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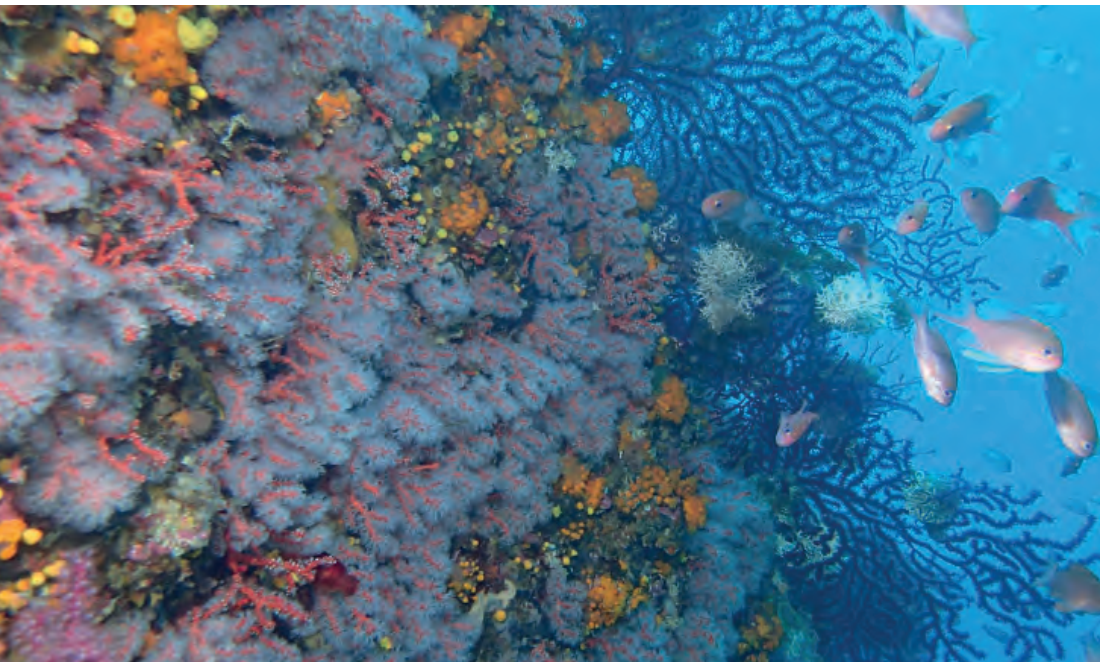
The Mediterranean Biodiversity Centre
SPA / RAC

Updated Classification of Benthic Marine Habitat Types for the Mediterranean Region



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Decision IG.24/7

Strategies and Action Plans under the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, including the SAP BIO, the Strategy on Monk Seal, and the Action Plans concerning Marine Turtles, Cartilaginous Fishes and Marine Vegetation; Classification of Benthic Marine Habitat Types for the Mediterranean Region, and Reference List of Marine and Coastal Habitat Types in the Mediterranean

The Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols at their 21st Meeting,

Recalling the outcome document of the United Nations Conference on Sustainable Development, entitled "The future we want", endorsed by the General Assembly in its resolution 66/288 of 27 July 2012, in particular those paragraphs relevant to biodiversity,

Recalling also General Assembly resolution 70/1 of 25 September 2015, entitled "Transforming our world: the 2030 Agenda for Sustainable Development", and acknowledging the importance of conservation, the sustainable use and management of biodiversity in achieving the Sustainable Development Goals,

Recalling further the United Nations Environment Assembly resolutions UNEP/EA.4/Res.10 of 15 March 2019, entitled "Innovation on biodiversity and land degradation",

Bearing in mind the international community's commitment expressed in the Ministerial Declaration of the United Nations Environment Assembly at its fourth session to implement sustainable ecosystems restoration, conservation and landscape management measures to combat biodiversity loss, as well as to develop an ambitious and realistic post-2020 global biodiversity framework,

Noting with appreciation the comprehensive and preparatory process for the development of an ambitious and transformational post-2020 global biodiversity framework,

Having regard to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, in particular Articles 11 and 12 thereof, addressing national and cooperative measures for the protection and conservation of species,

Recalling the Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region (SAP BIO), adopted by the Contracting Parties at their 13th Meeting (COP 13) (Catania, Italy, 11-14 November 2003),

Recalling also the Catania Declaration, adopted by the Contracting Parties at their 13th Meeting (COP 13), by which the Contracting Parties agreed, *inter alia*, that the Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region (SAP BIO) constitutes a major contribution to the sustainable development in the Mediterranean and should be implemented, as appropriate, and followed up effectively with adequate support and resources,

Recalling further Decision IG.22/7, adopted by the Contracting Parties at their 19th Meeting (COP 19) (Athens, Greece, 9-12 February 2016), on the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria,

Recalling Decision IG.23/8, adopted by the Contracting Parties at their 20th Meeting (COP 20) (Tirana, Albania, 17-20 December 2017), on Updated Action Plan for the Conservation of Marine and Coastal Bird Species listed in annex II to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean and Updated Reference List of Marine and Coastal Habitat Types in the Mediterranean, which requested the Specially Protected Areas Regional Activity Centre to finalize, in consultation with Focal Points, the classification of benthic marine habitat types for the Mediterranean region and the Reference List of Marine and Coastal Habitat Types in the

