B1.6a Atlantic and Baltic coastal dune scrub

Summary

This habitat includes a wide diversity of scrub types dominated by low to tall shrubs on stabilised dry dune sands and in wet dune slacks along the Atlantic and Baltic coasts, most extensively on the north French and North Sea coasts. The composition and structure vary according to regional climate and ground conditions with dry dunes tending to support taller and more species-rich vegetation. It provides shelter and food for birds and is part of a dynamic dune succession but its spread over more open dune grasslands is itself seen as a threat in some places. Further succession to dune woodland, eutrophication and spread of nitrophilous weeds and destruction for coastal development all endanger this habitat but overall its situation is of least concern.

Synthesis

As the habitat type is widely distributed and has a stable trend in quantity and a slightly negative trend in quality, the habitat is assessed as Least Concern.

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 is broadly defined and several sub-habitats may be distinguished. A main further split would be in a dune scrub on dry soil, dominated by thorn shrubs, and one in moist or wet dune slacks, being dominated mainly by *Salix* species.

Habitat Type

Code and name

B1.6a Atlantic and Baltic coastal dune scrub

Dry dune scrub with *Hippophae rhamnoides*, *Ligustrum vulgare* and *Lonicera periclymenum* in dry dune area close to the Hague, Netherlands. (Photo: Joop Schaminée).

Patch of *Salix atrocinerea* dominated scrub in a seepage at the foot of Dune du Pilat, France, the highest dune in Europe. (Photo: John Janssen).

Habitat description

A broad habitat type, covering more or less all low to high scrub in dry dunes and wet dune slacks in the Baltic and Atlantic coastal regions. The species composition differs over climatic regions. In north-western Europe and the southern Baltic *Hippophae rhamnoides* and *Salix repens* ssp. *arenarius* are mainly

dominating in dry dunes, while *Ulex europaeus*, *Cytisus scoparius* and *Rubus ulmifolius* are important species in dry dunes of the warmer parts of the Atlantic coasts. In wet dune slacks, typically *Salix* scrub is found, especially *Salix repens*, *Salix cinerea*, *Salix atrocinerea* and *Salix rosmarinifolius*. In the Baltic region *Salix repens* ssp. *arenarius* and *Salix rosmarinifolius* grow together with boreal heather species, while along the Portuguese coast in wet dunes *Salix repens* and *Salix atrocinerea* are accompanied by some Atlantic-Mediterranean species, like *Scirpus holoschoenus*. *Salix repens* ssp. *arenarius* is found in drier parts of the dunes as well. In mesic dune slacks it is typically accompanied by *Monotropa hypopitys*, living saprophytic on *Salix*-specific ectomycorrhizal fungi, and by *Pyrola minor* and *Pyrola rotundifolia*, forming the association *Pyrolo-Salicetum*. This association is known for many rare fungi, of which some live in symbiosis with *Salix repens*. Very low *Salix repens*-scrub (mowed or grazed) forming a component in fen or grassland communities is not included in this habitat, but considered under dune slacks (B1.8a) or dune grasslands (B1.4a). The same goes for relatively low scrub of *Rosa spinosissima* (sometimes known as *R. pimpinellifolia*), forming a component of grasslands.

The habitat is especially well developed in dry, calcium-rich dunes, where it reaches several meters of height and may form a dense formation, relatively rich in shrub species. Besides the already mentioned species *Rhamnus cathartica*, *Ligustrum vulgare*, *Berberis vulgaris*, *Euonymus europaeus*, *Sambucus nigra*, *Crataegus monogyna* and several species of *Rosa* and *Rubus* contribute to the biodiversity. The many berries produced by the shrubs play an important role as a food source for birds, especially during the migrating season in late summer and autumn. A typical accompanying species is the climbing *Bryonia cretica*.

The dune shrublands have been classified in the order *Salicetalia arenariae*, in which three alliances are distinguished: *Salicion arenariae*, *Ligustro-Hippophaeion*, and *Holoschoeno australis-Salicion arenariae*, the latter being restricted to the warmest parts of the Atlantic coast. Additional the communities of *Salix cinerea* (alliance *Salicion cinereae*.) are included in the habitat. The Pyrolo-Salicetum is sometimes classified in the *Empetrion nigri*.

