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**Committee for the activities of the Council of Europe
in the field of biological and landscape diversity**

(CO-DBP)

Group of specialists – European Diploma for Protected Areas

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**THE NAARDERMEER NATURE RESERVE
(Netherlands)**

**APPLICATION
for the European Diploma of Protected Areas**

Expert report by
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*Document established by
the Directorate of Culture
and Cultural and Natural Heritage*

I. INTRODUCTION

The Dutch government presented a report to the Council of Europe as an application of the European Diploma for the Naardermeer Nature Reserve, managed by the private society Natuurmonumenten.

During the on-the-spot-appraisal at the reserve from 24 – 25 June 2003 the undersigned expert and the representative of the Council of Europe (Mrs. Françoise Bauer) visited the reserve under guidance of the research and management team. Representatives of the responsible authorities and the press were contacted. Study documents, plans and publications were put at our disposal in order to formulate an objective advice on the application for the European Diploma.

We are grateful for the excellent way in which Natuurmonumenten enabled us to experience the values of the Naardermeer and to discuss fundamental and practical matters on the importance of the reserve and its relations to the surrounding environment.

The following persons have been contacted for discussions on the specific matters of their competence:

Feiko Prins (international relations officer, Natuurmonumenten)
Gradus Lemmen (chief conservator)
Jan Willem Van Rijn (water quality management)
Nico Straathof (hydrologist)
Gert Van Ee (limnologist)
Bart Van Vooren (botanist)

More persons, also volunteers, were met during the visit when specific aspects of actions and management were to be explained. We are very grateful to local authorities, including Maires, water council officers, provincial board members and representatives of the Ministry of Agriculture, Nature and Fisheries. We are most grateful for their presence and involvement in conservation.

II. GENERAL INFORMATION

1. Historical backgrounds and values

The Naardermeer reserve was established in 1905 as a result of fights and actions to avoid a waste dump of the city of Amsterdam planned in this lake. At that time, the Dutch private conservation society ‘Vereniging tot behoud van Natuurmonumenten’ was established and purchased the reserve in 1906. Nowadays, this organisation has a membership of almost 900.000 and manages about 50.000 ha of nature reserves and sites of natural and landscape importance. The reserve owned is 1077 ha, of which 400 ha is buffer zone.

In this regard, the Naardermeer is a unique symbol of the earliest conservation actions and realisations in Western Europe. Its hundreds anniversary will be celebrated in 2005 and the award of the European Diploma would emphasise this pioneer role of both the Naardermeer reserve and the association Natuurmonumenten for the nature conservation movement in Europe.

During the XXth century, especially after the Second World War, the province of Noord-Holland became the most densely populated region of Europe; the surrounding landscape of the Naardermeer became increasingly occupied by socio-economic developments as housing and transport networks.

Notwithstanding this external pressure and due to the public acceptance and recognition of the unique nature values, the Naardermeer could be preserved and managed as a biodiversity hot spot and a core area in the ecological network surrounded by an efficient buffer zone. The set of management tools needed to maintain these important values required specific techniques and care; also the success of these actions could be rewarded by the European Diploma.

1. Natural Heritage

A. Situation, geomorphology and hydrology

The Naardermeer is one of the few natural lakes in the Netherlands, in contrary to the nearby 'Vechtplassen' along the river Vecht that resulted from earlier peat digging (cfr. the Weerribben Diploma area). The lake and surrounding marshland is unique in its positioning and values because of landscape ecological and hydrological relations: the higher sandy Pleistocene soils of the Gooi hills (+ 30m) in the east cause constant seepage of good quality groundwater flowing to the river Vecht in the west. Thus the Naardermeer (at 0.8-1 m elevation) enjoy relatively constant water quantity conditions enabling the development of unique long term ecological processes.

The lake originated from an influx of the river Vecht and has a peat soil bottom under the marsh zone and mineral sand or clay soils under the water body itself.

The vicinity of the IJmeer and many other wetlands along the river Vecht (e.g. Ankeveense plassen) also increase the functions and potentials of the reserve as a core area.

B. Habitats

Several communities of the reserve form a complete succession series of peat formation: shallow mesotrophic open water, reedsbeds, quagmires, hayfields, brush wood and carr or bog forest; in the buffer zone an alternation of shallow water, grassland, rough herbs and low brush woods occur as a result of nature restoration and development. The completeness of this succession series is an almost unique characteristic that is rarely found in one single area.

