# Annex IV - Coastal and marine habitat Group

Annex to the Input Document for the Second Mediterranean Natura 2000 Seminar 14 – 16 November 2017, Limassol, Cyprus

# Contents

# 1110 Sandbanks which are slightly covered by sea water all the time

| X | Selected for first round of Biogeographical Seminar |
|---|---|
|   | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - inadequate due to the assessments of Spain and Italy. In the Mediterranean biogeographic region the habitat is widespread along the coasts of Spain and France (including Corse). Around 83% of the habitat area is located in Spain. Improvement of the habitat structure in France and Spain and habitat area increase by restoration in Italy is needed. Better information about habitat structure and functioning is needed in Italy, information about the habitat range and area in Greece are missing.

The main measures should include legal protection of the habitat and establishment of protected sites. They aim to prevent or reduce exploitation of the habitat (fishing, collecting and harvesting aquatic resources) and loss of the habitat due to urbanisation. Coastal engineering works that modify the dynamics of sediments near the coast or that imply the direct destruction of the habitat should also be avoided. Regulation/exclusion of the traffic of motor boats and underwater activities, especially those directed to fishing, gathering or extraction are required. Additional measures against water pollution are needed, tourist restrictions in certain localities must be taken seriously. It is desirable to promote the *Zostera* sp. population restocking and reinforcement program.

## Habitat description

Sandbanks are elevated, elongated, rounded or irregular topographic features, permanently submerged and predominantly surrounded by deeper water. They consist mainly of sandy sediments, but larger grain sizes, including boulders and cobbles, or smaller grain sizes including mud may also be present on a sandbank. Banks where sandy sediments occur in a layer over hard substrata are classified as sandbanks if the associated biota are dependent on the sand rather than on the underlying hard substrata. "Slightly covered by sea water all the time" means that above a sandbank the water depth is seldom more than 20 m below chart datum. Sandbanks can, however, extend beneath 20 m below chart datum.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread along the coasts of Spain and France (including Corse). It also occurs in Cyprus, Malta, Italy (including Sardinia and Sicily) and Slovenia. The overall very poor representation of the habitat in Natura 2000 sites (ca 3.8%) is due to a low area of this habitat covered in Natura 2000 sites in Spain and absent data in Italy and Slovenia. In Malta, a large part of the national habitat area is located in Natura 2000 sites (84%).

| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Cyprus | 10-77 | 6-47 | 3 |
| France | 0-460 | 0-38 | 30 |
| Greece | 0 | N/A | 50 |
| Italy | 0 | 0.0 | 110 |
| Malta | 32 | 84.0 | 3 |
| Portugal | N/A | N/A | 15 |
| Slovenia | 0 | 0.0 | 0 |
| Spain | 58 | 0.7 | 42 |
| Total | 100-627 | 3.8 | 253 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region ("coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in the Mediterranean biogeographical region is unfavourable - inadequate due to the assessment of Spain and Italy. This conclusion was reached despite the favourable status in three countries (Cyprus, Malta and Slovenia). France reported an unfavourable – bad conservation status, and the status in Greece is unknown. There are certain knowledge gaps - information on range and area are not available, Slovenia assessed one parameter and Italy two parameter as unknown. Therefore two parameters (Structure and Functions; Future prospect) were assessed as unknown also on the biogeographical region level. The overall conservation status has been changed since the previous reporting, but this change is not genuine - it is due to better data (Cyprus, Italy, Slovenia) and the use of different methods (Spain).

**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 199 | 0.4 | + | ≈199 | 164.60 | 1.7 | + | ≈164.60 | FV | FV | FV | | U1 | b1 |
| GR | N/A | N/A | 0 | N/A | N/A | N/A | 0 | N/A | FV | FV | XX | | XX | |
| ES | 21869 | 39.8 | 0 | ≈21869 | 7888.93 | 82.9 | 0 | ≈7888.93 | U1 | FV | U1 | + | XX | c1 |
| FR | 10400 | 18.9 | 0 | ≈10400 | 1200 | 12.6 | - | ≈1200 | U2 | U2 | U2 | - | U2 | nc |
| IT | 22100 | 40.3 | x | x | 220.07 | 2.3 | x | >220.07 | XX | XX | U1 | x | U1 | b1 |
| MT | 45 | 0.1 | x | ≈45 | 38 | 0.4 | x | ≈38 | FV | FV | FV | | XX | nc |
| SI | 288 | 0.5 | x | ≈288 | 1 | 0 | x | ≈1 | FV | XX | FV | | U1 | b1 |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | | 2GD | 0 | | | 2GD | - | | 2GD | 2GD | MTX | - | XX | no | C | - |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| Conservation status | FV | Favourable | U1 | Unfavourable - inadequate | U2 | Unfavourable - bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|

| Trend | 0 = stable; + = increase; - = decrease; x = unknown |
|---|---|
| **Qualifier** | = stable; + positive; - negative; x unknown |
| **Nature of change** | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change |
| **Target 1 contribution** | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. |

## Pressures, threats and proposed measures

The countries reported several pressures with high or medium intensity. The most important pressures seem to be fishing, hunting, collecting and harvesting aquatic resources, marine water pollution, coastal sand suppletion and beach nourishment, cargo lanes and reduction or loss of specific habitat features. Other important pressures are urbanisation and human settlement, outdoor sports, leisure and recreational activities.

| Code | Pressure name | CY | ES | FR | IT | MT | SI |
|------|---------------|----|----|----|----|----|----|
| A02 | modification of cultivation practices | M | | | | | |
| C01.01.01 | sand and gravel quarries | | | | M | | |
| C01.01.02 | removal of beach materials | | L | | | | |
| C02 | Exploration and extraction of oil or gas | | L | | | | |
| D03.02.01 | cargo lanes | | | | | | H |
| E01 | Urbanised areas, human habitation | M | | M | | | |
| E02 | Industrial or commercial areas | M | | | | | |
| E03 | Discharges | | | | | M | |
| E03.04.01 | Costal sand suppletion/ beach nourishment | | H | | | | |
| F01 | Marine and Freshwater Aquaculture | | L | | | | |
| F01.02 | suspension culture | | | | M | | |
| F02 | Fishing and harvesting aquatic resources | | H | | | M | |
| F06 | Hunting, fishing or collecting activities not referred to above | | H | L | | | |
| G01 | Outdoor sports and leisure activities, recreational activities | M | | M | | | |
| G01.01 | nautical sports | | | | M | | |
| G01.01.01 | motorized nautical sports | | | | | | M |
| G05.03 | penetration/ disturbance below surface of the seabed | | M | | | M | |
| H01 | Pollution to surface waters (limnic & terrestrial, marine & brackish) | | | M | | | |
| H03 | Marine water pollution | | H | | | | |
| H05 | Soil pollution and solid waste (excluding discharges) | | | M | | | |
| J02.02.01 | dredging/ removal of limnic sediments | | L | | | | |
| J02.11.01 | Dumping, depositing of dredged deposits | | | | | L | |
| J02.12.01 | sea defense or coast protection works, tidal barrages | | M | | | | |
| J02.14 | Altered water quality due anthropogenic changes in salinity | | M | | | | |
| J03.01 | Reduction or loss of specific habitat features | | H | | | | |
| K01.01 | Erosion | | | | M | | |
| L07 | storm, cyclone | | L | | | | |

Legend: **L** Low intensity **M** Medium intensity **H** High intensity

Establishing protected areas and legal protection of habitats are the most important proposed measures. Other important measures are regulation of hunting, extraction, and fisheries in marine and brackish systems, managing marine traffic and improving the water quality.

| Code | Measure name | CY | ES | FR | IT | MT | SI |
|------|--------------|----|----|----|----|----|----|
| 1.2 | Measures needed, but not implemented | | | | | | M |
| 1.3 | No measure known/ impossible to carry out specific measures | | | M | | | |
| 4.1 | Restoring/improving water quality | | H | | | | |
| 4.4 | Restoring coastal areas | | | M | | | |
| 5.0 | Other marine-related measures | | M | | | | |
| 5.1 | Restoring marine habitats | | L | | | | |
| 6.0 | Other spatial measures | | | M | | | |
| 6.1 | Establish protected areas/sites | H | H | | L | H | |
| 6.3 | Legal protection of habitats and species | H | H | | | H | |
| 7.1 | Regulation/ Management of hunting and taking | | M | | | H | |
| 7.3 | Regulation/ Management of fishery in marine and brackish systems | | H | | | M | |
| 8.1 | Urban and industrial waste management | | M | | | | |

| Code | Measure name | CY | ES | FR | IT | MT | SI |
|------|--------------|----|----|----|----|----|----|
| 8.3 | Managing marine traffic | | H | | | M | |

Legend: **L** Low importance **M** Medium importance **H** High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value on the Priority index. The habitat reached score 63 because of high values in two criteria (A and B). The habitat occurs in seven countries (criterion A). The unfavourable - bad overall conservation status was reported by one country (France) and the unfavourable - inadequate status by two countries (criterion B). Countries also reported negative trends in one case.

> The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure in France, Spain, and probably also in Italy is needed. Italy indicated a smaller habitat area than the reference value, thus increase of the habitat area through habitat restoration is needed. Better information about habitat structure and functioning is needed in Italy.

The main measures should include legal protection of the habitat and establishment of protected sites. These measures are aimed especially to prevent or reduce exploitation of the habitat (fishing, collecting and harvesting aquatic resources) and the loss of habitat due to urbanisation. It is necessary to ensure good management of artisanal fisheries practiced at the habitat level. Trawling, which constitutes an illegal practice in this habitat, must be punished (INPN). Fishing with gear or methods that revolve the bottom and dredging should be forbidden - with the exception of dredges geared to habitat protection and maintenance. Also coastal engineering works that modify the dynamics of sediments near the coast or that imply the direct destruction of the habitat should be avoided. Regulation or exclusion of the traffic of motor boats and underwater activities, especially those directed to fishing, gathering or extraction are required.

The habitat must be protected from human activities affecting the littoral: pollution, discharges of turbid waters and poorly managed facilities. Additional measures against water pollution are needed: the control over tanker tank washing and discharge of ballast water should be enhanced, the treatment of ballast water should be promoted and the quality and extension of treatment of urban and industrial effluents should be increased (ICFN). On the other hand, tourist restrictions in certain localities must be taken seriously. It is desirable to promote the *Zostera* sp. population restocking and reinforcement program

## Links

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Coastal+ha
bitats&subject=1110&region=MMED

ICNF 1110 Bancos de areia permanentemente cobertos por água do mar pouco profunda.
http://www.icnf.pt/portal/pn/biodiversidade/rn2000/p-set/hab-1a9#9

INPN: 1110 Bancs de sable à faible couverture permanente d'eau marine. -
https://inpn.mnhn.fr/site/natura2000/habitat/1110/cahiers-habitats

Morales, J.A., Borrego, J. Flor, G., Gracía, F.J., 2009: 1110 Bancos de arena cubiertos
permanentemente por agua marina poco profunda (Bancales Sublitorales). - In: VV.AA., Bases
ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en
España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 57 p.
http://www.jolube.es/Habitat_Espana/documentos/1110.pdf

# 1120 Posidonia beds (*Posidonion oceanicae*)

| X | Selected for first round of Biogeographical Seminar |
|---|---|
|   | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - inadequate due to the assessments of four countries (Greece, France, Spain and Italy). The habitat is in Mediterranean biogeographic region widespread along the coasts of Spain, France and Italy. 55% of the habitat area is located in Italy.

Improvement of the habitat structure and an increase of habitat area are needed in Greece, France and probably also in Italy. The main measures should include legal protection of the habitat, establishing protected areas/sites, managing marine traffic, regulation of fishery and aquatic resources exploitation. It is needed to further develop and systematically implement regulations for activities having a negative impact on the habitat, e.g. pollutants level limits and maximum allowed distances of impact sources. Habitat restoration is needed in Spain and France as they reported a smaller habitat area than the reference value. Better information about habitat structure and functioning is needed in Italy.

## Habitat description

Beds with the *Posidonia oceanica* characteristic in the infralittoral zone of the Mediterranean (depth: ranging from a few dozen centimetres to 30 - 40 metres). On hard or soft substrate, these beds constitute one of the main climax communities. They can withstand relatively large variations in temperature and water movement, but are sensitive to desalination, generally requiring a salinity of between 36 and 39‰.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread along the coasts of Spain, France and Italy. It also occurs in Malta, Cyprus, Slovenia, and Greece. The overall low representation of the habitat in Natura 2000 sites (ca 15%) is due to the small area of this habitat in Natura 2000 sites in Spain and absence of data from Greece and Italy. The whole national habitat area is located in Natura 2000 sites in Slovenia, a large part also in Cyprus (85%) and Malta (78%).

| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Cyprus | 110 | 85.0 | 7 |
| France | 400-468 | 41-48 | 30 |
| Greece | 0 | N/A | 80 |
| Italy | 0 | 0.0 | 202 |
| Malta | 140 | 78.0 | 5 |
| Slovenia | 0.08 | 100.0 | |
| Spain | 763 | 25.0 | 84 |
| Total | 1,413-1,481 | 15 | 408 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region ("coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in the Mediterranean biogeographical region is unfavourable - inadequate due to assessments of Greece, France, Spain and Italy. This conclusion was reached despite the favourable status in three countries (Cyprus, Malta, and Slovenia). The knowledge of habitat structure and functions is not sufficient in Italy. On the biogeographical level, one parameter (Range) was assessed as favourable, Area was assessed as unfavourable – inadequate, and the other two parameters (Structure and Functions; Future prospect) as unknown. The overall conservation status for the region has not been changed since the previous reporting.

### Treated data from Member States reports

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 281 | 0.5 | 0 | ≈281 | 130 | 1.3 | 0 | ≈130 | FV | FV | FV | | U1+ | b1 |
| GR | N/A | N/A | - | N/A | N/A | N/A | - | N/A | U1+ | U1+ | U1+ | N/A | U1+ | |
| ES | N/A | N/A | 0 | ≈ | 3100 | 32.1 | 0 | >3100 | FV | U1 | U1 | = | XX | c1 |
| FR | 12700 | 24.4 | 0 | ≈12700 | 980 | 10.1 | - | >980 | U1 | XX | U1 | = | U1 | nc |
| IT | 38400 | 73.9 | x | ≈38400 | 5282 | 54.6 | x | ≈5282 | XX | XX | U1 | = | U1 | b1 |
| MT | 185 | 0.4 | 0 | ≈185 | 179 | 1.9 | 0 | ≈179 | FV | FV | FV | | FV | |
| SI | 382 | 0.7 | 0 | ≈382 | 0.08 | 0 | 0 | ≈0.08 | FV | XX | FV | | U1 | b1 |

### EU Biogeographical assessment and proposed corrections

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | 51948 | 2GD | x | 51948 | 9671 | 2GD | x | 9671 | 2GD | 2GD | MTX | = | U1 | nc | D | = |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| Conservation status | FV Favourable | U1 Unfavourable - inadequate | U2 Unfavourable - bad | XX Unknown |
|---|---|---|---|---|

| Trend | 0 = stable; + = increase; - = decrease; x = unknown |
|---|---|
| Qualifier | = stable; + positive; - negative; x unknown |
| Nature of change | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change |
| Target 1 contribution | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. |

## Pressures, threats and proposed measures

The countries reported several pressures with high or medium intensity. The most important seem to be marine and freshwater aquaculture, marine water pollution, fishing and harvesting aquatic resources, coastal sand suppletion and beach nourishment, reduction or loss of specific habitat features. Other important pressures are invasive alien species, shipping lanes, ports and port areas, marine constructions and disturbance below the surface of the seabed.

| Code | Pressure name | CY | ES | FR | IT | MT | SI |
|------|---------------|----|----|----|----|----|----|
| C01.01.02 | removal of beach materials | | M | | | | |
| D02 | Utility and service lines | | M | L | | | |
| D03 | shipping lanes, ports, marine constructions | M | | M | | | |
| D03.01 | port areas | | M | | M | | |
| E03 | Discharges | | | L | | M | |
| E03.04.01 | costal sand suppletion/ beach nourishment | | H | | | | |
| F01 | Marine and Freshwater Aquaculture | M | L | H | | | |
| F01.01 | intensive fish farming, intensification | | | | M | | |
| F02 | Fishing and harvesting aquatic resources | | | H | | M | |
| F02.02 | Professional active fishing | | H | | | | |
| F05 | Illegal taking/ removal of marine fauna | | | L | | | |
| G01 | Outdoor sports and leisure activities, recreational activities | | M | | | | |
| G01.01.01 | motorized nautical sports | | | | | | M |
| G05.03 | penetration/ disturbance below surface of the seabed | | M | | | M | |
| H01 | Pollution to surface waters (limnic & terrestrial, marine & brackish) | | | M | | | |
| H03 | Marine water pollution | | H | L | | | |
| I01 | invasive non-native species | | M | M | M | | |
| J02.11.01 | Dumping, depositing of dredged deposits | | | | | L | |
| J02.12.01 | sea defense or coast protection works, tidal barrages | | H | | | | |
| J03.01 | reduction or loss of specific habitat features | | H | | | | |
| K01 | abiotic (slow) natural processes | | | L | | | |
| K04 | Interspecific floral relations | | | L | | | |
| K04.01 | competition (flora) | | | | M | | |
| M01 | Changes in abiotic conditions | | M | | | | |
| M02.01 | habitat shifting and alteration | | M | | | | |

Legend:  L Low intensity   M Medium intensity   H High intensity

All countries except for Slovenia proposed legal protection of habitats and species as the most important measure. Other measures that are considered as highly important are: establishing protected areas/sites, regulation of fishery in marine and brackish waters, managing marine traffic, restoring water quality, regulation of hunting, extraction and fishery in limnic systems.

| Code | Measure name | CY | ES | FR | IT | MT | SI |
|------|--------------|----|----|----|----|----|----|
| 1.2 | Measures needed, but not implemented | | | | | | M |
| 4.1 | Restoring/improving water quality | | H | | | | |
| 5.0 | Other marine-related measures | | L | M | | | |
| 5.1 | Restoring marine habitats | | | | L | | |
| 6.0 | Other spatial measures | | | M | | | |

| Code | Measure name | CY | ES | FR | IT | MT | SI |
|------|-------------|----|----|----|----|----|----|
| 6.1 | Establish protected areas/sites | H | H | | | H | |
| 6.3 | Legal protection of habitats and species | H | H | H | H | H | |
| 7.0 | Other species management measures | | M | | | | |
| 7.1 | Regulation/ Management of hunting and taking | | M | | | H | |
| 7.2 | Regulation/ Management of fishery in limnic systems | | | | H | | |
| 7.3 | Regulation/ Management of fishery in marine and brackish systems | M | H | | L | M | |
| 7.4 | Specific single species or species group management measures | | L | | | | |
| 8.1 | Urban and industrial waste management | | M | | | | |
| 8.3 | Managing marine traffic | | H | | | M | |
| 9.2 | Regulating/Managing exploitation of natural resources on sea | M | | | | | |

Legend:  L Low importance   M Medium importance   H High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value on the Priority index. The habitat reached score 49 because of high values for criterion A. The habitat occurs in seven countries (criterion A). No country reported the unfavourable - bad overall conservation status and an unfavourable - inadequate status was reported in four countries. Countries reported negative trends in one case.

