



# Ramsar Information Sheet

Published on 2 April 2015

## Netherlands Duinen en Lage Land Texel



Designation date	29 August 2000
Site number	2213
Coordinates	53°5'34"N 4°49'11"E
Area	4 088,80 ha

## Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

## 1 - Summary

### Summary

Extensive dune area along the North Sea side of Texel including small lakes and dune slacks (e.g. De Muy, De Geul), sea inlets with salt marshes (De Slufter, De Mok), and sand flats (De Hors). Part of the inner dunes have forest plantations (largely excluded from site). Total length 25 km, width varies from 200 m (near village De Koog) to 2 km. Inland are polders rich in orchids and meadow birds.

## 2 - Data & location

### 2.1 - Formal data

#### 2.1.1 - Name and address of the compiler of this RIS

Compiler 1

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#### 2.1.2 - Period of collection of data and information used to compile the RIS

To year 2013

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish) Duinen en Lage Land Texel

### 2.2 - Site location

#### 2.2.1 - Defining the Site boundaries

b) Digital map/image

&lt;1 file(s) uploaded&gt;

Boundaries description (optional)

The Ramsar site 'Duinen en Lage Land Texel' was formerly an integral part of the Ramsarsite 'Waddeneilanden en Noordzeekustzone'. This Ramsar site 'Waddeneilanden en Noordzeekustzone' however has also been designated as six separate European Natura 2000-sites, one named Noordzeekustzone and the others named after the respective islands 'Duinen en Lage land Texel', 'Duinen Vlieland', 'Duinen Terschelling', 'Duinen Ameland' and 'Duinen Schiermonnikoog'. A logical step as the ecosystems of the Noordzeekustzone and the islands are quite different and all islands have their own nature management plan.

For this RIS-version, the new Ramsar site boundaries have therefore been adjusted to the Natura 2000- boundaries, while the respective names for the Natura 2000-sites have been adopted.

For the 'Duinen en Lage Land Texel' this means that several terrains have been added within the Ramsarsite. In total the area now measures 4088,8 ha.

#### 2.2.2 - General location

a) In which large administrative region does the site lie?	Province of Noord-Holland
b) What is the nearest town or population centre?	Largest village at the island of Texel is Den Burg. The municipality has 13.668 inhabitants (per 1-1-2012) (Source: CBS, Netherlands Statistics).

#### 2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes  No

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes  No

Idem No 

d) Transboundary Ramsar Site name: Wadden Sea

#### 2.2.4 - Area of the Site

Official area, in hectares (ha): 4088.8

Area, in hectares (ha) as calculated from GIS boundaries 4088.95

## 2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Other scheme (provide name below)	Atlantic

Other biogeographic regionalisation scheme

The bio-geographic regions dataset used, contains the official delineations used in the Habitats Directive (92/43/EEC) and for the EMERALD Network set up under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

### 3 - Why is the Site important?

#### 3.1 - Ramsar Criteria and their justification

Criterion 1: Representative, rare or unique natural or near-natural wetland types

Other ecosystem services provided

The Dutch coastal dunes system stretching from the north-eastern border with Germany and the south-western border with Belgium is actually one big nature reserve. Within the Netherlands but also within the Atlantic biogeographic region it may be regarded as one of the most biodiverse ecosystems. The over 4000 ha of the 'Duinen en Lage Land Texel' represent one of the finest examples with a large variety of habitat types and species of European importance (see among others the habitat types listed in Annex 1 in Additional Material). The dunes still show gradual transitions to the polder land which is rich in orchids and meadow birds.

Criterion 2 : Rare species and threatened ecological communities

Criterion 3 : Biological diversity

Justification

The Duinen en Lage Land Texel is designated as a Natura 2000 site (both SAC and SPA) and can therefore be considered important for maintaining the biodiversity of the Atlantic biogeographic region. Besides the species mentioned under criterion 2, the site has also been designated as a SAC for a range of habitat types (Annex I of HD) and SPA for a number of bird species that are not on Annex I of the BD.

Please refer to Section 3.4 Ecological communities whose presence relates to the international importance of the site for a list of Habitat types (according to the interpretation manual of EU-Habitat Directive) for which the site has been designated as a SAC).

