

Information Sheet on Ramsar Wetlands

1. Date this sheet was completed/updated: 31 January 2001
2. Country: Switzerland
3. Name of wetland: Le Rhône genevois—the Allondon and La Laire glens
4. Geographical coordinates: (Geneva harbour)

46° 12' North latitude
6° 09' East longitude

5. Altitude: 335–372 metres

6. Area: 1929 hectares

7. Overview: This wetland includes the shores of Lake Lemman up stream from the city of Geneva, the Geneva harbour and the Rhone River from its exit from the lake up to the border with France, including two major tributaries: the Allondon and La Laire. It covers several biotopes of national importance (alluvial deposits and natural ponds) in the south-western part of the area downstream from the Verbois dam.

8. Wetland type:

Continental: M, O, Tp, Ts, U, W, Xf, Xp

Man-made: 6

9. Ramsar criteria: 1, 3, 4

The criterion that best characterizes this site: 4

10. Map of site included? Please tick yes -or- no

11. Name and address of the compiler of this form:

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12. Justification of the criteria selected under point 9, on previous page:

This is a river landscape with wooded banks forming an ecological corridor between the Geneva harbour, the city and the countryside up to the border with France. It is a wetland of international importance for waterfowl and migratory birds, being a former meander with ponds, reeds and alluvial areas of national importance.

Outstanding fisheries. Presence of beavers. The Allondon and La Laire are natural glens crossed by unchanneled streams and fed by brooks. They are protected from the lake wind (the *bise*) by their topography and are the habitat of fauna (insects, reptiles, birds, mammals) and an outstanding flora with many "southern" species unique in Switzerland. There is pioneer vegetation and, at the edge of the water, alluvial deposits, xerophile grasslands and steppes.

13. General location:

Canton of Geneva, Communes of Aire-la-Ville, Avully, Avusy, Bernex, Cartigny, Chancy, Confignon, Dardagny, Geneva, Lancy, Onex, Russin, Satigny, Soral and Vernier

14. Physical features:

Geology: During the most recent period of glaciation (Würm), the area of this wetland was entirely covered by an 800-metre-thick glacier, which deposited a bottom moraine.

When the ice melted, the Rhone dug a clearly identifiable trench on the French side at the site called Fort-de-l'Ecluse between the mountains of Le Crêdo and Le Vuache. The runoff from the retreating glaciers washed out the moraines and spread gravel, older alluvial deposits, to the lower regions where they accumulated on top of the original mudstone in thicknesses of up to 45 metres. The Rhone reappeared when the lake that had been formed during a short period by an obstruction by material from the moraines emptied. The Rhone flows through many meanders and around piles of gravel in the moraines. A recent uplifting of the whole region took place in three stages that left alluvial terraces apt for the development of forests and agriculture.

Origin: This wetland is of natural origin.

Hydrology: The average volume of the Rhone at its exit from Lake Lemman is 240 m³/s, to which the Arve adds 80 m³/s plus that of the Allondon and that of La Laire. Flooding is limited by the capacity of the bed of the Rhone at Geneva. The following records are available for Chancy in the extreme south-western part of the wetland before entry of the Rhone into France: average flow over 10 years, 1200 m³/s; average flow over 100 years, 1500 m³/s. A maximum flow of 1700 m³/s was recorded on 24 November 1944.

Water quality: Water quality in this part of the lake, in the Geneva harbour and up to the junction of the Rhone and the Arve is considered to be good to very good (nonetheless it is not potable). Accidental pollution by either chemicals or fuel is always a danger, but fortunately they are very rare. The sewage treatment plant at Aire, which treats 75 per cent of the waste water produced in Geneva, causes a noticeable increase in ammoniac in the Rhone. The Arve, however, has a high sediment load year round, and its water quality is inferior. This considerably influences the quality of the water in the Rhone

from the junction of the two rivers.

Long-term fluctuations: There is no risk that Lake Lemman, the Rhone or their main tributaries will dry up. Fluctuations in water level are insignificant.

Climate: The climate is Mediterranean, without extreme summer temperatures, which are the case farther south in the countries bordering the Mediterranean.

15. Hydrological values:

Ground water is replenished normally, and flooding is controlled by sluices regulating the flow of water at the exit from Lake Lemman and at the Verbois dam where large quantities of sediments carried by the Arve are deposited. The Verbois and Chancy-Pougny dams must be cleaned once every three years, and this upsets the habitat of the animal species living downstream from the dam. Engineering works have been constructed to counter the effects of these disturbances (beaver ways, fish ladders, etc.). The shores do not require stabilization structures, but it was necessary to construct a containment wall at Chancy in 2000.

16. Ecological features:

There are beds of reeds with strata of trees, flooded fields of *agrostide à stolons*, associations of ruderal perennials, shrub associations in alkaline soil, alluvial woodlands undergoing transformation, gravel ponds and even dry grasslands share this area, which creates ecotones suitable for a large variety of fauna and flora.

17. Noteworthy flora:

There are no unique, rare or endangered plant species or communities, except for the cattail and several species of orchids in the dry grasslands along certain parts of the Rhone or the Allondon, such as *ophrys abeille*, *orchis militaire*, *orchis brûlé*, *orchis bouc* and *anacamptis pyramidal*. There is a typical flora of the reed beds, and there are plans to reintroduce the cattail into the nature reserve of Moulin-de-Vert and the Planfond peninsula. In many of the woodlands along the tributaries to the Rhone, there are oaks, hornbeam, beech, ash, maple, false acacia and Scots pine. In gravel areas or in areas subject to erosion *argousiers*, willows and alders grow.

