



*Major*

# WETLANDS

*Of Himachal Pradesh*

Himachal Pradesh State Wetland Authority

HIMACHAL PRADESH COUNCIL FOR SCIENCE, TECHNOLOGY AND ENVIRONMENT [HIMCOSTE]

# WETLANDS



Wetlands are important features in the landscape that provide numerous beneficial services for people, wildlife and aquatic species. Some of these services, or functions, include protecting and improving water quality, providing fish and wildlife habitats, storing floodwaters and maintaining surface water flow during dry periods. These valuable functions are the result of the unique natural characteristics of wetlands. Wetlands are among the most productive ecosystems in the world, comparable to rain forests and coral reefs. An immense variety of

## WETLANDS

species of microbes, plants, insects, amphibians, reptiles, birds, fish and mammals can be part of a wetland ecosystem. Climate, landscape shape (topology), geology and the movement and abundance of water help to determine the plants and animals that inhabit each wetland. The complex, dynamic relationships among the organisms inhabiting the wetland environment are called food webs. Wetlands can be thought of as "biological supermarkets."

Ramsar convention defined wetlands as "areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres". These include estuaries, deltas, bogs, streams, ponds, reservoirs etc.

Himachal Pradesh encompasses a wide variety of wetlands, spread in various ecological zones which are the source of livelihood for the local community and have immense aesthetic & tourism values. Presently, the State has three "Ramsar Sites- Wetlands of International Importance" namely Pong dam (Kangra), Renuka (Sirmour) and Chandertal (Lahaul & Spiti). Besides, Rewalsar (Mandi) and Khajjiar (Chamba) have also been included by the Ministry of Environment Forests & Climate Change, Govt. of India for its conservation and management. The Himachal Pradesh State Wetland Authority (HPSWA) constituted in the year 2017 under the aegis of H.P. Council for Science, Technology & Environment (HIMCOSTE) is acting as a nodal agency to coordinate the Wetland

Conservation Programme with the active participation of all the stakeholders, keeping in view the requirement of multidisciplinary approach, various Departments and Agencies such as Forests, Fisheries, Tourism, Industries, HP Environment Protection and Pollution Control Board, Universities, Zoological Survey of India. National & State level research institutes are also actively involved in the Wetland Conservation Programme.

The core objective of the Wetland Conservation Programme is to conserve and restore wetlands with the active participation of the local community at the planning, implementation and monitoring level. Beside this the broad objectives laid down in the Management Plan are to conserve and to restore the habitats for migratory & resident species of birds of the area, to conserve the indigenous fish species and make fishery, sustainable livelihood for the local fishermen, to harmonize the relation between fishermen, wildlife and farmers, to enhance the income of the local people by undertaking the income generation in potential area, propagation of eco-tourism in the area to generate employment in the area and to make the tourists more sensitive towards the values of nature & wetlands.

To fulfill objectives, the Wetland Conservation and Management action plans involve components like Habitat Improvement, Soil and Water Conservation, Dweeding & Desilting, Income generating activities, Training/workshops/ Awareness camps, Research Studies covering site-specific conservation works and awareness activities.

# RAMSAR SITE-WETLANDS OF INDIA

S.No	Name of Site	State Location	Date of Declaration	Area (in sq.km)
1	Asthamudi Wetland	Kerala	19.08.2002	1860
2	Bhitarkanika Mangroves	Orissa	19.08.2002	525
3	Bhoj Wetlands	Madhya Pradesh	19.08.2002	31
<b>4</b>	<b>Chandertal Wetlands</b>	<b>Himachal Pradesh</b>	<b>08.11.2005</b>	<b>38.56</b>
5	Chilka Lake	Orissa	1.10.1981	1140
6	Deepor Beel	Assam	19.08.2002	4.14
7	East Calcutta Wetlands	West Bengal	19.08.2002	378
8	Harika Lake	Punjab	23.03.1990	86
9	Hokera Wetland	Jammu & Kashmir	08.11.2005	13.75
10	Kanjli Lake	Punjab	22.01.2002	14.84
11	Keoladeo Ghana NP	Rajasthan	01.10.1981	28.73
12	Kolleru Lake	Andhra Pradesh	19.08.2002	673
13	Loktak Lake	Manipur	23.03.1990	945
14	Nalsarovar Bird Sanctuary	Gujrat	24.09.2012	120
15	Point Calimere	Tamil Nadu	19.08.2002	17.26
<b>16</b>	<b>Pong Dam Lake</b>	<b>Himachal Pradesh</b>	<b>19.08.2002</b>	<b>307.29</b>
<b>17</b>	<b>Renuka Wetland</b>	<b>Himachal Pradesh</b>	<b>08.11.2005</b>	<b>4.028</b>
18	Ropar Lake	Punjab	22.01.2002	41.36
19	Rudrasagar Lake	Tripura	08.11.2005	2.40
20	Sambhar Lake	Rajasthan	23.03.1990	736
21	Sasthamkotta Lake	Kerela	19.08.2002	11.3
22	Surinsar-Mansar Lakes	Jammu & Kashmir	08.11.2005	3.50
23	Tsomoriri Lake	Jammu & Kashmir	19.08.2002	120
24	Vembanad Kol Wetland	Kerala	19.08.2002	4583
25	Upper Ganga River	Uttar Pradesh	08.11.2005	265.90
26	Wular Lake	Jammu & Kashmir	23.03.1990	173