Mediterranean, with a view of submitting them to the Contracting Parties at their 21st Meeting (Naples, Italy, 2-5 December 2019),

Recalling also the mandate of SPA/RAC within the MAP-Barcelona Convention System and its relevance to the implementation of this Decision,

Noting with appreciation the efforts so far undertaken by the Contracting Parties and relevant organisations to the implementation of the Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region (SAP BIO), stressing the need to continue to concentrate efforts and resources to ensure an effective implementation of the SAP BIO,

Bearing in mind the developments in the Mediterranean Action Plan-Barcelona Convention work since the adoption of the Conservation of Biological Diversity in the Mediterranean Region (SAP BIO), as well as ongoing biodiversity-driven global processes, such as the Post-2020 Global Biodiversity Framework,

Taking into account the results of the assessment of the implementation of the Regional Strategy for the Conservation of Monk Seal in the Mediterranean, the Action Plan for the Conservation of Mediterranean Marine Turtles, the Action Plan for the Conservation of Cartilaginous Fishes (Chondrichthyans) in the Mediterranean Sea and the Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea,

Committed to further streamlining the Mediterranean Action Plan Ecological Objectives and associated Good Environmental Status and Targets, as well as the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria into the Regional Action Plans for the conservation of endangered and threatened species and key habitats adopted within the framework of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean,

Having considered the outcomes of the 14th Meeting of Specially Protected Areas and Biological Diversity Thematic Focal Points (Portoroz, Slovenia, 18-21 June 2019) [1],

1. *Request* the Secretariat to prepare in 2020-2021 the "Post-2020 Strategic Action Programme for the Conservation of Biodiversity and Sustainable Management of Natural Resources in the Mediterranean Region" (Post-2020 SAP BIO), aligned with the Sustainable Development Goals, harmonised with the CBD Post-2020 Global Biodiversity Framework through the optic of the Mediterranean context, and following the recommendations and roadmap proposed in the evaluation document[2], as set out in the Annex I to the present Decision, and submit it for consideration by the Contracting Parties at their 22nd Meeting (COP 22);

2. *Invite* the relevant organisations, in particular the members of the SAP BIO Advisory Committee, to contribute in developing the new Post-2020 SAP BIO;

3. *Adopt* the Updated Strategy for the Conservation of Monk Seal in the Mediterranean, the Updated Action Plan for the Conservation of Mediterranean Marine Turtles, the Updated Action Plan for the Conservation of Cartilaginous Fishes (Chondrichthyans) in the Mediterranean Sea and the Updated Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea, as set out in Annexes II, III, IV and V to the present Decision;

4. *Request* the Contracting Parties to take the necessary measures for the implementation of the updated Strategy and Action Plans and to report on their implementation in a timely manner, using the online Barcelona Convention reporting system;

[1] See UNEP/MED WG.468/Inf.7 ("Reports of the MAP Components' Focal Points Meetings (April-June 2019)": Report of the Fourteenth Meeting of SPA/BD Thematic Focal Points (UNEP/MED WG.461/28))

[2] See UNEP/MED WG.468/Inf.11, ("Evaluation of the implementation of the Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region (SAP BIO) and orientations for the elaboration of a post-2020 SAP BIO, as reviewed by the Fourteenth Meeting of SPA/BD Thematic Focal Points")

5. *Also request* the Secretariat, to continue to provide technical support and capacity building for the full and effective implementation of the updated Strategy and Action Plans;

6. *Further request* the Secretariat to update the Action Plan for the conservation of cetaceans in the Mediterranean Sea and the Action Plan for the conservation of habitats and species associated with seamounts, underwater caves and canyons, aphotic hard beds and chemo-synthetic phenomena in the Mediterranean Sea and submit them for adoption by the Contracting Parties at their 22nd Meeting (COP 22);

7. *Adopt* the Updated Classification of benthic marine habitat types for the Mediterranean region and the Updated Reference List of Marine Habitat Types for the Selection of Sites to be included in National Inventories of Natural Sites of Conservation Interest in the Mediterranean, as set out in annexes VI and VII to the present Decision;

8. *Encourage* the Contracting Parties to use the Reference List of Marine Habitat Types for the Selection of Sites to be included in National Inventories of Natural Sites of Conservation Interest in the Mediterranean, where necessary, as a basis for identifying reference habitats to be monitored at the national level under the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria.

Updated classification of benthic marine habitat types for the Mediterranean region

LITTORAL

MA1.5 Littoral rock

MA1.51 Supralittoral rock

MA1.511 Association with Cyanobacteria and lichens (e.g. *Verrucaria* spp.)

MA1.512 Association with Ochrophyta

MA1.513 Facies with Gastropoda (e.g. Littorinidae, Patellidae) and Chthamalidae

MA1.51a Supralittoral euryhaline and eurythermal pools (enclave of mediolittoral)

MA1.51b Wracks of dead leaves of macrophytes

MA1.52 Mediolittoral caves

MA1.521 Association with encrusting Corallinales or other Rodophyta

MA1.53 Upper mediolittoral rock

MA1.531 Association with encrusting Corallinales creating belts (e.g. *Lithophyllum bissoides*, *Neogoniolithon* spp.)

