



UNEP



UNITED NATIONS  
ENVIRONMENT PROGRAMME  
MEDITERRANEAN ACTION PLAN

2 January 2019  
Original: English

Meeting of Experts on the finalization of the Classification of benthic marine habitat types for the Mediterranean region and the Reference List of Marine and Coastal Habitat Types in the Mediterranean

Rome, Italy, 22-23 January 2019

**Agenda item 4: Draft Updated classification of benthic marine habitat types for the Mediterranean Region**

**Draft Updated classification of benthic marine habitat types for the Mediterranean Region**

For environmental and economy reasons, this document is printed in a limited number and will not be distributed at the meeting. Delegates are kindly requested to bring their copies to meetings and not to request additional copies.



Note:

The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of Specially Protected Areas Regional Activity Centre (SPA/RAC) and UN Environment concerning the legal status of any State, Territory, city or area, or of its authorities, or concerning the delimitation of their frontiers or boundaries.

© 2019 United Nations Environment Programme / Mediterranean Action Plan  
(UN Environment/MAP)  
Specially Protected Areas Regional Activity Centre (SPA/RAC)  
Boulevard du Leader Yasser Arafat  
B.P. 337 - 1080 Tunis Cedex - Tunisia  
E-mail: [car-asp@rac-spa.org](mailto:car-asp@rac-spa.org)

The original version of this document was prepared for the Regional Activity Centre for Specially Protected Areas (SPA/RAC) by Monica Montefalcone taking into account as appropriate the comments received from the National designated experts.



**Draft Updated classification of benthic marine habitat types for the  
Mediterranean Region**



## LITTORAL

### MA1.5 Littoral rock

#### MA1.51 Supralittoral rock

MA1.511 Association with the lichen *Verrucaria* spp.

MA1.512 Association with Cyanobacteria

MA1.513 Association with Ochrophyta

MA1.514 Facies with Gasteropoda (e.g. Littorinidae, Patellidae)

MA1.515 Facies with 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 (e.g. belts of *Lithophyllum bissoides*, *Neogoniolithon* spp.)

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

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

MA1.534 Facies with Chthamalidae

#### MA1.54 Lower mediolittoral rock

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

MA1.542 Association with Fucales

MA1.543 Association with Ceramiales, Ulvales, other Rodophyta or other algae (algal belts)

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 Gasteropoda

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 (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 Banks of dead leaves of macrophytes (*banquette*)

MA3.51b Beaches with slowly-drying wracks

MA3.52 Mediolittoral coarse sediment

MA3.521 Association with marine angiosperms

MA3.52a Banks of dead leaves of macrophytes (*banquette*)

MA4.5 Littoral mixed sediment

MA4.51 Supralittoral mixed sediment

MA4.511 Association with macrophytes

MA4.51a Banks of dead leaves of macrophytes (*banquette*)

MA4.51b Beaches with slowly-drying wracks

MA4.52 Mediolittoral mixed sediment

MA4.521 Association with marine angiosperms

MA4.52a Banks of dead leaves of macrophytes (*banquette*)

MA5.5 Littoral sand

MA5.51 Supralittoral sands

MA5.511 Association with macrophytes

MA5.51a Banks of dead leaves of macrophytes (*banquette*)

MA5.51b Beaches with slowly-drying wracks

MA5.52 Mediolittoral sands

MA5.521 Association with marine angiosperms

MA5.522 Facies with Polychaeta

MA5.523 Facies with Bivalvia

MA5.52a Banks of dead leaves of macrophytes (*banquette*)

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 Lagoons and estuaries

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

MA6.522a Facies of saline



## **INFRA LITTORAL**

### 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 Dictyotales, Codiales, Ulvales, or other algae

MB1.513a Association with encrusting Corallinales (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 Ceramiales or other algae

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 Scleractinia (e.g. *Astroides calycularis*, *Cladocora caespitosa*, *Polycyathus muelleriae*, *Pourtalesmilia anthophyllites*)
- MB1.524a Facies with Alcyonacea (e.g. *Eunicella* spp., *Paramuricea clavata*, *Corallium rubrum*)

MB1.53 Infralittoral rock affected by sediments

- MB1.531 Facies with large and erect sponges (e.g. *Axinella polypoides*, *Axinella cannabina*)
- MB1.532 Facies with Scleractinia (e.g. *Cladocora caespitosa*)
- MB1.533 Facies with Alcyonacea (e.g. *Eunicella* spp., *Leptogorgia* spp.)
- MB1.534 Facies with Ascidiacea
- MB1.535 Facies with Bivalvia (e.g. *Pholas dactylus*)

MB1.54 Euryhaline and eurythermal lagoons

MB1.541 Association with Fucales

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

MB1.56 Semi-dark caves and overhangs (see MC1.53 for examples of associations and facies)

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 Seagrass meadows

MB2.531 *Posidonia oceanica* meadow on rock

MB2.532 *Posidonia oceanica* meadow on matte

MB2.533 *Posidonia oceanica* meadow on sand, coarse or mixed sediment

MB2.534 Dead matte of *Posidonia oceanica*

MB2.535 Fringing reef, barrier reef, atolls of *Posidonia oceanica*

MB2.536 Association of *Posidonia oceanica* with *Cymodocea nodosa* or *Caulerpa* spp.