> The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure is needed in Greece, France, and probably also in Italy. The legal protection of habitat was identified as the most important measure in most of countries. Habitat restoration is needed in Spain and France as they reported a smaller habitat area than the reference value. Better information about habitat structure and functioning is needed in Italy.

Important measures include establishing protected areas/sites, managing marine traffic, regulation of fishery and aquatic resources exploitation. There is a need to further develop regulations for activities that have a negative impact on the *Posidonia* beds and other coastal ecosystems (e.g. pollutants level limits and allowed minimum distances of impact sources to meadows) and to implement it through the setting of a vigilance system. Such system could be coordinated with the seagrass monitoring networks already in place. The conservation management is mainly focused on protective measures through the installation of artificial reefs and seagrass-friendly moorings for boats, in order to reduce the erosive pressure of otter-trawling and free anchoring in shallow meadows. The control of invasive species (*Caulerpa taxifolia, C. racemosa*) is important as well in some *P. oceanica* beds (Díaz-Almela et Duarte, 2008).

Seagrass monitoring is a fundamental tool for measuring the status and trends of meadows and it is also essential to assess the effectiveness of any protective or recovery initiatives. The slow growth of *P. oceanica* beds makes recovery difficult, it can take centuries after the cause before habitat

perturbation is eliminated. Recovery measures, like remediation of seagrass sediments enriched with organic matter, or transplanting of *P. oceanica*, are in an experimental stage and need further development (Díaz-Almela et Duarte, 2008).

## Links

Díaz-Almela E. & Duarte C.M. 2008. Management of Natura 2000 habitats. 1120 *Posidonia* beds (*Posidonion oceanicae*). - European Commission (DG ENV B2), Brussels, 32 pp. - http://ec.europa.eu/environment/nature/natura2000/management/habitats/pdf/1120_Posidonia_beds.pdf

Díaz, E., Marbà, N., 2009. 1120 Posidonion oceanicae. Praderas de Posidonia oceanica (*). - In: VV.AA., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 129 pp. - http://www.jolube.es/Habitat_Espana/documentos/1120.pdf

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Coastal+habitats&subject=1120&region=MMED

# 1150 Coastal lagoons

| X | Selected for first round of Biogeographical Seminar |
|---|---|
|   | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - bad due to the assessment of three countries: Greece, France and Portugal. In the Mediterranean biogeographic region the habitat is widespread along the coasts of Spain and France. Around 49% of the habitat area is located in France, in Italy this is around 45%.

The adoption of integrated coastal zone management is needed, it is crucial to restore or improve the hydrological regime and the water quality by significant reduction of the eutrophication and pollution both in the coastal lagoons and their watershed. The main measures are general protection of the habitat by law, introduction of ecologically sound fishing methods, improvement of the hydrological regime, preservation of natural dynamics, restrictions on building activities and any constructions and exclusion/restriction of access to people and vehicles. It is needed to recover threatened species in the coastal lagoon, eliminate alien species that were introduced and avoid their future introductions.

Moreover, programs and measures are needed to restore natural conditions in affected lagoon areas. Habitat restoration is needed in countries that indicated a smaller habitat area than the reference value: Spain, France, and Portugal. Better information about habitat structure and functioning is needed in Spain and Italy.

## Habitat description

Lagoons are expanses of shallow coastal salt water, of varying salinity and water volume, wholly or partially separated from the sea by sand banks or shingle, or, less frequently, by rocks. Salinity may vary from brackish water to hypersalinity depending on rainfall, evaporation and through the addition of fresh seawater from storms, temporary flooding of the sea in winter or tidal exchange. With or without vegetation from *Ruppietea maritimae, Potametea, Zosteretea* or *Charetea*.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread along the coasts of Spain and France. It also occurs in Portugal, Malta, Greece and Italy. The overall representation of the habitat in Natura 2000 sites is around 34%. The entire national habitat area in Malta is located in Natura 2000 sites, quite large parts also in France. The data from Spain seem unrealistic, likely a mistake was made.
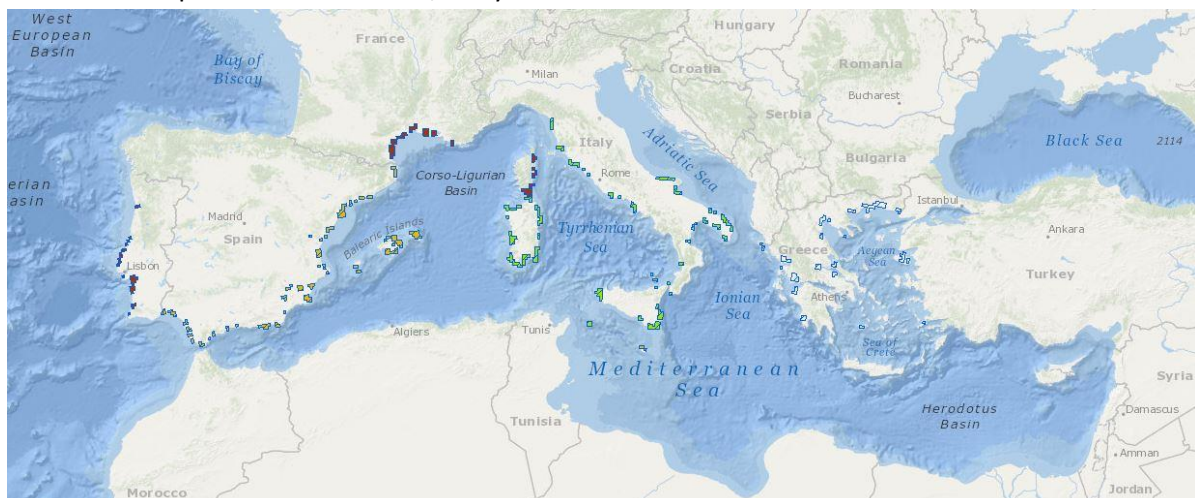
| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| **Cyprus** | N/A | N/A | 1 |
| **France** | 0-518 | 0-65 | 33 |
| **Greece** | 0 | N/A | 37 |
| **Italy** | 0 | 0.0 | 121 |
| **Malta** | 7 | 100.0 | 4 |
| **Portugal** | 20 | N/A | 14 |
| **Spain** | 270 | 321.0 | 70 |
| **Total** | 297-815 | 34 | 280 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region ("coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in the Mediterranean biogeographical region is unfavourable - bad due to the assessments of Greece, France and Portugal. This conclusion was reached despite the favourable status reported in Italy. Spain and Malta reported an unfavourable – inadequate conservation status. The knowledge of habitat structure and functions is not sufficient in Spain and Italy. On the biogeographical region level, Range was assessed as unknown, Area as unfavourable – inadequate, and the other two parameters (Structure and Functions; Future prospect) were assessed as unfavourable - bad. The overall conservation status for the region has not been changed since the previous reporting period.

**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| GR | N/A | N/A | - | N/A | N/A | N/A | - | N/A | U2 | U2 | U2 | N/A | U2 | |
| ES | 11689 | 26.4 | x | x | 84 | 5.2 | x | >84 | XX | U1 | U1 | x | XX | c1 |
| FR | 5600 | 12.7 | 0 | ≈5600 | 793 | 49.2 | 0 | >793 | U2 | U2 | U2 | = | U2 | nc |
| IT | 20800 | 47.1 | x | ≈20800 | 728.45 | 45.2 | x | ≈728.45 | XX | FV | FV | | N/A | |
| MT | 7 | 0 | 0 | ≈7 | 7 | 0.4 | 0 | ≈7 | U1 | U1 | U1 | = | U1- | c2 |
| PT | 6100 | 13.8 | 0 | ≈6100 | N/A | N/A | - | > | U2 | U2 | U2 | = | U2 | nc |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | 44196 | 2GD | | 32507 | 1612 | 2GD | | 1612 | 2GD | 2GD | MTX | x | U2 | nc | D | = |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| **Conservation status** | FV | Favourable | U1 | Unfavourable - inadequate | U2 | Unfavourable - bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|

| **Trend** | 0 = stable; + = increase; - = decrease; x = unknown |
|---|---|
| **Qualifier** | = stable; + positive; - negative; x unknown |
| **Nature of change** | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change |
| **Target 1 contribution** | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. |

## Pressures, threats and proposed measures

The countries reported a broad range of pressures; the most important are pollution to groundwater, human induced changes in hydraulic conditions, pollution to surface waters, urbanised areas and human habitation. Other important pressures are fertilisation, potting, hunting, fishing or collecting activities, trampling, overuse, disturbance below the surface of the seabed, storms, cyclones and changes in biotic conditions.

| Code | Pressure name | ES | FR | IT | MT | PT |
|------|---------------|----|----|----|----|----|
| A07 | use of biocides, hormones and chemicals | M | M | | | |
| A08 | Fertilisation | H | M | | L | |
| B01.02 | artificial planting on open ground (non-native trees) | | | | M | |
| C01 | Mining and quarrying | M | | | | |
| C01.05.02 | conversion of saltpans | | | | | L |
| D01 | Roads, paths and railroads | | | | M | |
| D01.02 | roads, motorways | | | | | L |
| E01 | Urbanised areas, human habitation | H | M | M | | M |
| E03 | Discharges | | M | | | |
| F01 | Marine and Freshwater Aquaculture | | M | | | |
| F01.02 | suspension culture | | | M | | |
| F02 | Fishing and harvesting aquatic resources | M | L | | | |
| F02.01.01 | potting | | | | | H |
| F02.01.02 | netting | | | | | M |
| F02.02.05 | benthic dredging | | | | | L |
| F06 | Hunting, fishing or collecting activities not referred to above | | | | | H |
| G01.01.01 | motorized nautical sports | | | | | M |
| G01.03.02 | off-road motorized driving | | | | | M |
| G02 | Sport and leisure structures | M | | | | M |
| G05.01 | Trampling, overuse | | | | | H |
| G05.03 | penetration/ disturbance below surface of the seabed | | | | | H |
| H01 | Pollution to surface waters (limnic & terrestrial, marine & brackish) | | H | | L | H |
| H01.01 | pollution to surface waters by industrial plants | | | | | M |
| H01.05 | diffuse pollution to surface waters by agricultural and forestry activities | | | | | M |
| H01.08 | diffuse pollution to surface waters by household sewage and waste waters | | | | | L |
| H02 | Pollution to groundwater (point sources and diffuse sources) | H | H | | | |
| H03 | Marine water pollution | | L | | | |
| H04 | Air pollution, air-borne pollutants | M | | | | |
| I01 | invasive non-native species | M | H | | M | |
| J02 | human induced changes in hydraulic conditions | H | H | | | |
| J02.02 | Removal of sediments (mud...) | | | | L | |
| J02.02.02 | estuarine and coastal dredging | | | | | M |
| J02.05.01 | modification of water flow (tidal & marine currents) | | | | | M |
| J02.06 | Water abstractions from surface waters | | | | | M |
| J03 | Other ecosystem modifications | | M | | | |
| K01 | abiotic (slow) natural processes | | L | | | |
| K01.02 | Silting up | | | | M | M |
| K02 | Biocenotic evolution, succession | | M | | | |
| K03 | Interspecific faunal relations | | M | | | |
| K05 | reduced fecundity/ genetic depression | | L | | | |
| L07 | storm, cyclone | | M | | H | |
| L08 | inundation (natural processes) | | L | | | |
| M01 | Changes in abiotic conditions | | M | | | |
| M02 | Changes in biotic conditions | | H | | | |

Legend:   L   Low intensity    M   Medium intensity    H   High intensity

All countries except for Portugal consider restoring/improving of the water quality to be the most important proposed measure. Also establishing protected areas/sites, improving the hydrological regime, legal protection of habitats and species, and specific single species or species group management measures are highly important. Other measures are restoration of coastal areas and other wetland-related measures.

| Code | Measure name | ES | FR | IT | MT | PT |
|------|-------------|----|----|----|----|----|
| 1.2 | Measures needed, but not implemented | | | | | NA |
| 2.0 | Other agriculture-related measures | | M | | | |
| 2.1 | Maintaining grasslands and other open habitats | | | | M | |
| 2.2 | Adapting crop production | M | | | | |
| 4.0 | Other wetland-related measures | M | | M | | M |
| 4.1 | Restoring/improving water quality | H | H | H | H | |
| 4.2 | Restoring/improving the hydrological regime | | H | M | H | |
| 4.4 | Restoring coastal areas | M | M | | M | |
| 6.0 | Other spatial measures | | | | | H |
| 6.1 | Establish protected areas/sites | H | | M | H | M |
| 6.3 | Legal protection of habitats and species | M | | H | H | |
| 6.4 | Manage landscape features | | | | M | |
| 7.1 | Regulation/ Management of hunting and taking | | | | M | |
| 7.4 | Specific single species or species group management measures | M | | | H | |
| 8.0 | Other measures | | | | | M |
| 9.1 | Regulating/Management exploitation of natural resources on land | | | | | M |

Legend: **L** Low importance  **M** Medium importance  **H** High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value on the Priority index. The habitat reached score 91 because of high values in two criteria (A and B). The habitat occurs in seven countries (criterion A). The unfavourable - bad overall conservation status was reported by three countries (Greece, France and Portugal) and an unfavourable - inadequate status by two countries (criterion B). Countries reported also negative trends in four cases.

The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure is needed in all countries. The need to adopt the integrated coastal zone management approach is generally recognised (Gaertner-Mazouni et De Wit, 2012). The preservation of this habitat is intimately linked to its hydrological functioning. It involves the maintenance of salt water penetration routes and the satisfactory quality of the fresh water passing through it and establishing the management of the direct water withdrawals from the coastal lagoons and the withdrawals of waters from the bodies of groundwater associated with the habitat, as long as they can affect the level changes of the lagoon directly. A partition of space should be ensured, so as to preserve the sensitive areas. It is crucial to restore or improve the water quality, this means a significant reduction of the eutrophication and pollution in the run-off area, including the adoption of good agricultural practices for the use of pesticides and fertilizers. The quality and extension of

treatment of agricultural, urban and industrial effluents should be increased and direct discharges of any kind that may exist to coastal lagoons should be eliminated. Monitoring of water quality (especially physico-chemical) is recommended in these areas with high sedimentation and at risk of eutrophication. The same applies to pollutant levels in sediments and organisms (INPN).

One of the main measures is general protection of this habitat by law as already performed in some countries. Particularly still undisturbed and natural lagoon areas should become strictly protected. For the other activities, compromises will be sought on the sites, on a case by case basis. However, any development involving embankments should be refused and sediment extraction and dredging, fishing or catch by gear or methods that revolve the bottom should be forbidden. Additional protective measures should be: introduction of ecologically sound fishing methods, improvement of the hydrological regime, preservation of natural dynamics, restrictions on building activities and any constructions, exclusion/restriction of access to people and vehicles. It is needed to recover threatened species in the coastal lagoon, eliminate alien species introduced and avoid their future introductions (Soria et Sahuquillo 2009). It is good to promote the production of salt in existing salt pans, especially those that use non-industrial methods (ICNB).
Moreover, programs and measures are needed to restore the natural conditions in affected lagoon areas. The increase of the habitat by habitat restoration is needed in all countries that reported a smaller habitat area than the reference value: Spain, France, and Portugal. Better information about habitat structure and functioning is needed in Spain and Italy.

## Links

Gaertner-Mazouni, N., De Wit, R., 2012: Exploring new issues for coastal lagoons monitoring and management. – Estuarine, Coastal and Shelf Sciuence 114, 1: 1-6.

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Coastal+ha bitats&subject=1150&region=MED

ICNB: 1150* Lagunas costeiras. - http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/hab-1150

INPN: 1150* Lagunes côtières. - https://inpn.mnhn.fr/site/natura2000/habitat/1150/cahiers-habitats

Soria, J.M., Sahuquillo, M., 2009: 1150 Lagunas costeras (*). - In: V.V. A.A., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 303 p. - http://www.jolube.es/Habitat_Espana/documentos/1150.pdf

# 1170 Reefs

| X | Selected for first round of Biogeographical Seminar |
|---|---|
| | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unknown due to the assessment of Spain and Slovenia. The habitat is in the Mediterranean biogeographic region widespread along the coasts of Spain, France, and Malta. Around 93% of the habitat area is located Spain.

