

Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

1. Name and address of the compiler of this form:

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

September 2013

3. Country:

the Netherlands

4. Name of the Ramsar site:

Oosterschelde (see 7b)

5. Designation of new Ramsar site or update of existing site:

This RIS is for:

- a) Designation of a new Ramsar site ; or
b) Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or
ii) the boundary has been extended ; or
iii) the boundary has been restricted**

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or
ii) the area has been extended ; or
iii) the area has been reduced**

** **Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the

Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

The storm surge barrier caused a decrease of the velocity of the tidal currents in the Oosterschelde. As such the tidal channels were actually too deep for the resulting currents. These channels are now filled up in a natural erosion process with sand from mud flats and shallow flats from the intertidal area. This erosion results in the loss of approx. 50 hectares of intertidal area; forage area for birds mainly. Without management action this would eventually have a significant negative impact on the sites bird numbers. The extension of the area (see 7b) through nature development inland, may (partly) compensate for this loss, as present bird numbers even slightly increased (see 14).

7. Map of site:

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a hard copy (required for inclusion of site in the Ramsar List):
- ii) an electronic format (e.g. a JPEG or ArcView image)
- iii) a GIS file providing geo-referenced site boundary vectors and attribute tables

b) Describe briefly the type of boundary delineation applied:

The Ramsar site 'Oosterschelde en Markiezaat' has also been designated as two separate European Natura2000 sites, one named Oosterschelde and the other named Markiezaat. A logical step since both sites are not connected and their ecology is actually very different.

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

For the Oosterschelde some harbours and recreational terrain have been excluded or exclavated, while substantial inlays to the north of the site in Schouwenduivenland and to the east between Tholen and St. Philipsland (Rammersgors and 't Stinkgat) have been included. The area measures 36.978,2 ha, which is an increase of approx. +1503 ha compared to the former situation for the Oosterschelde.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

51°33'N - 04°00'E

9. General location:

Province of Zeeland. The town of Zierikzee within the municipality of Schouwen-Duiveland (population 34.040 per 1-1-2013; source: CBS, Netherlands Statistics) is the largest town, bordering the Oosterschelde in the north.

10. Elevation: (in metres: average and/or maximum & minimum)

NAP -44 / 0 m

11. Area: (in hectares)

36.978,2 ha

12. General overview of the site:

This 40-km long water body was formerly 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 diverse 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 abiotic conditions are caused by tide, currents, water temperature, height, water quality and composition of the sediment.

13. Ramsar Criteria:

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

14. Justification for the application of each Criterion listed in 13 above:

The Ramsar site Oosterschelde, has been designated under Natura 2000 as well. Natura 2000 is the centrepiece of EU nature & biodiversity policy. It is an EU-wide network of nature protection areas which aims to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) designated under the Birds Directive. Natura 2000 applies to SACs and SPAs which are divided into biogeographical regions. The Ramsar site Oosterschelde applies to both and the justification for the application of each Ramsar criterion below, greatly refers to its designation as a SAC and SPA.

Justification criterion 1

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.

Justification criterion 2

The table below shows Annex II species (HD) and Annex I species (BD) for which the site has been designated as a SAC and SPA respectively, as well as their current status on the National Red List. Some other threatened species of the National Red Lists have also been added to the table.

*Species of Annex II of the European Habitat Directive (HD) and Annex I of the European Bird Directive for which the site has been designated as a SAC and SPA respectively, as well as species of annex IV (HD) and some threatened species of the National Red Lists. (- = Not Applicable; * = priority species). Year of adoption of the National Red List in parentheses.*