In some places also *Juniperus* species form coastal scrub. *Juniperus communis* is known from temperate coasts, for example calcareous dunes of north-western Jutland. In the Mediterranean coasts several other *Juniperus* species are found, and some of them northwards reach the warmer Atlantic dunes.

Indicators of good quality:

- Dense and high structure of scrub
- Diversity in shrub species
- Absence of non-native species, like *Rosa rugosa, Eleagnos spp., Cornus spp., ...*
- Low cover of trees
- Presence of breeding birds
- Food supply for migrating birds in autumn
- Presence of rare fungi

In some parts of the range (for example England) dune shrubs have been planted and form a threat to dune grasslands and other more species-rich habitats.

Characteristic species:

Flora: *Berberis vulgaris, Calamagrostis epigejos, Carex arenaria, Cornus sanguineus, Crataegus monogyna, Cytisus scoparius, Euonymus europaeus, Hippophae rhamnoides, Juniperus communis, Ligustrum vulgare, Monotropa hypopitys, Pyrola minor, Pyrola rotundifolia, Rhamnus catharticus, Rosa rubiginosa, Rosa spinosissima, Rubus thallasarctos, Rubus caesius, Rubus ulmifolius, Salix cinerea, Salix repens ssp. arenarius, Sambucus nigra, Ulex europaeus*

Birds: Nightingale (*Luscinia megarhynchos*)

Classification

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

EUNIS:

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EuroVegChecklist:

Salicion arenariae Tx. ex Passarge in Scamoni 1963

Ligustro-Hippophaeion Géhu et Géhu-Franck 1983

Holoschoeno australis-Salicion arenariae Neto et al. 2004 ?

Salicion cinereae T. Müller et Görs ex Passarge 1961

Empetrion nigri Schubert ex Westhoff et Den Held 1969 (association *Pyrolo-Salicetum*)

Annex I:

2160 Dunes with Hippophae rhamnoides

2170 Dunes with Salix repens ssp. argentea (Salicion arenariae)

Emerald:

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MAES-2:

Heathland and shrub

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
Atlantic

Justification
The habitat is best represented, both in area and diversity, in the relatively broad dune systems of the Atlantic coast.

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)
Belgium	Present	7.2 Km^2	Increasing	Stable
Denmark	Present	15 Km^2	Decreasing	Unknown
Estonia	Present	Unknown Km^2	Unknown	Stable
Finland	Aland Islands: Uncertain Finland mainland: Present	1 Km^2	Unknown	Unknown