C. Flora and vegetation

Vegetations are extremely rich thanks to the dephosphatised inlet of surface water, mixing with rainwater and seepage water. The succession series include:

Charetea vegetations with several rare species in the *Chara* and *Nitella* genera
Potametea with large patches of *Nymphaea*, *Nuphar* and also *Stratiotes*
 peat formation stages starting with *Typho-Phragmitetum*, *Scirpetum lacustris*,
Cicuto-Caricetum pseudocyperi
 mowing management results in *Phragmitetea*, with further succession toward
Palalvicinio-Sphagnetum, which is mainly dependent on rain water
 other marsh parts belong to *Calthion palustris* vegetations
 most precious are quagmires of *Caricion davellanae*-type with many rare species
 some mown types develop into vegetations with *Erica* and *Eriophorum*
 development of forests occur at the edge of the floating marshes: rich type of *Alnion* carr
 the oldest bog forest with acidophilus characteristics were never influenced by management,
 here a peat formation occurs with indicators as *Sphagnum maghellanicum*.

The species richness of water plants and different groups of algae is to be mentioned; also new species have been described here, indicating the rarity of this ecosystem.

D. Fauna

The Naardermeer is well known for its colonies of breeding birds: Cormorants, Gray and Purple herons, Black terns and in earlier times (until 1988) also Spoonbills. A great number of breeding and migratory water birds makes use of the open water of good quality and fringing vegetations. Further stages of succession offer habitats for different groups of birds, including rare passerines, rails, raptors etc.

Besides the well monitored avifauna, other groups are well represented such as Fish, Amphibians, Reptiles, Mammals and a number of typical insects (notably Dragonflies with 23 species). In total at least 550 aquatic invertebrate have been inventoried.

E. Landscape and culture

The core area of the reserve with the lakes, marshes and bog forests has never been reclaimed (after failed attempts in the 17-18th century), but is surrounded by a polder landscape that has been drained and cultivated in former centuries. The historic rectangular parcel patterns are still visible here in ditches and vegetations. Restoration and development of nature in the outer zone of the reserve, surrounded by a dike, has been realised and reinforced this pattern.

Other artificial landscape elements with historic values in the buffer zone are the duck decoy, the Machine building (former failing steam-driven pumping station), the windmill and even a series of bunkers.

2. Protection status

- 'core area' of the National Ecological Network (Nature Policy Plan 1990)
- 'national nature monument' (conservation legislation)
- designated as a 'Ramsar wetland area' (1980)
- fauna elements subject to protection as species in the Annexes of the Bonn and Bern Conventions
- designated as a 'Special Protection Area' under the EU-Bird Directive (1986)
- application as 'Special Area of Conservation' for the EU-Habitat Directive (1998)
- nature reserve status at regional level (district plan Gooi & Vechtstreek, 1998) and municipality level

In the landscape ecological relations, the flow of groundwater is essential, notably for the maintenance of nature values depending on seepage. As the infiltration zone of the Gooi hills are situated at a distance of the reserve, *they are not included in the protected zone*. In the 60s and 70s development of housing occurred and ground water was pumped for production of drinking water. This reduced the pressure of seepage in the reserve.

At the same time the surrounding polders evacuated water for agricultural improvement, resulting in 1m lowering of the surface. These negative trends have been stopped by nature restoration in the buffer zone (see next §). Also the negative stress by exploitation of groundwater volumes was lowered and hydrological balance is restored.

The realisation (acquisition) of the buffer zone surrounding the reserve is not yet fully completed, which causes some difficulties in nature restoration programming.

3. Reserve and buffer zone nature management

Guidelines are fixed in the 'Nature Management Plan Naardermeer 1995-2010' and the Restoration Plan 1993.

This plan with nature targets is evaluated every 6 years in view of achieving the objectives by the management team, partners and external experts. Natuurmonumenten as owner is carrying out the ecological management. The regional 'Polder Board' is responsible for water management in agreement with Natuurmonumenten.

The core area surrounded by the quay or small historic dike is managed mainly in view of the peat ecosystem protection and development. This includes mowing and reed cutting in order to increase subclimax diversity and to slow down shrub development. Parts of the carr woodland stages have been regenerated into young succession stages. When maintenance of water level is problematic, water inlet from the Vecht via the purification plant and dephosphatising station is allowed (flocculation process with FeCl).

As the phosphate accumulation in the muddy lake bottoms (from before 1960) delivered high concentrations of phosphates, all lakes have been dredged with support of EU-Life and all stakeholders concerned. This resulted in an unsurpassed improvement of the mesotrophic water quality. The water body directly influenced by the Cormorant colony (guanotrophication) has been successfully isolated from the restored lakes in order to avoid algae bloom in the entire reserve.

