

# PONG WETLAND



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## OVERVIEW OF WETLANDS

Wetlands are the most productive ecosystem in the world, comparable to rain forests and coral reefs. They are repositories of diverse species of microbes, plants, insects, amphibians, reptiles, birds, fish and mammals. The ideal climate, landscape (topology), geology, movement and abundance of water helps the flora and fauna inhabiting the wetland ecosystems. Wetlands are “*Biological Supermarkets*”, which provide immense food that attracts many animal species for completion of their life-cycle. The decaying dead plants and animals in the wetlands are converted by bacteria into organic matter (detritus) that are fed by many small aquatic insects, shellfishes and small fishes that are food for larger predatory fishes, reptiles, amphibians, birds and mammals.

Wetlands are the ecosystems infused with aquatic, semi aquatic as well as terrestrial characteristics. As the name suggests, these are such places which are mainly characterised by the presence of water, unique soils that differ from adjacent uplands and vegetation (hydrophytes) adapted to the wet conditions and conversely are characterised by the absence of flood tolerant vegetation (*Mitsch & Gosselink, 1986*). Wetlands cover about 6% of the world’s total land surface.

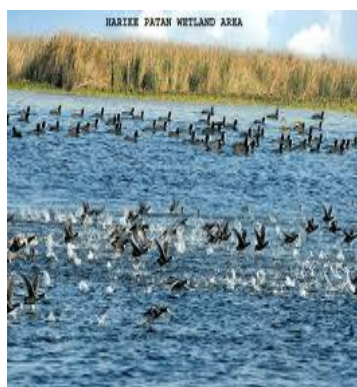
Ramsar convention defined wetlands as “areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres”. These include estuaries, deltas, bogs, streams, ponds, reservoirs etc. Wetlands are among the world’s most productive environments. They are “*Cradles of Biological Diversity*”, providing the water and primary productivity upon which countless species of plants and animals depend for survival. They support high concentrations of birds, mammals, reptiles, amphibians, fish and invertebrate species. Wetlands are also important storehouse of plant genetic material. Rice, for example, which is a common wetland plant, is the staple diet of more than half of humanity. Wetlands provide tremendous economic benefits, for example: water supply (quantity and quality); fisheries (over two third of the world’s fish harvest is linked to the health of coastal and inland wetland areas); agriculture, through the maintenance of water tables and nutrient retention in floodplains; timber production; energy resources, such as peat and plant matter; wildlife resources; transport; and recreation and tourism opportunities.

The Ministry of Environment and Forest, Government of India, prepared “Directory of Wetlands” in 1988 and a document “Conservation of wetlands in India” in 1990. As per the directory, so far a total area of 4,049,373 hectare has been designated as main wetlands in the country. This forms only about 1.23 percent of the total land surface.

## LIST OF RAMSAR WETLANDS IN INDIA

Sr. No.	NAME OF THE WETLAND	DATE OF DESIGNATION	STATE	AREA (HACTARE)	COORDINATES
1.	Ashtamudi Wetland	19/08/02	Kerala	61,400	08°57'N076°35'E
2.	Bhitarkanika Mangroves	19/08/02	Orissa	65,000	20°39'N086°54'E
3.	Bhoj Wetland	19/08/02	Madhya Pradesh	3,201	23°14'N077°20'E
4.	Chilika Lake	01/10/81	Orissa	116,500	19°42'N085°21'E
5.	Deepor Beel	19/08/02	Assam	4,000	26°08'N091°39'E
6.	East Calcutta Wetlands	19/08/02	West Bengal	12,500	22°27'N088°27'E
7.	Harike Lake	23/03/90	Punjab	4,100	31°13'N075°12'E
8.	Kanjli	22/01/02	Punjab	183	31°25'N075°22'E
9.	Keoladeo National Park	01/10/81	Rajasthan	2,873	27°13'N077°32'E
10.	Kolleru Lake	19/08/02	Andhra Pradesh	90,100	16°37'N081°12'E
11.	Loktak Lake	23/03/90	Manipur	26,600	24°26'N093°49'E
12.	Point Calimere Wildlife & Bird Sanctuary	19/08/02	Tamil Nadu	38,500	10°19'N079°38'E
13.	Pong Dam Lake	19/08/02	Himachal Pradesh	15,662	32°01'N076°05'E
14.	Ropar	22/01/02	Punjab	1,365	31°01'N076°30'E
15.	Sambhar Lake	23/03/90	Rajasthan	24,000	27°00'N075°00'E
16.	Sasthamkotta Lake	19/08/02	Kerala	373	09°02'N076°37'E
17.	Tsomoriri	19/08/02	Jammu & Kashmir	12,000	32°54'N078°18'E
18.	Vembanad-Kol Wetland	19/08/02	Kerala	151,250	09°50'N076°45'E
19.	Wular Lake	23/03/90	Jammu & Kashmir	18,900	34°16'N074°33'E

Source: [www.ramsar.org](http://www.ramsar.org)



## AREA ESTIMATES OF WETLANDS IN HIMACHAL PRADESH

(Area in hectare)

Sr. No.	WETTCODE	WETLAND CATEGORY	NUMBER OF WETLANDS	TOTAL WETLAND AREA	% OF WETLAND AREA	OPEN WATER	
						POST-MONSOON AREA	PRE-MONSOON AREA
	1100	INLAND WETLANDS - NATURAL					
1	1101	Lakes/Ponds	8	52	0.05	49	26
2	1102	Ox-bow lakes/ Cut-off meanders	-	-	-	-	-
3	1103	High altitude wetlands	42	387	0.39	285	128
4	1104	Riverine wetlands	-	-	-	-	-
5	1105	Waterlogged	10	47	0.05	39	19
6	1106	River/Stream	67	55558	56.41	27153	17063
	1200	INLAND WETLANDS -MAN-MADE					
7	1201	Reservoirs/Barrages	13	41817	42.46	41445	31966
8	1202	Tanks/Ponds	27	134	0.14	106	29
9	1203	Waterlogged	3	30	0.03	30	14
10	1204	Salt pans	-	-	-	-	-
		TOTAL INLAND	- 170	98025	99.25	69107	49245
		Wetlands (<2.25 ha)	471	471	0.48	-	-
		TOTAL	641	98496	100.00	69107	49245

<b>AREA UNDER AQUATIC VEGETATION</b>	<b>-</b>	<b>5294</b>
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Area under turbidity levels

<b>Low</b>	46870	33949
<b>Moderate</b>	22236	15296
<b>High</b>	<b>-</b>	<b>-</b>

*Source: National Wetland Atlas: Himachal Pradesh*

## INTRODUCTION

Himachal Pradesh is nature's paradise, replete with beautiful landscapes, river catchment and forest wealth. A hill state, part of the Hindu-Kush Himalayas, it abounds in natural herbal wealth, has a large population of wildlife and varied climatic zones and topography. The hilly and semi hilly areas are capable of sustaining a very large number of animal species and globally threatened birds.

