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Key Documents of the Ramsar Convention

# Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 of the Conference of the Contracting Parties

Note: It is important that you read the accompanying Explanatory Note and Guidelines document before completing this form.

1. Date this sheet was completed/updated: 9 May 2001

2. Country: Cyprus

3. Name of wetland: Lamaca Salt Lake

4. Geographical coordinates: 34° 52' N, 33° 33' E

5. Elevation: (average and/or maximum and minimum) +1m to +10m

6. Area: (in hectares) 473 h water surface plus 1,112 h terrestrial area. Total:1,585 h

7. Overview: (general summary, in two or three sentences, of the wetland's principal characteristics)

The Larnaca salt lake is the largest of a complex of four lakes, which have different salinity regimes. This lake is the most saline. It is an important overwintering and stopover area for waterbirds especially in spring. *Dunaniella salina* supports a population of *Artemia salina*, which in turn is the main food of flamingo in this lake. It is a seasonal lake with water levels not exceeding one metre, with salt flat halophytic communities fringing much of the lake. The connected small "airport" lake in the south has a lower salinity and supports a *Branchianella spinosa* population.

8. Wetland Type: (please circle the applicable codes for wetland types as listed in Annex I of the Explanatory Note and Guidelines document)

- marine-coastal:    A   B   C   D   E   F   G   H   I   J   K   Zk(a)
- inland:            L   M   N   O   P   Q   R   Sp   Ss   Tp   Ts
- U   Va   Vt   W   Xf   Xp   Y   Zg   Zk(b)   Zk(c)
- human-made:      1   2   3   4   5   6   7   8   9

Please now rank these wetland types by listing them from the most to the least dominant:

9. Ramsar Criteria: (please circle the applicable criteria; see point 12 below)

- 1  
✓
- 2  
✓
- 3  
✓
- 4  
✓
- 5  
✓
- 6  
✓
- 7  
✓
- 8  
✓

Please specify the most significant criterion applicable to this site: 1

10. Map of site included? Please tick YES Y or-- NO

(Please refer to the *Explanatory Note and Guidelines* document for information regarding desirable map traits.)

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

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*Please provide additional information on each of the following categories by attaching extra pages (please limit extra pages to no more than 10):*

12. Justification of the criteria selected under point 9, on previous page. (Please refer to Annex II in the *Explanatory Note and Guidelines* document).

Criterion 1. This is a representative example of a near natural wetland type R (Seasonal Saline Lake and Flats) in the Mediterranean.

Criterion 2. The area supports several species protected under national legislation and under the Bern Convention and CITES.

Criterion 4. Staging post during spring migration, also overwintering area for many species

13. General location: (include the nearest large town and its administrative region)

To the west of Larnaca town and to the north of the Larnaca International Airport and bordering on both.

14. Physical features: (e.g. geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth water permanence; fluctuations in water level; tidal variations; catchment area; downstream area; climate):

The lakes are surrounded by outcrops of sandy, shelly, limestone and siltstone beds of Recent to Pleistocene age. The lake bottom is covered by limnic deposits, about 6m thick. There is some evidence that the lake was connected to the sea in recent (Roman) times. The maximum water level is about 1m but the depth is usually less than 30cm over 60% of the lake. When full (at peak flood period) the lake is about 2m above sea level.

15. Hydrological values: (groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.):

The main source of water is rainfall, possibly with some very marginal underground flow from the sea.

Wide fluctuations in water level from year to year reflect precipitation fluctuations. The catchment area has been reduced in recent decades as a result of urban development on the eastern and especially in the northeastern end of the lake, where most of the water inflow comes from. In some years not enough water is collected to reduce the salinity enough for the brine shrimp to hatch. Fresh water enters the main lake also from the "airport" lake, which collects water from a drainage canal on the west of the main lake. This is critical in some years. The inflow of fresh water is the key element in the ecology of the lake, as it controls its salinity regime.

**16. Ecological features:** (main habitats and vegetation types):

The main salt lake itself is highly saline. The basis of its productivity is *Dunaniella salina*, a unicellular alga. On this feeds mainly *Artemia salina*. In years of high rainfall *Branchianella spinosa* also appears in quantity in the main lake. This originates in the small but important "airport" lake at the southwestern end of the main lake. This is the predominant fairy shrimp in this small lake which has a much lower salinity. (It is also the predominant "shrimp" in the other lakes south of the airport.)

