

## Ramsar Information Sheet

Published on 1 November 2022 Update version, previously published on : 15 December 2014

# **Netherlands**

## Oosterschelde



Designation date 3 April 1987

Site number 354

Coordinates 51°36'49"N 03°55'01"E

Area 36 978,00 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

The Ramsar site Oosterschelde (36,978 ha) is a 40-km long water body. It formerly was an estuary of the Rhine/Maas river system, via Hollands Diep and Krammer-Volkerak, but has been closed off from the sea since 1986 by a storm-surge barrier which allows the tidal regime to continue with some restrictions. The connection with the sea can be completely closed for instance during storms and (very) high tides. Two freshwater lakes have developed on the eastern side following the construction of secondary dams (The two Ramsar sites Markiezaat and Zoommeer). South of this area, the Ramsar site Veersemeer came into being following the closing of the Veerse Gat in 1961. As a result of the tidal currents erosion and sedimentation processes take place that create a divers pattern of salt marshes, mud flats and shallow flats that are uncovered at low tide (the intertidal area) and shallow water and deep tidal channels. The mouth of the Oosterschelde has the deepest channels, which may reach a depth of 45 meter. Between these channels and east of the Zeelandbrug there are vast areas with shallow waters and sandbanks. In the eastern and northern part of the site large mudflats occur.

On the landside of the dike there are remains of creeks and so-called 'inlagen' and 'karrevelden' (shallow water-bodies behind the sea dikes made by the removal of soil, in part for the construction of the dike). These areas mostly consist of humid grasslands and open water. The open water, the intertidal area and the areas on the landside of the dike form an environment for a rich flora and fauna. The great variation of abiotic circumstances creates a great diversity in animal and plant species. The aforementioned variation in environmental types is determined by factors such as tides, currents, water temperature, elevation, water quality and sediment composition.

The Oosterschelde forms a vital link in the West Palearctic Flyway (a chain of wetlands in Europe, Western Africa, arctic Northern Asia and north eastern Canada) for birds. It is the second most important wetland for birds of intertidal areas after the Waddenzee in the Netherlands. A large part of these birds forage on the macrofauna of the mudflats.

## 2 - Data & location

## 2.1 - Formal data

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

Responsible compiler

Institution/agency Wageningen Environmental Research

PO Box 47
6700 AA Wageningen
The Netherlands

National Ramsar Administrative Authority

Institution/agency Ministry of Agriculture Nature and Food Quality

Bezuidenhoutseweg 73

Postal address P.O. Box 20401 2500 EK The Hague The Netherlands

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

From year 2015

To year 2020

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)

Unofficial name (optional)

Formally 'Oosterschelde en Markiezaat'

2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary Yes O No 

(Update) B. Changes to Site area

(Update) For secretariat only: This update is an extension □

2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?

## 2.2 - Site location

#### 2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Former maps 0

Boundaries description

The boundary of the Ramsar site is equal to the Natura 2000-site with the same name.

The former Oosterschelde en Markiezaat Ramsar Site was in 2014 divided into two Ramsar Sites, the larger Oosterschelde and the smaller Markiezaat, following Natura 2000 boundaries.

#### 2.2.2 - General location

a) In which large administrative region does the site lie?

Zeeland

b) What is the nearest town or population centres, among others within the municipality of Schouwen-Duiveland with a population of 34.065 (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 O No  $\odot$
- b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes O No lacktriangle

## 2.2.4 - Area of the Site

Official area, in hectares (ha): 36978

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

## 2.2.5 - Biogeography

## Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
EU biogeographic regionalization	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

The site is a large almost 37.000 ha shallow sea arm with a large area of intertidal mudflats and other marine habitat types. Due to its size and location on one of the main bird migration routes it provides refuge throughout the year to a wide range of species in substantial numbers. Sites like these are exceptional within Europe.

- ☑ Criterion 2 : Rare species and threatened ecological communities
- ☑ Criterion 3 : Biological diversity

The Oosterschelde 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. Justification 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, see section 3.4) and SPA for a number of bird species that are not on Annex Lof the BD.

