
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:

Voordelta

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:

Voordelta is a young ecosystem which is still developing. The construction of the Delta works in the past had a strong influence on the natural processes of erosion, sedimentation and tidal currents. The 10 m depth line shifted towards the coast due to increased influence of waves. Former tidal channels filled up with sediment and new sandbanks developed near the coast.

Also the construction of the 'Eerste Maasvlakte' in the past and the current construction of the so-called "Tweede Maasvlakte", which started in September 2008 will have ecological influences on the site. The 'Tweede Maasvlakte' is a 2000 ha extension of Mainport Rotterdam which includes among others harbours, and industrial area. The "Tweede Maasvlakte" is located within Ramsar site "Voordelta". Environmental Impact Assessments have been carried out and potential impacts will be compensated for mainly at the "Tweede Maasvlakte" itself.

These ongoing processes are probably the main reasons for the changes observed in the application of the Ramsar Criteria (see 14). The site for instance supported only 13.115 for the period 2005/2006-2009/2010, which is half the peak number of 26.994 for the period 1999/2000-2003/2004 (source: Sovon, Dutch Centre for Field Ornithology).

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 Voordelta has also been designated as the European Natura 2000-site Voordelta. For this RIS-version, the new Ramsar site boundary has therefore been adjusted to the Natura 2000-boundary.

Some area in the northeast has been added to the Ramsar and Natura 2000-site Voornes Duin, while a substantial area in the southwest has been included within the Ramsar site.

In total the site substantially increased with +3501,9 ha.

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

51°43'N - 03°35'E

9. General location:

Provinces of Zeeland and Zuid-Holland, North Sea from Middelburg (population 47.523 per 1-1-2013; source: CBS, Netherlands Statistics) to Rotterdam (population 616.294 per 2013).

10. Elevation: (min & max)

NAP -20 / 0 m

11. Area:

92.270,7 ha

12. General overview of the site:

The Voordelta is an extensive area of coastal waters of the North Sea from Rotterdam in the north till the Westerschelde estuary in the south. The coastline of the site is almost 100 kilometres. The site also adjoins the closed-off delta area of the Rhine/Meuse system including five other wetlands and is close to Vlaamse Banken in Belgium. Sedimentation has increased due to the Delta works (involving the closing of several sea arms i.e. Haringvliet, Grevelingen and Oosterschelde. Near the main land there are mudflats and salt marshes. Also some beaches with embryonic dunes are part of the area.

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 Voordelta has been designated under Natura 2000 as well. Natura 2000 is the centrepiece of EU nature & biodiversity policy. It is a 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 Voordelta 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

With over 90.000 ha of shallow sandbanks, mudflats, salt meadows and embryonic shifting dunes the site resembles one of the largest sites of its kind within the Atlantic biogeographic region.

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 and V (HD) and their status on the National Red Lists (- = Not Applicable). Year of adoption of the National Red List between brackets.

Species(group)	Species code	HD Annex	BD Annex	National RL Category
Mammals				(2009)
Grey Seal <i>Halichoerus grypus</i>	H1364	II, V	-	NT
Common Seal <i>Phoca vitulina</i>	H1365	II, IV	-	VU
Non-breeding birds				
Red-throated Diver <i>Gavia stellata</i>	A001	-	I	-
Horned Grebe <i>Podiceps auritus</i>	A007	-	I	-

Eurasian Spoonbill <i>Platalea leucorodia</i>	A034	-	I	-
Avocet <i>Recurvirostra avosetta</i>	A132	-	I	-
Bar-tailed Godwit <i>Limosa lapponica</i>	A157	-	I	-
Little Gull <i>Larus minutus</i>	A177	-	I	-
Sandwich Tern <i>Sterna sandvicensis</i>	A191	-	I	-
Common Tern <i>Sterna hirundo</i>	A193	-	I	-
Fish				(2004)
Sea Lamprey <i>Petromyzon marinus</i>	H1095	II	-	LC
River Lamprey <i>Lampetra fluviatilis</i>	H1099	II, V	-	LC
Allis Shad <i>Alosa alosa</i>	H1102	II, V	-	LC
Twaite Shad <i>Alosa fallax</i>	H1103	II, V	-	LC

Justification criterion 3

The Voordelta 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.

