

7ES001

INFORMATION SHEET ON RAMSAR WETLANDS.

RAMSARSP.01

- 1.- **Country:** Spain.
- 2.- **Date:** July 17th, 1992.
- 3.- **Ref.:** 7SP001
- 4.- **Name and adress of the compiler:** ICONA, Ministerio de Agricultura.Subdireccion de Espacios Naturales.Gran Via de San Francisco n. 4.28071 Madrid.Spain.
- 5.- **Name of Wetland.-** Parque Nacional de Doñana.
- 6.- **Date of Ramsar designation:** May 4th, 1982.
- 7.- **Geographical coordinates:** 36° 48' to 37° 08' N; 6° 16' to 6° 34' W.
- 8.- **General location:** Municipalities of Almonte and Hinojos (Province of Huelva) and Aznalcazar (Prov. of Seville).Its geographical centre is located 60 km from Seville and nearly 55 km from Huelva.
- 9.- **Area:** 50.720 Has.
- 10.- **Wetland type:** E, F, G, H*, J*, K*, N, R, Y.
- 11.- **Altitude:** Areas liable to flooding are between 0 and 10 metres above sea level.The greatest elevations are in the mobile dune sector and reach about 36 m above sea level.
- 12.- **Overview:** There are two different kinds of areas: 1) MARCHES with impermeable substrate and surface hydrology.2) LAGOONS with sandy substrate and hydrology which is highly dependent on watertable variations.Both systems are seasonal, highly fluctuating and strictly dependent on climatology.
- 13.- **Physical features:**
MARCHES: Owe their origin to an ongoing process of sedimentation in an ancient fluvio - marine estuary.At present, the marshes are more or less isolated from tidal influences, and their hydrology shows a superficial pluvio - fluvial scheme.The water held by the marshes reaches high levels of surface/volume quotient.Maximum flooding occurs in winter, whereas in summer the soils become dry, following the seasonal pluviometric pattern.Salinity is highly variable because of the marine origin of the clay soils as well as the high rates of evapotranspiration.
LAGOONS: Subsurface hydrology.Lagoons are located in the sandy

sector, that serves as the recharge surface for the underlying free aquifer. Water levels in the lagoons are correlated with variations in the groundwater table and in general have shallow, seasonal and only slightly mineralised waters. There are some exceptions: for instance, Santa Olalla is a permanent lagoon with brackish waters because it occupies a discharge area for regional groundwater flows.

Climate is defined as mediterranean semi-arid type with oceanic influences. Average rainfall is 580 mm/year.

14.- Ecological features. In the aquatic environment, the primary production is channelled through carpets of macrophytes, that compete well with phytoplankton in waters with good conditions of light and quality. Emergent vegetation is dominated by *Scirpus littoralis* (bayunco) which is present where flooding is longer (lucios), whereas *Scirpus maritimus* (castañuela) cannot withstand immersion for so long time and may be found in medium depths (caños). In more terrestrial areas, where flooding is almost absent, the vegetation consists of glassworts: *Arthrocnemum*, *Suaeda*, *Salicornia* (almajos), and a diversity of species of Compositae and Gramineae. The lagoons are surrounded by the usual successive rings of hygrophilic shrubs (*Erica*), tamarisk (*Tamarix*), reeds (*Phragmites*) and very locally may be found groups of canes (*Arundo*).

15.- Land tenure / ownership of:

a) site:

State property.....	25.344 Has.
ADENA-WWF property	3.214 Has.
Municipal properties	8.622 Has.
Private properties	13.540 Has.

b) surrounding area. The owners of the surrounding areas are basically the same as in a). A special case is Matalascañas Urbanisation (+ 400 Has.) and El Rocio, whose ownership follows an urban scheme. Urban developments are in fact relatively distant from the site.