The buffer area outer the dike has been reclaimed as polder for agriculture, but since the establishment of the buffer zone in 1997 restoration of water levels (+ 1 m !) has resulted in a functional hydrological buffer for the core area. Higher water levels in the buffer zone would decrease the leakage of Naardermeer water to the agricultural areas outside. To maintain hydrological balances the inlet of water during summer is realised after a dephosphatising process. The result is that the lakes contain exceptionally clear water indeed (mesotrophic).

The aim of the buffer zone is also to create a corridor with surrounding wetlands and an attractive patchy mosaic of restored water bodies, meadows and semi-natural grasslands. Here grazing management with Galloway cattle is successful indeed, as this induces natural ecological processes.

4. Access, Recreation and Nature Education

Situated between the large cities of Amsterdam, Utrecht and Almere, the social function of the reserve is of highest importance in order to increase acceptance of nature conservation and public awareness.

Access to the core area is only possible by silent boats (8000 visitors annually in guided tours). An information point is established for participants as a low-profile but very functional visitors centre. Here education efforts towards school children are extremely creative and successful (e.g. carrier-tricycles with documents and experimental equipment for fieldwork, binoculars etc.).

In the surrounding outer buffer zone a long distance walking tour is realised in 1998, so the public at large gets free access at different habitat types. Especially the newly established wetlands offer unique observation facilities for waterbird concentrations from hides and towers. The number of hikers is estimated at several 10.000s. As the buffer zone is part of provincial cycling path networks, an even greater number of visitors enter the reserve. In hard winters skating is allowed on the lakes of the core area, making conservation efforts and closing the reserve in other seasons fully accepted.

A specific (potential) public are the passengers at the train connection Amsterdam-Hilversum crossing the reserve, many of them enjoying the scenic landscape and nature at daily basis. This railway exists since 1860.

Finally specific facilities have been adapted to increase accessibility for disabled persons in wheelchairs.

5. Scientific research, monitoring and personnel

Many students and scientists are carrying out research in the nature reserve. This gives an appropriate basis for the management options and measures, with feedback during evaluation audits.

The budget for personnel (8 permanent staff) and for the site management amounts to almost 460.000 €. On top the Restoration Plan partners also contribute for some projects.

6. Physical planning: threats from road network expansion

Actually physical planning documents are under consideration for extending the motorway A6 to join the A9. This would require the construction of a totally new stretch in the open polder landscape just NW of the reserve. Also the widening of the existing motorway A1 at the NE of the reserve is planned. Especially the A6-A9 connection will cause an unacceptable fragmentation of the landscape, where the connectivity of the Naardermeer with the IJsselmeer via Muiden and Muidenberg is part of the functional ecological network.

Alternative routes and the possibility of underground passage NW of the reserve are to be further developed in order to prevent the protected area and its surrounding landscapes from future irreversible damage. Also noise and light pollution are to be avoided. When a tunnel is considered, hydrological relations with the reserve needs to be fully taken into account, but it is doubtful all this is realistic. A full Environmental Impact Assessment is not yet established, so all alternatives can still be discussed.

IV. Conclusion

We fully recommend the award of the European Diploma by the Council of Europe for following reasons:

- the outstanding symbolic value of the Naardermeer as the first nature reserve in the Netherlands established 100 years ago (*'flagship reserve'*);
- the unique completeness of the ecological succession series of this natural lake (peat formation processes) and the biodiversity values belonging to this phenomenon;
- the balanced functions of conservation, education and recreation in a densely populated region, combined in one single reserve being exemplary and deserving greatest respect and support;
- the successful nature restoration of former agricultural land into wetland habitats functioning as important buffer zones that are attractive to a large public;
- the strong signal given to the authorities to avoid external disturbances or pressure by establishing new motorway connections (A6-A9) or renewal of existing ones (A1) in the neighbourhood.

Although the Netherlands has already three Diploma holding areas, this new application can be argued as a complementary contribution stressing the importance of integrated approach and action.

The existing Diploma sites are:

- Boschplaat: a natural site of dune and coastal marsh,
- Oostvaardersplassen: a totally artificial area but with natural processes in a sustainable management,
- Weerribben: semi-natural wetland, intensively managed and used for economic and recreation functions.

Comparing the biological characterisation of these Diploma areas, the Naardermeer holds a specific position not yet covered by the other reserves: an inland site of a natural lake with active peat formation processes in nutrient poor waters, where nature restoration of former agricultural land has been successful and functions as an example of potentials elsewhere in Western Europe.

This Diploma status will encourage Natuurmonumenten to continue their long standing and considerable conservation efforts in close cooperation between volunteers and official administrations.

It will also give a firm signal to the authorities to slow down urban development and roads expansion in the region and stimulate plans for establishing ecological corridors.

Notably the planned construction of the new trunk of A6-A9 motorways is to be relocated at a further distance N of the reserve and closer to the urbanised area S of Amsterdam area; eventually this could be considered by the Council as a preliminary condition before awarding the European Diploma.