Improvement of the habitat structure in Greece is needed. The main measures should include legal protection of habitats and species, establishing protected areas and sites, and regulation/management of fishery. It is essential to introduce ecologically sound fishing methods which do not harm the habitat, by adopting the buffer zone approach - prohibition of fishing activities with mobile bottom contacting gear in reef zones and the surrounding buffer zones; the effective prohibition of trawling should be extended to certain areas where high diversity benthic communities of reef habitats have been detected. The regulation of underwater activities is needed, especially those related to fishing, gathering or extraction. This includes limiting the number of divers per day in areas of limited extent that harbour sensitive benthic communities. Surveillance of the extension of the invasive algae species *Caulerpa taxifolia* is required (INPN). Other important groups of measures includes limitation of coastal development: to establish limits on the "carrying capacity" of the coastal strip and compliance with building regulations. The creation of new structures at sea should be limited as much as possible, in particular the piers perpendicular to the coast. Better information about habitat structure and functioning is needed in Spain, Italy, Malta, and Slovenia.

## Habitat description

Reefs can be either of biogenic concretions or of geogenic origin. They are hard compact substrata on solid and soft bottoms, which arise from the sea floor in the sub-littoral and littoral zone. Reefs may support a zonation of benthic communities of algae and animal species as well as concretions and corallogenic concretions.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread along the coasts of Spain, France, and Malta. It also occurs in Cyprus, United Kingdom (Gibraltar), Italy (including Sardinia and Sicily, Slovenia, and Greece. The overall low representation of the habitat in Natura 2000 sites (ca 4.2%) is due to low area of this habitat in Natura 2000 sites in Spain and missing information from Italy and Slovenia. The entire national habitat area is located in Natura 2000 sites in the United Kingdom (Gibraltar), large parts of the habitat are located in Natura 2000 sites in France and Malta.

| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Cyprus | 51 | 49.0 | 7 |
| France | 0-769 | 0-100 | 27 |
| Greece | 0 | N/A | 82 |
| Italy | 0 | 0.0 | 197 |
| Malta | 95 | 56.0 | 7 |
| Portugal | N/A | N/A | 6 |
| Slovenia | 0 | 0.0 | 0 |
| Spain | 262 | 2.0 | 46 |
| United Kingdom | 1.2 | 100.0 | 1 |
| Total | 409-1,178 | 4.2 | 373 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region ("coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in the Mediterranean biogeographical region is unknown due to assessments of Spain and Slovenia. This conclusion was reached despite the favourable status in four countries (Cyprus, France, Italy, and Malta). Greece and the United Kingdom reported an unfavourable – inadequate conservation status. The knowledge of habitat structure and functions is not sufficient in Spain, Italy, Malta, and Slovenia that assessed this parameter as unknown. On the biogeographical level region, two parameters (Range and Area) were assessed as favourable, two parameters (Structure and Functions; Future prospect) as unknown. The overall conservation status for the region has been changed since the previous reporting (unfavourable – inadequate), but this change is not considered as genuine – except for the United Kingdom.

### Treated data from Member States reports

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 104 | 0.1 | 0 | ≈104 | 104 | 0.6 | 0 | ≈104 | FV | FV | FV | | U1+ | b1 |
| GR | N/A | N/A | 0 | N/A | N/A | N/A | 0 | N/A | U1 | U1 | U1 | N/A | U1 | |
| ES | 38171 | 45.3 | 0 | ≈38171 | 17324.05 | 92.6 | 0 | ≈17324.05 | XX | XX | XX | | N/A | na |
| FR | 9100 | 10.8 | 0 | ≈9100 | 769 | 4.1 | 0 | ≈769 | FV | FV | FV | | U1 | b1 |
| IT | 36600 | 43.4 | x | ≈36600 | 336 | 1.8 | x | ≈336 | XX | FV | FV | | FV | |
| MT | 170 | 0.2 | x | ≈170 | 170 | 0.9 | x | ≈170 | XX | FV | FV | | XX | b1 |
| SI | 160 | 0.2 | 0 | ≈160 | 0.54 | 0 | 0 | ≈0.54 | XX | XX | XX | | FV | b1 |
| UK | 4 | 0 | 0 | 1.20 | 1.20 | 0 | 0 | 1.20 | FV | U1 | U1 | = | U1- | a |

### EU Biogeographical assessment and proposed corrections

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | 84309 | 2GD | | 84306 | 18705 | 2GD | | 18705 | 2GD | 2GD | MTX | = | U1 | no | D | = |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| Conservation status | FV | Favourable | U1 | Unfavourable - inadequate | U2 | Unfavourable - bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|
| Trend | 0 = stable; + = increase; - = decrease; x = unknown | | | | | | | |
| Qualifier | = stable; + positive; - negative; x unknown | | | | | | | |
| Nature of change | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change | | | | | | | |

| | Target 1 contribution | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. |
|---|---|---|

## Pressures, threats and proposed measures

The countries reported several pressures with high or medium intensity. The most important seem to be professional active fishing, nautical sports and marine water pollution. Other important pressures are coastal suppletion/beach nourishment, leisure fishing and harvesting aquatic resources, sea defence or coast protection works, tidal barrages, reduction or loss of specific habitat features, and changes in abiotic conditions.

| Code | Pressure name | CY | ES | FR | IT | MT | SI | UK |
|---|---|---|---|---|---|---|---|---|
| A02 | modification of cultivation practices | M | | | | | | |
| A09 | Irrigation | M | | | | | | |
| C02.01 | exploration drilling | | L | | | | | |
| D02 | Utility and service lines | | M | | | | | |
| D03.01 | port areas | | M | | | | | |
| E01 | Urbanised areas, human habitation | M | | L | | | | |
| E03 | Discharges | | | L | | M | | |
| E03.04.01 | costal sand suppletion/ beach nourishment | | H | | | | | |
| F01 | Marine and Freshwater Aquaculture | L | M | L | | | | |
| F02 | Fishing and harvesting aquatic resources | | | M | | M | | |
| F02.02 | Professional active fishing | | H | | | | | H |
| F02.03 | Leisure fishing | | | | | | | H |
| F05 | Illegal taking/ removal of marine fauna | | | L | | | | |
| F06 | Hunting, fishing or collecting activities not referred to above | | M | | | | | |
| G01 | Outdoor sports and leisure activities, recreational activities | | M | L | | | | |
| G01.01 | nautical sports | | | | M | | H | M |
| G02 | Sport and leisure structures | M | | | | | | |
| G05 | Other human intrusions and disturbances | | | L | | | | |
| G05.02 | shallow surface abrasion/ mechanical damage to seabed surface | | M | | | | | |
| G05.03 | penetration/ disturbance below surface of the seabed | | M | | | M | | |
| H01 | Pollution to surface waters (limnic & terrestrial, marine & brackish) | | | M | | | | |
| H03 | Marine water pollution | | H | M | | | | M |
| H04 | Air pollution, air-borne pollutants | | | L | | | | |
| I01 | invasive non-native species | L | M | M | | | | |
| J02.11.01 | Dumping, depositing of dredged deposits | | | | | | L | |
| J02.12.01 | sea defense or coast protection works, tidal barrages | | H | | | | | |
| J02.14 | Altered water quality due anthropogenic changes in salinity | | L | | | | | |
| J03.01 | reduction or loss of specific habitat features | | H | | | | | |
| K03 | Interspecific faunal relations | L | | | | | | |
| K04 | Interspecific floral relations | M | | | | | | |
| M01 | Changes in abiotic conditions | | M | M | | | | |
| M02 | Changes in biotic conditions | | | L | | | | |

Legend:  L Low intensity   M Medium intensity   H High intensity

The legal protection of habitats and species, establishing more protected areas and sites, regulation/management of fishery in marine and brackish systems are the most important proposed measures. Other important measures are improving water quality, regulation of hunting and taking, managing marine traffic, urban and industrial waste management.

| Code | Measure name | CY | ES | FR | IT | MT | SI | UK |
|------|-------------|----|----|----|----|----|----|----|
| 1.2 | Measures needed, but not implemented | | | | | | M | H |
| 4.1 | Restoring/improving water quality | | H | H | | | | |
| 4.4 | Restoring coastal areas | | | M | | | | |
| 5.0 | Other marine-related measures | | L | H | | | | |
| 6.0 | Other spatial measures | | | M | | | | |
| 6.1 | Establish protected areas/sites | H | H | | L | H | | |
| 6.3 | Legal protection of habitats and species | H | H | | M | H | | H |
| 7.0 | Other species management measures | | L | | | | | |
| 7.1 | Regulation/ Management of hunting and taking | | M | | | H | | |
| 7.3 | Regulation/ Management of fishery in marine and brackish systems | | H | H | | M | | H |
| 7.4 | Specific single species or species group management measures | | L | | | | | |
| 8.1 | Urban and industrial waste management | | M | | | | | H |
| 8.3 | Managing marine traffic | | H | | | M | | M |
| 9.2 | Regulating/Managing exploitation of natural resources on sea | | | H | | | | |

Legend:  **L** Low importance   **M** Medium importance   **H** High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value on the Priority index. The habitat reached score 42 because of a high value in criterion A. The habitat occurs in seven countries. No country reported the unfavourable - bad overall conservation status and an unfavourable - inadequate status was reported by two countries. Negative trends were reported in one case.

The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure in Greece is needed. The main measures should include legal protection of habitats and species, establishing protected areas and sites, and regulation/management of fishery. The strict management of the fishery also includes compliance with the moratoriums adopted for certain species, whose aim is to ensure the reconstitution of almost destroyed populations. It is also essential to introduce ecologically sound fishing methods which do not harm the habitat by adopting the buffer zone approach - prohibition of fishing activities with mobile bottom contacting gear in reef zones and the surrounding buffer zones; the effective prohibition of trawling above the 50m isobath should be extended to certain areas where high diversity benthic communities of reef habitats have been detected (Templado et al. 2009). The regulation of underwater activities is needed, especially those directed to fishing, gathering or extraction. This includes limiting the number of divers per day in areas of limited extent that harbour sensitive benthic communities. Surveillance of the extension of the invasive algae species *Caulerpa taxifolia* is required (INPN). Other important measures include limitation of coastal development: to establish limits on the "carrying capacity" of

the coastal strip and compliance with building regulations. The creation of new structures gained at sea should be limited as much as possible, in particular the piers perpendicular to the coast.

Better information about habitat structure and functioning is needed in Spain, Italy, Malta, and Slovenia.

## Links

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Coastal+ha bitats&subject=1170&region=MMED

ICNF: 1170 Recifes. - http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/hab-1170

INPN: 1170 – Récifs. - https://inpn.mnhn.fr/site/natura2000/habitat/1170

Templado, J., Capa, M., Guallart, J., Luque, A., 2009: 1170 Arrecifes. - In: VV.AA., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 142 p. - http://www.jolube.es/Habitat_Espana/documentos/1170.pdf

# 1310 *Salicornia* and other annuals colonizing mud and sand

| X | Selected for first round of Biogeographical Seminar |
|---|---|
|  | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - inadequate due to the assessment of three countries: Italy, Malta and Portugal. In the Mediterranean biogeographic region, the habitat is widespread in Portugal and Spain and occurs also in France, Italy, Malta, Greece, and Cyprus. Around 3% of the habitat area is located in Spain, in Italy around 29%.

Improvement of the habitat structure in Greece, France and Italy as well as an increase of the habitat area in Greece and France are needed. The main measures should include establishing protected areas/sites, legal protection of habitat and species, restoring/improving the hydrological regime and water quality, restoring coastal areas, specific single-species or species group management measures, urban and industrial waste management. It is necessary to avoid the fragmentation of this habitat and to maintain the oscillation dynamics in soil moisture and salinity. The agricultural pressure on surrounding areas should be reduced: to avoid overgrazing, to encourage the sustainable use of irrigation, and to reduce fertilization. The regulation of access for people and vehicles is needed. Also the urban-tourist expansion and the construction or installation of structures should be regulated. It is suitable to promote salt production in existing salt pans and to avoid the transformation of salinas into fish ponds. Habitat restoration is needed in Greece and France that reported a smaller habitat area than the reference value. Better information about the habitat is needed in Spain.

## Habitat description

Formations composed mostly or predominantly of annuals, in particular *Chenopodiaceae* of the genus *Salicornia* or grasses, colonising periodically inundated muds and sands of marine or interior salt marshes. There are four sub-types of the habitat: Glasswort swards (*Thero-Salicornietea*), Mediterranean halo-nitrophilous pioneer communities (*Frankenietea pulverulentae*), Atlantic sea-pearlwort communities (*Saginetea maritimae*) and Central Eurasian crypsoid communities.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread in Portugal and Spain. It occurs also in France, Italy, Malta, Greece, and Cyprus. The representation of the habitat in Natura 2000 sites is quite high due to France and Cyprus, where the whole national habitat area is located in Natura 2000 sites, large parts also in Italy (76%) and Spain (71%). The habitat area reported for Natura 2000 sites in Article 17 reports (2013) is probably overestimated as indicated by the total coverage that is exceeding 100%.
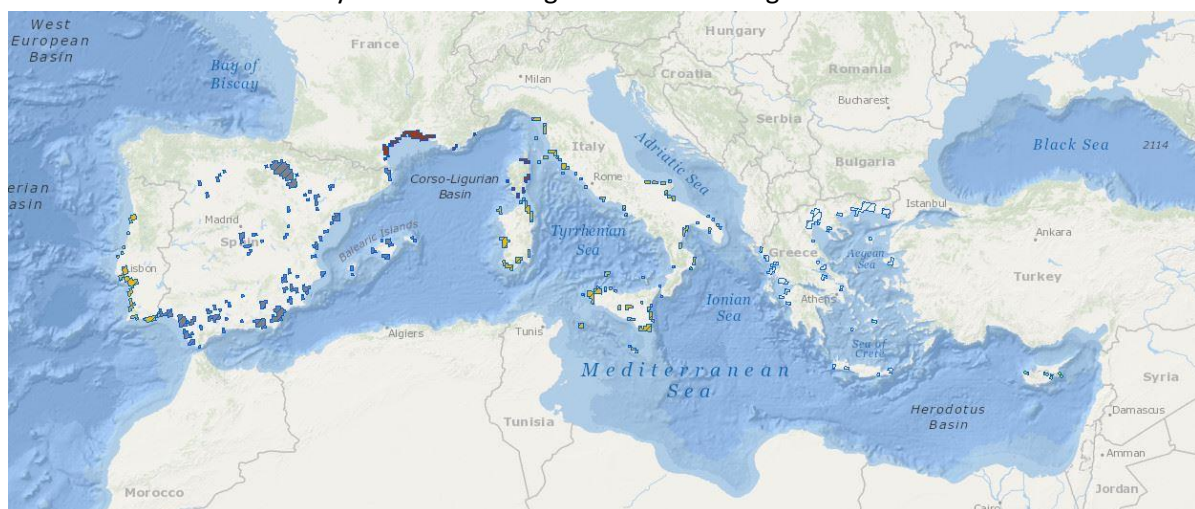
| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Cyprus | 4 | 100.0 | 6 |
| France | 26 | 100.0 | 26 |
| Greece | 0 | 0.0 | 39 |
| Italy | 46 | 76.0 | 112 |
| Malta | 3 | 50.0 | 3 |
| Portugal | 123 | N/A | 15 |
| Spain | 53 | 71.0 | 116 |
| Total | 256 | 120 | 317 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region ("coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in Mediterranean biogeographical region is unfavourable - inadequate due to assessment of Italy, Malta and Portugal. This conclusion was reached despite favourable status in Cyprus and unfavourable – bad conservation status in Greece and France. The knowledge about the habitat is not sufficient in Spain that assessed all parameters as unknown. On the biogeographical level, all four parameters (Structure and Functions; Future prospect; Range; Area) were assessed as unfavourable - inadequate. The overall conservation status for the region has been changed from unfavourable – bad to unfavourable – inadequate. This change is not considered favourable as it is due by better data and different thresholds used.