MA1.532 Association with Bangiales or other Rodophyta, or Chlorophyta

MA1.533 Facies with Bivalvia (e.g. *Mytilus* spp.)

MA1.534 Facies with Gastropoda(e.g. *Patella* spp.) and with Chthamalidae

MA1.54 Lower mediolittoral rock

MA1.541 Association with encrusting Corallinales creating belts (e.g. *Lithophyllum bissoides*, *Neogoniolithon* spp.)

MA1.542 Association with Fucales

MA1.543 Association with algae (algal belts), except Fucales and Corallinales

MA1.544 Facies with *Pollicipes pollicipes*

MA1.545 Facies with Vermetidae (*Dendropoma* spp.) (vermetid reefs)

MA1.546 Facies with Bivalvia (e.g. *Mytilus* spp.)

MA1.547 Facies with Gastropoda (e.g. *Patella* spp.)

MA1.54a Mediolittoral euryhaline and eurythermal pools (enclave of infralittoral)

MA2.5 Littoral biogenic habitat

MA2.51 Lower mediolittoral biogenic habitat

MA2.511 Association with encrusting Corallinales creating platforms

MA2.512 Facies with *Sabellaria* spp. (reefs of *Sabellaria*)

MA2.513 Facies with Vermetidae (*Dendropoma* spp.) (vermetid reefs)

MA2.51a Banks of dead leaves of macrophytes (*banquette*)

MA3.5 Littoral coarse sediment

MA3.51 Supralittoral coarse sediment

MA3.511 Association with macrophytes

MA3.51a Deposit of dead leaves of macrophytes

MA3.51b Beaches with slowly-drying wracks

MA3.52 Mediolittoral coarse sediment

MA3.521 Association with indigenous marine angiosperms

MA3.522 Association with *Halophila stipulacea*

MA3.52a Deposit of dead leaves of macrophytes

MA4.5 Littoral mixed sediment

MA4.51 Supralittoral mixed sediment

MA4.511 Association with macrophytes

MA4.51a Deposit of dead leaves of macrophytes

MA4.51b Beaches with slowly-drying wracks

MA4.52 Mediolittoral mixed sediment

MA4.521 Association with indigenous marine angiosperms

MA4.522 Association with *Halophila stipulacea*

MA4.52a Deposit of dead leaves of macrophytes

MA5.5 Littoral sand

MA5.51 Supralittoral sands

MA5.511 Association with macrophytes

MA5.51a Deposit of dead leaves of macrophytes

MA5.51b Beaches with slowly-drying wracks

MA5.52 Mediolittoral sands

MA5.521 Association with indigenous marine angiosperms

MA5.522 Association with *Halophila stipulacea*

MA5.523 Facies with Polychaeta

MA5.524 Facies with Bivalvia

MA5.52a Deposit of dead leaves of macrophytes

MA6.5 Littoral mud

MA6.51 Supralittoral mud

MA6.511 Association with macrophytes

MA6.51a Beaches with slowly-drying wracks under glassworts

MA6.52 Mediolittoral mud

MA6.52a Habitats of transitional waters (e.g. estuaries and lagoons)

MA6.521a Association with halophytes (*Salicornia* spp.) or marine angiosperms (e.g. *Zostera noltei*, *Ruppia maritima*)

MA6.522a Habitats of salinas

INFRALITTORAL

MB1.5 Infralittoral rock

MB1.51 Algal-dominated infralittoral rock

MB1.51a Well illuminated infralittoral rock, exposed

MB1.511a Association with Fucales

MB1.512a Association with photophilic algae, except Fucales, Corallinales and Caulerpales

MB1.513a Association with encrusting Corallinales creating belts (e.g. *Titanoderma trochanter*, *Tenarea tortuosa*)

MB1.514a Association with indigenous Mediterranean *Caulerpa* spp.

MB1.515a Association with non-indigenous Mediterranean *Caulerpa* spp.

MB1.516a Facies with Scleractinia (e.g. *Cladocora caespitosa*)

MB1.517a Facies with Bivalvia (e.g. *Mytilus* spp.)

MB1.518a Facies with Echinoidea on encrusting Corallinales (barren ground)

MB1.51b Moderately illuminated infralittoral rock, exposed

MB1.511b Association with encrusting Corallinales

MB1.512b Association with indigenous Mediterranean *Caulerpa* spp.

MB1.513b Association with non-indigenous Mediterranean *Caulerpa* spp.

MB1.514b Facies with Hydrozoa

MB1.515b Facies with Scleractinia (e.g. *Astroides calycularis*)

MB1.51c Well illuminated infralittoral rock, sheltered

MB1.511c Association with Fucales

MB1.512c Association with photophilic algae, except Fucales, Corallinales and Caulerpales

MB1.513c Association with encrusting Corallinales

MB1.514c Association with indigenous Mediterranean *Caulerpa* spp.

MB1.515c Association with non-indigenous Mediterranean *Caulerpa* spp.

MB1.516c Facies with Scleractinia (e.g. *Cladocora caespitosa*)

MB1.51d Moderately illuminated infralittoral rock, sheltered

MB1.511d Association with encrusting Corallinales

MB1.512d Association with indigenous Mediterranean *Caulerpa* spp.