Species(group)	Species code	HD Annex	BD Annex	National RL category
Vascular plants				(2004)
Small Cordgrass <i>Spartina maritima</i>	-	-	-	CR
Marsh Helleborine <i>Epipactus palustris</i>	-	-	-	VU
Early Marsh-orchid <i>Dactylorhiza incarnate</i>	-	-	-	VU
Molluscs				(2004)
Dun Sentinel <i>Assiminea grayana</i>	-	-	-	EN
<i>Oratella myosotis</i>	-	-	-	VU
Mammals				(2009)
¹ Harbour Porpoise <i>Phocoena phocoena</i>	H1351	II, IV	-	CR
*Root Vole <i>Microtus oeconomus arenicola</i>	H1340	II, IV	-	VU
Common or Harbour Seal <i>Phoca vitulina</i>	H1365	II	-	VU
Non-breeding birds				
Horned Grebe <i>Podiceps auritus</i>	A007	-	I	-
Little Egret <i>Egretta garzetta</i>	A026	-	I	-
Eurasian Spoonbill <i>Platalea leucorodia</i>	A034	-	I	-
Bewick's Swan <i>Cygnus bewickii</i>	A037	-	I	-
Barnacle Goose <i>Branta leucopsis</i>	A045	-	I	-
Peregrine Falcon <i>Falco peregrinus</i>	A103	-	I	-
Avocet <i>Recurvirostra avosetta</i>	A132	-	I	-
Kentish Plover <i>Charadrius alexandrinus</i>	A138	-	I	-
Eurasian Golden-Plover <i>Pluvialis apricaria</i>	A140	-	I	-
Bar-tailed Godwit <i>Limosa lapponica</i>	A157	-	I	-
Breeding birds				(2004)
Western Marsh Harrier <i>Circus aeruginosus</i>	A081	-	I	LC
Avocat <i>Recurvirostra avosetta</i>	A132	-	I	LC
Sandwich Tern <i>Sterna sandvicensis</i>	A191	-	I	EN
Common Tern <i>Sterna hirundo</i>	A193	-	I	VU
Arctic Tern <i>Sterna paradisaea</i>	A194	-	I	LC
Little Tern <i>Sterna albifrons</i>	A195	-	I	VU

¹ This species is present in a small reproductive population in the Oosterschelde, though the site has not been designated a Natura 2000-site for this species.

Justification criterion 3

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. 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. See the tables below.

Habitat types (according to interpretation manual of EU-Habitat Directive) for which the site has been designated as a SAC.

Habitat code	Habitat type
H1160	Large shallow inlets and bays
H1310	<i>Salicornia</i> and other annuals colonising mud and sand
H1320	<i>Spartina</i> swards (<i>Spartinion maritima</i>)
H1330	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)
H7140	Transition mires and quaking bogs

Bird species (not on Annex I of the BD) for which the site has been designated as a SPA as well as their status on the National Red List (2004).

Species(group)	Species code	National RL category
Non-breeding birds		
Little Grebe <i>Tachybaptus ruficollis</i>	A004	-
Great Crested Grebe <i>Podiceps cristatus</i>	A005	-
Great Cormorant <i>Phalacrocorax carbo</i>	A017	-
Greylag Goose <i>Anser anser</i>	A043	-
Brent Goose <i>Branta bernicla</i>	A046	-
Common Shelduck <i>Tadorna tadorna</i>	A048	-
Eurasian Wigeon <i>Anas [Mareca] penelope</i>	A050	-
Gadwall <i>Anas strepera</i> ,	A051	-
Common Teal <i>Anas crecca</i>	A052	-
Mallard <i>Anas platyrhynchos</i>	A053	-
Northern Pintail <i>Anas acuta</i>	A054	-
Northern Shoveler <i>Anas chipeata</i>	A056	-
Common Goldeneye <i>Bucephala clangula</i>	A067	-
Red-breasted Merganser <i>Mergus serrator</i>	A069	-
Common Coot <i>Fulica atra</i>	A125	-
Eurasian Oystercatcher <i>Haematopus ostralegus</i>	A130	-
Common Ringed Plover <i>Charadrius hiaticula</i>	A137	-
Grey Plover <i>Pluvialis squatarola</i>	A141	-
Lapwing <i>Vanellus vanellus</i>	A142	-
Knot <i>Calidris canutus islandica</i>	A143	-
Sanderling <i>Calidris alba</i>	A144	-
Dunlin <i>Calidris alpina alpina</i>	A149	-
Eurasian Curlew <i>Numenius arquata</i>	A160	-
Spotted Redshank <i>Tringa erythropus</i>	A161	-
Common Redshank <i>Tringa totanus totanus</i>	A162	-
Greenshank <i>Tringa nebularia</i>	A164	-
Turnstone <i>Arenaria interpres</i>	A169	-
Breeding birds		(2004)
Common Ringed Plover <i>Charadrius hiaticula</i>	A137	VU
Kentish Plover <i>Charadrius alexandrinus</i>	A138	EN

