A2.12 Communities of Mediterranean mediolittoral coarse sediment estuarine

Summary

Shores of coarse sediments (shingle, gravels and coarse sand) in the upper reaches of estuaries and other inlets which are subject to variable and reduced salinity conditions. The outflow of riverine freshwater at the heads of the inlets results in the washing out of fine particulate matter, leaving coarse sediments. This habitat typically covers a comparatively small area and exhibits a great variability of physical and chemical parameters. It is usually a species-poor habitat and the fauna is characterised by oligochaete worms.

Estuaries are particularly and directly subject to various human activities. Thus, this habitat is especially prone to impacts such as coastal pollution (urban, agricultural, industrial), coastal zone development (particularly urbanization and uncontrolled coastal infrastructures), contamination of sediments and biota, and episodic perturbations (i.e. sediment removal and illegal dumping of wreckages). Beneficial conservation measures include regulating discharges to improve water quality, managing fisheries, establishing protected areas, coastal zone planning including zoning of developments, and whole estuary management including regulation of water abstraction from the river system and other activities which affect the hydrological regime. Direct engagement of scientists and conservationists in the planning of the management process, analysis of social and economic costs and benefits of different management options, and involvement of diverse stakeholders will be essential to the successful implementation of conservation actions.

Synthesis

This habitat is present in all the Mediterranean sub-basins therefore the EOO exceeds the threshold for threatened status. It is believed to have declined in quality and extent over the last 50 years because of the pressures of urbanisation and pollution in the estuarine environments of the Mediterranean. The widespread distribution suggests this habitat could be assessed as Least Concern under criterion B however, because there is insufficient information to quantify any trends, it has been assessed as Data Deficient for both the EU 28 and EU 28+.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Data Deficient	-	Data Deficient	-

Sub-habitat types that may require further examination

None.

Habitat Type

Code and name

A2.12 Communities of Mediterranean mediolittoral coarse sediment estuarine

No characteristic photographs for this habitat currently available.

Habitat description

This habitat comprises shores of coarse sediments (shingle, gravels and coarse sand) in the upper reaches of estuaries and other inlets which are subject to variable and reduced salinity conditions. The outflow of

riverine freshwater at the heads of the inlets results in the washing out of fine particulate matter, leaving coarse sediments. This habitat is typically covers small areas and exhibit a great variability of physical and chemical parameters. It is a species-poor habitat and the fauna characterised by oligochaete worms.

Indicators of quality:

Both biotic and abiotic indicators have been used to describe marine habitat quality. These include: the presence of characteristic species as well as those which are sensitive to the pressures the habitat may face; water quality parameters; levels of exposure to particular pressure, and more integrated indices which describe habitat structure and function, such as trophic index, or successional stages of development in habitats that have a natural cycle of change over time.

Indices developed to assess the ecological status of coastal waters, including estuaries, according to the Water Framework Directive, include physical indicators, water quality indicators and measures of benthic diversity, species richness and abundance. The latter group, which is particularly relevant to benthic habitats, includes a Benthic Quality Index, an Infaunal Trophic Index, a Marine Biotic index based on ecological groups, and the Benthic Opportunistic Polychaetes/Amphipods index.

Characteristic species:

Poorly studied but known to include Oligochaetes such as *Grania* spp. and the gastropod *Littorina littorea.*

Classification

EUNIS (v1405):

Level 4. A sub-habitat of Littoral coarse sediment (A2.1).

Annex 1:

1130 Estuaries

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Littoral sediment

EUSeaMap:

Not mapped

IUCN:

9.10 Estuaries

12.3 Shingle and/ or pebble shoreline and/ or Beaches

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

No

Justification

Areas of coarse sediment are unusual rather than typical of estuarine areas.