MB1.513d Association with non-indigenous Mediterranean *Caulerpa* spp.

MB1.514d Facies with Alcyonacea (e.g. *Eunicella* spp.)

MB1.51e Lower infralittoral rock moderately illuminated

MB1.511e Association with Fucales

MB1.512e Association with Laminariales (kelp beds)

MB1.513e Association with indigenous Mediterranean *Caulerpa* spp.

MB1.514e Association with non-indigenous Mediterranean *Caulerpa* spp.

MB1.515e Facies with Alcyonacea (e.g. *Eunicella* spp.)

MB1.516e Facies with Scleractinia (e.g. *Cladocora caespitosa*)

MB1.52 Invertebrate-dominated infralittoral rock

MB1.52a Moderately illuminated infralittoral rock, sheltered

MB1.521a Association with indigenous Mediterranean *Caulerpa* spp.

MB1.522a Association with non-indigenous Mediterranean *Caulerpa* spp.

MB1.523a Facies with small sponges (sponge ground)

MB1.524a Facies with Scleractinia (e.g. *Astroides calycularis*,*Cladocora caespitosa*, *Polycyathus muellerae*, *Pourtalosmilia anthophyllites*)

MB1.525a Facies with Alcyonacea (e.g. *Eunicella* spp., *Paramuricea clavata*, *Corallium rubrum*)

MB1.53 Infralittoral rock affected by sediments

MB1.531 Facies with small sponges (sponge ground)

MB1.532 Facies with large and erect sponges (e.g. *Axinella polypoides*, *Axinella cannabina*)

MB1.533 Facies with Scleractinia(e.g. *Cladocora caespitosa*)

MB1.534 Facies with Alcyonacea (e.g. *Eunicella* spp., *Leptogorgia* spp.)

MB1.535 Facies with Ascidiacea

MB1.536 Facies with Bivalvia (e.g. *Pholas dactylus*)

MB1.537 Facies with endolitic species (e.g. *Lithophaga lithophaga*, *Cliona* spp.)

MB1.54 Habitats of transitional waters (e.g. estuaries and lagoons)

MB1.541 Association with marine angiosperms or other halophytes

MB1.542 Association with Fucales

MB1.55 Coralligenous (enclave of circalittoral, see MC1.51)

MB1.56 Semi-dark caves and overhangs (see MC1.53)

MB2.5 Infralittoral biogenic habitat

MB2.51 Reefs in algal-dominated habitat

MB2.511 Facies with Vermetidae (*Dendropoma* spp.) (vermetid reefs)

MB2.52 Reefs on fine sand in very shallow waters

MB2.521 Facies with *Sabellaria* spp. (reefs of *Sabellaria*)

MB2.53 Reefs of *Cladocora caespitosa*

MB2.54 *Posidonia oceanica* meadows

MB2.541 *Posidonia oceanica* meadow on rock

MB2.542 *Posidonia oceanica* meadow on matte

MB2.543 *Posidonia oceanica* meadow on sand, coarse or mixed sediment

MB2.544 Dead matte of *Posidonia oceanica*

MB2.545 Natural monuments/Ecomorphoses of *Posidonia oceanica* (fringing reef, barrier reef, atolls)

MB2.546 Association of *Posidonia oceanica* with *Cymodocea nodosa* or *Caulerpa* spp.

MB2.547 Association of *Cymodocea nodosa* or *Caulerpa* spp. with dead matte of *Posidonia oceanica*

MB3.5 Infralittoral coarse sediment

MB3.51 Infralittoral coarse sediment mixed by waves

MB3.511 Association with maërl or rhodolithes (e.g. *Lithothamnion* spp., *Neogoniolithon* spp., *Lithophyllum* spp., *Spongites fruticulosa*)

MB3.52 Infralittoral coarse sediment under the influence of bottom currents

MB3.521 Association with maërl or rhodolithes (e.g. *Lithothamnion* spp., *Neogoniolithon* spp., *Lithophyllum* spp., *Spongites fruticulosa*)

MB3.522 Facies with Polychaeta

MB3.53 Infralittoral pebbles

MB3.531 Facies with *Gouania willdenowi*

MB4.5 Infralittoral mixed sediment

MB5.5 Infralittoral sand

MB5.51 Fine sand in very shallow waters

MB5.511 Facies with Bivalvia (e.g. *Lentidium mediterraneum*)

MB5.52 Well sorted fine sand

MB5.521 Association with indigenous marine angiosperms

MB5.522 Association with *Halophila stipulacea*

MB5.523 Association with photophilic algae

MB5.53 Fine sand in sheltered waters

MB5.531 Association with indigenous marine angiosperms

MB5.532 Association with *Halophila stipulacea*

MB5.533 Association with indigenous Mediterranean *Caulerpa* spp.

MB5.534 Association with non-indigenous Mediterranean *Caulerpa* spp.

MB5.535 Association with photophilic algae, except Caulerpales

MB5.536 Facies with Bivalvia

MB5.537 Facies with Polychaeta

MB5.538 Facies with Crustacea Decapoda

MB5.539 Facies of *Tritianeritea* and nematodes (in hydrothermal vents)

MB5.54 Habitats of transitional waters (e.g. estuaries and lagoons)

MB5.541 Association with marine angiosperms or other halophytes

MB5.542 Association with Fucales

MB5.543 Association with photophilic algae, except Fucales

MB5.544 Facies with Polychaeta

MB5.545 Facies with Bivalvia (e.g. *Mytilus* spp.)