The benthic biomass is almost twice as high compared to similar sized areas in the North Sea, due to the supply of nutrients by rivers and the favourable light conditions in the shallow water. There are over least 100 species that spend at least part of their lives at the bottom among which larvae of worms, fish and crustaceans. The high abundance of food attracts seals, fish and birds that depend on it.

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

Habitat code	Habitat type
H1110	Sandbanks which are slightly covered by sea water all the time
H1140	Mudflats and sandflats not covered by seawater at low tide
H1310	<i>Salicornia</i> and other annuals colonizing mud and sand
H1320	<i>Spartina</i> swards (<i>Spartinion maritimae</i>)
H1330	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)
H2110	Embryonic shifting dunes

Bird species (not on Annex I of the BD) for which the site has been designated as a SPA.

Species(group)	Species code
Non-breeding birds	
Great Crested Grebe <i>Podiceps cristatus</i>	A005
Great Cormorant <i>Phalacrocorax carbo</i>	A017
Greylag Goose <i>Anser anser</i>	A043
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
Northern Pintail <i>Anas acuta</i>	A054
Northern Shoveler <i>Anas chrypeata</i> ,	A056
Greater Scaup <i>Aythya marila</i>	A062
Common Eider <i>Somateria mollissima</i>	A063
Black Scooter <i>Melanitta nigra</i>	A065
Common Goldeneye <i>Bucephala clangula</i>	A067
Red-breasted Merganser <i>Mergus serrator</i>	A069

Eurasian Oystercatcher <i>Haematopus ostralegus</i>	A130
Common Ringed Plover <i>Charadrius hiaticula</i>	A137
Grey Plover <i>Pluvialis squatarola</i>	A141
Sanderling <i>Calidris alba</i>	A144
Dunlin <i>Calidris alpina schinzii</i>	A149
Eurasian Curlew <i>Numenius arquata</i> ,	A160
Common Redshank <i>Tringa totanus totanus</i>	A162
Turnstone <i>Arenaria interpres</i>	A169

Justification criterion 4

The site is of particular importance for resting seals and many non-breeding bird species (see criterion 2, 3 and 6) that use the site for resting and feeding during the migration and wintering periods.

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	652	1.1
Sanderling	<i>Calidris alba</i>	NB	East Atlantic/ W&S. Africa (win)	1200	1888	1.6

Compared to the period 1992 – 1998 (former updated RIS-version) the species *Platalea leucorodia*, *Aythya marila*, *Pluvialis squatarola* and *Tringa totanus totanus* do not meet the 1%-threshold anymore, though *Calidris alba* now does.

Justification criterion 8

The Dutch coastal zone, among which the Voordelta, is the richest fish species part of the North Sea. The high food abundance and low predatory pressure from large fish makes the coastal zone an important spawning and nursery site. The number of juvenile species like Flounder, Sole, Plaice, Dab, Brill, Turbot, Cod, Whiting and Pouting are very high. The site is very important for migratory fish species due to its position at the mouth of the large rivers. The site has among others been designated as a SAC for the conservation of following fish species: Sea lamprey *Petromyzon marinus*, River lamprey *Lampetra fluviatilis*, Allis shad *Alosa alosa* and Twaite shad *Alosa fallax* (see criterion 2).

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:

After closure of the Delta by dams and a storm surge barrier this coastal area has changed dramatically. An extensive system of sandbanks and trenches appeared. Now, the Voordelta encompasses the shallow waters at the seaside of the Zeeuwse and Zuid-Hollandse Delta. The area is characterised by the presence of a varied and dynamic environment of coastal waters (marine), tidal systems and beaches. It functions as a transitional zone between the (former) estuary and the open sea.

The intertidal system changes due to erosion and sedimentation processes. The water quality is mainly influenced by the eutroficated waters of the Rhine and Meuse which enter the area via the Haringvliet sluices. The 20th of depth line constitutes the border of the Voordelta at sea. The area is especially important for fish, seals and water birds.

17. Physical features of the catchment area:

The Voordelta is situated in the delta of the rivers Schelde, Meuse and Rhine.

- The surface area of the Schelde catchment 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 climate according to Köppen is rainy (Cbf).
- The surface area of the Meuse catchment 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 climate according to Köppen is rainy (Cbf).
- The surface area of the Rhine catchment is 185.000 km². Geologically and geomorphologically it consists mainly of Quarternary, Paleozoic and Mesozoic sediments and Tertiary mountains. The general soil types are: Alluvial, Brown forest soils and montane soils. The climates according to Köppen are rainy (Cbf) and montane (EH).

