiacus
Polycirrus medusa
Polycirrus norvegicus
Polycirrus pallidus
Polycirrus tenuisetis
Polydora
Polydora armata
Polydora caeca
Polydora caulleryi
Polydora ciliata
Polydora cornuta
Polydora flava
Polydora giardi
Polydora hoplura
Polydora ligni
Polydora quadrilobata
Polydora socialis
Polydora tentaculata
Polydora websteri
Polygireulima monterosatoi
Polygordius appendiculatus
Polynoe scolopendrina
Polynoidae
Polyophthalmus pictus
Polypedilum nubeculosum
Polyphysia crassa
POLYPLACOPHORA
Polysiphonia
Pomatoceros lamarcki
Pomatoceros triqueter
Pomatoschistus
Pomatoschistus microps
Pomatoschistus minutus
Pomatoschistus pictus
Pontocrates
Pontocrates altamarinus
Pontocrates arenarius
Pontoporeia affinis
Pontoporeia femorata
Porcellana platycheles
PORIFERA
Portumnus latipes
Portunidae
Potamopyrgus
Potamopyrgus antipodarum
Potamothrix
Potamothrix bavaricus
Potamothrix hammoniensis
Potamothrix moldaviensis
Potamothrix vejdovskyi
Praunus
Praunus flexuosus
Praxillella affinis
Praxillella gracilis
Praxillella praetermissa
Praxillura longissima
Priapulida
Priapulus caudatus
Prionospio
Prionospio banyulensis
Prionospio caspersi
Prionospio dubia
Prionospio ehlersi
Prionospio fallax
Prionospio pulchra
Prionospio steenstrupi
Proceraea cornuta
Processa
Processa canaliculata
Processa edulis
Processa macrophthalma
Processa modica
Processa nouveli
Processidae
Procladius
Proclea graffii
Propappus volki
Protocirrineris chrysoderma
Protodorvillea kefersteini
Protodrilus
Protomedeia fasciata
Protomystides
Psamathe fusca
Psammechinus miliaris
Psammodrilus balanoglossoides
Psammoryctides barbatus
Pseudamussium septemradiatum
Pseudocuma longicornis
Pseudocuma similis
Pseudoleiocapitella fauveli
Pseudolirius kroyerii
Pseudomystides limbata
Pseudoparatanais batei
Pseudopolydora
Pseudopolydora antennata
Pseudopolydora paucibranchiata
Pseudopolydora pulchra
Pseudopotamilla reniformis
Pseudoprotella phasma
Pseudosphyrapus anomalus
Ptychoderidae
Pusillina inconspicua
Pusillina sarsi
PYCNOGONIDA
Pycnogonidae
Pycnogonum littorale
Pygospio
Pygospio elegans
Quistadrilus multisetosus
Radix balthica
Retusa
Retusa alba
Retusa obtusa
Retusa truncatula
Retusa umbilicata
Rhagionidae
Rhithropanopeus harrissii
Rhodine gracilior
Rhodine loveni
Ringicula auriculata
Ringicula conformis
Rissoa
Rissoa interrupta
Rissoa labiosa
Rissoa membranacea
Rissoa parva
Sabella
Sabella melanostigma
Sabella pavonina
Sabellaria
Sabellaria alveolata
Sabellaria spinulosa
Sabellidae
Sabellides octocirrata
Saccocirrus papillocercus
Sacculina carcini
Saduriella losadai
Sagartia troglodytes
Sagartiogeton undatus
Sagittidae
Salmacina dysteri
Salvatoria
Samytha sexcirrata
Saxicavella jeffreysi
Scalibregma
Scalibregma celticum
Scalibregma inflatum
Scalibregmatidae
Scaphander
Scaphander lignarius
Schistomeringos
Schistomeringos neglecta
Schistomeringos rudolphi
Schistomysis
Schistomysis kervillei
Schistomysis ornata
Schistomysis spiritus
Schizomavella auriculata
Schizomavella linearis
Scirtidae
Sclerocheilus minutus
Scolaricia
Scolaricia typica
Scolelepis
Scolelepis bonnieri
Scolelepis cantabra
Scolelepis foliosa
Scolelepis korsuni
Scolelepis squamata
Scolelepis tridentata
Scolepis cirratulus
Scoletoma emandibulata
Scoletoma fragilis
Scoletoma impatiens
Scoletoma magnidentata
Scoloplos armiger
Scrobicularia plana
Scrupocellaria scrupea
Scrupocellaria scruposa
Scypha ciliata
Semelidae
Semibalanus balanoides
Serpula vermicularis
Serpulidae
Sertularia
Sertularia argentea
Sertularia cupressina
Sertulariidae
Sialidae
Sigalion
Sigalion mathildae
Sigalion squamosus
Sigambra tentaculata
Sige fusigera
Similipecten similis
Simuliidae
Siphonodentalium lobatum
Siphonoecetes
Siphonoecetes kroyeranus
Siphonoecetes striatus
SIPUNCULA
Sipunculidae
Solemya togata
Solen
Solen marginatus
Sosane sulcata
Sosanopsis wireni
Spatangidae
