

## 1. Introduction

The wetland 'Zwarte Meer' is situated in the provinces of Overijssel and Flevoland in the municipalities of Kampen, Genemuiden, Brederwiede and Noordoostpolder. The area covers approximately 2,050 ha, 1,650 ha of which is owned by the Kingdom of the Netherlands.

Zwarte Meer comprises a large, shallow, peripheral lake with very shallow shores, wide reed marshes, flood plains and a man-made island: Vogeleiland (Bird's Island). When the wind comes from the east vast mud flats are exposed.

Zwarte Meer was part of the IJsselmeer until 1940 when the IJsselmeer was closed off by the Afsluitdijk (closing dike). Zwarte Meer is now open to the IJsselmeer via Ketelmeer. The area is used as a catchment area by large parts of Overijssel and Drenthe by way of Zwarte Water.

Zwarte Meer is a representative and valuable part of the shallow peripheral lakes which came about when the land within the closing dike was reclaimed. The shallowness of the lakes, their soil structure and the process of sedimentation all contributed to plant growth on the banks which gave the area its outstanding botanical and ornithological value.

The area is a breeding site for waterfowl, marsh and meadow birds. 85 species were counted between 1987 and 1990. It is also a resting, moulting and foraging site. The area is used by more than 1% of the north-western European population of at least five species.

## 2. Scientific value

In 1932 the Zuiderzee was closed off and the Noordoostpolder land was reclaimed. Obviously this had a major impact on the area's nature values. As the area turned into a fresh water area and a more sheltered place extensive communities of characeae and pond weed were formed which attracted large numbers of migrating birds. Zwarte Meer soon became a wintering and foraging site of international importance. However nitrate and phosphate pollution from rivers draining on the area reduced the vast communities of aquatic weeds in the 1950s and 1960s and the numbers of birds that used the area as a feeding site have dropped accordingly. Still the area is an important area for birds.

The characteristic dense communities of club rush have disappeared, probably as a result of increased pollution. Part of the beds of rush have submerged and other parts have given way to reeds as the level of the land rose.

Large numbers of marsh birds came to the area to breed but since the rush has disappeared species of rail dwindled.

Landscape ecological links can be traced between Zwarte Meer and the surrounding polders of peat and clay. This mainly concerns the daily pattern of migration of waterfowl and raptors between the wetland's resting and breeding sites and the feeding sites in the surrounding polder.

Conversely the cormorant flies from the breeding colony in the Wieden area to catch fish in Zwarte Meer. Zwarte Meer is also used as a hunting area by 6 species of bat from the Hoge Land van Vollenhove: serotine bat, common pipistrelle, nathusius' pipistrelle, common noctule, daubenton's bat and pond bat.

A number of biotopes can be distinguished in Zwarte Meer: open water (Zwarte Meer and the channels intersecting the adjacent land), marsh, grassland and forest.

The open water of Zwarte Meer still supports species of pond weed and characeae in places. In the eastern part floating weeds including yellow waterlily, white waterlily and fringed waterlily are found. In the channels intersecting the adjacent reed marshes and grasslands pond weed and species including water horsetail, mare's tail, greater bladderwort, water soldier, yellow waterlily, ribbon-leaved water plantain and flowering rush can still be found.

The sheltered location, the quietness and the large areas of mud flat exposed by the tide when the wind is east make Zwarte Meer an ideal resting, moulting and feeding site for several species of waterfowl and waders. These include cormorant, spoonbill, bewick's swan, white-fronted goose, greylag goose, bean goose, barnacle goose, shelduck, wigeon, teal, mallard, pintail, shoveler, lapwing, ruff, snipe, black-tailed godwit, redshank and black tern.

Zwarte Meer's fish fauna is rich both in terms of quantity and quality. In addition to flounder, bream, smelt, ruffe, zander, eel, pike, perch, roach, ide and scaled carp, the occasional trout, burbot, river lamprey, sea lamprey and catfish can also be found. Many of these species use the area as a spawning ground or pass through on their way to their spawning beds upstream the river Vecht.

Extensive marshes are found in the south and south-eastern part but not anywhere else in Zwarte Meer apart from the narrow strips of shore vegetation.

