

B1.8b Mediterranean and Black Sea moist and wet dune slack

Summary

The habitat comprises small permanent or temporary fresh water bodies that develop in the depressions between sand ridges in the dune systems along the Mediterranean and Black Sea coasts, a local feature with the drier climate typical of these regions. The constituent vegetation depends on the depth and persistence of the water which is very variable, and also on the level of enrichment, which is usually eutrophic to mesotrophic, though locally dystrophic. There can be aquatic communities in the open waters and swamps around the margins and, where the slacks dry out in summer, conditions can become saline with ephemerals colonising. This habitat is threatened by touristic development, changes in hydrology, overgrazing and pollution, and it needs strict protection and some restoration activities, like recovery of hydrologic functionality and regulation of touristic activities.

Synthesis

The habitat type is assessed as Least Concern (LC) under all criteria for which data were available. Trends in quality and quantity were relatively small, and the habitat is widespread over the coastal regions of the Mediterranean and Black Sea.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Least Concern	-	Least Concern	-

Sub-habitat types that may require further examination

The habitat type is relatively diverse, including different wetland communities in dunes. Depending on the size, depth and water regime of dune slacks these communities are dominated by helophytic or hydrophytic species or a mixture of them.

Habitat Type

Code and name

B1.8b Mediterranean and Black Sea moist and wet dune slack



B1.8b *Juncus acutus* communities on the island of Corsica, France (Photo: John Janssen).



B1.8b Dune slack with *Calamagrostis epigejos* and *Cladium mariscus* at Shabla, Bulgaria (Photo: Rossen Tzonev).

Habitat description

This habitat type develops in small permanent or temporary fresh water bodies in the depressions between dune ridges of the Mediterranean and Black Sea coasts. These wetlands occur at the lower parts of white and grey dune systems, having a patchy distribution. Coastal dune slacks are more common along the Atlantic coasts as in the warmer Mediterranean and Black Sea coasts. Plant communities in wet dune slacks depend on the groundwater level. This varies spatially and temporally and dune slacks may occur in a range from permanent water bodies to waterlogged or moist sandy depressions.

The communities consist of typical hydro- or hygrophytic species. The permanent or semi-permanent (persisting until summer) water bodies, like small ponds, lakes and pools, are inhabited by aquatic vegetation, with species of the classes *Potametea* or *Charetea*. Often a zone of high grasses (reed, sedges, rushes, reed mace) develops at their periphery. Nutrient content also varies, but mostly the water is eutrophic to mesotrophic, sometimes even dystrophic. Temporary water bodies are very diverse in water depth and duration of water retention. Stands of high helophytes, like *Phragmites australis*, *Typha* spp., *Juncus* spp., *Carex* spp. *Cladium mariscus*, *Holoschoenus* spp. and *Scirpus* spp. develop mostly on the over-wet sands, which desiccate during the summer. In such conditions, a slight salinization is possible, and halophytic species or small therophytes of the class *Isoeto-Nanojuncetea* may inhabit the bare bottoms. Such dune slacks are species rich and highly specialised habitats, and they are threatened by the lowering of water table.

Indicators of quality:

The habitat is very sensitive to every human disturbance, resulting from tourism development, physical damage, eutrophication, over growth through lack of grazing, climate change and especially changes in the water regime. The most important indicators of good quality are:

- natural water regime
- balance between the hygrophytic and hydrophytic vegetation
- diversity of plant communities depending on water dynamic
- occurrence of a range of different dune slacks within dune systems at a landscape level

Characteristic species:

Blackstonia perfoliata, *Bolboschoenus maritimus*, *Carex distans*, *Centaurium pulchellum*, *Ceratophyllum demersum*, *Cladium mariscus*, *Cyperus flavescens*, *Holoschoenus romanus* (= *Scirpoides holoschoenus*), *Juncus acutus*, *Juncus littoralis*, *Juncus maritimus*, *Lemna minor*, *Lemna trisulca*, *Myriophyllum spicatum*, *Orchis laxiflora* (= *Anacamptis palustris*), *Phragmites australis*, *Potamogeton* spp., *Samolus valerandii*, *Schoenus nigricans*, *Scirpus* (= *Schoenoplectus*) *lacustris*, *Typha angustifolia*, *Typha latifolia*

Classification

This habitat may be equivalent to, or broader than, or narrower than the habitats or ecosystems in the following typologies.

