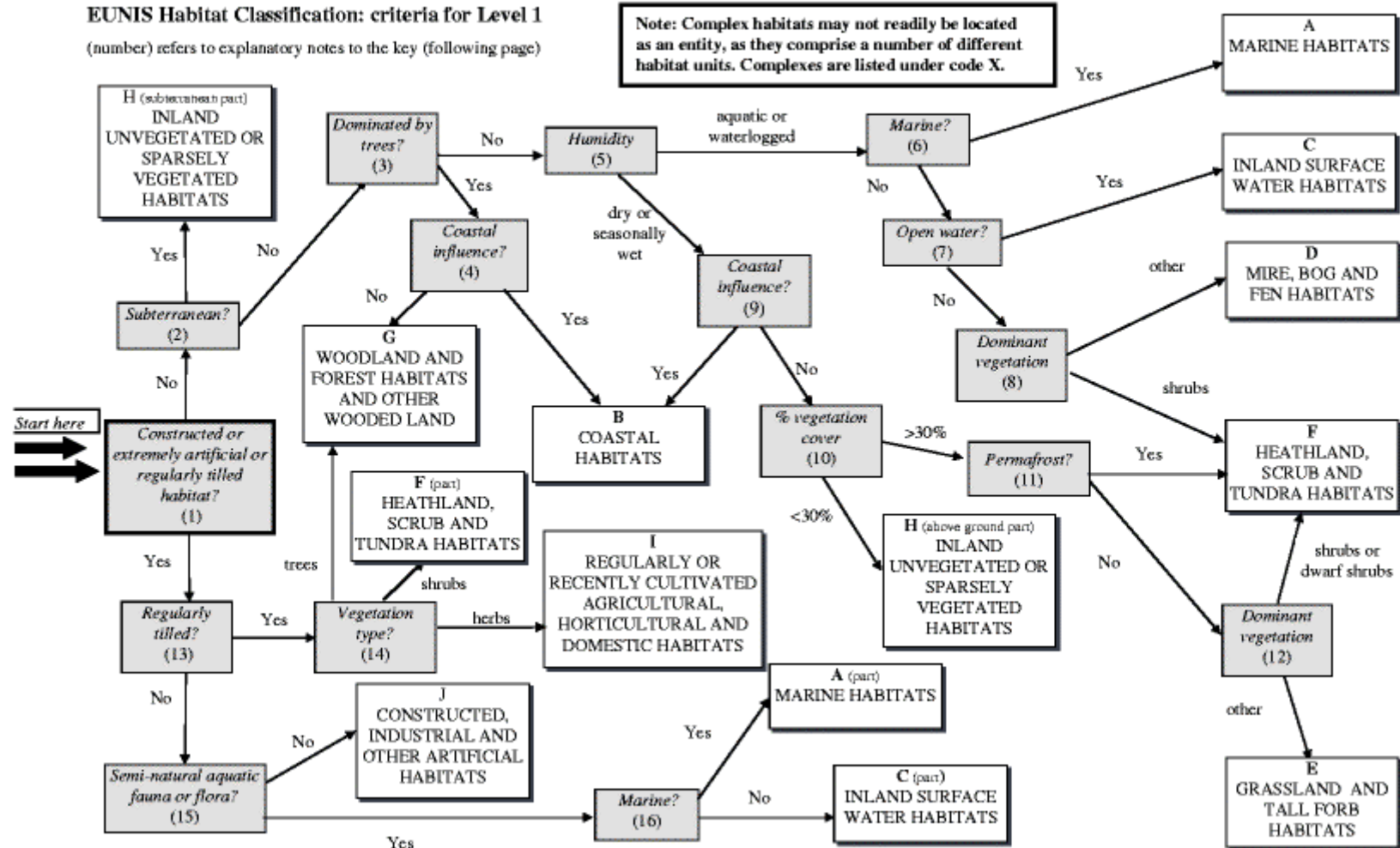


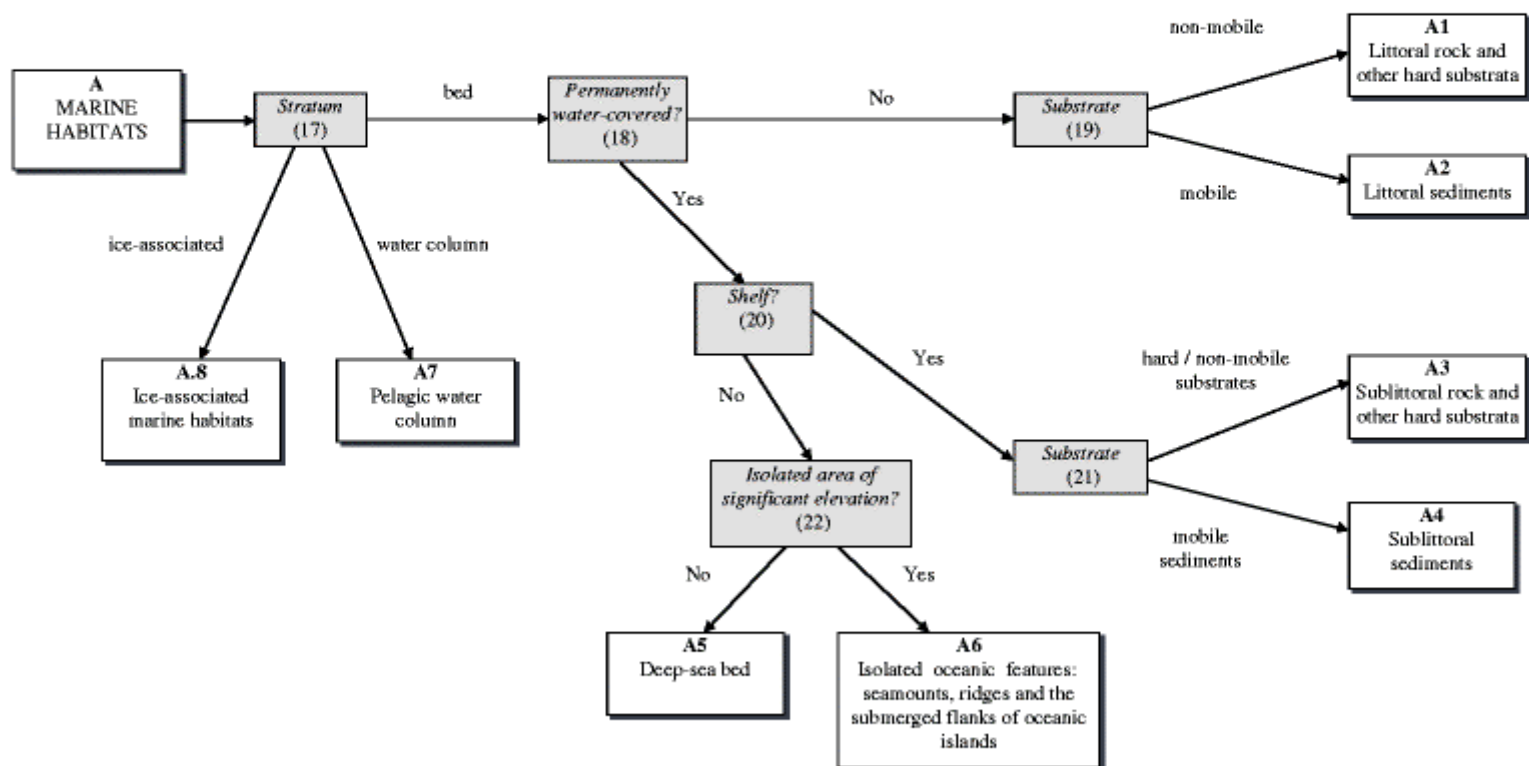
EUNIS Habitat Classification: criteria for Level 1
(number) refers to explanatory notes to the key (following page)

Note: Complex habitats may not readily be located as an entity, as they comprise a number of different habitat units. Complexes are listed under code X.