Justification criterion 4

The site is of particular importance for many breeding and non-breeding bird species (see criterion 2, 3 and 6), of which several species gather in relatively small areas like breeding colonies of Common Tern *Sterna hirundo* and Sandwich Tern *Sterna andvicensis*. The site is of particular importance for moulting of waders, including Eurasian Oystercatcher *Haematopus ostralegus*, Kentish Plover *Charadrius alexandrinus*, Knot *Calidris canutus* and Spotted Redshank *Tringa erythropus* and for pre-migratory fattening of waders, including: Grey Plover *Pluvialis squatarola*, Dunlin *Calidris alpina*, Common Redshank *Tringa totanus*.

Justification criterion 5

The site regularly supports more than 20,000 wintering waterbirds: the average peak number was 227.384 for the period 2005/2006-2009/2010, which is more than the average peak number of 223.900 for the period 1999/2000-2003/2004 (source: Sovon, Dutch Centre for Field Ornithology).

Justification criterion 6:

Species meeting the 1% threshold (WPE-4, Wetlands International 2006; source: Sovon, Dutch Centre for Field Ornithology). (NB = nonbreeding, BR = breeding period 2006-2010 unless stated otherwise).

Species (UK)	Species	NB/ BR	Biogeographic population	1% threshold	Average number of birds between 2006-2010	% at site
Northern Pintail	<i>Anas acuta</i>	NB	NW. Europe	600	1.306	2.2
Northern Shoveler	<i>Anas clypeata</i>	NB	NW/ Central Europe	400	1.849	4.6
Eurasian Wigeon	<i>Anas penelope</i>	NB	W. Siberia/ NW-NE. Europe	15.000	38.336	2.6
Gadwall	<i>Anas strepera</i>	NB	NW-Europe	600	696	1.2
Greylag Goose	<i>Anser anser</i>	NB	NW. Europe/ SW. Europe	5.000	8.370	1.7
Turnstone	<i>Arenaria interpres</i>	NB	Scandonavia / W-Russia	830	1.260	1.5
Turnstone	<i>Arenaria interpres</i>	NB	Greenland / NE Canada	1.500	1.744	1.2
Brent Goose	<i>Branta bernicla bernicla</i>	NB	W. Siberia/ W. Europe	2.000	13.239	6.6
Barnacle Goose	<i>Branta leucopsis</i>	NB	Russia/ Germany/ Netherlands	4.200	17.702	4.2
Sanderling	<i>Calidris alba</i>	NB	East Atlantic/ W&S. Africa (win)	1.200	1.647	1.4
Knot	<i>Calidris canutus islandica</i>	NB	NE. Canada – NW. Europe	4.500	29.038	6.5
Dunlin	<i>Calidris etanu alpina</i>	NB	N. Siberia/ Europe/ West Africa	13.300	39.712	3.0
Oystercatcher	<i>Haematopus ostralegus</i>	NB	Europe and N/ W. Africa	10.200	44.025	4.3
Lesser Black-backed Gull	<i>Larus fuscus</i>	BR	W-Europe	3.800	6.696	1.8
Bar-tailed Godwit	<i>Limosa lapponica</i>	NB	Southwestern Africa (win)	1.200	5.877	4.9
Bar-tailed Godwit	<i>Limosa taymyrensis</i>	NB		6.000	9.051	15.1
Curlew	<i>Numenius arquata</i>	NB	Europe (breeding)	8.500	20.104	2.4
Eurasian Spoonbill	<i>Platalea leucorodia</i>	NB	Eastern Atlantic	110	259	2.4
Golden Plover	<i>Pluvialis apricaria</i>	NB	NW. Europe (breeding)	7.500	9.290	1.2

