



# Information Sheet on Ramsar Wetlands

As approved by Rec.C.4.7 of the Conference of the Contracting Parties, Montreux, Switzerland - July 1990

NOTE: Please read the accompanying guidelines before attempting to complete this form. An example of a completed data sheet is also included.

Completed sheets should be returned to: T.A. Jones, Ramsar Database, IWRB, Slimbridge, Gloucester GL2 7BX, England

1. Country: The Netherlands      2. Date: 14-2-'92      3. Ref: office use only NL 008

4. Name and address of compiler:  
Ministry of Agriculture, Nature management and Fisheries  
P.O. box 20401  
2500 Ek The Hague / The Netherlands

5. Name of wetland: Oosterschelde and Markiezaatsmeer

6. Date of Ramsar designation: 3 April 1987

7. Geographical coordinates: 52°49'N 5°20'E

8. General location: (e.g. administrative region and nearest large town) In the province of Zeeland, enclosed by the cities of Middelburg, Goes, Bergen op Zoom and Zierikzee

9. Area: (in hectares)  
38,000

10. Wetland type: (see attached classification, also approved by Montreux Rec.C.4.7)  
Oosterschelde: E, (F), (G), H, S, U, 6; Markiezaatsmeer: F, (G), (H), 6

11. Altitude: (average and/or maximum & minimum)  
average on MAP (sealevel).

12. Overview: (general summary, in two or three sentences, of the wetland's principal characteristics) The Oosterschelde is one of Western Europe's chief tidal waters. Despite the fact that recent hydraulic engineering works have subdued the tide, the area still holds well-preserved natural values as well as very high biotic and abiotic values. By one of the hydraulic engineering works the Markiezaatsmeer has become separated from the Oosterschelde. As a result this area will develop into a ~~freshwater~~ subcamp.

13. Physical features: (e.g. geology; geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth; water permanence; fluctuations in water level; tidal variations; catchment area; downstream area; climate)  
One of the key factors of the Oosterschelde system is the tide. Erosion and sedimentation processes caused by tidal currents produce ever-changing patterns of deep tidal gullies, mudflats, shoals, and salt marshes. The water in the Oosterschelde is of good quality. This is another key factor for the type, size and richness of the biological communities in the area.  
Much of the former salt marshes in the area have been dyked and cultivated in the past centuries. Parts of the dyked land are included in the Ramsar-site. These areas consist of secondary sea defences, wet grasslands, former creeks and pools that were created by dyke bursts. The natural values of these areas closely depend on the presence of large variations in salinity, relatively high groundwater table (highly dependent on seepage), the good quality of the water, the extensive landuse and the peace in the area.

14. Ecological features: (main habitats and vegetation types)  
The Markiezaatsmeer has lost its tidal character and will eventually evolve into a stagnant fresh water system by a constant process of desalination. With its natural transition from the Pleistocene Holocene tidal landscape to the Pleistocene hills and cliff coast that is bounded by an estuary, the landscape of the Markiezaatsmeer is geomorphologically rare in the Netherlands.  
The climate of the total area is mild with wet winters.

15. The following ecosystems are distinguished: the Oosterschelde: deep water (especially in the mouth and the centre of the Oosterschelde), shallows, intertidal areas (mudflats and shoals), salt marshes, submerged parts of dykes and the areas with bushes (see nr. 13). The latter areas have hardly any (marine) vegetation except for some Zostera - vegetation occurring on.



mudflats and vegetation of seaweeds on the stone-covered dyke foots. The salt marshes are covered with several kinds of halophytes vegetation, depending on the height of the area and the frequency of flooding. The Mierlandsmeer, as a former part of the Oosterschelde, consist predominantly of mudflats, salt marshes and higher grasses. Seepage at the afore-mentioned transition (nr. 15) has caused

**15. Land tenure/ownership of:** a characteristic vegetation with species from a more brackish environment.

- (a) site ca. 95% of the total area is owned by the State of the Netherlands (Ministry of Finances and Ministry of Agriculture, Nature management and Fisheries ca. 1% of the area is in private ownership (including nature conservation bodies and municipalities)).
- (b) surrounding area predominately multiple private ownership

