

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note 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. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

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

World Wide Fund for Nature- India,
Seceretaryiat, 172-B, Lodi Estate
New Delhi- 110 003
Tel: 91(11)4616532, 4691760-62

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Designation date

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Site Reference Number

With Inputs From:

S.D. Swatantra, IFS
Chief Wildlife Warden
Jammu & Kashmir Govt.

2. Date this sheet was completed/updated:

January 2004

3. Country: INDIA

4. Name of the Ramsar site:

SURINSAR- MANSAR LAKE

5. Map of site included:

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

a) **hard copy** (required for inclusion of site in the Ramsar List): yes -or- no

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

6. Geographical coordinates (latitude/longitude):

Mansar (32° 45' N and 75° 23' E) & Surinsar (32° 46' N and 75° 02' E)

7. General location:

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

Mansar lake is located about 35 km and Surinsar lake is located about 40 km both from Jammu, towards northeast under Udhampur District in the Jammu & Kahsmir State. The Administration region is in Jammu.

8. Elevation: (average and/or max. & min.)

Mansar Lake 710 m & Surinsar Lake 605 m.

9. Area: (in hectares)

Mansar-329.40 ha & Surinsar-20.40 ha.

10. Overview:

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

Mansar and Surinsar Lakes have high significance for their religious importance. Apart from this, the lakes form an ideal habitat and breeding ground for many endangered and threatened avifauna and aqua fauna. Owing to their origin to the Mahabharata period, these lakes were separated by an aerial distance of 10 km. representing the typical micro-climate of the area. Therefore, they are treated as two components of one composite wetland. Considering their importance and threats confronted from increase tourists inflow and change in land-use pattern in the catchment area, the lakes have been declared as a part of the Surinsar-Mansar Wildlife Sanctuary.

11. Ramsar Criteria:

Circle or underline 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).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. 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 2:

The lake supports two important species of turtles namely Indian Flapshell Turtle (*Lissemys punctata*) registered in the CITES (Appendix II) and Indian Soft-shell Turtle (*Aspideretes gangeticus*) listed in CITES Appendix I and vulnerable in IUCN Redlist 2003.

Criterion 3:

The Mansar lake supports very rare medusae (*Mansariella lacustris*) besides a rich growth of Macrophytes in the shallow Littoral zone. The Lake has among the Phytoplanktons, 86 algal genera of 207 species. The dominant family is Chlorophyceae with 46 genera with 135 species. There are about 54 Zooplankton taxa in the lake freshwater, unique and rare to the region.

Criterion 4:

The Mansar lake is an ideal and attractive habitat for migratory waterfowl, such as *Fulica atra*, *Gaillinula chloropus*, *Podiceps nigricollis*, *Aythya fuligula*, *Aythya ferina* and *Podiceps cristatus*, *Anas querquedula*, *Anas strepera*, *Anas platyrhynchos*, *Anas clypeata* (Northern Shoveler), *Anus acuta*, *Anas Penelope*, at a critical stage of there life cycle & also provides refuge during adverse conditions. Other common waterfowls found in the lake include Pond heron/*Ardeola grayii*, Yellow bittern/*Ixobrychus sinensis*, Large egret/*Ardea alba*, Little egret/*Egretta garzetta*, Teal/*Anas crecca*, *Tadorna ferruginea* and *Porphyrio porphyry*.

13. 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: **4A Semi Arid- Punjab Plains**

b) biogeographic regionalisation scheme (include reference citation): **Not available**

14. 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 Mansar Lake is a semi-oval shaped water body having an average width of 680 m and a depth of 37.8 m. At the centre supporting rich growth of Macrophytes in the shallow littoral zone, 86 Algal genera with 207 species supporting wide variety of aqua fauna, common water fowls.

The Surinsar Lake is oval shaped having maximum depth of 24.04 m. Max. length of 888 m and a breadth of 444 m with alkaline water (pH 7.2 to 8.9) having a small island located 40 km. The lake harbors a complete belt of varied macrophytic vegetation all along its banks. The lake also supports five species of Fish fauna. Both lakes are an attractive habitat for a wide variety of resident and migratory water fowls, rare small freshwater medusa are also found here.