EUNIS Habitat Classification: criteria for marine habitats to Level 2

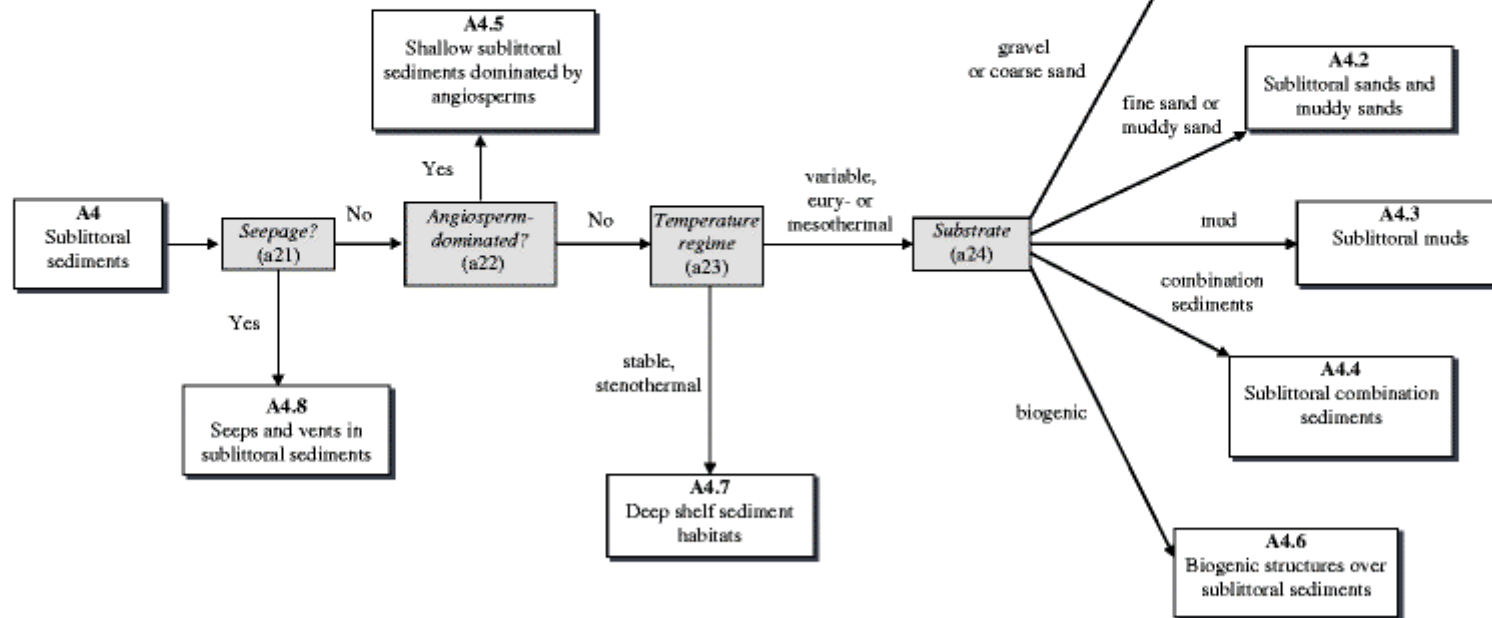
Note that the key to Level 1 shows two pathways to reach habitat type A: these are recombined here. (number) refers to explanatory notes to the key (following page)



EUNIS Habitat Classification: criteria for sublittoral sediments (A4) to Level 3

(number) refers to explanatory notes to the key

Note: In some marine areas a clear distinction can be made between infralittoral and circalittoral sediments, but this has proved difficult to formalise in this key as a consistent criterion applicable across the whole area covered by EUNIS. In A4.1 to A4.4, when it is possible to separate sediment habitats in shallower and deeper waters, this separation is at level 4.



EUNIS Habitat classification : habitat description

A4 - Sublittoral sediments

A4.1 - Sublittoral mobile cobbles, gravels and coarse sands

- A4.11 - Animal communities in shallow-water gravels
- A4.111 - [*Halcampa chrysanthellum*] and [*Edwardsia timida*] on sublittoral clean stone gravel
- A4.112 - [*Spisula elliptica*] and venerid bivalves in infralittoral clean sand or shell gravel
- A4.113 - Association with rhodolithes in coarse sands and fine gravels mixed by waves
- A4.114 - Facies with [*Gouania wildenowi*]
- A4.115 - Baltic shell gravel bottoms in the infralittoral photic zone
- A4.12 - Animal communities in shallow-water coarse sands
- A4.121 - Sparse fauna in marine infralittoral mobile clean sand
- A4.122 - [*Sertularia cupressina*] and [*Hydrallmania falcata*] on tide-swept sublittoral cobbles or pebbles in coarse sand
- A4.123 - Dense [*Lanice conchilega*] and other polychaetes in tide-swept shallow-water sand
- A4.124 - Greenland cockle [*Serripes*] in shallow coarse sand (influenced by warm low-salinity melt water) of the Arctic
- A4.13 - Animal communities of circalittoral mobile cobbles, gravels and sands
- A4.131 - Venerid bivalves in circalittoral coarse sand or gravel
- A4.1311 - [*Neopentadactyla mixta*] and venerid bivalves in circalittoral shell gravel or coarse sand
- A4.1312 - Venerid bivalves and [*Branchiostoma lanceolatum*] in circalittoral coarse sand with shell gravel
- A4.132 - [*Pomatoceros triqueter*], [*Balanus crenatus*] and bryozoan crusts on mobile circalittoral cobbles and pebbles
- A4.133 - [*Sertularia argentea*], [*Sertularia cupressina*] and [*Hydrallmania falcata*] on tide-swept circalittoral cobbles and pebbles
- A4.134 - Scallops on shell gravel and sand with some sand scour
- A4.14 - Animals communities in deeper coarse sands
- A4.141 - Coarse sand, 100-120 m, with polychaetes [*Hesionura elongata*], [*Protodorvillea kefersteini*], [*Protomystides bidentata*] and molluscs [*Moerella pygmaea*]
- A4.15 - Animal communities in variable or reduced salinity gravels and coarse sands
- A4.151 - Baltic level gravel bottoms of the infralittoral photic zone with little or no macrophyte vegetation
- A4.152 - Baltic gravel banks of the infralittoral photic zone