18. Hydrological values:

Nothing particular. It's a shallow coastal sea where freshwater flows in from the rivers Rhine (via Nieuwe Waterweg, Rotterdam) and Schelde (from Belgium).

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:

A G

20. General ecological features:

The site is especially important for water birds. Due to the shallow coastal waters (approx. 96% of the area) the area is of importance to grebes, divers and sea-ducks. During heavy frost the Voordelta functions as refugee area for water birds coming from inland waters. The Westplaat is a 350 ha mudflat and salt marsh. This area is important for wader species during the migration periods.

Main ecosystem services of the Voordelta:

- the sandbanks in the Voordelta function as barriers against rough sea.
- the area has an important function for water recreation in the region.

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 marine part of the site is state owned.

The land (i.e. Westplaat) included in the site is largely owned by the Zuidhollands Landschap (350 ha), Natuurmonumenten (59 ha) and Staatsbosbeheer (6 ha).

b) in the surrounding area:

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

25. Current land (including water) use:

a) within the Ramsar site:

Angling 75%, Boating 20%, Commercial fisheries 96%, Conservation and research 100%.

b) in the surroundings/catchment:

The catchment area of the big rivers concerns a substantial part of Northwest-Europe.:

- General land-use of Rhine-catchment: the general land use is forestry, pasture farming, arable farming, inproductive land (high mountains);
 - General land-use of Meuse catchment: The general land use is pasture farming, arable farming and forestry;
 - General land-use of of Schelde catchment is arable and pasture farming;
 - General land-use of Ems-catchment is arable and pasture farming.
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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):

- Voordelta: Aquaculture/ fisheries (A - shellfish fisheries); Construction/ impact dykes/dams/barrage (C - extension Maasvlakte); Extraction industry (mining) (C -); Recreation/ tourism (B -); Pollution (not Industrial discharge) (B -).
- Westplaat: Aquaculture/ fisheries (A -); Construction/ impact dykes/dams/barrage (B - extension Maasvlakte); Disturbance to birds (B - aircraft); Disturbance to birds (A - pleasure

aircrafts); Recreation/ tourism (B -). Extension of Rotterdam harbour (Maasvlakte II) by reclamation of 2800 ha marine area will be compensated for by the establishment of a strict marine reserve of about 30.000 ha.

b) in the surrounding area:

- Construction (A, Reopening of dams in dammed sea arms, like the Haringvliet and Grevelingen, to (partly) restore the tidal dynamics of the past will affect morphological and ecological system of the Voordelta).
- Construction (B - Increase of recreational capacity of harbours in the region).

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, 2000)
- Special Area of Conservation (Habitats Directive 92/43/EEC)
- Natura 2000-site

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

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 Natura 2000.

The Natura 2000-management plan has been approved.

d) Describe any other current management practices:

The loss of natural values as a result of the construction of the Tweede Maasvlakte will be compensated for. These compensation measures are an integral part of the construction works.

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, sediment) are also studied and monitored in the Delta by Rijkswaterstaat Directie Noordzee, the Institute for Coast and Sea (RIKZ, Middelburg, www.rikz.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.

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

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

Excursions, hikes, information booklet.

31. Current recreation and tourism:

Number of visitors not known.

32. Jurisdiction:

Territorial: Municipalities of Westvoorne, Hellevoetsluis, Goedereede, Schouwen-Duiveland, Noord-Beveland, Veere, Vlissingen. Functional jurisdiction (conservation purposes): Ministry of Economic Affairs.

33. Management authority:

Main management authorities:

- Rijkswaterstaat (Ministry of Infrastructure and Environment), Directie Noordzee, PO Box 5807, 2280 HV Rijswijk, the Netherlands, +31 70 3366600.
 - Natuurmonumenten, P.O. Box 9955, 1243 ZS 's-Graveland, tel. +31 (0)35 655 99 33.
 - Zuid-Hollands Landschap, Nesserdijk 368, 3063 NE Rotterdam, tel. +31 (0)10 272 22 22.
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34. Bibliographical references:

Many studies have been carried out in relation to the construction of the Maasvlakte near Main port Rotterdam. 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 Voordelta.
 - 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.
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