There is extensive halophytic vegetation in the mud/salt flats in the area surrounding the lake.

**17. Noteworthy flora:** (indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc.)

The halophytic communities which are rare and endangered are characterised by species such as *Salicornia fruticosa*, *Salicornia europea*, *Suaeda* spp., ) rushes (*Juncus* spp) and some annuals. There are Acacia and Pine plantations to the East and West of the lake which have an exceptional diversity and profusion of orchids. The orchid species include *Orchis italica* (in profusion), *Orchis collina*, *Orchis morio*, *Orchis lutea*, *Orchis coriophora* ssp *fragnans*, *Spiranthes spiralis*, *Ophrys attica*, *Ophrys carmeli* and *Serapias* spp. There is also a Eucalyptus plantation on part of the west near the Tekke with a more impoverished undergrowth. Giant Fennel and old Date palms are also common on the west of the lake.

Aquatic flora: this is mainly *Dunaniella salina* which forms the basis of the food chain in the main salt lake.

**18. Noteworthy fauna:** (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, etc.)

Aquatic species: *Artemia salina* (main lake) and *Branchianella spinosa* (mainly "airport" lake) are the two fairy shrimps that the Flamingo and other birds feed on.

Birds overwintering there include - *Phoenicopterus ruber* (c.2000 - max 10,000), *Tadorna tadorna* c 500 max 2000), *Anas crecca* (1,000-2,000 max) *A. querquedula* (c 150 max 500) *Larus ridibundus* (1,000-2,000 in winter). Also an important spring stopover site for many other species of waterfowl and a breeding area for others (eg Kentish plover <25 pairs). Important for many species of waders.

Several reptiles are found there - including *Acanthodactylus schreiberi* and several skinks, also *Hemidactylus kotcshyi*. Amphibia include *Hyla savignyi* on the west bank of the lake. Many invertebrates also.

**19. Social and cultural values:** (e.g., fisheries production, forestry, religious importance, archaeological site, etc.)

Hala Sultan Tekke on the western shores of the lake is an important Moslem shrine.

There is an archaeological site (late bronze age) on the north-western shores of the lake.

Aqueduct - an impressive 18<sup>th</sup> century structure, on the north fringes of the salt lake site.

There is no fishery or forestry production in the area. Salt and some Brine Shrimp cyst collection used to take place until the 1980's when both stopped.

**20. Land tenure/ownership of:** (a) site (b) surrounding area

The lagoons are state owned and part of the terrestrial site is also state owned. Private land (Greek and Turkish Cypriot) fringes part of the lake. Private land within the reserve is being acquired by government. (Estimated cost about CP8 million, of which the first stage of CP5 m is for ongoing acquisitions). Part of the land on the western shores of the lake are owned by Evkaf (Moslem religious organisations). There is also some church (Christian Orthodox religious organisations) land. These cannot, by Constitutional provisions, be acquired by government by way of compulsory acquisition.

**21. Current land use:** (a) site (b) surroundings/catchment

a. Site: The private land within the reserve is mainly used for agricultural purposes - non irrigated agriculture (cereals mainly).

b. Surroundings/catchment: The surrounding area is partly agricultural (west and northwest), partly urban (to the north and east) and the airport is bordering on the south and southeast of the lake. Agriculture has been mainly for non-irrigated crops - at least in the vicinity of the lake.

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

At the site: The private land, demarcated as being within the reserve site, is being acquired - the use of fertilizers has been a potential threat. Other pressures are: from urban development on the north and east of the lake; in the south the airport has caused problems by being located in the area, with the runway dividing one of the lakes into two - forming in the north the small "airport" lake. Its ongoing extension on the south of the lake is likely to pose some threats to the lakes though this is likely to impact the southern lakes more than the main lake or the "airport" lake. An EIA was prepared for this purpose.

There is a shooting club facility on the north of the lake but this is being relocated outside the reserve area. Lead from shooting was identified as a potential threat.

Around the site: The sewerage treatment plant for Larnaca town has been located to the south of the lakes (and airport) and has so far had mainly a positive impact providing an alternative (albeit artificial) habitat for water birds - especially in dry years. There is a threat from overflows from the storage lagoons in wet years.