[Source: Ministry of Environment & Forests, Government of India]

Total Area [in sq. km] = 12119.03

# REWALSAR-WETLAND

## Introduction

Rewalsar is natural and small wetland is located in district Mandi of Himachal Pradesh at a distance of 24 km in the south west direction of Mandi on Mandi-Hamirpur highway at the height of 1360 mts(Avg.) amsl. The lake is shaped like a square with the shoreline of about 735 m. This area falls on the confluence of "Sikandara-Dhar and 'Barkot' ranges of sub-mountainous Himalaya between latitude 31°37'30" N and longitude 76°49" E. The place has series of small beautiful lakes, of which Rewalsar lake is the most beautiful and sacred. Total catchment area of Rewalsar wetland is 173 hectare. The lake covers 2.6 ha. The main source of water for Rewalsar wetland is their internal water springs. Rewalsar is an important tourist destination and also one of the most famous sacred spots for Hindus, Buddhists and Sikhs as it is largely associated with serpent worshipping. Keeping view of its religious, cultural and ecological importance, the Ministry of Environment & Climate Change Govt. of Scheme Forests, GoI has covered Rewlsar wetland of the State underque national Wetland Coservation programme.



## REWALSAR-WETLAND

### Climate

The climate of the area is of sub-tropical monsoonic type. The average precipitation at Rewalsar is 1690 mm and average maximum temperature is 33°C. The minimum temperature touches freezing point and some time snowfall occurs in the area. Broadly, four distinct seasons namely, winter (middle of December to February), summer (March to June), rainy (early July to the middle of September) and autumn (October to November) are present in Rewalsar. Winter is mild in low-lying areas, whereas it snows on high mountain ranges. Springs are warm and sunny. Rainy season is the wettest part of the year and characterized by high humidity. Summers are prickly hot during monsoon months



### Geology

The area is mostly hilly. The catchments lithology is composed of middle Siwalik Group (Pliocene) of rocks comprising predominantly of fine grained, light colored sandstone with grey siltstone and shale inter-layered. The latter two are often thicker than the former, indicating intermittent subsiding basin condition, their more weatherable nature and intense tectonic activity; sandstone layers occasionally stand out as resistant boulder within the weathered mass. The greenish grey-siltstone often show spheroidal or elephant skin weathering which weathers to soil. Fine specks of mica are seen in the siltstone. Clayey soil is also common and is not very deep. The major, trace and, (rare earth element) (REE) geochemistry of Rewalsar Wetland sediments supported by petrographic. Clay mineralogical studies have revealed that sediments have been derived from metamorphic source terrain. In the very vicinity of the wetland area, sandstone is seen dipping into the hill in north-west direction. The depression formed for the accumulation of water appears to have been caused by a strike slip fault that runs in NE-SW direction. On the whole, the rocks are soft and the strata are unstable, easily lending to the forces of denudation and erosion.

### Social & Cultural Values

There is perennial outflow in one side of the lake which has been the source of irrigation for the immediate downstream families since the historical time. This economic value of agricultural productivity owing to the water body cannot be ignored. The wetland catchment also provides fuel and fodder for local habitants. Religious and historical Importance of the wetland is of great attraction for pilgrims throughout the year.

### Flora and Fauna

Rewalsar wetland is surrounded by thick vegetation and mountains which is a store house of both floral and faunal biodiversity. Rewalsar has forest area which is occupied by chir forest and scrub. The type of vegetation is sub-tropical type composed of khair, shisham, kachnar and chir etc. The chief macrophytic genera in Rewalsar

## REWALSAR-WETLAND

lake are; Nymphaea, Trapa, Ceratophyllum and Phragmites in Rewalsar 262 species belonging to 82 families and 220 genera; of these one belong to gymnosperms and to rest to angiosperms, with 8 monocotyledonous spp. are found. Besides, 47 genera of phytoplanktons are recorded. Out of which 11 belonged to Myxophyceae, 18 each to Chlorophyceae and Bacillariophyceae. Blue green algae developed in large number in Rewalsar Wetland The faunal biodiversity of the area is rich. It has jackals, leopards, snakes, monitor-lizard, mongoose, monkeys, porcupine, and barking deer. Indian coot, Brown coot, White Breasted kingfishers, Kalij pheasant birds are recorded in the area. The Wetland is rich in fish fauna consisting of Channa marulius, C. straitus, C. punctius, Cyprinus carpio, Carrasius auratus, Catla catla, Punctius ticto, P. sarana and Rasbora rasbra.