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

Optional text box to provide further information The Ramsar site is also part of the Natura 2000 network in the European Union. It is designated as a Special Protection Area (SPA) for the functions that it provides to specific breeding and non-breeding bird species (e.g. migratory, hibernating, sleeping, resting, foraging). The site is also designated as a Special Area of Conservation (SAC) for specific non-bird species (and habitat types, see section 3.4). For detailed information see:

https://www.natura2000.nl/index.php/gebieden/zeeland/oosterschelde https://natura2000.eea.e uropa.eu/Natura2000/SDF.aspx?site=NL3009016

☑ Criterion 5 : >20.000 waterbirds

Overall waterbird numbers 205.482

Start year 2015

End year 2020

Source of data: Sovon, Dutch Centre for Field Ornithology

Optional text box to provide further Start season 2015/2016. End season 2019/2020. Peak numbers for all five seasons > 20,000. Average information 205,482 individuals.

☑ Criterion 6 : >1% waterbird population

information (CSR7).

Optional text box to provide further The 1% waterbird population thresholds are based on the 7th Edition of the Conservation Status Report

1	Criterion	8 :	Fish	spawning	arounds	. etc

Justificatio

The Oosterschelde is an important spawning area for Garpike Belone belone, Sole Solea solea, Plaice Pleuronectus platessa and Lumpsucker Cyclopterus lumpus and an important nursery for Herring Clupea harengus, Plaice Pleuronectus platessa and Dab Limanda limanda.

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

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA/ LILIOPSIDA	Dactylorhiza incarnata	<b>2</b>					National RL category: VU	
TRACHEOPHYTA/ LILIOPSIDA	Epipactis palustris	✓			LC		National RL category: VU	
TRACHEOPHYTA/ LILIOPSIDA	Spartina maritima	✓					National RL category: CR	

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

Phylum	Scientific name	Species qualifies under criterion	Species contributes under criterion	Pop. Size	Period of pop. Est.	%	IUCN	CITES	CMS Appendix I	Other Status	Justification
Others											
CHORDATA/ MAMMALIA	Microtus oeconomus						LC			National red list species	The site is also designated as a Special Area of Conservation (SAC) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ MAMMALIA	Phoca vitulina	9900					LC			National red list species	The site is also designated as a Special Area of Conservation (SAC) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ MAMMALIA	Phocoena phocoena						LC			National red list species	The site is also designated as a Special Area of Conservation (SAC) for this species and is part of the Natura 2000 network within the European Union.
Fish, Mollusc a	ind Crustacea					'					
CHORDATA/ ACTINOPTERYGII	Alosa fallax						LC			National red list species	The site is also designated as a Special Area of Conservation (SAC) for this species and is part of the Natura 2000 network within the European Union.
MOLLUSCA/ GASTROPODA	Assiminea grayana						LC			National red list species	
CHORDATA/ ACTINOPTERYGII	Belone belone						LC				Criterion 4, 8: The Oosterschelde is an important spawning area for this species.
CHORDATA/ ACTINOPTERYGII	Clupea harengus						LC				Criterion 4, 8: The Oosterschelde is an important nursery for this species.
CHORDATA/ ACTINOPTERYGII	Cyclopterus lumpus										Criterion 4, 8: The Oosterschelde is an important spawning area for this species.
CHORDATA / ACTINOPTERYGII	Limanda limanda						LC				

Phylum	Scientific name	qua ui crit	ecies alifies ader erio	s n	con u cr	pecies tributes under iterion	Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix	Other Status	Justification
MOLLUSCA/ GASTROPODA	Myosotella myosotis	☑□			םם								National red list species	
CHORDATA / ACTINOPTERYGII	Pleuronectes platessa		0							LC				Criterion 4, 8: The Oosterschelde is an important spawning area for this species.
CHORDATA/ ACTINOPTERYGII	Solea solea													Criterion 4, 8: The Oosterschelde is an important spawning area for this species.
Birds														
CHORDATA/ AVES	Anas acuta	<b>V</b>	<b>7</b>		<b>7</b> 6		2518	2015/16-2019/20	4.2	LC			National red list species	Reference population: North-west Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Anas clypeata	<b></b>	9		Z [5	Z 🗆 🗆	1900	2015/16-2019/20	2.9	LC			National red list species	Reference population: North-west & Central Europe (win). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Anas crecca	<b>V</b>	9		<b>7</b> 6		5740	2015/16-2019/20	1.1	LC			National red list species	Reference population: crecca, North-west Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Anas penelope	<b>V</b>	9		Z [	<b>Z</b>	23699	2015/16-2019/20	1.7	LC			National red list species	Reference population: Western Siberia & NE Europe/NW Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Anas platyrhynchos				<b>2</b> 6	200	11532	2015/16-2019/20	0.2	LC				Reference population: platyrhynchos, North-west Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Anas strepera				<b>2</b> 6	200	770	2015/16-2019/20	0.6	LC				Reference population: strepera, North-west Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA / AVES	Anser albifrons				26	<b>2</b> 00	2064	2015/16-2019/20	0.2	LC				Reference population: albifrons, NW Siberia & NE Europe/North-west Europe. foraging, resting
CHORDATA/ AVES	Anser anser				Z (5		6822	2015/16-2019/20	0.7	LC				Reference population: anser, NW Europe/South-west Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA / AVES	Anser serrirostris				26	<b>2</b> 00	582	2015/16-2019/20	0.1					Reference population: rossicus, West & Central Siberia/NE & SW Europe. foraging, resting
CHORDATA/ AVES	Arenaria interpres				<b>2</b> 6		1314	2015/16-2019/20	0.9	LC				Reference population: interpres, NE Canada & Greenland/W Europe & NW Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.