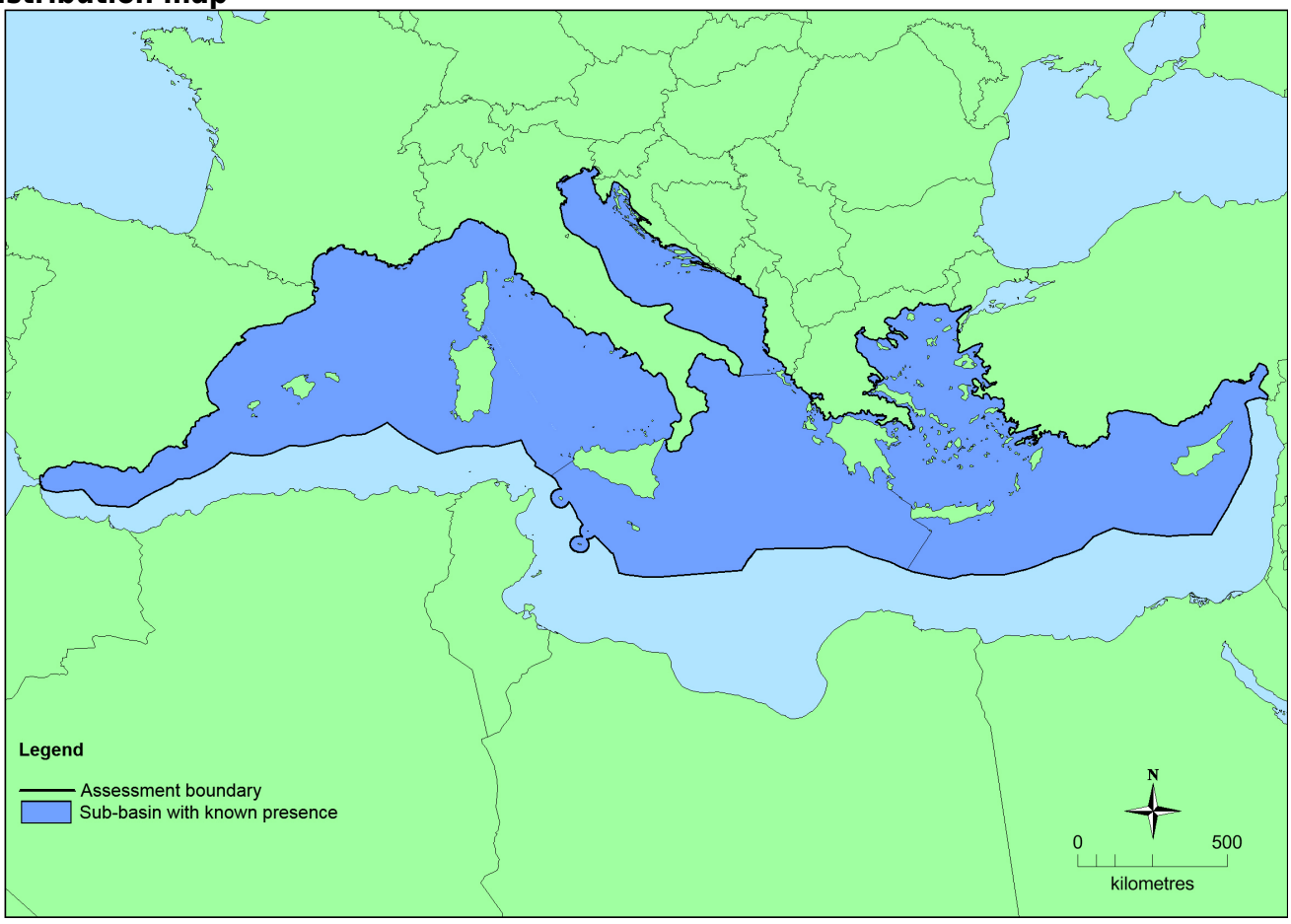
Geographic occurrence and trends

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	This habitat is present in all the Mediterranean sub-basins.
EU 28+	>50,000 Km^2	Unknown	Unknown Km^2	This habitat is present in all the Mediterranean sub-basins.

Distribution map



This habitat occurs in all the sub-basins of the Mediterranean but there are insufficient data to produce a map of its distribution.

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

It is unknown how much of this habitat is hosted by the EU 28 in the Mediterranean.

Trends in quantity

There are limited estuarine areas in the Mediterranean and there have been declines in quantity associated with urbanization of the Mediterranean coast which has especially impacted deltas, estuaries and coastal lagoons. It is reasonable to presume that this habitat has declined however there is insufficient information to quanitify such a trend.