18. Noteworthy fauna:

Avifauna: Among the outstanding avifauna, there are *grèbe huppé*, *grebe castagneux*, *harle bièvre*, *milan noir*, which cleans the river of diseased or dead fish, the *stern pierregarin*, *héron cendré*, which forms colonies in the wooded slopes, the *martin-pêcheur*, which digs a nest in the low banks and many wintering ducks, such as the *fuligule morillon*. Waders such as the *chevalier* or *bécasseaux* frequent the mud banks, and small passeriformes such as the *rousserolle effarvate* or the *bruant des roseaux* are found in areas of heavy vegetation.

Reptiles and batrachians: For the following species, the area of this wetland represents

one of the last habitats in Geneva for the *salamandre tachetée*, *triton palmé*, *sonneur à ventre jaune* and the *crapaud accoucheur*. The following species also deserve mention: the *lézard vert*, the *couleuvre d'Esculape*, the *couleuvre verte*, the *couleuvre jaune*, the *couleuvre vipérine* and the *cistude*. Most of the species mentioned are listed on the Red list of rare or endangered species.

Mammals: There are the following three outstanding species: the badger, the beaver and the wild boar, which frequently swim across the Rhone. In addition, this site is well known for having been the last habitat of the otter in Geneva, which has now disappeared from all of Switzerland. The reintroduction of this species will be possible within several years.

Fish: 25 species have been recorded at this site, which represents more than half of the 45 species and subspecies forming the fish species of Switzerland. Among the endangered species are the lake trout and the *blageon*, the grayling and the *spirilin*. There are also perch and pike, which find refuge in the many reeds.

Invertebrates: Several species among the dragonflies, crickets and butterflies are found only in Switzerland at this site (for example *Leucorrhinia albifrans*).

19. Social and cultural values:

Fishing is regulated, but is authorized during certain seasons in most of this site Ramsar. There has been, nonetheless, a decline in the catch from the Rhone and its tributaries in the past few years; the opposite of the catches of perch in Lake Lemman. Use of the forest resources is slight and scrupulously regulated in light of the conservation requirements throughout the site.

Archaeological importance: Prehistoric vestiges, such as mammoth tusks and bones, have been found on the left bank of the Rhone, in the valley of the Allondon and near Russin.

Electricity: Two hydro-electric power plants are in operation at Verbois and Chancy-Pougny.

20. Land tenure/ownership of:

At the site: Most of the streams are government property (Canton of Geneva or the communes). This is also the case for the wooded areas, but private ownership is greater there (about one third of the total).

In the surrounding area: There are either farms or rental buildings, which are almost all private property.

21. Current land use:

At the site: water area 30 per cent; woodlands 65 per cent; farmland 5 per cent.

In the surrounding area: woodland 10 per cent; farmland 45 per cent; urban area 45 per cent.

22. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects:

At the site: The areas upstream from dams must be cleaned out because of the sediments carried by the Arve. In addition, lack of treatment of water in some of the tributaries of Rhone affects the ecological quality of the water.

In the surrounding area: The use of chemical inputs by agriculture is not well managed.

23. Conservation measures taken:

Hunting has been prohibited in all of the canton of Geneva for the past 26 years. Protection plans and measures for the shores of several streams are in effect.

24. Conservation measures proposed but not yet implemented:

Management plans are being prepared for several important areas (Moulin-de-Vert and Teppes de Véré), in order to prepare and implement management plans for all the protected areas in the canton of Geneva within several years. Harmonization of the area of the Ramsar site with those of federal regulations on water fowl and migratory birds (OROEM) and the federal survey of landscapes of national importance is under way.

25. Current scientific research and facilities:

Monitoring of the number of wintering birds has been carried out every year for many years. A study on the effects on the fish of cleaning in front of the dams and a study on the evolution of the fauna and flora in the ponds of the Moulin-de-Vert are under way.

26. Current conservation education:

A reception centre for visitors and schools is being prepared in the Teppes de Véré reserve on the right bank of the Rhone, downstream from Verbois. Guided boat tours take place during the summer from the city of Geneva down to the Verbois dam. Several general brochures have been published on the Allondon, La Laire and the Arve. An information brochure on the Rhone is being prepared and will be published in 2001. These brochures can be obtained at Service de renaturation des cours d'eau et des rives, Case postale 36, 1211 Geneva 8

27. Current recreation and tourism:

Recreation: Given the proximity of the city of Geneva, this area is used for recreation by a large urban population for hiking, bicycling, VTT, canoeing, rafting and camping. All of these activities are more or less regulated, but an overall concept of recreational activities should be developed to harmonize activities with better protection of nature.

Tourism: There are heavy tourist activities at several places (camping along the Allondon, for example) that can be a source of disturbance and should be studied to determine whether regulations should be modified.

28. Jurisdiction:

Territorial jurisdiction is carried out by the Canton of Geneva, specifically by the following three departments, which are headed by a Conseiller d'Etat:

Département de l'intérieur, de l'agriculture, de l'environnement et de l'énergie (DIAE)

Département de l'aménagement, de l'équipement et du logement (DAEL)

Département de justice et police et des transports (DJPT).

29. Management authority:

Service des forêts, de la protection de la nature et du paysage (service du DIAE)

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30. Bibliographical references:

Various brochures on the streams (mentioned under item 26)

Roch, Philippe and Theurillat, Jean-Pierre. *Allondon. Moulin-de-Vert et Verbois: Situation, évolution, protection et gestion*. WWF, Geneva, 1989.