A4.2 - Sublittoral sands and muddy sands

- A4.21 - Animal communities in fully marine shallow clean sands
- A4.211 - [*Nephtys cirrosa*] and [*Bathyporeia*] spp. in shallow-water sand
- A4.212 - [*Fabulina fabula*] and [*Magelona mirabilis*] with venerid bivalves in shallow-water compacted fine sand
- A4.22 - Communities of fine sands in very shallow waters
- A4.221 - Facies with [*Lentidium mediterraneum*]
- A4.23 - Communities of well sorted fine sands
- A4.24 - Animal communities in variable or reduced salinity shallow clean sands
- A4.241 - Sparse fauna in reduced salinity shallow-water mobile sand
- A4.242 - [*Nephtys cirrosa*] and fluctuating salinity-tolerant fauna in reduced salinity shallow-water mobile sand
- A4.243 - [*Neomysis integer*] and [*Gammarus*] spp. in low salinity shallow-water mobile sand
- A4.244 - Baltic level sandy bottoms of the infralittoral photic zone with little or no macrophyte vegetation
- A4.245 - Baltic sand bars of the infralittoral photic zone
- A4.246 - Baltic sand banks of the infralittoral photic zone
- A4.247 - [*Macoma balthica*] in brackish environment (seasonally ice-covered)
- A4.25 - Animal communities in fully marine shallow-water muddy sands
- A4.251 - [*Echinocardium cordatum*] and [*Ensis*] sp. in lower shore or shallow sublittoral muddy fine sand
- A4.252 - [*Spio filicornis*] and [*Spiophanes bombyx*] infralittoral clean or muddy sand
- A4.253 - [*Macoma balthica*] and [*Abra alba*] in infralittoral muddy sand or mud
- A4.254 - [*Capitella capitata*] in enriched sublittoral muddy sediments
- A4.255 - [*Turritella*] in muddy sands
- A4.256 - [*Ervillia castanea*] beds in infralittoral sand
- A4.26 - Animal communities in variable or reduced salinity muddy sands
- A4.27 - Animal communities of circalittoral muddy sands
- A4.271 - [*Abra alba*], [*Nucula nitida*] and [*Corbula gibba*] in circalittoral muddy sand or slightly mixed sediments
- A4.272 - [*Amphiura filiformis*] and [*Echinocardium cordatum*] in circalittoral clean or slightly muddy sand
- A4.273 - [*Virgularia mirabilis*] and [*Ophiura*] spp. on circalittoral sandy or shelly mud
- A4.2731 - [*Virgularia mirabilis*] and [*Ophiura*] spp. with hydroids and ascidians on circalittoral sandy or shelly mud with shells or stones
- A4.274 - Medium to very fine sand, 100-120 m, with polychaetes [*Spiophanes kroyeri*], [*Amphiplectene auricoma*], [*Myriochele*] sp., [*Aricidea wassi*] and amphipods [*Harpinia antennaria*]
- A4.275 - Fine sand >80 m with polychaetes [*Ophelina neglecta*], [*Travisia forbesii*], crustaceans [*Bathyporeia elegans*], [*Eudorellopsis deformis*] and molluscs [*Abra prismatica*]
- A4.28 - Communities of the muddy detritic bottom
- A4.281 - Facies with [*Ophiothrix quinquemaculata*]