**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 20 | 0 | 0 | ≈20 | 4 | 1.9 | 0 | ≈4 | FV | FV | FV | | FV | |
| GR | 40.13 | 0 | - | >>40.13 | 40.13 | 18.9 | - | >>40.13 | U2 | U2 | U2 | N/A | U2 | |
| ES | 56763 | 60.7 | x | x | 75 | 35.3 | x | x | XX | XX | XX | | XX | |
| FR | 5800 | 6.2 | 0 | ≈5800 | 26.40 | 12.4 | - | >26.40 | U1 | U2 | U2 | - | U1 | b1 |
| IT | 17700 | 18.9 | - | ≈17700 | 61.05 | 28.7 | - | ≈61.05 | U1 | U1 | U1 | = | U1 | b1 |
| MT | 6 | 0 | 0 | ≈6 | 6 | 2.8 | 0 | ≈6 | U1 | U1 | U1 | = | U2 | c2 |
| PT | 13200 | 14.1 | 0 | ≈13200 | N/A | N/A | - | ≈ | FV | FV | U1 | - | U1 | nc |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | 93529 | 1 | x | >93529 | 213 | 1 | - | >213 | 2XA | 2XA | MTX | - | U2 | no | C | - |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| **Conservation status** | FV | Favourable | U1 | Unfavourable - inadequate | U2 | Unfavourable - bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|
| **Trend** | 0 = stable; + = increase; - = decrease; x = unknown | | | | | | | |
| **Qualifier** | = stable; + positive; - negative; x unknown | | | | | | | |
| **Nature of change** | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change | | | | | | | |
| **Target 1 contribution** | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. | | | | | | | |

# Pressures, threats and proposed measures

The countries reported a broad range of pressures; the most important is human induced changes in hydraulic conditions, pollution to surface waters, irrigation, paths and (cycling) tracks, industrial or commercial areas. To other important pressures belong modification of cultivation practices, grazing, fertilisation, disposal of household/recreational facility waste, estuarine and coastal dredging and modification of hydrographic functioning.

| Code | Pressure name | CY | ES | FR | IT | MT | PT |
|------|---------------|----|----|----|----|----|----|
| A01 | Cultivation | | M | L | | | |
| A02 | modification of cultivation practices | | H | | | | |
| A04 | grazing | | H | L | | | |
| A04.02 | non intensive grazing | L | | | | | |
| A04.03 | abandonment of pastoral systems, lack of grazing | | | | | | L |
| A07 | use of biocides, hormones and chemicals | | M | | | | |
| A08 | Fertilisation | | H | | | L | |
| A09 | Irrigation | | H | M | | | |
| A10 | Restructuring agricultural land holding | | M | | | | |
| B02 | Forest and Plantation management & use | | L | | | | |
| C01 | Mining and quarrying | | M | | | | |
| C01.05.01 | abandonment of saltpans (salinas) | | | | | | M |
| D01 | Roads, paths and railroads | | | L | | | |
| D01.01 | paths, tracks, cycling tracks | | | | M | | H |
| D01.02 | roads, motorways | L | | | | | L |
| D03 | shipping lanes, ports, marine constructions | | L | M | | | |
| D04.01 | airport | L | | | | | |
| D05 | Improved access to site | | | L | | | |
| E01 | Urbanised areas, human habitation | | M | M | M | | M |
| E01.03 | dispersed habitation | | | | M | | |
| E02 | Industrial or commercial areas | | M | H | | | |
| E03 | Discharges | | | L | M | | |
| E03.01 | disposal of household / recreational facility waste | | | | | H | |
| E03.03 | disposal of inert materials | | | | M | | |
| E04 | Structures, buildings in the landscape | | | M | | | |
| E05 | Storage of materials | | | M | | | |
| E06 | Other urbanisation, industrial and similar activities | | M | M | | | |
| F01 | Marine and Freshwater Aquaculture | | | L | | | |
| F06 | Hunting, fishing or collecting activities not referred to above | | | | | | M |
| G01 | Outdoor sports and leisure activities, recreational activities | | M | L | | | |
| G01.02 | walking, horseriding and non-motorised vehicles | | | | L | | |
| G01.03.02 | off-road motorized driving | | | | | | M |
| G02 | Sport and leisure structures | | | | | | L |
| G05 | Other human intrusions and disturbances | | M | | | | |
| G05.01 | Trampling, overuse | | | | | M | M |
| H01 | Pollution to surface waters (limnic & terrestrial, marine & brackish) | | M | | H | L | M |
| H02 | Pollution to groundwater (point sources and diffuse sources) | | M | | | | |
| H03 | Marine water pollution | | | | | | L |
| H05 | Soil pollution and solid waste (excluding discharges) | | M | | M | | |
| I01 | invasive non-native species | | | | | | M |
| J01 | fire and fire suppression | | M | | | | |
| J02 | human induced changes in hydraulic conditions | | H | H | | | |
| J02.01 | Landfill, land reclamation and drying out, general | | | | M | | M |
| J02.01.03 | infilling of ditches, dykes, ponds, pools, marshes or pits | | | | M | | |
| J02.02 | Removal of sediments (mud...) | | | | | L | M |

| Code | Pressure name | CY | ES | FR | IT | MT | PT |
|------|---------------|----|----|----|----|----|----|
| J02.02.02 | estuarine and coastal dredging | | | | | | H |
| J02.05 | Modification of hydrographic functioning, general | L | | | H | | |
| J02.10 | management of aquatic and bank vegetation for drainage purposes | | | | | L | |
| K01.02 | Silting up | | | | | M | |

Legend:  L Low intensity   M Medium intensity   H High intensity

All countries except France proposed establishing protected areas/sites as the most important measure. Also other measures are considered as highly important: legal protection of habitats and species, restoring/improving the hydrological regime and water quality, restoring coastal areas, other spatial measures, specific single species or species group management measures, urban and industrial waste management.

| Code | Measure name | CY | ES | FR | IT | MT | PT |
|------|--------------|----|----|----|----|----|----|
| 1.2 | Measures needed, but not implemented | | | | | | NA |
| 1.3 | No measure known/ impossible to carry out specific measures | | | M | | | |
| 2.0 | Other agriculture-related measures | | L | | | | |
| 2.1 | Maintaining  grasslands and other open habitats | | M | M | | M | |
| 2.2 | Adapting crop production | | L | | | | |
| 3.2 | Adapt forest management | | M | | | | |
| 4.0 | Other wetland-related measures | | M | M | | | H |
| 4.1 | Restoring/improving water quality | | M | | M | M | |
| 4.2 | Restoring/improving the hydrological regime | | H | | | H | |
| 4.4 | Restoring coastal areas | | M | M | | H | |
| 6.0 | Other spatial measures | | H | M | | | H |
| 6.1 | Establish protected areas/sites | H | H | | H | H | H |
| 6.3 | Legal protection of habitats and species | H | H | | M | H | |
| 6.4 | Manage landscape features | | L | | | M | |
| 7.0 | Other species management measures | | M | | | | |
| 7.1 | Regulation/ Management of hunting and taking | | | | | M | |
| 7.3 | Regulation/ Management of fishery in marine and brackish systems | | | | | | M |
| 7.4 | Specific single species or species group management measures | | M | | | H | |
| 8.1 | Urban and industrial waste management | H | M | | | | |
| 9.0 | Other resource use measures | | | | | | M |

Legend:  L Low importance   M Medium importance   H High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value of the Priority index. The habitat reached score 84 because of high values in criteria A and B. The habitat occurs in seven countries (criterion A). The unfavourable - bad overall conservation status was reported by two countries (Greece and France) and an unfavourable - inadequate status in three countries. Countries reported negative trends in four cases.

The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure in Greece, France and Italy as well as an increase of the habitat area in Greece and France are needed. The main measures should include establishing protected areas/sites, legal protection of habitat and species, restoring/improving the hydrological regime and water quality, restoring coastal areas, specific single-species or species group management measures, urban and industrial waste management.

Given the pioneering nature and the great fragility of this habitat, non-intervention seems to be the most appropriate way of keeping it in a good state of conservation. It is necessary to avoid, as far as possible, the fragmentation of this type of habitat and if already fragmented, to increase the connectivity between isolated patches. It is essential to maintain the oscillation dynamics in soil moisture and salinity associated with Mediterranean climates. Any alteration of this regime (flooding, drying or variations of the water table) will affect the patterns of recruitment of species from the seed bank and their viability (Espinar 2009). It is important to try to reduce the agricultural pressure on surrounding areas (it is necessary to avoid overgrazing ) as far as possible, and to encourage the sustainable use of irrigation, as well as to reduce the excess of fertilizers.

The regulation of access to people and vehicles is needed in order to avoid the passage of motor vehicles in these areas, especially in clay soils, when the soil moisture conditions are high or the soils are soaked. Also the urban-tourist expansion and the construction or installation of structures should be regulated, especially where this implies the direct destruction of the habitat. It is suitable to promote salt production in existing salt pans, but to avoid the transformation of salinas into fish ponds (ICNB).

Habitat restoration is needed in Greece and France that reported a smaller habitat area than the reference value. Better information about habitat is needed in Spain.

## Links

Espinar, J. L., 2009: 1310 Vegetación halonitrófila anual sobre suelos salinos poco evolucionados. - In: VV.AA., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 70 pp. - http://www.jolube.es/Habitat_Espana/documentos/1310.pdf

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Coastal+habitats&subject=1310&region=MED

ICNB: Vegetação pioneira de Salicornia e outras espécies anuais de zonas lodosas e arenosas. http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/habitat-1310

# 1410 Mediterranean salt meadows (*Juncetalia maritime*)

| X | Selected for first round of Biogeographical Seminar |
|---|---|
|   | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - bad due to assessments of Greece and France. In the Mediterranean biogeographic region, the habitat is widespread in Spain, Portugal and France and it also occurs in Italy, Malta, Greece, and Cyprus. Around 29% of the habitat area is located in Spain.

Improvement of habitat structure and an increase of the habitat area is needed in Greece and France. Habitat restoration is needed in Italy as well – the reported habitat area was smaller than the reference value. Extra information about the habitat is needed in Spain. The main measures should include establishment of protected sites, legal protection of habitats and species, restoration or improvement of the hydrological regime and water quality, urban and industrial waste management and specific single species or species group management measures. Extensive grazing can be established, but it is necessary to avoid overgrazing. The development and implementation of a plan to control the invasive neophyte *Spartina versicolor*, and to eradicate it is urgent. The access of people and vehicles should be regulated in order to avoid/reduce the effect of trampling and riding. It is recommended to develop social awareness and promotion programs on the value of this type of habitat and its ecological, functional and landscape importance.

## Habitat description

Various Mediterranean and western Pontic (Black Sea) communities of the *Juncetalia maritimi*. There are various sub-types: tall rush saltmarshes dominated by *Juncus maritimus* and/or *J. acutus*, short rush, sedge and clover saltmarshes (*Juncion maritimi*) and humid meadows behind the littoral, rich in annual plant species and in *Fabaceae* (*Trifolion squamosi*), Mediterranean halo-psammophile meadows *(Plantaginion crassifoliae)*, Iberian salt meadows (*Puccinellion fasciculatae*), halophilous marshes along the coast and the coastal lagoons (*Puccinellion festuciformis*), humid halophilous moors with the shrubby stratum dominated by *Artemisia coerulescens* (*Agropyro-Artemision coerulescentis).*

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread in Spain, Portugal and France. It also occurs in Italy, Malta, Greece, and Cyprus. The overall representation of the habitat in Natura 2000 sites is high – the whole national habitat area is located in Natura 2000 sites in Cyprus and France, large part also in Malta (89%) and Italy (78%). The habitat area reported for Natura 2000 sites in Article 17 reports (2013) is probably overestimated as indicated by the total coverage exceeding 100%.

| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| **Cyprus** | 2 | 100.0 | 6 |
| **France** | 90 | 100.0 | 43 |
| **Greece** | 0 | 0.0 | 54 |
| **Italy** | 56 | 78.0 | 157 |
| **Malta** | 8 | 89.0 | 5 |
| **Portugal** | 140 | N/A | 13 |
| **Spain** | 142 | 137.0 | 177 |
| **Total** | 438 | 123 | 455 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region („coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in Mediterranean biogeographical region is unfavourable - bad due to the assessment of Greece and France. This conclusion was reached despite the favourable status in Cyprus and Portugal. Italy and Malta reported an unfavourable – inadequate conservation status. The knowledge of all parameters except range is not sufficient in Spain that assessed these parameters as unknown. On the level of biogeographic region, Range was assessed as unfavourable – inadequate, two parameters (Area; Future prospect) were assessed as unfavourable - bad, the last one (Structure and Functions) as unknown. The overall conservation status for the region changed since the previous reporting from unknown to unfavourable – bad, but this change is not genuine, it is due to better knowledge or different thresholds used.

**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 26 | 0 | 0 | ≈26 | 2 | 0.6 | 0 | ≈2 | FV | FV | FV | | U1+ | b1 |
| GR | 77.80 | 0.1 | - | >>77.80 | 77.80 | 21.9 | - | >>77.80 | U2 | U2 | U2 | N/A | U2 | |
| ES | 101965 | 72.4 | 0 | ≈101965 | 104 | 29.3 | x | x | XX | XX | XX | | XX | |
| FR | 8100 | 5.8 | 0 | ≈8100 | 89.60 | 25.3 | - | >89.60 | U1 | U2 | U2 | - | U1 | b1 |
| IT | 19700 | 14 | - | ≈19700 | 72.32 | 20.4 | - | >72.32 | U1 | U1 | U1 | x | XX | b1 |
| MT | 10 | 0 | 0 | ≈10 | 9 | 2.5 | 0 | ≈9 | U1 | U1 | U1 | = | U2 | c2 |
| PT | 10900 | 7.7 | 0 | ≈10900 | N/A | N/A | 0 | ≈ | FV | FV | FV | | FV | |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | Contrib. | Type |
| EU27 | 140779 | 1 | - | >140779 | 355 | 1 | - | >>355 | 2XA | 2XA | MTX | - | XX | no | C | - |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| **Conservation status** | FV Favourable | U1 Unfavourable - inadequate | U2 Unfavourable - bad | XX Unknown |
|---|---|---|---|---|
| **Trend** | 0 = stable; + = increase; - = decrease; x = unknown | | | |
| **Qualifier** | = stable; + positive; - negative; x unknown | | | |
| **Nature of change** | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change | | | |

| | Target 1 contribution | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. |
|---|---|---|

## Pressures, threats and proposed measures

The member countries reported broad range of pressures; the most important are urbanised areas, human habitation, invasive non-native species, and human induced changes in hydraulic conditions. To other important pressures belong grazing, paths, tracks, cycling tracks, continuous urbanisation, industrial or commercial areas, disposal of household / recreational facility waste, structures, buildings in the landscape, pollution to surface waters (limnic & terrestrial, marine & brackish), other human induced changes in hydraulic conditions.

| Code | Pressure name | CY | ES | FR | IT | MT | PT |
|---|---|---|---|---|---|---|---|
| A01 | Cultivation | | M | M | | | |
| A02 | modification of cultivation practices | | M | | | | |
| A02.03 | grassland removal for arable land | | M | | | | |
| A04 | grazing | | H | M | | | |
| A07 | use of biocides, hormones and chemicals | | M | | | | |
| A08 | Fertilisation | | M | | | L | |
| A09 | Irrigation | | M | L | | | |
| B02 | Forest and Plantation management  & use | | L | | | | |
| B03 | forest exploitation without replanting or natural regrowth | | L | | | | |
| C01 | Mining and quarrying | | L | | | | |
| C01.01 | Sand and gravel extraction | | | | M | | |
| D01 | Roads, paths and railroads | | M | M | | | |
| D01.01 | paths, tracks, cycling tracks | | | | | | H |
| D01.02 | roads, motorways | M | | | | | L |
| D02 | Utility and service lines | | M | | | | |
| D03 | shipping lanes, ports, marine constructions | | | M | | | |
| D04.01 | airport | M | | | | | |
| D05 | Improved access to site | | | M | | | |
| E01 | Urbanised areas, human habitation | H | L | H | M | | M |
| E01.01 | continuous urbanisation | H | | | | | |
| E01.02 | discontinuous urbanisation | | | | M | | |
| E02 | Industrial or commercial areas | | | H | | | |
| E03 | Discharges | | M | M | | | |
| E03.01 | disposal of household / recreational facility waste | | | | | H | |
| E04 | Structures, buildings in the landscape | M | | H | | | |
| E05 | Storage of materials | | | M | | | |
| F03 | Hunting and collection of wild animals (terrestrial) | | | M | | | |
| G01 | Outdoor sports and leisure activities, recreational activities | | M | L | | | |
| G02 | Sport and leisure structures | | M | | | | |
| G05.01 | Trampling, overuse | | | | M | M | M |
| H01 | Pollution to surface waters (limnic & terrestrial, marine & brackish) | | M | | H | L | |
| H01.01 | pollution to surface waters by industrial plants | | | | | | M |
| H01.05 | diffuse pollution to surface waters due to agricultural and forestry activities | | | | | | L |
| H01.08 | diffuse pollution to surface waters due to household sewage and waste waters | | | | | | L |
| H02 | Pollution to groundwater (point sources and diffuse sources) | | M | | | | |
| H05 | Soil pollution and solid waste (excluding discharges) | | | | M | | |
| I01 | invasive non-native species | | | M | | H | H |
| J02 | human induced changes in hydraulic conditions | | H | H | | | |
| J02.01 | Landfill, land reclamation and drying out, general | | | | | | M |
| J02.01.03 | infilling of ditches, dykes, ponds, pools, marshes or pits | | | | M | | |
| J02.02 | Removal of sediments (mud...) | | | | | L | M |

| Code | Pressure name | CY | ES | FR | IT | MT | PT |
|---|---|---|---|---|---|---|---|
| J02.03.02 | canalisation | | | | M | | |
| J02.07 | Water abstractions from groundwater | | | | M | | M |
| J02.10 | management of aquatic and bank vegetation for drainage purposes | | | | | M | |
| J02.15 | Other human induced changes in hydraulic conditions | | | | H | | |
| K01.02 | Silting up | | | | | M | |
| K02 | Biocenotic evolution, succession | | L | | | | |
| L07 | storm, cyclone | | | | | H | |
| M01.07 | sea-level changes | | | | | | L |

Legend:  L Low intensity   M Medium intensity   H High intensity

Establishment of protected areas/sites and legal protection of habitats and species are the most important proposed measures. Other important measures are restoring coastal areas, restoring/improving the hydrological regime, specific single species or species group management measures, urban and industrial waste management and restoring/improving water quality.

| Code | Measure name | CY | ES | FR | IT | MT | PT |
|---|---|---|---|---|---|---|---|
| 1.2 | Measures needed, but not implemented | | | | | | NA |
| 1.3 | No measure known/ impossible to carry out specific measures | | | M | | | |
| 2.0 | Other agriculture-related measures | | L | M | | | |
| 2.1 | Maintaining  grasslands and other open habitats | | L | M | | M | |
| 2.2 | Adapting crop production | | L | M | | | |
| 3.1 | Restoring/improving  forest habitats | | L | | | | |
| 4.0 | Other wetland-related measures | | M | M | | | |
| 4.1 | Restoring/improving water quality | | M | | M | M | |
| 4.2 | Restoring/improving the hydrological regime | | M | M | | H | |
| 4.3 | Managing water abstraction | | L | | | | |
| 4.4 | Restoring coastal areas | | M | M | | H | |
| 6.0 | Other spatial measures | | M | M | | | H |
| 6.1 | Establish protected areas/sites | H | M | | H | H | H |
| 6.3 | Legal protection of habitats and species | H | H | | M | H | |
| 6.4 | Manage landscape features | | | | | M | |
| 7.1 | Regulation/ Management of hunting and taking | | | | | M | |
| 7.4 | Specific single species or species group management measures | | M | | | H | |
| 8.1 | Urban and industrial waste management | H | L | | | | |

Legend:  L Low importance  M Medium importance  H High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value of the Priority index. The habitat reached score 77 because of high values in criteria A and B. The habitat occurs in seven countries (criterion A). The unfavourable - bad overall conservation status was reported by two countries (Greece and France) and an unfavourable - inadequate status by two countries. Countries reported also negative trends in three cases.