The predominant species here is reed. Locally patches of marsh marigold occur and self-sown willow. Along shores and low-lying parts vegetations occur where great and lesser bulrush, sea club-rush and/or common club rush are the dominant species.

The higher reed lands support tufted loosestrife, large-flowered bittercress, marsh sedge, marsh stitchwort and milk parsley.

In the highest and littered parts great willow herb, common valerian, marsh sow thistle, great fen ragwort, swamp meadow grass and reed grass are found.

The reed marshes host approximately 64 species of breeding birds. These include bittern, purple heron, garganey, marsh harrier, kingfisher (occasionally), spotted crake, bluethroat, sedge warbler, great reed warbler, whitethroat and bearded reedling. The pendulin tit has recently been observed to breed here.

The reed marshes are also important stop-over places for marsh harrier and hen harrier, swallow and several species of song birds.

Grasslands are found on the unembanked land east of Zwarte Meer and also along the embankments of Kampereiland and Mandjeswaard. On these wet grasslands different associations of silverweed occur. From a botanical point of view the associations of marsh arrow grass and creeping bent are the most interesting. Characteristic species are marsh arrow grass, marsh bedstraw, jointed rush, single-glume spike rush and false fox sedge. The rare snake's head fritillary is found in some fields.

The unembanked land east of Zwarte Meer are foraging grounds for greylag goose and white-fronted goose. Meadow birds also use it as a nesting site including such vulnerable species as black-tailed godwit, redshank, garganey and shoveler.

Apart from a willow coppice in the southern marshland forest is only found on Vogeleiland. It is mainly composed of bolted willow shoots with species such as common osier, crack willow, almond-leaved willow and white willow. The undergrowth contains many species of sedge among which paniced sedge, greater pond sedge, cyperus sedge, remote sedge and false fox sedge. The island is used by goshawk, sparrow hawk, common buzzard, hobby and long-eared owl as a nesting site although they may not breed every year. The kingfisher probably nests on the island as well. The island also hosts a colony of grey herons.

Mammals are also found in the terrestrial biotopes. Roe deer, hedgehog, mole, brown hare and species of shrew, mouse, vole and mustelidae. The root vole has not been seen on the island since the 1960s.

Little is known about reptiles, amphibians and insects although common toad, common frog and one of the species of green frog have been observed in the area.

### 3. Criteria for identifying wetlands

#### A. Quantitative criteria for identifying wetlands of importance to waterfowl:

A wetland should be considered internationally important if:      Zwarte Meer:

a) it regularly supports 20,000 ducks, geese, swans, coots or waders,

a) it regularly hosts 50,000 ducks, swans and geese, most notably white-fronted goose, bean goose, greylag goose and mallard.

b) it regularly supports 1% of the population of one species or subspecies of waterfowl,

b) the area is a major resting, moulting and feeding site. The species exceeding the 1% standard include: cormorant, spoonbill, bewick's swan, white-fronted goose, greylag goose. As a feeding site it is used by cormorant (1100), spoonbill (65) and bewick swan (200). As a resting site it is used by white-fronted goose (45,000), greylag goose (3,100).

**B. General criteria for identifying wetlands of importance to plants or animals:**

A wetland should be considered internationally important if:

a) it supports a large number of rare, vulnerable or endangered species or subspecies of plant or animal,

a) the species that use the area as a nesting site include: bittern, purple heron, garganey, marsh harrier, kingfisher, spotted crake, black-tailed godwit, redshank, bluethroat, sedge warbler, great reed warbler, white-throat and bearded reedling. The area supports rare species of bat, fish (sea trout, sea lamprey, river lamprey, burbot and catfish) and plant (snake's head fritillary).

b) it is of special value for maintaining the genetic and ecological diversity of a region,

b) the wetland supports a large number of species of plant, insect, amphibian, bird and mammal (see above). Zwarte Meer is also used as a feeding site for birds and bats from neighbouring sites and so contributes to maintaining the genetic and ecological diversity of north-western Overijssel.

c) it is of special value as the habitat of plants and animals at a critical stage of their biological cycles,

c) Zwarte Meer is an important stop-over for many migratory birds and is of special value as a resting, moulting and foraging area for ducks, geese, swans, waders and marsh birds at a critical stage of their biological cycles.

