

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. Name and address of the compiler of this form:

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Designation date

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Site Reference Number

With Inputs From:

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Dr. Subash Gupta, Sr. Scientific Officer & Deepak Sethi, Project Associate.
State Council for Science, Technology & Environment (H.P.), Shimla

2. Date this sheet was updated: January 2004

3. Country: INDIA

4. Name of the Ramsar site: RENUKA WETLAND

5. Map of site included? Please tick **YES** --or-- **NO**

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

a) **hard copy :** Yes

b) **digital (electronic format) format (optional):** Yes

6. Geographical coordinates: 31⁰ 36'35'' N, 77⁰ 27'10'' E

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

Renuka wetland is located 37 km. northeast of Nahan, the administrative headquarter of the district Sirmaur of the State of Himachal Pradesh. Chandigarh is the nearest airport.

8. Elevation: (average and/or maximum and minimum):
660 m asl.

9. Area: (in hectares): 20 ha.

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

Renuka is a natural wetland located in the Western Himalayas which has survived through natural calamities & tectonic upheavals struck during the geological past. The lake is fed by a small stream flowing in from the lower Himalayan hills that surround it. These slopes are covered with

dense sub-tropical forests. Besides place of religious importance, wetland possesses rich biodiversity. Renuka area has 443 species of fauna from protozoa to mammals according to a faunal survey.

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

1 2 3 4 5 6 7 8

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 3:

- Wetland possesses rich biodiversity. According to faunal survey, wetland has 443 species from protozoa to mammals (ZSI-2000).
- 19 species of fishes are found in the Renuka. (ZSI-2000). The lake supports a high population of Mahaseer & indigenous variety belonging to Baam (*Mastacambelus armatus*), Borna snakehead (*Channa amphibioides*), Chikli (*Nemacheilus sikmaiensis*), Khavali (*Puntius amphibioides*), Rohu (*Labea rohita*), Saslu (*Rasbora caverii*) & Barred baril (*Barilius barila*) spp. etc. of lacustrine and stream fishes.
- Vegetation is dry deciduous which include Overwood *Terminalia tomentosa*, *Shorea robusta*, *Moringa pterygosperma*, *Ougeinia dalbergioides*, *Cassia fistula*, *Bauhinia variegata*, *Ficus palmata*, *Ficus religiosa*, *Bambusa arundinacea*, *Phoenix spp.*, *Salix tetrasperma* and *Dalbergia sissoo* and Hydrophytes include *Phragmites*, *Typha*, *Carex* and *Hydrilla* etc.

Criterion 4:

- 103 species of the birds belonging to 38 families have been identified in the Renuka area with 66 species of resident birds e.g. Crimson breasted barbet (*Megalaima haemacephala*), Bulbul (*Pycnonotus cafer*), Robin (*Saxicoloides fulicata*), Minivet (*Pericrocotus flammeus*), and House swift (*Apus nipalensis*).
- 19 species of migratory birds i.e. Lapwing (*Vanellus indicus*), Egret (*Egretta garzetta*), Mallard (*Anas platyrhynchos*), Pond Heron (*Ardeola grayii*) are sighted during winter. (ZSI-2000).

13. Biogeography:

(a) biogeographic region: **2B West Himalaya**

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

14. Physical features of the site:

The lake water is alkaline at surface with pH value ranging from 8.0-8.2 and slightly acidic to alkaline at bottom 6.9-7.4. During the stagnant period, mean values of temperature, transparency and dissolved oxygen remains as 16.5 °C, 204 cm and 7.6 pm respectively. Lake water is hard due to the addition of calcium and magnesium from the leaching of dolomite formation of the catchment. Depth of water in the lake is 13 m max. Total catchment area of the lake is about 500 ha which is covered with sub-tropical vegetation. Outlet of the wetland is toward ParshuRam Tal (pond) from where water outflows toward Giri River in the west.

Annual Rainfall is 1500-2000 mm Monsoon brings the 70 % of the rainfall during July, August and September month. Maximum and Minimum temperature recorded from the area is 44⁰ C (in summer) and 5⁰ C (in winter) respectively.

15. Physical features of the catchment area :

Geologically, the area represents a part of the main range of Lesser Himalayas. The rocks belonging to Krol formation are exposed in the catchment. Between the two ridges, lake is oriented in the east –west direction. The southern slopes are steep whereas the northern side is characterized by gentle slopes Jammu Ka Tibba in the north to the highest point (1591 m) in the catchment.

The basin of Renuka lake is believed to be an abandoned channel of the Giri river, presently flow to the west of the lake, in the past flowed along the length of the Renuka. River possibly blocked by massive landslide forming a lake in the upstream. As a result, the river Giri occupied the course of its tributary, the river Jalal. Hydrologically, the catchment of the wetland is drained by 21 small and big streamlets which receive water mainly during rainy season. The perennial source of water of the lake coming from internal springs, which are controlled by fractures and faults. Limestone & Dolomite formation of the area is also helping in this process.

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

In monsoon, wetland also contributes to the ground water recharge . Lake water helps to maintain the water quality by capturing and stabilizing the sediments and removing nutrients like nitrogen and phosphorous.

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

a) presence:

<i>marine-coastal:</i>	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:

Zk (b), Y, Xf, W, U, Xp

18. General Ecological features: (main habitats and vegetation types)

The entire catchment area is a reserve forest and has been declared a wildlife sanctuary. The forest around the lake is of sub-tropical dry deciduous type. Grasslands, marshy area, rocky area and open water are some of the major habitats of the wetland. The vegetation can be classified as hydrophytes, shrubs, climbers and woody. Main vegetation comprise of bamboos, palms, Harar (*Terminalia chebula*) and Kacchnar (*Bauhinia variegata*). Plantation of exotic variety, eucalyptus is also undertaken in the area. Due to abundance of food, shelter and water, a good number of wild animals like Sambhars (*Cervus unicolor*), Barking deer (*Muntiacus muntjack*), and birds like Barbet (*Megalaima zeylanica*), Kingfisher(*Alcedo atthis*), Minivet(*Pericrocotus flammeus*), Lapwing(*Vanellus indicus*), Egret(*Egretta garzetta*) and Coot(*Fulica atra*) have made this catchment ecologically very important and have also made this area as their habitat.