Criterion 4 : Support during critical life cycle stage or in adverse conditions

Criterion 6 : >1% waterbird population

#### 3.2 - Plant species whose presence relates to the international importance of the site

Scientific name	Common name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
<i>Anacamptorchis moriooides</i> 	Green Winged Orchid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - CR	
<i>Anagallis tenella</i> 	Bog Pimpernel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Bryum neodamense</i> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - CR	
<i>Campyliadelphus elodes</i> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - EN	
<i>Carex pulicaris</i> 	Flea Sedge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - EN	
<i>Ctenidium molluscum</i> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - EN	
<i>Dactylorhiza incarnata</i> 	Early Marsh orchid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Dactylorhiza majalis</i> 	Western Marsh Orchid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Drepanocladus sendtneri</i> 	Sendtner's drepanocladus moss	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - CR	
<i>Eleocharis quinqueflora</i> 	Fewflower Spikerush	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	National Red List - EN	
<i>Epipactis palustris</i> 	Marsh Helleborine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Fissidens adianthoides</i> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Liparis loeselii</i> 	Fen Orchid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - EN ; HD Annex II, IV	
<i>Menyanthes trifoliata</i> 	Bog Bean	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Oenanthe lachenalii</i> 	Parsley Water dropwort	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Parnassia palustris</i> 	Grass of parnassus	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	National Red List - VU	
<i>Platanthera bifolia</i> 	Lesser Butterfly Orchid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - EN	
<i>Pyrola minor</i> 	Common Wintergreen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - EN	
<i>Pyrola rotundifolia</i> 	Round-leaved Wintergreen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Rhizomnium pseudopunctatum</i> 	rhizomnium moss	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - VU	
<i>Riccardia multifida</i> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - EN	
<i>Schoenus ferrugineus</i> 	Black Bog-rush	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	National Red List - VU	
<i>Scorpidium scorpioides</i> 	scorpidium moss	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	National Red List - CR	

## Species listed under Criteria 2:

## Moss species:

- *Campylium stellatum*: National Red List (VU) (has not yet been assessed for the IUCN Red List and is not in the Catalogue of Life)

## Mushroom species (have not yet been assessed for the IUCN Red List, but is in the Catalogue of Life):

- *Marasmiellus trabutii*: National Red List - VU
- *Hygrocybe helobia*: National Red List - VU
- *Hygrocybe phaeococcinea*: National Red List - EN
- *Entoloma rhombisporum*: National Red List - CR

## Noteworthy flora (not listed under Criteria 2):

## Mushroom Species

- *Entoloma queletii*: National Red List - NT (has not yet been assessed for the IUCN Red List, but is in the Catalogue of Life)
- *Entoloma querquedula*: National Red List - NT (has not yet been assessed for the IUCN Red List and is not in the Catalogue of Life)

## 3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion		Species contributes under criterion		Pop. Size	Period of pop. Est.	% occurrence	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification	
			2	4	6	9									
CHORDATA / AVES	 <i>Asio flammeus</i>	Short-eared Owl	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 LC GCR	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - CR ; BD Annex I		
CHORDATA / AVES	 <i>Botaurus stellaris</i>	Bittern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 LC GCR	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - EN ; BD Annex I		
CHORDATA / AVES	 <i>Charadrius alexandrinus</i>	Kentish Plover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 LC GCR	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - EN	Breeding bird	
CHORDATA / AVES	 <i>Charadrius hiaticula</i>	Common Ringed Plover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 LC GCR	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU	Breeding bird	
CHORDATA / AVES	 <i>Circus aeruginosus</i>	Western Marsh Harrier	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 LC GCR	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC ; BD Annex I		
CHORDATA / AVES	 <i>Circus cyaneus</i>	Northern Harrier	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 LC GCR	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - NT ; BD Annex I		
ARTHROPODA / INSECTA	 <i>Issoria lathonia</i>	Queen of Spain Fritillary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU		
CHORDATA / AVES	 <i>Larus fuscus graellsii</i>	Lesser Black-backed Gull	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	43266 2006-2010	11.4	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC	Breeding bird. The site is of particular importance for many breeding and non-breeding bird species, of which several species gather in relatively small areas like breeding colonies of Eurasian Spoonbill ( <i>Platalea leucorodia</i> ), Lesser Black-backed Gull ( <i>Larus fuscus graellsii</i> ), Avocet ( <i>Recurvirostra avosetta</i> ), Little Tern ( <i>Sterna albifrons</i> ) and Sandwich Tern ( <i>Sterna sandvicensis</i> ).
CHORDATA / MAMMALIA	 <i>Microtus oeconomus</i>	Root vole	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		 LC GCR	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU ; HD Annex II, IV	Priority species - the island of Texel is one of the five regions in the Netherlands where the endemic subspecies of the Root Vole <i>Microtus oeconomus arenicola</i> exists and the site is one of the main habitats of this subspecies in the Netherlands (and the world!).