### Problems/ Threats

- Water pollution and siltation in the water body.
- Hydrological and ecological troubles by crowded human settlement around the wetland.
- Encroachment, deforestation and increased activities of the heavy influx of pilgrims/tourists.
- Proliferation of aquatic weeds in the wetland area depleting the dissolved oxygen level in the wetland.
- The profuse aggregation of Phragmites, Nymphaea, Ceratophyllum, Trapa and other species is causing much concern to the ecological functioning of the lake.
- Sewage drains constructed around the lake are not functioning properly and leaking at many points which are causing eutrophication in the Wetland due to the heavy flow of the nutrients.
- Frequent incident of heavy fish mortality in the water-body due to increasing water pollution which increases the BOD level and decreases the DO level below the permissible level.
- Fish catch is taboo at the religious place for population crossing the carrying capacity of the wetland, increased due fish molarity during summer season.



### Initiatives

- Initiatives for conservation and management of the wetland:
- Environment awareness generation
- Soil conservation
- Fencing with cemented poles
- Raising medicinal herbs/plants
- Construction of Check Dam
- Construction of Silt retention Chamber
- Fisheries conservation
- Plantation at the catchment area (10 ha)
- Solid waste management
- Cleaning of drains

## CHANDERTAL-WETLAND

### Climate

The region of Chandertal is characterized by the oxygen deficiency, low atmospheric pressure, intense sun radiations, excessive coldness, aridity and revitalizing climate. The average snowfall recorded is 75cm. The winters are extremely cold with mercury dipping down 37°C to 40°C making it one of the coldest regions of the country.

### Geology

The geology of the catchment area of this lake is unique as the Kunzum Range possess a distinct sedimentary as well as fossilised structure of the rocks dating back to the period of uplift of the Himalayas.

### Social & Cultural Values

The social and cultural values assigned with this wetland include religious importance, tourism importance social relations with the wetland, etc. There is no permanent human settlement in the catchment area of wetland. However, from July to September, the migratory grazers erect temporary shelters. There are no commercial units in the vicinity of wetland. Since the whole area is devoid of vegetation and human settlement, hence no area in the vicinity of lake is used for agriculture.

### Flora and Fauna

The Chandertal wetland and its catchment area falls in the Alpine zone that is characterized by the absence of trees. The herbaceous growth is remarkable for its variety. The important species are Potentilla, Ranunculus, Aquilegia, Primula, Aconitum, Aster, Asteraglus, Bistorta affinis, Delphinium, Geranium, Oxyria, Polygonium, Ranunculus, Rosularia, Stellaria and Thymus species belonging to family Ranunculaceae, Poaceae, Asteraceae, Polygonaceae, Rosaceae, Gentianaceae, Geraniaceae, Polygonaceae, Caryophyllaceae and Lamiaceae etc. The common grasses frequently encountered are Poa and Agropyron. These grasses have rich nutritive value. The faunal species like Marmot (Marmota bobak) Snow leopard (Panthera), Red Fox (Vulpes vulpes) Wild Chukar (Alectoris Chukar), Goat (Capra ibex), Blue Sheep (Pseudois nayaur), Snow Cock (Tetrao gallus spp), Black Winged Stilt (Himantopus himantopus), Brahminy Duck (Tadorna feruginea), Golden Eagle (Aquila chrysaetos).





# CHANDERTAL-WETLAND



## Introduction

Chandertal is one of the high altitude wetland located in the cold desert part of Western Himalayas at an height of 4337 mts above mean sea level. The wetland is situated in Chandertal Wild Life Sanctuary. The total area of sanctuary is 38.56 Square km.( 3856 Ha) and Protected Area is - 61.50 Square Km.(6150 Ha) With Eco Sensitive Zone. The geographical location of the lake is Latitude- 3228'30" N and Longitude-77 37'E. The total wetland area is about 1.53 Square kms and circumference of the Lake is 4 kms. Chandertal catchment is an area of meadows, rugged rocks, snow and scree. The Chandertal area falls in the rain-shadow areas of Himalayas. The monsoon hardly penetrates and reaches the valley in the form of misty drizzles. Precipitation occurs in the form of

snow fall and mercury dips down to 37°C - 40°C. during winter season. Chandertal area is covered by glacial type of soil which is not fully matured. The catchment area of this wetland is formed by the kunzam range which is covered with snow for most part of the year. Area is free from any human activity in the immediate vicinity. Approximate 65% of the catchment area is a degraded land due to glacial action. Remaining of 35% of the area is covered by herbs and grasses which undergoes seasonal grazing by migratory graziers. In veiw of uniqie Features & Ecological importance of the Chandertal Wetland has been declared as "RAMSAR SITE" in year 2005.