MB6.5 Infralittoral mud sediment

MB6.51 Habitats of transitional waters (e.g. estuaries and lagoons)

MB6.511 Association with marine angiosperms or other halophytes

CIRCALITTORAL

MC1.5 Circalittoral rock

MC1.51 Coralligenous

MC1.51a Algal-dominated coralligenous

MC1.511a Association with encrusting Corallinales

MC1.512a Association with Fucales or Laminariales

MC1.513a Association with algae, except Fucales, Laminariales, Corallinales and Caulerpales

MC1.514a Association with non-indigenous Mediterranean *Caulerpa* spp.

MC1.51b Invertebrate-dominated coralligenous

MC1.511b Facies with small sponges (sponge ground, e.g. *Ircinia* spp.)

MC1.512b Facies with large and erect sponges (e.g. *Spongia lamella*, *Sarcotragus foetidus*, *Axinella* spp.)

MC1.513b Facies with Hydrozoa

MC1.514b Facies with Alcyonacea (e.g. *Eunicella* spp., *Leptogorgia* spp., *Paramuricea* spp., *Corallium rubrum*)

MC1.515b Facies with Ceriantharia (e.g. *Cerianthus* spp.)

MC1.516b Facies with Zoantharia (e.g. *Parazoanthus axinellae*, *Savalia savaglia*)

MC1.517b Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Leptopsammia pruvoti*, *Madracis pharensis*)

MC1.518b Facies with Vermetidae and/or Serpulidae

MC1.519b Facies with Bryozoa (e.g. *Reteporella grimaldii*, *Pentapora fascialis*)

MC1.51Ab Facies with Ascidiacea

MC1.51c Invertebrate-dominated coralligenous covered by sediment

See MC1.51b for examples of facies

MC1.52 Shelf edge rock

MC1.52a Coralligenous outcrops

MC1.521a Facies with small sponges (sponge ground)

MC1.522a Facies with Hydrozoa

MC1.523a Facies with Alcyonacea (e.g. *Alcyonium* spp., *Eunicella* spp., *Leptogorgia* spp., *Paramuricea* spp., *Corallium rubrum*)

MC1.524a Facies with Antipatharia (e.g. *Antipathella subpinnata*)

MC1.525a Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Madracis pharensis*)

MC1.526a Facies with Bryozoa (e.g. *Reteporella grimaldii*, *Pentapora fascialis*)

MC1.527a Facies with Polychaeta

MC1.528a Facies with Bivalvia

MC1.529a Facies with Brachiopoda

MC1.52b Coralligenous outcrops covered by sediment

See MC1.52a for examples of facies

MC1.52c Deep banks

MC1.521c Facies with Antipatharia (e.g. *Antipathella subpinnata*)

MC1.522c Facies with Alcyonacea (e.g. *Nidalia studeri*)

MC1.523c Facies with Scleractinia (e.g. D*endrophyllia* spp.)

MC1.53 Semi-dark caves and overhangs

MC1.53a Walls and tunnels

MC1.531a Facies with sponges (e.g. *Axinella* spp., *Chondrosia reniformis*, *Petrosia ficiformis*)

MC1.532a Facies with Hydrozoa

MC1.533a Facies with Alcyonacea (e.g. *Eunicella* spp., *Paramuricea* spp., *Corallium rubrum*)

MC1.534a Facies with Scleractinia (e.g. *Leptopsammia pruvoti*, *Phyllangia mouchezii*)

MC1.535a Facies with Zoantharia (e.g. *Parazoanthus axinellae*)

MC1.536a Facies with Bryozoa (e.g. *Reteporella grimaldii*, *Pentapora fascialis*)

MC1.537a Facies with Ascidiacea

MC1.53b Ceilings

See MC1.53a for examples of facies

MC1.53c Detritic bottom

See MC3.51 for examples of associations and facies

MC1.53d Brackish water caves or caves subjected to freshwater runoff

MC1.531d Facies with *Heteroscleromorpha* spp. sponges

MC2.5 Circalittoral biogenic habitat

MC2.51 Coralligenous platforms

MC2.511 Association with encrusting Corallinales

MC2.512 Association with Fucales

MC2.513 Association with non-indigenous Mediterranean *Caulerpa* spp.

MC2.514 Facies with small sponges (sponge ground, e.g. *Ircinia* spp.)

MC2.515 Facies with large and erect sponges (e.g. *Spongia lamella*, *Sarcotragus foetidus*, *Axinella* spp.)

MC2.516 Facies with Hydrozoa

MC2.517 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Eunicella* spp., *Leptogorgia* spp., *Paramuricea* spp., *Corallium rubrum*)

MC2.518 Facies with Zoantharia (e.g. *Parazoanthus axinellae*, *Savalia savaglia*)

MC2.519 Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Madracis pharensis, Phyllangia mouchezii*)

MC2.51A Facies with Vermetidae and/or Serpulidae

MC2.51B Facies with Bryozoa (e.g. *Reteporella grimaldii*, *Pentapora fascialis*)

MC2.51C Facies with Ascidiacea

MC3.5 Circalittoral coarse sediment

MC3.51 Coastal detritic bottoms (without rhodoliths)

MC3.511 Association with Laminariales

MC3.512 Facies with large and erect sponges (e.g. *Spongia lamella*, *Sarcotragus foetidus*, *Axinella* spp.)