### DISTRICT-WISE WETLAND AREA OF HIMACHAL PRADESH

Sr. No.	DISTRICT	GEOGRAPHIC AREA	WETLAND AREA	% OF TOTAL WETLAND AREA	% OF DISTRICT GEOGRAPHIC AREA
		(sq. km)	(ha)		
1	Bilaspur	1167	12407	12.60	10.63
2	Chamba	6528	4667	4.74	0.71
3	Hamirpur	1118	2182	2.22	1.95
4	Kangra	5739	34605	35.13	6.03
5	Kinnaur	6401	4990	5.07	0.78
6	Kullu	5503	2894	2.94	0.53
7	Lahul & Spiti	13835	10766	10.93	0.78
8	Mandi	3950	3704	3.76	0.94
9	Shimla	5131	2368	2.40	0.46
10	Sirmaur	2825	9990	10.14	3.54
11	Solan	1936	2720	2.76	1.40
12	Una	1540	7203	7.31	4.68
	<b>TOTAL</b>	<b>55673</b>	<b>98496</b>	<b>100</b>	1.77

Source: National Wetland Atlas: Himachal Pradesh

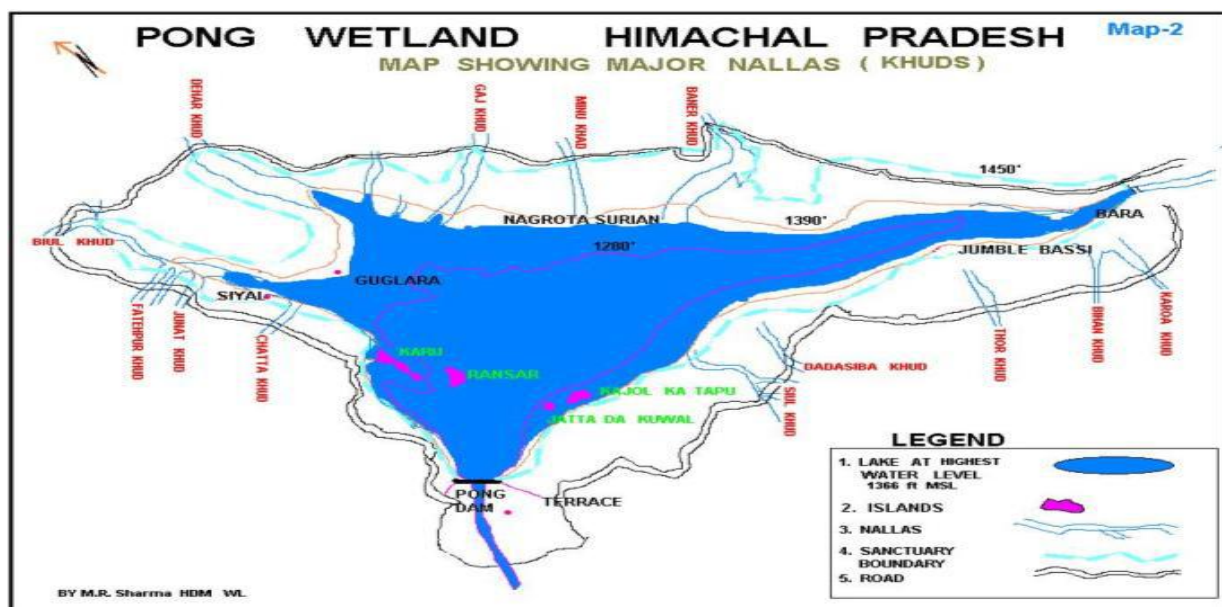


## PONG WETLAND

Pong wetland, 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. 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. This reservoir is 42 Km long and 19 Km wide and having live storage capacity of 7290 million cum. 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.



Source: Wild Wings

## THE RAMSAR CRITERIA FOR IDENTIFYING WETLANDS OF INTERNATIONAL IMPORTANCE

As adopted by the 4<sup>th</sup>, 6<sup>th</sup> & 7<sup>th</sup> meetings of the conference of the Contracting Parties to the convention on Wetlands ( *Ramsar , Iran, 1971*) to guide implementation of Article 2.1 on designation of Ramsar sites.

### Group A of the Criteria. Sites containing representatives, rare or unique wetland types

**Criterion 1:** A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near natural wetland type found within the appropriate bio geographic region.

### Group B of the Criteria. Sites of international importance for conserving biological diversity

#### Criteria based species and ecological communities

**Criterion 2:** A wetland should be considered internationally important if it supports vulnerable, endangered or critically endangered species or threatened ecological communities.

**Criterion 3:** A wetland should be considered internationally important if it supports population of plant and / or animal species important for maintaining the biological diversity of a particular bio geographic region.

**Criterion 4:** A wetland should be considered internationally important if it supports plant and / or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

#### Specific criteria based on water birds

**Criterion 5:** A wetland should be considered internationally important if it regularly supports 20,000 or more water birds.

**Criterion 6:** A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or sub species of water bird.

#### Species criteria based on fish

**Criterion 7:** A wetland should be considered internationally important if it supports a significant proportion of indigenous fish sub species, species or families, life history stages, species interactions and/ or population that are representative of wetland benefits and/ or values and thereby contributes to global biological diversity.

**Criterion 8:** A wetland should be considered internationally important if it is an important source of food for fish, spawning ground, nursery and/ or migration path on which fish stocks, either within the wetland or elsewhere, depends.

Source: [www.ramsar.org](http://www.ramsar.org)

## PONG GETS GLOBAL STATUS

The wetland earned the distinction of being among the global class of selected Sites. This is first wetland of the state to have got the global arm of protection and declared a “**RAMSAR SITE**” in the year 2002.

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.



## 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. The average annual rainfall during the last five years was 1,207 mm.

## ZONATION

The sanctuary area is divided into different zones keeping in view the objectives of the management plan such as:

- i) Core zone – Conservation zone – Up to 1400msl (Level may be increased in future keeping in view increasing water level)
- ii) Rehabilitation zone -1400msl to 1450msl
- iii) Multiple Use zone-Buffer zone
- iv) Tourism zone-Overlapping zone



## *PONG WETLAND SANCTUARY*

Pong wetland earned the distinction of being selected as an international RAMSAR site in 2002. This is the 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' North and longitudes 75°53' to 76°17' East. The total catchment area of 12,562 km<sup>2</sup> extends over Kangra, Mandi and Kullu Districts. The reservoir is 42 km long and 19 km wide and has live storage capacity of 7,290 million m<sup>3</sup>. The area of the water body varies from 125 km<sup>2</sup> at minimum water level of 1,265-1,280 ft in summer to about 225 km<sup>2</sup> at the maximum water level of 1,370-1,390 ft in the rainy season. When full, the reservoir has the appearance of an inland sea with waves traveling to the shoreline.

The environs of Pong wetland support more than 415 bird species belonging to more than 60 families. A large number of major and minor tributaries – some perennial and some seasonal, viz Dehar, Bhul, Gaj, Baner, Nekar, etc. from the Dhauladhar ranges – directly drain into Pong Dam. The Pong reservoir has four major islands, viz Rancer, Karu, Kajal-ka-tapu and Jattaan da Kual.

## *SIGNIFICANCE OF PONG WETLAND*

The wetland has an immense untapped potential for bird watching, camping, water sports, nature/heritage tourism and other multifarious recreational activities. Rare species like Vultures, Falcons, Indian Skimmer, Red Necked Grebes, White Fronted Geese and many Waders have been recorded in the wetland. Bar Headed Geese visiting Pong in large number constitutes more than 40 % of the world population. This makes the Pong wetland, the largest single congregation destination for Bar Headed Geese not only in India but also in the world.

The wetland provides comforts, environmental stimulation and the kind of tranquility, the tourists look for. Five beautiful islands inside the lake offer temptations to feel them closely and enjoy the nature. It is a unique wetland whose potential has yet not been exploited at all. The fully developed wetland will not only be the dream habitat for lakhs of birds but also a dream destination for millions of national and international tourists with immense revenue generation potential.

Places of cultural and mythological importance in and around Pong add significant and spiritual value to the wetland. The wetland can be a source of inspiration for the poets and artists alike.