## CHANDERTAL-WETLAND



### Problems/ Threats

- Soil erosion due to glaciers.
- Maintains of Pastures.
- Solid waste management in the area.
- The tourist influx in the wetland.
- Check Walls in staggered Manner with crate wire to check the soil erosion.
- Development of Pasture to stop gully formation.
- Conservation and protection of native grass species like Poa and Agropyron
- Sensitization of tourists on littering and waste management through IEC material.
- Income generation activities for camping site development outside the catchment of the wetland.



### Initiatives

- Initiatives for conservation and management of Chandertal wetland
- Check Walls in staggered Manner with crate wire to check the soil erosion.
- Development of Pasture to stop gully formation.
- Conservation and protection of native grass species like Poa and Agropyron
- Sensitization of tourists on littering and waste management through IEC material.
- Income generation activities for camping site development outside the catchment of the wetland.



# KHAJJIAR-WETLAND



## Introduction

Khajjiar wetland is a part of the Ravi basin, located in the north-east of Dalhousie town, Chamba district of Himachal Pradesh. Khajjiar is situated at an altitude of 1900 mts. above mean sea level. Water body is in the center of gently rolling meadows covered with lush green grass. Beautiful glade is surrounded by a thick cover of deodar forest. A few streamlets enter the water-body crossing through the saucer shaped glade and feeding the discharge into the wetland mainly from the rainwater and snow melt water. It receives a high volume of

surface runoff water during rainy season. It is presumed that wetland is fed by perennial natural sources of ground water in the center, maintains its water level. The scenic beauty of the area earned Khajjiar the name of the Mini-Switzerland. The Geographical location of Khajjiar wetland is Latitude 32° and 32'N Longitude 76° 4'E. The area of the water body is about 4500 Sq. Mts. The total Catchment area of Khajjiar wetland is 6 Square Km.

## Climate

The area receives rain during monsoon and snow/rain during the winter season. Rains peaks in July, averaging 350 cm in the month and snow is maximum during the month of January. Temperature in Khajjiar area varies from sub zero in the winter to 32 during summer. Wind of 6-11kms/hour speed can be generally felt in the area, occasionally rising to about 30kms per hour.

## KHAJJIAR-WETLAND

### Geology

Khajjiar is situated on the western extremity of Dhauludhar range of the Western Himalayas. Area is mainly comprised of Silurian rocks chiefly slates, schist and conglomerate. These rocks are underlined by granite, gneiss and quartzite. The strata is conventionally known as Dalhousie Granite forming part of Dhauludhar Granite.

### Social & Cultural Values

The Khajjiar wetland named often the Khajji Nag. The Temple dedicated to Khajji Nag is located in the glade of khajjiar wetland. For the local people this wetland holds sacredness and they believe that it is unfaithomable. The large number of people residing in the vicinity of the wetland depend on it for livelihood, very mainly involved in tourism activities like horse riding to Clive Victoria, hotelier occupation. The live stocks of the nearby khajjiar also depend upon the wetland for grazing purpose. The sheep, cows, mules are the main grazing animals of the glade.

### Flora and Fauna

The floristic composition of the Kalatop-Khajjiar area varies from Chil Pine (*Pinus roxburghii*) with a mixture of Ban Oak in the lower zone to pure Deodar in the middle reaches which culminates in to mixed of Deodar, Fir and Spruce with some pasture towards Dainkund area. Some of the medicinal plants like Patish, Barian, Chora, Shafoo, Rasount, Juhi, Asmani booti, Karu, Kaur, Salam misri, Kuth, Barhmi, Banfasha Ashwagandha. The portion of the lake is infested by weeds and has become marshy and swampy due to deposition of silt and other bio-mass from its catchment area. The weed species like Typha, *Thalia geniculata*, *Cyperus robust*, *Echinodorus trialatus*, *Polygonum hydropiper*, *Maraltes gundriolia*, *Paspalum rapens*, *Potamogeton pectinatus*, *Hydrocotyle ranunculoides*

The forest around the area abounds in wildlife. At higher elevation near the snow line one may find the Leopard, Himalayan fox, Black Bear, Stripped Hyena, Goral, Barking Deer, Hanuman Languor, Rhesus Monkey, Flying squirrel etc