A4.3 - Sublittoral muds

- A4.31 - Shallow fully marine mud communities
- A4.311 - Semi-permanent tube-building amphipods and polychaetes in sublittoral mud or muddy sand
- A4.312 - [*Arenicola marina*] and synaptid holothurians in extremely shallow soft mud
- A4.313 - [*Philine aperta*] and [*Virgularia mirabilis*] in soft stable infralittoral mud
- A4.314 - [*Ocnus planci*] aggregations on sheltered sublittoral muddy sediment
- A4.315 - [*Astarte crenata*] beneath high salinity cold polar water
- A4.316 - Oligochaetes in mobile mud
- A4.32 - Variable or reduced salinity sublittoral muds
- A4.321 - [*Polydora ciliata*] in variable salinity infralittoral firm mud or clay
- A4.322 - [*Aphelocheata marioni*] and [*Tubificoides*] spp. in variable salinity infralittoral mud
- A4.323 - [*Nephtys hombergii*] and [*Tubificoides*] spp. in variable salinity infralittoral soft mud
- A4.324 - [*Capitella capitata*] and [*Tubificoides*] spp. in reduced salinity infralittoral muddy sediment
- A4.325 - [*Tubificoides*] spp. in reduced salinity infralittoral muddy sediment

A4.326 - [*Limnodrilus hoffmeisteri*], [*Tubifex tubifex*] and [*Gammarus*] spp. in low salinity infralittoral muddy sediment
A4.327 - Variable or reduced salinity shallow-water fluid mobile mud
A4.328 - Baltic brackish water sublittoral muddy biocenoses influenced by varying salinity
A4.3281 - Baltic muds of the infralittoral photic zone with little or no macrophyte vegetation
A4.3282 - Boreal Baltic narrow inlets with soft mud substrate
A4.33 - Communities of superficial muddy sands in sheltered waters
A4.331 - Facies with [*Callianassa tyrrhena*] and [*Kellia corbuloides*]
A4.332 - Facies with fresh water resurgences with [*Cerastoderma glaucum*] and [*Cyathura carinata*]
A4.333 - Facies with [*Loripes lacteus*], [*Tapes*] spp.
A4.334 - Association with [*Caulerpa prolifera*] on superficial muddy sands in sheltered waters
A4.335 - Facies of hydrothermal oozes with [*Cyclope neritea*] and nematodes
A4.34 - Communities of coastal terrigenous muds
A4.341 - Facies of soft muds with [*Turritella tricarinata communis*]
A4.342 - Facies of sticky muds with [*Virgularia mirabilis*] and [*Pennatula phosphorea*]
A4.343 - Facies of sticky muds with [*Alcyonium palmatum*] and [*Stichopus regalis*]
A4.35 - Periodically and permanently anoxic sublittoral muds
A4.351 - Bacterial mats on anoxic sublittoral mud
A4.36 - Animal communities of circalittoral muds
A4.361 - [*Brissopsis lyrifera*] and [*Amphiura chiajei*] in circalittoral mud
A4.362 - Seapens and burrowing megafauna in circalittoral muds
A4.3621 - Seapens, including [*Funiculina quadrangularis*], and burrowing megafauna in undisturbed circalittoral soft mud
A4.363 - Silty sediments > 140 m with polychaetes [*Lumbrineris fragilis*], [*Levinsonia gracilis*] and amphipods [*Eriopisa elongata*]
A4.364 - [*Spiochaetopterus*] beneath high salinity Atlantic water
A4.365 - [*Macoma calcarea*] in deep-water soft clayey mud