The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure and increase of the habitat area are needed in Greece and France. Besides France and Greece, habitat restoration is needed also in Italy – all these countries reported a smaller habitat area than the reference value. Better information about the habitat is needed in Spain.

The main measures should include establishment of protected sites, legal protection of habitats and species, restoration or improvement of the hydrological regime and water quality, urban and industrial waste management and specific single species or species group management measures. Extensive grazing can be used on this type of habitat, but it is necessary to avoid overgrazing. Activities related to the traditional uses of the territory and resources should be promoted and conserved, such as salinas or moderate grazing (ICNB). It is advisable to reduce as much as possible the agricultural pressure on surrounding areas and to try to encourage the sustainable use of irrigation, as well as to reduce the excess of fertilizers and to increase the quality and extension of treatment of agricultural, urban and industrial effluents (Espinar 2009). The development and implementation of a plan to control the invasive neophyte *Spartina versicolor*, and to eradicate it is urgent (ICNB). The access of people and vehicles should be regulated in order to avoid/reduce effect of trampling and riding. It is recommended to develop social awareness and promotion programs on the value of this type of habitat and its ecological, functional and landscape importance.

## Links

Espinar, J. L., 2009: 1410 Pastizales salinos mediterráneos (Juncetalia maritimi). - In: VV.AA., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 77 p. - http://www.jolube.es/Habitat_Espana/documentos/1410.pdf

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Coastal+habitats&subject=1410&region=MED

ICNB: 1410 Prados salgados mediterrânicos (Juncetalia maritimi). - http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/hab-1410

# 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

| X | Selected for first round of Biogeographical Seminar |
|---|---|
|   | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - inadequate due to the assessment results of Greece and France. In the Mediterranean biogeographic region habitat is widespread in Spain, France and Portugal; it occurs also in Italy, Malta, Cyprus and Greece. Around 38% of the habitat area is located in Spain.

Improvement of habitat structure is needed in Greece and increase of the habitat area by restoration are needed in Greece, France, and Italy. Furthermore, better information about habitat is necessary in Spain. Establishment of protected areas/sites and legal protection of habitats and species are the most important proposed measures. Other important measures are restoring coastal areas, other wetland-related measures, regulation/management of hunting and taking, urban and industrial waste management. A better control of investments, recreation and aquaculture industry could potentially help reduce or minimize reported pressures. The increase the quality and extension of treatment of agricultural, urban and industrial effluents, the control of the discharge of untreated effluents, dumping and treatment of ballast water should contribute to improving water quality. Another necessary measure is the regulation/restriction of access of people and vehicles. In habitats, extensive grazing can be put into place. The fact that whole habitat area in France is located in Natura 2000 sites should facilitate implementation of necessary measures in this country.

## Habitat description

Perennial vegetation of marine saline muds (schorre) mainly composed of scrub, essentially with a Mediterranean-Atlantic distribution (*Salicornia*, *Limonium vulgare*, *Suaeda* and *Atriplex* communities) and belonging to the *Sarcocornetea fruticosi* class.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread in Spain, France and Portugal. It occurs also in Italy, Malta, Cyprus and Greece. Very high proportion of the habitat area is located in Natura 2000 sites (ca 90 %). Whole national habitat area is located in Natura 2000 sites in Cyprus and France, large parts are also present in Spain (94 %) and Italy (78 %).

| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Cyprus | 6 | 100.0 | 3 |
| France | 164 | 100.0 | 39 |
| Greece | 0 | 0.0 | 36 |
| Italy | 40 | 78.0 | 143 |
| Malta | 13 | 37.0 | 8 |
| Portugal | 150 | N/A | 14 |
| Spain | 248 | 94.0 | 174 |
| Total | 622 | 90 | 417 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region („coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in Mediterranean biogeographical region is unfavourable – bad due to assessment of Greece and France. This conclusion was reached despite favourable status in Cyprus and Malta. Italy and Portugal reported unfavourable – inadequate conservation status. The knowledge of habitat is not sufficient in Spain that assessed al parameters except range as unknown. On the level of biogeographical region, one parameter (Range) was assessed as unfavourable - inadequate, the Area as unfavourable - bad, and the other two parameters (Structure and Functions; Future prospect) were assessed as unknown. The overall conservation status for the region has been changed against previous reporting from unknown to unfavourable - bad, and this assessment is considered genuine due to the assessment of France.

**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 32 | 0 | 0 | ≈32 | 6 | 0.9 | 0 | ≈6 | FV | FV | FV | | U1+ | b1 |
| GR | 170 | 0.2 | - | >>170 | 170 | 24.6 | - | >>170 | U2 | U2 | U2 | N/A | U2 | |
| ES | 66808 | 65 | 0 | ≈66808 | 265 | 38.3 | x | ≈265 | XX | XX | XX | | XX | |
| FR | 6400 | 6.2 | 0 | ≈6400 | 164.20 | 23.7 | - | >164.20 | U1 | U2 | U2 | - | U1 | a |
| IT | 17000 | 16.5 | - | >17000 | 52.11 | 7.5 | - | >52.11 | U1 | U1 | U1 | x | XX | b1 |
| MT | 44 | 0 | 0 | ≈44 | 35 | 5.1 | 0 | ≈35 | FV | FV | FV | | U1 | c2 |
| PT | 12400 | 12.1 | 0 | ≈12400 | N/A | N/A | 0 | ≈ | FV | FV | U1 | = | U1 | nc |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | 102854 | 1 | - | >102854 | 692 | 1 | - | 692 | 2XA | 2XA | MTX | - | XX | yes | C | - |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| Conservation status | FV | Favourable | U1 | Unfavourable - inadequate | U2 | Unfavourable - bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|
| **Trend** | 0 = stable; + = increase; - = decrease; x = unknown | | | | | | | |
| **Qualifier** | = stable; + positive; - negative; x unknown | | | | | | | |
| **Nature of change** | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change | | | | | | | |
| **Target 1 contribution** | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. | | | | | | | |

## Pressures, threats and proposed measures

The member countries reported a broad range of pressures; the most important ones are urbanised areas, human habitation, human induced changes in hydraulic conditions, pollution to surface waters, trampling, and overuse. Other important pressures concern cultivation, grazing, paths, tracks, cycling tracks, hunting and collection of wild animals, infilling of ditches, dykes, ponds, pools, marshes or pits.

| Code | Pressure name | CY | ES | FR | IT | MT | PT |
|---|---|---|---|---|---|---|---|
| A01 | Cultivation | | M | H | | | |
| A02 | modification of cultivation practices | | M | | | | |
| A04 | grazing | | H | L | | | |
| A07 | use of biocides, hormones and chemicals | | M | | | | |
| A08 | Fertilisation | L | M | | | | |
| A09 | Irrigation | | M | M | | | |
| A10 | Restructuring agricultural land holding | L | M | | | | |
| B01 | forest planting on open ground | | L | | | | |
| B01.02 | artificial planting on open ground (non-native trees) | | | | M | L | |
| B03 | forest exploitation without replanting or natural regrowth | | L | | | | |
| C01 | Mining and quarrying | | M | | | L | |
| C01.05.02 | conversion of saltpans | | L | | | | L |
| D01 | Roads, paths and railroads | | | M | | | |
| D01.01 | paths, tracks, cycling tracks | | | | | | H |
| D01.02 | roads, motorways | M | | | | | L |
| D03 | shipping lanes, ports, marine constructions | | | M | | | L |
| D05 | Improved access to site | | | L | M | | |
| E01 | Urbanised areas, human habitation | H | L | M | H | | M |
| E01.03 | dispersed habitation | | | | M | | |
| E02 | Industrial or commercial areas | | L | M | | | |
| E03 | Discharges | | | L | M | | |
| E03.01 | disposal of household / recreational facility waste | | | | M | | |
| E04 | Structures, buildings in the landscape | | | L | | | |
| E05 | Storage of materials | | | L | | | |
| F01 | Marine and Freshwater Aquaculture | | | M | | | |
| F03 | Hunting and collection of wild animals (terrestrial) | | | H | | | |
| F06 | Hunting, fishing or collecting activities not referred to above | | | | | | M |
| G01 | Outdoor sports and leisure activities, recreational activities | | M | L | | M | |
| G01.03 | motorised vehicles | L | | | M | | |
| G01.03.02 | off-road motorized driving | | | | | | M |
| G02 | Sport and leisure structures | | M | | | | |
| G05.01 | Trampling, overuse | | | | | H | M |
| H01 | Pollution to surface waters (limnic & terrestrial, marine & brackish) | | M | | H | | M |
| H02 | Pollution to groundwater (point sources and diffuse sources) | | M | | | | |
| H05 | Soil pollution and solid waste (excluding discharges) | | | | M | | |
| H05.01 | garbage and solid waste | | | | | | L |
| I01 | invasive non-native species | | | | | M | M |
| J01 | fire and fire suppression | | M | | | | |
| J02 | human induced changes in hydraulic conditions | | H | M | | | |
| J02.01 | Landfill, land reclamation and drying out, general | | | | M | | |
| J02.01.02 | reclamation of land from sea, estuary or marsh | | | | | | M |
| J02.01.03 | infilling of ditches, dykes, ponds, pools, marshes or pits | | | | H | | |
| J02.02 | Removal of sediments (mud...) | | | | | | M |
| J02.02.02 | estuarine and coastal dredging | | | | | | M |
| J02.15 | Other human induced changes in hydraulic conditions | | | | M | | |
| J03.01 | reduction or loss of specific habitat features | | | | | L | |
| K01.02 | Silting up | | | | M | | |

| Code | Pressure name | CY | ES | FR | IT | MT | PT |
|------|---------------|----|----|----|----|----|----|
| K02 | Biocenotic evolution, succession | | M | | | | |
| L05 | collapse of terrain, landslide | | | | | M | |

Legend:  L  Low intensity   M  Medium intensity   H  High intensity

Establishment of protected areas/sites and legal protection of habitats and species are the most important proposed measures. Other important measures are restoring coastal areas, other wetland-related measures, regulation/management of hunting and taking, urban and industrial waste management, other resource use measures, and other spatial measures.

| Code | Measure name | CY | ES | FR | IT | MT | PT |
|------|--------------|----|----|----|----|----|----|
| 1.2 | Measures needed, but not implemented | | | | | | NA |
| 1.3 | No measure known/ impossible to carry out specific measures | | | M | | | |
| 2.0 | Other agriculture-related measures | | L | | | | |
| 2.1 | Maintaining  grasslands and other open habitats | | M | M | | | |
| 2.2 | Adapting crop production | | M | | | | |
| 4.0 | Other wetland-related measures | | M | M | | | H |
| 4.1 | Restoring/improving water quality | | M | | M | | |
| 4.2 | Restoring/improving the hydrological regime | | M | | | | |
| 4.3 | Managing water abstraction | | L | | | | |
| 4.4 | Restoring coastal areas | | H | M | | | |
| 5.0 | Other marine-related measures | | M | | | | |
| 6.0 | Other spatial measures | | M | M | | | H |
| 6.1 | Establish protected areas/sites | H | M | | H | H | M |
| 6.3 | Legal protection of habitats and species | H | H | | M | H | |
| 6.4 | Manage landscape features | | M | | | | |
| 7.1 | Regulation/ Management of hunting and taking | | | | | H | |
| 7.3 | Regulation/ Management of fishery in marine and brackish systems | | | | | | M |
| 7.4 | Specific single species or species group management measures | | M | | | | |
| 8.1 | Urban and industrial waste management | H | L | | | | |
| 9.0 | Other resource use measures | | | | | | H |

Legend:  L  Low importance   M  Medium importance   H  High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value of the Priority index. The habitat reached score 77 because of high values in criteria A and B. The habitat occurs in 7 countries (criterion A). The unfavourable - bad overall conservation status reported two countries (Greece and France) and unfavourable - inadequate status another two countries (Italy and Portugal). The countries likewise reported negative trends in three cases.

The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure in Greece and increase of the habitat area by restoration in Greece, France, and Italy are necessary. Better information about habitat is needed in Spain. Establishment of protected areas/sites and legal protection of habitats and species are the most important proposed measures. Other important measures concern restoring coastal areas, other wetland-related measures, regulation/management of hunting and taking, urban and industrial waste management. Better control of investments, recreation and aquaculture industry could help reduce or minimize reported pressures.

The increase the quality and extension of treatment of agricultural, urban and industrial effluents, the control of the discharge of untreated effluents, dumping and treatment of ballast water should contribute to improvement of the water quality (ICBN). Protection of the habitat can contribute as well, dredging should be restricted and using gear or methods that revolve the bottom in the habitat areas should be banned. It is necessary to maintain the dynamics of oscillations in soil moisture and salinity associated with Mediterranean climates. Any alteration of this regime (dikes, floods, desiccation or changes in the water table) would affect the competitive relationships and the patterns of zonation of typical species (Espinar 2009). Another necessary measure is regulation/restriction of access of people and vehicles.  In the habitat, extensive grazing can be put in place, the load per hectare should be compatible with maintaining the diversity and functionality of this habitat (INPN). The fact that whole habitat area in France is located in Natura 2000 sites should facilitate implementation of necessary measures in this country.

## Links

Espinar, J. L., 2009: 1420 Matorrales halófilos mediterráneos y termoatlánticos (*Sarcocornetea fruticosi*). - In: VV.AA., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 96 pp. - http://www.jolube.es/Habitat_Espana/documentos/1420.pdf

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Coastal+ha bitats&subject=1420&region=MED

ICNB: 1420 Matos halófilos mediterrânicos e ermoatlânticos (*Sarcocornietea fruticosae*). - http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/habitat-1420

INPN: 1420 - Fourrés halophiles méditerranéens et thermo-atlantiques (Sarcocornietea fruticosi). - https://inpn.mnhn.fr/site/natura2000/habitat/1420/cahiers-habitats

# 1520 Iberian gypsum vegetation (*Gypsophiletalia*)

| | |
|---|---|
| | Selected for first round of Biogeographical Seminar |
| X | Selected using "Low hanging fruit" approach |

## Habitat summary

Spain's assessment led to the overall conservation status in the Mediterranean region being unfavourable-inadequate. The habitat is widespread in the Mediterranean biogeographical region in Spain; it also occurs in Cyprus. Almost the entire habitat area is located in Spain.

Improvement of habitat structure in Spain is needed. The main measures should include establishment of protected sites and legal protection of habitats and species. The policy for gypsum-rich areas must implement both the protection of mining-free, natural reserves and suitable restoration strategies for quarries when extraction activities come to an end. Farming, unsuitable reforestation, urban development and new infrastructure are also important negative factors. Indeed, their impact on gypsum surfaces is or can become more dramatic than that of quarrying, and therefore they should be addressed by relevant measures such as sustainable grassland management, adaptation of forest management, and spatial development regulation.

## Habitat description

Garrigues occupying gypsum-rich soils of the Iberian Peninsula, usually very open and floristically characterised by the presence of numerous gypsophilous species. Characteristic syntaxa are *Lepidion subulati, Gypsophilion hispanicae* and *Thymo-Teucrion verticillati*.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread in Spain. It also occurs in Cyprus. The rather low representation of the habitat in Natura 2000 sites (ca 33 %) is due to the area of this habitat in Natura 2000 sites in Spain.
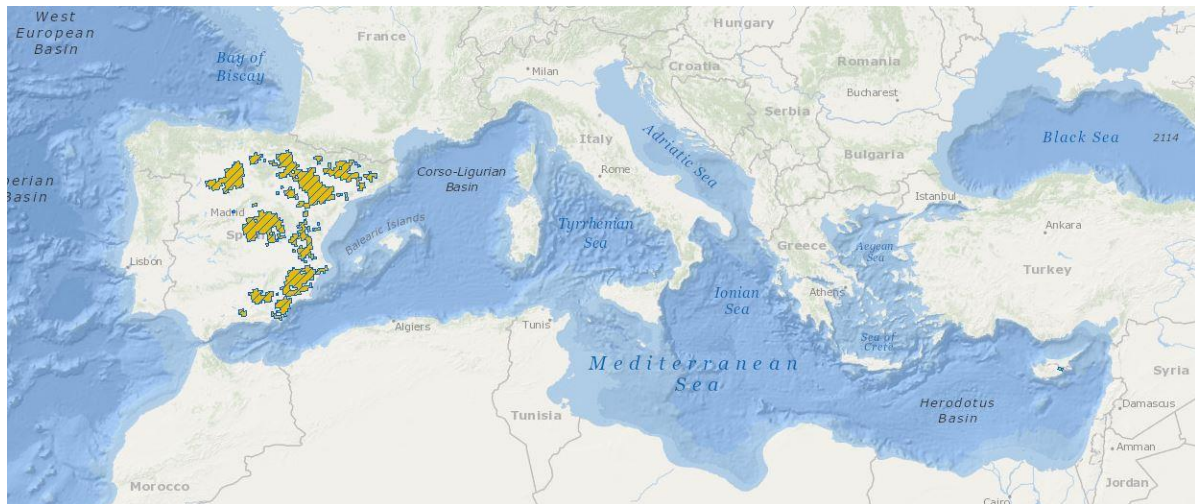


| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Cyprus | 0.00133 | 21 | 1 |
| Spain | 796 | 33 | 148 |
| **Total** | **796** | **33** | 149 |

The table shows the size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographical region ('coverage') as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

Spain's assessment led to the overall conservation status of this habitat type in the Mediterranean biogeographical region being unfavourable-inadequate. Cyprus reported favourable conservation status. At the biogeographical region level, two parameters (Range; Area) were assessed as favourable; the other two (Structure and functions; Future prospects) were assessed as unfavourable-inadequate. The overall conservation status for the region has changed from the previous reporting from unknown to unfavourable-inadequate. This change is not genuine, but is due to the use of different methods (Spain), and better data (Cyprus).