EUNIS:

B1.8 Moist and wet dune slacks

EuroVegChecklist alliances:

Agropyro-Plantaginion maritimi Horvatic 1934

Lolio-Plantaginion commutatae Horvatic 1934

Molinio-Holoschoenion Br.-Bl. ex Tchou 1948

Phragmites communis Koch 1926

Annex 1:

2190 Humid dune slacks

6420 Mediterranean tall humid grasslands of the Molinio-Holoschoenion

Emerald:

B1.8 Moist and wet dune slacks

E3.1 Mediterranean tall humid grassland

MAES:

Coastal

IUCN:

13.3. Coastal Sand Dunes

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

Yes

Regions

Black Sea

Mediterranean

Justification

The habitat includes plant communities that depend on the Mediterranean climate and more specifically on the duration of dry season and the fluctuation of water level during the vegetative period.

Geographic occurrence and trends

EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Bulgaria</i>	Present	0.2 Km ²	Decreasing	Decreasing
<i>Croatia</i>	Present	Unknown Km ²	Unknown	Unknown
<i>France</i>	Corsica: Present France mainland: Present	14 Km ²	Decreasing	Stable
<i>Greece</i>	Crete: Present Greece (mainland and other islands): Present	3.2 Km ²	Stable	Stable
<i>Italy</i>	Italy mainland: Present Sardinia: Present Sicily: Present	156 Km ²	Decreasing	Stable
<i>Portugal</i>	Portugal mainland: Present	10 Km ²	Stable	Decreasing
<i>Romania</i>	Present	1 Km ²	Stable	Stable
<i>Spain</i>	Balearic Islands: Present Spain mainland: Present	1.5 Km ²	Decreasing	Decreasing