Prior to the impoundment of the river Beas, a subsistence fishery of inconsequential nature existed in the river and adjoining streams. But, with the creation of the Pong reservoir, a lucrative fishery started attracting large number of fishermen and the ousters who had no other viable means of livelihood. The commercial fishing in the reservoir started soon after. The total catch during the first year of fishing

operation was 98 Metric tons and has increased progressively till 1987-88 when it attained a peak of 779 metric tons. Pong dam is probably the only reservoir in the country, which provides opportunity of Mahasheer angling.

### **ENVIRONMENTAL CONCERNS**

The analysis of oxygen demand may not be too unfavorable at the moment, but if unplanned/unregulated habitat extension and habitat improvement works are carried out then the dissolved oxygen content may decrease. The aquatic plants in the main wetland have already decreased, which may not be helpful in increasing the dissolved oxygen content in the future. The temperature of the lake sometimes rises up to 47°C during the summer season and that may also reduce the oxygen concentration in the water body. The movement of boats in the lake might to some extent be helping to increasing the dissolved oxygen content. Chemical analysis of lake water has to be carried out yearly to determine the pollutant load and water quality, otherwise all the management interventions carried out in Pong lake may turn out to be futile.

As this wetland is glacier-fed, the impact of global warming on the wetland has to be considered and the effects of construction of new dams above streams, diversion of water for drinking, irrigation and hydropower, etc., has to be analyzed. Local cattle and the cattle of gujjars in the Pong must be immunized and registered with local authorities to prevent outbreaks of various diseases.

#### **Socio-economics**

Fish population and fish diversity is one area that needs improvement in Pong Lake, as is preserving the breeding grounds of various fish in the Greater Pong since the fish generally breed upstream outside of the main Pong wetland. All fishing should cease during the bird migration season (December to March) and the fishermen may be compensated. It is very important to determine the dependency level of the 26,000 people living in the sanctuary and the 11,500 domestic cattle in order to develop a prevention mechanism through protection and enhancing awareness about the importance of this fragile ecosystem.

### **OTHER CONCERNS**

Other areas which need attention include:

- treatment of nallahs/khads in buffer zone;
- soil types silt load;
- erosion;
- study of pressure, temperature and wind direction;
- biotic interference;
- Quarrying outside the protected area;
- rain gauge to measure the precipitation;
- strengthening the infrastructure and communication facilities;

**CHECKLIST OF BIRD SPECIES RECORDED IN PONG LAKE SANCTUARY**

SERIAL NO.	COMMON NAMES	SCIENTIFIC NAMES	FAMILY
1.	Small Pratincole	<i>Glareola lactea</i>	Glareolidae
2.	Oriental Pratincole	<i>Glareola maldivarum</i>	Glareolidae
3.	Lesser Kestrel	<i>Falco naumanni</i>	Falconidae
4.	Peregrine Falcon	<i>Falco peregrines</i>	Falconidae
5.	Eurasian Hobby	<i>Falco subbuteo</i>	Falconidae
6.	Common Kestrel	<i>Falco tinnunculus</i>	Falconidae
7.	Oriental Hobby	<i>Falco severus</i>	Falconidae
8.	Merlin	<i>Falco columbarius</i>	Falconidae
9.	Laggar Falcon	<i>Falcon jugger</i>	Falconidae
10.	House Swift	<i>Apus affinis</i>	Apodini
11.	Alpine Swift	<i>Tachymarptis melba</i>	Apodini
12.	Himalayan Swiftlet	<i>Collocalia brevirostris</i>	Collocaliini
13.	Indian Grey- Hornbill	<i>Ocyrceros birostris</i>	Bucerotidae
14.	Black Winged Kite	<i>Elanus caeruleus</i>	Accipitridae
15.	Oriental Honey –buzzard	<i>Pernis ptilorhyncus</i>	Accipitridae
16.	Black Kite	<i>Milvus migrans</i>	Accipitridae
17.	Brahminy Kite	<i>Haliastur Indus</i>	Accipitridae
18.	Shikra	<i>Accipiter badius</i>	Accipitridae
19.	Northern Goshawk	<i>Accipiter gentilis</i>	Accipitridae
20.	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	Accipitridae
21.	Besra	<i>Accipiter virgatus</i>	Accipitridae
22.	Common Buzzard	<i>Buteo buteo</i>	Accipitridae
23.	Long Legged Buzzard	<i>Buteo hemilasius</i>	Accipitridae
24.	White Eyed Buzzard	<i>Butastur teesa</i>	Accipitridae
25.	Booted Eagle	<i>Hieraaetus pennatus</i>	Accipitridae
26.	Greater Spotted Eagle	<i>Aquila clanga</i>	Accipitridae
27.	Steppe Eagle	<i>Aquila nipalensis</i>	Accipitridae
28.	Tawny Eagle	<i>Aquila rapax</i>	Accipitridae
29.	Black Eagle	<i>Ictinaetus malayensis</i>	Accipitridae
30.	Cinereous vulture	<i>Aegypius monachus</i>	Accipitridae
31.	Red headed vulture	<i>Sarcogyps calvus</i>	Accipitridae
32.	White Rumped vulture	<i>Gyps bengalensis</i>	Accipitridae
33.	Eurasian Griffon	<i>Gyps fulvus</i>	Accipitridae
34.	Himalayan Griffon	<i>Gyps himalayensis</i>	Accipitridae
35.	Long- billed vulture	<i>Gyps indicus</i>	Accipitridae

36.	Egyptian Vulture	<i>Neophron percnopterus</i>	Accipitridae
37.	Pallid Harrier	<i>Circus macrourus</i>	Accipitridae
38.	Pied harrier	<i>Circus melanoleucos</i>	Accipitridae
39.	Hen harrier	<i>Circus cyaneus</i>	Accipitridae
40.	Eurasian Marsh Harrier	<i>Circus aeruginosus</i>	Accipitridae
41.	Crested serpent Eagle	<i>Spilornis cheela</i>	Accipitridae
42.	Osprey	<i>Pandion haliaetus</i>	Accipitridae
43.	Short- toed Snake Eagle	<i>Circaetus gallicus</i>	Accipitridae
44.	Bonelli's Eagle	<i>Hieraaetus fasciatus</i>	Accipitridae
45.	Oriental Darter	<i>Anhinga melanogaster</i>	Accipitridae
46.	Barheaded Goose	<i>Anser indicus</i>	Anitadae
47.	Greylag Goose	<i>Anser anser</i>	Anitadae
48.	Greater White Fronted Goose	<i>Anser albifrons</i>	Anitadae
49.	Northern pintail	<i>Anas acuta</i>	Anitadae
50.	Common Teal	<i>Anas crecca</i>	Anitadae
51.	Spotbilled duck	<i>Anas poecilorhyncha</i>	Anitadae
52.	Northern Shovller	<i>Anas clypeata</i>	Anitadae
53.	Garganey	<i>Anas querquedula</i>	Anitadae
54.	Mallard	<i>Anas platyrhynchos</i>	Anitadae
55.	Eurasian Wigeon	<i>Anas penelope</i>	Anitadae
56.	Gadwall	<i>Anas strepera</i>	Anitadae
57.	Ruddy Shelduck	<i>Tadorna tadorna</i>	Anitadae
58.	Common Pochard	<i>Aythya ferina</i>	Anitadae
59.	Tufted duck	<i>Aythya fuligula</i>	Anitadae
60.	Red Crested Pochard	<i>Rhodoness rufina</i>	Anitadae
61.	Ferruginous Pochard	<i>Aythya nyroca</i>	Anitadae
62.	Greater Scaup	<i>Aythya marila</i>	Anitadae
63.	Common Merganser	<i>Mergus merganser</i>	Anitadae
64.	Lesser Whistling duck	<i>Dendrocygna javanica</i>	Anitadae
65.	Common Shelduck	<i>Tadorna tadorna</i>	Anitadae
66.	Cotton Pygmy Goose	<i>Nettapus coromandelianus</i>	Anitadae
67.	Grey Heron	<i>Ardea cinerea</i>	Ardeidae
68.	Purple Heron	<i>Ardea purpurea</i>	Ardeidae
69.	Indian Pond heron	<i>Ardeola grayii</i>	Ardeidae
70.	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae
71.	Great Egret	<i>Casmerodius albus</i>	Ardeidae
72.	Little Egret	<i>Egretta garzetta</i>	Ardeidae
73.	Western Reef Egret	<i>Egretta gularis</i>	Ardeidae