Phylum	Scientific name	Spec qualit und criter	fies er rion	C	Species ontributes under criterion	Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix	CMS I Appendix I	Other Status	Justification
CHORDATA/ AVES	Arenaria interpres interpres				<b>2</b> 00	532	2015/16-2019/20	0.7	LC				Reference population: interpres, Northern Europe/West Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA / AVES	Aythya ferina	<b>I</b>			<b>2</b> 00	125	2015-16-2019/20	0.1	VU				Reference population: North-east Europe/North-west Europe. foraging, resting
CHORDATA/ AVES	Aythya fuligula				<b>2</b> 00	523	2015/16-2019/20	0.1	LC				Reference population: North-west Europe (win). foraging, resting
CHORDATA/ AVES	Branta bernicla		2		<b>2</b> 00	18776	2015/16-2019/20	8.9	LC				Reference population: bernicla, Western Siberia/Western Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Branta leucopsis		2		<b>2</b> 00	42038	2015/16-2019/20	3.5	LC				Reference population: Russia/Germany & Netherlands. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Bucephala clangula	<b>V</b>		<b></b>	<b>2</b> 00	466	2015/16-2019/20	0	LC			National red list species	Reference population: clangula, North-west & Central Europe (win). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Calidris alba				<b>2</b> 00	1484	2015/16-2019/20	0.7	LC				Reference population: alba, East Atlantic Europe, West & Southern Africa (win). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Calidris alpina alpina		<b>2</b>		<b>2</b> 00	37064	2015/16-2019/20	2.8					Reference population: alpina, NE Europe & NW Siberia/W Europe & NW Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Calidris canutus canutus		<b>7</b>		<b>2</b> 00	776	2015/16-2019/20	0.3					Reference population: canutus, Northern Siberia/West & Southern Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Calidris canutus islandica		2		<b>2</b> 00	13938	2015/16-2019/20	2.6					Reference population: islandica, NE Canada & Greenland/Western Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Charadrius alexandrinus	<b>2 2</b> (			<b>2</b> 00	72	2015/16-2019/20	0.1	LC			National red list species	Reference population: alexandrinus, West Europe & West Mediterranean/West Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Charadrius hiaticula	<b>V</b>			<b>2</b> 00	108	2015/16-2019/20	0	LC			National red list species	Reference population: psammodromus, Canada, Greenland & Iceland/W & S Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA / AVES	Chroicocephalus ridibundus					2731	2015/16-2019/20	0.1					Reference population: W Europe/W Europe, W Mediterranean, West Africa. foraging, resting

