A4.23 Communities of Mediterranean soft circalittoral rock

Summary

This habitat type occurs on moderately wave-exposed, circalittoral soft bedrock subject to moderately strong tidal streams. As this complex is found in highly turbid water conditions, the circalittoral zone may begin at the low water mark, due to poor light penetration. This complex is dominated by the piddock *Pholas dactylus.*

This habitat is affected by demersal towed fishing gears which cause direct damage to the soft rock as well as removing associated species. There are also indirect effects, for example associated with sedimentation and increased turbidity which may smother associated species. Organic enrichment from land based sources of pollution and fish farms have also been identified as a pressure on this habitat. There are no conservation measures specifically for this habitat although it may occur in some protected areas. The regulation of demersal fisheries, including the establishment of refuge areas where such activity is prohibited, as well as measures to improve water quality will benefit this habitat.

Synthesis

In general, epibenthos from soft rock communities have been severly affected by fisheries, especially by towing fishing gear, such as trawls and dredges. Off-shore zones of this habitat in the northern Adriatic Sea have been flattened and reduced in size by trawling and other destructive forms of fisheries, sometimes to virtual extinction of the original habitat. *P. dactulys*, as a characteristic species of this habitat was once prevalent across the entire Mediterranean coast of Europe, but it has disappeared from most sites due to human collection for food and bait and as a result of pollution.

The habitat has been assessed as Vulnerable on the basis of expert opinion for both the EU 28 and EU 28+ because of declines in both quantity and quality. Further data collection is needed to gain a better understanding of this habitat type and re-assessment when more information is available.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Vulnerable	A1, A2a, C/D1	Vulnerable	A1, A2a, C/D1

Sub-habitat types that may require further examination

None.

Habitat Type

Code and name

A4.23 Communities of Mediterranean soft circalittoral rock

No characteristic photographs of this habitat currently available.

Habitat description

This habitat type occurs on moderately wave-exposed, circalittoral soft bedrock subject to moderately strong tidal streams. As this complex is found in highly turbid water conditions, the circalittoral zone may begin at the low water mark, due to poor light penetration. This complex is dominated by the piddock (a marine rock boring bivalve mollusc) *Pholas dactylus* *Barnea parva* and other boring bivalves. Other species typical of this complex include the tube building polychaete *Polydora* and *Bispira volutacornis*, the

sponges *Cliona celata* and *Suberites ficus*, the bryozoan *Alcyonium coralloides*, and the crabs *Necora puber* and *Cancer pagurus*. Foliose red algae may also be present.

Indicators of quality:

Standard biotic and abiotic indicators have been used to describe marine habitat quality. Both biotic and abiotic indicators have been used to describe marine habitat quality. These include the presence of particular species, water quality parameters, levels of exposure to a particular exposure as well as more integrated indices which describe habitat function and structure, such as trophic index, or successful stages of development in habitats that have a natural cycle of change over time. There are no known commonly agreed indicators of quality for this habitat, although particular parameters may be set in certain situations, e.g. protected features with Natura 2000 sites, where reference values may have been determined and applied on a location-specific basis.

Characteristic species:

Bivalves: *Pholas dactylus*, Polychaetes: *Bispira volutacornis,* Sponges: *Cliona celata, Cliona viridis, Suberites ficus, Suberites carnosus,* Bryozoan: *Alcyonium coralloides*; Crustaceans: *Necora puber, Cancer pagurus; Ascidian: Polyclinum aurantium.*

Classification

EUNIS (2007):

Level 4. A sub-habitat of Atlantic and Mediterranean moderate energy circlaittoral rock (A4.2)

Annex 1:

1170 Reefs

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Shallow sublittoral rock & biogenic reef

Shelf sublittoral rock & biogenic reef

EUSeaMap:

Shallow aphotic rock or biogenic reef

Shelf rock or biogenic reefs

IUCN:

9.2 Subtidal Rock and Rocky Reefs

Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?