**Treated data from Member States reports**

| MS | Range (km²) Surface | Range % MS | Range Trend | Range Ref. | Area Surface | Area % MS | Area Trend | Area Ref. | Struct & func. | Future prosp. | Overall asses. Curr. CS | Overall asses. Qualifier | Overall asses. Prev. CS | Overall asses. Nat. of ch. |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| CY | 7.50 | 0 | + | 7.50 | 0.01 | 0 | 0 | 0.01 | FV | FV | FV | | U1 | b1 |
| ES | 121312 | 100 | 0 | ≈121312 | 2390 | 100 | x | ≈2390 | U1 | U1 | U1 | x | XX | c1 |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| EU27 | 121320 | 0 | 0 | 121320 | 2390 | 0 | x | 2390 | 2XA | 2XA | MTX | x | XX | no | D | = |

**Legend:** MS – Member State; Overall asses – Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole biogeographical region; Ref. – reference value; Struct & func. – Structure and functions; Future prosp. – Future prospects; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1 – target 1 of the EU 2020 Biodiversity Strategy.

| Conservation status | FV | Favourable | U1 | Unfavourable-inadequate | U2 | Unfavourable-bad | XX | Unknown |
|----|----|----|----|----|----|----|----|----|
| **Trend** | 0 = stable; + = increase; - = decrease; x = unknown |||||||
| **Qualifier** | = stable; + positive; - negative; x unknown |||||||
| **Nature of change** | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomical review; c1 – due to different methods to measure or evaluate; c2 – due to use of different thresholds; d – no information about nature of change; e – due to less accurate or absent data; nc – no change |||||||
| **Target 1 contribution** | A – favourable assessments; B – improved assess.; C – deteriorated assessments; D – unfavourable and unknown assessments that did not change; E – assessments that became unknown. |||||||

## Pressures, threats and proposed measures

Cyprus reported only two pressures: forest and plantation management and use, and paths, tracks, cycling tracks. Spain reported a broad range of pressures; the most important ones are annual crops for food production, perennial non-timber crops, forest planting on open ground (native trees), and open cast mining. Other important pressures include modification of cultivation practices, irrigation, restructuring agricultural land holding, urbanised areas, human habitation, and industrial or commercial areas.

| Code | Pressure name | CY | ES |
|----|----|----|----|
| A02 | Modification of cultivation practices | | M |
| A04.01 | Intensive grazing | | L |
| A06.01 | Annual crops for food production | | H |
| A06.02 | Perennial non-timber crops | | H |
| A07 | Use of biocides, hormones and chemicals | | L |
| A08 | Fertilisation | | L |
| A09 | Irrigation | | M |
| A10 | Restructuring agricultural land holding | | M |
| B01.01 | Forest planting on open ground (native trees) | | H |
| B02 | Forest and Plantation management & use | H | |

| Code | Pressure name | CY | ES |
|---|---|---|---|
| C01.04.01 | Open cast mining | | H |
| C03.03 | Wind energy production | | L |
| D01.01 | Paths, tracks, cycling tracks | M | |
| E01 | Urbanised areas, human habitation | | M |
| E02 | Industrial or commercial areas | | M |
| G01.03 | Motorised vehicles | | L |

Legend: **L** Low intensity **M** Medium intensity **H** High intensity

According to both countries, the establishment of protected areas/sites, and legal protection of habitats and species are the most important measures. Other important measures are maintaining grasslands and other open habitats, specific single species or species group management measures, restoring/improving forest habitats, and adapting forest management.

| Code | Measure name | CY | ES |
|---|---|---|---|
| 2.0 | Other agriculture-related measures | | M |
| 2.1 | Maintaining grasslands and other open habitats | | H |
| 3.0 | Other forestry-related measures | | M |
| 3.1 | Restoring/improving forest habitats | | M |
| 3.2 | Adapt forest management | | M |
| 4.0 | Other wetland-related measures | | L |
| 4.2 | Restoring/improving the hydrological regime | | L |
| 6.0 | Other spatial measures | | M |
| 6.1 | Establish protected areas/sites | H | H |
| 6.3 | Legal protection of habitats and species | H | H |
| 7.0 | Other species management measures | | M |
| 7.4 | Specific single species or species group management measures | | H |

Legend: **L** Low importance **M** Medium importance **H** High importance

### Reason for selection as "Low Hanging Fruit" (LHF) habitat in the Mediterranean region

Applying the methodology to identify LHF habitats in the Mediterranean region, habitat reached an LHF score of 3.00. This habitat type was classified as LHF because to achieve improvement, it is sufficient to change from an unknown to an improving trend in the category U1 (unfavourable-inadequate). It is normally much easier to improve a trend than to achieve a change in category. Another reason for including the habitat type as LHF is that the trend of only one parameter (Structure & functions) in one country (Spain) needs to be improved in order to achieve overall improvement.

### Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure in Spain is needed. The main measures should include establishment of protected sites and legal protection of the habitat. Mining activities are the most harmful threat to this habitat (Martínez-Hernández et al., 2011). The policy for gypsum-rich areas must implement both the protection of mining-free, natural reserves and suitable restoration strategies for quarries when extraction activities come to an end. The only way to mitigate the impact of mining is to plan and monitor exploitations appropriately and subsequently carry out ecological restoration programmes. The restoration strategies should rely on the high colonising potential of some gypsophytes; they clearly tend to recover their former populations in an autogeneous primary succession process, a fact which reveals the extraordinary resilience of this habitat. The widely used technique of covering the quarry squares with topsoil after the end of exploitation seems to promote vegetation very different from the aboriginal gypsicolous ones (Mota et al., 2004) and thus should be avoided. Farming, unsuitable reforestation, urban development and new infrastructure are also

important negative factors (Martínez-Hernández et al., 2011). Indeed, their impact on gypsum surfaces is or can become more dramatic than that of quarrying and therefore they should be addressed by relevant measures such as sustainable grassland management, adaptation of forest management, and spatial development regulation.

## Links

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Coastal+habitats&subject=1520&region=MED

Martínez-Hernández, F., Pérez-García, F.J., Garrido-Becerra, J.A., Mendoza-Fernández, A.J., Medina-Cazorla, J.M., Martínez-Nieto, M.I., Encarnació Merlo Calvente, M.E., Mota Poveda, J.F., 2011: The distribution of Iberian gypsophilous flora as a criterion for conservation policy. – Biodiversity Conservation 20: 1353–1364

Mota, J.F., Sola, A.J., Jiménez-Sánchez, M.L., Pérez-García, F.J, Merlo, M.E., 2004: Gypsicolous flora, conservation and restoration of quarries in the southeast of the Iberian Peninsula. – Biodiversity and Conservation 13: 1797–1808.

# 2110 Embryonic shifting dunes

| X | Selected for first round of Biogeographical Seminar |
|---|---|
| | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - bad due to assessment of three countries (Spain, France and Italy). This type of habitat widespread in the Mediterranean biogeographic region along coasts of Portugal, Spain, France, and Italy; it also occurs in Malta, Cyprus and Greece. In Italy it is located around 53% of the habitat area.

Improvement of habitat structure and increase of habitat area in Italy and increase of the habitat area by restoration in Spain, France and Italy are needed. Habitat restoration is also required in Greece. The main measures should include: restoration of coastal areas, establishment of protected sites, legal protection of habitats and species. Other important measures are management of landscape features, regulation/management of hunting and taking, regulating/management of natural resources exploitation. The maintenance or restoration of dynamic processes of sand dune creation and modification is the main challenge related to this habitat. The coastal engineering works that alter the dynamics of sediments near the coast should be strictly regulated. The mechanical cleaning of the beaches should be avoided except for sectors with high tourist numbers where sensitive methods need to be used, e.g. manual cleaning of macro-waste. On the most visited sites, the control of the attendance can be organized and access of motor vehicles prohibited.

## Habitat description

Formations of the coast representing the first stages of dune construction, constituted by ripples or raised sand surfaces of the upper beach or by a seaward fringe at the foot of the tall dunes.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread along coasts of Portugal, Spain, France, and Italy. It occurs also in Malta, Cyprus and Greece. The representation of the habitat in Natura 2000 sites (ca 80 %) is high. Whole national habitat area is located in Natura 2000 sites in France, large parts can be found in Cyprus and Malta. The information provided by Spain does not look reliable.

| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Cyprus | 0.75 | 75.0 | 5 |
| France | 28 | 100.0 | 37 |
| Greece | 0 | 0.0 | 73 |
| Italy | 15 | 20.0 | 148 |
| Malta | 4 | 67.0 | 3 |
| Portugal | 36 | N/A | 15 |
| Spain | 29 | 393.0 | 50 |
| Total | 113 | 80 | 331 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region („coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in Mediterranean biogeographical region is unfavourable - bad due to assessment of three countries (Spain, France and Italy). Greece, Malta and Portugal reported unfavourable – inadequate conservation status and Cyprus indicated favourable conservation status. On the level of biogeographical region were all four parameters (Range; Area; Structure and Functions; Future prospect) assessed as unfavourable - bad. The overall conservation status for the region has not been changed from previous reporting.



**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 21 | 0 | 0 | ≈21 | 1 | 0.7 | 0 | ≈1 | FV | FV | FV | | U1+ | b1 |
| GR | 24.40 | 0 | - | >24.40 | 24.40 | 17.3 | - | >24.40 | FV | U1 | U1 | N/A | U1 | |
| ES | 5508 | 9.2 | - | >5508 | 7.38 | 5.2 | 0 | >>7.38 | U1 | U1 | U2 | = | XX | c1 |
| FR | 7500 | 12.5 | 0 | >7500 | 28.20 | 20 | - | >>28.20 | U1 | U2 | U2 | = | U2 | nc |
| IT | 34200 | 57.1 | - | >>34200 | 74.13 | 52.5 | - | >>74.13 | U2 | U2 | U2 | = | U2 | b1 |
| MT | 7 | 0 | 0 | ≈7 | 6 | 4.3 | 0 | ≈6 | U1 | U1 | U1 | = | U2 | c2 |
| PT | 12600 | 21 | 0 | ≈12600 | N/A | N/A | - | x | U1 | XX | U1 | x | U1 | nc |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | 59860 | 1 | - | >>59860 | 141 | 2GD | - | >>141 | 2GD | 2GD | MTX | = | U2 | nc | D | = |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| Conservation status | FV | Favourable | U1 | Unfavourable - inadequate | U2 | Unfavourable - bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|

| Trend | 0 = stable; + = increase; - = decrease; x = unknown |
|---|---|
| Qualifier | = stable; + positive; - negative; x unknown |
| Nature of change | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change |
| Target 1 contribution | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. |

## Pressures, threats and proposed measures

The countries reported several pressures with high or medium intensity. According to them the most important seems to be trampling, overuse, urbanised areas, human habitation. To other important pressures belong walking, horse riding and non-motorised vehicles, other urbanisation, industrial and similar activities, intensive maintenance of public parks/cleaning of beaches, sea defence or coast protection works, tidal barrages, other ecosystem modifications, erosion.

| Code | Pressure name | CY | ES | FR | IT | MT | PT |
|------|---------------|----|----|----|----|----|----|
| A01 | Cultivation | L | | | | | |
| A02.01 | agricultural intensification | L | | | | | |
| B01.02 | artificial planting on open ground (non-native trees) | | | | M | | |
| C01 | Mining and quarrying | | M | M | | | |
| C01.01 | Sand and gravel extraction | | | | M | | |
| C01.01.02 | removal of beach materials | | | | | | L |
| D01 | Roads, paths and railroads | | M | L | M | | |
| D01.01 | paths, tracks, cycling tracks | L | | | | | |
| D01.02 | roads, motorways | M | | | M | | |
| D02 | Utility and service lines | | M | | | | |
| D03 | shipping lanes, ports, marine constructions | | | M | | | |
| D04.01 | airport | L | | | | | |
| D05 | Improved access to site | | L | L | | | |
| E01 | Urbanised areas, human habitation | | H | H | M | | |
| E01.03 | dispersed habitation | | | | M | | |
| E02 | Industrial or commercial areas | | | M | | | |
| E03 | Discharges | | M | | | | |
| E04 | Structures, buildings in the landscape | | | M | | | |
| E06 | Other urbanisation, industrial and similar activities | | M | H | | | |
| F04 | Taking / Removal of terrestrial plants, general | | | | | L | |
| G01 | Outdoor sports and leisure activities, recreational activities | | M | M | | | |
| G01.02 | walking, horseriding and non-motorised vehicles | H | | | | | |
| G01.03.02 | off-road motorized driving | | | | | | M |
| G01.08 | other outdoor sports and leisure activities | | | | | M | |
| G02 | Sport and leisure structures | | M | M | | | |
| G02.08 | camping and caravans | | | | | M | |
| G04.01 | Military manouvres | L | | | | | |
| G05 | Other human intrusions and disturbances | | M | | | | |
| G05.01 | Trampling, overuse | L | | | M | H | H |
| G05.05 | intensive maintenance of public parcs /cleaning of beaches | H | | | | | |
| H03.01 | oil spills in the sea | | | | | | L |
| H05 | Soil pollution and solid waste (excluding discharges) | | | | M | | |
| H05.01 | garbage and solid waste | L | | | | | |
| I01 | invasive non-native species | L | | | M | | |
| J02 | human induced changes in hydraulic conditions | | M | | | | |
| J02.01 | Landfill, land reclamation and drying out, general | | | | M | | |
| J02.01.03 | infilling of ditches, dykes, ponds, pools, marshes or pits | | | | M | | |
| J02.12.01 | sea defense or coast protection works, tidal barrages | | | | | | H |
| J03 | Other ecosystem modifications | | | H | | | |
| J03.02 | anthropogenic reduction of habitat connectivity | L | | | | | |
| K01 | abiotic (slow) natural processes | | | | M | | |
| K01.01 | Erosion | | | | M | | H |
| M01.07 | sea-level changes | | | | | | L |

Legend:   L Low intensity   M Medium intensity   H High intensity

Restoring coastal areas, establishment of protected areas/sites, legal protection of habitats and species are the most important proposed measures. Other important measures are management of landscape features, regulation/management of hunting and taking, regulating/management exploitation of natural resources on land.

| Code | Measure name | CY | ES | FR | IT | MT | PT |
|---|---|---|---|---|---|---|---|
| 1.2 | Measures needed, but not implemented | | | | | | NA |
| 4.0 | Other wetland-related measures | | L | | | | |
| 4.1 | Restoring/improving water quality | | M | | | | |
| 4.4 | Restoring coastal areas | | H | M | H | H | L |
| 6.0 | Other spatial measures | H | L | | | | H |
| 6.1 | Establish protected areas/sites | H | M | | H | H | M |
| 6.3 | Legal protection of habitats and species | H | M | | H | H | |
| 6.4 | Manage landscape features | | | | | H | |
| 7.1 | Regulation/ Management of hunting and taking | | | | | H | |
| 7.4 | Specific single species or species group management measures | | M | | | | |
| 9.1 | Regulating/Management exploitation of natural resources on land | | | | | | H |

Legend:     L Low importance    M Medium importance    H High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value of the Priority index (highest from all habitats in Mediterranean region). The habitat reached score 105 because of high values in two criteria (A and B). The habitat occurs in seven countries (criterion A). The unfavourable - bad overall conservation status reported three countries (Spain, France, Italy) and unfavourable - inadequate status another three countries. Countries reported also negative trends in five cases.

> The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure in Italy and increase of the habitat area by restoration in Spain, France and Italy are needed. The habitat restoration is needed also in Greece that has reported smaller habitat area than the reference value. The main measures should include: restoration of coastal areas, establishment of protected areas/sites, legal protection of habitats and species. Other important measures are management of landscape features, regulation/management of hunting and taking, regulating/management of natural resources exploitation.

The maintenance or restoration of dynamic processes of sand dunes creation and modification is the main challenge related to this habitat. This means maintaining the natural dynamics of disturbances in coastal sections with lower infrastructure density (Gracia 2009). In general, the maintenance of vegetation at the top of the beach is desirable for the preservation of this type of habitat. There should be regulation of coastal engineering works that alter the dynamics of sediments near the coast, leading to the loss of sediments to the sea, with a consequent slimming of the beach (ICNB). Mechanical cleaning of the beaches should be avoided. In sectors with high tourist numbers, particularly near seaside resorts, where beach cleaning is needed, more selective cleaning methods should be used,

such as manual cleaning of macro-waste. The cleanliness of the beaches should avoid the removal of organic or inorganic elements, which are natural to the beaches, and which form the basis of a detrital trophic chain. In sections of beeches of natural character as well as in sections with low or medium recreational use the natural dynamics of debris should be respected and protected to allow conservation of the communities of the sandy intertidal, the most affected zone by recreational use. On the most visited sites, the control of the attendance should be organized (fencing of certain sensitive zones and channelling of the walkers) (INPN). Strengthening the supervision of access of motor vehicles is needed as well.

The recovery of embryonic mobile dunes should start with installation of palisades and /or seal primary dunes using bio-degradable material in areas to be recovered or in need of protection. Then to place collectors in order to retain sand in the eroded area, and finally, proceed to re-vegetation. It is necessary to use local seeds or seedlings for re-vegetation, selection of species should be based on study of their distribution in the dune systems of the region. To implement an adequate production of dunes plant seedlings, it is favourable to create small nurseries spread along the coast, whose task would be to produce seedlings from local dune plants, to restore certain specific enclaves. These nurseries take advantage of the machines (all-terrain forklifts) used for the transfer of seedlings planted in the nursery to carry out additional tasks of removal of the invasive *Carpobrotus edulis* (Gracia 2009).


## Links

Gracia, F., Hernández L., Hernández, A. I., Sanjaume, E., Flor, G., 2009: 2110 Dunas móviles embrionarias. – In: VV.AA., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 54 pp. - http://www.jolube.es/Habitat_Espana/documentos/2110.pdf

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Dunes+habitats&subject=2110&region=MED

ICNB: 2110 Dunas móveis embrionárias. - http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/hab-2110

INPN: 2110 - Dunes mobiles embryonnaires. - https://inpn.mnhn.fr/site/natura2000/habitat/2110/cahiers-habitats

# 2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)

|   | Selected for first round of Biogeographical Seminar |
|---|---|
| X | Selected using "Low hanging fruit" approach |

## Habitat summary

Portugal's assessment led to the overall conservation status in the Mediterranean region being unfavourable-inadequate. The habitat is widespread in the Mediterranean biogeographical region in Portugal, and also occurs in Spain. Based on the distribution map, the most of the habitat area is located in Portugal (the size of the habitat area is not specified in the Article 17 report from 2013).

Improvement of habitat structure and increase of habitat area are needed. The main measures should include regulation/management of natural resources exploitation, regulation of urbanisation and tourism expansion, and management of water abstraction. Other important measures are adapting forest management, establishment of protected sites, and legal protection of habitats and species, to develop practices for the sustainable development of psammophile pine forest, combining the reduction of fire risks and the preservation of this habitat, control of illegal dumping of rubbish, debris, and control of exotic weeds. The habitat restoration should be incorporated into the broader recovery of dunes.

## Habitat description

Decalcified dunes of France, Belgium and Britain, colonised by heaths of the alliances *Calluno-Genistion* or *Ulicion minoris*, and of Iberia, colonised by heaths of the alliance *Ericion umbellatae*.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread in Portugal. It also occurs in Spain. The overall representation of the habitat in Natura 2000 sites cannot be calculated because of missing data from Portugal. In Spain, almost the entire national habitat area (98 %) is located in Natura 2000 sites.



| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Portugal | 709 | N/A | 12 |
| Spain | 35 | 98 | 4 |
| **Total** | **744** | **n/a** | **16** |

The table shows the size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographical region ('coverage') as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

Portugal's assessment led to the overall conservation status of this habitat type in the Mediterranean biogeographical region being unfavourable-inadequate. This conclusion was reached despite favourable status in Spain. At the biogeographical region level, two parameters (Range; Area) were assessed as favourable, Structure and functions as unfavourable-inadequate, and Future prospects as unknown. The overall conservation status for the region has not changed from previous reporting.

**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| ES | 2203.22 | 14.6 | 0 | ≈2203.22 | 35.55 | 100 | 0 | ≈35.55 | FV | FV | FV | | XX | c1 |
| PT | 12900 | 85.4 | 0 | ≈12900 | N/A | N/A | 0 | ≈ | U1 | XX | U1 | = | U1 | nc |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | Contrib. | Type |
| EU27 | 15103 | 1 | | 15103 | | 0 | 0 | x | 2GD | 2GD | MTX | = | U1 | nc | D | = |

**Legend:** MS – Member State; Overall asses – Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole biogeographical region; Ref. – reference value; Struct & func. – Structure and functions; Future prosp. – Future prospects; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1 – target 1 of the EU 2020 Biodiversity Strategy.

| Conservation status | FV | Favourable | U1 | Unfavourable-inadequate | U2 | Unfavourable-bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|

| **Trend** | 0 = stable; + = increase; - = decrease; x = unknown |
|---|---|
| **Qualifier** | = stable; + positive; - negative; x unknown |
| **Nature of change** | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomical review; c1 – due to different methods to measure or evaluate; c2 – due to use of different thresholds; d – no information about nature of change; e – due to less accurate or absent data; nc – no change |
| **Target 1 contribution** | A – favourable assessments; B – improved assess.; C – deteriorated assessments; D – unfavourable and unknown assessments that did not change; E – assessments that became unknown. |

## Pressures, threats and proposed measures

Spain and Portugal reported several pressures, the most important being invasive non-native species, water abstractions from groundwater, and groundwater abstractions for agriculture. Other important pressures include sand and gravel quarries, roads, paths and railroads, and urbanised areas, human habitation.

| Code | Pressure name | ES | PT |
|---|---|---|---|
| A11 | Agriculture activities not referred to above | | M |
| B02 | Forest and Plantation management & use | L | |
| B02.03 | Removal of forest undergrowth | L | |
| C01.01.01 | Sand and gravel quarries | | M |
| D01 | Roads, paths and railroads | | M |
| E01 | Urbanised areas, human habitation | | M |
| H05.01 | Garbage and solid waste | | L |
| I01 | Invasive non-native species | | H |
| J02.01 | Landfill, land reclamation and drying out, general | | M |
| J02.07 | Water abstractions from groundwater | H | |
| J02.07.01 | Groundwater abstractions for agriculture | H | |
| K02 | Biocenotic evolution, succession | L | |
| K02.01 | Species composition change (succession) | L | |

Legend: L Low intensity    M Medium intensity    H High intensity

Both countries considered regulating/management exploitation of natural resources on land to be an important measure. Managing water abstraction, and other spatial measures also seem to be very important. Other important measures are adapting forest management, establishment of protected areas/sites, and legal protection of habitats and species.

| Code | Measure name | ES | PT |
|---|---|---|---|
| 1.2 | Measures needed, but not implemented | | NA |
| 3.2 | Adapt forest management | | M |
| 4.3 | Managing water abstraction | H | |
| 6.0 | Other spatial measures | | H |
| 6.1 | Establish protected areas/sites | M | |
| 6.3 | Legal protection of habitats and species | M | |
| 7.1 | Regulation/ Management of hunting and taking | L | |
| 7.4 | Specific single species or species group management measures | M | |
| 8.2 | Specific management of traffic and energy transport systems | M | |
| 9.1 | Regulating/Management exploitation of natural resources on land | M | H |

Legend: L Low importance    M Medium importance    H High importance

### Reason for selection as "Low Hanging Fruit" (LHF) habitat in the Mediterranean region

Applying the methodology to identify LHF habitats in the Mediterranean region, habitat 2150 reached an LHF score of 3.22. This habitat type was classified as LHF because to achieve improvement, it is sufficient to change from a stable to an improving trend in the category U1 (unfavourable-inadequate). It is normally much easier to improve a trend than to achieve a change in category. Other reasons for including the habitat type as LHF were its quite significant representation in Natura 2000 sites and the fact that the trend of only one parameter (Structure & functions) in one country (Portugal) needs to be improved in order to achieve overall improvement.

### Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat Structure and functions in Portugal is needed. The main measures should include regulation/management of natural resources exploitation, regulation of urbanisation and tourism expansion, and management of water abstraction. Other important measures are adapting forest management, establishment of protected sites, and legal protection of habitats and species, to develop practices for the sustainable development of psammophile pine forest, combining the reduction of fire risks and the preservation of this habitat, control of illegal dumping of rubbish, debris, and control of exotic weeds. The habitat restoration should be incorporated into the broader recovery of dunes.

### Links

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Dunes+habitats&subject=2150&region=MED

ICNB: * Dunas fixas descalcificadas atlanticas (Calluno-Ulicetea). – Plano Sectorial da Rede Natura 2000, 5 pp. - http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/hab-2150

# 2230 *Malcolmietalia* dune grasslands

| X | Selected for first round of Biogeographical Seminar |
|---|---|
|   | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - inadequate due to the assessment of five countries (Greece, Spain, Italy, Portugal, and United Kingdom). France reported unfavourable – bad status. This habitat type is widespread in the Mediterranean biogeographic region in Portugal, Spain and Italy; it occurs also in France, United Kingdom (Gibraltar), Cyprus, and Greece. In Spain is located around 52% of the habitat area, in Italy around 41%.

Improvement of habitat structure is necessary in five countries (Greece, Spain, France, Italy, and Portugal) as well as an increase of the habitat area by restoration in France is needed. The habitat restoration is likewise required in other countries that reported smaller habitat area than the reference value: Greece, Italy, and Portugal. Better information about habitat area is needed in Spain.

The regulation of site access, recreation and other human activities, establishment of protected sites and legal protection of habitats and species belong to the most important measures. Restoration of coastal areas, urban and industrial waste management are other important measures. There should be regulation of construction activities in the dune belt as well as regulating all coastal engineering works that alter the dynamics of sediments near the coast, the inspection of sand extraction should be enhanced. It is needed to develop waste management policies that are more respectful of the natural environment of beaches, based on manual selective collection of garbage. Agricultural activities on psamophilic stands, including grazing, should be prohibited. The programs to eradicate or control invasive species (mainly *Acacia* sp., *Cortadeira selloana* and *Carpobrotus edulis*) should be developed.

## Habitat description

Associations with many small annuals and often abundant ephemeral spring bloom, with *Malcolmia lacera*, *M. ramosissima*, *Evax astericiflora*, *E. lusitanica*, *Anthyllis hamosa*, *Linaria pedunculata*, of deep sands in dry interdunal depressions of the coasts.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

The habitat type is widespread in Portugal, Spain and Italy. It occurs also in France, United Kingdom (Gibraltar), Cyprus and Greece. The overall representation of this particular type of habitat in Natura 2000 sites is ca 48%. In Cyprus, France and United Kingdom whole national habitat area is located in Natura 2000 sites; around 50% in Italy.

| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| **Country** | **Habitat area /km²/** | **Coverage /%/** | **Number of sites** |
| **Cyprus** | 0.1 | 100.0 | 3 |
| **France** | 11 | 100.0 | 31 |
| **Greece** | 0 | 0.0 | 7 |
| **Italy** | 30 | 49.0 | 127 |
| **Portugal** | 0 | N/A | 13 |
| **Spain** | 31 | 40.0 | 40 |
| **United Kingdom** | 0.25 | 100.0 | 1 |
| **Total** | 72 | 48 | 222 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region („coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in Mediterranean biogeographical region is unfavourable - inadequate due to assessment of five countries (Greece, Spain, Italy, Portugal, and United Kingdom). Favourable status was assessed only in Cyprus. France reported unfavourable – bad conservation status. On the level of biogeographical region, all four parameters (Range; Area; Structure and Functions; Future prospect) were assessed as unfavourable – inadequate. The overall conservation status for the region has not been changed from previous reporting.

**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 2 | 0 | 0 | ≈2 | 0.10 | 0.1 | 0 | ≈0.10 | FV | FV | FV | | U1+ | b1 |
| GR | 0.10 | 0 | x | >0.10 | 0.10 | 0.1 | x | >0.10 | U1 | U1 | U1 | N/A | U1 | |
| ES | 15626 | 24.1 | 0 | ≈15626 | 77.41 | 51.7 | x | ≈77.41 | U1 | U1 | U1 | - | XX | c1 |
| FR | 4800 | 7.4 | 0 | >4800 | 10.90 | 7.3 | - | >>10.90 | U1 | U2 | U2 | = | U2 | nc |
| IT | 30200 | 46.7 | - | ≈30200 | 61.09 | 40.8 | - | >61.09 | U1 | U1 | U1 | x | XX | b1 |
| PT | 14100 | 21.8 | x | ≈14100 | N/A | N/A | - | > | U1 | XX | U1 | = | U1 | nc |
| UK | 0.50 | 0 | 0 | 0.25 | 0.25 | 0.2 | 0 | 0.25 | FV | U1 | U1 | = | U1+ | b1 |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | 64729 | 2GD | x | >64728 | >150 | 2GD | x | >150 | 2GD | 2GD | MTX | x | U1 | nc | D | = |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| **Conservation status** | FV | Favourable | U1 | Unfavourable - inadequate | U2 | Unfavourable - bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|

| **Trend** | 0 = stable; + = increase; - = decrease; x = unknown |
|---|---|
| **Qualifier** | = stable; + positive; - negative; x unknown |
| **Nature of change** | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change |
| **Target 1 contribution** | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. |

## Pressures, threats and proposed measures

The countries reported several pressures with high or medium intensity. The most important seems to be sport and leisure structures, outdoor sports and leisure activities, recreational activities, motorised vehicles, trampling, overuse, urbanised areas, human habitation. To other important pressures belong improved access to site and invasive non-native species.

| Code | Pressure name | CY | ES | FR | IT | PT | UK |
|------|---------------|----|----|----|----|----|----|
| A04 | grazing | | | L | | L | |
| B01.01 | forest planting on open ground (native trees) | | | | | L | |
| B01.02 | artificial planting on open ground (non-native trees) | | | | M | | |
| C01 | Mining and quarrying | | M | L | | | |
| C01.01 | Sand and gravel extraction | | | | | M | |
| D01 | Roads, paths and railroads | | M | L | | | |
| D01.01 | paths, tracks, cycling tracks | L | | | | | |
| D01.02 | roads, motorways | | | | M | | |
| D02 | Utility and service lines | | M | | | | |
| D05 | Improved access to site | | H | L | | | |
| E01 | Urbanised areas, human habitation | | H | H | | M | |
| E01.02 | discontinuous urbanisation | | | | M | | |
| E02 | Industrial or commercial areas | | | M | | | |
| E03 | Discharges | | M | L | M | | |
| E04 | Structures, buildings in the landscape | | | M | | | |
| E06 | Other urbanisation, industrial and similar activities | | M | | | | |
| G01 | Outdoor sports and leisure activities, recreational activities | | H | H | | | |
| G01.03 | motorised vehicles | M | | | M | H | |
| G02 | Sport and leisure structures | | H | H | | M | |
| G05.01 | Trampling, overuse | L | H | | M | H | |
| I01 | invasive non-native species | | M | M | | H | M |
| J02 | human induced changes in hydraulic conditions | | M | | | | |
| J02.12.01 | sea defense or coast protection works, tidal barrages | | | | | L | |
| K01.01 | Erosion | | | | M | M | |
| K02 | Biocenotic evolution, succession | | | M | | | |
| L02 | tidal wave, tsunamis | | | L | | | |
| L09 | fire (natural) | | M | | | | |
| M01.07 | sea-level changes | | | | | L | |

Legend:   L  Low intensity     M  Medium intensity     H  High intensity

Establishment of protected areas/sites and legal protection of habitats and species are the most important proposed measures. Other important measures are restoring coastal areas, other spatial measures, urban and industrial waste management.

| Code | Measure name | CY | ES | FR | IT | PT | UK |
|------|--------------|----|----|----|----|----|----|
| 1.2 | Measures needed, but not implemented | | | M | | NA | |
| 1.3 | No measure known/ impossible to carry out specific measures | | | M | | | |
| 2.1 | Maintaining  grasslands and other open habitats | | | | | | L |
| 4.0 | Other wetland-related measures | | M | | | | |
| 4.1 | Restoring/improving water quality | | M | | | | |
| 4.4 | Restoring coastal areas | | H | M | H | L | |
| 6.0 | Other spatial measures | | | M | | H | |
| 6.1 | Establish protected areas/sites | H | H | M | H | M | |
| 6.3 | Legal protection of habitats and species | H | M | | H | | H |
| 6.4 | Manage landscape features | | | M | | | |
| 7.4 | Specific single species or species group management measures | | M | | | | |

| Code | Measure name | CY | ES | FR | IT | PT | UK |
|------|--------------|----|----|----|----|----|----|
| 8.1 | Urban and industrial waste management | H | | | | | |

Legend: **L** Low importance   **M** Medium importance   **H** High importance

## Reason of selection for the first Mediterranean seminar

The habitat type was selected for the first Mediterranean seminar because of its high value of the Priority index. The habitat reached score 77 because of high values in two criteria (A and B). The habitat occurs in seven countries (criterion A). The unfavourable - bad overall conservation status reported one country (France) and unfavourable - inadequate status five countries. Countries reported also negative trends in three cases.

The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure and functions in five countries (Greece, Spain, France, Italy, and Portugal) as well as increase of the habitat area by restoration in France is needed. The habitat restoration is required also in other countries that reported smaller habitat area than the reference value: Greece, Italy, and Portugal. Better information about habitat area is necessary in Spain.

The regulation of access to sites, recreation and other human activities belong to most important measures. In addition, countries proposed establishment of protected sites and legal protection of habitats and species as the most important measures and restoration of coastal areas, and urban and industrial waste management as other important measures.

In general, the maintenance of vegetation at the top of the beach is desirable for the preservation of this type of habitat. There should be regulation of construction of the dune belt as well as of all coastal engineering works that alter the dynamics of sediments near the coast, leading to the loss of sediments to the sea, with a consequent slimming of the beach (ICNB). The inspection of sand extraction should be enhanced, the practices of extraction of the sand deposited in beaches for the regeneration of other more tourist beaches should be reduced.

The cleaning and smoothing of the beaches with heavy machinery is the main cause of disappearance of the dunes and their associated vegetation. The repeated use of this technique in successive years represents the main limiting factor for dune regeneration and plant colonization. Another type of cleaning, less aggressive with the medium, is the one that is done only in the border and the mesolitoral desert to eliminate the waste contributed by the tides. However, this cleansing includes organic remains that are important to the ecosystem. It is necessary to articulate waste management policies that are more respectful of the natural environment of beaches, based on manual selective collection, respecting and making it clear to users, managers and politicians that not everything that accumulates in the sand is garbage that must be removed (Gómez-Serrano et Sanjaume, 2009).

On the most visited sites, the control of the pedestrian access should be organized by fencing of certain sensitive zones, channelling of the walkers, building  footbridges for pedestrian access to the beach) (INPN). Strengthening the supervision of access of motor vehicles and exclusion of car parks from the dune belt are needed as well. Agricultural activities on psamophilic stands, including grazing, should be prohibited. Programs to eradicate or control invasive species (mainly *Acacia* sp., *Cortadeira selloana*

and *Carpobrotus edulis*) should be developed. Action plans should be based on the early detection of the arrival of these species in the ecosystem, so eradication species is immediate and occurs before they spread to other sites.

The natural regeneration of the lawns of the *Malcolmietalia* can be supported by installation of stakes of wood joined by ropes of polypropylene, sisal, braided, etc. This type of exclusion from human transfer favours the spontaneous plant colonization of the altered zones. If it is desired to accelerate the process of plant colonization (for example to prevent erosion), planting of vegetation can be realized. Local seeds or seedlings of native plants taken from as many parents as possible should be used, for their placement in the dunes it is necessary to take into account the distribution that they have in a natural zone next to the enclave that is going to be restored. The model for restoration of the dune habitats was developed in the project LIFE00 NAT/E/007339 "Model for restoration of dune habitats in the Albufera de Valencia".

## Links

Gómez-Serrano, M. Á., Sanjaume, E., 2009: 2230 Dunas con céspedes de Malcolmietalia. - In: VV.AA., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 63 pp. - http://www.jolube.es/Habitat_Espana/documentos/2230.pdf

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Dunes+habitats&subject=2230&region=MED

ICNB: 2230 Dunas com prados de *Malcolmietalia*. - http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/hab-2330

INPN: 2230 - Dunes avec pelouses des *Malcolmietalia.* - https://inpn.mnhn.fr/site/natura2000/habitat/2110/cahiers-habitats

# 2250 Coastal dunes with *Juniperus spp.*

| X | Selected for first round of Biogeographical Seminar |
|---|---|
|  | Selected using "Low hanging fruit" approach |

## Habitat summary

The overall conservation status in the Mediterranean region is unfavourable - bad due to the assessment of France and Italy. This type of habitat is widespread in the Mediterranean biogeographic region in Italy; it occurs also in Portugal, Spain, France (mostly in Corse), Greece, and Cyprus. In Italy is located around 45% of the habitat area.

Improvement of habitat structure and increase of habitat area are needed in Italy. The main measures should include establishment of protected sites, legal protection of habitats and species and restoration of coastal areas. The main recurring management measures consist of eradication of invasive plants, fire prevention, scrub clearance and controlled grazing. It is necessary to stop urban development, the planned land use changes should be subject of EIA. The juniper conservation objectives should be included to forest management plans, overgrazing control is needed. The eradication of exotic plant species invading the habitat should be realized and concern: acacias, agaves, yucca, *Oenothera drumondii* and *Carpobrotus* spp.

The habitat restoration is needed besides Italy also in all countries that reported smaller habitat area than the reference value: Greece, France, and Portugal. Better information about habitat area, structure and functioning are required in Spain.

## Habitat description

Juniper formations [*Juniperus turbinata* ssp. *turbinata* (=*J. lycia, J. phoenicea ssp. lycia*), *J. macrocarpa, J. navicularis* (=*J. transtagana, J. oxycedrus* ssp. *transtagana*), *J. communis*] of Mediterranean and thermo-Atlantic coastal dune slacks and slopes (*Juniperion lyciae)* and J*uniperus communis* formations of calcareous dunes. This habitat type includes also the communities of *J. communis* from the calcareous dunes of Jutland and the communities of *J. phoenicea* ssp. *lycia* in Rièges woods in the Camargue.

## Distribution in the Mediterranean region and coverage by Natura 2000 network

This habitat type is widespread in Italy. It occurs also in Portugal, Spain, France (mostly in Corse), Greece, and Cyprus. The representation of this habitat in Natura 2000 sites is high (ca 85 %). in Cyprus and France the whole national habitat area is located within Natura 2000 sites, large parts are also found in Italy and probably also in Spain, but habitat area in Spain is probably overestimated.

| Natura 2000 sites in the Mediterranean region | | | |
|---|---|---|---|
| Country | Habitat area /km²/ | Coverage /%/ | Number of sites |
| Cyprus | 0.3 | 100.0 | 2 |
| France | 25 | 100.0 | 21 |
| Greece | 0 | 0.0 | 17 |
| Italy | 56 | 81.0 | 109 |
| Portugal | 0 | N/A | 13 |
| Spain | 49 | 104.0 | 30 |
| Total | 131 | 85 | 192 |

The table shows size of the habitat area in Natura 2000 sites and its proportion compared to habitat area in the whole biogeographic region („coverage") as reported by MS in the 2013 Article 17 report. The number of sites was extracted from the 2016 Natura 2000 database.

## Biogeographical conservation status assessment

The overall conservation status of this habitat type in Mediterranean biogeographical region is unfavourable - bad due to assessment of France and Italy. The favourable status was indicated only in Cyprus. Three countries (Greece, Spain, and Portugal) reported unfavourable – inadequate conservation status. The knowledge of habitat area, structure and functions is not sufficient in Spain where these parameters were reported as unknown. On the level of biogeographical region, all four parameters (Range; Area; Structure and Functions; Future prospect) were assessed as unfavourable - bad. The overall conservation status for the region has been changed from previous reporting from unfavourable – inadequate to unfavourable – bad. But this change is not considered genuine as it is due to better data and different methods used.



**Treated data from Member States reports**

| MS | Range (km²) | | | | Area | | | | Struct & func. | Future prosp. | Overall asses. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface | % MS | Trend | Ref. | Surface | % MS | Trend | Ref. | | | Curr. CS | Qualifier | Prev. CS | Nat. of ch. |
| CY | 6.40 | 0 | 0 | 6.40 | 0.30 | 0.2 | 0 | 0.30 | FV | FV | FV | | U1+ | b1 |
| GR | 12 | 0 | - | >12 | 12 | 7.8 | - | >12 | U1 | U1 | U1 | N/A | U1 | |
| ES | 6197 | 14.9 | + | ≈6197 | 47 | 30.6 | x | ≈47 | XX | U1 | U1 | x | XX | c1 |
| FR | 5100 | 12.2 | 0 | ≈5100 | 25.40 | 16.5 | 0 | >25.40 | U1 | U2 | U2 | - | U1 | b1 |
| IT | 21900 | 52.5 | - | >>21900 | 68.81 | 44.8 | - | >>68.81 | U2 | U2 | U2 | - | U1 | c1 |
| PT | 8500 | 20.4 | x | x | N/A | N/A | x | > | U1 | U1 | U1 | = | U1 | nc |

**EU Biogeographical assessment and proposed corrections**

| MS/EU27 | Surface | Range Concl. | Trend | Ref. | Surface | Area Concl. | Trend | Ref. | Struct. func. | Future prosp. | Curr. CS Concl. | Qualifier | Prev. CS Concl. | Nat. of ch. | Target 1 Contrib. | Target 1 Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EU27 | 41715 | 2GD | x | >>33215 | 154 | 2GD | x | >>154 | 2GD | 2GD | MTX | - | U1 | no | C | - |

**Legend**: MS – Member State; Overall asses- Overall assessment; % MS – percentage of the surface area in the respective Member State compared to whole Biogeographical Region; Ref. – reference value; Struct & func. - structure and functions; Future prosp. – future prospect; Curr. CS – current conservation status; Prev. CS – previous conservation status; Nat. of ch. – nature of change; EU27: assessment on the level of all EU Member Countries; Concl. – conclusion; Target 1: - target 1 of the EU 2020 Biodiversity Strategy.

| Conservation status | FV | Favourable | U1 | Unfavourable - inadequate | U2 | Unfavourable - bad | XX | Unknown |
|---|---|---|---|---|---|---|---|---|

| Trend | 0 = stable; + =  increase; - = decrease; x = unknown |
|---|---|
| Qualifier | = stable; + positive; - negative; x unknown |
| Nature of change | a – genuine change; b – change due to better data or improved knowledge; b2 – due to taxonomic review; c1 – due to different methods to measure or evaluate; c2 - due to different thresholds use; d - no information about nature of change; e - due to less accurate or absent data; nc - no change |
| Target 1 contribution | A - favourable assessments; B - improved assess.; C - deteriorated assessments; D - unfavourable and unknown assessments that did not change; E - assessments that became unknown. |

## Pressures, threats and proposed measures

The countries reported several pressures with high or medium intensity. The most important ones seems to be urbanised areas, human habitation, and motorised vehicles. To other important pressures belong grazing, paths, tracks, cycling tracks, trampling, and overuse.

| Code | Pressure name | CY | ES | FR | IT | PT |
|------|---------------|----|----|----|----|----|
| A01 | Cultivation | | | | M | L |
| A04 | grazing | | H | L | | |
| A04.01.04 | intensive goat grazing | M | | | | |
| B01 | forest planting on open ground | | M | L | | |
| B01.02 | artificial planting on open ground (non-native trees) | | | | M | |
| B02 | Forest and Plantation management & use | | | L | | |
| B02.03 | removal of forest undergrowth | | | | | M |
| B03 | forest exploitation without replanting or natural regrowth | | | L | | |
| C01 | Mining and quarrying | | | L | | |
| D01 | Roads, paths and railroads | | L | L | | |
| D01.01 | paths, tracks, cycling tracks | | | | | H |
| D01.02 | roads, motorways | | | | M | L |
| D02 | Utility and service lines | | L | | | |
| D05 | Improved access to site | | | M | | |
| E01 | Urbanised areas, human habitation | | H | L | | M |
| E01.02 | discontinuous urbanisation | | | | M | |
| E02 | Industrial or commercial areas | | M | L | | |
| E03 | Discharges | | M | L | M | |
| E03.01 | disposal of household / recreational facility waste | | | | | L |
| E03.03 | disposal of inert materials | | | | | L |
| E04 | Structures, buildings in the landscape | | | L | | |
| E05 | Storage of materials | | | L | | |
| E06 | Other urbanisation, industrial and similar activities | | M | | | |
| F04 | Taking / Removal of terrestrial plants, general | | | L | | |
| G01 | Outdoor sports and leisure activities, recreational activities | L | M | M | | |
| G01.03 | motorised vehicles | | | | M | H |
| G02 | Sport and leisure structures | | M | | | M |
| G02.01 | golf course | | | | | M |
| G05.01 | Trampling, overuse | | | | | H |
| H01 | Pollution to surface waters (limnic & terrestrial, marine & brackish) | | M | | | |
| H05 | Soil pollution and solid waste (excluding discharges) | | | | M | |
| H07 | Other forms of pollution | | L | | | |
| I01 | invasive non-native species | | M | L | M | |
| I02 | problematic native species | | | L | | |
| J01 | fire and fire suppression | | | M | | |
| J01.01 | burning down | | | | M | |
| J02 | human induced changes in hydraulic conditions | | M | | | |
| J02.01 | Landfill, land reclamation and drying out, general | | | | M | M |
| K01.01 | Erosion | | | | M | |
| L02 | tidal wave, tsunamis | | | L | | |
| L09 | fire (natural) | | M | L | | |

Legend:  L  Low intensity    M  Medium intensity    H  High intensity

All countries consider establishment of protected areas/sites as measures of high, respectively medium importance. Legal protection of habitats and species and restoring coastal areas are also among the most important proposed measures.

| Code | Measure name | CY | ES | FR | IT | PT |
|------|--------------|----|----|----|----|----|
| 1.2 | Measures needed, but not implemented | | | M | | NA |
| 1.3 | No measure known/ impossible to carry out specific measures | | | M | | |
| 3.1 | Restoring/improving forest habitats | | M | | | |
| 4.0 | Other wetland-related measures | | L | M | | |
| 4.1 | Restoring/improving water quality | | L | | | |
| 4.4 | Restoring coastal areas | | H | M | H | L |
| 6.0 | Other spatial measures | | | M | | M |
| 6.1 | Establish protected areas/sites | H | M | M | H | M |
| 6.3 | Legal protection of habitats and species | H | M | | H | |
| 6.4 | Manage landscape features | | | M | | |
| 7.4 | Specific single species or species group management measures | | M | | | |

Legend:   **L** Low importance   **M** Medium importance   **H** High importance

## Reason of selection for the first Mediterranean seminar

This particular habitat type was selected for the first Mediterranean seminar because of its high value of the Priority index. The habitat reached a score  of 54 due to medium values in criteria A and B. The habitat occurs in six countries (criterion A). The unfavourable - bad overall conservation status were reported for two countries (France and Italy) and unfavourable - inadequate status for three countries. Countries reported also negative trends in three cases.

> The Priority Index was calculated using information from the reports of Member States based on requirements of the Article 17 of the Habitats Directive for period 2001-2006. It is based on three parameters: A) Number of Member States where habitat type is present; B) Unfavourable conservation status of the habitat type (U2 – 2 points; U1 & XX – 1 point each), and C) Trend information: number of negative trends for parameters "Area of the habitat type" and qualifiers for "Structure & functions". The index is then calculated using formula: A*(B+C).

## Priority conservation measures needed

For the improvement of the overall conservation status in the Mediterranean biogeographical region, improvement of the habitat structure and increase of the habitat area in Italy are needed. Better information about habitat area, structure and functioning are needed in Spain. The main measures should include establishment of protected sites, legal protection of habitats and species and restoration of coastal areas. This habitat should be regarded as one part of dune systems that need to be managed as a whole. The main recurring management measures consist of eradication of invasive plants, fire prevention, scrub clearance and controlled grazing (Picchi 2008).

For the conservation of the coastal juniper it is necessary to implement a set of measures that allow the recovery of the environmental conditions of the coastal environment and the recovery and enhancement of the remaining populations as well as reducing the existing threat factors. The areas where this habitat has the best conservation status should be identified and promoted, as a matter of urgency, a network of reserves and micro-reserves for their strict conservation.

It is necessary to stop urban development. The changes in land use that may conflict with habitat conservation should be subject of the Environmental Impact Assessment, especially those that imply urban occupation or intensification of tourism, agriculture or forestry. The changes could be approved only if it is possible to guarantee the implementation of compensatory measures that result in a balance positive for habitat recovery.

The eradication of exotic plant species invading the habitat is needed - invasive species may include acacias, agaves, yucca, *Oenothera drumondii* and *Carpobrotus* spp. They could also include pines that invade the juniper trees from nearby repopulations. The coastal junipers are not free from the danger

of fires, therefore is necessary to carry out surveillance, prevention and awareness activities, especially in those places where junipers are found in areas repopulated by pines Muñoz et Gracia 2009.

For tourism and visitors control, it is necessary to restrict access to sensitive areas and implement networks of roads and walkways that safeguard the habitat. For this purpose, it is possible to build infrastructures such as walkways and rustic fencing that channel the passage of walkers. The infrastructures that are constructed should respect the dynamics of the dune system. It is necessary to exclude from dune areas the transit of all types of vehicles.

It is recommended to encourage the implementation of forest management plans that integrate juniper conservation objectives, either under tree layer or in mosaic with pinewood areas (possibly using also the instrument of management contracts with owners) (ICNB).

The overgrazing control is needed as the excessive grazing by wild (deer) and domestic (goats) herbivores reduces junipers to cushioned forms and may limit their natural regeneration (INPN).

Besides Italy, habitat restoration is needed in all countries that reported smaller habitat area than the reference value: Greece, France, and Portugal. Therefore it is needed to promote recovery, revegetation and bio-remediation plans tending to restore junipers in their potential area of occurrence, where it has been altered or extinct. However, the recovery interventions on degraded dunes with junipers take time since juniper cultivation is difficult due to its low germination rates and slow sapling growth (Picchi 2008). In sites that were planted by pines in the past, the pines and other species subsequently colonized the habitat type should be eliminated, it is necessary to remove also the wood and the needles to maintain the oligotrophy of the medium and facilitate establishment of new seedlings. The objective of lightening should be to recover the original environmental conditions: the effect of the marine spray, a certain mobility of the substrate and high radiation. The goal of population empowerment is to reduce the isolation and progressive decline in size of current populations. The introduction of individuals is also important in those populations with sexually biased distributions that may have low reproduction, low seed numbers or low viability of seeds.


## Links

https://bd.eionet.europa.eu/article17/reports2012/habitat/summary/?period=3&group=Dunes+habitats&subject=2250&region=MED

ICNB: 2250 *Dunas litorai com Juniperus spp. - http://www.icnf.pt/portal/pn/biodiversidade/rn2000/resource/docs/rn-plan-set/hab/hab-2250

INPN: 2250* *Dunes littorales à Juniperus spp. - https://inpn.mnhn.fr/site/natura2000/habitat/2250/cahiers-habitats

Muñoz, J.C., Gracia, F.J., 2009: 2250 Dunas litorales con Juniperus spp. (*). - In: VV.AA., Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino. 61 pp. - http://www.jolube.es/Habitat_Espana/documentos/2250.pdf

Picchi S. 2008. Management of Natura 2000 habitats. 2250 *Coastal dunes with Juniperus spp. – EuropeanCommission (DG ENV B2), Brussels, 28 pp.