Geologically the site is occupied by Sedimentaries of Siwalik Tertiary age. Lithologically, the area comprises of light grey sand stone, subordinate clay, Calcareous and pebbly lenses. The soil is primarily shallow and immature.

The pH of the lake varies between 6.4 and 7.6 the Maximum in July and the minimum in September. The fluctuation in water level is about 2 m and tidal variations are minimum. The water is alkaline (pH 7.2 – 8.9).

The monsoon rains extent from July to September and average rain fall is around 1500 mm. The winters are usually dry with occasional rains in January. The summers are hot with an average atmospheric temperature ranging between 35⁰C and 40⁰ C. Thermal stratification is clearly discernible in the lake between 5 to 15 m. Depth and the secchi transparency exhibits a by-modal peak. The water is used for irrigation in the neighboring agricultural fields and vegetation is a source of green fodder for live stock. There is no permanent inlet or outlet though a temporary inlet is observable on the north eastern end. A manually constructed outlet in Surinsar towards the north west of the lake operates only when the water level reaches 24.05 m at the deepest point during rainy season. The margin of the lake is regular because DI value (Development of the shore line) is 1.28 to 1.29.

15. Physical features of the catchment area:

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

A submerged spring source within the lakebed has been reported. Surrounding area has mango tree groves backed by pine trees on the hill slopes. The soil is primarily shallow and immature. Catchment comprises of sandy conglomeratic soil with boulders and pebbles. The catchment area of Mansar is about 2000 ha. The catchment area of Surinsar is about 1000 ha.

16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Surinsar lake is rain-fed, and has no permanent inlet or outlet. The maximum depth is 22.7m. Mansar lake is primarily fed by surface run-off and partially by mineralised water through paddy fields which gives rise to an inlet to the lake during the rainy season.

17. 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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18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

There is rich growth of macrophytes in the shallow littoral zone. Among the emergent macrophytes are *Typha angustata*, *Polygonum barbatum*, *P. flaccidum*, *P. glabrum* and *Phragmites karka* are dominant. Others include *Cyperus difformis*, *C. distans*, *C. tenuispica*, *Eleocharis plantagineum*, *Ranunculus arvensis*, *R. sceleratus*, *Rumex dentatus*, *Scirpus acutangulus*, *S. articulatus*, *S. mucronatus*, *S. validus* and *Veronica anagallis* –aquatic etc.

Floating species include *Nelumbo nucifera*. The submerged species include *Nymphoides hydrophylla*, *N. indicum*, *Chara sp.*, *Hydrilla verticillata*, *Ceratophyllum demersum*, *Alisma plantago-aquatica*, *Equisetum diffusum*, *Najas indica*, *Itella sp.*, *Potamogeton crispus*, *P. lucens*, *P. nodosus*, *P. pectinatus*, *P. perfoliatus* and *P. natans* etc.

Among the Phytoplankton, 86 algal genera with 207 species have been reported. The dominant family is Chlorophyceae with 46 genera and 135 species. Common and dominant phytoplankton species in Mansar and Surinsar lakes are *Cosmarium sp.*, *Staurastrum sp.*, *Scenedesmus sp.*, *Pediastrum sp.*, *Tetradron sp.*, *Oscillatoria sp.*, *Spirulina sp.*, *Lyngbya sp.*, *Fragilaria sp.*, *Synedra sp.*, *Nitzschia sp.*, *Cymbella sp.*, *Navicula sp.*, *Gomphonema, sp.*, *Cocconeis sp.*, *Tabellaria sp.*, *Ceratium sp.*, *Peridinium sp.*, *Ankistrodesmus sp.*, *Sphaerocystis sp.*, *Ulothrix sp.*, *Euastrum sp.*, *Merismopedia sp.* and *Euglena sp.*

19. Noteworthy flora:

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. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Ipomoea carnea, *Vallisneria spiralis*, *Najas graminea*, *Typha angustifolia*, *Phragmites communis* and *Sparganium erectum*.

20. 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.*

Mansar lake is an attractive habitat for migratory waterfowl. A 1989-90 count recorded the following species: *Fulica atra* (497) *Gallinula chloropus* (114) *Podiceps nigricollis* (56) *Aythya fuligula* (26) *Aythya ferina* (38) and *Podiceps cristatus* (3). Other common waterfowl include pond heron, yellow bitter, large egret, little egret and purple moorhen.