Phylum	Scientific name	Common name	Species qualifies under criterion		Species contributes under criterion		Pop. Size	Period of pop. Est.	% occurrence	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification		
			2	4	6	9										
CHORDATA/ AVES	Oenanthe oenanthe 	Northern Wheatear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - EN	Breeding bird		
CHORDATA/ AVES	Platalea leucorodia 	Eurasian Spoonbill	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1005	2006-2010	10.1	LC 	<input type="checkbox"/>	National Red List - LC ; BD Annex I	The site is of particular importance for many breeding and non-breeding bird species, of which several species gather in relatively small areas like breeding colonies of Eurasian Spoonbill (Platalea leucorodia), Lesser Black-backed Gull (Larus fuscus graelii), Avocet (Recurvirostra avosetta), Little Tern (Sternula albifrons) and Sandwich Tern (Sternula sandvicensis).
CHORDATA/ AVES	Recurvirostra avosetta 	Avocet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC ; BD Annex I	The site is of particular importance for many breeding and non-breeding bird species, of which several species gather in relatively small areas like breeding colonies of Eurasian Spoonbill (Platalea leucorodia), Lesser Black-backed Gull (Larus fuscus graelii), Avocet (Recurvirostra avosetta), Little Tern (Sternula albifrons) and Sandwich Tern (Sternula sandvicensis).		
CHORDATA/ AVES	Saxicola torquatus 	Common Stonechat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC	Breeding bird
CHORDATA/ AVES	Somateria mollissima 	Common Eider	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC	Breeding bird		
CHORDATA/ AVES	Sternula albifrons 	Little Tern	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU ; BD Annex I	The site is of particular importance for many breeding and non-breeding bird species, of which several species gather in relatively small areas like breeding colonies of Eurasian Spoonbill (Platalea leucorodia), Lesser Black-backed Gull (Larus fuscus graelii), Avocet (Recurvirostra avosetta), Little Tern (Sternula albifrons) and Sandwich Tern (Sternula sandvicensis).		
CHORDATA/ AVES	Thalasseus sandvicensis 	Sandwich Tern	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2886	2006-2010	1.7	LC 	<input type="checkbox"/>	<input type="checkbox"/>	The site is of particular importance for many breeding and non-breeding bird species, of which several species gather in relatively small areas like breeding colonies of Eurasian Spoonbill (Platalea leucorodia), Lesser Black-backed Gull (Larus fuscus graelii), Avocet (Recurvirostra avosetta), Little Tern (Sternula albifrons) and Sandwich Tern (Sternula sandvicensis).

Butterflies (neither in the Catalogue of Life nor in the IUCN Red List):

Argynnis aglaja (Dark green fritillary): National Red List - CR

Argynnis niobe (Niobe Fritillary): National Red List - EN

### 3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )	<input type="checkbox"/>		
Mudflats and sandflats not covered by seawater at low tide	<input type="checkbox"/>		
Salicornia and other annuals colonizing mud and sand	<input type="checkbox"/>		
Embryonic shifting dunes	<input type="checkbox"/>		
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes')	<input type="checkbox"/>		
Fixed coastal dunes with herbaceous vegetation ('grey dunes')	<input type="checkbox"/>	Priority habitat types	
Decalcified fixed dunes with <i>Empetrum nigrum</i>	<input type="checkbox"/>	Priority habitat types	
Atlantic decalcified fixed dunes ( <i>Calluno-Ulicetea</i> )	<input type="checkbox"/>	Priority habitat types	
Dunes with <i>Hippophaë rhamnoides</i>	<input type="checkbox"/>		
Dunes with <i>Salix repens</i> ssp. <i>Argentea</i> ( <i>Salicion arenariae</i> )	<input type="checkbox"/>		
Humid dune slacks	<input type="checkbox"/>		
Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	<input type="checkbox"/>	Priority habitat types	

## 4 - What is the Site like? (Ecological character description)

### 4.1 - Ecological character

The Dutch Wadden Sea is bordered by a series of dune barrier islands, the "Wadden islands", among which the island of Texel. The natural values of the area are primarily connected to the shallow sea with its mud and sand flats that fall dry at low tide. Among the birds, the waders forage at low tide and rest on higher beaches, dunes and islands at high tide.

Due to the harsh climatic circumstances natural woodland in the Wadden area is generally low and dominated by Oak (*Quercus robur*). In the 20th century many conifers have been planted to stabilize shifting sand dunes, partly as an employment project in the 1930's.

Main ecosystem services of the site:

- The chain of Wadden islands (among which Texel) creates shelter from the North Sea which protects and sustains the highly productive Wadden Sea (a.o. in terms of fisheries);
- The Wadden islands dunes protect the islands hinterland from the North Sea;
- The dunes are a catchment area for rainwater which provides high quality drinking (ground)water;
- The sunny climate and the scenic and natural beauty of the Wadden islands has turned the islands into one of the main tourism destinations in the Netherlands.

### 4.2 - What wetland type(s) are in the site?

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1:greatest - 4:least)	Area (ha) of wetland type	Justification of Criterion 1
H: Intertidal marshes		1		Representative
J: Coastal brackish / saline lagoons		2		

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1:greatest - 4:least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Marshes on inorganic soils >> Tp: Permanent freshwater marshes/pools		3		

### 4.3 - Biological components

#### 4.3.1 - Plant species

<no data available>

#### 4.3.2 - Animal species

<no data available>

### 4.4 - Physical components

#### 4.4.1 - Climate

<no data available>

#### 4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

Coastal

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

The Wadden islands like Texel have their own catchment area. The islands basically consist of dune sands and silt polders claimed from the sea. The land surface of Texel ranges some 170 km<sup>2</sup>.

#### 4.4.3 - Soil

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes  No

Please provide further information on the soil (optional)

Texel is the largest Wadden Sea island. The Ramsar site supports wet dune slacks, dry dunes, woodland, heath land, salt marshes and polders. The northern and southern part of the dunes originally belonged to two different islands: the original Texel and Eijerland. The part north of the Slufter (Eierlandsche Duinen) encompasses old dunes with grasslands and heath land; the southern part is more varied with both relatively young and old dunes.

#### 4.4.4 - Water regime

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.

The area comprises a large variety of dune slacks which differ in infiltration and the upwelling of fresh ground water.

Ammophila arenaria has been planted and reed screens have been placed in order to fix the dunes. Between 1979 and 1990 sand was added in order to stop erosion of the dunes. For the same reason a long dam (800 m) was built at the northern side into the North Sea. The groundwater level, which is only replenished by precipitation, declined 50 to 100 centimetres due to coastal erosion, digging of drainage streams, water extraction and afforestation of part of the dune area. Inland are some low-lying polders rich in orchids and meadow birds.

#### 4.4.5 - Sediment regime

Please provide further information on sediment (optional):

See 4.4.4 Water Regime, for a description of the measures taken to stop the erosion of the dunes.

#### 4.4.6 - Water pH

<no data available>

#### 4.4.7 - Water salinity

<no data available>

#### 4.4.8 - Dissolved or suspended nutrients in water

<no data available>

#### 4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the i) broadly similar  ii) significantly different  site itself:

### 4.5 - Ecosystem services

#### 4.5.1 - Ecosystem services/benefits

##### Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Low
Fresh water	Drinking water for humans and/or livestock	Medium

##### Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	Medium

##### Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	High
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	High

Other ecosystem service(s) not included above:

The dune area form the natural coastal defence of the island against the North Sea. Furthermore the dunes play an important role for fresh (drinking) water extraction.

A primary indicator of the extent of tourism and recreation in the Wadden Sea region (here all five islands and mainland municipalities) is the number of overnight stays in commercial enterprises (nine beds or more). These are approx. 12 million overnight stays per year (data 1996).

a) within the Ramsar site:

Residential (scattered) 1%

Military training 4%

b) in the surroundings/catchment:

The Wadden Sea and the North Sea represent the immediate surroundings of the Wadden Island. Recreation and fisheries are some of the main user groups.

Have studies or assessments been made of the economic valuation of  
ecosystem services provided by this Ramsar Site?

#### 4.5.2 - Social and cultural values

<no data available>

#### 4.6 - Ecological processes

<no data available>

## 5 - How is the Site managed? (Conservation and management)

### 5.1 - Land tenure and responsibilities (Managers)

#### 5.1.1 - Land tenure/ownership

Provide further information on the land tenure / ownership regime (optional):

a) within the Ramsar site:

Staatsbosbeheer, Natuurmonumenten, Ministry of Defense, private owners.

b) in the surrounding area:

The water (Wadden Sea and North Sea) is state owned, on land several private owners.