Grey Plover	<i>Pluvialis squatarola</i>	NB	Eastern Atlantic (wintering)	2.500	9.884	4.0
Horned Grebe	<i>Podiceps auritus</i>	NB		55	55	1.0
Avocet	<i>Recurvirostra avosetta</i>	NB	West Europe/ W. Med (breeding)	730	1.559	2.1
Avocet	<i>Recurvirostra avosetta</i>	BR	West Europe/ W. Med (breeding)	730	2.568	3.5
Common Tern	<i>Sterna hirundo</i>	BR	SW.Europe	1.900	3.180	1.7
Sandwich Tern	<i>Sterna sandvicensis</i>	BR	W-Europe	1.700	2.988	1.8
Shelduck	<i>Tadorna tadorna</i>	NB	NW. Europe	3.00	4.194	1.4
Redshank	<i>Tringa totanus</i>	NB	Eastern Atlantic (win)	2.800	3.268	1.2
Redshank	<i>Tringa totanus robusta</i>	NB	Iceland/ Faroes Islands (bre)	2.800	3.153	1.1
Redshank	<i>Tringa totanus totanus</i>	NB	Eastern Atlantic (win)	2.500	3.161	1.3

Justification criterion 8

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*.

15. Biogeography:

a) biogeographic region:

The Ramsar site belongs to the Atlantic biogeographical region.

b) biogeographic regionalisation scheme (include reference citation):

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)

16. Physical features of the site:

Formerly the Oosterschelde, together with the Westerschelde, formed the mouth of the Schelde River, which was closed off from that river in 1867. The Oosterschelde then was an estuary of the Rhine/Maas rivers system, via Hollands Diep and the Volkerakmeer. In 1986 a storm-surge barrier was constructed at the sea side of the Oosterschelde which contains a system of floodgates which will be closed only during severe storm-flood conditions. This happens once or twice a year on average. Due to the strength of the in- and outgoing water current one can find here the deepest gullies of up to 45 m.

The Oesterdam separates the saline Oosterschelde from the freshwater Zoommeer in the east and the Philipsdam separates it from the freshwater lake Volkerak in the north east.

The civil-engineering project has shown effects on many aspects of the Oosterschelde estuary, like: decrease of the area of intertidal sand and mudflats (35% reduction) and salt marshes (60% reduction), decrease of the tidal range (13% reduction), decrease of the tidal current velocity, decrease of the silt content of the intertidal sediments.

17. Physical features of the catchment area:

The relevant catchment area's for the Oosterschelde are the catchments of the rivers Schelde and Meuse. The surface area of the catchment of the river Schelde is 21.900 km². Geologically and geomorphologically it consists mainly of Quarternary and Tertiary sediments. The general soil types are: Alluvial and Podzol soils. The general land use is arable and pasture farming. The climate according to Köppen is rainy (Cbf).

The surface area of the catchment of the river Meuse is 33.000 km². Geologically and geomorphologically it consists mainly of Quarternary and Mesozoic sediments and Paleozoic (eroded) mountains. The general soil types are: Alluvial, Brown forest soils and montane soils. The general land use is pasture farming, arable farming and forestry. The climate according to Köppen is rainy (Cbf).

18. Hydrological values:

The hydrological value of the Oosterschelde includes flood control.