MC3.513 Facies with Hydrozoa

MC3.514 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Eunicella* spp., *Leptogorgia*spp.)

MC3.515 Facies with Pennatulacea (e.g. *Pennatula* spp., *Virgularia mirabilis*)

MC3.516 Facies with Polychaeta (Salmacina-Filograna complex included)

MC3.517 Facies with Bivalvia (e.g. *Pecten jacobaeus*)

MC3.518 Facies with Bryozoa (e.g. *Turbicellepora incrassata*, *Frondipora verrucosa*, *Pentapora fascialis*)

MC3.519 Facies with Crinoidea (e.g. *Leptometra* spp.)

MC3.51A Facies with Ophiuroidea (e.g. *Ophiura* spp., *Ophiothrix* spp.)

MC3.51B Facies with Echinoidea (e.g. *Neolampas* spp., *Spatangus purpureus*)

MC3.51C Facies with Ascidiacea

MC3.52 Coastal detritic bottoms with rhodoliths

MC3.521 Association with maërl (e.g. *Lithothamnion* spp., *Neogoniolithon* spp., *Lithophyllum* spp., *Spongites fruticulosa*)

MC3.522 Association with *Peyssonnelia* spp.

MC3.523 Association with Laminariales

MC3.524 Facies with large and erect sponges (e.g. *Spongia lamella*, *Sarcotragus foetidus*, *Axinella* spp.)

MC3.525 Facies with Hydrozoa

MC3.526 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Paralcyonium spinulosum*)

MC3.527 Facies with Pennatulacea (e.g. *Veretillum cynomorium*)

MC3.528 Facies with Zoantharia (e.g. *Epizoanthus* spp.)

MC3.529 Facies with Ascidiacea

MC4.5 Circalittoral mixed sediment

MC4.51 Muddy detritic bottoms

MC4.511 Facies with Hydrozoa(e.g. *Lytocarpia myriophyllum*, *Nemertesia* spp.)

MC4.512 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Spinimuricea* spp.)

MC4.513 Facies with Pennatulacea (e.g. *Veretillum cynomorium*)

MC4.514 Facies with Polychaeta

MC4.515 Facies with Ophiuroidea (e.g. *Ophiothrix* spp.)

MC4.516 Facies with Ascidiacea

MC5.5 Circalittoral sand

MC6.5 Circalittoral mud sediment

MC6.51 Coastal terrigenous muds

MC6.511 Facies with Alcyonacea (e.g. *Alcyonium* spp.) and Holothuroidea (e.g. *Parastichopus* spp.)

MC6.512 Facies with Pennatulacea (e.g. *Pennatula* spp., *Virgularia mirabilis*)

MC6.513 Facies with Gastropoda (e.g. *Turritella* spp.)

OFFSHORE CIRCALITTORAL

MD1.5 Offshore circalittoral rock

MD1.51 Offshore circalittoral rock invertebrate-dominated

MD1.511 Facies with small sponges (sponge ground, e.g. *Haliconas*pp., *Phakellia* spp., *Poecillastra* spp.)

MD1.512 Facies with large and erect sponges (e.g. *Spongia lamella*, *Axinella* spp.)

MD1.513 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Callogorgia verticillata*, *Ellisella paraplexauroides*, *Eunicella* spp., *Leptogorgia* spp., *Paramuricea* spp., *Swiftia pallida*, *Corallium rubrum*)

MD1.514 Facies with Antipatharia (e.g. *Antipathella subpinnata*)

MD1.515 Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Madracis pharensis*)

MD1.516 Facies with Ceriantharia (e.g. *Cerianthus* spp.)

MD1.517 Facies with Zoantharia (e.g. *Savalia savaglia*)

MD1.518 Facies with Polychaeta

MD1.519 Facies with Bivalvia

MD1.51A Facies with Brachiopoda

MD1.51B Facies with Bryozoa (e.g. *Myriapora truncata*, *Pentapora fascialis*)

MD1.52 Offshore circalittoral rock invertebrate-dominated covered by sediments

See MD1.51 for examples of facies

MD1.53 Deep offshore circalittoral banks

MD1.531 Facies with Antipatharia (e.g. *Antipathella subpinnata*)

MD1.532 Facies with Alcyonacea (e.g. *Nidalia* spp.)

MD1.533 Facies with Scleractinia (yellow corals forest, e.g. *Dendrophyllia* spp.)

MD2.5 Offshore circalittoral biogenic habitat

MD2.51 Offshore reefs

MD2.511 Facies with Vermetidae and/or Serpulidae

MD2.52 Thanatocoenosis of corals, or Brachiopoda, or Bivalvia (e.g. *Modiolus modiolus*)

See MD1.51 for examples of facies

MD3.5 Offshore circalittoral coarse sediment

MD3.51 Offshore circalittoral detritic bottoms

MD3.511 Facies with Bivalvia (e.g. *Neopycnodonte* spp.)