Birds like Black Eagle, Cinereous Vulture, Himalayan Griffon, Egyptian Vulture, Lammergeier, Himalayan Monal, Kalij Pheasant, Koklass, Wedge-tailed Green Pigeon, Oriental Turtle Dove, Plum-headed Parakeet, Slaty-headed Parakeet, Eurasian Cuckoo, Asian Barred Owllet, Large-tailed Nightjar, House Swift, Great Barbet, Scaly bellied Woodpeckers, Grey-headed Woodpeckers, Himalayan Woodpecker, Red-rumped swallow, Black bulbul, Variegated Laughing thrush, Streaked Laughing thrush, Rufous Sibia, Dark-sided Flycatcher, Common Chiffchaff, Greenish Warbler, Golden-spectacled Warbler, Plumbeous Water Redstart, Spotted Fork tail, Grey Bushchat, White-capped Water Redstart, Blue-capped Rock Thrush, Chestnut-bellied Rock Thrush, White-collared Blackbird, Grey-winged Blackbird, Mistle Thrush, Great Tit, Green-backed Tit, Spot-winged Tit, Black-throated Tit, White-cheeked Nuthatch, Bar-tailed Treecreeper, House Sparrow, Russet Sparrow, Black-and-yellow Grosbeak, Yellow-breasted Greenfinch, Rock Bunting, Crested Bunting.

## KHAJJAR-WETLAND



### Problems/ Threats

- Wetland ecosystem has been disrupted in recent years due to a combination of natural and man – made factors. . Heavy siltation and deposition of peat has made the water-body too shallow which impeded the movement of Phragmites island. Humic acid has reduced the visibility . Besides other peripheral vegetations have also encroached into the open water area.
- Heavy siltation and deposition of organic matter on the periphery of the wetland
- The vegetation around the lake acts as a sieve for the runoff material. A substantial amount of domestic animals excreta the water-body. Deposited excreta in this sieve, provide nutrition to substantially increase the vegetation both in size and extent. As a result, some of the old open water area has been reclaimed, by the vegetation.
- Fish population and occasional congregation of migratory birds have also been affected over the past several years.
- During the last two decades, area has witnessed an unprecedented increase in the tourist influx. Inevitably, this has led to mushrooming of tuck shops in the area. Tourism is generating a large quantum of waste. This waste is being dumped in the downstream of the water body. It has been observed that no waste management measures are being practiced in the area



### Inititives

- Soil Conservation works to check the soil erosion
- Manual Desilting of wetland
- .Check dam constructions
- Development Pony trails.
- Sensatisation of local people and tourists about the Solid Waste management



## PONG DAM-WETLAND

### Climate

The climate of the region is sub-tropical. The summer season extends from mid-March to mid July and the monsoon season is from early July to mid-September. Winters are mild, starting in early December and lasting till mid-March. The temperatures range from a maximum 47°C in summer to a low of 3.5°C in winter. The rainfall is generally heavy and continuous from July to September.

### Geology

Geomorphologically the wetland is located in a typical inter – mountain valley filled with thick pile of fluvial deposits. From the central portion of the waterbody, fluvial terraces can be easily demarcated. In fact, the place named Terrace is an example of old terrace of the river Beas which drained the valley from south-eastern side. Sediments constituting the valley fill ranges that from boulders to sand grains. Streams that joins the water body from the northern side are straight and some of them are structurally controlled

with little meandering. Mud flats exposed during the lean period constitute the broad belt all along the waterbody. There is a Clear cut distinction between the physiographical & fluvial feature on the northern and southern side of the water body. Streamlets joining the water body in the southern side are ephemeral in nature and locally called choes. The soils by & large are alluvial & sandy loam in texture obtained from the weathering of sand stones & conglomerates.

### Flora and Fauna

The right bank of the Beas has meager forests in small pockets whereas on the left bank from Dehra to Terrace, there are linear strips of scrub forest. There are several tree species which produce edible fruit for the birds. There is also some submerged aquatic vegetation in the wetland but pronounced seasonal changes in water level & shore line does not support extensive areas of emergent vegetation. Main tree species of the tract having attraction for the bird are. Acacia, Jamun, Shisham, Mango, Mulberry, Ficus, Kachnar, Amla & Prunus Apart from these tree species a variety of shrubs grasses & climbers are also found in these forests. The wildlife species found in Pongdam wetland are Nilgai, Sambhar Barking

Deer wild boar. Common Monkey, Jackal, Leopard, Jungle Cat, Mongoose, Pangolin, Bats, snake, butterflies etc. The wetland attracts more than 220 species of migratory & resident birds & is an important wintering area for a large number of black headed Gulls Brahminy ducks Bar headed geese, Shovlers, Plovers, Grebes, Cormorants, Darters, Herons, Moorhes Egrets, storks, Bar-headed Geese, Ruddy Shelduck, Pintails, Coots, Pochards, Gulls, Grebes, Cormorants, Mallards etc. A large variety of fish such as Mahaseer, Katla, Minor carps, Rohoo, Singhara etc are found in the Pong dam and its tributaries. A total of 27 fish species belonging to 5 families have been recorded.