Puntius chonchonius, *Channa gachua*, *Rasbora rasbora*, *Labeo rohita* and *Trichogaster fasciatus* constitute the common ichthyofauna of the lake. Other noteworthy species include *Danio rerio*, *Mastacembelus armatus*, *Ophiocephalus punctatus*.

About 54 zooplankton taxa belonging to Protozoa, Coelentrata, Copepoda, Ostracoda, Insecta and the dominant Rotifera and Cladocera have been recorded. Following fish species are also found in the lake.

21. Social and 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.

The lakes are socially and culturally very significant as it owes its origin to the Mahabharata period and an important and popular tourist destination in Jammu region. The lakes have many temples around it and a fair is held every year. Although the lakes support a variety of fishes, however due to its religious significance, fishing is not encouraged. The catchment area of the lakes supports rich and varied vegetation prominent among them being *chir* and its subtropical associates.

22. Land tenure/ownership:

(a) within the Ramsar site: Wildlife Department of J&K govt

(b) in the surrounding area: Forest and waste lands are owned by the state government and other areas are privately owned. Part of the land is owned by Dharamarth Trust which looks after the shrines of the lake embankment. The Wildlife Department of Jammu & Kashmir government. has constructed some wild animal enclosures on the western bank of the lake.

23. Current land (including water) use:

(a) within the Ramsar site:

The lake is currently used for various purposes. The local people use the lake for irrigation of their agricultural fields, for bathing and bathing domestic animals. The Tourism Department uses the lake for promoting tourism by running motor boats and has raised many structures along the banks. There are a few temples around the lake and the offerings made in these temples also find their way into the lake.

(b) in the surroundings/catchment:

The lake and the catchment form a part of Mansar – Surinsar wildlife sanctuary and managed as per the principles of wildlife conservation, though the funds for the purpose are inadequate. The surrounding areas also have agricultural fields.

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: In the absence of a proper sewerage disposal system, all the waste flows down into the lake. The lake is also being used by the people for their bathing and cleaning of their animals. There also is a cremation ground on the bank of the lake the waste from which also flows down into the lake.

(b) in the surrounding area: Many structures have come up around the lake and in the catchment area during past few years. The Tourism Department has constructed a hotel along the bank and few

private buildings have also come up. Changes in agricultural practices in the neighbouring fields have also contributed towards pollution of the lake.

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Legally the lake and surrounding areas form a part of Mansar – Surinsar Wildlife sanctuary and the management of the area is carried out according to different management plans proposed for the area.

26. Conservation measures proposed but not yet implemented:

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

The management plan for maintenance and the development of the lake is prepared annually under centrally sponsored schemes “Development of National Parks and Wildlife Sanctuaries”. However, comprehensive management plan shall be prepared once the lake is included amongst the Ramsar list and fund is received.

27. Current scientific research and facilities:

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

Scientific research is carried out by the Department of Wildlife Protection in collaboration with the Department of Environment and Remote Sensing of Jammu University.

28. Current conservation education:

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

The lake receives a large number of visitors through out the year, especially when the annual fair is held. The information booklet giving details about the lake and its surrounding areas is published and circulated by the Wildlife Protection Department. The surrounding area has a tourism bungalow of Jammu and Kashmir Tourism Department and an inspection hut of Public Works Department.

29. Current recreation and tourism:

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

The wetland is used extensively for recreational purposes by a large number of tourists including school children throughout the year. It is an important tourist destination in Jammu region.

30. Jurisdiction:

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

The lake and its surrounding area falls in Udhampur District and are a part of Mansar – Surinsar Wildlife Sanctuary which is administratively controlled by Chief Wildlife Warden, Jammu & Kashmir Govt.

31. 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.

Wildlife Warden

Kathua, Dist. Kathua

Jammu Province (J&K)

Phone : 01922-34622, 544575

32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

Malhotra. Y.R. *et.al.* (1990). Ecology of lake Mansar with emphasis on conserving fish and wildlife population endangered by creation of recreational tourist and other human interference in the area. Department of Environment, Government of India.

W.W.F.- India's Handbook of Wetland Management, published by Avenash Datta for W.W.F.-India, New Delhi, August, 1995.

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