Unknown

Justification

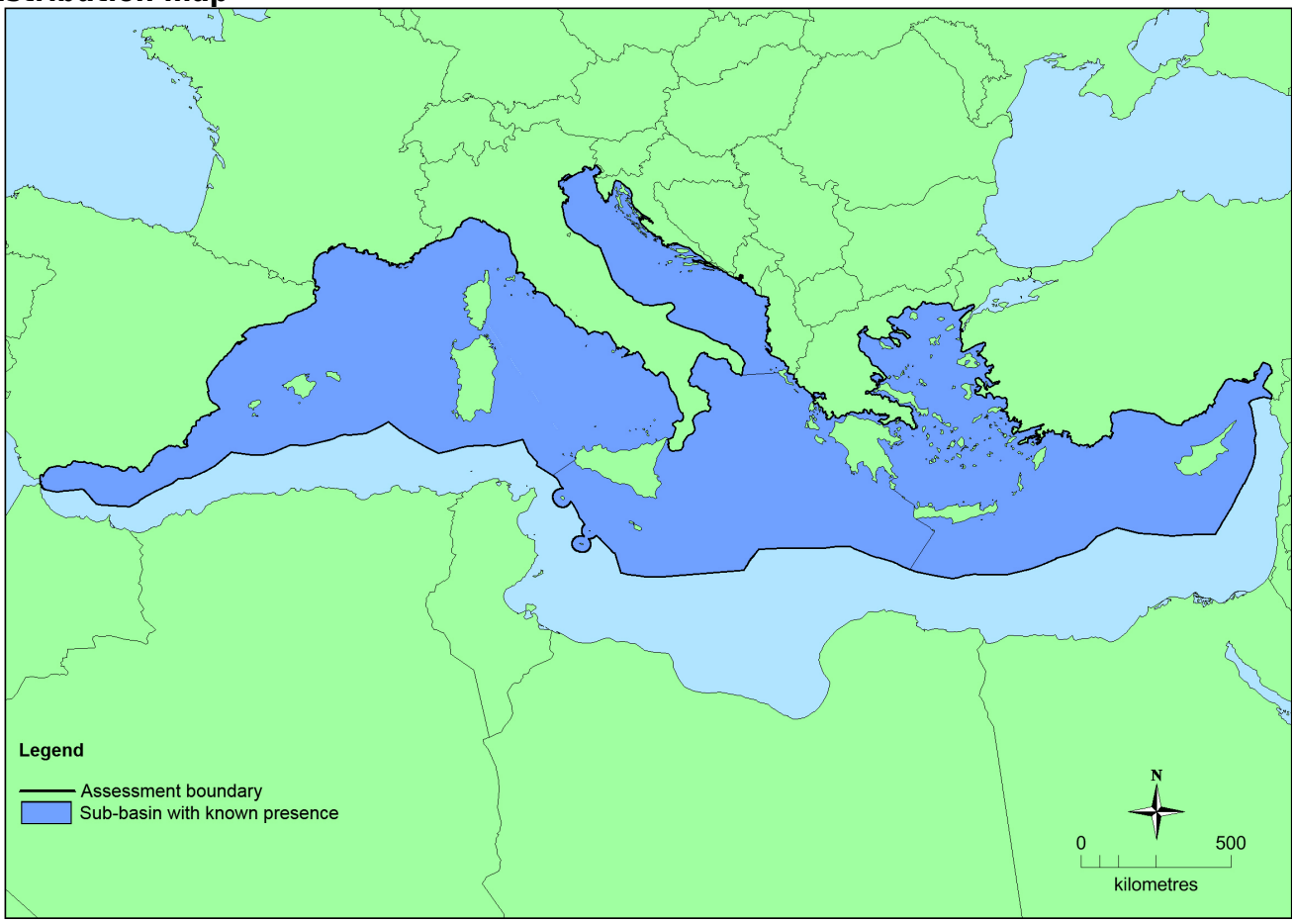
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Mediterranean Sea	Adriatic Sea: Present Aegian-Levantine Sea: Present Ionian Sea and the Central Mediterranean Sea: Present Western Mediterranean Sea: Present	Unknown Km^2	Decreasing	Decreasing

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	>50,000 Km^2	Unknown	Unknown Km^2	
EU 28+	>50,000 Km^2	Unknown	Unknown Km^2	

Distribution map



This habitat is known to occur in all sub-basins in the Eastern and Western Mediterranean but there is insufficient data to produce a map of its distribution.

How much of the current distribution of the habitat type lies within the EU 28?

Unknown.

Trends in quantity

Off-shore zones of this habitat in the northern Adriatic Sea have been flattened and reduced in size by trawling and other destructive forms of fisheries sometimes resulting in total loss the habitat. The habitat is has also been affected by nitrogenous wastes from fish farms, where effects such as changes in benthic communities can be traced over distances of several kilometres from the inputs.

P. dactulys, a characteristic species of this habitat, was once prevalent across the entire Mediterranean coast of Europe, but it has disappeared from most sites due to human collection for food and bait, and as a result of pollution. This represents a decline in quanitity.

- Average current trend in quantity (extent)
  EU 28: Decreasing
  EU 28+: Decreasing
- Does the habitat type have a small natural range following regression?
  No
  Justification
  The habitat has an EOO that exceeds 50,000 km^2.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  The habitat type does not have an instrinsically restricted area.