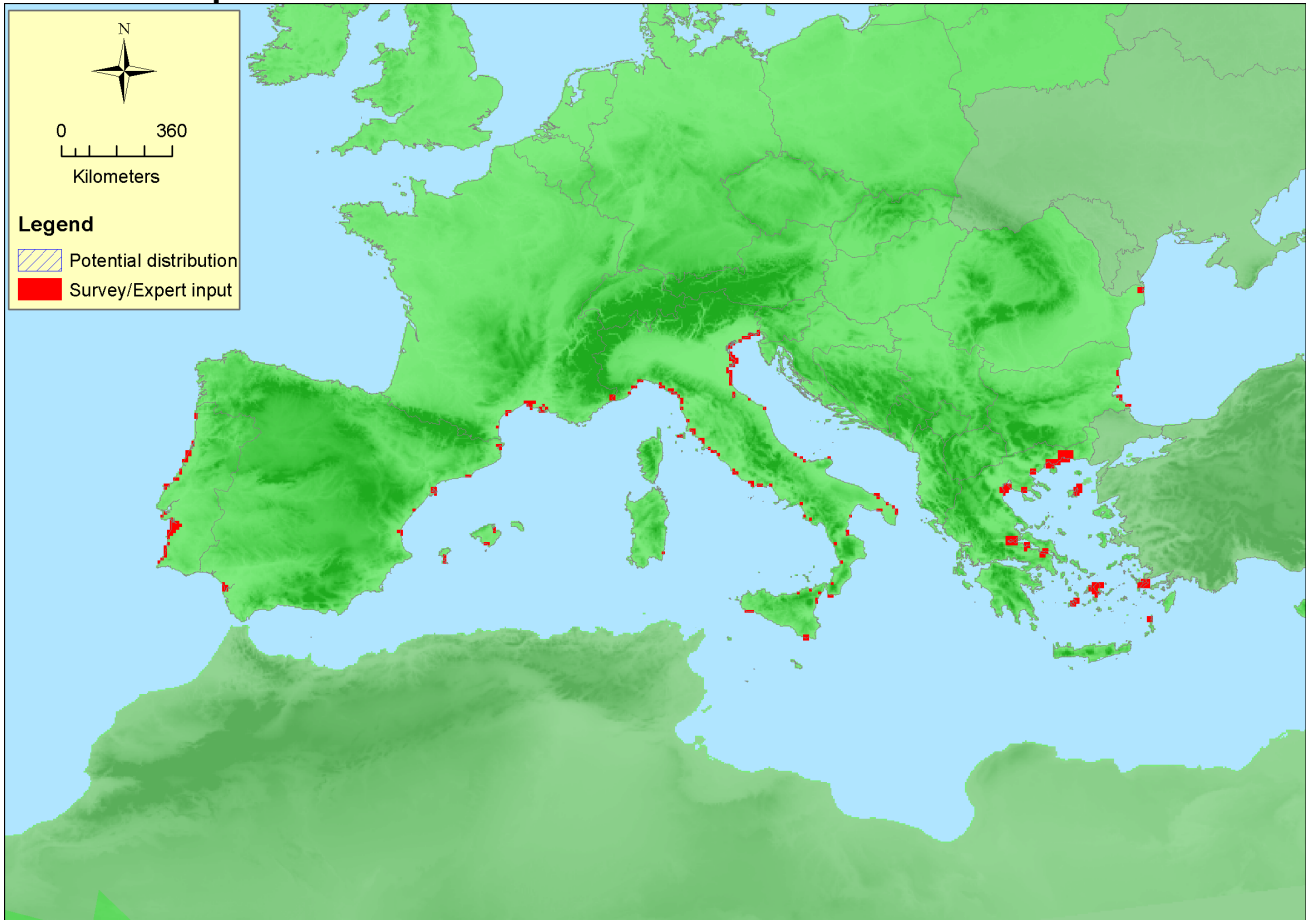
EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
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EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Albania	Present	Unknown Km ²	Unknown	Unknown
Montenegro	Present	Unknown Km ²	Unknown	Unknown

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	2824500 Km ²	333	185 Km ²	
EU 28+	2824500 Km ²	333	185 Km ²	

Distribution map



Map rather complete, with data gaps in Albania. Data sources: Art17.

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

Probably more than 70%. The habitat's area outside EU28, in Mediterranean and Black Sea countries like Albania, Montenegro, Turkey, Ukraine and Russia, is unknown, but it is estimated to be smaller from that of the Mediterranean countries of European Union.

Trends in quantity

The decrease on average is -19% for EU28 over about the last 50 year. After 1960 the habitat has been decreased approximately 10% in Spain and Bulgaria, 17-18% in Italy and 48% in Portugal, because of the intense touristic development and the drainage of wetlands in coastal areas. Its area remains stable in Greece and Romania, while in France the trend is considered negative, although no exact data exist. The trend in Croatia, Albania and Montenegro is unknown.

- Average current trend in quantity (extent)

EU 28: Decreasing

EU 28+: Decreasing

- Does the habitat type have a small natural range following regression?

No

Justification

The habitat is widespread along Mediterranean and Black Sea coastal areas.

- Does the habitat have a small natural range by reason of its intrinsically restricted area?

Yes

Justification

The overall range is not small, but the habitat occurs mainly in small stands within sites.

Trends in quality

The trends have been calculated from the reported negative trends in quality (extent and severity) by Portugal (10%) Bulgaria (70%), Italy (35%), Greece (3%) and France in the territorial data. The overall extent of degradation is estimated to be 17% and of the severity 50%. The severe decline is mostly because of the touristic development and changes in hydrologic conditions.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

Pressures and threats

The most important threats are urbanisation and habitation because of touristic development, as well as changes in the hydraulic conditions, different kinds of pollution, alien species and ruderalisation caused by overgrazing. Natural processes like erosion and climate change, also threaten the habitat.

List of pressures and threats

Urbanisation, residential and commercial development

Urbanised areas, human habitation

Continuous urbanisation

Discontinuous urbanisation

Human intrusions and disturbances

Outdoor sports and leisure activities, recreational activities

Pollution

Pollution to surface waters (limnic, terrestrial, marine & brackish)

Pollution to groundwater (point sources and diffuse sources)

Invasive, other problematic species and genes

Invasive non-native species

Natural System modifications

Human induced changes in hydraulic conditions

Modification of hydrographic functioning, general

Conservation and management

Strict protection of preserved dune systems with dune slacks is considered as the most appropriate conservation measure. Restoration of hydraulic conditions of dune wetlands as well as removal of non-

typical and invasive species are required in some coastal area.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality
Restoring/Improving the hydrological regime
Restoring coastal areas

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species

Conservation status

Annex I:

2190: BLS U1, MED U2

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

The habitat has some capacity to recover naturally but this depends on geomorphological processes which are slow. It could be restored in some areas especially by improving hydraulic conditions and the removal of invasive species.

Effort required

20 years	200+ years
Through intervention	Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-19 %	unknown %	unknown %	unknown %
EU 28+	-19 %	unknown %	unknown %	unknown %

The habitat has been decreased about 10% in Spain, 10% in Bulgaria, 48% in Portugal, 18% in Italy during the last 40 to 60 years. In total, it has been reduced from 228 km² to 185 km², nearly 19%. There is no information on longer historical trends. In the future a small further decline is expected, but quantitative data are not available. No additional data were available for the EU28, but along the Mediterranean coast the habitat is rare outside the EU28 countries.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50000 Km ²	Yes	No	No	>50	Yes	No	No	No
EU 28+	>50000 Km ²	Yes	No	No	>50	Yes	No	No	No

EOO and AOO and number of locations are much higher than the thresholds for criterion B, leading to the conclusion Least Concern.

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

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	17 %	50 % %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	17 %	50 % %	Unknown %	Unknown %	Unknown %	Unknown %

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

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

The weighted average extent and severity were calculated from reported data from Spain, Portugal, France, Italy, Greece, Bulgaria and Romania. The involved countries could not provide enough information on the long historical or future trends in quality (CD2, CD3, C2, C3, and D2). The changes in quality are both abiotic (changes in hydraulic conditions, climate change) and biotic, thus C/D1 has not been split into C1 and D1.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

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

There is no quantitative analysis available that estimates the probability of collapse of this habitat type.

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

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

Overall Category & Criteria			
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Least Concern	-	Least Concern	-

Confidence in the assessment

Medium (evenly split between quantitative data/literature and uncertain data sources and assured expert knowledge)

Assessors

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Contributors

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References

Biondi, E., Blasi, C., Burrascano, S., Casavecchia, S., Copiz, R., Del Vico, E., Gadenz, D., Gigante, D., Lasen, C., Spampinato, G., Venanzoni, R. and Zivkovic, L. 2009. Manuale Italiano di interpretazione degli habitat della Direttiva 92/43/CEE (Italian Interpretation Manual of the 92/43/EEC Directive habitats).-URL: <http://vnr.unipg.it/habitat/index.jsp>

Donita, N., Popescu, A., Pauca-Comanescu, M., Mihailescu, S. and Biris, I. 2005. Habitatele din România. Edit. Tehnică Silvică, București, 500 p.

Gracia Prieto, F. 2009. 2190 Depresiones intradunares húmedas.En: 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. 50 p.

Houston, J. 2008. Management of Natura 2000 habitats. 2190 Humid dune slacks. European Commission. Technical report 2008 05/24.

Tzonev, R. 2012. Over-wet and flooded dune slacks. In: Bisserkov V., Gussev, Ch., Tsoneva, S., Popov, V., Hibaum, G., Roussakova, V., Pandurski, I., Uzunov, J., Dimitrov, M. and Tzonev, R.(eds). Red Data Book of Bulgaria. Vol.3. Natural habitats.MOEW-BAS, Sofia.