**16. Conservation measures taken:** (national category and legal status of protected areas - including any boundary changes which have been made; management practices; whether an officially approved management plan exists and whether it has been implemented)

The area was designated as Ranger-site (3-4-87) and as Special Protection Area under the EC Wild Birds Directive (20-11-89). Large parts of the area (excluding the deeper gullies) are protected by the Nature Conservation Act <sup>(see short notes)</sup> ~~and the Nature Conservation Act~~ (some 25.000 ha). Ca 440 ha is strict Nature Reserve owned and/or managed by the state Forestry Service, the Provincial Landscapes and the Dutch Society for the Protection of Birds. Under supervision of the so-called "Oosterschelde Steering Group", installed by the Provincial Executive Council of Zeeland, a policy plan has been drawn up for the area concerning management and development. All authorities concerned have approved this plan.

**17. Conservation measures proposed but not yet implemented:** (e.g. management plan in preparation; officially proposed as a protected area etc.)

16. ~~For the Mierlandsmeer~~ For the Mierlandsmeer there is an administrative committee, which has formulated a number of principles regarding development and management. These principles are in accordance with the Agreement.
17. Concerning the Oosterschelde: none
- Concerning the Mierlandsmeer: A management committee will be installed in the near future in order to harmonize the management of private and state territory and to supervise the implementation of management plans.

**18. Current land use: principal human activities in:**

- (a) site nature conservation, pastoral agriculture, recreation, flood protection, hunting and fishing. Fishing ~~includes~~ includes fishing by small trawlers on fish <sup>the exploitation of cultures of</sup> shrimp and oysters and mussels and ~~the~~ collecting by hand of mussels, cockles and sea worms (Neries and Arents).
- (b) surroundings/catchment predominately agriculture, and further industry, harbour facilities and human occupations (Koudebrug).

**19. Disturbances/threats, including changes in land use and major development projects:**

(factors which may have a negative impact on the ecological character of the wetland)

- (a) at the site Due to hydraulic engineering works the current and the tidal movement have altered. As a result the salt marshes are eroding rapidly. In the Oosterschelde. Therefore this type of environment will become ~~more~~ rarer ~~than~~ ~~today~~ although some replacement with new formed tidal marshes may occur.
- in the Mierlandsmeer organisms that are dependent upon the tide and salt water <sup>are</sup> will be replaced by organisms of freshwater systems. In the future this area will develop into a vast fresh water swamp. This means that the character of this wetland will change dramatically. However, ~~but~~ new biotic values will develop and the area will remain of great scientific interest. It may become a very important breeding and feeding area for cormorants and herons.
- (b) in the surroundings/catchment

~~no information available due to the large scale reclamation.~~ none known



## 20. Hydrological and physical values: (groundwater recharge, flood control, sediment trapping, shoreline stabilisation etc.)

The Oosterschelde area is completely enclosed in order to prevent flooding of valuable agricultural land. In order to prevent flooding of this area in case of extreme high water levels the Oosterschelde is separated from the North-Sea by a barrier dam. See 13

## 21. Social and cultural values: (e.g. fisheries production, forestry, religious importance, archaeological site etc.)

The area is important for conservation education, scientific research and fisheries (especially the cultures of oysters and mussels). The Oosterschelde is the only estuary in the delta region, beside the Westerschelde, where a tidal regime still exists. The Oosterschelde has large cultural values by its traditional fishery types and the existence of archaeological sites like drowned villages.

## 22. Noteworthy fauna: (e.g. unique, rare, endangered, abundant or biogeographically important species; include count data etc.)