Trends in quality

Epibenthos from soft rock communities have been severly affected by fisheries, especially by towed demersal fishing gear, such as trawls and dredges. These can cause direct damage and also indirect declines in quality by increasing sedimentation. Sediments that accumulate on rocky substrata are important agents of stress and disturbance. They can cause burial, scour and profound modifications to the characteristics of the bottom surface, and interact with other important physical and biological processes. The effects of sedimentation are complex, because they involve both direct outcomes on settlement, recruitment, growth or survival of individual species and indirect outcomes through mediation of competitive and/or predator–prey interactions.

P. dactulys, a characteristic species of this habitat, was once prevalent across the entire Mediterranean coast of Europe, but it has disappeared from most sites due to human collection for food and bait, and as a result of pollution. A reduction in the density and abundance of this species represents a decline in quallity.

- Average current trend in quality
  EU 28: Decreasing
  EU 28+: Decreasing

Pressures and threats

This habitat is affected by demersal towed fishing gears which cause direct damage to the soft rock as well as removing associated species. There are also indirect effects, for example associated with sedimentation and increased turbidity which may smother associated species. Organic enrichment from land based sources of pollution and fish farms have also been identified as a pressure on this habitat.

List of pressures and threats

Urbanisation, residential and commercial development

Discharges

Biological resource use other than agriculture & forestry

Marine and Freshwater Aquaculture
Fishing and harvesting aquatic resources

Pollution

Marine water pollution
Soil pollution and solid waste (excluding discharges)

Conservation and management

There are no conservation measures specifically for this habitat although it may occur in some protected areas. The regulation of demersal fisheries, including the establishment of refuge areas where such activity is prohibited, as well as measures to improve water quality will benefit this habitat.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

Measures related to marine habitats

Restoring marine habitats

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species

Measures related to hunting, taking and fishing and species management

Regulation/Management of fishery in marine and brackish systems

Conservation status

Annex 1:

1170: MMED XX

When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?

Depending on a scale of habitat destruction an recovery can take a long time or even to be an irreversible process if the substrate is removed.

Effort required

10 years
Unknown

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	>30 %	>30 %	Unknown %	Unknown %
EU 28+	>30 %	>30 %	Unknown %	Unknown %

The habitat is assessed as Vulnerable under Criterion A1 and A2a for both the EU 28 and EU 28+ as expert opinion is that it is likely to have suffered large declines in surface area (more than 30%) over the last 50 years. These trends are considered likely to continue over the next 50 years.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50,000 Km^2	Yes	Yes	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
EU 28+	>50,000 Km^2	Yes	Yes	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

This habitat has a widespread geographical distribution but the exact locations and therefore AOO are unknown. Threatening processes are considered likely to cause continuing declines in the next 20 years. This habitat has therefore been assessed as Least Concern for criteria B1a and B1b for both the EU 28 and EU 28+ and Data Deficient for all other criteria.

Criterion C and D: Reduction in abiotic and/or biotic quality

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	>50 %	Intermediate %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	>50 %	Intermediate %	Unknown %	Unknown %	Unknown %	Unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	Unknown %	Unknown%	Unknown %	Unknown%	Unknown %	Unknown%
EU 28+	Unknown %	Unknown%	Unknown %	Unknown%	Unknown %	Unknown%

P. dactulys, as a characteristic species of this habitat was once prevalent across the entire Mediterranean coast of Europe, but it has disappeared from most sites due to human collection for food and bait and as a result of pollution. Epibenthos from soft rock communities have also been severly affected by fisheries, especially by towing fishing gear, such as trawls and dredges. Expert opinion is that this habitat is likely to have suffered a substantial reduction in quality. It has therefore been assessed as Vulnerable under criteria C/D1 for both the EU 28 and EU 28+.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	Unknown

Criterion E	Probability of collapse
EU 28+	Unknown

There is no quantitative analysis available to evaluate risk of habitat collapse. Therefore, the habitat is assessed as Data Deficient under Criterion E.

Overall assessment "Balance sheet" for EU 28 and EU 28+

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	VU	VU	DD	DD	LC	DD	DD	VU	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	VU	VU	DD	DD	LC	DD	DD	VU	DD	DD	DD	DD	DD	DD	DD	DD	DD

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Vulnerable	A1, A2a, C/D1	Vulnerable	A1, A2a, C/D1

Confidence in the assessment
Low (mainly based on uncertain or indirect information, inferred and suspected data values, and/or limited expert knowledge)

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