#### 5.1.2 - Management authority

##### Main management authorities:

Please list the local office / offices of any agency or organization responsible for managing the site:

- Staatsbosbeheer, P.O. Box 1300, 3970 BH Driebergen, the Netherlands, tel. +31 (0)30-6926111.
- Natuurmonumenten, P.O. Box 9955, 1243 ZS 's-Graveland, tel. +31 (0)35 655 99 33.
- Rijkswaterstaat Noord-Nederland, ZuiderSingel 3, 8911 AV Leeuwarden, P.O. Box 2301, 8901 JH, Leeuwarden, tel. +31 (0)58 234 43 44.
- Ministry of Defense, P.O. Box 20701, 2500 ES, The Hague, +31 (0)70 318 81 88.

##### See above

### 5.2 - Ecological character threats and responses (Management)

#### 5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

##### Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Recreational and tourism activities	Medium impact		<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Para)military activities	Low impact		<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 5.2.2 - Legal conservation status

##### Regional (international) legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
EU Natura 2000	Duinen en Lage Land Texel		whole

##### National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
National Park	Duinen van Texel		partly

#### 5.2.3 - IUCN protected areas categories (2008)

II National Park: protected area managed mainly for ecosystem protection and recreation

IV/Habitat/Species Management Area: protected area managed mainly for conservation through management intervention

#### 5.2.4 - Key conservation measures

<no data available>

#### 5.2.5 - Management planning

Is there a site-specific management plan for the site? In preparation

Has a management effectiveness assessment been undertaken for the site? Yes  No

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning Yes  No   
processes with another Contracting Party?

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

A wide variety of hides, excursions, information booklets etc.

The area has a visitor centre: "EcoMare", Centrum voor Wadden en Noordzee; tentoonstellingen en opvang van zeehonden en zeevogels. Ruijslaan 92, 1796 AZ De Koog, tel. 0222 317741. Information on excursions can be obtained through the visitor centre and Tourist Office (VVV's) of Texel.

URL of site-related webpage (if relevant): [www.ecomare.nl](http://www.ecomare.nl)

#### 5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No need identified

#### 5.2.7 - Monitoring implemented or proposed

Ongoing biodiversity monitoring is one of the obligatory activities in relation to the designated Natura 2000-habitat types and species.

Numerous scientific research projects are ongoing in the Wadden Sea, North Sea Coastal area and the Wadden Islands. Main responsible executors are:

- NIOZ: Royal Netherlands Institute for Sea Research;
- Wageningen IMARES: The Institute for Marine Resources and Ecosystem Studies (which joins same facilities with NIOZ);
- Wageningen Alterra: research institute for our green living environment (mainly terrestrial and fresh water research);
- University of Groningen (offering an MSc in Marine Biology);
- SOVON, the Dutch Bird Research Organisation, coordinates a continues national bird monitoring program in which it cooperates with 7000 volunteers, research institutes and organisations in the monitoring of birds throughout the Netherlands;
- TNO: Netherlands Organization for Applied Scientific Research (Den Helder);
- NIOO: Netherlands Institute of Ecology;
- RIKZ: The National Institute for Coastal and Marine Management.

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

The number of scientific/technical references is too extended to list here. For a complete list please surf to the publication lists of the research institutes on the internet.

For an arbitrary selection see below:

- BirdLife International, 2004. Birds in Europe, population estimates, trends and conservation status. Cambridge, UK: BirdLife International. (BirdLife Conservation Series No. 12).

- Hornman, M., Hustings, F., Koffijberg, K., Kleefstra, R., Klaassen, O., van Winden, E., SOVON Ganzen- en Zwanenwerkgroep & L. Soldaat, 2012. Watervogels in Nederland 2009/2010. SOVON-rapport 2012/02, Waterdienst-rapport 12.06. SOVON Vogelonderzoek Nederland, Nijmegen.

- Janssen, John, A.M. & Joop, H.J. Schaminée, 2009. Europese Natuur in Nederland. Zee en kust Natura 2000-gebieden. KNNV-Uitgeverij. 296p.

- Ministerie van LNV, 2008. Aanwijzingsbesluit Natura-2000 gebied Duinen en Lage Land Texel.

#### 6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<1 file(s) uploaded>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

<no file available>

vi. other published literature

<no file available>

#### 6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:

<no data available>

#### 6.1.4 - Designation letter and related data

Designation letter

<2 file(s) uploaded>

Transboundary Designation letter

<1 file(s) uploaded>

Date of Designation