A4.4 - Sublittoral combination sediments

A4.41 - Kelp and seaweeds on shallow-water mixed sediments
A4.411 - [*Laminaria saccharina*], [*Chorda filum*] and filamentous red seaweeds on sheltered shallow-water sediment
A4.412 - Mats of [*Tralliella*] on shallow-water muddy gravel
A4.413 - Loose-lying mats of [*Phyllophora crispa*] on shallow-water muddy sediment
A4.414 - Filamentous green seaweeds on low salinity shallow-water mixed sediment or rock
A4.415 - Facies with [*Ficopomatus enigmaticus*]
A4.416 - Association with [*Gracilaria*] spp.
A4.417 - Association with [*Chaetomorpha linum*] and [*Valonia aegagropila*]
A4.418 - Association with [*Halopitys incurva*]
A4.419 - Association with [*Ulva laetevirens*] and [*Enteromorpha linza*]
A4.41A - Association with [*Cystoseira barbata*]
A4.41B - Association with [*Lamprothamnium papulosum*]
A4.41C - Association with [*Cladophora echinus*] and [*Rytiphloea tinctoria*]
A4.42 - Animal communities in shallow-water mixed sediments
A4.421 - [*Venerupis senegalensis*] and [*Mya truncata*] in lower shore or shallow-water muddy gravel
A4.422 - Burrowing anemones in sublittoral muddy gravel
A4.423 - [*Limaria hians*] beds in tide-swept sublittoral muddy mixed sediment
A4.43 - Variable and reduced salinity sublittoral mixed sediments
A4.431 - [*Crepidula fornicata*] and [*Aphelochaeta marioni*] in variable salinity shallow-water mixed sediment
A4.432 - [*Mytilus edulis*] beds in variable salinity shallow-water mixed sediment
A4.433 - [*Polydora ciliata*], [*Mya truncata*] and solitary ascidians in variable salinity shallow-water mixed sediment
A4.434 - Baltic level mixed sediment bottoms of the infralittoral photic zone with little or no macrophyte vegetation
A4.44 - Animal communities of circalittoral mixed sediments
A4.441 - [*Sabellaria spinulosa*] and [*Polydora*] spp. on stable circalittoral mixed sediment
A4.442 - [*Modiolus modiolus*] beds on circalittoral mixed sediment
A4.443 - Sparse [*Modiolus modiolus*], dense [*Cerianthus lloydii*] and burrowing holothurians on sheltered circalittoral stones and mixed sediment
A4.444 - Sandy mixed sediment with [*Alcyonidium diaphanum*]
A4.445 - [*Ophiotrix fragilis*] brittlestar beds with moderately strong tidal streams
A4.446 - Crinoids [*Leptometra celtica*]
A4.45 - Communities of the coastal detritic bottom
A4.451 - Association with rhodoliths on coastal detritic bottoms
A4.452 - Association with [*Peyssonnelia rosa-marina*]
A4.453 - Association with [*Arthrocladia villosa*]
A4.454 - Association with [*Osmundaria volubilis*]
A4.455 - Association with [*Kallymenia patens*]
A4.456 - Association with [*Laminaria rodriguezii*]
A4.457 - Facies with [*Ophiura texturata*]
A4.458 - Facies with Synascidies
A4.459 - Facies with large Bryozoa

A4.5 - Shallow sublittoral sediments dominated by angiosperms

A4.51 - [*Cymodocea*] beds
A4.511 - Macaronesian [*Cymodocea*] beds
A4.512 - Lusitanian [*Cymodocea*] beds
A4.513 - Mediterranean [*Cymodocea*] beds
A4.5131 - Association with [*Cymodocea nodosa*] on well sorted fine sands
A4.5132 - Association with [*Cymodocea nodosa*] on superficial muddy sands in sheltered waters
A4.52 - [*Halophila*] beds
A4.521 - Canarian [*Halophila*] beds
A4.522 - Mediterranean [*Halophila*] beds
A4.53 - [*Zostera*] beds in infralittoral sediments

A4.531 - [Zostera] beds in lower shore or infralittoral clean or muddy sand
 A4.532 - Association with [Zostera noltii] in euryhaline and eurythermal environment
 A4.533 - Association with [Zostera marina] in euryhaline and eurythermal environment
 A4.534 - Association with [Zostera noltii] on superficial muddy sands in sheltered waters
 A4.54 - [Ruppia] and [Zannichellia] communities
 A4.541 - Middle European [Ruppia] and [Zannichellia] communities
 A4.542 - Tethyan marine [Ruppia] communities
 A4.543 - [Ruppia maritima] in reduced salinity infralittoral muddy sand
 A4.55 - Sublittoral macrophyte beds of coastal brackish waters
 A4.551 - Vegetation of brackish waters dominated by [Phragmites australis]
 A4.552 - Association with [Potamogeton pectinatus]
 A4.553 - Vegetation of brackish waters dominated by [Ranunculus baudotii]
 A4.554 - Baltic level gravel bottoms of the infralittoral photic zone dominated by macrophyte vegetation
 A4.555 - Baltic level sandy bottoms of the infralittoral photic zone dominated by macrophyte vegetation
 A4.556 - Baltic muds of the infralittoral photic zone dominated by macrophyte vegetation
 A4.557 - Baltic mixed sediments of the infralittoral photic zone dominated by macrophyte vegetation
 A4.558 - Baltic [Mytilus edulis] beds of the infralittoral photic zone dominated by macrophyte vegetation
 A4.56 - [Posidonia] beds
 A4.561 - Association with [Posidonia oceanica]
 A4.5611 - Ecomorphosis of striped [Posidonia oceanica] meadows
 A4.5612 - "Ecomorphosis of ""barrier-reef"" [Posidonia oceanica] meadows"
 A4.5613 - "Facies of dead ""mattes"" of [Posidonia oceanica] without much epiflora"
 A4.5614 - Association with [Caulerpa prolifera] on [Posidonia] beds

