

Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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

Christina Pantazi, Environment Service, Ministry of
Agriculture, Natural Resources and Environment, Nicosia,
1411 CYPRUS

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

11 August 2008

3. Country:

Cyprus

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Larnaca Salt Lake

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- a) Designation of a new Ramsar site ; or
b) Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or
ii) the boundary has been extended ; or
iii) the boundary has been restricted**

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or
- ii) the area has been extended ; or
- iii) the area has been reduced**

** **Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

No major changes have been occurred. It should be mentioned, though that due to the drought period we face, the water level was lower the last 2 years, than the years before.

7. Map of site:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a hard copy (required for inclusion of site in the Ramsar List): ;
- ii) an electronic format (e.g. a JPEG or ArcView image) ;
- iii) a GIS file providing geo-referenced site boundary vectors and attribute tables . ✓

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The boundaries of the site cover the salt lake and the surrounding area, which is mainly characterised by halophytic communities, orchids, other rare and endangered species and agricultural land.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

34° 52' N, 033° 33' E

9. General location:

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The site lies at the west of Larnaca Town and at the north of the Larnaca International Airport.

10. Elevation: (in metres: average and/or maximum & minimum)

+1m to +10m

11. Area: (in hectares)

473 ha water surface, plus 634 ha terrestrial area. Total: 1,107 ha.

The area mentioned in the previous RIS does not correspond to the area of the lake declared as Ramsar site, as the correct area is 1,107 hectares. The boundaries of the lake have not changed. As far as concerns

the lakes in the south area, which are included in the EU “Natura 2000” Network, we will examine the possibility of starting the procedure to declare them as Ramsar sites as well.

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

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. *Dunaliella salina*, supports a population of *Artemia salina*, which is in turn the main food of flamingo of the 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 *Branchinella spinosa* population.

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	•	2	•	3	•	4	•	5	•	6	•	7	•	8	•	9
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14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1: This is a representative example of a near natural wetland type R (Seasonal Saline Lake and Flats) in the Mediterranean. The salt lake is recharged by rainfall, surface runoff and possibly seawater intrusion. It has a seasonally variable water depth and accordingly variable salinity concentrations that are mainly determined by the weather conditions and the quality and diffusion of the sub layer of the lake.

Criterion 2: The area supports several species protected under national legislation and under the Bern Convention and CITES. Some of these species are *Crypsis factorovskii*, *Filago mareotica*, *Limonium mucronulatum*, *Suaeda aegyptiaca*. Moreover, the endangered species of *Ophrys kotschy* and *Cachrys scabra* are present in the area. The area supports some habitats listed in the annexes of the EU Directive 92/43/EEC, such as halophilus scrubs (1420), that are the main vegetation in the wetland and includes communities of *Arthrocnemum macrostachyum*, *Halocnemum strobilaceum*, *Sarcocornia fruticosa* etc, salt meadows communities (1410) with *Juncus sp.*, halophilus and halo-nitrophilus pioneer therophytic communities (1310) with *Salicornia europaea*, *Halopeplis amplexicaulis*, *Mesembryanthemum nodiflorum* etc, phrygana formations (5420), small reed beds (CY02) and grassland mainly composed of therophytes (6220).

Criterion 4: the site is an overwintering area for many bird species such as *Phoenicopterus ruber*, *Tadorna tadorna*, *Anas crecca*, *A. querquedula*, *Larus ridibundus*. It is also, an important spring stopover site for many other species of waterfowl and a breeding area for others (eg. Kentish plover)

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Mediterranean

b) biogeographic regionalisation scheme (include reference citation):

EEA biogeographic regionalization system

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

The lake is 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.

The annual precipitation in the area ranges between 300-350 mm per year. The warmest period is between June-August and the mean daily maximum temperature of the hottest month (August) is 34°C, where the mean daily minimum is 16°C and the mean daily is 25°C. The mean daily maximum of the coldest month (February) is 18°C, the mean daily minimum is 8°C and the mean daily is 13°C.

The soils in the area are alkaline and are either alluvial deposits consisting of sands, silts, clays and gravels or terrace deposits consisting of calcarenites, sands and gravels.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Please see above.

18. Hydrological values:

Describe the functions and values of the wetland in 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 the urban development on the eastern and especially in the north eastern 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.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar “Classification System for Wetland Type” present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

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)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

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20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The main salt lake itself is highly saline. The basis of its productivity is *Dunaliella 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 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.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

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. *fragrans*, *Spiranthes spiralis*, *Ophrys attica*, *Ophrys carmeli* and *Serapias* spp. There is also *Eucalyptus* plantation on part of the west near the Tekke with more impoverished undergrowth. Giant Fennel and old Date palms are also common on the west of the lake.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds overwintering there include: *Phoenicopus ruber* (c. 2000- max 10000), *Tadorna tadorna* (c. 500- max 2000), *Anas crecca* (c.1000 – max 2000), *A. querquedula* (c. 150 – max 500), *Larus ridibundus* (1000 – 2000 in winter). It is also, an important spring stopover site for many other species of waterfowl and a breeding area for others (eg. Kentish plover <25 pairs). Moreover, it is important for many species of waders. Several reptiles are found there including *Acanthodactylus schreiberi* and several skinks, as well as *Hemidactylus kotschyi*. Amphibia include *Hyla savingyi* on the west bank of the lake. Many invertebrates appear, as well..

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

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

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

Aqueduct – an impressive 18th 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.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box and describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

a) within the Ramsar site: The lakes 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 the government.

b) in the surrounding area: Part of the land on the western shores of the lake is owned by Evkaf (Moslem religious acquisitions). There is also some church (Greek Orthodox religious organisations) land.

25. Current land (including water) use:

a) within the Ramsar site:

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

b) in the 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.

26. 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:

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 used to be a shooting club facility on the north of the lake but it has been relocated outside the reserve area.

b) in the surrounding area:

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

A desalination plant was built next to the sewerage treatment plant so years ago. 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 catchments area may impact water availability.

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

The area has been declared as 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 Environment Service of the Ministry of Agriculture, Natural Resources and Environment and a management/coordinating Committee that has been appointed to assist the Environment Service. The Committee includes all the Department/Agencies etc involved (Environment, Fisheries, Forestry, Water Development, Agriculture, Game Fund, 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 Waterbirds (Protection and Development) Law, No.39 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.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

c) Does an officially approved management plan exist; and is it being implemented?:

Yes, an official approved management plan exists since 1997 and has been already implemented. A Management Committee has been established, chaired by the Environment Service which meets regularly in order to ensure the implementation of the several provisions of the Plan.

d) Describe any other current management practices:

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

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

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

An environmental information centre will be built in the near future in the area, where visitors can learn about the importance of the site. Moreover, two observation towers will be established through an EU Life Nature funded Programme. Also through the same project, information panels for the area and its importance have been placed. A footpath was also created along the lake which is being used by many people.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Due to the proximity of the lake to the 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.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

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Email: cpantazi@environment.moa.gov.cy

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Environment Service, Ministry of Agricultural Natural Resources and Environment (MANRE)

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34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Please return to: **Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
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