Phylum	Scientific name	Species qualifies under criterior	s c	Species ontributes under criterion 5 7 8	Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix	I Other Status	Justification
CHORDATA/ AVES	Circus aeruginosus							LC				The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Cygnus columbianus bewickii				81	2015/16-2019/20	0.4					Reference population: bewickii, Western Siberia & NE Europe/North-west Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Cygnus olor				187	2015/16-2019/20	0.1	LC				Reference population: North-west Mainland & Central Europe. foraging, resting
CHORDATA/ AVES	Egretta garzetta	<b>2</b> 20			124	2015/16-2019/20	0.1	LC			National red list species	Reference population: garzetta, Western Europe, NW Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Falco peregrinus							LC	V		National red list species	The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Fulica atra				1379	2015/16-2019/20	0.1	LC				Reference population: atra, North-west Europe (win). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Haematopus ostralegus				32658	2015/16-2019/20	4	NT				Reference population: ostralegus, Europe/South & West Europe & NW Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA / AVES	Larus argentatus				3336	2015/16-2019/20	0.2	LC				Reference population: argentatus, North & North-west Europe. foraging, resting
CHORDATA/ AVES	Larus canus				1160	2015/16-2019/20	0.1	LC				Reference population: canus, NW & C Europe/Atlantic coast & Mediterranean. foraging, resting
CHORDATA/ AVES	Larus fuscus				9052	2015/16-2019/20	1.4	LC				Reference population: intermedius, S Scandinavia, Netherlands, Ebro Delta, Spain. foraging, resting
CHORDATA / AVES	Larus marinus				183	2015/16-2019/20	0.1	LC				Reference population: North & West Europe. foraging, resting
CHORDATA/ AVES	Limosa lapponica				6497	2015/16-2019/20	4.3	NT				Reference population: lapponica, Northern Europe/Western Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Limosa lapponica taymyrensis				7603	2015/16-2019/20	1.5	NT				Reference population: taymyrensis, Western Siberia/West & South-west Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Limosa limosa	<b>2 2 0</b>			433	2016/17	0.5	NT			National red list species	Reference population: limosa, Western Europe/NW & West Africa. foraging, resting
CHORDATA/ AVES	Mergus serrator	~~			1231	2015/16-2019/20	1.4	LC			National red list species	Reference population: North-west & Central Europe (win). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.

Phylum	Scientific name	Species qualifies under criterion	c n	Species ontributes under criterion	Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix	Other Status	Justification
CHORDATA/ AVES	Numenius arquata				24016	2015/16-2019/20	3.2	NT			National red list species	Reference population: arquata, Europe/Europe, North & West Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Numenius phaeopus				293	2015/16-2019/20	0.1	LC				Reference population: phaeopus, Northern Europe/West Africa. foraging, resting
CHORDATA/ AVES	Phalacrocorax carbo				849	2015/16-2019/20	0.1	LC				Reference population: sinensis, Northern & Central Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Platalea leucorodia				806	2015/16-2019/20	5	LC				Reference population: leucorodia, West Europe/West Mediterranean & West Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Pluvialis apricaria	<b>22</b>			8939	2015/16-2019/20	1	LC			National red list species	Reference population: altifrons, Northern Europe/Western Europe & NW Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Pluvialis squatarola				8815	2015/16-2019/20	4.4	LC				Reference population: squatarola, W Siberia & Canada/W Europe & W Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Podiceps auritus	<b>2</b> 20			72	2015/16-2019/20	0.4	VU				Reference population: auritus, North-east Europe (small-billed). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Podiceps cristatus				624	2015/16-2019/20	0.1	LC				Reference population: cristatus, North-west & Western Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA / AVES	Podiceps nigricollis				1322	2015/16-2019/20	0.7	LC				Reference population: nigricollis, Europe/South & West Europe & North Africa. foraging, resting
CHORDATA/ AVES	Recurvirostra avosetta				1678	2015/16-2019/20	1.8	LC				Reference population: Western Europe & North-west Africa (bre). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Sterna hirundo	<b>7</b>			3446	2015/16-2019/20	0.3	LC			National red list species	Reference population: hirundo, Northern & Eastern Europe (bre). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Sterna paradisaea	<b>2</b> 20			82	2015/16-2019/20	0	LC			National red list species	Reference population: Western Eurasia (bre). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.

Phylum	Scientific name	Species qualifies under criterion	Species contributes under criterion 3 5 7 8	Pop. Size	Period of pop. Est.		IUCN Red List	CITES Appendix I	CMS Appendix	Other Status	Justification
CHORDATA/ AVES	Sternula albifrons			60	2015/16-2019/20	0.3	LC			National red list species	Reference population: albifrons, Europe north of Mediterranean (bre). The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Tachybaptus ruficollis			186	2015/16-2019/20	0	LC				Reference population: ruficollis, Europe & North-west Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Tadorna tadorna			5502	2015/16-2019/20	2.2	LC				Reference population: North-west Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Thalasseus sandvicensis			246	2015/16-2019/20	0.1	LC			National red list species	Reference population: sandvicensis, Western Europe/West Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Tringa erythropus			236	2015/16-2019/20	0.2	LC				Reference population: N Europe/Southern Europe, North & West Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Tringa nebularia			457	2015/16-2019/20	0.1	LC				Reference population: Northern Europe/SW Europe, NW & West Africa. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Tringa totanus robusta			2289	2015/16-2019/20	1				National red list species	Reference population: robusta, Iceland & Faroes/Western Europe. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.
CHORDATA/ AVES	Vanellus vanellus			15138	2015/16-2019/20	0.2	NT				Reference population: Europe, W Asia/Europe, N Africa & SW Asia. The site is also designated as a Special Protection Area (SPA) for this species and is part of the Natura 2000 network within the European Union.