- \* The whole area is of major importance to migratory and wintering waterfowl and waders, including *Branta leucopsis* (2,700), *B. bernicla* (7,500), *Tadorna tadorna* (7,200), *Anas penelope* (13,900), *Anas platyrhynchos* (6,200), *A. clypeata* (2,360), *Haematopus ostralegus* (38,000), *Recurvirostra avosetta* (700), *Charadrius hiaticula* (2,000), *C. alexandrinus* (1,000), *Pluvialis squatarola* (7,000), *Calidris canutus* (18,000), *C. alpina* (50,000), *Limosa lapponica* (7,000), *Numenius argentea* (10,000), *Tringa erythropus* (1,100), *T. totanus* (2,000), *T. nebularis* (900) and *Ardeus interpres* (7,300).
- \* Breeding species include *Recurvirostra avosetta* (450 pairs), *Sterna hiundo* (450 pairs), *S. albifrons* and *Charadrius alexandrinus* and species like *Circus aeruginosus* (5 pairs) and *C. cyaneus* (6 pairs)

## 23. Noteworthy flora: (e.g. unique, rare, endangered, or biogeographically important species/communities etc.)

- \* ~~in~~ the intertidal mudflats: well developed *Zostera* vegetation (rare in the Netherlands nowadays)
  - \* stone-covered dyke foreshore contain some unique flora (and fauna) species for the Netherlands, which are common in other European countries
  - \* saltmarshes and dykes: ~~species~~ *Spartina maritima*, *S. x townsendii*, *Puccinellia fasciculata*, *Hordeum maritimum*, *Cladium mariscus*, *Halimione pedunculata*, *Bupleurum tenuissimum*, *Verbena officinalis*, *Medicago arabica*, *Calcite maritima*, *Salsola kali*, *Beta maritima*, *Atriplex sabulosa*, *Crambe maritima*, *Polygonum maritimum*, *Taraxacum maritimum*, *T. kernianum*, *T. palustre*, *T. sublaeticolor*, *Artemisa maritima* and *Corn punctata*
- communities: *Spartinetum maritimae*

24. **Current scientific research and facilities:** (e.g. details of current projects; existence of field station etc.)

Two major research institutes are active in the area. 1) The Delta Institute for Hydrobiological Research (Vierstraat 29, 4401 Yerseke, The Netherlands) and 2) Dienst Getijdewateren (Tidal waters) of the Dept of Rijkswaterstaat (P.O. box 8039), 4330 EA Middelburg).

25. **Current conservation education:** (e.g. visitors centre, hides, information booklet, facilities for school visits etc.)

There are no visitors centres, hides nor facilities for school visits. However there are some popular books on the natural and cultural values of the Oosterschelde and some information leaflets.

26. **Current recreation and tourism:** (state if wetland used for recreation/tourism; indicate type & frequency/intensity)

The Oosterschelde is used for all kind of watersport (sailing, surfing etc). Also sportfishing is quite popular in this region.

27. **Management authority:** (name and address of body responsible for managing the wetland)

- 1) Ministry of Traffic and Public Affairs, Dept. Rijkswaterstaat, Directorate Zeeland, PO Box 5014, 4330 KA Middelburg
- 2) Ministry of ~~Water~~ Agriculture, Nature management and Fisheries, ~~Postbox~~ Directorate Nature, Forest, Landscape and Wildlife, P.O. box 20401, 2500 EK The Hague / Den Haag

28. **Jurisdiction:** (territorial e.g. state/region and functional e.g. Dept of Agriculture/Dept of Environment etc.)

territorial: State, Provinces of Zeeland and Noord-Brabant, Municipalities of Bergen op Zoom, Tholen, St Philipsland, Yerseke, Goes, Wissenkerke, Zierikzee,

functional: Ministry of Agriculture, Water management and Fisheries / Min. of Finance / Min. of Traffic and Public Affairs

29. **Bibliographical references:** (scientific/technical only)

30. **Reasons for inclusion:** (state which Ramsar criteria - as adopted by Rec.C.4.15 of the Montreux Conference - are applicable)

1. (a)
2. (a), (b), (c)
3. (a), (b), (c)

31. **Map of site** (please enclose the most detailed and up-to-date map available - preferably at least 1:25,000 or 1:50,000)

already in your possession

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