74.	Black Bittern	<i>Ixobrychus flavicollis</i>	Ardeidae
75.	Yellow Bittern	<i>Ixobrychus sinensis</i>	Ardeidae
76.	Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	Ardeidae
77.	Intermediate Egret	<i>Mesophoyx intermedia</i>	Ardeidae
78.	Black Crowned Night Heron	<i>Nycticorax nycticorax</i>	Ardeidae
79.	Eurasian Thick Knee	<i>Burhinus oediconemus</i>	Burhinidae
80.	Great Thick Knee	<i>Burhinus recurvirostris</i>	Burhinidae
81.	Kentish Plover	<i>Charadrius alexandrinus</i>	Charadriidae
82.	Little Ring Plover	<i>Charadrius dubius</i>	Charadriidae
83.	Common Ringed Plover	<i>Charadrius hiaticula</i>	Charadriidae
84.	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Charadriidae
85.	Black Winged Stilt	<i>Himantopus himantopus</i>	Charadriidae
86.	Grey Plover	<i>Pluvialis squatarola</i>	Charadriidae
87.	River Lapwing	<i>Vanellus duvaucelii</i>	Charadriidae
88.	Pacific Golden Plover	<i>Pluvialis fulva</i>	Charadriidae
89.	Red Wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae
90.	White tailed Lapwing	<i>Vanellus leucurus</i>	Charadriidae
91.	Yellow Wattled Lapwing	<i>Vanellus malbaricus</i>	Charadriidae
92.	Northern Lapwing	<i>Vanellus vanellus</i>	Charadriidae
93.	Lesser Sand Plover	<i>Charadrius mongolus</i>	Charadriidae
94.	Greater Sand Plover	<i>Charadrius leschenaultia</i>	Charadriidae
95.	Long Billed Plover	<i>Charadrius placidus</i>	Charadriidae
96.	Oriental Plover	<i>Charadrius veredus</i>	Charadriidae
97.	Asian Openbill	<i>Anastomus oscitans</i>	Ciconiidae
98.	Woolly -necked Stork	<i>Ciconia episcopus</i>	Ciconiidae
99.	Black Stork	<i>Ciconia nigra</i>	Ciconiidae
100.	Black- necked Stork	<i>Ephippiorhynchus asiaticus</i>	Ciconiidae
101.	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae
102.	Pheasant Tailed jacana	<i>Hydrophasianus chirurgus</i>	Jacanidae
103.	Whiskered Tern	<i>Chlidonias hybridus</i>	Laridae
104.	Brown Headed Gull	<i>Larus brunnicephalus</i>	Laridae
105.	Yellow Legged Gull	<i>Larus cachinnans</i>	Laridae
106.	Mew Gull	<i>Larus canus</i>	Laridae
107.	Slender – billed Gull	<i>Larus genei</i>	Laridae
108.	Pallas Gull	<i>Larus ichthyaetus</i>	Laridae
109.	Black headed Gull	<i>Larus ridibundus</i>	Laridae
110.	Little Gull	<i>Larus minutus</i>	Laridae
111.	Indian Skimmer	<i>Rynchops albicollis</i>	Laridae



112.	Black bellied Tern	<i>Sterna acuticauda</i>	Laridae
113.	River Tern	<i>Sterna aurantia</i>	Laridae
114.	Gull- billed Tern	<i>Sterna nilotica</i>	Laridae
115.	Little Tern	<i>Sterna albifrons</i>	Laridae
116.	Great Cormorant	<i>Phalacrocorax carbo</i>	Phalacrocoracidae
117.	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae
118.	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae
119.	Great Crested Grebe	<i>Podiceps cristatus</i>	Podicipedidae
120.	Red necked Grebe	<i>Podiceps grisegena</i>	Podicipedidae
121.	Black necked Grebe	<i>Podiceps nigricollis</i>	Podicipedidae
122.	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae
123.	Ruddy Turnstone	<i>Arenaria interpres</i>	Scolopacidae
124.	Dunlin	<i>Calidris alpine</i>	Scolopacidae
125.	Curlew Sandpiper	<i>Calidris ferruginea</i>	Scolopacidae
126.	Little Stint	<i>Calidris minuta</i>	Scolopacidae
127.	Temminck's Stint	<i>Calidris temmonckii</i>	Scolopacidae
128.	Common Snipe	<i>Gallinago gallinago</i>	Scolopacidae
129.	Greater Painted Snipe	<i>Rostratula benghalensis</i>	Scolopacidae
130.	Pintail Snipe	<i>Gallinago stenura</i>	Scolopacidae
131.	Solitary Snipe	<i>Gallinago solitaria</i>	Scolopacidae
132.	Jack Snipe	<i>Lymnocyrtus minimus</i>	Scolopacidae
133.	Black tailed Godwit	<i>Limosa limosa</i>	Scolopacidae
134.	Eurasian Curlew	<i>Numenius arquata</i>	Scolopacidae
135.	Whimbrel	<i>Numenius phaeopus</i>	Scolopacidae
136.	Red Necked Phalarope	<i>Phalaropus fulicaria</i>	Scolopacidae
137.	Ruff	<i>Philomachus pugnax</i>	Scolopacidae
138.	Terek Sandpiper	<i>Tringa cinerea</i>	Scolopacidae
139.	Spotted Redshank	<i>Tringa erythropus</i>	Scolopacidae
140.	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae
141.	Common Sandpiper	<i>Tringa hypoleucos</i>	Scolopacidae
142.	Common Greenshank	<i>Tringa nebularia</i>	Scolopacidae
143.	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae
144.	Marsh Sandpiper	<i>Tringa stagnatilis</i>	Scolopacidae
145.	Broad Billed Sandpiper	<i>Limicola falcinellus</i>	Scolopacidae
146.	Common Redshank	<i>Tringa totanus</i>	Scolopacidae
147.	Sanderling	<i>Calidris alba</i>	Scolopacidae
148.	Long Toed Stint	<i>Callidris subminuta</i>	Scolopacidae
149.	Nordmann's Greenshank	<i>Tringa hypoleuco</i>	Scolopacidae