A4.6 - Biogenic structures over sublittoral sediments

A4.61 - Seaweeds and maerl on coarse shallow-water sediments
 A4.611 - [Phymatolithon calcareum] maerl beds in shallow-water clean gravel or coarse sand
 A4.6111 - [Phymatolithon calcareum] maerl beds with red seaweeds in shallow infralittoral clean gravel or coarse sand
 A4.6112 - [Phymatolithon calcareum] maerl beds with hydroids and echinoderms in deeper infralittoral clean gravel or coarse sand
 A4.612 - [Lithothamnion glaciale] maerl beds in tide-swept variable salinity shallow-water gravel
 A4.613 - Maerl facies (= Association with [Lithothamnion corallioides] and [Phymatolithon calcareum])
 A4.614 - Association with rhodolithes in coarse sands and fine gravels under the influence of bottom currents
 A4.62 - Maerl beds on shallow-water muddy mixed sediments
 A4.621 - [Lithothamnion corallioides] maerl beds on shallow-water muddy gravel
 A4.622 - [Lithothamnion fasciculatum] maerl beds with [Chlamys varia] on shallow-water sandy mud or mud
 A4.623 - [Lithothamnion dentatum] maerl beds on shallow-water muddy sediment
 A4.63 - Oyster beds
 A4.631 - [Ostrea edulis] beds on shallow sublittoral muddy sediment
 A4.64 - Structures formed by mussels over sublittoral sediment
 A4.641 - [Hiatella arctica] beds on silty clay with small pebbles and shells
 A4.642 - Baltic [Mytilus edulis] beds in the infralittoral photic zone
 A4.6421 - Baltic [Mytilus edulis] beds in the infralittoral photic zone with little or no macrophyte vegetation
 A4.65 - Maerl beds on deep-water muddy sediments
 A4.651 - Maerl facies ([Lithothamnion corallioides] and [Phymatolithon calcareum])
 A4.652 - Serpulid reefs on very sheltered circalittoral mixed substrata

A4.7 - Deep shelf sediment habitats

A4.71 - Animal communities of deep circalittoral gravel bottoms
 A4.711 - Baltic gravel bottoms of the aphotic zone
 A4.72 - Animal communities of deep circalittoral sandy bottoms
 A4.721 - Baltic sandy bottoms of the aphotic zone
 A4.73 - Animal communities of deep circalittoral shell gravel bottoms
 A4.731 - Baltic shell gravel bottoms of the aphotic zone
 A4.74 - Animal communities of deep circalittoral muddy bottoms
 A4.741 - [Ampharete falcata] turf with [Parvicardium ovale] on cohesive muddy very fine sand near margins of deep stratified seas
 A4.742 - Foraminiferans and [Thyasira] sp. in deep circalittoral soft mud
 A4.743 - [Styela gelatinosa] and other solitary ascidians on sheltered deep circalittoral muddy sediment
 A4.744 - Baltic muddy bottoms of the aphotic zone
 A4.75 - Animal communities of deep circalittoral mixed sediment bottoms
 A4.751 - Baltic mixed sediment bottoms of the aphotic zone
 A4.76 - Communities of shelf-edge detritic bottom
 A4.761 - Facies with [Neolampas rostellata]
 A4.762 - Facies with [Leptometra phalangium]

A4.8 - Seeps and vents in sublittoral sediments

A4.81 - Freshwater seeps in sublittoral sediments
 A4.82 - Methane seeps in sublittoral sediments
 A4.83 - Oil seeps in sublittoral sediments
 A4.84 - Vents in sublittoral sediments