<sup>1)</sup> Percentage of the total biogeographic population at the site

Bird data are provided by SOVON, Dutch Centre for Field Ornithology.

The 1% waterbird population thresholds are based on the 7th Edition of the Conservation Status Report (CSR7).

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

## RIS for Site no. 354, Oosterschelde, Netherlands

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Transition mires and quaking bogs	Ø		The site is also designated as a Special Area of Conservation (SAC) for this habitat type and is part of the Natura 2000 network within the European Union.
Dunes with Hippophae rhamnoides	V		The site is also designated as a Special Area of Conservation (SAC) for this habitat type and is part of the Natura 2000 network within the European Union.
Fixed coastal dunes with herbaceous vegetation (	V	Priority habitat type	The site is also designated as a Special Area of Conservation (SAC) for this habitat type and is part of the Natura 2000 network within the European Union.
Atlantic salt meadows (Glauco- Puccinellietalia maritimae)	V		The site is also designated as a Special Area of Conservation (SAC) for this habitat type and is part of the Natura 2000 network within the European Union.
Spartina swards (Spartinion maritimae)	<b>V</b>		The site is also designated as a Special Area of Conservation (SAC) for this habitat type and is part of the Natura 2000 network within the European Union.
Salicornia and other annuals colonizing mud and sand	Ø		The site is also designated as a Special Area of Conservation (SAC) for this habitat type and is part of the Natura 2000 network within the European Union.
Large shallow inlets and bays			The site is also designated as a Special Area of Conservation (SAC) for this habitat type and is part of the Natura 2000 network within the European Union.
Calcareous fens with Cladium mariscus and species of the Caricion davallianae	Ø	Priority habitat type	The site is also designated as a Special Area of Conservation (SAC) for this habitat type and is part of the Natura 2000 network within the European Union.

#### Optional text box to provide further information

The site is also designated as a Special Area of Conservation (SAC) for the habitat types listed above and is part of the Natura 2000 network within the European Union.

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

## 4.1 - Ecological character

As a result of the tidal currents erosion and sedimentation processes take place that create a divers pattern of salt marshes, mud flats and shallow flats that are uncovered at low tide (the intertidal area) and shallow water and deep tidal channels. On the landside of the dike there are remains of creeks and so-called 'inlagen' and 'karrevelden' (shallow water-bodies behind the sea dikes made by the removal of soil, in part for the construction of the dike). These areas mostly exist of humid grasslands and open water.

The open water, the intertidal area and the areas on the landside of the dike form an environment for a rich flora and fauna. The great variation of abiotic circumstances creates a great diversity in animal and plant species. The abiotic conditions are caused by tide, currents, water temperature, height, water quality and composition of the sediment.

Plant communities of European interest are:

- Spartinetum townsendii,
- Salicornietum brachystachyae
- Salicornietum dolichostachyae
- Puccinetllietum maritimae
- Plantagini-Limonietum
- Halimionetum portulacoidis
- Puccinellietum distantis

The Oosterschelde forms a vital link in the West Palearctic Flyway (a chain of wetlands in Europe, Western Africa, arctic Northern Asia and north eastern Canada) for birds, it is the second important area for birds of intertidal areas after the Waddenzee. A large part of these birds forage on the macrofauna of the mudflats.

The change in amounts of some of these bird species suggest an influence of cold winters on the availability of food on the mudflats, but this could also be due to the erosion of mudflats (and food). The amounts of waders (mainly Oystercatcher and Turnstone) are also affected by changes in the shell fish fishery. To minimize these effects some parts are closed for fishery permanently or in some years.