150.	Grey tailed Tattler	<i>Heteroscelus brevipes</i>	Scolopacidae
151.	Sharp Tailed Sandpiper	<i>Calidris acuminata</i>	Scolopacidae
152.	Rock Pigeon	<i>Columba livia</i>	Columbidae
153.	Common Wood Pigeon	<i>Columba palumbus</i>	Columbidae
154.	Spotted Dove	<i>Streptopelia chinensis</i>	Columbidae
155.	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae
156.	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	Columbidae
157.	Laughing Dove	<i>Streptopelia senegalensis</i>	Columbidae
158.	Red Collared Dove	<i>Streptopelia tranquebarica</i>	Columbidae
159.	Emerald Dove	<i>Chalcophaps indica</i>	Columbidae
160.	Yellow- Footed- Green- Pigeon	<i>Treron phoenicoptera</i>	Treroninae
161.	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae
162.	Pied Kingfisher	<i>Ceryle rudis</i>	Cerylidae
163.	Crested Kingfisher	<i>Megaceryle lugubris</i>	Cerylidae
164.	White- throated Kingfisher	<i>Halcyon smyrnensis</i>	Halcyonidae
165.	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae
166.	European Roller	<i>Coracias qarrulus</i>	Coraciidae
167.	Little Green Bee-eater	<i>Merops orientalis</i>	Meropidae
168.	Blue-tailed Bee-eater	<i>Merops philippinus</i>	Meropidae
169.	Greater Coucal	<i>Centropus sinensis</i>	Centropodidae
170.	Eurasian Cuckoo	<i>Cuculus canorus</i>	Cuculidae
171.	Indian Cuckoo	<i>Cuculus micropterus</i>	Cuculidae
172.	Common Hawk Cuckoo	<i>Cuculus varius</i>	Cuculidae
173.	Asian Koel	<i>Eudynamys scolopacea</i>	Cuculidae
174.	Pied Cuckoo	<i>Oxylophus jacobinus</i>	Cuculidae
175.	Grey Bellied Cuckoo	<i>Cacomantis passerines</i>	Cuculidae
176.	Lesser Cuckoo	<i>Cuculus poliocephalus</i>	Cuculidae
177.	Sirkeer Malkoha	<i>Phaenicophaeus leschenaultia</i>	Cuculidae
178.	Common Quail	<i>Coturnix coturnix</i>	Phasianidae
179.	Black Francolin	<i>Francolinus francolinus</i>	Phasianidae
180.	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae
181.	Red Junglefowl	<i>Gallus gallus</i>	Phasianidae
182.	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae
183.	Jungle Bush- Quail	<i>Perdica asiatica</i>	Phasianidae
184.	Rain Quail	<i>Coturnix coromandelica</i>	Phasianidae
185.	Khaliz Pheasant	<i>Lophura leucomelanos</i>	Phasianidae
186.	Barred Button Quail	<i>Turnix suscitator</i>	Phasianidae
187.	Sarus Crane	<i>Grus antigone</i>	Gruidae

188.	Demoiselle Crane	<i>Grus virgo</i>	Gruidae
189.	Brown Crake	<i>Amaurornis akool</i>	Rallidae
190.	White Breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae
191.	Common Coot	<i>Fulica atra</i>	Rallidae
192.	Ballion's Crake	<i>Porzana pusilla</i>	Rallidae
193.	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae
194.	Purple Swampphen	<i>Porphyrio porphyrio</i>	Rallidae
195.	Water Rail	<i>Rallus aquaticus</i>	Rallidae
196.	Eurasian Skylark	<i>Alauda arvensis</i>	Alaudidae
197.	Oriental Skylark	<i>Alauda gulgula</i>	Alaudidae
198.	Lesser Short toed Lark	<i>Calandrella rufescens</i>	Alaudidae
199.	Greater Short toed Lark	<i>Calandrella brachydactyla</i>	Alaudidae
200.	Indian Short toed Lark	<i>Calandrella raytal</i>	Alaudidae
201.	Ashy Crowned Sparrow Lark	<i>Eremopterix grisea</i>	Alaudidae
202.	Crested Lark	<i>Galerida cristata</i>	Alaudidae
203.	Bimaculated Lark	<i>Melanocorypha bimaculata</i>	Alaudidae
204.	Singing Lark	<i>Mirafra cantillans</i>	Alaudidae
205.	Bengal Bush Lark	<i>Mirafra assamica</i>	Alaudidae
206.	Humes Short Toed Lark	<i>Calandrella acutirostris</i>	Alaudidae
207.	Indian Bush Lark	<i>Mirafra erythroptera</i>	Alaudidae
208.	Bar tailed Tree Creeper	<i>Certhia himalayana</i>	Certhiidae
209.	Rufous- fronted Prinia	<i>Prinia buchanani</i>	Cisticolidae
210.	Zitting Cisticola	<i>Cisticola juncidis</i>	Cisticolidae
211.	Striated Prinia	<i>Prinia criniger</i>	Cisticolidae
212.	Yellow bellied Prinia	<i>Prinia flaviventris</i>	Cisticolidae
213.	Grey Breasted Prinia	<i>Prinia hodgsonii</i>	Cisticolidae
214.	Plain Prinia	<i>Prinia inornata</i>	Cisticolidae
215.	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae
216.	Jungle Prinia	<i>Prinia sylvatica</i>	Cisticolidae
217.	Graceful Prinia	<i>Prinia gracilis</i>	Cisticolidae
218.	Common Iora	<i>Aegithina tiphia</i>	Corvidae
219.	Large Cuckoo- shrike	<i>Coracina macei</i>	Corvidae
220.	Black- headed Cuckoo Shrike	<i>Coracina melanoptera</i>	Corvidae
221.	Black winged Cuckoo Shrike	<i>Coracina melaschistos</i>	Corvidae
222.	Common Raven	<i>Corvus corax</i>	Corvidae
223.	Large-billed Crow	<i>Corvus macrorhynchos</i>	Corvidae
224.	House Crow	<i>Corvus splendens</i>	Corvidae
225.	Spangled Drongo	<i>Dicrurus hottentottus</i>	Corvidae

226.	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae
227.	Ashy Drongo	<i>Dicrurus leucophaeus</i>	Corvidae
228.	Black Drongo	<i>Dicrurus macrocercus</i>	Corvidae
229.	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Corvidae
230.	Small Minivet	<i>Pericrocotus cinnamomeus</i>	Corvidae
231.	Long tailed Minivet	<i>Pericrocotus ethologus</i>	Corvidae
232.	Rosy Minivet	<i>Pericrocotus roseus</i>	Corvidae
233.	White-throated Fantail	<i>Rhipidura albicollis</i>	Corvidae
234.	White- browed Fantail	<i>Rhipidura aureola</i>	Corvidae
235.	Yellow bellied Fantail	<i>Rhipidura hypoxantha</i>	Corvidae
236.	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	Corvidae
237.	Asian Paradise Flycatcher	<i>Terpsiphone paradisi</i>	Corvidae
238.	Red Billed Blue Magpie	<i>Urocissa erythrorhyncha</i>	Corvidae
239.	Yellow Billed Blue Magpie	<i>Urocissa flavirostris</i>	Corvidae
240.	European Goldfinch	<i>Carduelis carduelis</i>	Fringillidae
241.	Yellow Breasted Greenfinch	<i>Carduelis spinoides</i>	Fringillidae
242.	Common Rosefinch	<i>Carpodacus erythrinus</i>	Fringillidae
243.	Pine Bunting	<i>Emberiza leucocephalos</i>	Fringillidae
244.	Rock Bunting	<i>Emberiza cia</i>	Fringillidae
245.	Crested Bunting	<i>Melophus lathami</i>	Fringillidae
246.	White Capped Bunting	<i>Emberiza stewarti</i>	Fringillidae
247.	Fire Fronted Serin	<i>Serinus pusillus</i>	Fringillidae
248.	Eurasian Linnet	<i>Carduelis cannabina</i>	Fringillidae
249.	Red rumped Swallow	<i>Hirundo daurica</i>	Hirundinidae
250.	Streak throated Swallow	<i>Hirundo fluvicola</i>	Hirundinidae
251.	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae
252.	Wire- tailed Swallow	<i>Hirundo smithii</i>	Hirundinidae
253.	Plain Martin	<i>Riparia paludicola</i>	Hirundinidae
254.	Pale Martin	<i>Riparia diluta</i>	Hirundinidae
255.	Eurasian Crag Martin	<i>Hirundo rupestris</i>	Hirundinidae
256.	Brown Shrike	<i>Lanius cristatus</i>	Hirundinidae
257.	Rufous-tailed Shrike	<i>Lanius isabellinus</i>	Laniidae
258.	Long -tailed Shrike	<i>Lanius schach</i>	Laniidae
259.	Bay- Backed Shrike	<i>Lanius vittatus</i>	Laniidae
260.	Grey-backed Shrike	<i>Lanius tephronotus</i>	Laniidae
261.	Southern Grey Shrike	<i>Lanius meridionalis</i>	Laniidae
262.	Indian Chat	<i>Cercomela fusca</i>	Muscicapidae
263.	White- capped Water Redstart	<i>Chaimarrornis leucocephalus</i>	Muscicapidae