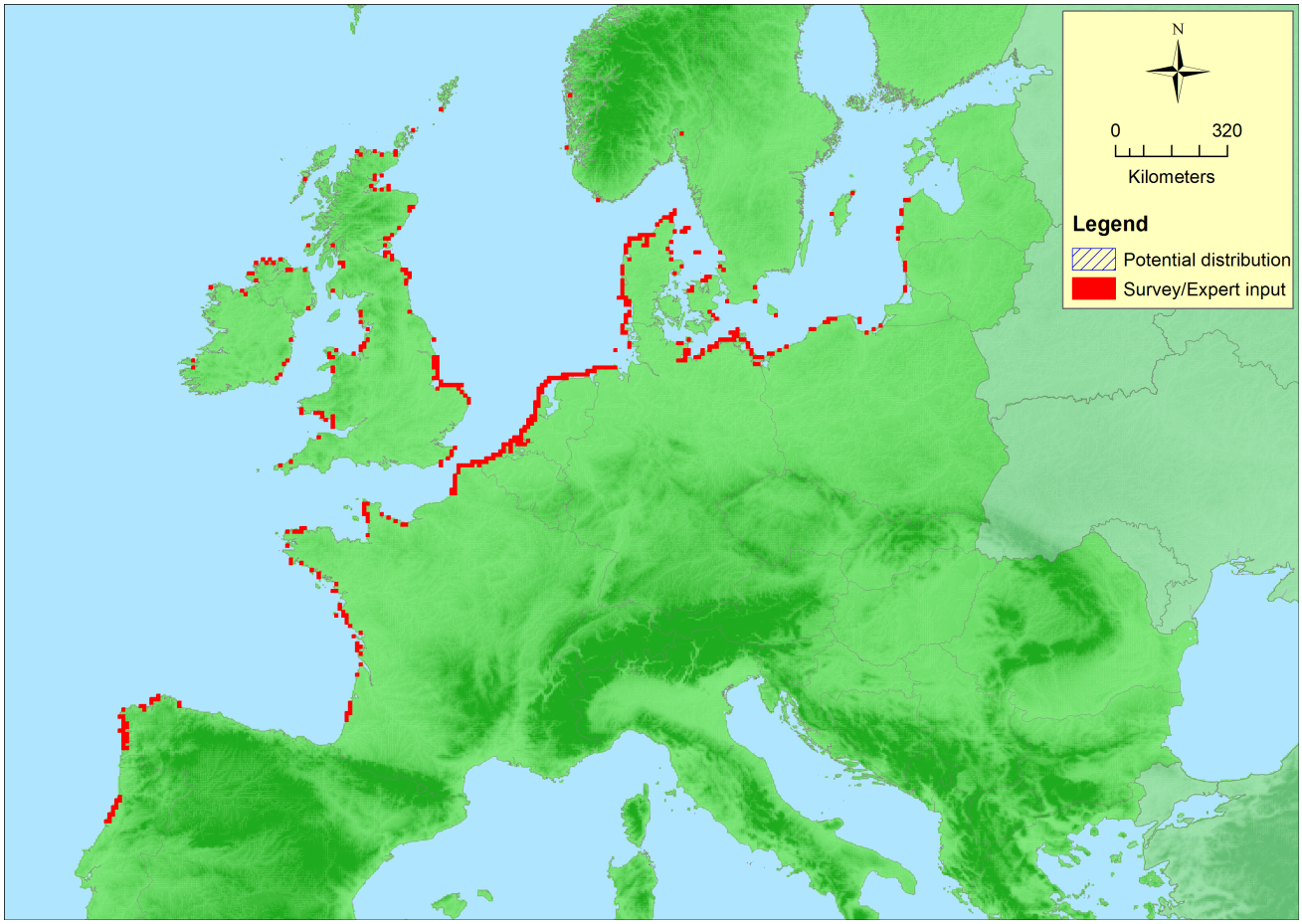
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
France	France mainland: Present	90 Km^2	Increasing	Stable
Germany	Present	5 Km^2	Increasing	Decreasing
Ireland	Present	3.4 Km^2	Increasing	Unknown
Latvia	Present	0.7 Km^2	Stable	Decreasing
Lithuania	Present	1 Km^2	Decreasing	Stable
Netherlands	Present	95 Km^2	Increasing	Stable
Poland	Present	0.5 Km^2	Decreasing	Decreasing
Portugal	Portugal mainland: Present	2 Km^2	Decreasing	Decreasing
Spain	Spain mainland: Present	0.1 Km^2	Decreasing	Decreasing
Sweden	Present	1 Km^2	Unknown	Decreasing
UK	Northern Island: Present United Kingdom: Present	8.8 Km^2	Unknown	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)
Guernsey	Uncertain	Unknown Km^2	Unknown	Unknown
Jersey	Uncertain	Unknown Km^2	Unknown	Unknown
Kaliningrad	Uncertain	Unknown Km^2	Unknown	Unknown
Norway	Norway Mainland: 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	2536250 Km^2	626	231 Km^2	
EU 28+	2611550 Km^2	630	231 Km^2	

Distribution map



The map is rather complete, with maybe some gaps in the Baltic region. Data sources: Art17, EVA.

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

95% of the habitat type is within the EU28.