# PONG DAM-WETLAND



Pong wetland, now called as Maharana Pratap Sagar situated in the Kangra District of Himachal Pradesh, is one of the largest man-made wetland of the Northern India formed by the construction of Pong Dam during 1974 across the Beas River. The wetland located in district Kangra of Himachal Pradesh State with Himalayas in the background and Shivalik foothills in the forefront.

## Introduction

This wetland is the first major wetland which potentially offers a transitory resting reserve for the migratory birds coming from the Trans Himalayan zone in the winter season when the wetlands in the Europe and North and Central Asia become frozen due to onset of winters. Flocks of waterfowls that breed in these areas in summer undertake migration to Pong to spend winter in more congenial climatic conditions every year during the winter season from October to March. The total catchments area of 12562 Sq.km. extends in Kangra, Mandi and Kullu Districts. The area of water body varies from 125 sq Km at minimum water level at 1280 ft in summer season to about 220 Sq Km at the maximum water level of 1390 Feet in rainy season and also leaving behind the maximum draw down area of about 80 sq Km. This sanctuary was indentified under

Conservation and Management of wetlands programme in 1994 by the Ministry of Environment, Forest & Climate Change, Govt. of India .

Pong wetland earned the distinction of being selected as an international RAMSAR site in year 2002. This is first wetland of the state to have been given the global arm of protection. The Pong dam reservoir extends between latitudes 31°49' to 32°14' N and longitudes 75°53' to 76°17' E. Dhauladhar Mountains are feeder of water supply to Pong Lake. Below Pong dam, a barrage was constructed during 1985-86 at Sathana. From this barrage, Sahanahar canal originates. The total distance of Pong to Barrage is about 4 Km. This barrage constitutes a shallow water body enclosing about 3 Sq Km .The area, is a heaven for a variety of migratory birds specific to marshy conditions.

## PONG DAM-WETLAND

### Population Of Common Waterfowl Of Pong Dam Wetlands

Bird Numbers	Species
>10000	Bar-headed Goose, Pintail, Coot, Large Cormorant, Common Teal
>5000	Eurasian Wigeon, Tufted Duck, Common Pochard
>1000	Mallard, Shoveller, Little Cormorant
>500	Gadwall, Spot-billed Duck, Indian River Tern, Brown-headed Gull, Temminck's Stint



### Problems/ Threats

- To conserve and to restore the habitats for migratory & resident species of birds of the area.
- To conserve the indigenous fish species and make the fishery sustainable livelihood for the local fishermen.
- To check the Soil erosion.
- To propagate the organic farming in the peripheral of the wetland.
- To harmonize the relation between fishermen & wildlife and farmer & wildlife by sensitizing them to the values of the wetland wildlife.
- To check the deforestation activities in the area.



### Initiatives

- Watershed Management such as construction of check dams, check walls, bioengineering works in the catchment to reduce the silt load in the wetland.
- Habitat improvement to attract the more number of migratory and local species of birds.
- Income generation activities for local people like horticulture, agriculture, bee-keeping, sericulture, fishery in ponds, diary farming Tourism etc.
- Scientific Studies to improve water quality, aquatic life, biodiversity conservation.
- Socio-Economic study of the area.
- Trainings to the action plan implementing members and other stake holders.



# RENUKA-WETLAND



## Introduction

Renuka wetland is in the Sirmour district of Himachal Pradesh in India and it is 672 m above the sea level. Renuka is oblong shaped wetland flanked by two parallel steep hills running east-west. The geographical location of Renuka wetland is Latitude: 35°58'N to 37°08' N and Longitude 77°26'34" to 77°28'21" E. The total wildlife sanctuary area is 402.80 ha. The Renuka lake is surrounded by lush green forests supporting a variety of animal and bird life. Renuka lake is not only an idyllic holiday resort but also revered Pilgrim centre. Renuka wetland is connected by road and lies in Sirmour district. It is 123 km from Parwanoo, 60 km from Paonta Sahib and 37 km from Nahan. With an area 20 ha Renuka lake is the largest natural lake in Himachal. It is shaped like a

sleeping woman. Renuka was killed by her own son, the legendary Parsu Ram, in obedience to the orders of his father-the sage Jamadagni. After the deed was done, lake Renuka was formed surrounded by stepped fields of golden corn. Today the myth is brought to the fore when, each year in November, a fair is held to celebrate the immortality of Renuka and her son. The key-notes of the colourful fair are the festivity and devotional exuberance. It lasts for a week in which cultural programmes and folk dances are organised for the entertainment of visitors. Several idols of Parsu Ram, believed to be the incarnation of Lord Vishnu and other local deities, placed in decorated palanquins, are carried by an impressive procession to Parsu Ram Tal. Renuka wetland is a perennial water body fed by 21