264.	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae
265.	Grey- headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	Muscicapidae
266.	Blue-throated Flycatcher	<i>Cyornis rubeculoides</i>	Muscicapidae
267.	Verditer Flycatcher	<i>Eumyias thalassina</i>	Muscicapidae
268.	Red-throated Flycatcher	<i>Ficedula parva</i>	Muscicapidae
269.	Slaty-blue Flycatcher	<i>Ficedula tricolor</i>	Muscicapidae
270.	Indian Blue Robin	<i>Luscinia brunnea</i>	Muscicapidae
271.	White-tailed Rubythroat	<i>Luscinia pectardens</i>	Muscicapidae
272.	Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	Muscicapidae
273.	Bluethroat	<i>Luscinia svecica</i>	Muscicapidae
274.	Blue Rock- Thrush	<i>Monticola solitarius</i>	Muscicapidae
275.	Blue Whistling-Thrush	<i>Myiophonus caeruleus</i>	Muscicapidae
276.	Blue Capped Rock Thrush	<i>Monticola cinclorhynchus</i>	Muscicapidae
277.	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	Muscicapidae
278.	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	Muscicapidae
279.	Dark Sided Flycatcher	<i>Muscicapa sibirica</i>	Muscicapidae
280.	Rufous-bellied Niltava	<i>Niltava sundara</i>	Muscicapidae
281.	Desert Wheatear	<i>Oenanthe deserti</i>	Muscicapidae
282.	Isabelline Wheatear	<i>Oenanthe isabelline</i>	Muscicapidae
283.	Variable Wheatear	<i>Oenanthe picata</i>	Muscicapidae
284.	Pied Wheatear	<i>Oenanthe pleschanka</i>	Muscicapidae
285.	Blue-capped Redstart	<i>Phoenicurus caeruleocephalus</i>	Muscicapidae
286.	Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	Muscicapidae
287.	Black Redstart	<i>Phoenicurus ochruros</i>	Muscicapidae
288.	Plumbeous Water-Redstart	<i>Rhyacornis fuliginosus</i>	Muscicapidae
289.	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae
290.	Grey Bushchat	<i>Saxicola ferrea</i>	Muscicapidae
291.	White Tailed Stonechat	<i>Saxicola leucura</i>	Muscicapidae
292.	Indian Robin	<i>Saxicoloides fulicata</i>	Muscicapidae
293.	Grey-winged Blackbird	<i>Turdus boulboul</i>	Muscicapidae
294.	Eurasian Blackbird	<i>Turdus merula</i>	Muscicapidae
295.	Scaly Thrush	<i>Zoothera dauma</i>	Muscicapidae
296.	Common Stone Chat	<i>Saxicola torquata</i>	Muscicapidae
297.	Dark-Throated Thrush	<i>Turdus ruficollis</i>	Muscicapidae
298.	Orange headed Thrush	<i>Zoothera citrina</i>	Muscicapidae
299.	Tickell's Thrush	<i>Turdus unicolor</i>	Muscicapidae
300.	Crimson Sunbird	<i>Aethopyga siparaja</i>	Nectariniidae
301.	Pale-billed Flowerpecker	<i>Dicaeum erythrorhynchos</i>	Nectariniidae



302.	Purple Sunbird	<i>Nectarinia asiatica</i>	Nectariniidae
303.	Thick billed Flowerpecker	<i>Dicaeum agile</i>	Nectariniidae
304.	Great Tit	<i>Parus major</i>	Paridae
305.	Green-backed Tit	<i>Parus monticolus</i>	Paridae
306.	Black lored Tit	<i>Parus xanthogenys</i>	Paridae
307.	Spotwinged Tit	<i>Parus melanolophus</i>	Paridae
308.	Tawny Pipit	<i>Anthus campestris</i>	Passeridae
309.	Red-throated Pipit	<i>Anthus cervinus</i>	Passeridae
310.	Blyth's Pipit	<i>Anthus godlewskii</i>	Passeridae
311.	Olive-backed Pipit	<i>Anthus hodgsoni</i>	Passeridae
312.	Richard's Pipit	<i>Anthus richardi</i>	Passeridae
313.	Rosy Pipit	<i>Anthus roseatus</i>	Passeridae
314.	Paddyfield Pipit	<i>Anthus rufulus</i>	Passeridae
315.	Long-billed Pipit	<i>Anthus similis</i>	Passeridae
316.	Water Pipit	<i>Anthus spinoletta</i>	Passeridae
317.	Upland Pipit	<i>Anthus sylvanus</i>	Passeridae
318.	Tree Pipit	<i>Anthus trivialis</i>	Passeridae
319.	Indian Silverbill	<i>Lonchura malabarica</i>	Passeridae
320.	Scaly-breasted Munia	<i>Lonchura punctulata</i>	Passeridae
321.	White Wagtail	<i>Motacilla alba</i>	Passeridae
322.	Grey Wagtail	<i>Motacilla cinerea</i>	Passeridae
323.	Citrine Wagtail	<i>Motacilla citreola</i>	Passeridae
324.	Yellow Wagtail	<i>Motacilla flava</i>	Passeridae
325.	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Passeridae
326.	House Sparrow	<i>Passer domesticus</i>	Passeridae
327.	Baya Weaver	<i>Ploceus philippinus</i>	Passeridae
328.	Red Avadavat	<i>Amandava amandava</i>	Passeridae
329.	Chestnut-Shoulder Petronia	<i>Petronia xanthocollis</i>	Passeridae
330.	Streaked Weaver	<i>Ploceus manyar</i>	Passeridae
331.	Indian Pitta	<i>Pitta brachyura</i>	Pittidae
332.	Black Bulbul	<i>Hypsipetes leucocephalus</i>	Pycnonotidae
333.	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae
334.	Himalayan Bulbul	<i>Pycnonotus leucogenys</i>	Pycnonotidae
335.	Chestnut-bellied Nuthatch	<i>Sitta castanea</i>	Sittidae
336.	Wallcreeper	<i>Tichodroma muraria</i>	Sittidae
337.	Jungle Myna	<i>Acridotheres fuscus</i>	Sturnidae
338.	Bank Myna	<i>Acridotheres ginginianus</i>	Sturnidae
339.	Common Myna	<i>Acridotheres tristis</i>	Sturnidae

