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Information Sheet on Ramsar Wetlands (RIS)

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Designation date Site Reference Number

2. Date this sheet was completed/updated: 25 October 2002

3. Country: France

4. Name of the Ramsar site: Etangs du Lindre, Forêt du Romersberg and surrounding areas

5. Map of site included:

(a) **hard copy:** yes -or- no

(b) **digital format:** yes -or- no

6. Geographical coordinates: 48° 47' North latitude - 06° 48' East longitude

7. General location: This site is located in the Lorraine Region (North-Eastern France), Department of Moselle (57), approximately 40 kilometres southeast of the city of Metz between the towns of Château-Salins, Morhange and Sarrebourg, near Dieuze. This site is located in the heart of a small region of 134 ponds: the Pays des étangs.

8. Elevation: 207 to 250 metres

9. Area: 5308 hectares

10. Overview: This vast eco-complex is characterized by a very diversified mosaic of environments made up of ponds (including the Etang de Lindre), forests and meadows. This mosaic is one of the essential interests of the site because it offers numerous habitats for wild fauna and flora. This area also constitutes an exceptional site for birdlife.

11. Ramsar Criteria: 1, 2, 3 and 4

12. Justification for the application of each criterion listed in 11 above:

Criterion 1: The site includes a small area of inland salt marshes. This type of habitat is very rare in France and Europe, very localized and small in area. It provides habitat for outstanding plant life. Furthermore, it is considered as priority under the E.U. Directive on Habitats (92/43/CEE).

Criteria 2 and 3: The site provides habitat for an important number of animal species of community interest listed in the E.U. Directive on Wild Birds (79/409/CEE) and the E.U. Directive on Habitats (92/43/CEE).

Criterion 4: This site is considered to be of major importance for post-nuptial gatherings (moulting) of the Northern shoveler (*canard souchet*) (*Anas clypeata*) and the common pochard (*fuligule milouin*) (*Aythya ferina*) (see paragraph 18).

13. Biogeography:

14. Physical features of the site: This site is characterized by the predominance of outcroppings of Keuper Marl, which form very characteristic regions, mostly depressed, often marshy and favourable to the creation of ponds. Human interaction with the Etang de Lindre goes back to the ninth and tenth centuries, when a Benedictine convent was established at Vergaville. The soil is characterized by its low permeability, high water content and shallow depth. The climate is characterized by marked continental influences: large differences of temperature, long and cold winters, and hot and stormy summers. Masses of mild and humid air are supplied by winds from the south-west, west and south, which give this region a temperate climate. Average annual temperature is 8° C (with average minimal temperature in winter of -2° C and an average maximum temperature in summer of +24° C). Spring frosts are frequent and sometimes occur into May. Precipitation is abundant (an average of 905 millimetres per year) and is spread throughout the year. In summer, the large areas of water surface and forest cover create a microclimate marked by high ambient humidity, which produces cloud cover at night and many storms. Ambient humidity and cloud cover create a greenhouse effect that limits loss of heat between day and night.

15. Physical features of the catchment area:

16. Hydrological values: This site is located in the catchment basin of the Lindre, which in turn belongs to the Seille catchment basin. About 20 ponds are aligned in a row along three streams: the Speck, which begins at Rorbach-lès-Dieuze, the Nolweiher, which begins southwest of Belles-Forêts, and the Zebourg, which drains the southern part of the site. The Etang de Lindre, source of the Seille, is a large basin (620 hectares) into which all these streams empty. The total capacity of the ponds for water retention at the site corresponds to almost 18 million cubic metres (an area of 920 hectares with an average depth of approximately two metres). Water is supplied to the catchment basin primarily by surface runoff, which leads to large variations in water level. Downstream from the site, the water level of the

Seille is regulated at the exit of the Etang de Lindre through a system of sluices. A rise of ground water in the marls and impermeable sub-soils occurs through cracked dolomite pockets. These aquifers create a very dense hydrographical network, as well as ponds and pools. These aquifers are abundant but little productive, with non-potable water rich in sodium chlorides and lime sulphate. Drinking water is found only in the deep water table of the Vosgian sandstone. No study has recently been made on the impact of flooding on the watershed.

17. Wetland types:

(a) presence: 1, 2, Tp, M and Sp

(b) dominance: 2

18. General ecological features: The ecological heritage of this area is explained by the preservation of diversified environments, disposed in a mosaic at the site: ponds, reed beds and streams, forests, pools, the borders of fields, meadows, pastures, crops and hedges. The types of habitats of community interest and listed in annex I of the E.U. Directive on Habitats (92/43/CEE) cover 93 per cent of the total area at this outstanding site. The following features are found there (the code corresponds to that of the E.U. Directive on Habitats).