ME2.512 Facies with Brachiopoda

MD3.513 Facies with Polychaeta

MD3.514 Facies with Crinoidea (e.g. *Leptometra* spp.)

MD3.515 Facies with Ophiuroidea

MD3.516 Facies with Echinoidea

MD4.5 Offshore circalittoral mixed sediment

MD4.51 Offshore circalittoral detritic bottoms

See MD3.51 for examples of facies

MD5.5 Offshore circalittoral sand

MD5.51 Offshore circalittoral sand

See MD3.51 for examples of facies

MD6.5 Offshore circalittoral mud

MD6.51 Offshore terrigenous sticky muds

MD6.511 Facies with Pennatulacea (e.g. *Pennatula* spp., *Virgularia mirabilis*)

MD6.512 Facies with Polychaeta

MD6.513 Facies with Bivalvia (e.g. *Neopycnodonte* spp.)

MD6.514 Facies with Brachiopoda

MD6.515 Facies with Ceriantharia (e.g. *Cerianthus* spp., *Arachnanthus* spp.)

UPPER BATHYAL

ME1.5 Upper bathyal rock

ME1.51 Upper bathyal rock invertebrate-dominated

ME1.511 Facies with small sponges (sponge ground; e.g. *Farrea bowerbanki*, *Halicona* spp., *Podospongia loveni*, *Tretodictyum* spp.)

ME1.512 Facies with large and erect sponges (e.g. *Spongia lamella*, *Axinella* spp.)

ME1.513 Facies with Antipatharia (e.g. *Antipathes* spp., *Leiopathes glaberrima*, *Parantipathes larix*)

ME1.514 Facies with Alcyonacea (e.g. *Acanthogorgia* spp., *Callogorgia verticillata*, *Placogorgia* spp., *Swiftia pallida*, *Corallium rubrum*)

ME1.515 Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Madrepora oculata*, *Desmophyllum cristagalli*, *Desmophyllum pertusum*, *Madracis pharensis*)

ME1.516 Facies with Cirripeda (e.g. *Megabalanus* spp., *Pachylasma giganteum*)

ME1.517 Facies with Crinoidea (e.g. *Leptometra* spp.)

ME1.518 Facies with Bivalvia (e.g. *Neopycnodonte* spp.)

ME1.519 Facies with Brachiopoda

ME1.52 Caves and ducts in total darkness

ME2.5Upper bathyal biogenic habitat

ME2.51 Upper bathyal reefs

ME2.511 Facies with small sponges (sponge ground)

ME2.512 Facies with large and erect sponges (e.g. *Leiodermatium* spp.)

ME2.513 Facies with Scleractinia (e.g. *Madrepora oculata*, *Desmophyllum cristagalli*)

ME2.514 Facies with Bivalvia (e.g. *Neopycnodonte* spp.)

ME2.515 Facies with Serpulidae reefs (e.g. *Serpula vermicularis*)

ME2.516 Facies with Brachiopoda

ME2.52 Thanatocoenosis of corals, or Brachiopoda, or Bivalvia, or sponges

See ME1.51 for examples of facies

ME3.5 Upper bathyal coarse sediment

ME3.51 Upper bathyal coarse sediment

ME3.511 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Chironephthya mediterranea*, *Paralcyonium spinulosum*, *Paramuricea* spp., *Villogorgia bebrycoides*)

ME4.5 Upper bathyal mixed sediment

ME4.51 Upper bathyal mixed sediment

ME4.511 Facies with Bivalvia (e.g. *Neopycnodonte* spp.)

ME4.512 Facies with Brachiopoda

ME5.5 Upper bathyal sand

ME5.51Upper bathyal detritic sand

ME5.511 Facies with small sponges (sponge ground, e.g. *Rhizaxinella* spp.)

ME5.512 Facies with Pennatulacea (e.g. *Pennatula* spp., *Pteroeides griseum*)

ME5.513 Facies with Crinoidea (e.g. *Leptometra* spp.)

ME5.514 Facies with Echinoidea

ME5.515 Facies with Bivalvia (e.g. *Neopycnodonte* spp.)

ME5.516 Facies with Brachiopoda

ME5.517 Facies with Bryozoa

ME5.518 Facies with Scleractinia (e.g. *Caryophyllia cyathus*)

ME6.5 Upper bathyal muds

ME6.51 Upper bathyal muds

ME6.511 Facies with small sponges (sponge ground, e.g. *Pheronema* spp., *Thenea* spp.)

ME6.512 Facies with Pennatulacea (e.g. *Pennatula* spp., *Funiculina quadrangularis*)

ME6.513 Facies with Alcyonacea (e.g. *Isidella elongata*)

ME6.514 Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Madrepora oculata*, *Desmophyllum cristagalli*)

ME6.515 Facies with Crustacea Decapoda (e.g. *Aristeus antennatus*, *Nephrops norvegicus*)

ME6.516 Facies with Crinoidea (e.g. *Leptometra* spp.)

ME6.517 Facies with Echinoidea (e.g. *Brissopsis* spp.)

ME6.518 Facies with Bivalvia (e.g. *Neopycnodonte* spp.)

ME6.519 Facies with Brachiopoda

ME6.51A Facies with Ceriantharia (e.g. *Cerianthus* spp., *Arachnanthus* spp.)