340.	Asian Pied Starling	<i>Sturnus contra</i>	Sturnidae
341.	Brahminy Starling	<i>Sturnus pagodarum</i>	Sturnidae
342.	Common Starling	<i>Sturnus vulgaris</i>	Sturnidae
343.	Chestnut-tailed Starling	<i>Sturnus malabaricus</i>	Sturnidae
344.	Rosy Starling	<i>Sturnus roseus</i>	Sturnidae
345.	Paddyfield Warbler	<i>Acrocephalus agricola</i>	Sylviidae
346.	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Sylviidae
347.	Black Browed Reed Warbler	<i>Acrocephalus bistrigiceps</i>	Sylviidae
348.	Clamorous Reed Warbler	<i>Acrocephalus stentoreus</i>	Sylviidae
349.	Brownish-flanked Bush Warbler	<i>Cettia fortipes</i>	Sylviidae
350.	Booted Warbler	<i>Hippolais caligata</i>	Sylviidae
351.	Common Tailorbird	<i>Orthotomus sutorius</i>	Sylviidae
352.	Smoky Warbler	<i>Phylloscopus fuligiventer</i>	Sylviidae
353.	Common Chiffchaff	<i>Phylloscopus collybita</i>	Sylviidae
354.	Mountain Chiffchaff	<i>Phylloscopus sindianus</i>	Sylviidae
355.	Sulper-Bellied Warbler	<i>Phylloscopus griseolus</i>	Sylviidae
356.	Greenish Warbler	<i>Phylloscopus trochiloides</i>	Sylviidae
357.	Grey-hooded Warbler	<i>Seicercus xanthoschistos</i>	Sylviidae
358.	Grasshopper Warbler	<i>Nocustella naevia</i>	Sylviidae
359.	Dusky Warbler	<i>Phylloscopus fuscatus</i>	Sylviidae
360.	Lemon-rumped Warbler	<i>Phylloscopus chloronotus</i>	Sylviidae
361.	Humes Warbler	<i>Phylloscopus humei</i>	Sylviidae
362.	Grey Sided Bush Warbler	<i>Cettia brunnifrons</i>	Sylviidae
363.	Western Crowned Warbler	<i>Phylloscopus occipitalis</i>	Sylviidae
364.	Golden Spectacled Warbler	<i>Seicercus burkii</i>	Sylviidae
365.	Lesser Whitethroat	<i>Sylvia curruca</i>	Sylviidae
366.	Humes Whitethroat	<i>Sylvia althaea</i>	Sylviidae
367.	Puff-throated Babbler	<i>Pellorneum ruficeps</i>	Sylviidae
368.	Common Babbler	<i>Turdoides caudatus</i>	Sylviidae
369.	Striated Babbler	<i>Turdoides earlei</i>	Sylviidae
370.	Jungle Babbler	<i>Turdoides striatus</i>	Sylviidae
371.	Striated Grassbird	<i>Megalurus palustris</i>	Sylviidae
372.	Plain leaf Warbler	<i>Phylloscopus neglectus</i>	Sylviidae
373.	Chestnut Crowned Laughingthrush	<i>Garrulax affinis</i>	Sylviidae
374.	Bristled Grassbird	<i>Chaetornis striatus</i>	Sylviidae
375.	Streaked Laughingthrush	<i>Garrulax lineatus</i>	Sylviidae
376.	Rusty Cheeked Scimitar Babbler	<i>Pomatorhinus erythrogenys</i>	Sylviidae
377.	White Browed Babbler	<i>Pomatorhinus schisticeps</i>	Sylviidae

378.	Yellow Eyed Babbler	<i>Chrysomma sinense</i>	Sylviidae
379.	White Browed Fulvetta	<i>Alcippe vinipectus</i>	Sylviidae
380.	Black Chinned Babbler	<i>Stachyris pyrrhops</i>	Sylviidae
381.	Lanceolated Warbler	<i>Locustella lanceolata</i>	Sylviidae
382.	Oriental White Eye	<i>Zosterops palpebrosus</i>	Zosteropidae
383.	Blue-fronted Woodpecker	<i>Megalaima asiatica</i>	Megalaimidae
384.	Coppersmith barbet	<i>Megalaima haemacephala</i>	Megalaimidae
385.	Great Barbet	<i>Megalaima virens</i>	Megalaimidae
386.	Brown-headed Barbet	<i>Megalaima zeylanica</i>	Megalaimidae
387.	Brown-fronted Woodpecker	<i>Dendrocopos auriceps</i>	Picidae
388.	Grey-capped Woodpecker	<i>Dendrocopos canicapillus</i>	Picidae
389.	Yellow-crowned Woodpecker	<i>Dendrocopos mahrattensis</i>	Picidae
390.	Brown-capped Woodpecker	<i>Dendrocopos nanus</i>	Picidae
391.	Black-rumped Flameback	<i>Dinopium benghalense</i>	Picidae
392.	Fulvous Breasted Woodpecker	<i>Dendrocopos macei</i>	Picidae
393.	Eurasian Wryneck	<i>Jynx torquilla</i>	Picidae
394.	Grey-headed Woodpecker	<i>Picus canus</i>	Picidae
395.	Speckled Piculet	<i>Picumnus innominatus</i>	Picidae
396.	Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	Psittacidae
397.	Alexandrine Parakeet	<i>Psittacula eupatria</i>	Psittacidae
398.	Slaty-headed Parakeet	<i>Psittacula himalayana</i>	Psittacidae
399.	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae
400.	Savanna Nightjar	<i>Caprimulgus affinis</i>	Caprimulgidae
401.	Large Tailed Nightjar	<i>Caprimulgus macrurus</i>	Caprimulgidae
402.	Spotted owlet	<i>Athene brama</i>	Strigidae
403.	Eurasian Eagle-Owl	<i>Bubo bubo</i>	Strigidae
404.	Jungle Owlet	<i>Glaucidium radiatum</i>	Strigidae
405.	Short eared Owl	<i>Asio flammeus</i>	Strigidae
406.	Oriental Scops-Owl	<i>Otus sunia</i>	Strigidae
407.	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	Strigidae
408.	Barn Owl	<i>Tyto alba</i>	Tytonidae
409.	Common Hoopoe	<i>Upupa epops</i>	Upupidae
410.	Black Ibis	<i>Pseudibis papillosa</i>	Threskiornithidae
411.	Eurasian Spoonbill	<i>Platalea leucorodia</i>	Threskiornithidae
412.	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae
413.	Black Throated Accentor	<i>Prunella atrogularis</i>	Prunellidae
414.	Rufous-Breasted Accentor	<i>Prunella strophciata</i>	Prunellidae
415.	Pied Avocet	<i>Recurvirostra avosetta</i>	Recurvirostridae

## OTHER ANIMALS REPORTED IN PONG WETLAND AREA

### MAMMALS:

SERIAL NO.	COMMON NAME	ZOOLOGICAL NAME
1.	Common Monkey	<i>Rhesus macaque</i>
2.	Hannuman Langur	<i>Semnopithecus entellus</i>
3.	Sambar	<i>Cervus unicolor</i>
4.	Barking Deer	<i>Muntiacus muntjak</i>
5.	Nilgai	<i>Boselaphus tragocamelus</i>
6.	Wild Pig	<i>Sus scrofa</i>
7.	Jackal	<i>Canis aureus</i>
8.	Common Leopard	<i>Panthera pardus</i>
9.	Jungle Cat	<i>Felis chaus</i>
10.	Small Indian Civet	<i>Viverricula indica</i>
11.	Large Indian Civet	<i>Viverra zibetha</i>
12.	Common Palm Civet	<i>Paradoxurus hemaphroditus</i>
13.	Common Indian Grey Mongoose	<i>Herpestes edwardsii</i>
14.	Small Indian Mongoose	<i>Herpestes javanicus</i>
15.	Indian Pangolin	<i>Manis crassicaudata</i>
16.	Indian Hare	<i>Lepus nigricollis</i>
17.	Indian Porcupine	<i>Hystrix indica</i>
18.	Striped Squirrel	<i>Funambulus pennantii</i>
19.	Rats	
20.	Bats	
21.	Clawless Otter	