## RENUKA-WETLAND

seasonal streams which are vigorous particularly during the monsoon season.

Internal springs of the lake are the perennial source of water. Underground network of channels in the Limestone and Dolomite

formations of the area are possibly conduit to discharge groundwater to the wetland. In view of its rich biodiversity and uniqueness of the area. The Renuka wetland was declared as a RAMSAR SITE in the year 2005.

### Climate

The climate of the area is of sub-tropical monsoonic type. The average precipitation at Renuka wetland is 150-199.9 cm per annum average maximum temperature is 32°C. Winter is mild in low-lying areas, whereas it snows on high mountain ranges. Springs are warm and sunny. Rainy season is the wettest part of the year and characterized by high humidity. Summers are prickly hot during monsoon months

### Geology

The catchment rocks of Renuka are dark carbonaceous shales and slates, closely inter bedded with thin slaty quartzite belonging to Infra Krol Group. The slaty quartzite, or clay slates are frequently calcareous and consists of quartz, carbonate, sericite and pyrite and in some cases chlorite. The green-gray calcareous shale and argillaceous limestone with variable gradation are of Krol A Group. The purple red shales with intercalation of green-shales and thin dolomitic cherty limestone belong to Krol B Group. The well bedded grayish white limestone with shale represents Krol C. The rock formation belongs to neo Proterozoic – Proterozoic age. The soil composition of the region also show a heterogeneous mixture of carbonate rocks, sandstones, shales, siltstone in various proportion. The soil cover is thin due to weathering-limited conditions.

### Flora and Fauna

Wetland possesses rich bio-diversity having more than 440 faunal species from protozoa to mammal. The wetland is covered with vegetation of sub-tropical

forest comprises of Chhal, Sain, Bahera, Harar, Kachnar, Tun, Shisham and Amaltas etc. Natural Sal forest exists in the northern side of the wetland.



## RENUKA-WETLAND

Although Renuka catchment is a small area of five hundreds hectares, yet it harbors a large variety of wild life like Ghoral, Kakkar, Chital, Hare, Porcupine, Black Bear, Monkey and Languor etc. Wetland also possesses a good variety of aquatic life like fishes and

### **Problems/ Threats**

- Soil erosion and siltation
- Religious practices/ land tenurial issues
- Destruction of the catchment
- Anthropogenic pressures
- Fish feeding

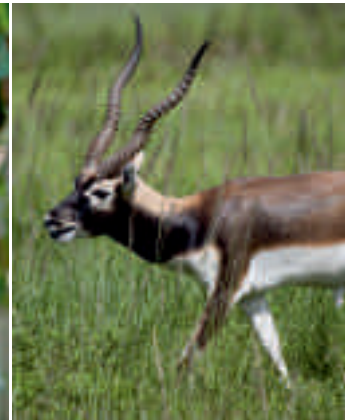
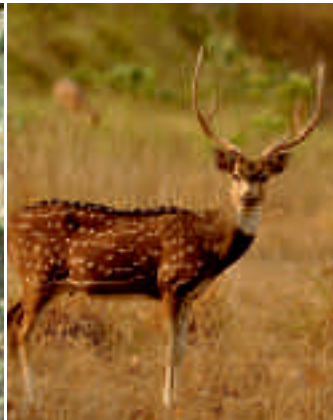
### **Inititives**

- Soil conservation works
- Construction of Check dam to check the soil.
- Preparation of silt retention chamber
- Manual desilting

tortoise. Wetland is gradually becoming the habitat for many species of local and migratory birds. Major resident bird groups found in the area are pheasants, partridges, parrots, jungle fowl and magpie etc.

- Monkey menace
- Garbage and littering
- Lack of co-ordination between stake holders and line departments

- Awareness campaigns
- Plantation activities
- Garbage Management .