The urbanization of the coast is predicted to continue and therefore this habitat remains under threat.

- 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
  This habitat does not have a small natural range as the EOO exceeds 50,000 km^2.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  This habitat does not have a small range however there are very few examples of large rivers with estuaries in the Mediterranean (e.g. Po, Ebro), or of smaller watercourses that form a confined by significant estuary environment with this type of habitat.

Trends in quality

There are limited estuarine areas in the Mediterranean and there have been declines in quality associated with urbanization and pollution of the Mediterranean coast which has especially impacted deltas, estuaries and coastal lagoons. It is reasonable to presume that the quality of this habitat has declined however there is insufficient information to quanitify such a trend.

These pressures are predicted to continue and therefore this habitat remains under threat.

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

Pressures and threats

Estuaries within the Mediterranean are particularly and directly subject to various human activities. These include coastal pollution and nutrient enrichment (from urban, agricultural, industrial), coastal zone development (particularly urbanization and uncontrolled coastal infrastructures), contamination of sediments and biota caused by inputs of hazardous compounds and dredging and dumping of wastes. Coastal development can also alter the flow regime. Coarse sediment habitats in estuaries can be expected to be subject to these same pressures.

List of pressures and threats

Agriculture

Use of biocides, hormones and chemicals
Fertilisation

Transportation and service corridors

Roads, paths and railroads
Shipping lanes, ports, marine constructions

Urbanisation, residential and commercial development

Urbanised areas, human habitation
Industrial or commercial areas
Discharges

Pollution

Pollution to surface waters (limnic, terrestrial, marine & brackish)
Nutrient enrichment (N, P, organic matter)
Marine water pollution
Soil pollution and solid waste (excluding discharges)

Conservation and management

Some legal provisions regarding estuaries in general exist, but management measures aimed at this particular habitat conservation are not in place. Beneficial measures include improving water quality and both direct and indirect effects of coastal development. Direct engagement of scientists and conservationists in the planning of the management process, analysis of social and economic costs and benefits of different management options,and involvement of diverse stakeholders will be essential to the successful implementation of conservation actions.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

Measures related to marine habitats

Other marine-related measures

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species
Manage landscape features

Measures related to urban areas, industry, energy and transport

Urban and industrial waste management
Specific management of traffic and energy transport systems
Managing marine traffic

Conservation status

Annex 1:

1130: MMED U2

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

The capacity to recover of this habitat is unknown.

Effort required

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	Unknown %	Unknown %	Unknown %	unknown %
EU 28+	Unknown %	Unknown %	Unknown %	unknown %

There are limited estuarine areas in the Mediterranean and there have been declines in quantity associated with urbanization of the Mediterranean coast which has especially impacted deltas, estuaries and coastal lagoons. It is reasonable to presume that this habitat has declined, however there is insufficient information to quanitify such a trend. This habitat has therefore been assessed as Data Deficient under criterion A for both the EU 28 and EU 28+.

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	Yes	Yes	Unknown	Unknown
EU 28+	>50,000 Km^2	Yes	Yes	Unknown	Unknown	Yes	Yes	Unknown	Unknown

This habitat has a large natural range in the Mediterranean. The precise extent is unknown, however as EOO >50,000km^2 , this exceeds the thresholds for a threatened category on the basis of restricted geographic distribution. The habitat is believed to have reduced in extent and quality and the pressures, primarily urbanisation and pollution, are predicted to continue. There is insufficient data to derive a comprehensive figure for AOO. This habitat has therefore been assessed as Least Concern under 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	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	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%

This habitat is believed to have reduced in qualityover the last 50 years. The pressures, primarily urbanisation and pollution, are predicted to continue, however there is insufficient information to quantify any such trend. This habitat has therefore been assessed as Data Deficient under criteria C/D1.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	Unknown
EU 28+	Unknown

There is no quantitative analysis available to estimate the probability of collapse of this habitat type. It is therefore 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	DD	DD	DD	DD	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	LC	DD	DD	DD	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
Data Deficient	-	Data Deficient	-

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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