### SNAKES:

SERIAL NO.	COMMON NAME	ZOOLOGICAL NAME
1.	Indian Rock Pythons	<i>Python molurus</i>
2.	Indian Trinket Snake	<i>Coelognathus helena</i>
3.	Sand Boa	<i>Gongylophis conicus</i>
4.	Indian Rat Snake	<i>Ptyas mucosa</i>
5.	Banded Kukri Snake	<i>Oligodon arnensis</i>
6.	Barred Wolf Snake	<i>Lycodon striatus</i>
7.	Chekered Keelback Water Snake	<i>Xenochrophis piscator</i>
8.	Buff Striped Kelback Snake	<i>Amphiesma stolatum</i>
9.	Largebeaked Thread Snake	<i>Leptotyphlops macrorhynchus</i>
10.	Brahminy Blind Snake	<i>Ramphotyphlops braminus</i>
11.	Yellow Spotted Wolf Snake	<i>Lycodon flavomaculatus</i>
12.	Common Wolf Snake	<i>Lycodon aulicus</i>
13.	Russell's Viper	<i>Daboia russelii</i>
14.	Saw Scaled Viper	<i>Echis carinatus</i>
15.	Common Krait	<i>Bungarus caeruleus</i>
16.	Spectacled Cobra	<i>Naja naja</i>
17.	Central Asian Cobra	<i>Naja oxiana</i>
18.	Vine Snake	<i>Ahaetulla nasuta</i>

### **TURTLES:**

SERIAL NO.	COMMON NAME	ZOOLOGICAL NAME
1.	Spotted Pond Turtle	<i>Geoclemys hamiltonii</i>
2.	Indian tent turtle	<i>Pangshura tentoria</i>
3.	Indian Flap- shelled turtle	<i>Lissemys punctata</i>
4.	Indian Black Turtle	<i>Melanochelys trijuga</i>
5.	Gangetic Soft-shell Turtle	<i>Nilsonia gangetica</i>

### **BUTTERFLIES:**

85 species of butterflies have been identified in the Pong- Lake. Few names are Blue Pansy, Peacock Pansy, Yellow Pansy, Small Grass Yellow, Chocolate Pansy, Mottled Emigrant, Common Leopard, Great Eggfly, Common Map, Common Crow, Common Mormon, Rustic, Common Sailer, Great Pansy, Red pierrot, Orange Oak Leaf.

### **FISH:**

Variety of fish such as Mahsheer, Katla, Carps, Mirgal, Rahoo, Singhara etc. are found in Pong Dam Lake and its tributaries. A total of 27 fish species belonging to five families have been recorded. Pong reservoir may be categorized as cat fish reservoir. Mahsheer is highly precious and the most sought after fish of Pong reservoir

## **CONSERVATION INITIATIVES**

**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).

In 1986, the entire reservoir was declared as a Wildlife Sanctuary by the Himachal Pradesh Government. A management plan (*Chandra, 1992*) for the Pong Dam bird Sanctuary mainly addresses issues inside the PA boundaries such as, protection, habitat improvement, tourism and regulation, roads and staff quarters, etc. The HPFD has undertaken plantation work in the peripheral area of the lake. This has been done for checking the silt as well as providing nesting and roosting places for the birds. The island of Ransar has been developed for nature conservation education. A Rest House has been built on this island and boat facility is provided for the school children to go upto the island for birding.

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

## **THREE TYPES OF MEASURES ARE PROPOSED**

- To manage the habitat
- To co-exist with the local community
- Ecotourism



## ***HABITAT MANAGEMENT***

Some of the suggested measures are:

- (a) Creation of permanent shallow – water area where reed- beds and other perennial aquatic vegetation will develop and attract additional bird species.
- (b) The establishment of trees on the main island to provide nesting sites for colonial nesting birds such as storks, herons and egret.
- (c) Planting of variety of trees on the lake margins to attract more and more birds
- (d) One area, the mouth of the Baner Khad (on the river Banganga) just below Haripur Guler, is recommended for development. This can be done by erecting an earthen dam with water regulatory mechanisms so that shallow area is developed for establishing heronaries. If this is successful, then one or two areas can be developed and managed for wildlife.

## ***TO CO-EXIST WITH THE LOCAL COMMUNITY***

Efforts to conserve forests and wildlife have gradually begun to shift away from law enforcement and use restrictions during the last two decades, and towards more participatory approaches emphasizing equitable and sustainable use of natural resources by local people. This change in approach is particularly important in rural areas of the Pong Dam Bird Sanctuary where biodiversity is concentrated and where poverty tends to be pervasive.

## ***COMMUNITY BASED ECOTOURISM AT PONG DAM LAKE***

The location of the Pong Dam Lake is highly suited for ecotourism. It is close to the towns of Pathankot in Punjab and religious places of Kangra, Chamunda in Himachal Pradesh. The natural grandeur of the Lake with its magnificent backdrop invites an ecotourist. Ecotourism at the lake will aim at providing ecotourist with nature tourism opportunities and also generating economic returns to strengthen the lake management and augment economic benefits for local people. “Ecotourism” is not simply taking a holiday in a nature, watching wildlife, or engaging in an outdoor sport, it is distinguished from conventional tourism in that it employs measures to reduce negative impacts on the natural and cultural environment. “Community”- based ecotourism (CBET) takes the definition on step further. It ensures that the benefits, both social and economic, are realized by local communities. If local people receive direct economic benefits from a protected area, they are less likely to resent its presence and more inclined to support management activities.

## WETLANDS VISION

State-wide ecological landscape with functional wetland ecosystems to sustainably meet the needs of present and future generations through:

- Developing short and long term conservation plans, strategies and policies.
- Achieving wise use and effective management on ground.
- Promoting research development and technical skills.
- Generating realistic wetland resource database.
- Cooperating with national and interstate agencies.
- Promoting awareness and knowledge about wetland values.

*“Wetland ecosystems are not inherited from our descendants. They must be returned in good working order-if they are returned with interest- so much the better”.*

*Edward Maltby*

## REFERENCES

Anonymous (2010). *National Wetland Atlas: Himachal Pradesh* by Ministry of Environment & Forest, Govt. of India, New Delhi.

Anonymous (2011). *National Wetland Inventory & Assessment* by Ministry of Environment & Forest, Govt. of India, New Delhi.

Dhadwal, D.S. (2011). “*Wild Wings*” - Pong & its Birds.

Kumar Rajesh and Kumar Sanjay (2012). *Biodiversity and Interdependence Study of the Pong Wetland Bird Sanctuary*.

Dhadwal, D.S. (2008). “*Pong Lake- An International Ramsar Site in need of Management Interventions*”.

Mitsch, W.J. and Gooselink, J.G. (1986). *Wetlands*. Van Nostrand Reinhold, New York.

Mitsch, W.J. and Gooselink, J.G. (2000). *Wetlands* (Third Edition). John Wiley & Sons, Inc., New York

