B1.7c Baltic coniferous coastal dune woodland

Summary

Baltic coniferous coastal dune woods occur locally along the coast of the Baltic sea where dune sands have become stabilised and removed from the influence of salty winds. Their overall character is indistinguishable from similar woodland inland, the main colonisers being *Pinus sylvestris* with *Picea abies* to more boreal the north, often with some broad-leaved trees, and sub-shrubs of heaths/ The habitat has been much manipulated in recent times, by ways of landuse, for need of timber and for stabilisation of dunes. Over a longer historical period it has increased its area, but the actual trend is a decline with afforestation and coastal development.

Synthesis

The Baltic coniferous costal dune woods are assessed as Vulnerable (VU) due to the large negative trend in quality over the last 50 years (criterion C/D1). More than half of the area has degraded to a rather high degree.

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

Sub-habitat types that may require further examination

No sub-habitat is known that needs further investigation.

Habitat Type

Code and name

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Baltic coniferous coastal dunes at Hagestad, Sweden (Photo: Hans Gardfjell).

Coniferous forest of the association *Empetro-Pinetum* in the Słowiński National Park at Rąbka, near Łeba, Poland (Photo: Zygmunt Kącki).

Habitat description

Dune woods develop naturally where coastal sands become sufficiently stabilised and remote from the influence of saline ground water or spray to sustain a permanent cover of trees and they bear a strong resemblance to the zonal woodland types of the regional climate. On the Baltic coast of Germany, Denmark, Sweden, Finland, Poland, Estonia, Lithuania and Latvia, where the climate is Boreal to the north

and east, Continental to the south-west, dune woods persist locally, though often reduced in quality now by replanting with introduced conifers. *Pinus sylvestris* is the natural coloniser and dominant and the overall character is similar to G3.4/5a Temperate Continental *Pinus sylvestris* woodland.

Associated trees and shrubs include *Quercus robur* to the south, with *Betula pendula, Juniperus communis*. Often there is a heathy field layer with *Vaccinium myrtillus, V. vitis-idaea, Calluna vulgaris, Empetrum nigrum, Arctostaphylos uva-ursi*, *Deschampsia flexuosa* and such distinctive boreal plants as *Moneses uniflora, Linnaea borealis, Chimaphia umbellata* and *Pyrola rotundifolia.* More locally, on calcareous sands, the flora can be basiphilous and, in more open stands, have a distinctively grassy look with *Festuca ovina, Hieracium pilosella, Peucedanum oreoselinum, Phleum phleoides, Thymus serpylllum.* On more recently colonised sands, dune species such as *Ammophila arenaria, Leymus arenarius* and *Carex arenaria* can persist among the trees. In Poland a variety of the habitat is found in wet depressions, with *Ledum palustre* dominating the field layer.

Indicators of quality:

- Presence of mature canopy of *Pinus sylvestris* with associated woody and herb species.
- Absence of planted *Pinus sylvestris* or other commercial conifers with loss of associated native flora.
- Infrequent burial of trees by storm-blown sands and forest fires.
- Absence of logging.
- Absence of human disturbance due to tourism or military activity.

Characteristic species:

Tree canopy: *Betula pendula, Quercus robur, Pinus sylvestris*

Field layer: *Arctostaphylos uva-ursi*, *Calluna vulgaris, Deschampsia flexuosa, Empetrum nigrum, Juniperus communis, Linnaea borealis, Melampyrum pratense, Moneses uniflora, Peucedanum oreoselinum, Chimaphila umbellata, Pyrola rontundifolia, Vaccinium myrtillus, V. vitis-idaea*

Mosses: *Leucobryum glaucum*

Lichens: *Cladina* subgen. *Cladina*, *Cetratia islandica, Stereocaulon* sp.

Classification

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

Annex 1:

2180 Wooded dunes of the Atlantic, Continental and Boreal region

EuroVegChecklist (alliances):

Dicrano-Pinion (Libbert 1933) W. Matuszkiewicz 1962

Festuco-Pinion Passarge1968

Emerald:

B1.7 Coastal dune woods

MAES:

Coastal

IUCN:

1.1 Boreal Forest

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

Regions
Boreal

Justification
The Baltic coniferous dune woods ara a very typical phenomenon along the coasts of the Baltic, in areas with dunes.