Trends in quantity

Different countries report very different trends. The countries with the largest area (France, Netherlands, Belgium) report a positive trend, mainly caused by expansion of *Hippophae rhamnoides* scrub. Denmark however, reports a stronge decrease. Also many of the countries with small extents reported a decrease of the quantity. On average the trend is more or less stable. The data does not include figures from outside the EU28.

- Average current trend in quantity (extent)
  EU 28: Stable
  EU 28+: Stable
- Does the habitat type have a small natural range following regression?
  No
  Justification
  The habitat is found everywhere along the coasts of the Atlantic and the Baltic Sea.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  Within dune systems the area of dune scrub varies from being rather limited to occupying large areas.

Trends in quality

The countries with largest occurrences report stable trends in quality, but on average the trend is slightly

negative. Only 7% of the total area has a declined quality.

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

Pressures and threats

Most important threats to this habitat, besides destruction by urbanisation (Spain), are (1) succession towards forest, (2) expansion of alien species, like *Rosa rugosa* and *Prunus serotina*, (3) intensification of agricultural practices, including overgrazing, and (4) trampling by recreation and outdoor activities. For wet examples of the habitat changes in hydraulic conditions cause deterioration. Finally atmosferic deposition may be a problem for the habitat, but - on the other hand - the shrubs may profit from it as well, by overgrowing dune grasslands. Notable is that the characteristic species *Hippophae rhamnoides* is considered as a non-native problematic species in large parts of the UK.

List of pressures and threats

Agriculture

Agricultural intensification

Human intrusions and disturbances

Outdoor sports and leisure activities, recreational activities

Invasive, other problematic species and genes

Invasive non-native species

Natural System modifications

Human induced changes in hydraulic conditions

Natural biotic and abiotic processes (without catastrophes)

Species composition change (succession)

Conservation and management

Along the Atlantic coast, in the larger dune areas, expansion of the habitat is considered a threat to other, more open and more species-rich habitats, like dune grasslands and dune slacks. This is especially the case in large parts of the UK, where *Hippophae rhamnoides* is considered as a non-native species. On the other hand the habitat has an important function for animals, by providing food (berries) and shelter. In optimal situations there is a balance between dynamic conditions causing rejuvenation of dunes and succession towards dune scrub and forest, and no specific management is needed. Many dune areas however are relatively small and often the focus of management will be on the more open habitats, which may be maintained by extensive grazing. In such cases the preservation of at least some patches of shrubland is important and will increase the overall diversity and species-richness of the dunes.

Specific measures relate to the removal of invasive non-native species, which are able to dominate dune shrublands.

List of conservation and management needs

Measures related to hunting, taking and fishing and species management

Specific single species or species group management measures

Conservation status

Annex I:

2160: ATL FV, CON U2

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

The habitat can spontaneously restore when dunes stabilise. Succession towards shrubland can occur within short periods (10-20 years).

Effort required

10 years	20 years
Naturally	Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	0 %	Unknown %	Unknown %	Unknown %
EU 28+	0 %	Unknown %	Unknown %	Unknown %

The trend in area in the last ca. 50 years is more or less stable, ranging from -1.6% to +3.7% when using minimum and maximum reported values. Therefore the habitat is assessed as Least Concern under criterion A1. No data on future trends are available, while long historical trends have been reported for only 13% of the present area.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	253,625 Km^2	No	No	No	626	No	No	No	No
EU 28+	261,155 Km^2	No	No	No	630	No	No	No	No

The AOO and EOO are both much larger than the thresholds for the criteria B1 and B2, there is no continuous decline or future threat, and also the number of locations is very high. These figures lead to the category Least Concern for criterion B.

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	7 %	32 %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	7 %	32 %	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%

In the last 50 years the negatively affected extent of this habitat is very small, less than 10%. Within this area the severity of quality decrease is slight to moderate. There is no historic information about the reduction in quality or in the future. Thus this habitat is assessed as Least Concern under criteria C/D.

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. Thus, this habitat is assessed as Data Deficient under criterion E.

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

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	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			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Least Concern	-	Least Concern	-

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

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