19. Wetland Types

a) presence:

Marine/coastal: A • B • C • D • E • **F** • **G** • **H** • I • **J** • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp Ts • U •
Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.-

F 66%; G 31%; H 2%; J 2%

20. General ecological features:

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*
- *Puccinellietum 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 forages on the fauna 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 black-winged 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).

21. Noteworthy flora:

Most noteworthy flora is listed under no. 14.

22. Noteworthy fauna:

Most noteworthy fauna is listed under no. 14.

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

See 25. Current land use.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

No

24. Land tenure/ownership:

a) within the Ramsar site:

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

b) in the surrounding area:

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

25. Current land (including water) use:

a) within the Ramsar site:

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%.

b) in the surroundings/catchment:

Nothing particular

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

a) within the Ramsar site:(A = serious threat covering large part of the area; B = moderate threat or local threat; C = minor threat):

Aquaculture/ fisheries (A - shellfish cultures); Construction/ impact dykes/dams/barrage (A - tidal volume and flow speed decreased with 30% due to storm surge barrier); Disturbance to birds (B - ultra light airplanes and air force); Recreation/ tourism (A -).

b) in the surrounding area:

Long distance recreation paths on the dikes may affect tidal roosts (B).
Construction of windturbines may cause collisions with birds (B).

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

- Special Protection Area (Birds Directive 79/409/EEC, 1989);
- Special Area of Conservation (Habitats Directive 92/43/EEC);
- Natura2000 site;
- Oosterschelde National Park (2002).

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

c) Does an officially approved management plan exist; and is it being implemented?:

The Ramsar site matches 100% with the designation for Natura2000.
The process for the Natura2000 management plan has been started.

d) Describe any other current management practices:

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 area.

28. Conservation measures proposed but not yet implemented:

Nothing particular.

29. Current scientific research and facilities:

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/Images/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.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting 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.

31. Current recreation and tourism:

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. For details on visitor numbers see the recent studies of Waterrecreatieadvies (2009) and Werkgroep Recreatie-onderzoek Deltawateren (2011).

32. Jurisdiction:

Territorial: Dienst Domeinen (Ministerie van Financiën); Functional jurisdiction (conservation purposes): Ministry of Economic Affairs.

33. Management authority:

Main management authorities:

- Rijkswaterstaat (Ministry of Infrastructure and Environment), Directie Zeeland, P.O. Box 5014, 4330 KA Middelburg, the Netherlands, +31 (0)118 672200.
 - Natuurmonumenten, P.O. Box 9955, 1243 ZS 's-Graveland, tel. +31 (0)35 655 99 33.
 - Staatsbosbeheer, P.O. Box 1300, 3970 BH Driebergen, the Netherlands, tel. +31 (0)30-6926111.
 - Stichting Het Zeeuwse Landschap, PO Box 25, 4450 AA Heinkenszand, tel. +31 (0)113 569110.
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34. 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).
- Boudewijn, T.J. en P.W. van Horssen, 2010. Openstellen onderhoudswegen Oosterschelde en Westerschelde. Effecten op overrijende en foeragerende steltlopers. Bureau Waardenburg. Rapport nr. 10-105: 157 p.
- 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 Oosterschelde.
- Van Roomen M.W.J, Boele A., van der Weide M.J.T., van Winden E.A.J, Zoetebier D. 2000. Belangrijke vogelgebieden in Nederland, 1993-97. Actueel overzicht van Europese vogelwaarden in aangewezen en aan te wijzen speciale beschermingszones en andere belangrijke gebieden. SOVON-informatierapport 2000/01. SOVON Vogelonderzoek Nederland, Beek-Ubbergen.
- Waterrecreatieadvies, 2009. Onderzoek vaargedrag Deltagebied.
- Werkgroep Recreatie-onderzoek Deltawateren, 2011. Recreatietellingen Oosterschelde 2010. Provincie Zeeland.

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