V. Recommendations

1. Long term improvement of the hydrological conditions of the reserve needs reduced pumping of drinking water in the Gooi hills and the separation of sewage water and surface water to increase quality of infiltration.

2. In order to complete all adequate actions of restoration and nature development it is of high priority that Natuurmonumenten gets financial support to complete the buffer zone around the core area of the reserve.

3. - The function of the Naardermeer as a core area in the ecological network ('green main structure') needs that all possible measures are taken to avoid habitat fragmentation in the corridor landscapes towards the IJmeer, the IJsselmeer, the Vecht River, the Ankeveense Plassen and the Gooi hills.

- in the regional planning the creation of the 'natte as' ('wet axis' or corridor with Naardermeer as a core area) between Amsterdam and Hilversum is to be promoted.

4. - The establishment of larger ecological zones in the surrounding agricultural area enabling the further restoration of water levels is recommended, in order to avoid leakage from the reserve and further shrinking of peat layers.

- Restoration programmes transforming former polders into wetlands must be encouraged in order to link the Naardermeer with its surroundings; this needs agro-environmental agreements with the agricultural sector.

5. The possibilities to improve the connecting corridor between Naardermeer and Ankeveense plassen by reconstructing the actual road on pillars (removal of a barrier) are to be considered.

6. - In relation to the construction of a new motorway connection (A6-A9), the zero option, alternative routes and the possibility of underground passage NW of the reserve are to be duly investigated in a preliminary Environmental Impact study.

- The effects of widening of the A1 on the nearby reserve are to be minimised.

- Risks for pollution deriving from transport along motorways and railroad are to be minimised and carefully caught.

APPENDIX

Draft resolution concerning the award of the European Diploma of Protected Areas to the Naardermeer Nature Reserve (Netherlands)

The Committee of Ministers, under the terms of Article 15.a of the Statute of the Council of Europe,

Having regard to Resolution (65) 6 instituting the European Diploma, as amended by Resolution (98) 29 on the Regulations for the European Diploma of Protected Areas;

Taking into consideration the expert's report presented at the meeting of the Group of Specialists - European Diploma of Protected Areas on 12 and 13 January 2004;

Having regard to the proposals of the Committee for the Activities of the Council of Europe in the Field of Biological and Landscape Diversity (CO-DBP);

Having noted the agreement of the Government of the Netherlands;

After deliberation,

Solemnly awards the European Diploma of Protected Areas to the Naardermeer Nature Reserve, in accordance with the Regulations for the European Diploma for Protected Areas, due to the outstanding symbolic value of the Naardermeer as the first nature reserve in the Netherlands established 100 years ago, the unique completeness of the ecological succession series of this natural lake (peat formation processes) and the biodiversity values belonging to this phenomenon, the balanced functions of conservation, education and recreation in a densely populated region combined in one single reserve being exemplary and deserving greatest respect and support;

Places the aforesaid area under the patronage of the Council of Europe until,

Attaches the following recommendations to the award:

1. Long term improvement of the hydrological conditions of the reserve needs reduced pumping of drinking water in the Gooi hills and the separation of sewage water and surface water to increase quality of infiltration.
2. In order to complete all adequate actions of restoration and nature development it is of high priority that Natuurmonumenten gets financial support to complete the buffer zone around the core area of the reserve.
3. - The function of the Naardermeer as a core area in the ecological network ('green main structure') needs that all possible measures are taken to avoid habitat fragmentation in the corridor landscapes towards the IJmeer, the IJsselmeer, the Vecht River, the Ankeveense Plassen and the Gooi hills.
 - in the regional planning the creation of the 'natte as' ('wet axis' or corridor with Naardermeer as a core area) between Amsterdam and Hilversum is to be promoted.
4. - The establishment of larger ecological zones in the surrounding agricultural area enabling the further restoration of water levels is recommended, in order to avoid leakage from the reserve and further shrinking of peat layers.
 - Restoration programmes transforming former polders into wetlands must be encouraged in order to link the Naardermeer with its surroundings; this needs agro-environmental agreements with the agricultural sector.

5. The possibilities to improve the connecting corridor between Naardermeer and Ankeveense plassen by reconstructing the actual road on pillars (removal of a barrier) are to be considered.

6. - In relation to the construction of a new motorway connection (A6-A9), the zero option, alternative routes and the possibility of underground passage NW of the reserve are to be duly investigated in a preliminary Environmental Impact study.

- The effects of widening of the A1 on the nearby reserve are to be minimised.
- Risks for pollution deriving from transport along motorways and railroad are to be minimised and carefully caught.