- C. A wetland should be considered internationally important if it is a particularly good example of a specific type of wetland characteristic of its region.

Zwarte Meer can be described as a stagnant fresh water ecosystem that evolved after a former sea inlet was closed off. Its shallow waters, sheltered location, the emergent plant zones along shores and the area's environmental dynamics make it into an outstanding example of this type of ecosystem the scale of which is exceptional for the Netherlands.

#### 4. Situation and boundaries of the wetland

The wetland is bounded on the south-west by the Ramspolbrug. On the north-west it is bounded by the Noordoostpolder dike, on the north-east by the Wendelerdijk and Barsbekerdijk. Towards the south-east the wetland is bounded by the Broekenpolder dike, Zwarte Water and the outer dikes of De Biesvelden and Mandjeswaard polders and Kamper-eiland.

For the exact demarcation of the area see accompanying map.

#### 5. Administration and management

The administration and management of the area are aimed at maintaining and developing the high potential of nature values in the area. This aim finds expression in the following:

- Zwarte Meer is designated as a core area in the national ecological network in the Nature Policy Plan of the Netherlands (1990). The policy for core areas is aimed at safeguarding and enhancing existing nature values.
- In the Structure Plan for the Rural Areas in the Netherlands (1993) the area is designated as a core area (and/or nature development area) with water-borne recreation fitted in. The policy for nature development areas is aimed at further developing nature values of international importance.
- In the draft Regional Plan Flevoland (1992) the zone along Zwarte Meer is designated for agricultural purposes only.
- In the Regional Plan West-Overijssel (1993) Zwarte Meer and the marshlands are referred to as Landelijk Gebied IV (rural area zone IV), the unembanked grasslands are referred to as Landelijk Gebied III. This means that nature and landscape values are to be maintained or to be developed further. In areas referred to as Zone III the development of landscape, nature, reed cultivation and forest is a first priority. Agriculture and recreational co-use are also promoted but are subordinate to the function of nature. In areas referred to as Zone IV the emphasis is on nature, landscape and forest development. Co-use is a possibility as long as it does not interfere with the function of nature.
- The land use plans of the municipalities of Noordoostpolder, Kampen,

Genemuïden and Brederwiede correspond with these zoning plans: the lake and marshlands are designated as 'nature areas', the unembanked grasslands are designated as 'agricultural land of (high) landscape value' and regulations provide for the conservation of the area's nature values.

- On 10 October 1990 Zwarte Meer and the adjacent state-owned marshland zones - with the exception of the shipping routes - were designated as a state-owned nature reserve under the Nature Conservation Act to ensure the best possible legal protection and to create the most favourable conditions for nature management. Designation as nature reserve of the southern marshland zone which is owned by the municipality of Kampen is under preparation. In this context a reedlands management policy is proposed aimed at the special protection of vulnerable reedland and marshland nesting birds.
- The unembanked grasslands east of Zwarte Meer have been designated as management area and reserve area under the Policy Document on Agriculture and Nature Conservation (Management Plan North-west Overijssel, 1990). Under this Document farmers are encouraged to enter into management agreements to prevent damage to the more sensitive areas.

The policy for Zwarte Meer is aimed at safeguarding and enhancing existing nature values. In view of its importance for waterfowl and waders as a resting, moulting and foraging site it is of vital importance that the quiet found in the area be maintained. In Zwarte Meer and the adjacent marshlands therefore a ban on shooting applies. An effort will be made to ban shooting in the eastern unembanked grasslands as well. Large sections of Zwarte Meer will be closed to watersports under article 17 of the Nature Conservation Act.

The valuable marshlands will be maintained by placing them under a mowing regime. To that end the National Forest Service, the Service of Public Lands, the municipalities of Kampen and Genemuïden and the Water Control Board of Vollenhove have leased large sections of the reedlands to private reed cutters. The National Forest Service manages the reedlands with a view to breeding birds which depend on perennial reeds such as purple heron, bittern and great reed warbler. Under the Policy Document on Agriculture and Nature Conservation there is a possibility to conclude management agreements to conserve botanical values important for meadow birds and winter visitors.

## 6. Other uses

Channels have been dug through Zwarte Meer for commercial shipping which are used by pleasure craft through the summer months. The waters outside these shipping channels are used by smaller craft, canoes and surfboards.