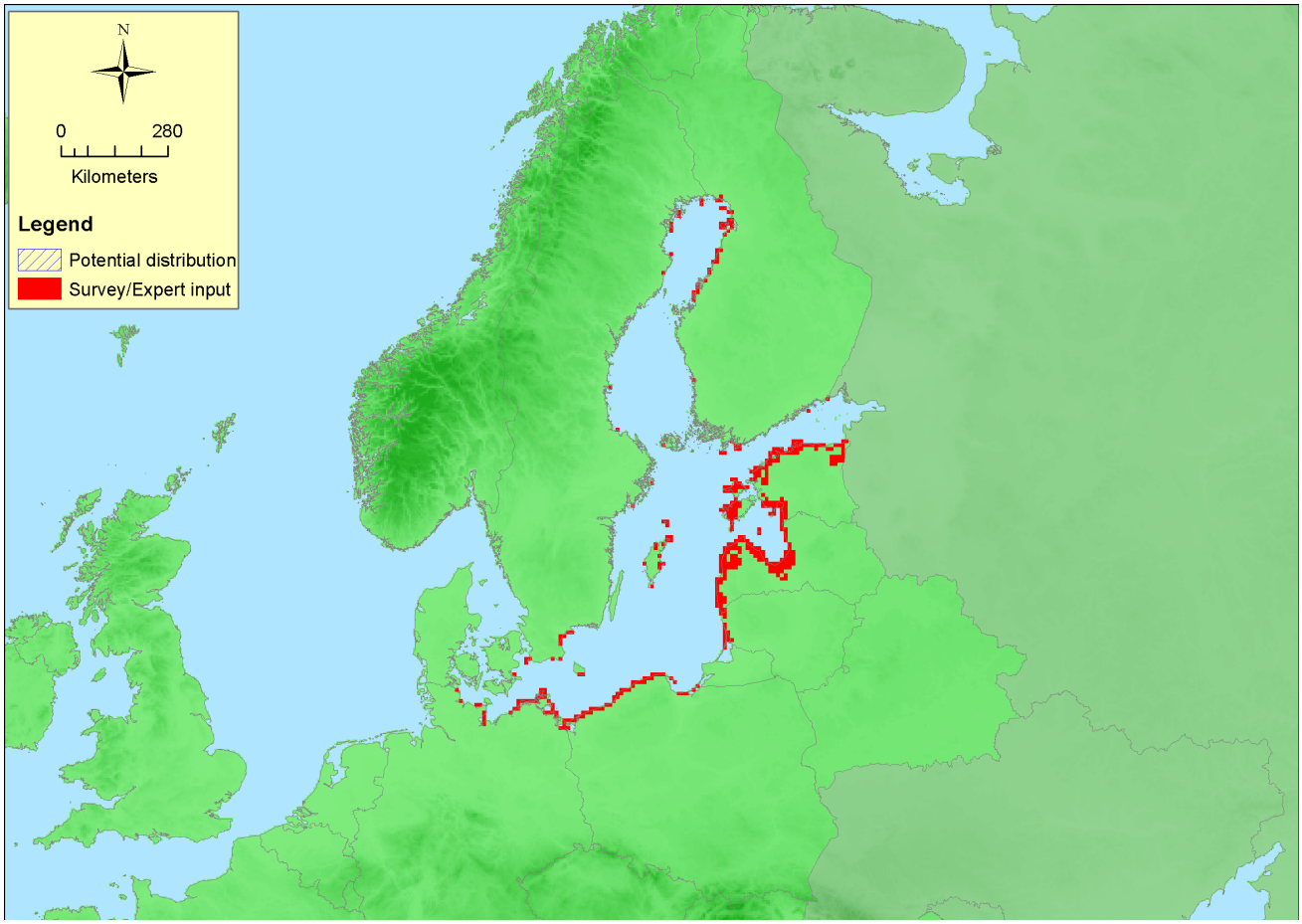
Geographic occurrence and trends

EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Estonia	Present	80 Km^2	Stable	Unknown
Finland	Aland Islands: Present Finland mainland: Present	40 Km^2	Decreasing	Decreasing
Germany	Present	20 Km^2	Stable	Decreasing
Latvia	Present	600 Km^2	Decreasing	Decreasing
Lithuania	Present	41 Km^2	Increasing	Decreasing
Poland	Present	50 Km^2	Decreasing	Decreasing
Sweden	Present	63 Km^2	Increasing	Decreasing

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	789700 Km^2	435	894 Km^2	
EU 28+	789700 Km^2	435	894 Km^2	

Distribution map



Map rather complete, with some gaps for Russia. Data: Art17.

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

Close to 100% of the area is found in the EU28, just a small part occurs outside, in Kaliningrad.

Trends in quantity

Trends in quantity differ between countries, but the overall trend is today decreasing with about 15%, an expected future decrease of about 5% and an historical increase with about 6%.

- 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 EOO is much larger than 50,000 km^2.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  The habitat has not a very limited area in the sites where it is found.

Trends in quality

The quality is in most areas declining because of lack of fires, expansion of invasive species and wrong management.

- Average current trend in quality
  EU 28: Decreasing

EU 28+: Decreasing

Pressures and threats

Trough history there have been many different activites going on in this habitat, from use of the timber to stabilising dunes by planting both native and non-native species. There are very few areas where the habitat has been undisturbed in the last 100 years, and in these areas the lack of fire has changed the species compostition from a more natural situation.

List of pressures and threats

Sylviculture, forestry

Forest replanting (non native trees)
Forestry clearance

Urbanisation, residential and commercial development

Continuous urbanisation

Human intrusions and disturbances

Trampling, overuse

Pollution

Nitrogen-input

Invasive, other problematic species and genes

Invasive non-native species

Conservation and management

Many of the sites with the habitat need some management, but it is very different in different areas. It varies from removal of invasive species or planted non-native trees to activate forest fires. In some areas the highest conservation need is legal protection.

List of conservation and management needs