## NOTIFICATONS

### Government of Himachal Pradesh Department of Environment, Science & Technology

No. STE-E(3)-10/2017-Pt-I

Dated: 07-11-2017

In pursuance of the notification of Wetlands (Conservation and Management) Rules, 2017 by Ministry of Environment, Forest & Climate Change, Government of India, dated 26-09-2017, the Governor, Himachal Pradesh is pleased to constitute Himachal Pradesh State Wetlands Authority (HPSWA) under the Conservation and Management of Wetlands as defined in Rule 5 sub rule (1) of the Wetlands (Conservation and Management) Rules, 2017 as under:

#### **1.The State Government hereby constitutes the State Wetlands Authority with the following members, namely:-**

1	Minister In-charge of the Department of Environment, Science and Technology - Chairperson;
2	Chief Secretary to the Govt. of H.P. – Vice Chairperson;
3	Additional Chief Secretary, Environment, Science and Technology, Govt. of H.P. – Member ex-officio;
4	Secretary in-charge of the Department of Forest – Member ex-officio;
5	Secretary in-charge of the Department of Urban Development – Member ex-officio;
6	Secretary in-charge of the Department of Rural Development – Member ex-officio;
7	Secretary in-charge of the Department of Fisheries – Member ex-officio;
8	Secretary in-charge of the Department of Irrigation and Public Health – Member ex-officio;
9	Secretary in-charge of the Department of Tourism – Member ex-officio;
10	Secretary in-charge of the Department of Revenue – Member ex-officio;
11	In-charge, State Remote Sensing Centre - Member ex-officio;
12	Principal Chief Conservator Forests (HoFF) - Member ex-officio;
13	Chief Wildlife Warden - Member ex-officio;
14	Member Secretary, State Biodiversity Board - Member ex-officio;
15	Member Secretary, State Pollution Control Board - Member ex-officio;
16	Additional Principal Chief Conservator of Forests of the Regional Office of Ministry of Environment, Forests and Climate Change - Member ex-officio;
17	Five non-official members to be nominated in due course in field of Ecology, Landscape, Fisheries, Hydrology and Socio-Economics;
18	Five non-official members to be nominated in due course in field of Ecology, Landscape, Fisheries, Hydrology and Socio-Economics;

2) The H.P. State Wetlands Authority shall exercise the powers and functions as defined in the notification No. GSR 1203(E) of the Ministry of Environment, Forests and Climate Change, Government of India, New Delhi.

3) The H.P. State Council for Science, Technology and Environment (HIMCOSTE), shall provide all necessary support and act as nodal Department and Secretariat to the Authority.

4) As per Rule 5 Sub Rule (6) of Wetland (Conservation and Management) Rules 2017, the Authority shall, within ninety days of these rules, shall constitute:

a	A technical committee to review brief documents management plants and advise on any technical matter referred by the Wetland Authority;
b	A grievance committee consisting of four members to provide a mechanism for hearing and forwarding the grievances raised by public to the Authority;

5) The Committees referred to in sub-rule (6) shall meet at least once in every quarter to perform their functions.

6) The Authority shall meet at least thrice in a year.

7) The term of non-official members of the Authority nominated by State Government, shall be for a period not exceeding three years.

The office of the Himachal Pradesh Council for Science, Technology & Environment (HIMCOSTE), Vigyan Bhawan, Bemloe, Shimla-1 would function as the Secretariat of the Himachal Pradesh State Wetlands Authority for Conservation and Management of the Wetlands of the State.

Endst. No. same as above

**By order  
Chief Secretary  
to the Government of Himachal Pradesh**

Dated: 07-11-2017


Copy is forwarded to the following for information:-


1	The Secretary to the Governor, Himachal Pradesh, Shimla-2;
2	The Senior Private Secretary, Chief Minister, Shimla-2;
3	The Senior Private Secretary, Minister-in-charge of the Department of Environment, Science & Technology, Shimla-2;
4	All Administrative Secretaries to the Government of H.P.;
5	All Members of the Wetlands Authority;
6	The Vice-Chancellor, H.P University, Shimla-5;
7	All Heads of Department in H.P.;
8	The Additional Secretary, Govt. of India, Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bag, New Delhi, 110003;
9	The Accountant General, H.P, Shimla-3;
10	The Advisor, National River Conservation Directorate, Ministry of Environment, Forest & Climate Change, Antodaya Bhawan, CGO Complex, Lodhi Road, New Delhi-110510;
11	The Secretary, H.P Vidhan Sabha, Shimla-4;
12	The Controller, Printing & Stationery, H.P for publication in the Rajpatra.




# HIMACHAL PRADESH STATE WETLAND AUTHORITY

HIMACHAL PRADESH COUNCIL FOR SCIENCE, TECHNOLOGY AND ENVIRONMENT [HIMCOSTE]

 Vigyan Bhawan, Bemloe, Shimla-171001. [HP]

 +91-0177-2656489, 2814923

 stc-hp@nic.in