16.- Conservation measures taken: The site is a National Park belonging to the State network. Management is focused on habitats instead of species (with a few exceptions). Implemented plans are: -White-headed duck (*Oxyura leucocephala*) captive breeding and release Programme.
- Iberian lynx (*Lynx pardina*) Management Plan
- Imperial eagle (*Aquila adalberti*) Management Plan

In Dec. 1991 the II Use and Management Plan came into force.

In July 1989 the Andalusian Parliament enacted a Law declaring an extensive area (54.000 Has.), surrounding the National Park, as a new Natural Park (Entorno de Doñana).

17.- Conservation measures proposed but not yet implemented:

- Water Resources Management Plan
- Public Use Plan
- Livestock Grazing Plan
- Iberian lynx (*Lynx pardina*) captive breeding Programme.

18.- Current land use: principal human activities in:

a) site: Conservation is considered as the first priority. Some low intensity exploitation (activities considered compatible with conservation) are allowed under control: coking, beekeeping, mollusc harvesting, pine collecting, river fishing and extensive livestock grazing. Traffic through the Park is also under regulation: common tracks, "Via Pecuaria" (Livestock Route), beach, etc.

b) surroundings/catchment: Urban developments are restricted to Matalascañas and El Rocio, both just in the border of the Park. The remaining areas are:

- crops. Some of them are irrigated with surface waters (rice fields) and groundwater as well (intensive cultures of the Plan Almonte-Marismas).
- forest exploitations (*Pinus pinea* and *Eucalyptus* crops) cover large areas around the National Park.
- grazing lands often overlap the above mentioned territories. A number of hectares are used for livestock grazing.

19.- Disturbances/threats, including changes in land use and major development projects:

a) at the site. Long term falls in the level of saturation within the aquifer could adversely change the hydrology of the hydric systems being supplied with groundwater (lagoons and vera). The causes of negative trends lie on pumping activity serving urban and agricultural demands: Matalascañas, el Rocio and Mancomunidad and on the other hand the Almonte Marismas Irrigation Scheme and certain rice fields (2.000 Has.) irrigated with groundwater, whose needs reach roughly 30 Hm³/year. All of these factors also have negative impacts on the timing and the volume of flows in La Rocina and peripheral streams, essential for the ecological health of the marshes.

b) in the surroundings/catchment
The same considerations may be stated here.

20.- Hydrological and physical values: The natural infilling of an old fluviomarine basin is still occurring in the marshes: in Roman times it was a shallow lake where inshore fishing was a common practice. This gives an idea of the rate of sedimentation, now in its final stage.

Slopes, are almost absent, and are not so important in

controlling the hydrological dynamics as are other factors: differences in water level, direction and strength of the wind, as well as microtopographic elements (**caños** -shallow streams where water flows with a extremely low speed-, **lucios** -deeper areas, sometimes very large, with shape of lagoon- and **vetas** -highest zones acting as islands) are decisive in influencing the movements of water volumes.

The sandy sector is the free aquifer's rain recharge area. The aquifer becomes confined or semiconfined under the clays of marshes, that work as an almost impermeable layer. In general terms, the aquiferous surface corresponds with topography. Sometimes, an intersection occurs forming a more or less permanently flooded area (lagoon).

21.- Social and cultural values:

Extensive livestock raising is a highly traditional activity, although at present it is less vital to for the rural economy than in former times. In general, it is closely linked with the marsh and lagoon environment. The sustainable rate should be quite low to avoid damage to bird colonies and overexploitation of pastures.

During some days in the spring, a crowded pilgrimage takes place and some thousands of people cross the Park along its Via Pecuaria (Livestock Route) to reach El Rocio village, one of the most important pilgrimage centres of the catholic faith. In general terms, the traffic is quite controlled, because of agreements between Brotherhoods and Park Administration. Some measures are taken to avoid irreparable damages.