Measures related to forests and wooded habitats

Restoring/Improving forest habitats

Measures related to spatial planning

Establish protected areas/sites

Conservation status

Annex 1:

2180 BOR U2, CON U1

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

To restore coniferous costal dune woods takes long time as the forest is extremely slow growing. If the forest is clearcut it will take several hundred years to come back to what it was, and there is no known way to fasten this process. The natural regeneration is by fire and those cycles also take long time periods.

Effort required

200+ years
Naturally and through intervention

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-15.4 %	-5.4 %	unknown %	+6 %
EU 28+	-15.4 %	-5.4 %	unknown %	+6 %

The trend in the last 50 years is a decrease with about 15%, but the historical trend is an increase. For the future a decrease is expected, but less than the recent change.

Criterion B: Restricted geographic distribution

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

The habitat doesn't meet the EOO or AOO thresholds, nor does it occur in relatively few locations. Therefore it is assessed Least Concern under the B criteria.

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

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	61.4 %	63.3 %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	61.4 %	63.3 %	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 quality of the habitat is strongly affected to a large extent, based on data from xxx countries. With better data the situation is probably even worse. The figures lead to the conclusion Vulnerable.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

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

No quantitative analysis has been carried out on the risk for collapse of this habitat.

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	LC	DD	LC	LC	LC	LC	VU	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	LC	DD	LC	LC	LC	LC	VU	DD	DD	DD	DD	DD	DD	DD	DD	DD

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

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

Assessors
M. Aronsson

Contributors
Habitat definition: J. Rodwell

Territorial data: P. Finck, A. Jacobson, Z. Kącki, T. Kontula, V. Rašomavičius, U. Raths, U. Riecken, I. Rove, I. Sell, A. Ssymank

Working Group Coastal: A. Acosta, F. Bioret, H. Gardfjell, J. Janssen, J. Loidi, R. Tzonev

Reviewers
J. Janssen

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