ME6.51B Facies with Bryozoa (e.g. *Candidae* spp., *Kinetoskias* spp.)

ME6.51C Facies with giant Foraminifera (e.g. Astrorhizida)

LOWER BATHYAL

MF1.5 Lower bathyal rock

MF1.51 Lower bathyal rock

MF1.511 Facies with small sponges (e.g. *Stylocordyla* spp.)

MF1.512 Facies with Alcyonacea (e.g. *Dendrobrachia* spp.)

MF1.513 Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Madrepora oculata*, *Desmophyllum cristagalli*, *Desmophyllum pertusum*)

MF1.514 Facies with chemiosynthetic benthic species (e.g. Siboglinidae, *Lucinoma* spp.)

MF2.5 Lower bathyal biogenic habitat

MF2.51 Lower bathyal reefs

MF2.511Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Madrepora oculata*, *Desmophyllum cristagalli*, *Desmophyllum pertusum*)

MF2.52 Thanatocoenosis of corals, or Brachiopoda, or Bivalvia, or sponges

See MF1.51 for examples of facies

MF6.5 Lower bathyal muds

MF6.51 Sandy muds

MF6.511 Facies with small sponges (e.g. *Thenea* spp.)

MF6.512 Facies with Alcyonacea (e.g. *Isidella elongata*)

MF6.513 Facies with Echinoidea (e.g. *Brissopsis* spp.)

MF6.514 Facies with Pennatulacea (e.g. *Pennatula* spp., *Funiculina quadrangularis*)

MF6.515 Facies with bioturbations

ABYSSAL

MG1.5 Abyssal rock

MG1.51 Abyssal rock

MG1.511 Facies with small sponges

MG1.512 Facies with Alcyonacea

MG1.513 Facies with Polychaeta

MG1.514 Facies with Crustacea (Amphipoda, Isopoda, Tanaidacea)

MG6.5 Abyssal muds

MG6.51 Abyssal muds

MG6.511 Facies with small sponges

MG6.512 Facies with Alcyonacea (e.g. *Isidella elongata*)

MG6.513 Facies with Polychaeta

MG6.514 Facies with Crustacea (Amphipoda, Isopoda, Tanaidacea)

MG6.515 Facies with bioturbations

There are some geomorphologic / hydrologic features not included in the above list because their presence is independent from the depth zone and the substrate type, but they must also be considered due to the role they play in the Mediterranean ecosystem[14]. They can hold a "complex of habitats" and geoforms that cannot be treated in isolation, and therefore, they do not fit inside other categories. Among them:

- Hydrothermal vents
- Cold seeps (sulfide, methane – e.g. pockmarks, mud volcanoes)
- Brine pools
- Freshwater resurgences
- Seamounts (including banks, hills, etc.)
- Submarine canyons
- Escarpments
- Boulders fields

[14]Action Plan for the conservation of habitats and species associated with seamounts, underwater caves and canyons, aphotic hard beds and chemo-synthetic phenomena in the Mediterranean Sea (Dark Habitats Action Plan)

Annex I: the revised marine section of the EUNIS habitat classification[15]

Table 1. Level 2 units of the marine component of the revised EUNIS habitats classification, including proposed level 2 codes

			Hard/firm		Soft			
			Rock*	Biogenic habitat**	Coarse	Mixed	Sand	Mud
Depth Zones	Phytal gradient/ hydrodynamic gradient	Littoral	MA1	MA2	MA3	MA4	MA5	MA6
		Infralittoral	MB1	MB2	MB3	MB4	MB5	MB6
		Circalittoral	MC1	MC2	MC3	MC4	MC5	MC6
	Aphytal/ hydodynamic gradient	Offshore circalittoral	MD1	MD2	MD3	MD4	MD5	MD6
		Upper bathyal	ME1	ME2	ME3	ME4	ME5	ME6
		Lower bathyal	MF1	MF2	MF3	MF4	MF5	MF6
		Abyssal	MG1	MG2	MG3	MG4	MG5	MG6

Table 2. Updated EUNIS habitat classification

Level 1: Marine habitats (code M)

Level 2: Depth zone

LITTORAL (code A)
INFRALITTORAL (code B)
CIRACLITTORAL (code C)
OFFSHORE CIRCALITTORAL (code D)
UPPER BATHYAL (code E)
LOWER BATHYAL (code F)
ABYSSAL (code G)

Substrate type

ROCK (including soft rock, marls, clays, artificial hard substrata) (code 1)
BIOGENIC HABITAT (code 2)
COARSE (code 3)
MIXED (code 4)
SAND (code 5)
MUD (code 6)

Level 3: Regions: Atlantic, Baltic, Black Sea, Artic and Mediterranean (the latter corresponding to the code 5).

[15]Evans D., Aish A., Boon A., Condé S., Connor D., Gelabert E., Michez N., Parry M., Richard D., Salvati E., Tunesi L. 2016. Revising the marine section of the EUNIS habitat classification. Report of a workshop held at the European Topic Centre on Biological Diversity, 12-13 May 2016. ETC/BD report to the EEA: 8 pp.

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United Nations
Environment Programme

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Barcelona Convention

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Biodiversity
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