22.- Noteworthy fauna:

Donana's wetland are used mainly by waterbirds during the winter floods, allowing many nesting species breed here. Numbers are highly variable according to variations in natural conditions, but wintering Anatidae reach nearly 500.000 birds. The most numerous species are: gadwall (*Anas strepera*), wigeon (*Anas penelope*) (up to 100.000), teal (*Anas crecca*) (up to 150.000), pintail (*A. acuta*), shoveler (*A. clypeata*) (up to 80.000), pochard (*Aythya ferina*) and greylag (*Anser anser*) (60 - 70.000). Winter counts of coot (*Fulica atra*) (also a breeding species) reach 40.000 birds. Other nesting species are mallard (*Anas platyrhynchos*), marbled teal (*Anas angustirostris*), red crested pochard (*Netta rufina*) and pochard. White headed duck (*Oxyura leucocephala*) is a former nesting species. Other important species are: purple gallinule (*Porphyrio porphyrio*) and crested coot (*Fulica cristata*). In the last years, several pairs of glossy ibis (*Plegadis falcinellus*) have tried to breed, but the results are unknown. Important colonies of night heron, squacco heron, cattle egret, little egret, grey heron, purple heron, spoonbill and white stork (*Nycticorax nycticorax*, *Ardeola ralloides*, *Bubulcus ibis*, *Egretta garzetta*, *Ardea cinerea*, ****Ardea purpurea****, *Platalea leucorodia* and *Ciconia ciconia*) nest mainly in 200-400 years-old cork-oaks. Great flocks of greater flamingo (*Phoenicopterus ruber*) are present in the Park throughout the year, but only nest occasionally. About 15 pairs of the endangered Spanish imperial

eagle, *Aquila adalberti*, nest in the Park. Threatened mammals include European otter *Lutra lutra* and Iberian lynx, *Lynx pardina* whose estimated reproductive population is about 38 adults.

23.- Noteworthy flora:

Endemic and/or endangered species:

GRAMINEAE:	<i>Vulpia fontquerana</i>	P.E.	(UICN categ.)
	<i>Trisetaria dufourei</i>	N.T.	"
	<i>Festuca ampla simplex</i>	K.	"
POACEAE:	<i>Micropyropsis tuberosa</i>	V	"
	<i>Gaudinia hispanica</i>	V	"
JUNCEAE:	<i>Juncus emmanuelis</i>	R	"
	<i>Juncus acutiflorus</i>		
	<i>rugosus</i>	N.T.	"
IRIDACEAE:	<i>Romulea ramiflora</i>	R	"
SCROPHULARIACEAE:			
	<i>Linaria tursica</i>	V	"
ZANNICHELLIACEAE:			
	<i>Althenia orientalis</i>		

24.- Current scientific research and facilities:

The Law in force states that research must be carried out by scientific Organisations (mainly C.S.I.C. and Universities) while ICONA and other investing Institutions, fulfill a management and planner role. In fact, the Donana Biological Station - C.S.I.C. (its Director) coordinates all the scientific activity to be done in the Park.

In addition to the current research that different scientific teams carry out in the Park according to their own interest, some studies have been launched to improve the management criteria.

25.- Current conservation education:

At present there is a main visitors centre (Acebuche), as well as two more secondary ones (Las Rocinas and El Acebron). All of them have self-guided footpaths with observatories and also a different exhibition in each centre. In the near future, two more main centres will be ready to work, as well as two more secondary ones. Information, booklets and entrance to the different centres, are free.

26.- Current recreation and tourism:

In addition to the facilities that visitors may use freely in all centres, there is the possibility to visit the Park with a local tourism Cooperative. There are two tours per day, six days per week. When other visitors centres are in operation, additional tours will be available. These visits must be paid for.

27.- Management authority:

ICONA, Ministry of Agriculture.

28.- Jurisdiction:

Central Administration -> Ministry of Agriculture -> ICONA -> Natural Areas Vice-Direction -> National Parks Service.

29.- Bibliographical references:

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30.- Reasons for inclusion:

31.- Map of the site: