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INFORMATION SHEET ON RAMSAR WETLANDS

1. **Country:** France
2. **Date:** 01/03/93, revised 26/09/94
3. **Ref:** 7FR014
4. **Name and address compiler:**
Diren des Pays de la Loire
75, Rue des Français Libres
BP 2197
44204 Nantes Cedex 02
5. **Name of wetland:** Lac de Grand-Lieu (44)
6. **Designation Date:** 01/02/95
7. **Geographical coordinates:** 47°02 - 47°08'N 01°36 - 01°45'W
8. **Overview:** The site is situated in the Département Loire-Atlantique, south of the estuary of the Loire, 15 km south-west of Nantes.
9. **Area:** 6300 ha in winter, 4000 ha in summer (depending on climatical conditions)
10. **Wetland type:** O-U Freshwater lake with a variable water level - peat bog (900 ha)
11. **Altitude:** 2 - 5 m
12. **Overview:**
A shallow lake, dominated by macrophytic vegetation and three large floating forests. In appearance, it is quite untypical of a European water body, as it has many of the features of a tropical wetland. It is encircled by wet meadows (1,500 ha), which are used for agriculture (mowing and pasture).
13. **Physical features:**
Shaped by tectonic movements some 120 million years ago, the lake remained in a remarkably well preserved state until the 1960s, when the natural regime of its waters was radically altered by large-scale human intervention: major hydraulic works between 1954 and 1962 (removal of the rocky sills guaranteeing a minimum level), a substantial fall in the water level, the introduction of new methods of land cultivation, the flattening of hedges, and urban development. Coupled with the pollution of the 670 km² catchment area (agriculture, urban effluent), these disturbances have caused such severe eutrophication that the lake's ability to survive in the short term is now in question.

- 14. Ecological features:**
The lake has five major biotopes:
- a central area of open water characterized by floating or emergent vegetation;
- an area of floating and emergent herbs (nenuphars, lacustrine club-rushes, water chestnuts, herbs of the Limnaceae family);
- an area of reed-beds and floating forest (alders and willows);
- an area of marshy wet meadows; and
- the surrounding land, which is not subject to flooding (bocage with cultivated land and grassland, heath and woodland, including two forests of 150 and 200 ha respectively).
- 15. Land tenure/ownership:**
- the site is partly private property, partly property of the local community and partly state property
- 16. Conservation measures taken:**
- Site listed in ZNIEFF - type 1 (1009.0000).
- Site listed in ZICO (PL 04).
- Site listed in the Habitats Directive.
- The lake and its shores (7,500 ha) have been a classified site since 1982.
- The centre of the lake (2,700 ha) was designated a nature reserve in 1980; it is managed by the Société Nationale de Protection de la Nature.
- 650 ha have been acquired by the Fondation pour la protection des habitats de la faune sauvage.
- ZPS classification on 5.9.1986 (6,000 ha).
- 17. Conservation measures proposed but not yet implemented**
- A rescue operation (clearance of silt by dredging and raising the level of the water) has been proposed.
- 18. Current land use: principal human activities in:**
- (a) site:**
- Principal human activities: fishing (traditional methods used by 10 professional fishermen); hunting in the unprotected peripheral area of the lake (1,500 to 2,000 hunters, including 150 wildfowlers).
- (b) surroundings/catchment:**
- Highly diversified mixed farming, dominated by wine-growing and cattle rearing.
- 19. Disturbances/threats, including changes in land use and major development projects:**
- (a) at the site:**
- Because of hydraulic management problems and excessive eutrophication of the water from the catchment area, the lake is undergoing unusually rapid siltation.
Its future can be safeguarded only by:
- reverting to a more natural hydraulic regime and maintaining a high water level in spring;
- reducing pollution in the catchment area;
- removing some of the sediment by means of ecological engineering;
- providing financial reparation, introducing management contracts and adopting land control measures for the peripheral areas.
- (b) in the surroundings/catchment:**

- The situation is liable to be aggravated by land reallocation schemes, as well as by the introduction of intensive breeding (pigs, poultry, etc.) and the many problems raised by the consequent spread of liquid manure.
- It is difficult to maintain biodiversity in the face of the trend towards abandoning traditional farming practices such as mowing.
- The increase in large-scale hunting close to water holes is a significant cause of environmental degradation, while intensive urban development in some parts of the catchment basin close to Nantes is having an adverse effect on the physical and chemical quality of the water.
- A water management/regulation pilot scheme (SAGE) is currently being studied.

20. Hydrological and physical values:

- Presence of a subterranean layer of about 1000 million m³ of water that can be converted to drinking water. Grand-Lieu represents a potential water source of major importance. In summer, it is possible to restore up to 20 million m³ through human activities if the programme of water saving for the lake is applied (.

21. Social and cultural values:

- the patrimonial richness of the lake, classified on the inventory of sites since 1982 because of its aesthetical values in the landscape, which are partly due to the absence of any artificial influence caused by human intervention. It is also important for its archaeological, historical, palynological and ethnographical values, and for the legend around the lake.
- fishing, which was important traditionally in the beginning of this century (120 fishermen in 1923) still carries on strongly at the lake (10 professional fishermen, who also hunt the waterfowl as is traditional in the local culture.
- the wet meadows are traditionally used for hay production and as pasturing.

22. Noteworthy fauna:

- Over 200 species, including approximately 110 nest-building species.
- Noteworthy birds:
- A colony of white spoonbills, unique in France and spread over a few neighbouring marshes (Brière-Mazerolles).
 - One of the main colonies of grey herons in Europe (1,000 nesting pairs).
 - Other nest-building species: purple heron, night heron, cattle egret, Eurasian bittern, sacred ibis, great cormorant, great reed warbler, black tern, whiskered tern, little egret, great white egret.
 - Migration and wintering site for Anatidae (about 17,000 ducks and coots); 8,000 to 10,000 mallard; 3,500 pochard; 2,500 northern shovelers (largest wintering site for this species in France, after the Camargue); 2,000 coots.

23. Noteworthy flora:

- 500 important plant species, including many that are very rare at national or regional level and several that are protected at national level (*Ranunculus lingua*, *Damasonium alisma*, *Drosera rotundifolia*, *Gratiola officinalis*, etc.).
- Aquatic plant communities are well represented and diversified. The floating herb species of the site are unparalleled in France.

24. Current scientific research and facilities:

- An important scientific research programme has been started in 1992 aiming to save the lake. It covers hydrological aspects, sedimentology, water quality, evolution of aquatic vegetation and socio-economical aspects. The management of the natural reserve (SNPN)

permanently monitors the evolution of the ecosystem in liaison with the University of Rennes.

25. Education and information:

For the part of the area that is covered by the natural reserve, the SNPN keeps a simple visitors centre, in particular for school children and students. It is also used as a facility for tourists in the region.

A visitors centre especially for the reserve is planned. On the propriety of the Fondation pour les Habitats, hunters organise discovery days for school children.

26. Recreation and tourism:

- Boats are prohibited at the lake, except for one day a year at the 'fête de la pêche' (fishing festival).

- More permanent activity exists at the borders of the lake: an observatory for the lake, a Maison du Pêcheur (fisher's house) at Lassay and a Museum for Avifauna at Sain Philbert.

27. Management authority:

- Réserve Naturelle du Lac de Grandlieu

- SNPN, Château de la Senaigeraie, 44830 Bouaye.

- Fondation pour les Protection des habitats de la Faune Sauvage

- Fédération des Chasseurs de la Loire Atlantique, 12 bis, Boulevard Blancho, 44200 Nantes.

28. Jurisdiction:

- Nature reserve and classified site: Ministère de l'environnement

- Water management: the State (prefectorial decree), DDAF

29. Bibliographical references:

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30. Reasons for inclusion:

- 1d (unique in France in terms of appearance/physiognomy)
- 2a, 2b, 2c, 2d
- 3a, 3b, 3c