MB2.537 Association of *Cymodocea nodosa* or *Caulerpa* spp. with dead matte of *Posidonia oceanica*

MB2.538 Facies with the Bivalvia *Pinna nobilis*

### MB3.5 Infralittoral coarse sediment

MB3.51 Infralittoral coarse sediment mixed by waves

MB3.511 Association with rhodolithes

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

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

MB3.522 Association with rhodolithes

MB3.523 Facies with Polychaeta

### MB4.5 Infralittoral mixed sediment

MB4.511 Facies with *Gouania willdenowi*

### 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 marine angiosperms

MB5.522 Association with Ceramiales, Ulvales or other algae

MB5.53 Fine sand in sheltered waters

MB5.531 Association with marine angiosperms

MB5.532 Association with indigenous Mediterranean *Caulerpa* spp.

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

MB5.534 Association with Ceramiales, Ulvales or other algae

MB5.535 Facies with Bivalvia

MB5.536 Facies with Polychaeta

MB5.537 Facies with Crustacea Decapoda

MB5.538 Facies of *Tritia neritea* and nematodes (in hydrothermal vents)

MB5.54 Euryhaline and eurythermal lagoons

MB5.541 Association with marine angiosperms or other halophyta

MB5.542 Association with Fucales

MB5.543 Association with Ceramiales, Ulvales or other algae

MB5.544 Facies with Polychaeta

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

MB6.5 Infralittoral mud sediment

MB6.51 Euryhaline and eurythermal lagoons

MB6.511 Association with marine angiosperms or other halophyta

## **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 Ceramiales, Ulvales or other algae

MC1.514a Association with *Ptilophora mediterranea* or *Schimmelmannia schousboei*

MC1.515a 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 reefs

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

MC1.520b Facies with Ascidiacea

MC1.51c Invertebrate-dominated coralligenous covered by sediment

See MC1.51b for examples of associations and 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 (black corals forest, 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 associations and facies

MC1.52c Deep banks

MC1.521c Facies with Antipatharia (black corals forest, e.g. *Antipathella* spp.)

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

MC1.523c Facies with Scleractinia (e.g. *Dendrophyllia* 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 *Lithistida* 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*)
- MC2.520 Facies with Vermetidae and/or Serpulidae reefs
- MC2.521 Facies with Bryozoa (e.g. *Reteporella grimaldii*, *Pentapora fascialis*)
- MC2.522 Facies with Ascidiacea

### MC3.5 Circalittoral coarse sediment

#### MC3.51 Coastal detritic bottoms (without rhodoliths)

- MC3.511 Association with Laminariales
- MC3.512 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Eunicella* spp., *Leptogorgia* spp.)
- MC3.513 Facies with Pennatulacea (e.g. *Pennatula* spp., *Virgularia mirabilis*)
- MC3.514 Facies with Polychaeta (Salmacina-Filograna complex included)
- MC3.515 Facies with Bivalvia (e.g. *Pecten jacobaeus*)
- MC3.516 Facies with Bryozoa (e.g. *Turbicellepora incrassata*, *Fron dipora verrucosa*, *Pentapora fascialis*)
- MC3.517 Facies with Crinoidea (e.g. *Leptometra* spp.)
- MC3.518 Facies with Ophiuroidea (e.g. *Ophiura* spp., *Ophiothrix* spp.)
- MC3.519 Facies with Echinoidea (e.g. *Neolampas* spp., *Spatangus purpureus*)
- MC3.520 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 Hydrozoa

MC3.525 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Paralcyonium spinulosum*)

MC3.526 Facies with Pennatulacea (e.g. *Veretillum cynomorium*)

MC3.527 Facies with Zoantharia (e.g. *Epizoanthus* spp.)

MC3.528 Facies with Ascidiacea

#### MC4.5 Circalittoral mixed sediment

##### MC4.51 Muddy detritic bottoms

MC4.511 Facies with large hydrozoans (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

MC5.511 Facies with Polychaeta

MC5.512 Facies with Ophiuroidea (e.g. *Ophiothrix* spp.)

MC5.513 Facies with Crinoidea (e.g. *Leptometra* spp.)

#### MC6.5 Circalittoral mud sediment

##### MC6.51 Coastal terrigenous muds

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

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

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

MC6.514 Facies with Holothuroidea (e.g. *Parastichopus* spp.)

### **OFFSHORE CIRCALITTORAL**

#### MD1.5 Offshore circalittoral rock

##### MD1.51 Offshore circalittoral rock invertebrate-dominated

MD1.511 Association with macroalgae (included non-indigenous *Caulerpa* spp.)

MD1.512 Facies with small sponges (sponge ground, e.g. *Halicona* spp., *Phakellia* spp., *Poecillastra* spp.)