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

Both the northern and southern aspects of the catchment valley are clothed with vegetation of sub-tropical nature. *Phoenix sps.*, *Ficus religiosa* and Shisham (*Dalbergia sissoo*) are the dominant trees present near the base of valley i.e. around the lake and Anoguissus, Beul and Kachnar near the ridge. The slopes have good shrub by growth of Lantana, Mauraya, Berbaries etc.

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

The lake body itself is highly productive in view of intense organic loading and decay of aquatic macrophytes. There is a preponderance of carnivorous fish in the lake comprised of Snake heads (20%), Spiny eel fishes (5%) and others.

The following table incorporates the major fish fauna of the lake:-

S.No.	Name	Scientific name	Average size(Kg.)
1.	Mahseer	<i>Tor putitora</i>	1.5-3.5
2.	Soles	<i>Centropristes striatus</i>	0.5-1.3
		<i>Centropristes cephalus</i>	0.5-1.3
		<i>Centropristes marulius</i>	0.5-1.3
3.	Bam	<i>Mastacembelus armatus</i>	0.25-05
4.	Weed fishes	<i>Puntius sarana</i> small sized. <i>Labeo bata</i> <i>Chela sp.</i>	

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

According to legend, the lake was formed when sage Parshuram sacrificed his mother Renuka in obedience to his father sage Jamadagni. An annual fair is held at the site of the lake and a large number of pilgrims visit this area during this time. Local people are symbolically attached to this lake and treat it as sacred place.

22. **Land tenure/ownership :**

(a) **with in the Ramsar site:** Forest Department, Government of Himachal Pradesh.

(b) **in the surrounding area:** Forest Department Government of Himachal Pradesh.

23. **Current land (including) use:**

- (a) **within the Ramsar site:** Fertile ground for weed growth.
- (b) **in the surroundings/catchment:** A temple of Renukaji exists along the bank of lake. Thousands of tourists and pilgrims visit the lake each year. There are six villages in the close proximity of the lake used the surrounding are for fuel and fodder collection for their needs.

24. 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

- (a) **with in the Ramsar site:**
Ecological degradation has set in due to the vast quality of sediments that flow into this water body from the degraded uplands each year. Silt on the edge of the lake subsequently provides fertile ground for the growth of the weeds. One third of the lake has already silted up and covered with weed growth. Apart from this, lake is also covered with aquatic weed.
- (b) **in the surrounding/catchment:** There is massive landslide on the northern side of the lake. This coupled with the construction of the road in the area have caused heavy siltation on the northern side of the lake. The sanctuary is surrounded by six villages with the population of 2700 and cattle population of 3407. Local community fulfills their needs of fuel and fodder from the surrounding area.

25. 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)

Renuka area was declared wildlife sanctuary under the 1972 Wildlife Protection Act:

- Produced publicity material i.e. brochure in Hindi and English on Renuka wetland.
- Constructed a toe and retaining wall around the lake to check the silt influx into the lake.
- A massive plantation on 50 hectares in the catchment areas of the Renuka wetland has been done to check soil erosion.
- Thirty two check dams and eight check walls have been constructed in various nallahs/channels, to prevent the flow of silt into, the lake bed.

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

Following conservation measures have been proposed in the Renuka wetland:

- Assessing the impact of tourism on the Renuka wetland eco-system.
- Physical demarcation of the catchment of the Renuka wetland
- Evolving strategy and action for the community awareness and conservation education in the villages of the Renuka wetland area.

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

Following research has been undertaken on the Renuka wetland.

- Identification of Fauna of Renuka wetland by zoological survey of India
- Hydro-biological study by H.P. University Shimla.
- Formulation of a comprehensive management action plan by State Council for Science, Technology and Environment.

- Evaluation of the comprehensive MAP by Wadia Institute of Himalayan Geology, Dehradun
- Water Quality assessment of Renuka lake by the Punjab University & State Pollution Control Board.

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

Awareness camps are organized during the Renuka fair. Resource material i.e posters, brochures have been produced for distribution amongst the local people and tourists.

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

Renuka lake is one of the most beautiful natural lake of the western Himalayas. Lake attracts a large numbers of tourists due to its picturesque locations. Renuka area has one mini zoo and a Lion safari which is maintained by the Forest Department. The Himachal Pradesh tourism is also running a hotel in the area.

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

The lake and its catchment area is a wild life sanctuary. Divisional Forest Officer, Wildlife, Shimla is the custodian of the wetland and its catchment as the entire area is under Forest Department, Government of Himachal Pradesh.

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

Ministry of Environment and Forests, Government of India has designated State council for Science, Technology and Environment as a coordinating agency for the Conservation and Management of Renuka Wetland.
Forest Department, Shimla.

The Renuka Vikas Board a body constituted under the chairmanship of the local Deputy Commissioner looks after the management of the lake.

Chief Conservator of Forests,
Himachal Pradesh.
Mist Chamber, Khalini, Shimla - 171002.
Tel. (0177)-2623038.

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

Comprehensive Management Action Plan on Conservation and Management of Renuka wetland Report. 1990. State Council for Science, Technology & Environment.
Das Brijraj & Kaur Parkesh .2001. Major Ion Chemistry of Renuka Lake and Weathering Processes, Environment Geology. 40:908-912
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