The salt marshes, "inlagen" and areas for nature development are important for plant eating birds as geese en ducks. Some of them increase in numbers, which seems to have a link with the nature development in the Prunje- en Scherpenissepolder (Wigeon, Pintail, Shoveler and Teal). Very important breeding area for shore birds of sand flats and flats with shells, such as Avocet, Ringed plover, Kentish plover, Lesser blackwinged gull, Common tern and Little tern.

After nature, fisheries are the most important function of the Oosterschelde. The most famous are the shellfish farms around Yerseke. The "Zeeland" mussels actually come from the Wadden Sea. They are fished from the Wadden Sea and set out on beds in the Oosterschelde. Oysters are also taken as larvae and sown on oyster beds to grow on. The beds can be recognised by the stakes (tree branches) in the water. Furthermore fishing on lobster, eel, flatfish and anchovy takes place.

For shipping it is used as route from the mouth of the Rhine (Rotterdam port) to the ports of the Westerschelde (Vlissingen, Terneuzen).

## 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
F: Estuarine waters		1	24450	
G: Intertidal mud, sand or salt flats		2	11463	Representative
H: Intertidal marshes		3	739	
J: Coastal brackish / saline lagoons		4	739	

#### Other non-wetland habita

Other Horr-weitaria Habitat									
Other non-wetland habitats within the site	Area (ha) if known								
Dunes									

## 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

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cfb: Marine west coast (Mild with no dry season, warm summer)

The climate according	g to Köppen is rainy (Cb	f).	
4.4.2. Coomonahio oo	W		
4.4.2 - Geomorphic set	ung		
a) Minimum elevation a	bove sea level (in metres)		
a) Maximum elevation a	bove sea level (in metres)		
	En	itire river basin	
	Upper pai	rt of river basin	
	Middle par	rt of river basin $\square$	
	Lower par	rt of river basin 🗹	
		one river basin	
	No	ot in river basin	
		Coastal	
Please name the river hasi	n or hasins. If the site lies in a		the larger river basin. For a coastal/marine site, please name the sea or ocean.
river Meuse & Scheld		Sub-basiii, picase also haliit	and larger river basin. For a coastainmanne site, please name the sea of ocean.
Troi Modoo di Conola			
4.4.3 - Soil			
		Mineral ☑	
	(Undate) o		0- 0 0
		_	Increase O Decrease O Unknown O
		ole information	
Are soil types subject to	change as a result of changin	ng hydrological Yes O No	
Condition	ons (e.g., increased salinity or	acidification)?	
Please provide further infor			
The general soil types	s are: Alluvial, Brown fore	est soils and montane s	oils. The general land use is pasture farming, arable farming and forestry.
111 Materragime			
4.4.4 - Water regime			
Water permanence Presence?	Changes at RIS update		
Usually permanent water	changes assue aparas		
present			
Source of water that maintain	s character of the site		
Presence?	Predominant water source	Changes at RIS update	
Water inputs from surface water		No change	
Water destination Presence?	Changes at DIS undate		
Marine	Changes at RIS update  No change		
Wallio	140 orlange		
Stability of water regime			
Presence?	Changes at RIS update		
Water levels fluctuating (including tidal)	No change		
445.0 " : :			
4.4.5 - Sediment regim	ie		
Signific	cant erosion of sediments occ	curs on the site 🗹	
	(Update) Changes	at RIS update No change	Increase O Decrease O Unknown O

(Update) Changes at RIS update No change 

● Increase O Decrease O Unknown O

(Update) Changes at RIS update No change **●** Increase O Decrease O Unknown O

Significant accretion or deposition of sediments occurs on the site  $\ensuremath{\checkmark}$ 

Significant transportation of sediments occurs on or through the site  $\ensuremath{ arksymbol{arksymbol{arksymbol{o}}}}$ 

Sediment regime unknown

#### Please provide further information on sediment (optional):

The tidal system and the balance between erosion and sedimentation has been disrupted due to the construction of the storm surge barrier in the estuary of the Oosterschelde. The result is that the sand banks, plates, salt marshes etc. net erode. This process continues until a new equilibrium situation is reached and the channels are filled with sediment. Until then, the Oosterschelde will suffer of so-called sand hunger.

#### 4.4.6 - Water pH

Unknown 🗹

Please provide further information on pH (optional):

Probably no change although the pH of the water was not exactly known at the time of completing this database.