MD1.513 Facies with large and erect sponges (e.g. *Spongia lamella*, *Axinella* spp.)

MD1.514 Facies with Alcyonacea (e.g. *Alcyonium* spp., *Callogorgia verticillata*, *Ellisella paraplexauroides*, *Eunicella* spp., *Leptogorgia* spp., *Paramuricea* spp., *Swiftia pallida*, *Corallium rubrum*)

MD1.515 Facies with Antipatharia (black corals forest, e.g. *Antipathella subpinnata*)

MD1.516 Facies with Scleractinia (e.g. *Dendrophyllia* spp., *Madracis pharensis*)

MD1.517 Facies with Ceriantharia (e.g. *Cerianthus* spp.)

MD1.518 Facies with Zoantharia (e.g. *Savalia savaglia*)

MD1.519 Facies with Polychaeta

MD1.520 Facies with Bivalvia

MD1.521 Facies with Brachiopoda

MD1.522 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 associations and facies

MD1.53 Deep offshore circalittoral banks

MD1.531 Facies with Antipatharia (black corals forest, e.g. *Antipathella* spp.)

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 reefs

MD3.5 Offshore circalittoral coarse sediment

MD3.51 Offshore circalittoral detritic bottoms

MD3.511 Association with macroalgae (included non-indigenous *Caulerpa* spp.)

MD3.512 Facies with Bivalvia (e.g. *Neopycnodonte* spp.)

ME2.513 Facies with Brachiopoda

MD3.514 Facies with Polychaeta

MD3.515 Facies with Crinoidea (e.g. *Leptometra* spp.)

MD3.516 Facies with Ophiuroidea

MD3.517 Facies with Echinoidea

MD4.5 Offshore circalittoral mixed sediment

MD4.51 Offshore circalittoral detritic bottoms on shelf edge

See MD3.51 for examples of association and facies

MD5.5 Offshore circalittoral sand

See MD3.51 for examples of association and facies

MD6.5 Offshore circalittoral mud

MD6.51 Coastal 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

## **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 (black corals forest, *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 (yellow corals forest, e.g. *Dendrophyllia* spp.; white corals forest, e.g. *Madrepora oculata*, *Desmophyllum cristagalli*, *Lophelia pertusa*, *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 (enclave of lower bathyal)

##### ME1.52a Muddy bottom

##### ME1.52b Walls and ceilings

- ME1.521b Facies with small sponges (e.g. *Diplastrella* spp., *Dendroxea* spp.)

##### ME1.52c Walls and ceilings in anchialine environments

### ME2.5 Upper 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 (white corals forest, 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 the white corals (on seamounts)

See ME1.51 for examples of facies

ME3.5 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

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

ME4.512 Facies with Brachiopoda

ME5.5 Upper bathyal sand

ME5.51 Upper 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

ME6.5 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 (yellow corals forest, e.g. *Dendrophyllia* spp.; white corals forest, e.g. *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

ME6.520 Facies with Ceriantharia (e.g. *Cerianthus* spp., *Arachnanthus* spp.)

ME6.521 Facies with Bryozoa (e.g. *Candidae* spp., *Kinetoskias* spp.)

ME6.522 Facies with giant Foraminifera (e.g. *Astrorhizida*)

## **LOWER BATHYAL**

### MF1.5 Lower bathyal rock

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

MF1.512 Facies with Alcyonacea (e.g. *Isidella elongata*)

MF1.513 Facies with Scleractinia (yellow corals forest, e.g. *Dendrophyllia* spp.; white corals forest, e.g. *Madrepora oculata*, *Desmophyllum cristagalli*, *Lophelia pertusa*)

MF1.52 Caves and ducts in total darkness

### MF2.5 Lower bathyal biogenic habitat

#### MF2.51 Lower bathyal reefs

MF2.511 Facies with Scleractinia (yellow corals forest, e.g. *Dendrophyllia* spp.; white corals forest, e.g. *Madrepora oculata*, *Desmophyllum cristagalli*, *Lophelia pertusa*)

MF2.52 Thanatocoenosis of the white corals (on seamounts)

See MF1.5 for examples of facies

### MF6.5 Lower bathyal muds

#### MF6.51 Sandy muds

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

MF6.515 Facies with bioturbations

#### MF6.52 Compact muds

MF6.521 Facies with small sponges (e.g. *Thenaea* spp.)

MF6.522 Facies with Alcyonacea (e.g. *Isidella elongata*)

MF6.523 Facies with Echinoidea (e.g. *Brissopsis* spp.)

MF6.524 Facies with Pennatulacea (e.g. *Pennatula* spp., *Funiculina quadrangularis*)

MF6.525 Facies with bioturbations

## **ABYSSAL**

### MG1.5 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 mud

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

**The following specific geomorphologic / hydrologic features were not considered in this list because their presence is independent from the depth zone and the substrate type:**

- A. Hydrothermal vents
- B. Cold seeps (methane and sulfide)
- C. Freshwater resurgences
- D. Seamounts
- E. Canyons