The shipping route from Meppel via Zwarte Water and Zwarte Meer and Ramsgeul to Ketelmeer will soon be designated as main shipping route. Designation of the area for inclusion in the list of wetlands will not affect the development and possible adaptation of this shipping route. To safeguard Zwarte Meer's function as a resting, moulting, foraging

and breeding site for birds areas will be zoned for recreational use. To that end watersports will be banned from large sections of Zwarte Meer outside the shipping channels.

The municipality of Kampen issues annual licences that allow people to sniggle for eels. These licences also cover the shallow waters along the southern shores of Zwarte Meer where snigglng is not a desirable activity since it might disturb birds breeding in the adjacent reedy borders. Besides, the waters here being often too shallow people tend to move on to state-owned property where fishing rights are farmed out to commercial fishermen whose activities are not in conflict with the area's nature function.

On the grasslands agriculture is not too intensive. The conclusion of management agreements under the Policy Document on Agriculture and Nature Conservation makes for the best possible management of existing nature values. Leaching of fertilisers is negligible compared to the amount of nutrients supplied by the rivers and channels draining on Zwarte Meer.

In Zwarte Meer high inputs of phosphate over the past decade have led to high levels of eutrophication. This leads to excessive growth of algae particularly during the summer months. When the algae die their microbial degradation consumes most of the dissolved oxygen so that the water's capacity to support life is greatly reduced. The waters however still meet oxygen threshold levels.

In 1988 an Environment Impact Assessment (Ramspol) was published to assess plans for the West Overijssel sea defences. On the basis of this EIA the Minister for Transport, Public Works and Water Management decided to opt for a sluice near Ramspol. Given the significance of the nature and landscape values involved a new environmental impact study has begun, particularly to decide the desired flow-through opening, the management regime and water levels, the prevention of polluted waters coming in and the options for nature development. The policy as laid down in the Structure Plan for the Rural Areas in the Netherlands will apply to areas that come within the national ecological network.

## 7. Consequences of the designation as a wetland

The designation of Zwarte Meer for inclusion in the list of wetlands has the following consequences:

- Under article 3, paragraph 1, the government is obliged to formulate and implement its planning so as to promote the conservation and the wise use of the wetland as far as possible. The necessary steps have been taken as the above sets out.
- Under article 3, paragraph 2, the government is obliged to arrange to be informed at the earliest possible time if the ecological character of the wetland is changing or is likely to change. There is a general consensus as to how the area should be administrated,

developed and managed. 1650 ha of it is state-owned.

- Under article 4, paragraph 2, the government is obliged to compensate for any loss should the boundaries of the wetland be restricted because of its urgent national interest. Such a restriction is not expected. The obligation to compensate cannot be honoured since in view of the nature of the area there is no real possibility of any compensation.
- Under article 4, paragraph 3, the government is obliged to encourage research and the exchange of data and publications regarding the wetland.  
In accordance with the main objective laid down in the management plan for the area research will be carried out to get a better understanding of the area's ecosystem and the desired management.
- Under article 4, paragraph 4, the government is obliged to endeavour to increase the waterfowl population through management. This obligation is fulfilled because management is aimed at maintaining and developing the nature function of the area.

#### Obligations under national policy

The hunting and shooting policy, which was reviewed in 1994, prohibits the reviewed in 1994, prohibits the hunting or shooting of migratory species in areas included in the list of wetlands and other nature reserves and allows the shooting of resident species only under well-defined conditions. This policy has also been incorporated in the management plan for the area.

Nature reserves come under the Environmental Management Act. Under article 4.9, paragraph 4 of this Act provincial authorities should give nature reserves in provincial environmental management plans the status of 'area where the quality of the environment or parts thereof requires special protection' (article 4.9, paragraph 3c). This is not desirable for parts of Zwarte Meer which lie within the bounds of noise sources. In the explanatory notes therefore it has been laid down that article 4.9, paragraph 4b, of the Environmental Management Act shall not apply to noise nuisance in or coming from the shipping channels Ramsdiep, Zwanendiep, Zwolsche Diep and Scheepvaartgat. The use, maintenance and adaptation of shipping channels therefore will not be subject to restrictions. The shipping channels are indicated on the map.