## 4.4.7 - Water salinity

Mixohaline (brackish)/Mixosaline (0.5-30 g/l) 

✓

(Update) Changes at RIS update No change 

● Increase O Decrease O Unknown O

Euhaline/Eusaline (30-40 g/l)

(Update) Changes at RIS update No change Increase O Decrease O Unknown O

Unknown

## 4.4.8 - Dissolved or suspended nutrients in water

Unknown 🗷

Please provide further information on dissolved or suspended nutrients (optional):

The water quality is considered good, although the dissolved or suspended nutrients in the water were not exactly known at the time of completing this database.

## 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 O ii) significantly different O site itself:

Surrounding area has greater urbanisation or development

Surrounding area has higher human population density 🗹

Surrounding area has more intensive agricultural use

Surrounding area has significantly different land cover or habitat types

## 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)	Medium

#### Regulating Services

Ecosystem service Examples		Importance/Extent/Significance	
Hazard reduction	Flood control, flood storage	Medium	

## Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Picnics, outings, touring	Medium
Recreation and tourism	Water sports and activities	Medium
Recreation and tourism	Recreational hunting and fishing	Medium
Scientific and educational	onal Educational activities and opportunities Medium	
Scientific and educational Important knowledge systems, importance for research (scientific reference area or site)		Medium
Scientific and educational	Major scientific study site	High
Scientific and educational	Long-term monitoring site	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	High

#### Other ecosystem service(s) not included above:

The hydrological value of the Oosterschelde includes flood control.

Commercial fisheries 65 - 95%, Sand, clay, shell and gravel extraction 5 - 35%, Motorways and major roads <5%, Shipping traffic 5 - 35%, Leisure and tourism, Nautical sports 65 - 95%, Water management >95%.

All kinds of recreation take place: water recreation, angling and diving on and under the water as well as hiking, cycling and bird watching along the dikes. The delta works, such as the storm surge barrier with the artificial island Neeltje Jans halfway are tourist attractions.

See additional material for further information.

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes O No O Unknown  $\odot$ 

## 4.5.2 - Social and cultural values

i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland	
ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland	
iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples	
iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland	

<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

Pu				

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	✓	✓
Local authority, municipality, (sub)district, etc.	<b>2</b>	

#### Private ownership

Category	Within the Ramsar Site	In the surrounding area
Foundation/non- governmental organization/trust	<b>2</b>	
Other types of private/individual owner(s)	<b>/</b>	<b>&gt;</b>

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

#### within the Ramsar site:

The site is partly owned by Staatsbosbeheer, Natuurmonumenten and Zeeuw Landschap. The water of the former estuary is state-owned.

in the surrounding area:

Surrounding area: the water (Veersemeer, Markiezaat, Zoommeer, Voordelta) is state, on land several private owners.

## 5.1.2 - Management authority

Main management authorities:

- Please list the local office / offices of any 1. Rijkswaterstaat (Ministry of Infrastructure and Environment), Directie Zeeland,
- agency or organization responsible for 2. Natuurmonumenten, see https://www.natuurmonumenten.nl/natuurgebieden/nationaal-parkmanaging the site: oosterschelde
  - 3. Staatsbosbeheer, see https://www.staatsbosbeheer.nl/Over-Staatsbosbeheer/Feiten-en-cijfers/zeeland
  - 4. Stichting Het Zeeuwse Landschap, PO Box 25, 4450 AA Heinkenszand, tel. +31 (0)113 569110.
  - 1. Rijkswaterstaat, P.O. Box 5014, 4330 KA Middelburg, the Netherlands, +31 (0)118 672200.
  - 2. Head office: Staatsbosbeheer, P.O. Box 2, 3800 AA Amersfoort, the Netherlands, tel. +31 (0)30-6926111

Postal address:

3. Head office: Natuurmonumenten, P.O. Box 2166, 3800 CD Amersfoort, the Netherlands, tel. +31 (0)33 47 97 000

E-mail address: info@staatsbosbeheer.nl

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

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

Human settlements (non agricultural)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Tourism and recreation areas	Medium impact	Medium impact		No change	<b>✓</b>	No change

## Energy production and mining

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Renewable energy	unknown impact	Medium impact		No change	✓	No change

## Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Aircraft flight paths	Low impact	Medium impact	✓	No change		No change

## Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Fishing and harvesting aquatic resources	High impact	High impact	<b>✓</b>	No change		No change

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities	Medium impact	High impact	✓	No change	✓	No change

## Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Dams and water management/use	High impact	High impact	✓	No change		No change

#### Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Air-borne pollutants	High impact	High impact	✓	No change	✓	No change

## 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	Oosterschelde	https://www.natura2000.nl/gebied en/zeeland/oosterschelde	whole

## National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
National Ecological Network (NEN)	Oosterschelde	https://www.government.nl/topics /nature-and-biodiversity/nationa l- ecological-network-nen	whole
National Park	Oosterschelde	https://www.np-oosterschelde.nl/	whole

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Important Bird Area	Oosterschelde	http://datazone.birdlife.org/sit e/factsheet/1206	whole
Other non-statutory designation	KBA Oosterschelde	http://www.keybiodiversityareas. org/site/factsheet/1206	whole

## 5.2.3 - IUCN protected areas categories (2008)

ш	la Strict Nature Reserve
	Ib Wilderness Area: protected area managed mainly for wilderness protection
¥	Il National Park: protected area managed mainly for ecosystem protection and recreation
	Il Natural Monument: protected area managed mainly for conservation of specific natural features
1	V Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
	V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
	/I Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

## 5.2.4 - Key conservation measures

## Legal protection

Measures	Status
Legal protection	Implemented

## Habitat

Measures	Status
Habitat manipulation/enhancement	Implemented

## Species

Measures	Status
Threatened/rare species management programmes	Implemented

#### **Human Activities**

Measures	Status
Regulation/management of recreational activities	Implemented
Communication, education, and participation and awareness activities	Implemented
Research	Implemented
Fisheries management/regulation	Implemented
Harvest controls/poaching enforcement	Implemented

#### Other

In order to help stop the erosion of tidal flats several large (hundreds of meters) artificial reefs have been constructed. These reefs should protect the tidal flats and/or the adjacent land area from erosion, while it meanwhile creates habitat for many marine species. These experimental reefs and their supposed functions are being monitored.

Also nature development projects have been carried out inland and have been added to the site in order to compensate for losses of intertidal

#### 5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site?

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning Yes O 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:

The area of Neeltje Jans in the west end of the site has a National Park visitors centre since 2008. Here one can find information on excursions, hides, booklets etc.

URL of site-related webpage (if relevant): https://www.neeltjejans.nl/

## 5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

## 5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Plant community	Implemented
Soil quality	Implemented
Animal community	Implemented
Birds	Implemented
Animal species (please specify)	Implemented

Most of the topics studied at in the Wadden Sea (ecology of seals, birds (numbers, distribution, foraging, breeding), fish, invertebrates, seagrass, sediment) are also studied and monitored in the Delta by Rijkswaterstaat (www.rws.nl), the Center for Marine and Estuarine Ecology (NIOO/CEMO, www.nioo.nl) and IMARES (part of the Wageningen University and Research Centre; www.imares.wur.nl) in Yerseke. The long term studies also include the effects on the ecosystem of the closure of the Oosterschelde with a half-open dam and monitoring the macrobenthic fauna of the estuarine area in the Delta region, in particular related to environmental impact assessment of land reclamation schemes (SLUFTER).. Also monitoring of functional and structural variables of the ecosystems at regular intervals during at least 10 years. Aim is to assess the extent and causes of long-term changes in ecosystems and biodiversity, to indicate threats to a system, to obtain basic data for models, and to indicate forcing factors in the systems. Also studies on the influence of climatic change on coastal sediment erosion (NIOO, www.nioo.nl) and the monitoring of erosion of tidal areas due to a decrease in tidal currents (see:

http://mirt2012.mirtprojectenboek.nl/lmages/524\_tcm322-307142.pdf).

Besides that, ongoing biodiversity monitoring is one of the obligatory activities in relation to the designated Natura 2000-habitattypes and species.

## 6 - Additional material

## 6.1 - Additional reports and documents

## 6.1.1 - Bibliographical references

The site equals the Natura 2000-boundaries. Voor up-to-date information and references about the site see https://www.natura2000.nl/index.php/gebieden/zeeland/oosterschelde.

## 6.1.2 - Additional reports and documents

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

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

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

iv. relevant Article 3.2 reports

v. site management plan

<1 file(s) uploaded>

vi. other published literature

## 6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



- ( John Janssen, - )

## 6.1.4 - Designation letter and related data

#### **Designation letter**

<2 file(s) uploaded>

Date of Designation 1987-04-03