SPATANGOIDA
Sphacelaria
Sphaerium
Sphaerodoridium claparedii
Sphaerodoropsis
Sphaerodoropsis minuta
Sphaerodoropsis philippi
Sphaerodorum gracilis
Sphaeroma
Sphaeroma cf. bocqueti
Sphaeroma serratum
Sphaeromatidae
Sphaerosyllis
Sphaerosyllis bulbosa
Sphaerosyllis erinaceus
Sphaerosyllis hystrix
Sphaerosyllis pirifera
Sphaerosyllis taylori
Sphaerosyllis tetralix
Sphenia binghami
Spio
Spio armata
Spio decorata
Spio filicornis
Spio martinensis
Spiochaetopterus
Spiochaetopterus costarum
Spiochaetopterus typicus
SPIONIDA
Spionidae
Spiophanes bombyx
Spiophanes kroyeri
Spiophanes urceolata
Spiophanes wigleyi
Spirorbidae
Spirorbis
Spisula
Spisula elliptica
Spisula solida
Spisula subtruncata
Stenothoe
Stenothoe marina
Stenothoe monoculoides
Sternaspis scutata
Sthenelais
Sthenelais boa
Sthenelais limicola
Streblosoma bairdi
Streblosoma intestinalis
Streblospio
Streblospio benedicti
Streblospio shrubsolii
Streptosyllis websteri
Striarca lactea
Styela clava
Stylochus
Subadyte pellucida
Syllidae
Syllides
Syllides benedicti
Syllidia armata
Syllis
Syllis amica
Syllis armillaris
Syllis cornuta
Syllis garciai
Syllis gracilis
Syllis hyalina
Syllis parapari
Syllis prolifera
Syllis variegata
Synchelidium
Synchelidium haplocheles
Synchelidium longidigitatum
Synchelidium maculatum
Synidotea laevidorsalis
Synidotea laticauda
Synisoma
Tabanidae
Tachytrypane jeffreysii
Talitridae
Talitrus saltator
TANAIDACEA
Tanaidae
Tanaidomorpha
Tanais dulongii
Tanaissus
Tanaissus lilljeborgi
Tanaopsis graciloides
Tanypodinae
Tapes
Tapes aureus
Tapes decussatus
Tapes philippinarum
Tapes rhomboides
Tectonatica affinis
Tectura virginea
Tellimya ferruginosa
Tellina
Tellina distorta
Tellina incarnata
Tellina pulchella
Tellina serrata
Tellinidae
Tenora
Terebella lapidaria
TEREBELLIDA
Terebellidae
Terebellides stroemi
Tetrastemma
Tetrastemma longissimum
Tetrastemma melanocephalum
Tetrastemmatidae
Thalassema thalassemum
Thalassosmittia thalassophila
Tharyx
Tharyx dorsobranchialis
Tharyx killariensis
Thelepus cincinnatus
Theodoxus fluviatilis
Theostoma oerstedi
Thracia
Thracia convexa
Thracia distorta
Thracia phaseolina
Thracia villosiuscula
Thyasira
Thyasira equalis
Thyasira flexuosa
Thyasira gouldi
Thyasira granulosa
Thyasira obsoleta
Thyasira sarsi
Thyasira succisa
Thyone fusus
Thysanocardia procera
Timarete tentaculata
Timoclea ovata
Tipulidae
Tmetonyx cicada
Tornus subcarinatus
Tragula fenestrata
Travisia forbesii
Trichobranchus glacialis
Trichobranchus roseus
Trichoptera
Tricolia pullus
Tridonta borealis
Tridonta elliptica
Tridonta montagui
Tritaeta gibbosa
Trochidae
Trochochaeta
Trochochaeta multisetosa
Tryphosella sarsi
Tryphosites longipes
Tubifex
Tubifex nerthus
Tubifex tubifex
Tubificidae
Tubificoides
Tubificoides amplivasatus
Tubificoides benedii
Tubificoides galiciensis
Tubificoides heterochaetus
Tubificoides pseudogaster
Tubificoides swirencoides
Tubulanus
Tubulanus linearis
Tubulanus polymorphus
TURBELLARIA
Turbonilla acuta
Turridae
Turritella communis
Turritella triplicata
Tylos
Uncinais uncinata
Unciola crenatipalma
Unciola planipes
Unidentifiable
Upogebia
Upogebia deltaura
Upogebia pusilla
Upogebia stellata
Upogebia tipica
Urothoe
Urothoe brevicornis
Urothoe elegans
Urothoe grimaldii
Urothoe intermedia
Urothoe poseidonis
Urothoe pulchella
Valvata cristata
Valvata macrostoma
Valvata piscinalis
Vaunthompsonia cristata
Vejdovskyella intermedia
Veneridae
VENEROIDA
Venerupis
Venerupis senegalensis
Ventrosia ventrosa
Venus verrucosa
Verruca stroemia
Vesicularia spinosa
Virgularia
Virgularia mirabilis
Vitreolina collinsi
Viviparus
Viviparus viviparus
Walkeria uva
Websterinereis glauca
Westwoodilla caecula
Westwoodilla rectirostris
Xanthidae
Xantho
Yoldiella
Yoldiella acuminata
Yoldiella frigida
Yoldiella lenticula
Yoldiella lucida
Yoldiella nana
Yoldiella propinqua
Zenobiana prismatica