A desalination plant has recently been built next to the sewerage treatment plant. There is also tourism development (villas etc) on the seashore to the south/south-east of the lakes.

Development in the northern part of the catchment area may impact water availability.

**23. Conservation measures taken:** (national category and legal status of protected areas - including any boundary changes which have been made: management practices; whether an officially approved management plan exists and whether it has been implemented)

The area has been declared as a protected area by a Council of Minister's Decision in November 1997. This decision includes approval of the management plan for the area and of a land-use plan (town and country planning zoning). It also approved the acquisition of the land needed for the reserve and provided funding for the plan. The management plan is being implemented. It is the responsibility of the Ministry of Agriculture, Natural Resources and Environment and a management/coordinating Committee has been

appointed to assist the Ministry. It includes all the Departments/Agencies etc involved (Environment, Fisheries, Forestry, Water Development, Agriculture, Town Planning/Ministry of Interior, Planning Bureau, CTO, Local Authorities (Municipal and District) and the Federation of Environmental and Ecological Organisations (NGOs)).

Hunting in the area is prohibited by the Game and Wildbirds (Protection and Development) Law, No39 of 1974. The aquatic fauna, including the Brine shrimp, *Artemia salina*, is protected under the Fisheries Law and Regulations (Fisheries Regulations, No 273/90). Several other laws are also relevant.

**24. Conservation measures proposed but not yet implemented:** (e.g, management plan in preparation; officially proposed as a protected area, etc.)

The Management Plan is already being implemented. Additional land acquisitions are planned.

**25. Current scientific research and facilities:** (e.g., details of current projects; existence of field station, etc.)

The aquatic parameters (Biotic and environmental) have been (and are) being monitored for many years by the Department of Fisheries. The terrestrial flora has been surveyed by the Forestry Department. Bird counts and observations have been made by the Ornithological Societies/birdwatchers for many years.

**26. Current conservation education:** (e.g., visitors centre, hides, information booklet, facilities for school visits, etc.)

An information centre has been provided for in the management plan and is to be pursued in the near future. Two hides - watch towers - and footpaths are planned.

**27. Current recreation and tourism:** (state if wetland is used for recreation/tourism; indicate type and frequency/intensity)

Due to the proximity of the lake to Larnaca town and the fact that the airport access road from Larnaca town follows the southern shores of the lake, there is an additional (incidental) number of visitors to the lake, over and above local and overseas birdwatchers that visit the area in winter and spring.

**28. Jurisdiction:** (territorial, e.g., state/region and functional, e.g., Dept. of Agriculture/Dept. of Environment etc.)

Ministry of Agriculture, Natural Resources and Environment

Ministry of Interior

**29. Management authority:** (name and address of local body directly responsible for managing the wetland)

Overall responsibility is with the Ministry of Agriculture, Natural Resources and Environment. A representative of the Ministry chairs the Management/Coordination Committee. Management issues on the policy level/implementation go to this Committee. The budget comes under this Ministry.

Law enforcement depends on the nature of the contravention/offence. The District Officer (local government authority) has appointed an Inspector to control some activities such as rubbish and rubble dumping. The Fisheries Department has an Inspectorate Service to control water pollution and aquatic biota issues and the Environment Service has empowered a number of Environmental Inspectors to control water pollution. The Game Service/Fund and the police are responsible for hunting and the

Forestry Department for reforestation/planting.

30. **Bibliographical references:** (scientific/technical only)

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Demetropoulos A. and Hadjichristophorou M., 1994. Larnaca Salt Lake. In Directory of Specially Protected Areas in the Mediterranean RAC/SPA (MAP/UNEP).

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**Explanatory Note and Guidelines** for the Information Sheet on Ramsar Wetlands  
**Ramsar Classification System for Wetland Type**  
**Criteria for Identifying Wetlands of International Importance**  
Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands

For further information please contact the **Ramsar Convention Bureau**, Rue Mauverney 28, CH-1196 Gland, Switzerland (tel +41 22 999 0170, fax +41 22 999 0169, e-mail [ramsar@ramsar.org](mailto:ramsar@ramsar.org)). Posted 4 December 1996, updated 1 August 1999, Dwight Peck, Ramsar.