Sub-Atlantic and medio-European oak or oak-hornbeam forests	Code 9160
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>	Code 91E0
Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> -type vegetation	Code 3150
Oligotrophic to mesotrophic standing waters	Code 3130
Lowland hay meadows	Code 6510
Alkaline fens	Code 7230
Inland salt marshes	Code 1340
Hydrophilous tall herb fringe communities	Code 6430
Bog woodlands (wooded peaty pools, miniature replicas of this habitat)	Code 91D0

The ecological importance of the site is also determined by the fauna and flora found there. The birdlife is especially remarkable because of its abundance and rarity or the fragility of certain species.

19. Noteworthy flora: Many outstanding plant species, including several protected at the national(**) and regional(*) levels, are found at the site. Outstanding flora of the forest: elm (*Ulmus laevis*), wild black current (*Ribes nigrum*), dactyle souple (*Dactylis polygama*), dorine à feuilles alternes (*Chrysosplenium alternitifolium*), scirpe sétacé (*Isolepis setacea*), nivéole printanière (*Leucojum vernalis*)*, ophioglosse commun (*Ophioglossum vulgatum*)* and thin-spiked wood-sedge (*Carex strigosa*). There is also a presence of rare lichens, characteristic of undisturbed forests (notably *Lobaria pulmonaria*, *Pyrenula nitida* and *Pyrenula nitidella*) and dicrane vert (*Dicranum viride*), a moss of community-wide interest listed in annex II of the E.U. Directive on Habitats.

Outstanding flora of wooded ponds: comaret des marais (*Potentilla palustris*), trèfle d'eau (*Menyanthes trifoliata*) and fougère des marais (*Thelypteris palustris*)*.

Outstanding flora of the ponds and standing waters: Callitriche des marais (*Callitriche palustris*), cératophylle submergé (*Ceratophyllum submersum*), elatine à trois étamines (*Elatine triandra*), elatine à six étamines (*Elatine hexandra*)*, grande naïade (*Najas marina*), jonc des chaisiers glauque (*Schoenoplectus tabernaemontani*)*, jonc fleuri (*Butomus umbellatus*), laïche de Bohème (*Carex bohemica*)*, laïche faux-souchet (*Carex pseudocyperus*), lentille d'eau bossue (*Lemna gibba*), lentille d'eau à trois sillons (*Lemna trisulca*), limoselle aquatique (*Limosella aquatica*)*, oenanthe aquatique (*Oenanthe aquatica*), petit nénuphar (*Hydrocharis morsus-ranae*), flûteau à feuilles de graminées (*Alisma gramineum*)**, potamot filiforme (*Potamogeton trichoides*), renoncule aquatique (*Ranunculus aquatilis*), renoncule de Rion (*Ranunculus rionii*)*, scirpe à inflorescence ovoïde (*Eleocharis ovata*), brown flat sedge (*Cyperus fuscus*) and utriculaire citrine (*Utricularia australis*).

Outstanding flora of the open environments: Adonis d'été (*Adonis aestivalis*), chénopode des villages (*Chenopodium urbicum*), epipactis des marais (*Epipactis palustris*), euphorbe des marais (*Euphorbia palustris*)*, genêt d'Allemagne (*Genista germanica*)*, laïche à épis d'orge (*Carex hordeistichos*)**, laiterson des marais (*Sonchus palustris*), mouron délicat (*Anagallis tenella*)*, pédiculaire des marais (*Pedicularis palustris*)*, samole de Valerand (*Samolus valerandi*)*, scorzonère des prés (*Scorzonera humilis*), troscart des marais (*Triglochin palustre*)* and troscart maritime (*Triglochin maritimum*)*.

20. Noteworthy fauna: Several species of animals of community-wide interest listed in annex II of the E.U. Directive on Habitats (92/43/EEC) are found at the site; for example the triton crêté (*Triturus cristatus*), sonneur à ventre jaune (*Bombina variegata*), cuivré des marais (*Lycaena dispar*), bouvière (*Rhodeus amarus*) and several species of chiroptera including vespertillon de Bechstein (*Myotis bechsteini*). At the site, there is one of the best European populations of feral cat (*Felis silvestris*), a species protected at the national level. The main interest of the site is based on the large diversity of birdlife that visits the site throughout the year for reproduction, migration and wintering. With approximately 120 nesting species and more than 250 species observable year round, this is an exceptional site for birds including several that are listed in annex I of the E.U. Directive on Wild Birds (79/409/EEC); for example the bittern (*Botaurus stellaris*), little bittern (*Ixobrychus minutus*), great white egret (*Egretta alba*), purple heron (*Ardea purpurea*), white stork (*Ciconia ciconia*), black stork (*Ciconia nigra*), Bewick's swan (*Cygnus columbianus bewickii*), ferruginous duck (*Aythya nyroca*), smew (*Mergus albellus*), honey buzzard (*Pernis apivorus*), black kite (*Milvus migrans*), marsh harrier (*Circus aeruginosus*), white-tailed eagle (*Haliaeetus albicilla*), greater eagle (*Aquila clanga*), osprey (*Pandion haliaetus*), spotted crane (*Porzana porzana*), crane (*Grus grus*), black tern (*Chlidonias niger*), kingfisher (*Alcedo atthis*), grey-headed woodpecker (*Picus canus*), middle spotted woodpecker (*Dendrocopos medius*), black woodpecker (*Dryocopus martius*), collared flycatcher (*Ficedula albicollis*) and red-backed shrike (*Lanius collurio*).

The reed beds at the site provide habitat for more than 100 couples of great reed warbler (*Acrocephalus arundinaceus*), a species in rapid decline in France and within the European Union, which represents 20 per cent of the Lorraine population and between two and three per cent of the national population.

A large number of Anatidea use the site at the time of their pre and post-nuptial migration. In the summer, thousands of ducks currently find refuge on the water at the site where they need calm to moult. This site constitutes a major site for post-nuptial gatherings of the Northern shoveler (*Anas clypeata*) (up to 10 per cent of the total in France at this time) and the common pochard (*Aythya farina*) (one of the most important sites in France). Many other species of Anatidea frequent the site, such as the bean goose (*Anser fabalis*), white-fronted goose (*Anser albifrons*), greylag goose (*Anser anser*), Eurasian wigeon (*Anas penelope*), gadwall (*Anas strepera*), common teal (*Anas crecca*), mallard duck (*Anas platyrhynchos*), common pintail (*Anas acuta*), Garganey teal (*Anas querquedula*), red-crested pochard (*Netta rufina*), tufted pochard (*Aythya fuligula*), common goldeneye (*Bucephala clangula*) and the goosander (*Mergus merganser*).

21. Social and cultural values: Human activities (agriculture, fish farms and forestry) exploit all the environments at the site, and fallow or abandoned areas are rare. This presence is an undeniable advantage that must be maintained in order to promote a balance between conservation of these environments and their exploitation. Tourism and recreation activities are modest (see paragraph 27). An effort to promote environmental awareness and education has begun (see paragraph 26). Infrastructure for environmental education has been established, and scientific monitoring is provided (see paragraph 25).

The historical and architectural heritage: There are many traces of history at the site, including Roman vestiges, buried ruins (amphitheatre, stone-paved Roman roads, temples and villas), constructions of the Duke of Lorraine (the dyke and fortified tower of the Etang de Lindre, Château de Guermange), the Domain d'Alteville (two sixteenth-century châteaux), the village-streets of Tarquimpol and Assenoncourt, minor sites (wells, fountains, watering troughs and *guéoirs* in the villages; wayside crosses along the roads or in the fields) and village architecture from the nineteenth century.

22. Land tenure/ownership:

(a) Within the Ramsar site: Private owners, the government, associations and associations own land.

(b) in the surrounding area: Idem.

23. Current land (including water) use:

(a) within the Ramsar site: Forests (55 per cent), meadows (20 per cent), ponds (15 per cent), crops (8 per cent) and miscellaneous (2 per cent).

Agriculture: Farmland occupies 28 per cent of the site, almost 1500 hectares. The farms are primarily for livestock raising (above all for dairy farming and meat production). Several farms carry out both livestock raising and mixed farming. Grains are grown to feed cattle and as additional production. Fewer than a quarter of the exploitations are classified as large farms (*grandes cultures*) where cereals and colza are grown.

Fish farms: The ponds and their reed beds cover 15 per cent of the site, about 800 hectares, of which almost 690 hectares are covered by water. They are used for fish farming and are exploited extensively. The Domaine de Lindre is one of the largest fish farms in France in terms of production (between 80 and 140 tonnes/year) and its technical know-how. It has a hatching facility producing about three million fish fry per year. The ponds are fished annually.

Forestry: Forests are present on 55 per cent of the site, a bit less than 3000 hectares (of which three quarters are government forests and one fourth private forests). They are mainly broadleaf forests, with in some areas old coppices of low forests. The most abundant species are oak, beech, hornbeam and ash. Income is from the production of construction wood and rental of hunting rights.

Hunting and recreational fishing are practised on part of the site. Traditional hunting is the hunting of large game, which waterfowl and small game are not widely hunted, except occasionally the mallard duck. The ponds of the Domaine du Lindre are hunting reserves. They have no special status but hunting areas are not rented. Hunting is no longer practiced on the peninsula of Tarquimpol. Currently, an agreement to suspend hunting has been signed with the person holding hunting rights in order to avoid disturbance of the Etang de Lindre.

(b) in the surroundings/catchment: Idem.

24. 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: This site is not considered especially vulnerable, however, changes in landscapes (homogenization and any decrease in the area left in meadow) and any increase in human activities, disturbances (shooting and frightening of the great cormorant population), drainage, the always-increasing use of biocides and any lack of maintenance of certain environments, such as the reed beds which could lead to a decline in certain species of birds, should be monitored. The site still offers considerable calm, which is one of the elements that explains its abundant wildlife and the reason it must be preserved.

25. Conservation measures taken: In 1976, part of the site (Domain de Lindre-930 hectares) was purchased by the Conseil Général de la Moselle. The site is included in the eastern part of the Lorraine Regional Nature Park (PNRL). The site has been proposed as a site of community-wide importance under the E.U. Directive on Habitats (92/43/EEC) concerning conservation of natural habitats and wild fauna and

flora. A management plan for the site prepared by the Lorraine Regional Nature Park as local operator was completed in October 2001.

26. Conservation measures proposed but not yet implemented: Classification of the site as an SPA is under way under E.U. Directive on Wild Birds (79/409/EEC) concerning conservation of birdlife for the same area as the Ramsar site.

27. Current scientific research and facilities: Since 1991, a large programme of studies and management of the domanical forest of Romersberg has been undertaken by the Office National des Forêts (ONF) in cooperation with the Conservatoire des Sites Lorrains (CSL) and the Lorraine Regional Nature Park (PNRL). The PNRL has begun a programme of surveying all the ponds within the park, especially the site of Lindre. The park has also established a programme aimed at preserving outstanding meadows.

Scientific monitoring: The Domaine de Lindre monitors wildlife at its ponds, particularly herons and fauvelles paludicoles, and there is weekly monitoring of Anatidae (swans, geese and ducks). The Domaine de Lindre is cooperating with the site of Madine under a monitoring programme for these species in order to identify any trends. (Contact: Michel Hirtz, Domaine de Lindre, 67, rue principale, 57260 Lindre-Basse, Tel.: 03 87 86 90 04.)

Infrastructure for initiation: An interpretation trail has been created as part of a hiking circuit between Lindre-Basse and Tarquimpol. Four observation sites are accessible to the public at Dressling, Guermange, Lindre-Basse and Tarquimpol. The Lindre-Basse dyke has an observation telescope.

28. Current conservation education: Three organizations participate actively in the conservation education activities at the site: the Maison du Pays des étangs, Domaine de Lindre and Maison du Clément. Environmental education activities for the general public and schoolchildren are well developed. Conservation also creates local economic activity (provision of services, restaurants, accommodations, transportation) and creates employment in the rural areas. Infrastructure for educational activities has been installed at the site (see paragraph 25).

29. Current recreation and tourism: Tourist and recreation activities are modest. Those dealing with environmental education are, however, well developed (see paragraph 26). Estimates of the number of visitors range from 20,000 to 25,000 visitors per year (of which 7000 to 15,000 visit at the time of the Fête de la Grande Pêche). Nearly 65 per cent of the visits are concentrated in the summer. Families make up most of the public, but nature lovers and birdwatchers also visit the site. The Fête de la Grande Pêche, an event held every autumn since 1992, allows the public to discover traditional fishing with nets, the grading of fish and the technology used at the hatchery.

30. Jurisdiction: DIREN (Ministère de l'Écologie et du Développement Durable), DDAF (Ministère de l'Agriculture, de l'Alimentation, de la Pêche et des Affaires

Rurales), DDE (Ministère de l'Équipement, des Transports, du Logement, du Tourisme et de la Mer) and the Conseil Général de la Moselle.

31. Management authority: There is no single management authority for the wetland. The following institutions manage parts of the wetlands:

Office National des Forêts (ONF) for forests subject to the forest code

Conseil Général de la Moselle (CG 57) for the Domaine de Lindre

Conservatoire des Sites Lorrains (CSL) for the land for which it provides management

Various communes and private owners for their own land

32. Bibliographical references:
