

RANJIT SAGAR DAM CONSERVATION RESERVE 2020-21 TO 2030-31



ACKNOWLEDGEMENT

Ranjit Sagar Dam Conservator Reserve was made a reality in the month of September 2017. It was a challenging task to convene series of meetings involving all Panchayats to convince them about new provisions of amended Wildlife Protection Act, 2002 (amended 2006) to conserve the area without depriving them their rights.

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**MANAGEMENT PLAN
OF
RANJIT SAGAR DAM
CONSERVATION RESERVE**

PART I

**SUMMARY OF FACTS ON WHICH THE
PROPOSALS ARE BASED**

Chapter-1 General Description of the Conservation Reserve

1.1 History

The Forest area of villages Thara Uperla, Hardosaran, Chamrore , Phangota, Atharwan, Sarti, Darkua, Darbahn, Dukhniali, Barsudal, Bhamlada, Naloh& Phagli was declared as a **Conservation Reserve** vide Pb. Govt. Notification no. 34/11/2017-Ft.5/1057477/1 Chandigarh, dated 5/09/2017. The total area is 4608.24 Acre of “Ranjit Sagar Dam Conservation Reserve” from the date of issue of this notification which was later on amended vide Pb. Govt. Notification no.34/11/2017-FT-5/1177745/1Chandigarh,dated the 5/3/2018 to 4559.71 Acre (1845.28 Ha).

1.2 Name & Situation:

- This Management plan deals with the “Ranjit Sagar Dam Conservation Reserve”. Ranjit Sagar Dam is being constructed across Ravi River 25 Kms upstream of Madhopur Head Works in Pathankot District.
- It is 160m High Earthen-core cum Gravel Dam having storing capacity of millions cubic Meter.
- It is designed to generate 600 Mw power along with irrigation facilities.
- Ranjit Sagar wetland is a manmade wetland due to the construction of Then Dam in the Ravi River.
- The catchment as well as water storage dam area is shared by three states viz. PUNJAB, JAMMU & KASHMIR (J&K) and HIMACHAL PRADESH (H.P)

1.3 APPROACH & ACCESS

The Ranjit Sagar Dam Conservation Reserve is situated at a distance:-

- 30 Km from District Forest (WL) Division Pathankot.
- 260 Km from State H.Q. Chandigarh.
- It's approachable from other sides like Jalandhar and Amritsar also.
- The nearest Rail head is at - Pathankot Cantt.
- The nearest airport is at - Pathankot

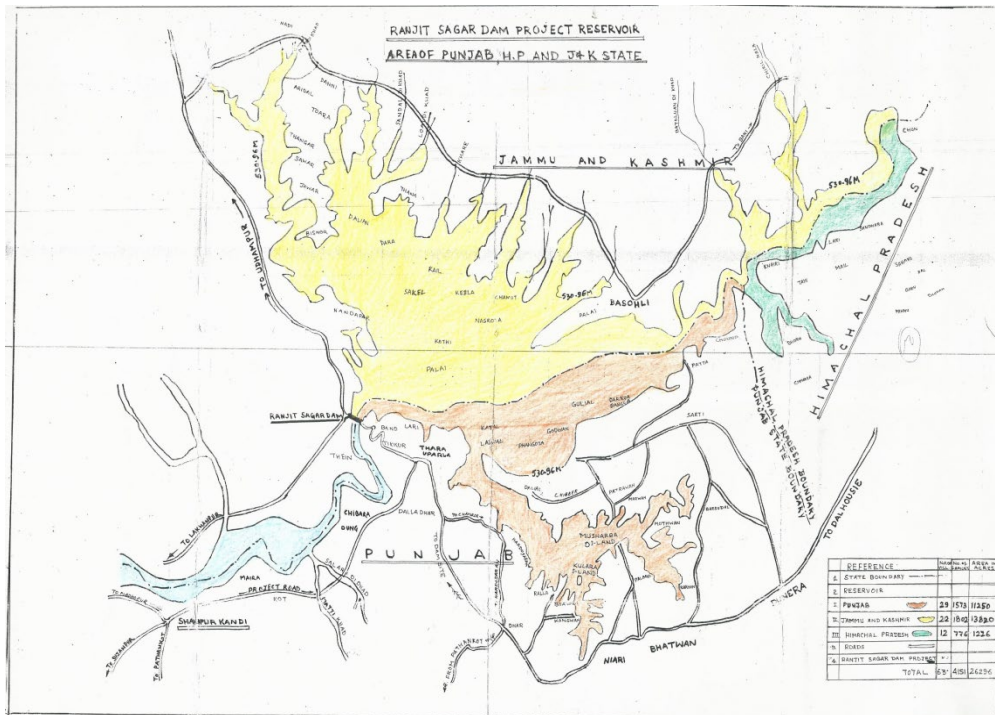
1.4 Statement of significance

- Ranjit Sagar Dam Conservation Reserve has abundant Fauna and Flora supports a rich area for water fowls.
- It provides important feeding & nesting area for a wide range of water birds.
- Ranjit Sagar Dam Conservation Reserve offers a variety of habitats to different bird's species throughout the year.

1.5 Geographical Location:

The lake is situated in the Shivalik mountain system forming boundary between J& K, Punjab & Himachal Pradesh. The climate of the area is sub tropical having monsoons with warm summer and cool winter. The Latitude 32.2665666° N.E and Longitude 75.440931° E.W of Ranjit Sagar Dam Conservation Reserve.

Map



1.6 Description of the Area:

The Present area that has been declared as a Ranjit Sagar Dam Conservation Reserve by Punjab Government vide their Notification no.34/11/2017-FT-5/1177745/1Chandigarh,dated the 5/3/2018

1.7 Soil:

On the north and east side, it is surrounded by Shivalik hills whereas on south and western sides it is surrounded by Shahpurkandi town with large amount of alluvial soil.

Texture:

The soil texture of the area varies from gravel and sandy with sufficient water and nutrients.

1.8 Water supply:

The main source of water is river Ravi.

1.9 Drainage:

The drainage is towards the south and south-west. The Ranjit Sagar Dam is built on river Ravi.

1.10 Distribution of Area:

Terrestrial Area: The surrounding banks include sub-mountainous area of Shivalik Hills and urban area of Shahpur kandi town .

Land Use Pattern: The most of the area is in the shape of lake which is under water. Whereas the adjoining area is mostly covered with forest. Paddy, maize, potato, pulses etc are also cultivated.

1.11 Legal Position:

The total area is 4559.71 Acre (1845.28 Ha) as “Ranjit Sagar Dam Conservation Reserve” from the date of issue of this Notification.

1.12 Boundaries:

- Part of Ranjit Sagar Reservoir which is in Punjab State and Green belt area.
- Interstate Boundary of Jammu & Kashmir in Dam area in the North.
- Interstate Boundary of Himachal Pradesh in the East Dhar Block and its villages in South.
- Part of Ranjit Sagar Dam and Their villages of Jammu & Kashmir in the West.

1.13 Rights and concessions:

There are no rights of any kind in the area except the limited rights of water and way. After notifying the area as a Conservation Reserve in 2017, the ownership of the area is vested with the Punjab Government and the management is in the hands of the Department of Forests and Wild life (Preservation) in association with the Ranjit Sagar Dam.

Chapter-2 Locality Factors

2.1 Climate:

2.1.1 Temperature:

During the hot summer months the temperature touches 46⁰C whereas in winter the mercury falls to 4⁰C.

The hottest months are May and June and the coldest being December and January.

The mean temperatures recorded during the last six years are given below:

Table 2.1: Mean temperatures recorded during the last 5 years

:

Monthly Mean Maximum Temperature 2014 – 18

Month	Jan			Feb			Mar			Apr			May			Jun		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
2014	24	7	15.5	27	5	16	29	9	19	36	14	25	43	20	31.5	46	21	33.5
2015	21	6	13.5	27	8	17.5	34	8	21	38	14	26	43	18	30.5	43	16	29.5
2016	24	6	15	22	8	15	36	11	23.5	42	12	27	45	16	30.5	45	21	33
2017	21	6	13.5	23	8	15.5	30	7	18.5	38	12	25	41	13	27	41	16	28.5
2018	29	7	18	31	8	19.5	35	12	23.5	37	15	26	45	16	30.5	44	19	31.5

Month	Jul			Aug			Sep			Oct			Nov			Dec		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
2014	41	20	30.5	39	23	31	35	20	27.5	33	16	24.5	28	13	20.5	24	7	15.5
2015	44	18	31	40	18	29	39	16	27.5	36	13	24.5	26	9	17.5	23	6	14.5
2016	41	16	28.5	40	21	30.5	39	21	30	38	11	24.5	26	9	17.5	20	7	13.5
2017	40	16	28	40	16	28	38	19	28.5	36	16	26	32	11	21.5	28	8	18
2018	44	21	32.5	41	18	29.5	38	17	27.5	37	15	26	26	12	19	25	8	16.5

2.1.2 Rain Fall:

The area normally experiences a dry climate throughout the year, the monsoon showers constituting about 70 per cent of the annual rainfall. The average annual rainfall in the area during the last 15 years is about 875.6 mm. The variation in rainfall during the year is appreciable. On an average there are 62 rainy days. Normally the months of July, August and September are wet months and remaining months of the year can be termed as more or less dry months.

Small portion of rainfall occurs during winter months of December to February. There are occasional showers during the summer months of April, May and June. The south-western monsoon begins in the first week of July and extends upto mid September.

The average rainfall data during the last 6 years is as follows:

Table 2.2: Average rainfall recorded during the last 6 years:

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007	1.2	112.8	105.6	47.8	11.2	131.4	209.8	152.3	154.4	0	4.2	13.2	943.9
2008	21.2	7.4	0	28.2	31.4	435	75	294.5	256.5	41	0.5	0.8	1191.5
2009	17.5	16.2	15.9	22.2	13.9	27	190	201.8	86.6	11.2	14.3	0	616.6
2010	6.8	19.4	2.7	0	30.1	79.9	346.9	171	219.4	45.5	0	61.4	983.1
2011	12.6	95.9	21.6	14.3	40.5	303	139	492	153	0	0	30.1	1302
2012	48.2	11.8	5.3	37.6	1.1	10.6	152.2	235	99.2	1.9	0.0	22.0	624.9

2.1.3 Frost:

During winter, the frost is quite common. Wherever there is a long dry spell, the frost is quite severe

2.1.4 Winds:

During May and June hot and dry westerly winds are quite common. These are responsible for creating dry conditions. The strong winds followed by the rain during summer are responsible for uprooting of trees and breaking of big branches of large size old trees. During winter the cold spell carried by northerly winds is responsible for the retarded growth of plants.

Chapter-3 The Terrestrial area

3.1 Extent and Condition:

On the North western and eastern sides of the reserve the soil is eroded and in the form of ravines. Efforts have been made with the coordination of the department of Soil Conservation to check erosion by constructing check dams and other mechanical structures. However, these efforts need to be carried forward and given more impetus.

3.2 Composition and condition of the vegetation:

The original terrestrial vegetation in and around the reserve area can be classified as "Northern Tropical Dry Deciduous Forest". Due to declaration of this area as Conservation Reserve, there is no exploitation of forest and Wildlife resources. There is good ground cover. The existing stand comprises of the following main tree species.

- | | | |
|-----|----------------------------|------------|
| 1. | <i>Acacia nilotica</i> | (Kikar) |
| 2. | <i>Dalbergia Sissoo</i> | (Sheesham) |
| 3. | <i>Eucalyptus globules</i> | (Safeda) |
| 4. | <i>Albizia lebbeck</i> | (Siris) |
| 5. | <i>Zizyphus sp.</i> | (Ber) |
| 6. | <i>Ficus religiosa</i> | (Pipal) |
| 7. | <i>Ficus bengalensis</i> | (Bohar) |
| 8. | <i>Mangifera indica</i> | (Mango) |
| 9. | <i>Acacia catechu</i> | (Khair) |
| 10. | <i>Cedrela toona</i> | (Toon) |
| 11. | <i>Syzgium cumini</i> | (Jamun) |
| 12. | <i>Salmalia malabarica</i> | (Simbal) |

Trees in the upper canopy with thick undergrowth of Shrubs such as:-

Garna (<i>Carissa spinarum</i>),	Vilayti Mehdi (<i>Dodonaea viscosa</i>),
Mallah (<i>Zizyphus nummularia</i>),	Gamdhal (Murraya koenigi), Basuti
(<i>Adhatocia vasica</i>), Hins (<i>Capparis decidua</i>),	Panwar (<i>Cassia</i>
tora),	

Non palatable weeds are:-

Bhagiari Booti (Lantana camara),
Congress grass (Parthenium hysterophorus) and
Bhang (Cannabis sativa).

The excellent soil binder like Babbar grass, Kanna and Kahi are also available.

3.3 Resource Assessment:

No proper resource assessment of the existing forest by way of enumeration is done.

Chapter-4 The Submerged area

4.1 Extent and Condition of water:

Nearly 95% of the Reserve area is submerged under water.

Within the submerged area, about 95% area is under deep water and the rest is either shallow or marshy land.

Open water is spread in the form of a lake.

Few small islands are also found where water level is low.

4.2 Availability of water:

As per the information provided by the Irrigation Department the water level at the R.S.D Head works remains almost constant throughout the year. The water level remains sufficient throughout the year.

4.3 Water Quality:

Fresh water is finite resource, essential for agriculture, industry and even human existence. Without fresh water in adequate quantity and quality, sustainable development will not be possible. So the quality of water is good enough for irrigation and for every other use.

Chapter-5 The Flora and Fauna

5.1 The Flora:

The flora of the Reserve is dominated by the aquatic conditions. However the terrestrial flora as well as the aquatic fauna like the plankton are equally important and play significant roles in the ecosystem.

5.1.1 Biodiversity of Area

Natural vegetation is restricted to area which receives adequate rainfall. Different types of seasonal plants, grasses, aquatic vegetation and faunal diversities depending upon variable altitude and soil conditions found in this area.

5.1.2 Vegetation profile:

The upper reaches of Shivaliks in the catchment areas falling in HP at the border of Punjab are better vegetated. The growing stocks in this area consist of scattered Khair (*Acacia catechu*), Tun (*Toona ciliata*), Kikar (*Acacia nilotica*), Phalahi (*Platanus Orientalis*), Jamun (*Syzygium cumini*), Ber (*Zizyphus Jujuba*), Sheesham (*Dalbergia sissoo*), Simbal (*Salmalia malbarica*), Amb (*Mangifera indica*), Dhak/palash (*Butea monosperma*).

Trees in the upper canopy with thin or thick undergrowth of shrubs such as garuna (*Cassia spinarum*), Vilayti Mehdi (*Dodoneae viscosa*) Mallah (*Zizyphus nummularia*), Gandhala (*Murraya koenaii*), Besuti (*Adhatoda vasica*) Jhav (*Artemesia sp*) Hins (*Capparis decidua*), Panwar (*Cassia tora*). Many forest are infested by Bhagiarihi booti (*Lantana camara*), Congress grass (*Parthenium hysterophorus*), and Bhang (*Cannabis sativa*).

Bhabbar grass is most important constituent of open places. They are excellent soil binders. The rest of the grass species are mostly fed to cattle.

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

The under growth consists of shrubs such as Hins (*Capparis zeylanica*), Jahu (*Artemesia* sp), Gruna (*Carissa spinarum*), Karir (*Capparis decidua*), Bhang (*Cannabis sativa*), Jindoo (*Xanthium strumarium*), Kahi (*Saccharum spontaneum*), Akk (*Ipomea fistuloca*).

In agricultural fields the people have planted Eucalyptus and Mango trees on the boundaries.

Water is slow and clean In Ranjit Sagar Dam Conservation Reserve area. One can see small stones on bottom of lake. The banks are very smooth have Acacia, Cannabis, Cassia spp. etc; along west side. This area form a congenial hotspot for animals to live because of marshy grasses and shrubs accompanied by tall trees mentioned above form an excellent habitat.

Along water course, trees of *Dalbergia sissoo*, *Acacia nilotica* and cultivation *Acacia Catechu* *Toona Ciliata* and *Eucalyptus* are common. Where moisture is available, small plants as *Ranunculus sceleratus*, *Cannabis sativa*, *Ibiris amara*, *Polygonum*, *Alternantheria galium*, *Phalaris minor*, *Rumex dentatus*, *Ageratum conyzoides*, *Majus* are common. *Ipomoea* is planted in ash filled area and there is plenty of growth of this species along with *Saccharum*. *Cynodon dactylon* is the most common grass inside the river where water is moving or standing in small ditches near the bank of river water plants as *Potamegeton*, *Vallisneria*, *Hydrilla*, *Lemna* and broad leaved plants are found. Among algae *Spirogyra*, *Chara* and *Cladophora* species are available. Adjoining hills have scattered dry deciduous and thorny forests of following types:-

Dry Deciduous forest: There are mixed growth of deciduous trees. The lower canopy of these forests is also deciduous. There is undergrowth of shrubs but the light reaches the surface allowing the growth of grasses.

Bamboos show luxuriant growth and they are present in isolated patches. Trees of deciduous forests are *Dalbergia sissoo*, *Bauhinia variegata*, *Butea monosperma*, *Cordia monosperma*, *Anogeissus latifolia*, *Cedrela toona*, etc.

Scattered trees of *Acacia catechu* and *Ficus* semi parasite of *Loranthus* and *Dendrophthoe* make their appearance throughout the year and remain well flourished even during dry season.

Thorny Forests: With the decreasing rainfall, the forests in drier areas is thorny and tend to assume a xerophytic character because of dry and less moisture available in soil.

Trees are *Acacia Catechu*, *Acacia leucophloea*, *Capparis aphylla*, *Zizyphus mauratiana*, *Z. rotundifolia*.

The most common variety of Bamboo is *Dendrocalamus*.

Vegetation show luxuriant growth during and after the rainy season in the months of July to November. Even, thorny shrubs show profuse leaves on branches.

Large numbers of seasonal herbs appear in the months of July to September but if dry season prevails they die soon.

If there is rain during winter particularly in the month of November to February, plenty of herbs and grasses appear which complete their life cycle in short span of time.

The heights of trees are sufficient to allow growth of ground flora which can stand tolerable moisture. Large numbers of climbers climb up the trees and shrubs as they are competing with them in small and isolated patches of forest on islands. Variety of resident birds and reptiles live there.

Forest department have planted number of species in the area, Around the lake to increase the biodiversity. Vegetation in this catchment region significantly helps in soil and water conservation.

5.1.3 The Marshy areas:

A few marshy areas are also the characteristics of the Reserve. These are basically low lying areas which are inundated with water throughout or at least a part of the year.

5.1.4 The Submerged or inundated area vegetation.

5.1.4.1 *Submerged*

The **submerged** species include Pota megaton

5.1.4.2 *Periphyton*

The microphytic vegetation of Ranjit Sagar Dam Conservation Reserve is mainly formed of:

- Diatoms : *Cymbella*
- Green algae : *Spirogyra, Ulothrix.*
- Blue green algae : *Microcystis*
- Rotifers : *Branchiomus*
- Cladocerans : *Daphnia*
- Copepods : *Cyclops*

5.2 The Fauna:

About 48 migratory birds of different variety can also be seen inside and outside the reserve area. Often large flocks of migratory birds have a long flight over the vast area along the water course particularly in the evening. One can also Spot-Insects, Snakes, Jackals, Hare, Mongoose and Wild cats in marshy area. A large number of birds, insects and other species, therefore, complete their life cycle by adding new offspring's in this calm vicinity.

The influx of birds, both local and migratory, in this border area of Punjab and Himachal Pradesh has been on the rise for the past many years.

Besides the resident birds, including the Red jungle fowl, Large Indian parakeet, Indian cuckoo, Bank myna, Wood shrike, Yellow eyed babbler and Crested bunting are there. One can watch a large variety of birds from far-off hills roosting and feeding in the area.

The catchment along the reservoir is an important habitat for some threatened species like the Pangolin (SALLAH) and Python (AJAGAR). Leopard, Indian monitor Lizard. Besides it is also an important breeding place for the Jackal, Hog deer, Sambhar and Barking Deer etc.

5.2.1 Birds

Reserve is a bird lover's and birdwatcher's paradise. This is because the Reserve offers a variety of habitats to different bird species throughout the year. The islands inside the wetlands are prone to inundation during the monsoon season and then dry up. Subsequently they become covered with thick and sparse vegetation and provide ideal habitat for different bird species. In addition, they provide safe refuge for nest building and breeding, Reserve is also home to several vulnerable and near threatened species. The vulnerable species include:

1. Ferruginous Pochard *Aythya nyroca.*
2. Blackbellied or River Tern *Sterna auticauda*

The uncommon avian species are:

1. Marsh Harrier *Circus aeruginosus*
2. Bar Headed Goose *Anser indicus*

5.2.2 Aves

S.No	English name	Scientific Name	Status/ Schedule
1.	Indian Peafowl	<i>Pavo cristatus</i>	Schedule- I
2.	Rock Pigeon	<i>Columba livia</i>	Common
3.	Gery francolin	<i>Francolinus pondicerianus</i>	Least Concern
4.	Jungle babbler	<i>Turoides striatus</i>	Schedule-IV
5.	Common Myna	<i>Acridotheres tristis</i>	Schedule-IV
6.	Green bee-eater	<i>Merops orientalis</i>	Least Concern
7.	Indian roller	<i>Coracias benshalensis</i>	Schedule-IV
8.	Black Drongo	<i>Dicirurus macrocercus</i>	Schedule-IV
9.	Little cormorant	<i>Microcarbo niger</i>	Schedule-IV
10.	Common swift	<i>Apus apus</i>	Schedule-IV
11.	House swift	<i>Apus affinis</i>	Schedule-IV
12.	Shikra	<i>Accipiter badius</i>	Schedule-IV
13.	Cattle Egret	<i>Bubulcus ibis</i>	Schedule-IV
14.	Little Egret	<i>Egretta garzetta</i>	Schedule-IV
15.	Pond heron	<i>Ardeola grayii</i>	Schedule-IV
16.	Red wattled lapwing	<i>Vanellus indicus</i>	Schedule-IV
17.	Black Ibis	<i>Pseudibis papillosa</i>	Schedule-IV
18.	Ring dove	<i>Streptopelia decaocto</i>	Schedule-IV

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19.	Spotted Dove	<i>Streptopelia chinensis</i>	Schedule-IV
20.	White Breasted Kingfisher	<i>Halcyon smyrnensis</i>	Schedule-IV
21.	Blue Cheeked Bee Eater	<i>Merops persicus</i>	Schedule-IV
22.	Asian Koel	<i>Eudynamys scolopacea</i>	Schedule-IV
23.	Drongo Cuckoo	<i>Srniculus lugubris</i>	Schedule-IV
24.	Pied Kingfisher	<i>Ceryle rudis</i>	Schedule-IV
25.	Red Jungle Fowl	<i>Gallus sallas</i>	Schedule-IV
26.	White breasted water hen	<i>Amaurornis phoenicurus</i>	Schedule-IV
27.	Common Moorhen	<i>Gallinule chloropus</i>	Schedule-IV
28.	Plum headed Parakeet	<i>Psittacula cyanocephala</i>	Schedule-IV
29.	Tree Pie	<i>Dendrocitta vagabunda</i>	Schedule-IV
30.	Indian Robin	<i>Saxicoloides fulicata</i>	Schedule-IV
31.	Pied Bush Chat	<i>Saxicola caprata</i>	Schedule-IV
32.	Purple Sun Bird	<i>Nectarinia asiatica</i>	Schedule-IV
33.	Small Sun Bird	<i>Nectarinia minima</i>	Schedule-IV
34.	House Sparrow	<i>Passer domesticus</i>	Schedule-IV
35.	Grey Tit	<i>Parus major</i>	Schedule-IV
36.	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Schedule-IV
37.	Bank Myna	<i>Acridotheres ginginianus</i>	Schedule-IV
38.	Common Babbler	<i>Turdoides caudatus</i>	Schedule-IV
39.	Tailor Bird	<i>Orthotomus sutorius</i>	Schedule-IV
40.	Rose Ringed Parakeet	<i>Psittacula krameri</i>	Schedule-IV
41.	Baya	<i>Ploceus philippinus</i>	Schedule-IV
42.	Owl	<i>Bubo bubo</i>	Schedule-IV
43.	Slaty headed parakeet	<i>Psittacula himalayana</i>	Schedule- IV

5.2.2 (a) Bird Census

The first census of the Birds in the area was conducted by the Department on 26 Jan.2019 with the collaboration of WWF, Chandigarh Bird Watchers Club. The detail of Birds count is as under:-

Migratory and water birds recorded during census 2019			
S.No.	English Name	Scientific Name	Status/Schedule
1.	Bar Headed Goose	<i>Anser Indicus</i>	Schedule- IV
2.	Common Teal	<i>Anas Crecca</i>	Schedule- IV
3.	Little Cormorant	<i>Microcarbo Niger</i>	Schedule- IV
4.	Great Cormorant	<i>Phalacrocorax carbo</i>	Schedule- IV
5.	Eurasian Coot	<i>Fulica Atra</i>	Schedule- IV
6.	Little Ringed Plover	<i>Charadrius Dubius</i>	Schedule- IV
7.	Little Stint	<i>Calidris Minuta</i>	Schedule- IV
8.	Pallas's Gull	<i>Ichthyaetus ichthyaetus</i>	Schedule- IV
9.	Rudy Shelduck	<i>Tadorna Ferruginea</i>	Schedule- IV
10.	Temminck's Stint	<i>Calidris Temminckii</i>	Schedule- IV
11.	Intermediate Egret	<i>Ardeaintermedia</i>	Schedule- IV

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12..	Northern Pintail	<i>Anas Acuta</i>	Schedule- IV
13.	Northern Lapwing	<i>Vanellus vanellus</i>	Schedule- IV
14.	Mallard	<i>Anas Platyrhynchos</i>	Schedule- IV
15.	River Tern	<i>Sterna Aurantia</i>	Schedule- IV
16.	Citrine Wagtail	<i>Motacilla citreola</i>	Schedule- IV
17.	Brown headed Gull	<i>Chroicocephalus brunnicephalus</i>	Schedule- IV
18.	Black Winged Stilt	<i>Himantopus himantopus</i>	Schedule- IV
19.	Red Watted Lapwing	<i>Vanellus Indicus</i>	Schedule- IV
20.	White Wagtail	<i>Motacilla Alba</i>	Schedule- IV
21.	Gadwall	<i>Mareca Strepera</i>	Schedule- IV
22.	Northern Shoveler	<i>Anas Clypeatea</i>	Schedule- IV
23.	Green sandpiper	<i>Scolopacidae</i>	Schedule- IV
24.	White/Browned Wagtail	<i>motacilla Maderaspatensis</i>	Schedule- IV
25..	Western Cattle Egret	<i>Bubulcus ibis</i>	Schedule- IV
26.	Gray Heron	<i>Ardea Cinerea</i>	Schedule- IV
27.	River lapwing	<i>Vanellus Duvaucelii</i>	Schedule- IV
28.	Common GreenShank	<i>Tringa nebularia</i>	Schedule- IV
29..	Common Snipe	<i>Gallinago gallinago</i>	Schedule- IV
30.	Western Yellow Wagtail	<i>Motacilla flava</i>	Schedule- IV
31.	Little Grebe	<i>Tachybaptus ruficollis</i>	Schedule- IV
32.	Little egret	<i>Egretta gerzetta</i>	Schedule- IV
33.	Indian pond heron	<i>Ardeola</i>	Schedule- IV
34.	Black Crowned night heron	<i>Nycticorax Nycticorax</i>	Schedule- IV
35.	Eurasion Wigeon	<i>Mareca Penelope</i>	Schedule- IV
36.	White breasted waterhen	<i>Amaurornis phoenicurus</i>	Schedule- IV
37.	Common black headed Gull	<i>Chroicocephalus ridibundus</i>	Schedule- IV
38.	White throated kingfisher	<i>Halcyon smyrnensis</i>	Schedule- IV
39.	Lesser pied kingfisher	<i>Ceryle rudis</i>	Schedule- IV
40.	White capped redstart	<i>Chaimarrornis leucocephalus</i>	Schedule- IV
41.	Great egret	<i>Ardea alba</i>	Schedule- IV
42.	Purple heron	<i>Ardea purpurea</i>	Schedule- IV
43.	Woolly necked stork	<i>Ciconia episcopus</i>	Schedule- IV
44.	Western marsh harrier	<i>Circus aeruginosus</i>	Schedule- IV
45.	Kentish plover	<i>Charadrius Alexandrinus</i>	Schedule- IV
46.	Common Redshank	<i>Tringa Totanus</i>	Schedule- IV

5.2.3 Mammals

S. No.	English Name	Scientific Name	Status/Schedule
1.	Leopard(Occasionally)	<i>Panthera pardus</i>	Schedule-I
2.	Nilgai	<i>Boselaphus tragocamelus</i>	Schedule-III
3.	Monkey	<i>Maccaca mulata</i>	Schedule-II
4.	Bat	<i>Rousettus leschenaultia</i>	Schedule-V
5.	Common Langur	<i>Semnopithecus entellus</i>	Schedule-II
6.	Five Striped Palm Squirrel	<i>Funambulus pennanii</i>	Schedule-IV
7.	Chachundar	<i>Suncus murinus</i>	Schedule-IV
8.	Jackal	<i>Canis aureus</i>	Schedule-II
9.	Common mongoose	<i>Herpestes edwardsii</i>	Schedule-II
10.	Indian porcupine	<i>Hystrix indica</i>	Schedule-IV
11.	Indian hare	<i>Lepus nigricollis</i>	Schedule-IV
12.	Wild boar	<i>Sus scrofa</i>	Schedule-III
13.	Indian civet	<i>Viverricula indica</i>	Schedule-II
14.	Sambar	<i>Rusa unicolor</i>	Schedule—III
15	Hog dear	Axis Procineus	Schedule- II

5.2.4 Reptiles

Reptiles			
1.	Python	<i>Python bivittatus</i>	Schedule-I
2.	Indian Cobra	<i>Naja naja</i>	Schedule-II
3.	Rat Snake	<i>Ptyas mucosa</i>	Schedule-IV
4.	Common garden lizard	<i>Calotes versicolor</i>	Common
5.	Indian Krait	<i>Bungarus caeruleus</i>	Schedule-IV
6.	Russell Viper	<i>Daboia siamensis</i>	Schedule-II

5.2.5 Amphibians

Amphibians			
1.	Indian pond frog	<i>Rana hexadactyla</i>	Schedule-IV

5.2.6 Fishes

Fishes			
1.	Rohu	<i>Labeo rohita</i>	Least Concern
2.	Katla	<i>Catla catla</i>	Least Concern
3.	Silver carp	<i>Labeo calbasu</i>	Least Concern
4..	Common Carp	<i>Cyprinus carpio</i>	Least Concern
5.	Masheer	<i>Tor putitora</i>	Least Concern

5.2.7 Invertebrates:

Following invertebrates are reported in Ranjit Sagar Dam Conservation Reserve.

Protozoans Paramecium

Crustaceans Daphnia Cahydorus, Planasia, Diaptonus.

Arthropods hironomus, Beetles, aquatic spiders, Damselflies etc

Annelids Leeches

Molluscs Pilo

Chapter-6 Staff and Labour Supply

6.1 Existing Staff and Labour supply:

Staff, Labour availability and utilization are an important component of management.

6.1.1 Staff:

The Detail of Existing staffs working for the Ranjit Sagar Dam Conservation Reserve under the Wildlife Division Pathankot is as under:-

Table 6.1:

S. No.	Name of post	Working
1.	Divisional Forest Officer	1
2.	Range Forest Officer (Wildlife).	1
3.	Forester	1
4.	Forest Guard	1
5.	Superintendent	0
6.	Sr. Assistant	1
7	Clerk / Jr. Assistant	2

Important works like nature interpretation, caretaking etc are looked out by persons kept on daily wage basis.

6.1.2 Labour Supply

No shortage of Labour has been experienced except during harvesting of agricultural crops, transplanting paddy, because most of workers harvest the crops on contract system and earn more than double the amount paid to them by the Forest Department.

Chapter 7 Problems

Reserve is one of the highly threatened ecosystems in the world today. Destruction of this valuable ecosystem endangers human, plant and animals life at an alarming rate. The main reason reserve areas are destroyed is to create agricultural land, while industrial & residential construction also contribute a lot.

Immediate and long term dangers to the Reserve areas have been identified by different works which include anthropogenic pressure, weed infestation, eutrophication fishing, pesticide pollution etc. The most important threat to the reserve area is due to the anthropogenic pressure i.e. indiscriminate conversion of reserve for agriculture, habitation, irrigation purpose. When rest of the reserve in Punjab are choking with water hyacinths and dying a slow death the one in reserve is so calm and pristine that only birds and breeze make waves in it. But it won't be for long as industrial pollution, deforestation and climate change have started to make their presence felt. Due to the presence of vegetation in some of the areas, the visibility of the water reduces, thereby making it difficult for the birds to locate fish. . Beside, the plastic waste hanging from the hillocks hemming the wetland also disturb the birds, which stay near the banks at night. This ecologically-fragile reserve area is also facing the problem of siltation caused by soil erosion wreaked by deforestation in Himachal hills.

Some of these problems facing Conservation Reserve are discussed in detail hereunder:-

7.1 Weed infestation:

One of the problems facing the reserve is the problem of weed infestation. The Predominant weed causing much of the problem is the lantana and parthenium etc.

7.2 Encroachments

Encroachment is not a major problem in the reserve area. But Temporary types of encroachment may occur. Temporary types of encroachments may as under:-

- Occupying area for dumping of cattle dung, garbage & stocking fodder.
- Making temporary cattle sheds.
- Making temporary seasonal huts.
- Making Kitchen gardens, etc.

7.3 Siltation

Hills around the reserve are highly prone to soil erosion by rain during rainy season tons of silt are carried out into the river and got deposited into the lake through water canals on hills. Fields are however, any increase in the erosion rate in the catchment will proportionately decrease the lifespan of the lake.

Siltation not only affects the quality of water but the reduction in water depths has a direct bearing in the species composition of the ecosystem as well. Species depend on the availability of optimum level of water for their feeds.

7.4 Pollution:

The lake is a receptacle for domestic and agricultural wastes generated within its catchment. Non-point sources of pollution such as agricultural runoffs are also some contributors. As the lake is surrounded by predominantly agricultural lands where the use of fertilizers and pesticides is high, the runoff during the rains from fields. All waste fertilizer ultimately finds its way into the lake through ground water movement and surface runoffs.

7.5 Biotic Pressures:

The biotic pressure of people in surrounding villages is also there on Conservation Reserve management.

No incidence of man-animal conflict / cattle lifting occurred in past in Conservation Reserve area, though three cases of cattle lifting by leopard are happened in the adjoining rural area.



MANAGEMENT PLAN
OF
RANJIT SAGAR DAM
CONSERVATION RESERVE

PART II

Chapter-1 General Objects of Management

1.1 General Objects of Management:

Even before the declaration of the area as PA under the Wild Life (Protection) Act, 1972, the general area of the Conservation Reserve used to play an important part in offering a unique habitat for birds and aquatic organisms. Subsequently, the unique features of the area began to attract the attention of Wildlife observers. After the notification of the area Wild Life Conservation Reserve it came into the network of protected area of national importance.

On the basis of ecology, flora/fauna geographical location; socio economic factors and land use patterns in and around the Conservation Reserve the general objects of management of this Management Plan shall be as under:

- To create ideal habitats for the Wildlife particularly resident and migratory birds by carrying out habitat improvement protection works.
- To improve the environment by reducing the ill effects of pollution so that the ecological balance of the area is maintained.
- Regular water monitoring in the Conservation Reserve area.
- Impetus on agro forestry in surrounding areas.
- To maintain and protect the already available growing stock and increase the vegetative cover of the area by undertaking plantations of indigenous and site specific species, respectively.
- To check and reduce soil erosion and consequent siltation in the wetland area by adopting suitable soil conservation measures
- To create public awareness and involve the people in the management of the area
- To enhance the aesthetic values of the area thereby promote ecotourism.
- To conserve the area on a sustainable basis.
- To in-corporate technical guidance of Experts/ Scientists in management.

1.2 Methods to be adopted :

In order to fulfill the above objectives various treatments are necessary, the broad outlines of which are mentioned below:

- i. **Creation of baseline data:** As the management of the Conservation area needs specific prescriptions to address specific issues, it is very important to have basic raw data as well as processed data so that the prescriptions can be made in a more accurate manner. This would include field works like surveys of topography, demography, socio-economic dynamics, flora & fauna population estimates, experiments, as well as interpretation and extrapolation of the data so gathered to draw inferences and arrive at appropriate conclusions. Existing studies of scientists, NGOs etc with regard to reserves will also be utilized.
- ii. After the compilation of the baseline data, it will be applied as per requirement of specific issues.
- iii. Formation of working circles so that similar problems are grouped, categorized in a scientific manner so that a common prescription can be implemented.
- iv. Focus would be on scientific management rather than mere protection of the area.
- v. Participation of the people especially those living around the reserve in the management of the reserve.
- vi. Special impetus to the awareness and publicity campaign to highlight the importance, values as well as the problems of the Reserve .

Chapter-2 Formation of Working Circles

2.1 Constitution of Working Circles:

Ranjit Sagar Dam Conservation Reserve is a unique place being graced with great natural resource and scenic value. It plays an important role in the ecology and environment of the surrounding area. It also serves as a source of livelihood for many people living around the area. The reserve is also beset with many problems. A number of efforts were made in the past involving several agencies, to address the problems and to also improve the condition of the reserve. However, most of these efforts were not based on scientific, management prescriptions and the agencies involved are not well coordinated

In order to achieve the general objectives of this Management Plan and keeping in view the method of treatment to be adopted, the following Working Circles shall be constituted:

1. Survey, Demarcation and inventorication circle
2. Habitat Improvement Working Circle
3. Protection Working Circle
4. Soil Conservation Working Circle.
4. Eco- development Working Circle

2.2 Abstract of the Working Circles

An abstract of the different Working Circles proposed will extend to the whole of the reserve and their salient features are outlined below:

2.2.1 Survey, Demarcation and inventorication of resources circle

This is a newly created protected area of the state which represents bio-diversity of sub-mountainous hills, the most of the area is water based. The survey of the area is required and shall be done in respect of different parameters including social, anthropological, economical etc. The various resources in the reserve shall be inventoried with the help of futilities / experts in the field.

2.2.2 Habitat Improvement Working Circle

The main purpose of this working circle would be to prescribe appropriate measures to improve the general conditions including flora and fauna.

2.2.3 Protection Working Circle

This Working Circle deals with the protection of the reserve from poachers, encroachers, illegal fishing and other offences that many occur in the reserve area.

2.2.4 Soil Conservation Working Circle

In this Working circle the problems of soil erosion, siltation etc is to measure and method to eradicate be adopted are prescribed. This Working Circle is mainly restricted to the outer peripheral and river areas as the based on problem.

2.2.5 Eco-development Working Circle

This Working Circle focuses on the role of the people living around the Reserve and how best their help and cooperation can be sought and obtained for participatory management.

2.3 **Period of the Management Plan**

This Management Plan will be for a period of **10 years** i.e. from the year **2020-2021** to **2030-2031**. No midterm revision is anticipated during the plan period.

Chapter-3 Habitat Improvement Working Circles

3.1 General Description:

Ranjit Sagar Dam Conservation Reserve is one of the most important wetlands of India for its contribution towards wildlife resources and particularly being a very important wintering place for migratory avifauna. The birds include many long distance migratory birds, some coming from as far as Siberia and the Arctic region. Species like White eyed Pochard or Ferrugineous duck (*Aythya nyroca*), and Tufted duck (*Aythya fuligula*) Bar Headed Geese. Besides, the Reserve is home to other species of animals like Hog deer, Wild boar, Nilgai, Sambar, Jackals, Leopard and Turtles etc. It is because of this rich biological wealth and the significant role it plays in the ecology of the area. Taking into consideration the above discussed points, it is very important that the habitat of the area must be maintained and improved so that the rich heritage is conserved and preserved.

3.1.1 Special objects of management

The special objects of management of this working circle are:

- i. To improve the habitat for all the resident birds and animals as well as migratory birds visiting the area in winter season.
- ii. To identify important areas critical to the habitat and to take appropriate measure for their protection and improvement
- iii. To improve and provide better condition by plantation of more plants & conservation of existing vegetation.
- iv. To utilize the available resources of the area in a sustainable manner without damaging the existing habitat.
- v. To ensure participation people in the process of habitat improvement and conservation.

3.2 Methods of treatment to be adopted

The general methods to be adopted in order to achieve the above said objectives include:

- To encourage nearby farmers to adopt agro-forestry and Silvi-pasture Development models.
- Plantation in catchment area to prevent soil erosion and enhance green cover.
- Maintenance of water quality is very critical to the avifauna.
- Reduction of unwanted weeds as they adversely affect the habitat leading to the decrease in Wildlife population.
- Other miscellaneous activities needed for the purpose.

3.2.1 Plantation

The presence of trees, forests and woodland is very important in the wetland ecosystem. The existing crop is mostly limited to the peripheral area. It is therefore very important to take up plantation to:

- Preserve and enhance the biodiversity of the area
- Create ideal habitats for birds to build their nest roots.
- To reclaim barren and fallow areas
- To provide food / fodder to other Wild Animals.

3.2.1.1 Identification of areas

Conservation Reserve is mostly consisted of about 4559.71 acre long lake area. The 80% is under water and about 20% area is forest situated in Shivalik foot hills. Some portion of forest is low lying where water gets accumulated during monsoon leading to water logging. Interventions are proposed to improve the site as an excellent bird and animal habitat.

3.2.1.2 Target Area: - Total 100 Hectare Area of the Conservation Reserve will be planted in the 10 year under this Management Plan.

3.2.1.3 Choice of species

In the peripheral area the species that may be planted are:

[List of floral diversity]

Floristic composition

Sr. No.	Botanical Name	Family	Common Name
TREES			
1.	<i>Aegle marmelos</i>	Rutaceae	Bel
2.	<i>Albizia procera</i>	Fabaceae	Safed Siris
3.	<i>Albizia lebbek</i>	Fabaceae	Kala Siris
4.	<i>Acacia catechu</i>	Fabaceae	Khair
5.	<i>Bauhinia variegata</i>	Fabaceae	Kachnar
6.	<i>Bombax ceiba</i>	Malvaceae	Semal
7.	<i>Cassia fistula</i>	Fabaceae	Amaltas
8.	<i>Dalbergia sissoo</i>	Fabaceae	Shisham
9.	<i>Emblica officinalis</i>	Phyllanthaceae	Amla
10.	<i>Ficus racemosa</i>	Moraceae	Gular
11.	<i>Ficus religiosa</i>	Moraceae	Pipal
12.	<i>Ficus benghalensis</i>	Moraceae	Bargad
13.	<i>Mallotus philippensis</i>	Euphorbiaceae	Kamala
14.	<i>Melia azedarach</i>	Meliaceae	Bakain
15.	<i>Morus alba</i>	Moraceae	Shehtoot
16.	<i>Neolamarckia cadamba</i>	Rubiaceae	Kadam
17.	<i>Syzygium cumini</i>	Myrtaceae	Jamun
18.	<i>Tectona grandis</i>	Lamiaceae	Teak
19.	<i>Terminalia belerica</i>	Combretaceae	Baheda
20.	<i>Terminalia chebula</i>	Combretaceae	Harad
21.	<i>Toona ciliate</i>	Meliaceae	Toon, Cedar
22.	<i>Ailanthus excels</i>	Simaroubaceae	Maharukh

Sr. No.	Botanical Name	Family	Common Name
GRASSES			
23.	<i>Apluda mutica</i>	Poaceae	Banjura grass
24.	<i>Cenchrus echinatus</i>	Poaceae	Sandbur
25.	<i>Cymbopogon Martini</i>	Poaceae	Tikhadi
26.	<i>Cynodon dactylon</i>	Poaceae	Doob
27.	<i>Dactyloctenium aegyptium</i>	Poaceae	Crow foot grass
28.	<i>Echinochloa colona</i>	Poaceae	Jungle Rice

3.2.1.4 Planting techniques

The following general guidelines would be kept in mind while undertaking plantations:

1. Only blank patches will be undertaken for plantation.
2. Areas will be measured and marked on the ground with the help of pegs and cleared of jungle growth. (alignment, dag-bailing and jungle clearance)
3. The earthwork will be completed by the end of February to allow the soil-weathering.
4. Wherever possible, the irrigated plantations will be raised and arrangements for assured irrigation will be made in advance.
5. Planting shall start with the onset of pre-monsoon and completed by the end of July or the first week of August.
6. Good healthy plants raised in bags or in root trainers should be used for plantation.
7. The spacing will vary as per site conditions. However, in general the following may be adopted:
 - a. *In plain areas* 3m x 3m. This may be modified to 3m x 2m according to site conditions and type of species.
 - b. *In the islands having marshy conditions:* 5m x 5m and this will be done in scattered pockets and not continuously. The main idea is to stock up the islands which are filled with only reeds and tall grasses with some tree species scattered around, without disturbing the uniqueness of the marshy conditions.

8. The planting stock used for beating up will consist of healthy and vigorous plants.
9. Frost tender species like Neem if not planted under shade, shall be covered during the winter months to protect from the damage by frost.
10. In low-lying areas, planting can be done after the flood waters have receded or by planting on banks and ridges or constructed for the purpose.
11. The young plantations shall be tended by carrying out weeding and hoeing for three more year plantation. During the first season, three weeding and hoeing will be done in the months of August, October-November and February/March.
12. Pruning will be carried out during the winter season especially during December-January in case of Shisham, Mulberry etc. Care will be taken to ensure that pruning is done only on the best stems, which are to be retained as the final crop. In case of larger stem, after cutting the branches, the cut portion will be treated with some pesticides to avoid infection from the exposed parts.
13. Soil preservation measures will preferably be completed one year in advance in the areas taken up for plantation.
14. In terms of species, preference will be given to local, indigenous, hardy and frost resistant varieties.
15. In a particular compartment, preferably one species will be planted with 10% mixture of other species in order to maintain biodiversity.
16. All natural regeneration of the species shall be retained and adopted.

3.2.1.5 Creation of Nursery.

To meet the seedling requirement of the proposed planting programme, nursery needs to be set up at an appropriate place. One modern nursery is proposed to be set up in conservation reserve. This would not only serve the planting requirements but would also cater to the needs of the local requirements of the surrounding villages. The nursery should have all the modern facilities like root trainers, mist chamber, shade house, sprinkler system etc. As far as possible chemical fertilizers and pesticides are not to be used, in their place, organic compost and vermin-compost and bio-pesticides are proposed be used. Food/ Fodder, Shady and ornamental plants will be raised in the nursery.

3.2.1.6 Fire line.

A fire line is a gap in vegetation or other combustible material that acts as a barrier to slow or stop the progress of a bushfire or wildfire. A fire line may occur naturally where there is a lack of vegetation or “fuel” such as a river, lake or canyon. Fire line may also be man-made, and many of these also serve as roads, such as a logging road, four-wheel drive trail, secondary road. To avoid fires, regular vigil will be maintained and fire-fighting equipments will be made available to the staff. Fire lines will be maintained where necessary. But Conservation Reserve area is small. So fire incidents do occur. However, for better management of the area, anti fire measures such as staff, fire lines & Three Watch Towers are required. Despite these measures 20 fire watchers are needed to minimize the incidents of fire. Conservation Reserve will be divided into compartments. A complete set of modern fire fighting equipment need to be procured to meet any eventuality. In addition to paths, which are presently being used and maintained as fire lines, an additional 10 K.m. of fire lines need to be created.

3.2.1.7 Inspection Path :- Inspection Paths are used to comfortably gain access to a forest and allow for trees to be inspected and measured at various points in the forest inspection paths also allow for tree/plantation access to wildlife. Inspection paths are very necessary for the inspection of the protected area, labourers and forest staff use it for patrolling, plantation works and carrying other material inside the protected area. These inspection paths also serve as nature trail for tracers and bird watchers.

3.2.2 Maintenance of water quality.

The major reasons for the degradation of water quality of the wetland can be summarized as follows:

i. Drainage of pollutants:

A variety of agrochemicals such as pesticides, weedicides, fertilizers along with sewer and other organic matter in the runoff waters from the immediate catchments cause deterioration of the water quality in the reserve.

ii. Siltation

One of the major threats to reserve is siltation which is caused by:

- Degradation of the catchment area
- Intensive grazing and trampling of surface grasses loosens the top soil in the catchment area which then is washed away with the rains into the lake
- Deforestation in the upper catchment area leading to loosening of the topsoil and gradual erosion.
- Non forestry activities in the catchment area.

iii. Weed infestation

To control this menace following measures will be undertaken

- i. Sources of pollution from the catchment areas will be identified and plugged.
- ii. Prevent the seepage and surface runoffs from catchment areas of the nearby fields.
- iii. Carry out extensive Afforestation in the catchments and check on deforestation strictly.
- iv. Human and animal near the reservoir will be checked regularly.
- v. Generally, Water level of reserve reservoir is maintained at least at a minimum level throughout the year but even then care will be taken during extreme drought seasons.
- vi. Monitoring of river Ravi reservoir will be continued to keep vigil on the level of pollution and nearby people will be involved in the process.
- vii. Steps will be taken to create awareness among the people to treat the lake as a life-line and not to make it a dumping site for wastes.

3.2.3 Miscellaneous Activities:

Besides the above mentioned measures which are treated in detail, the following measures also needs to be implemented:

- i. Creation of shallow ponds and uplands: As different species need shallow as well as deep waters for their biological activities these features need to be created. Uplands also need to be created in certain areas, especially in the area prone to floods.
- ii. Dead, dry and fallen trees will not be allowed to be removed by fire wood collectors as these are ideal habitats for the birds, insects and other organisms.
- iii. Snags, dens nests and other such structures used by the animals and birds will allow to not being disturbed.
- iv. Termite hills, honeycombs etc will not be destroyed or removed.
- v. Snags will be maintained at the islands.

Chapter-4 Protection Working Circles

4.1 General Description:

The protection of the reserve from various threats like encroachments, poaching, illegal fishing, grazing and other activities harming the reserve and its resources is very important so that the habitat is protected. This working circle is formed for the main purpose on focusing on the issues related to the protection of the reserve from such threats. It will cover the whole of the reserve.

4.2 Special objects of management

The special objectives of the working circle are:

1. Identification of the threat perceptions faced by reserve, their causes and possible remedies
2. Take suitable measures for the protection of the reserve from such threat perceptions
3. To involve the people in the protection and management of the reserve.

4.3 Methods of treatment to be adopted

The methods to be adopted in order to achieve the objectives:

1. Survey, mapping and demarcation of the area under treatment.
2. Identification of problem area, habitat offenders, etc., their causes and prescribing suitable remedies to tackle them.
3. Fencing of the areas if possible.
4. Establishment of a legal cell.
5. Augmentation of existing resources like infrastructure, buildings, communication system etc.
6. Coordinate with police and other agencies for better protection.
7. Create awareness among the people so that they are deterred from committing offences and help the authorities in the management of the reserve.
8. Annual testing and monitoring of water quality in the lake area to be done by Scientist / Technical experts

4.4. Survey, Mapping and Demarcation

Survey sheets and maps are vital tools for the management and protection of the reserve. Because of the easy accessibility and uniform terrain the survey and demarcation of the limits of the area is not difficult. From time to time surveys were conducted by various agencies at different times but almost all of these surveys were meant for ascertaining certain ground conditions like spread of water, vegetation, extent of pollution etc. and not for demarcation or fixing the limits of the reserve as such. Lack of proper survey and mapping has led to disputes between the reserve staff and the local people from time to time regarding the boundary and limits of the reserve and more often than not, it leads to encroachments and subsequent litigations.

4.4.1 Survey

In light of the above, it is very imperative that a proper and detailed survey is conducted for the main purpose of demarcation and fixing the boundary and limits of the reserve with the help of Revenue Department. This has become more important after the final declaration of the area as a Conservation Reserve and the application of the provisions of the Wild Life (Protection) Act, 1972.

For the survey, the main strategy would be:

- The earlier survey works carried out by the irrigation department, other agencies would be referred.
- As the staff of the reserve has limited knowledge and skills regarding survey works, the services of staff from the revenue department, retired Patwari / Kanungos, and experts will be requisitioned.
- The staff of the reserve would also be trained so that they gradually take over the work in future so that any component of the management of the reserve should not suffer on account of dependence on other agencies. Moreover, their services would be all the more important in the settlement of disputes and the several ongoing litigations.
- It should also ensure that the post of at least one Patwari is created and filled up on a permanent basis at the level of Division.
- The use of modern technologies like GPS and GIS and satellite data like remote sensing data may be employed.

4.4.2 Mapping:

Once the survey work is completed, maps would be generated. The maps should have the following features:

- *Physical map:* Showing the actual boundary and limits of the reserve. It should also contain other features like the extent of water; land mass, uplands, swamp/marsh areas, existing rivers, tributaries, islands, bunds, roads, and other such physical features on the ground.
- *Infrastructure map:* Showing existing roads, fire lines, tracts, buildings, check posts, barriers, watch-towers, bird hide-outs, boat jetty/landing spots, wireless towers/base sets, boundary pillars etc.
- *Vegetative map:* Showing the vegetation of the area, their location, types, blank areas etc.

The maps should be prepared using modern technology like the GIS/GPS software. The Offices of the Town Planning and other agencies that have expertise in the field will be utilized. The maps should be prepared on the same scale so that integrating and interpreting different maps of the same area will be convenient.

4.4.3 Demarcation:

After completion of the survey and mapping, demarcation of disputed areas will be undertaken. As demarcation involves legal issues as well, the help and coordination of other agencies like the District administration, the police force, the Revenue Department etc will be taken. Wherever possible the village panchayat and village elders of the concerned village will be taken into confidence so as to avoid any confrontation.

Once the area is demarcated, boundary pillars will be fixed at strategic points. In order to avoid displacement or destruction of boundary pillars, following measures are to be carried out:

- The boundary pillars will be large and sturdy enough so that it cannot be uprooted or shifted easily. At least 1/3 of the total length of the pillar will be below the ground and fixed with concrete.
- Each boundary pillar will be numbered and recorded.
- The forward and backward bearings will be recorded for each boundary pillar
- GPS will be used and coordinates (latitude and longitude) of the boundary will also be recorded.
- A grove of 10 trees will be established around each boundary pillars so that their location in the field is further simplified and enhanced.

4.5 Fencing:

Even though the terrain is uniform and easily accessible, there are still some areas where people from adjoining area try to encroach upon the Reserve area. There are also certain points from where cattle and other animals enter into the area, graze and destroy the habitat. Some routes are used by poachers and illegal fishers to gain entry into the area. There are also certain isolated cases where animals from the reserve, especially the Wild

Boar and Blue Bull, have gone into the surrounding villages and cause damage to crops. Such vulnerable areas need to be properly identified and fenced.

The general guidelines to be followed are:

- Identification of vulnerable areas and categorizing them into areas prone to
 - Encroachments
 - Grazing
 - Poaching
 - Animal attack
- The identified areas should be fenced by chain-link fencing.
- For chain linked fencing, angle-iron fence post is ideal.
- For areas prone to encroachments and poaching, chain-link fencing is preferable. The fence should be a minimum of 6 feet height.
- The fencing will be regularly monitored and repaired and maintenance will be carried out wherever necessary.

4.6 Prosecution of offenders:

As the boundary is porous and incidents of illegal activities in the reserve are quite possible. It is important that besides taking preventive measures like demarcation and fencing, the frontline staff also have to keep constant vigil and take appropriate legal action against the offenders.

4.6.1 Patrolling:

One of the most important aspects of protecting the reserve is to keep strict vigil by regularly patrolling the area and also by conducting surprise checks, raids and traps. The patrolling is to be done both on land and on water. The patrolling on water is to be done using motorized boats as well as manual boats. The patrolling on the land is to be done by using vehicles. The general instructions for patrolling are:

- Special unit, within the staff (existing and upgraded, as and when it happens) would be raised for the sole purpose of patrolling the area.
- There will be two Patrolling Units, one for the land and one for the water, Headed by Range Officer.
- Each patrolling Unit will consist of guard and four laborers. During night patrol 2 policemen will also form part of the party.
- The patrol party will have mobile communication systems either in the form of wireless handset or mobile phones.
- All members of the field staff will have to serve in the patrolling units for at least twice a week.
- A comprehensive time chart will be prepared containing details of the persons, time and date of patrolling to be done.
- Over and above, tours routine will be carried out by the in-charge Wild Life Guards who have to control and manage the areas under their jurisdiction.

4.6.2 *Removal of encroachments*

Encroachment may occur at some places along the area. Besides being an illegal activity under the Wildlife (Protection) Act 1972, it destroys the habitat, increases, biotic interference in the surrounding area, destroys the ecological balance by the excessive use of fertilizers, insecticides, ground water, burning of straw etc.

The following actions may be taken to have a check on encroachment:

- Demarcations of all the areas which are prone to against encroachments.
- Physical marking on the ground of the demarcated areas by erecting, fence post, boundary pillars etc., as already elaborated earlier, so that the area demarcated is not altered till it is finally evicted.
- Take stringent action against persons altering the demarcated areas by destroying or shifting the pillars etc.
- Identification of areas where the encroachers have managed to change the revenue records in their favor, and encroachers who have not yet changed the revenue records

- Once the above identification is made, the process for eviction under the Public Premises Act against the encroachers who have changed the revenue records in their favor will be initiated. Legal action will also be taken for the destruction of habitat under provisions of Wild life (Protection) Act, 1972. Provisions of the Indian Penal Code may also be invoked wherever applicable. The latest amendment of the Wild Life (Protection) Act, 1972, in 2004 has given full powers to the Wild Life authorities for the eviction of encroachers similar to the provisions given in the Public Premises Act. A proposal will be sent to the government to frame appropriate rules regarding the matter so that the provisions of the act can be fully implemented and the Wildlife Officers can dispose of encroachment cases quickly without depending on the revenue authorities.
- The encroachers who have not changed the revenue records in their favor they will be prosecuted under provisions of the Wild Life (Protection) Act, 1972, for encroaching, habitat destruction and other activities prohibited under the said Act. Here again, provisions of IPC may also be invoked for taking legal action.
- Establish good working relations with the Revenue and Police Departments, the District Administration so that coordination with the departments will help in removing the encroachers. This may be achieved by having regular meetings with the DC or the SDM on a monthly basis to discuss the problem and progress. Similar meetings may also be held with the Police authorities from time to time.
- The support of the general public, especially of the adjoining villages is also necessary. For this, awareness camps and meetings will be held in villages to seek cooperation of local villagers and Panchayats.
- The local elected representatives like the Sarpanches, MLAs and MP will also to be taken into confidence and be informed from time to time about the activities and the damage caused by the encroachers.
- Once an area is evicted from encroachment, the area should be immediately fenced and planted up with suitable species so that further encroachments do not take place.

4.6.3 ***Prevention and Prosecution of other offences:***

The Reserve encounters many offences occurring in the sanctuary, including grazing, poaching, illegal fishing, habitat destruction, illicit felling, illicit manufacturing of local brew, etc. It is very important that these offences are kept in check and strict action is taken against the offenders.

4.6.3.1 Habitat destruction: Another common offence is the destruction of habitat mainly by the removal fire wood, grass etc. The actions recommended for illegal fishing may also be adopted for curbing this offence.

4.6.3.2 Grazing: The problem of grazing is common in many areas around reserve. In some cases the cattle even reaches the interiors by wading/swimming through the shallow areas of the streams. Besides the measures already listed above for the control, the following measures may be taken:

- Seizure of the cattle and confiscation as per provisions of the Wild Life (Protection) Act, 1972. and the Cattle Trespass Act.
- Preparation of a cattle pound outside the reserve area to keep the cattle in Govt. custody during the pendency of litigation. And to dispose them off by sending to pounds owned by the government or other agencies as per rules applicable.
- The local population may be encouraged to stall feed their cattle. Certain identified persons/families may be given grasses and other fodder species which are removed from the reserve for management purposes as outlined in the chapter on JFM.
- Certain areas in the surrounding villages which are laying waste and fallow may be identified with the help of the local people themselves so that grazing areas may be developed by planting suitable grasses and shrubs.

4.6.3.3 Illicit felling: Although not a major problem, there are cases of illicit felling and lopping of trees in the periphery of the reserve. These are mainly for fuel wood and fodder purposes. The following measures may be adopted, over and above the measures already outlined before:

- Create public awareness to encourage people to protect and manage the plantations so raised and to cause minimum damage to the habitat.

4.6.3.4 Conservation for important wildlife species.

➤ **CONSERVATION PLAN FOR FAUNA REQUIRES KNOWLEDGE ON**

- Home range of the animal
- Territorial requirement of the animal
- Deciding the number of animals to be conserved and accordingly evaluating the carrying capacity of the habitat
- Conservation is aimed at single species or multiple species
- Conservation is proposed in a managed ecosystem or an un-managed, natural ecosystem
- However, very little knowledge exists on the above parameters of most of the animals.

➤ **REASONS FOR DECLINE OF WILDLIFE**

Several reasons for the decline of wild life and methods for their conservation are proposed. However the best method for the conservation of wild life is related directly to the maintenance of ecosystems in their natural condition, allowing their natural development and protection to the wildlife and their habitat. Both these phenomena (ecosystem development and habitat protection) are related to anthropogenic factors. Some of the important anthropogenic factors are listed below:

- Habitat fragmentation and destruction
- Man animal conflict
- Forest fire
- Poaching
- Stake holders dependence on forest resources
- Creating awareness amongst forest stake holders
- Water scarcity

➤ **CONSERVATION ACTION PLAN FOR SCHEDULE-I SPECIES**

Conservation plan is developed with the aim to reduce adverse impact on the natural habitat of various wild animals. Day by day issues related to threats to natural terrestrial and aquatic ecosystems arises due to high anthropogenic activities and loss of natural

habitat due to climate change. A conservation plan is needed for the conservation of critical habitats of wildlife for endangered and schedule-I species along with their scientific management strategy. During the mining/industrial/developmental activities and conservation activities, natural resources (Land, Biodiversity, Forest, Animals and Humans) are likely to exert tremendous pressure due to various activities in the respective region, while the present management plan will ensure mitigation of such impacts.

➤ **INDIAN PEAFOWL (*Pavo cristatus*):**

The Indian Peafowl (*Pavo cristatus*), is also known as the Common Peafowl or the Blue Peafowl. The peacock is the **national bird** of India.

Habitat: It is found in forests, but can live also in cultivated regions and around human habitations and is usually found where water is available.

Food: It is an omnivorous bird. Its diet consists of small mammals like: mice, reptiles like lizards and snakes, amphibians, arthropods like: insects, ticks, termites, ants, locusts and scorpions, seeds, fruit, vegetables, flowers, leaves, and minnows in shallow streams and so on. With its strong bill it is able to kill a snake, even a cobra. Around cultivated areas, peafowl feed on a wide range of crops such as groundnut, tomato, paddy, chilly, and even bananas. Around human habitations, they feed on a variety of food scraps and even human excreta.

Threat: Poaching of peacocks for their meat, feathers and accidental poisoning by feeding on pesticide treated seeds are known threats to wild birds. Methods to identify if feathers have been plucked or have been shed naturally have been developed as Indian law allows the collection of feathers that have been shed. However, presently, there is no severe threat to this species, primarily for its status as a National bird and secondarily due to religious belief this species is protected. But its train feathers are in great demand for commercial purposes and are the main threat to its survival. Their loud calls make them easy to detect.

Conservation: They are generally protected by religious sentiment and will forage around villages for scraps. The people living in the surrounding area should be rewarded for timely information about disturbing and/or poaching of the bird. The bird

has a wide range of food items, hence, improvement of and protection of the bird in the area will provide sufficient food to the animal.

Conservation Status: IUCN Red List, Least Concern species, and Schedule-I species under Indian Wildlife (Conservation) Act, 1972.

➤ **INDIAN LEOPARD (*Panthera pardus*)**

Habitat: Indian leopard has high capability to adopt any type of habitat where it can get sufficient food and covers. Leopards avoid overlapping their territory or the home range with the tigers. Therefore they try to occupy the fringe areas of the forests, as well as dare more to enter the human inhabited areas.

Behavior: leopards are highly territorial. Leopards are not only the widest ranging of all Big Cats but are actually one of the most adaptable and are found in a variety of different habitats. The Leopard can be found inhabiting numerous different areas providing that there is a good source of cover and an ample supply of food including tropical rainforests, tree-lined savannah, barren deserts and mountain highlands. One of the reasons why they are thought to be still surviving successfully throughout much of their natural range is that Leopards have adapted to the growing presence of people and are known to both live and hunt in areas close to urban activity. However, in some parts of their natural range populations are threatened by loss of their natural habitats to both deforestation and growing settlements.

Food Habits: The diet of these big cats is surprisingly varied which includes: wildebeest, impalas, reed-bucks, Thomson's gazelles, jackals, monkeys, fish and storks. However, at times they seem to show a preference for canines, even attempting to snatch dogs right from the feet of their masters. They can also eat fish and domestic stock such as goats and cows. They will even eat carrion.

Status: The species has been assigned almost all the categories of IUCN Red List Categories including: Near threatened, Threatened, Endangered, Critically endangered to Vulnerable, by different workers and agencies. However these categories have been assigned mostly on regional basis. On global basis the species has been assigned Lower Risk Status. The species has been included in Shedule I in The Wildlife (Protection) Act, 1972 of our country.

Conservation Status: *CITES APPENDIX: I; Indian wildlife (Protection) Act (1972) (As amended up to 2002);* Sheduled-1; Part-1; *Indian Red Data Book (IUCN, 1994);* Vulnerable; (*IUCN 1998*) (Proposed); Vulnerable (National) and Data Deficient (Global).

Man-leopard Conflicts: Major conflicts arise when leopards start preying on livestock. These conflicts have increased in recent years due to population growth among humans. The conflict becomes more severe when some leopards become man-eaters. They can prey on children and even enter homes at night to attack humans.

Threats: The Indian leopard (*Panthera pardus fusca*) is facing the crisis of adaptation. The species could soon qualify for Vulnerable under criterion A4 (30% decline over a period of 30 years = three generations, including both past and future). Despite being the most widespread cat, the Indian leopard faces several types of threat. The animal shares its habitat with other animals, which include tigers, bears, wolves, Asian elephants, hyenas, and wild dogs. These animals may kill leopard cubs if given a chance. Apart from its natural enemies, the leopard's main threat is people. For years, it has been threatened, due to loss of habitat and poaching. A rapidly increasing threat to Leopards is the poisoning of carcasses targeting carnivores as a form of retaliation as well as a means of predator control. An estimated 50% of the population lives outside Protected Areas and so it is vulnerable to habitat destruction.

Conservation: Capture and translocation to protected areas has been practiced more as a means of conservation. However, investigations have shown that the animal is highly territorial. Shifting causes inter and intra specific fighting to establish a territory in the translocated area. They are so much particular about their territory that they may make all the efforts to reach back to their original territory. However, Leopard are somewhat tolerant of habitat conversion, and may persist close to large human populations provided they have suitable cover and prey.

Guidelines for Dealing with Man-leopard Conflict, Press Note, Ministry of Environment and Forests, Govt. of India, [moef.nic.in/downloads/public-in format](http://moef.nic.in/downloads/public-in-format). Accessed on, 01-08- 2011.

The guidelines suggest a three pronged strategy to deal with man-leopard conflict as a means to their conservation:

- i. Awareness generation among local communities, media and officials of various departments.
- ii. Establish trained teams at two levels; the primary response team and the emergency response team, and
- iii. Use of latest technology and scientific know-how to improve efficacy of capture, handling, care and translocation of the animal.

➤ **CONSERVATION MEASURES**

It is critical that urgent efforts are made to understand the habitat and population status of the species through field based research and *in situ* conservation projects. A meeting of the Indian Board for Wild Life (held on 19 June 2006) underlined the need for such efforts. The actions required are:

- Mapping of habitat and distribution status of the species across the country, inside and outside protected areas;
- Time series analysis of habitat change to quantify the rate of change and identify high-risk areas and potential sites for further affirmative action;
- Estimation of population size by established count methods such as line transect, call counts and roost counts;
- Intensive ecological investigations in representative sites in major biogeographic zones with focus on the effects of threats in relation to breeding success and survival probability;
- Quantification of trade, with details on source and people involved; and
- Undertaking outreach activities to sensitize local communities, this may be carried out by a network of 'student clubs' (e.g. National Green Corps) throughout the country. These people could be trained to collect population data and undertake monitoring within their localities, and the reliability of the results could be ensured by adopting rigorous protocols.

➤ ***ELIMINATION OF MAN ANIMAL CONFLICT***

Man-animal conflict is a difficult problem to be eliminated. The conflict is both deliberate as well as inadvertent. However, conflict can be minimized through employing local persons to form anti-depredation team. The conflict can be minimized

also through protecting the area, preventing the entry of human beings or the cattle in the area. First aid facilities should be provided in the villages to meet exigencies in case of any conflict.

➤ ***DUST CONTROL***

All transport roads of the project passing through buffer zone shall be kept wet by sprinkling of water at required intervals. The frequency of watering will be based on season and weather conditions. This will reduce and minimize the impact of dust on flora/fauna.

➤ ***PROTECTION & IMPROVEMENT OF HABITAT***

The patches of forest that forms the habitat of wildlife is threatened due to anthropogenic pressure generated due to the construction/operation and other ancillary activities. Hence, concerted and vigorous efforts will be made to protect such forest patches. Besides, improvement of vegetation cover on Non-Forest land in the buffer zone will be tried.

➤ ***PREVENTION OF FOREST FIRE***

Forest fire is caused both naturally as well as by the human beings. Anthropogenic causes will be minimized through forming a fire line around the forest area. To add to the prevention of fire local persons will be employed as fire guards, during the fire prone season. The team will be instructed to fight the fire as soon as it is detected. Watch towers will also be constructed to detect forest fire. Awareness program against forest fire will also be run in adjoining villages.

➤ ***REDUCING STAKE HOLDER'S DEPENDENCE ON FOREST PRODUCES***

People from adjoining villages have already exploited the forest to the extent that the forests have become a grazing land or a source of fuel wood. Timber and medicinal species have either disappeared or have become scarce. However, regenerating the forest will again attract the villagers towards the forest. To keep the people away from the forest their economic condition will be improved. This will be achieved through financial and technical help to develop Dairy, Poultry, Vegetable cultivation, Horticulture and Agroforestry. Promotion of agro-forestry, in particular, will reduce their dependence on forests for timber as well as for fuel wood.

➤ ***WATER AVAILABILITY***

However, due to lack of proper storage, severe water scarcity develops during the summer season. To make the water available throughout the year it is essential to create water storage facility. Multiple water storage places will be created in the Buffer zone through improving the existing ponds, constructing check dams in the water channels and through creating water holes. Also, camouflage and hiding places should be created. Some wildlife species fulfill their salt requirement through licking the soil. Salt deposits will be arranged for such species adjacent to the water holes. These water holes will also be helpful in recharging the ground water and thus will be supporting good growth of the vegetation.

➤ ***SALT LICKS***

As natural salt is very scarce in the area and salt is a very essential requirement for the wild animals particularly the herbivores. Five such saltlicks may be created artificially and maintained for use of wild animals near the water hole and grass lands. Clay soil will be mixed with salt mixture in 3:1 ratio. Salt mixture will be prepared by mixing of 95 kg common salt, 3 kg rock salt and 2 kg trace mineral mixture.

4.7 Legal cell:

There are a lot of litigations going on against the offenders. Most of these cases are long drawn-out cases going on for several years and involving legal intricacies. While the offenders hire the best lawyers available, most of the cases of the reserve are handled by the staff of the reserve that have little or negligible legal knowledge. Due to lack of manpower and lack of expertise of the manpower available, the cases are not represented properly and quite often the cases are decided against the government. Besides, some of the staff is engaged routinely in court cases that too in different courts that they are not able to carry out their other duties effectively in the reserve.

It is therefore recommended that a legal cell may be set up to look after the prosecution and other legal works of the reserve at the division level. The legal cell shall be constituted with a qualified lawyer who may either be a government one or a private lawyer hired on contract basis, a clerk, and two field staffs. The legal cell besides looking after the court cases will also advise the reserve management in future course of action against offenders and possible offenders especially the encroachers who have political clout and influence, so that un-necessary litigation is avoided.

4.8 Up gradation of Infrastructure

One of the important features of protection which often is overlooked is the acquisition/up gradation of the infrastructure needed for protection works. Some of the important ones are highlighted below:

4.8.1 **Vehicles:**

The Conservation Reserve has no vehicles at present. It is therefore proposed that the following vehicles are acquired and placed at the disposal of reserve staff on priority basis:

- One Bolero: To be used by the DFO.
- One Mahindra-utility vehicle: for use in patrolling and transportation of materials.
- Two Motor Boats with power engine : for patrolling and management
- Two motorcycles: To be used by the Forester/ Forest Guard.

4.8.2 **Buildings:** For better management of the area it is important that the staff are present at their headquarter and for that residential provisions need to be looked after. There is no residential provisions for the DFO. Besides, some other buildings are required in other areas. The following buildings are recommended:

- DFO residence at Pathankot H Q.
- Two Guard quarter at Dhar and Dunera.
- Field office in the Dhar.
- Garage at Dunera for the vehicles.
- Store-room: one at Dunera.
- A new building for Nature Interpretation Centre at Dunera.
- A building to be used as rescue centre
- A building for laboratory.

4.8.3 Wireless system: The reserve has no wireless system.

- The require must of wireless system is as under.
- One base set at reserve in the Dhar.
- Handsets should be provided to all the field staff which includes the DFO, the Forester / Forest Guard. St least 3 hand sets are required.
- The tower at the reserve Interpretation center should be installed so that signal is clearly received at all points of the reserve by the handsets.
- The official vehicle of the DFO should be equipped with a mobile wireless set.

4.8.4 Check posts and barriers:

There is no check post at present in the reserve. Therefore 3 No. check post are proposed as under. These 3 areas are prone to encroachment and a lot of human activities also take place in the surrounding area.

1. One check post at village Chamrore.
2. One check post in area of village Patralwan.
3. One check post in area of village Bar Sudal.

Besides 2 more barriers also need to be set up to monitor movement of people and vehicles on the approach roads which are commonly used by the villagers as well as by the reserve staff. One is proposed on the road leading up to Dunera for Reserve- side. The other is proposed on the road from Dhar to Dam site.

4.8.5 Watch-towers: Watch towers are also an important feature for the management of the reserve including poaching, grazing, fire etc. it also serves as vantage points for bird watching. 4 such towers are required to construction.

4.8.6 Firearms: The offenders operating inside the reserve area often use arms and other dangerous weapons while carrying out their activities. Appropriate firearms may be issued to the personnel of the armed wing so that the protection of the reserve can be done in a more effective manner and it also deters adventurism from the crooks. For this the staff should be properly trained and all the requirements as laid down in the Arms Act should be fulfilled. As the decision for such a measure is to be taken at the government

level and may take time, the services of the police team placed at the disposal of the DFO should be engaged.

4.9 Manpower

Another main component in protection and management of the sanctuary is the manpower available. The situation prevailing at the present moment is not adequate and the following structure and strength is recommended:

S. No.	Name of the Post	Existing	New Posts	Total
1.	D.F.O. Wildlife	1	0	1
2.	Range Officer	1	0	1
3.	Forester	1	0	1
4.	Forest Guard	1	2	3
5.	Accountant	0	1	1
6.	Assistant	0	1	1
7.	Clerk	0	1	1
8.	Peon	0	2	2
9.	Chowkidar	0	1	1
10.	Driver	0	3	3
11.	Boatman	0	2	2
12.	Research officer	0	1	1
13.	Research Assistant	0	1	1
14.	Computer Data operator	0	1	1
15.	Cinema operator	0	1	1
16.	Guide	0	2	2
	Total	4	19	23

Chapter-5

Soil and Moisture Conservation Working Circles

5.1 General Description:

The problem of soil erosion although not acute is definitely a cause of concern. This is because the erosion of soil in the immediate catchment will not only damage the land and will also lead to gradual siltation of the lake area, it has also adversely affected surrounding villages due to loss of fertile soil and consequent effect on agriculture production.

The problem is most severe on the north-west side of the reserve, especially in the villages of Bar Sudal, Chamrore, Niari. In these villages some areas are at heights of 100-150m above the surface of water. There is negligible vegetation in the area. The main causes for the condition can be attributed to:

- a. Semi-arid climate with sparse annual rainfall
- b. Overgrazing of the land
- c. Deforestation of meager vegetation existing on these lands
- d. Cultivation of marginal lands for agriculture
- e. Faulty water management

Certain areas on the north & east side have also problems of erosion. However, the problem is not as severe on this side as the area is low lying and flat. The main causes of soil erosion in this area being the high rate of flow of water cutting into the banks and take away soil with the flow.

To improve biodiversity and the wildlife habitat and management of invasive weeds.

5.2: Method of treatment of area closed under section 4 of the PLPA, 1900;

To achieve above objectives of the plan the following proposals are being made:

5.2.1: Soil and Moisture Conservation Measures for checking siltation:

The basic thrust will be to improve the vegetative cover on the Ranjit Sagar Dam Conservation Reserve. The endeavor will be to do the extensive soil conservation works on micro-watershed basis. The soil conservation works will include following measures.

- a) Vegetative barriers in the upper reaches.
- b) Loose stone check dams in the middle stage.
- c) Crate wire/Gabion check dams.
- d) Stone masonry structures in the lower reaches to check torrents.
- e) Continue alive hedge.

Dry stone check dams are required to supplement the brushwood check dams in the initial stages to decrease the velocity of the water in the gullies along the slopes. These structures have been raised in series to act as steps in the way of the fast flowing water to minimize its eroding impact. The establishment of such structures has been found to be very effective in reducing soil erosion in treated areas of Ranjit Sagar Dam Conservation Reserve.

Other measures include choe training, contour trenching, contour bunding etc. Precautions will be taken to minimize the destabilization of soil and vegetation. Blank patches and areas prone to sheet, slip and gully erosion will be taken up for soil conservation works on priority basis.

Babbar grass and other soil binding grasses shrubs and herbs will be planted along the choe beds, gullies and on the berms of trenches. The areas of natural regeneration will be fenced and protected against the cattle damage. The regeneration will be encouraged; however, artificial planting will be done in blanks with species like khair, Shisham, Neem, Rajain, Siris, Drek, Amla, Subabul, Mango, Ber, Gauva, Toot, Arjan, Bamboos, tamarind etc.

5.3 Special objects of Management.

The special objectives of this working circle are:

1. Identification of areas prone to erosion, their causes and impact on the Reserve.
2. To prescribe and take suitable remedial measures to deal with the problem
3. To ensure participation of people in the protection and management of the reserve area and neighbourhood.

5.4 Methods of treatment to be adopted

- i. Identification of problem areas and data collection of such sites,
- ii. Closure of such areas from biotic interference.
- iii. Reclamation of the gullies / ravines for various approved land uses.
- iv. Conservation measures in surrounding agricultural areas.

5.5 Closure to biotic interference

One of the most important causes for the formation of gullies and ravines is biotic interference. It is therefore very important that the first step for controlling such soil erosion is to close the area to biotic interference like grazing, illicit cutting of sparse shrubs and tree vegetation etc. This would not only improve the quality of grasses but also the quantitative improvement in yield.

5.6 Arresting the growth of gullies and ravines

Although the closure of affected area is an effective measure, the absorption of maximum rainfall and allowing runoff in guided fashion through safe disposal structures in a gully is equally important. This can be achieved by:

i. Contour, Graded and Peripheral bund

Contour bounding consists of constructing narrow bases trapezoidal bunds on contour to impound runoff water behind them so that the stored water will be absorbed gradually into the soil profile for crop use. The bunds can be either open ended or hooked up at the ends at certain sites.

ii. Stabilization of Banks of lake

Banks need stabilization by planting grasses or otherwise. For this, planting of grass species which can provide good ground cover and also have elaborate root system is recommended. Although banks of the lake are provided by small and large stones fitted in soil yet. The species of grasses which may be used for the purpose include: *Dichanthium annulatum*, *Cenchrus ciliaris*, *Pennisetum purpureum*, *Andropogon ischaemum*, *Cynodon dactylon* etc.

5.7 Reclamation of the gullies/ravines for various land uses

Owing to the acute shortage of land, it is very important that the treated gullies and ravines are reclaimed for cultivation of approved crops only and for habitat improvement measures.

Some of the methods that may be used for reclamation are:

i. Afforestation

The best land use of ravine lands is to subject these to grow permanent vegetation of grasses and trees. This type of land use is most effective to arrest and rehabilitate deep and narrow ravines.

The species to be planted in these areas include: *Leucaena leucocephala*, *Dendrocalarmus strictus*, *Bohar*, *Lasora*, etc.

ii. Management of grasses

Another important aspect in the reclamation of ravines is the management of grasses. There is no better way of protecting the bunds of newly reclaimed areas than to cover them with suitable vegetation. Grasses and legumes have a dual role to play because they not only give the safest, cheapest and earliest protection to the soil but also provide the much needed fodder and green manure.

5.8 Better agricultural practices in surrounding villages

The agricultural lands in the surrounding villages offers the maximum soil and water losses as it is cultivated very frequently for the growing of various types of crops and very often remain exposed to rain which causes accelerated erosion. It is therefore very important that the people are made aware, trained and made to follow certain agronomic practices so that while obtaining sustained economic yields soil fertility is maintained by protecting the soil and conserving water.

The measures which can be adopted are:

i. Selection of crops for maximum cover

It is generally believe that legumes provide better cover and better protection to land against soil erosion then clean cultivated or row crops.

ii. Crop rotation

Crop rotation involves incorporation of legumes with cereals in a sequence to take advantage of different feeding zones, both for nutrients and water, and to offset disadvantages of mono-cropping in controlling insects, pests and diseases etc.

iii. Intercropping / Mixed cropping

This is an age old practice wherein different crops (erosion resisting and erosion permitting) are cultivated simultaneously either by means of inter-cropping or by strip cropping.

Chapter-6

JFM and Eco-development Working Circle

6.1 General Description:

Involvement of rural communities living close to forest in protection and management of Forests resources is enshrined in the NFP-1980. Translation of policy found expression in the resolution of Govt. of India, Ministry of Environment and Forests, issued in June 1990. It envisaged that in lieu of the participation, the local communities will be entitled to sharing of in a manner specified by the concerned State Forest Department. Punjab Forest Department issued Notification No. 46/242/99-Ft.IV/187509 Dated 18/3/2003. The concept of JFM as enshrined in this Notification; will form the core of J.F.M working circle.

6.2 Special objects of management

1. To ensure people participation in certain areas of management of the reserve.
2. To win the confidence of the people surrounding the area so that the objectives of establishing the Reserve are safeguarded and inimical attitude of the people is removed.
3. To empower the people towards self help activities so that become self reliant from resources other than those from the reserve.
4. To create certain community assets which would be beneficial for the general public of the surrounding area
5. To develop capacity building in the surrounding villages to plan and implement sustainable modes of development which are not detrimental to the ecosystem also
6. To promote land practices compatible with the objective of biodiversity conservation in the surrounding villages
7. To create awareness and a sense of responsibility among the people.

6.3 Methods of treatment to be adopted

- i. Conduct Socio-economic survey
- ii. Identify people/family/villages directly dependent on the reserve.
- iii. Sources of livelihood and income generating capacity
- iv. Micro planning using PRA and other techniques
- v. Asset creation and employment generation.

6.4 Socio-Economic Survey

In order to involve people in the management of the sanctuary it is very important that the confidence of the people towards the reserve and its staff is built up and enhanced. This can be done by carrying out some “people friendly” schemes in the surrounding area. These schemes can only be formulated and implemented when basic data regarding the village, its people, population dynamics, literacy, land use pattern, livestock, dependence on forests and forest products etc are available. At the present moment there is very little data available. It is therefore necessary to carry out a socio economic survey to gather all these relevant information's. While conducting the survey, the involvement of the people is a must so that the data reflects the actual ground realities and the real problems, strengths, hopes and aspirations of the people.

For this techniques like participatory rural appraisal (PRA) may be employed. The services of reputed NGOs, voluntary organizations operating in the area may be used for the purpose.

6.5 Identification of Problem and thrust areas.

From the basic data obtained through the socio economic survey, identification of thrust areas, village wise, will be carried out. This includes:

- People/families dependent on forests and the reserve area.
- Areas available for plantation and other such activities.
- Problems unique to the village and how it can be addressed
- Contributions that the people can make.
- Expectations of the people from the reserve and the staff.

6.6 Income generation and asset creation activities

Once the problem areas and thrust areas are identified, certain concrete steps should be taken to address the issue. This may include:

- i. *Taking up plantations of fuel wood and fodder species so that the people's dependence on the forests and the reserve for these products is reduced.*
- ii. *Employment generation by employing labor from among the locals for plantations and other activities where manual labour is required. Some of the protection work can also be given to the local youth as they know the terrain well and they are familiar with the tricks used by offenders.*
- iii. *Some of the educated, unemployed youth may be engaged on daily wage or contract basis to act as guides for tourists and visitors visiting the area.*
- iv. *Creation of community assets like:*
 - a. solar energy based systems like solar lamps for street lighting, solar cookers etc.
 - b. Bio-gas plants using cow dung.
 - c. Nursery for raising seedlings for plantation as well as for commercial activities by the villagers.
 - d. Compost and vermi-compost plants.
- v. *Skill enhancement activities*
 - a. Sewing and embroidery
 - b. Bee-keeping
 - c. Fish rearing
 - d. Compost and vermi-composting, using both traditional organic materials as well as using water hyacinth. This is all the more important not only from the point of view of income generation but also from the point of organic farming, whereby the farming and agricultural activities around the reserve can gradually shift to the environment friendly method of using organic fertilizers like compost and vermi-compost instead of chemical fertilizers which are increasingly polluting the area.

This is not an exhaustive list, rather a suggestive list, which may be improved upon as and when new and innovative ideas arise especially from the micro-planning and PRA exercises.

6.7 Benefit sharing:

Under these provisions grasses like Lantana & Mallah which are removed from the reserve for habitat improvement practices like clearance for fire lines, jungle clearance for plantation etc can be given to the neighbouring villages. This will be done in a controlled and regulated manner so as to fulfill the bona fide requirements of the local populations while ensuring that the condition of the wetland is not compromised.

Chapter-7 Miscellaneous Regulations

7.1 Monitoring and Evaluation

The Management Plan has not anticipated the effects and results of the prescriptions given in the plan and their implementation, like habitat improvement measures, plantations, and other treatments. It will be monitored and evaluated yearly preferably by a separate unit set up for the purpose. The corrective measures will be taken, if need be, on the basis of the results of the study. Responsibility and accountability of the staff and officials will be adhered to as laid down in the department rules.

7.2 Research and Development

The management of the reserve depends largely on the data available – data on the problems and threat perceptions, their causes, possible solutions; data on the role of the wetland in the ecology of the area- its evaluation, values, interrelationship between various biotic & abiotic factors etc. Without having these data, appropriate remedies cannot be prescribed. Not many studies have been carried out on the ecology of the wetland, its resource base, interactions with the adjoining upland areas, its diminishing aquatic zone and the impact on processes in the ecosystem. Though a number of publications have appeared, they cover specific aspects of the system and an integrated system approach is lacking. Studies carried out by different agencies and researchers so far include research on avian, fish and turtle populations, water quality assessments and weed control.

It is therefore recommended that an integrated approach is adopted where research work treats the reserve as an ecological unit and the various factors involved in it.

Some of the possible areas of study are:

1. The potential of Conservation Reserve ecosystem in terms of energy flow and tropic structure.
2. Identification of the biological diversity existing in the area, right from the microbes to mammals, their inventory and establish the role of the organisms in the ecosystem.
3. The population estimates of avifauna, especially the waterfowls. Limiting factors affecting the waterfowl count, their causes etc.
4. Minimum vegetation area required for providing protection and breeding of waterfowl.

5. Study relating to vulnerable species of birds, and the fishing cat.
6. The physiology and dynamics of bird migration to this area with respect to ecological and other conditions
7. For water management, geological characteristics, ground water discharge, chemical factors found in water should be determined.
8. Land use management in the entire catchments area.
9. The role of Eco-development and their impact on the people.

7.3 Maintenance of Records

A detailed record of each management activity like habitat improvement works; plantations etc shall be maintained in order to have a solid database for scientific monitoring, evaluation and future planning. The controlling officers should check all these records and documents in their field tours.

The records to be maintained include:

1. *Annual Plan of Operations.*

The Divisional Forest Officer should prepare annual Plan of Operations in advance and works executed according to the approved plan. The plan would be in conjunction with the prescriptions laid down in the Management Plan.

2. *Weed Control Journal.*

Weed control measures is one of the major activities of management. A detailed record of the operations, duration, labor employed, expenditure incurred, quantum of weed removed, utilization of machinery etc should be maintained on a monthly basis. An abstract of the physical and financial progress should also be prepared for each month. The Journal should be signed by the concerned guard and countersigned by the Forester every month. The inspection notes by the officers should be filled in the journals. The Divisional Forest Officer should inspect the entries at the time of annual office inspection.

3. *Plantation Journals.*

For each plantation, a separate journal shall be maintained in prescribed form, wherein a complete record of the plantation viz year of plantation, area under plantation, number of plants, species planted, details of expenditure incurred month wise, compartment-wise/strip-wise/locality-wise, etc. should be given. It will also, later on, include the maintenance cost for subsequent three years. At the end of each year observations regarding success of the plantation, growth figures etc. shall be recorded in the journals. Instructions of the Principal Chief Conservator of Forests, Punjab, regarding checking of plantations issued from time to time, should also be followed.

4. *Nursery Registers.*

For each nursery, a separate register shall be maintained. It shall have monthly detail of operations and expenditure incurred, plants raised, plants used departmentally, plants supplied to the public during the month etc. Detail of plants supplied free of cost to other Government, departments, public institutions etc. shall also be recorded in the register. Plants destroyed as a result of natural calamities or otherwise shall be got written off from the competent authority. A copy of the nursery register showing details of species wise nursery stock should be sent to the Divisional Office monthly.

5. *Divisional Note-Book.*

The Divisional Forest Officer should maintain a note-book in which the following information should be recorded:

- Population estimate of the birds during the year
- Sighting of rare, endangered birds and the area of their sighting.
- Flowering and seeding of important tree species.
- Climate-rainfall and temperature experienced during the year and its effect on the wild life and forest crop.
- Pests and diseases noticed on the wild life and forest crop; the treatment and result thereof.
- Problems regarding labour.
- Any other matter important from the management point of view.

6. *Fire Control Forms*

The record of forest fires should be maintained in the prescribed Performa. The details of area burnt with sketch, cause of fire, date of fire, damage, date of time of control, damage and the appropriate financial loss will be recorded. The information should be correct and up-to-date.

7. *Deviation Statement.*

No deviation should be done without the prior approval of the competent authority. To exercise control over progress of various operations at the end of each financial year, the prescription of the Management Plan will be compared with the progress of works done on the ground. Any excess or shortfall will be recorded, giving reasons for deviation and sanction of the competent authority be given.

8. *Beat Books*

Each guard should maintain a Beat-Book that has been prepared and issued by the Divisional Office. The Beat Book shall contain the following information:

- Map of the area in his beat.
- Details about the area, boundaries, H.B. Nos. etc.
- Duties of Beat Forest Guard.
- Abstract copy of the relevant sections of the Indian Forest Act, 1927, Wild life Protection Act, 1972, Forest (Conservation) Act, 1980 and Vernacular translations thereof.
- List of buildings, roads, paths, fire lines etc in his beat.
- List of court cases pertaining to his area
- List of encroachments
- List of trees prevalent in his area
- List of major birds and animals found in his area
- List of habitual offenders who commit crimes/offences in his area.

7.4 Publicity and awareness

Even though the Conservation Reserve has gained national and international recognition, there is still very little awareness among the people, especially those living around the Reserve. It is very important that the unique features of the Reserve, its enchanting beauty, its aesthetic, environmental and economic values as well as the threats faced by it are highlighted and widely publicized, so that awareness is created. This can be achieved by:

- Promoting ecotourism.
- Utilizing the services of local cable TV especially in the surrounding districts for dissemination of information and awareness.
- Publication of information brochures, pamphlets booklets containing all types of information, including pictures of birds and the area
- Setting up of signboards containing vital information at the Railway station and Bus stands in the immediate vicinity of the area as well as in major cities and towns around the state.

- Large scale celebration involving public participation on occasions like World Wetlands Day, World Environment Day, World Science day etc
- Utilizing the facilities available at the Interpretation centre which has a library and audio-visual materials for educating the local people as well as students and groups visiting the Reserve from time to time.

Chapter-8 Ecotourism

8.1 Concept of Eco-Tourism

The concept of ecotourism has evolved over the past decade due to an increased awareness of the world's dwindling biological diversity, and as a reaction against mass tourism. The major underlying assumption of successful ecotourism is that visitors can provide the necessary economic incentives to achieve local conservation and development. That is, ecotourism is able to generate revenue, which can be used to protect and conserve the existing biodiversity and natural environment that draws visitors to a particular site. Ecotourism's objectives, therefore, include visitor education, non-alteration of ecosystems and local economic benefits.

So the nominal and very much controlled Eco-tourism can be done in the peripheral area of the reserve so that it should not make a negative effect on conservation of Wildlife in the area.

No concrete structure may made inside the reserve area are for this purpose.

The possible eco-tourism activities can be suggested in this regard is as under:-

- A very specific type of nature based tourism, in which small groups of people are taken to experience various aspects of nature, and participate in wildlife viewing.
- Nature trekking, education tours and so on. Special care is taken to prevent negative impacts of the ecosystem.
- Tourist education in matters related to the environment is given high priority.
- The distinguishing feature of ecotourism is that it emphasizes the ecological fragility, carrying capacity and biodiversity conservation of the region.

However, keeping in view the suggestions laid above and for the purpose of this Management plan, the following measures are recommended:

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

- The focus would be both on serious bird watchers as well as on the casual visitors school/college students, organized groups and local villagers.
- Utilization of existing facilities and new facilities (created for management purposes) to facilitate visitors as well. These features include:
 - Nature trails over the bank as well as downstream bed
 - Bicycling routes for bird watching in the periphery of the lake
 - Boat jetties and boardwalks leading to bird hides/towers strategically located in the periphery of the lake as well as on the islands in the lake
 - Sign Boards showing the directions and other essential information at strategic locations
 - Solar lighting at strategic points etc.
 - Tourist attraction like hut balloon, Speed Boat, cruise, Horse riding, Zip line jumping, Para gilding etc.
- Development of visitor education facilities: This include
 - Setting up of museum, exhibits, audio-visuals, nature shop having curios, books, souvenirs, local handicraft etc at the Interpretation centre.
 - Utilization of check posts and barriers on the routes open to tourists as kiosks for making available information brochures, books, guides, etc.
- Ensuring that no structure, trails, buildings, landscaping and other mode of exploitation is established which is contrary to the aesthetic, environmental and natural forms and value of the ecosystem.

Chapter-9

Financial Forecasts

THE BUDGET

9.1 General Considerations:

The following is the financial forecast of the Management Plan. The calculations are based on current rates. The Management Plan is basically based on conservation measures and no revenue generation activities are prescribed. This is because there is no felling prescribed for the trees, no removal of grasses, except for the improvement of habitat, construction of inspection paths or fire lines, no auction of fruits etc takes place in the Reserve area. Besides, as a rule the offences are not compounded but are rather, prosecuted in courts of law, so the revenue from fines and forfeitures is also not possible. So this financial Forecast reflects only the expenditure component. There can be some income / revenue if ecotourism facilities are developed.

9.2 Availability of Funds:

Funds for the various development and protection activities as given below may be available under following scheme:

9.2.1 State Govt. Funds:

- (a) State-Normal Non-Plan.
- (b) State-Plan Scheme:-

- I. FT-20- Developments of Forests.
- II. FT-21- Conservation, management & Development of Wild Life in State.
- III. Punjab Compensatory afforestation fund Management and planning authority.

9.2.2 Funds from Central Govt:

- (a) Central Sponsored Scheme-Integrated Development of Wild Life Habitat.

9.3 Physical and Financial

Physical and Financial aspects of the Plan are given below:

9.4 Expenditure:

The **Budget forecast** /estimated expenditure of **Rs. 1436.77 Lacs** to be incurred for the management activities during the 10 years plan period as given below:

Abstract of the budget under broad categories of activities is provided as under:

9.4 (a) Budget 10 years :-

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Comprehensive Ten Year Action Plan for the Conservation and Management of Ranjit Sagar Dam Wetland																										
Sr. No	Technical Interventions	Total unit	Unit cost	Total	1 Year		2 Year		3 Year		4 Year		5 Year		6 Year		7 Year		8 Year		9 Year		10 Year		Grand Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Survey and demarcation.																									
1.1	Boundary demarcation with Pillars and zoning of the Ranjit Sagar Dam Conservation Reserve.	0	L/S	1000000	0	0	L/s	500000	L/S	500000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	L/S	1000000
1.2	Chain link Fencing	10 KM	1051124	10511240	0	0	5 km	5255620	5 km	5255620	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10 km	10511240
	Total:-			11511240		0		5755620		5755620		0		0		0		0		0		0		0		11511240
2	Infrastructure Development																									
2.1	Construction of watch towers	2 No.	500000	1000000	0	0	1 No.	500000	0	0	0	0	0	0	0	0	0	0	0	0	1 No.	500000	0	0	2 No.	1000000
2.2	Interpretation Centre Including Video, Audio device support.	L/s	L	700000	0	0	0	0	0	700000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	L/S	700000
2.3	Construction of pause Points with Rain Shelter in Ranjit Sagar Dam Conservation Reserve For visitors (Size 15ft x 10 ft)	10 No.	200000	2000000	1 No.	200000	2 No.	400000	1 No.	200000	1 No.	200000	0	0	0	0	0	0	2 No.	400000	2 No.	400000	1 No.	200000	10 No.	2000000
2.4	Construction of Bird Hides in Ranjit Sagar Dam Conservation Reserve	4 No.	200000	800000	2 No.	400000	0	0	0	0	0	0	0	0	0	2 No.	400000	0	0	0	0	0	0	0	4 No.	800000
2.5	Camping Site in Ranjit Sagar Dam Conservation Reserve	10 Tent	L/S	500000	0	0	5 No.	250000	0	0	0	0	0	0	0	0	0	0	5 No.	250000	0	0	0	0	10 Tent	500000
2.6	Toilet blocks uses for visitors and staff at camping site in Ranjit Sagar Dam Conservation Reserve Including water Bore Well	2 No.	L/S with mtc.	1000000	0	0	2 No.	700000	0	0	0	0	0	0	0	0	0	0	mtc.	300000	0	0	0	0	2 No.	1000000
2.7	Provision of Electricity in Ranjit Sagar Dam Conservation Reserve	1 No.	L/S	100000	0	0	1 No.	100000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 No.	100000
2.8	Signages/Awareness/Instruction Board in Ranjit Sagar Dam Conservation Reserve	30 No.	10000	300000	0	0	10 No.	100000	0	0	0	0	10 No.	100000	0	0	0	0	10 No.	100000	0	0	0	0	30 No.	300000
2.9	Cement Benches Included carriage charges in Ranjit Sagar Dam Conservation Reserve	20 No.	8000	160000	0	0	5 No.	40000	0	0	5 No.	40000	0	0	5 No.	40000	0	0	5 No.	40000	0	0	0	0	20 No.	160000
2.10	Establishing check posts at Ranjit Sagar Dam Conservation Reserve	5 No.	200000	1000000	0	0	2 No.	400000	0	0	1 No.	200000	0	0	0	0	0	0	2 No.	400000	0	0	0	0	5 No.	1000000

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

2.1 1	Deputed at Check posts for 6 Month at 5 site 2 Mazdoor each site (60 x 10 Years) = 600 mazdoor	600 men	9000	5400000	60 men	540000	60 men	540000	60 men	540000	60 men	540000	60 men	540000	60 men	540000	60 men	540000	60 men	540000	60 men	540000	60 men	540000	5400000			
2.1 2	Development of Nature Trail for tourist & eco tourism	20000 mtr.	38508	770160	5000 mtr.	192540	0	0	5000 mtr.	192540	0	0	5000 mtr.	192540	0	0	0	0	5000 mtr.	192540	0	0	0	0	20000 mtr.	770160		
	Total:-			13730160		1332540			3030000			1632540			980000			832540			580000			940000	2222540	1440000	740000	13730160
3	Habitat Improvement																											
3.1	Plantation of tall Indigenous plants.	100 Ha.	69684	696840	10 Ha.	696840	20 Ha.	1393680	20 Ha.	1393680	0	0	0	0	10 Ha.	696840	20 Ha.	1393680	20 Ha.	1393680	0	0	0	0	100 Ha.	6968400		
3.1 (a)	Maintenance of plantation (including 3 year maintenance)	260 Ha.	28127/-	7313020	0	0	10 Ha.	281270	30 Ha.	843810	50 Ha.	1406350	40 Ha.	1125080	0	0	10 Ha.	281270	30 Ha.	843810	50 Ha.	1406350	40 Ha.	1125080	260 Ha.	7313020		
3.2	Removal of Unwanted weeds (lantana etc)	100 Ha.	61500	6150000	10 Ha.	615000	10 Ha.	615000	10 Ha.	615000	10 Ha.	615000	10 Ha.	615000	10 Ha.	615000	10 Ha.	615000	10 Ha.	615000	10 Ha.	615000	10 Ha.	615000	100 Ha.	6150000		
3.3	Water fowl Census during winter every year in Ranjit Sagar Dam Conservation Reserve	10 time	50000	500000	1 time	50000	1 time	50000	1 time	50000	1 time	50000	1 time	50000	1 time	50000	1 time	50000	1 time	50000	1 time	50000	1 time	50000	10 time	500000		
	Total:-			20931420		1361840			2339950			2902490			2071350			1790080			1361840			2339950	2902490	2071350	1790080	20931420
4	Soil & Moisture Conservation measure to Reduce Siltation																											
4.1	Bank Stabilization measure in Ranjit Sagar Dam Conservation Reserve	50000 mtr.	7942/- per% mtr.	3971000	5000 mtr.	397100	5000 mtr.	397100	5000 mtr.	397100	5000 mtr.	397100	5000 mtr.	397100	5000 mtr.	397100	5000 mtr.	397100	5000 mtr.	397100	5000 mtr.	397100	5000 mtr.	50000 mtr.	3971000			
4.2	Brush wood check dam in Ranjit Sagar Dam Conservation Reserve	10000 mtr.	15885/- per% mtr.	1588500	1000 mtr.	158850	1000 mtr.	158850	1000 mtr.	158850	1000 mtr.	158850	1000 mtr.	158850	1000 mtr.	158850	1000 mtr.	158850	1000 mtr.	158850	1000 mtr.	158850	1000 mtr.	10000 mtr.	1588500			
4.3	Planting of Khair, agave, Babbar Grass for stabilization of siltation in Ranjit Sagar Dam Conservation Reserve	200000 No.	114/71 per 100 No.	229420	20000 No.	22942	20000 No.	22942	20000 No.	22942	20000 No.	22942	20000 No.	22942	20000 No.	22942	20000 No.	22942	20000 No.	22942	20000 No.	22942	20000 No.	200000 No.	229420			
4.4	Dry Stone masonry check dam	10000 m3	1050/- per m3	1050000	1000 m3	1050000	1000 m3	1050000	1000 m3	1050000	1000 m3	1050000	1000 m3	1050000	1000 m3	1050000	1000 m3	1050000	1000 m3	1050000	1000 m3	1050000	1000 m3	10000 m3	10500000			
4.5	Kachha water holes	10 No.	37913/-	379130	1 No.	37913	1 No.	37913	1 No.	37913	1 No.	37913	1 No.	37913	1 No.	37913	1 No.	37913	1 No.	37913	1 No.	37913	1 No.	10 No.	379130			
4.6	Crate wire structure	5000	1810/-	9050000	500	905000	500	905000	500	905000	500	905000	500	905000	500	905000	500	905000	500	905000	500	905000	500	5000	9050000			
	Total:-			25718050		2571805			2571805			2571805			2571805			2571805			2571805			2571805	25718050			
5	Protection and Patrolling																											

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

5.1	Fire lines cum inspection path in Ranjit Sagar Dam Conservation Reserve	40000 mtr.	90577/- per 1000 mtr	3623080	5000 mtr.	452885	5000 mtr.	452885	5000 mtr.	452885	5000 mtr.	452885	0	0	5000 mtr.	452885	5000 mtr.	452885	5000 mtr.	452885	5000 mtr.	452885	0	0	40000 mtr.	3623080
5.2	Maintenance of fire lines Cum I/Path in Ranjit Sagar Dam Conservation Reserve	240000 mtr.	45299/- per 1000 mtr.	10871760	5000 mtr.	226495	10000 mtr	452990	15000 mtr	679485	20000 mtr	905980	20000 mtr.	905980	25000 mtr.	1132475	30000 mtr.	1358970	35000 mtr.	1585465	40000 mtr.	1811960	40000 mtr.	1811960	240000 mtr.	10871760
5.3	Engaging daily wages watch & ward staff for protection and antipoaching in Ranjit Sagar Dam Conservation Reserve 10 mazdoor x 12 month x 10 years.	1200 men	9000/-	10800000	120 men	1080000	120 men	1080000	120 men	1080000	120 men	1080000	120 men	1080000	120 men	1080000	120 men	1080000	120 men	1080000	120 men	1080000	120 men	1080000	1200 men	10800000
5.4	Rescue and rehabilitation of wild animals including purchase of tranquilization equipment and medicines, net body armour etc.	L/s	L/s	2000000	L/s	400000	L/s	400000	L/s	500000	L/s	350000	L/s	350000	0	0	0	0	0	0	0	0	0	0	L/s	2000000
5.5	Vehicle for Rescue, patrolling & Emergency operation related to wild life	L/s	L/s	900000	0	0	L/s	900000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	L/s	900000	
	Total:-			28194840		2159380		3285875		2712370		2788865		2335980		2665360		2891855		3118350		3344845		2891960		28194840
6	Transportation																									
6.1	Inflated Speed boats for patrolling & protection of Ranjit Sagar Dam Conservation Reserve	2 No.	1200000/- each	2400000	0	0	1 No.	1200000	0	0	1 No.	1200000	0	0	0	0	0	0	0	0	0	0	0	0	2 No.	2400000
6.2	Tractor with accessories (Trolley ,tanker, cultivator)	1 No.	1200000/- each	1200000	0	0	1 No.	1200000	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	1 No.	1200000
6.3	Carriage vehicle for Boat	1 No.	1000000/- each	1000000	0	0	1 No.	1000000	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	1 No.	1000000
	Total:-			4600000		0		3400000		0		1200000		0		0		0		0		0		0		4600000
7	Equipment																									
7.1	Binoculars	10 No.	10000	100000	5 No.	50000	0	0	5 No.	50000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10 No.	100000
7.2	G.P.S	2 No.	35000	70000	1 No.	35000	0	0	1 No.	35000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2 No.	70000
7.3	Laser Range finder	2 No.	30000	60000	1 No.	30000	0	0	1 No.	30000	0	0	0	0	0	0	0	0	0	0	0	0	0	2 No.	60000	

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

7.4	Photography equipment digital still and video camera & accessories	1 No.	250000	250000	0	0	1 No.	250000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 No.	250000
7.5	Patrolling kits	2 No.	100000	200000	0	0	1 No.	100000	0	0	0	0	1 No.	100000	0	0	0	0	0	0	0	0	0	0	2 No.	200000
7.6	Computer, Laptop, Printer, Scanner, Software,	L/s	L/S	300000	0	0	1 No.	300000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	L/s	300000	
7.7	Trap Cameras	20 No.	25000/-	500000	0	0	8 No.	200000	0	0	0	0	0	0	0	0	8 No.	200000	0	0	0	0	4 No.	100000	L/s	500000
	Total:-			1480000		115000		850000		115000		0		100000		0		200000		0		0		100000		1480000
8	Awareness Programme																									
8.1	Exposure visit for community, staff, official & Management committee.	L/s	L/S	500000	L/s	100000	L/s	100000	L/s	100000	L/s	100000	L/s	100000	0	0	0	0	0	0	0	0	0	0	L/s	500000
8.2	Development of education materials & distribution.	L/s	L/S	500000	L/s	100000	L/s	100000	L/s	100000	L/s	100000	L/s	100000	0	0	0	0	0	0	0	0	0	0	L/s	500000
8.3	Lectures/workshops/slide shows in villages/schools.	L/s	L/S	500000	L/s	100000	L/s	100000	L/s	100000	L/s	100000	L/s	100000	0	0	0	0	0	0	0	0	0	0	L/s	500000
8.4	Celebration of special days .	L/s	L/S	250000	L/s	50000	L/s	50000	L/s	50000	L/s	50000	L/s	50000	0	0	0	0	0	0	0	0	0	0	L/s	250000
	Total:-			1750000		350000		350000		350000		350000		350000		0		0		0		0		0		1750000
9	Wild Life Interventions																									
9.1	Secret Services Funds	L/s	L/S	250000	L/s	50000	L/s	50000	L/s	50000	L/s	50000	L/s	50000	0	0	0	0	0	0	0	0	0	0	L/s	250000
9.2	Development of a GIS based map through OSCS	L/s	L/S	200000	L/s	0	L/s	100000	L/S	100000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	L/s	200000
	Total:-			450000		50000		150000		150000		50000		50000		0		0		0		0		0		450000
10	Eco Development & Entry Point Activity																									
10.1	Preparation of detailed eco development Project document.	L/s	L/S	500000	L/s	0	L/s	200000	L/S	300000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	L/s	500000

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

10.2	Forming Eco development committees (EDC) through engaging facilitators and village level motivators.	L/s	L/s	1000000	0	0	L/s	300000	L/s	300000	L/s	200000	L/s	200000	0	0	0	0	0	0	0	0	0	L/s	1000000	
10.3	Preparation of Microplan for villages	L/s	L/s	1000000	0	0	L/s	200000	L/s	200000	L/s	300000	L/s	300000	0	0	0	0	0	0	0	0	0	L/s	1000000	
10.4	Promotion of IGAS in villages	L/s	L/s	2500000	0	0	L/s	500000	L/s	500000	L/s	500000	L/s	1000000	0	0	0	0	0	0	0	0	0	L/s	2500000	
10.5	Entry points activities in local villages development of village 2 lac Per villeges per year 20 village.	L/s	L/s	16000000	0	0	L/s	4000000	L/s	4000000	L/s	4000000	L/s	4000000	0	0	0	0	0	0	0	0	0	L/s	16000000	
	Total:-			21000000		0		5200000		5300000		5000000		5500000		0		0		0		0		21000000		
11	Recurring charges																									
11.1	Electricity bill.	L/s	L/s	250000	0	50000	0	50000	0	50000	0	50000	0	50000	0	0	0	0	0	0	0	0	0		250000	
11.2	Cleansing material for wash rooms and campus area.	L/s	L/s	1000000	0	200000	0	200000	0	200000	0	200000	0	200000	0	0	0	0	0	0	0	0	0		1000000	
	Total:-			1250000		250000		250000		250000		250000		250000		0		0		0		0		0	1250000	
	Total :- 1+2+3+4+5+6+7+8+9+10+11			130615710		8190565		27183250		21739825		15262020		13780405		7179005		8943610		10815185		9428000		8093845	130615710	
	Total 10% contingencies & an escalations cover cost			13061571		819056.5		2718325		2173982.5		1526202		1378040.5		717900.5		894361		1081518.5		942800		809384.5	13061571	
	Grand Total			143677281		9009622		29901575		23913808		16788222		15158446		7896906		9837971		11896704		10370800		8903230	143677281	



MANAGEMENT PLAN OF RANJIT SAGAR DAM CONSERVATION RESERVE

PART III

ANNEXURE

Government of Punjab
Department of Forests and Wildlife Preservation
(Forest Branch)

NOTIFICATION

No. 34/11/2017-Ft.5/1057477/1 Chandigarh, dated the 5/9/2017

Whereas the Government of Punjab is of the opinion that due to its ecological, floral and faunal significance for the purpose of protecting, propagating and developing wildlife and its environment, the area mentioned in the following schedule should be declared as Conservation Reserve.

Now, therefore, in exercise of powers conferred under Section 36-A of the Wildlife (Protection) Act, 1972 as amended from time to time, the Governor of Punjab is pleased to declare the area of Ranjit Sagar Dam falling in district Gurdaspur, Punjab, totalling to 4608.24 Acre as "Ranjit Sagar Dam Conservation Reserve" from the date of issue of this notification. The provisions of sub section (2) of Sector 18, Sub Section (2), (3) and (4) of section 27, Section 30, 32 and clauses (b) and (c) of Section 33 of the Wildlife (Protection) Act, 1972 as amended from time to time shall also apply to the Conservation Reserve being notified. Boundary detail of the Conservation Reserve shall be as under: -

Part of Ranjit Sagar Reservoir which is in Punjab State and Green belt area.
Interstate Boundary of Jammu & Kashmir in Dam area in the North.
Interstate Boundary of Himachal Pradesh in the East.
Dhar Block and its villages in South.
Part of Ranjit Sagar Dam and Thien villages of Jammu & Kashmir in the West

SCHEDULE

Sr. No	District	Tehsil	Village/Tikka	H.B. No	Area (in Acres)	Description of Khasra Number
1	Gurdaspur	Dhar Kalan	Thara Uperla Tikka Fhangoh	399/2	28.45	129, 130min to 132min
2	Gurdaspur	Dhar Kalan	Thara Uperla Tikka Salwal	399/2	78.60	1056 min, 1056/1 min, 1057 min, 1088 min, 1096 min, 1098 min to 1100 min, 1101, 1102 min, 1103 min, 1104 min, 1105, 1106 min, 1107 to 1112, 1113 min to 1116 min, 1118 min, 1120min, 1121 min, 1125 to 1132, 1133/1, 1134 to 1146, 1147/1, 1147/2, 1148/1, 1148/2, 1149 to 1155.

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MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Sr. No	District	Tehsil	Village/Tikka	H.B. No	Area (in Acres)	Description of Khasra Number
3	Gurdaspur	Dhar Kalan	Thara Uperla Tikka Ladhwal	399/2	212.87	85 min to 89 min, 89/1 min, 91min to 93 min, 94, 94/1, 95, 95/1, 96 min, 98 min, 99 min, 100, 101, 103 min, 105 min, 106 min, 108 min, 110 min, 111 min, 113 min, 114 to 133, 133/1, 134 to 201, 201/1, 202 to 213, 214 min, 215 to 225, 226/1, 226/2, 227 to 444, 445 min to 449 min, 540 to 585, 586/1, 586/2, 587 to 589, 591.
4	Gurdaspur	Dhar Kalan	Thara Uperla Tikka Naloh	399/2	71.86	1 min, 2 min, 39 min, 78 min, 239 min, 244 min, 245 min, 246 min, 248 min, 254 min, 260 min, 263/1 min, 270 min, 279 to 281, 282, 283, 284.
5	Gurdaspur	Dhar Kalan	Hardosara	401	2.23	1
6	Gurdaspur	Dhar Kalan	Hardosara Tikka Fallal	401	1.67	1 min, 45 min, 64/2/2 min 143 min.
7	Gurdaspur	Dhar Kalan	Chamrour	402	206.62	1cut, 2 to 136, 137 cut, 138, 139 cut, 180 cut, 184 cut, 185 cut, 186 cut, 441 cut, 470 to 474, 495, 496, 520 to 583, 583/1, 584 to 595, 607, 608 to 610, 612, 613 cut, 614 to 719, 738 to 742, 802 cut, 803 to 805, 806 cut, 807 to 859, 860 cut, 863 cut, 901 cut, 907 cut, 908 cut, 923 cut, 925 cut, 926 to 928, 929 cut, 934 cut, 935 to 941, 948 cut, 920 cut.
8	Gurdaspur	Dhar Kalan	Phangota (Tikka) Chibber	403	335.04	1 to 64, 73, 74, 77, 91, 93 to 127, 129, 150, 172, 177 to 179, 195, 196, 227, 234, 237 to 239, 344 to 351, 363, 389, 391 to 422, 425 to 429, 431, 432 to 442, 443- 444 to 446, 448 to 455, 455/1, 456 to 466, 465 to 471-618.
9	Gurdaspur	Dhar Kalan	Phangota (Tikka) Katal	403	106.66	138 to 191, 191/1, 192 to 203, 204/1, 204/2, 205, 206, 207/1, 207/2, 208 to 220, 229/2, 230 to 242, 625/243, 626/243, 244, 312 to 315, 320 to 328, 329/2, 330 to 340, 341/1, 341/2, 342/1, 342/2, 343 to 366, 367/1, 367/2/1, 367/2/2, 368 to 414, 414/1, 415, 416, 418 to 430, 444 to 446, 538 to 556, 557/1, 557/2, 558 to 599, 610 to 614, 617, 618.
10	Gurdaspur	Dhar Kalan	Phangota (Tikka) Gulial	403	8.15	109 min, 131 to 161, 161/1, 162 to 172, 172/1, 173 to 205, 206/1, 206/2, 207, 208, 209, 210, 214, 217, 218 min to 220 min, 221 to 228, 232 to 235.
11	Gurdaspur	Dhar Kalan	Phangota (Tikka) Dalyal	403	295.14	2 to 5, 8, 11. 19 to 79, 81 to 258, 266 to 310, 410/311/1, 402/311/2, 312 to 346, 348 to 358, 360, 362 to 370, 371 to 375, 377 to 384, 385 min, 386 min, 387 min, 388 to 400, 540 to 585, 586/1, 586/2, 587 to 589.
12	Gurdaspur	Dhar Kalan	Phangota (Tikka)	403	190.94	1 to 4, 7 to 9, 14, 15, 23 to 63, 70 to 97,

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MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Sr. No	District	Tehsil	Village/Tikka	H.B. No	Area (in Acres)	Description of Khasra Number
13	Gurdaspur	Dhar Kalan	Atharwan Phangota Khas	403	416.18	1 to 10, 11/1, 11/2, 12 to 50, 50/1, 51, 51 to 59, 59/1, 60 to 87, 88/1, 88/2, 89 to 277, 274 min, 275, 276, 277 min, 278 to 384, 1164/385, 1165/385, 386 to 393, 1166/394, 1167/394, 395 to 414, 414/1, 415, 415/1, 416 to 428, 428/1, 429 to 474, 475, 475/2, 476 to 487, 781/1, 488 to 543, 544/1, 1162/544, 1163/544, 545 to 552, 553/1, 553/2, 554 to 687, 687/1, 688 to 731, 731/1, 732 to 789, 789/1, 790 to 873, 873/1, 874 to 913, 914/1, 914/2, 915 to 933, 934/1, 934/2, 935 to 944, 945/1, 945/2, 946 to 958, 958/1, 959 to 995, 996 to 1092, 1092/1, 1093 to 1151, 1152 min to 1154 min,
14	Gurdaspur	Dhar Kalan	Satri (Tikka) Patralwan	404	168.34	1 to 86, 87 min, 90 min, 91, 92 min, 93 min, 110 to 113, 132 to 137, 142 to 159, 163 min, 164 to 174, 175 min, 176 to 178, 179 min, 314 min, 315 to 317, 318 min, 319 to 322, 323 min, 324 min, 679 min to 672 min, 674 min, 676 min, 840/682 min, 683 to 687 min, 693 min to 696 min, 697, 698 min to 700min, 701, 702 min, 703 to 705, 706/1, 707 to 710, 711, 712, 713 to 716, 717 to 776, 740/1-2, 786, 787, 788 to 833,
15	Gurdaspur	Dhar Kalan	Satri (Tikka) Tanoh	404	134.29	1,2 min, 4 min, 7 min, 78 min, 107 min,
16	Gurdaspur	Dhar Kalan	Satri (Tikka) Trotwan	404	22.45	221 min, 222, 237 to 242,
17	Gurdaspur	Dhar Kalan	Sarti (Tikka) Marwan	404	27.59	203. min, 300, 300/1, 301, 302, 303, 318, 337, 341, 344, 344/1, 345, 345/1, 346 to 349, 359 to 403, 348 min, 358, 361 min, 362, 404 to 421, 431 min, 432 min, 433 min,
18	Gurdaspur	Dhar Kalan	Sarti (Tikka) Gunera	404	4.01	53, 54, 55, 217, 230, 231 to 244, 245/1, 245/2, 246, 247, 248, 250/2 min, 251 min, 251/1 min, 342 min, 343 min, 344, 345, 346 min, 350 min, 351 min,
19	Gurdaspur	Dhar Kalan	Sarti (Tikka) Kamial	404	79.52	131 min, 326, 347 min, 348, 349, 362, 363, 369, 371 to 385, 387, 397 to 404, 406 to 412, 409 min, 413, 414, 415 min, 416 min, 417, 418, 419 to 422, 563 to 566, 567,
20	Gurdaspur	Dhar Kalan	Sarti (Tikka) Satin	404	52.57	1 to 12, 15 to 19, 26, 27, 29 to 33, 99, 100, 101, 102/1 to 102/4, 115/1 min, 115/2 min, 116, 119 to 129, 130 min, 132 min, 134 min, 158, 159 to 168,
21	Gurdaspur	Dhar Kalan	Sarti (Tikka) Har	404	7.31	2 min, 4, 10, 13 min, 21, 22. min, 23 to 26, 27 min, 28, 29 min, 31 min,
22	Gurdaspur	Dhar	Sarti Khas	404	85.99	1 min, 2 min, 3 to 11, 61 min, 62

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MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Sr. No	District	Tehsil	Village/ Tikka	H.B. No	Area (in Acres)	Description of Khasra Number
		Kalan				min, 134 min, 139/1A, 139/2A, 139/3/1/1, 139/3/1/2, 139/3/2, 139/3/3 min, 139/3/4, 139/3/5, 139/3/6, 139/3/7 min, 139A/3/7, 139/3/8 min, 139/3/9 min, 147 min, 159 min, 160 min, 161 min, 423 to 426, 427/1 to 427/4, 428, 429, 429/1, 429/2, 430, 431/1, 431/2, 432 min, 433, 434, 437, 438, 439 min, 440, 441 to 444, 445 min, 446, 447, 448, 527 to 531, 531/1, 531/2, 533, 534, 535/1 to 535/10, 536 to 539, 540 min, 541
23	Gurdaspur	Dhar Kalan	Darkua Bangla Tikka Patta	405	55.41	1 min, 5 min, 7 min, 8, 9 min, 10 min, 11 min, 12, 13, 14 min, 15, 16, 17 min, 18 min, 22 min, 23, 26 min, 143 to 145,
24	Gurdaspur	Dhar Kalan	Darkua Bangla Tikka Godhwan	405	229.45	85 to 87, 547/88, 548/88, 89 to 112, 113/1, 113/2, 114 to 154, 155/1, 155/2, 156 to 162, 163/1, 163/2, 555/164, 556/164, 165 to 173, 174/1, 174/2, 175 to 227, 549/228, 520/228 229 to 235, 551/236, 552/236, 237 to 335, 557/336, 558/336, 337 to 432, 559/433, 560/433, 434 to 472, 473 min, 474, 475, 480 min, 483 to 521, 523 to 543, 539 to 546,
25	Gurdaspur	Dhar Kalan	Darkua Bangla Khas	405	310.07	4 to 89, 520/90, 421/90, 91 to 102, 103/1, 103/2, 104 to 127, 128/1, 128/2, 129 to 220, 221/1/1, 221/1/2, 221/2, 222/1/1, 222/1/2, 222/2, 223 to 258, 259/1, 259/2, 260 to 264, 265/1, 265/2, 266 to 281, 282 min, 284 to 292, 293 to 342, 522/343, 523/343, 344, 345/2 min, 354 to 360, 361 min, 362 to 417, 419 to 451, 452/1, 452/2, 453 to 465, 466 min, 469 min, 516 min, 518
26	Gurdaspur	Dhar Kalan	Darbahn Tikka Chound	406	251.94	1 to 114, 115 min, 125 min, 126 to 140, 141 min, 142 to 146, 147 min, 148 to 150
27	Gurdaspur	Dhar Kalan	Darbahn Khas	406	46.60	802/10 min, 806/33 min, 34 min, 92 min, 100 min, 101, 187 min, 188/1 min, 807/189/1 min, 808/189/1 min, 189/2 min, 810/189/3 min, 811/189/3 min, 866/783 min, 867/783 min,
28	Gurdaspur	Dhar Kalan	Dukhniali Tikka Sarowari	407	4.70	78 min, 79 min, 81 min,
29	Gurdaspur	Dhar Kalan	Dukhniali Tikka Lajong	407	2.80	60
30	Gurdaspur	Dhar Kalan	Barsudal Tikka Mothwan	409	122.23	1,2,3 min, 4 to 6, 7 min to 9 min, 10 to 48, 49 min, 50, 51 min, 55, 56 min, 56/1, 57 min to 59, 60, 61, 62 min, to 65 min, 79 min, 80 min, 82 min, 83 min, 83/2 min, 85 min, 86 min, 87 to 92, 192/93, 195/93, 93, 93/1, 94 min, 97 min,

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MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Sr. No	District	Tehsil	Village/ Tikka	H.B. No	Area (in Acres)	Description of Khasra Number
						102 min to 105 min, 106, 107, 108 min, 109 to 111, 112 min to 114 min, 137 min, 138 min, 197/172 min, 173 min, 202/182 min, 184 min, 185 min, 186 min, 187, 188 min, 189 to 191, 192, 193 min.
31	Gurdaspur	Dhar Kalan	Barsudal Tikka Sudal	409	29.33	56 min, 58 min, 59 to 63, 64 min, 65 min, 66, 67 min, 68, 69 min, 308 min to 311 min, 312 to 327 min, 328 min, 330 min, 331 min, 334 min,
32	Gurdaspur	Dhar Kalan	Barsudal Tikka Karoon	409	79.81	2 min, 3 to 5, 11 min, 77 min, 78 min, 80 min, 81 min, 82, 84 min, 85 to 90, 91 min, 92, 93 min, 95 min, 96 min, 97 min, 98 min, 99, 107 min to 109 min, 110 to 116, 117 min, 118 min, 119 to 121, 122 min, 123 min, 127 to 130, 131 min, 133 min, to 136 min, 142 min, 144 min, 145 min, 147 min, 148, 149 min, 150 to 163, 164 min, 165 min, 169 min, 170 min, 172 min, 175 min, 180 min, 241 min, 242 min, 243, 244 min to 246 min, 248 min, 291 min, 292 min, 294/1, 294/2 min, 295 to 298, 302, 303, 309 min 310 min, 313 min, 315 min,
33	Gurdaspur	Dhar Kalan	Barsudal Tikka Phagli	409	72.45	1,2, 3 min, 4 to 8, 9 min to 12 min, 14 min, 15 min, 17 min, 22 min, 23 to 30, 31 min, 32
34	Gurdaspur	Dhar Kalan	Bhamlada Tikka Panjala	410	7.77	1,2 min, 8 min, 9 min, 10 to 12, 13 min to 15 min, 97 min, 121 min to 123 min, 124, 125 min, 126 min, 132 min to 134 min, 146 min, 147 min, 175 min, 181 min,
35	Gurdaspur	Dhar Kalan	Bhamlada Khas	410	6.10	1 min, 2 min, 4 min,
36	Gurdaspur	Dhar Kalan	Naloh Khas	411	55.23	1 to 20, 24 to 49, 53 to 67, 70, 81, 88 to 90, 101, 111 to 115, 117, 119, 120, 207, 209, 470, 482, 489/1, 490 to 493, 501, 502,
37	Gurdaspur	Dhar Kalan	Naloh Tikka Niari	411	161.23	1,2,3, 4/1, 12 to 18, 22 to 26, 38, 49, 50, 57, 58, 108 to 123, 123/1, 124 to 130, 150, 164, 185 to 191,
38	Gurdaspur	Dhar Kalan	Naloh Tikka Plangi	411	233.16	1 to 17, 28 to 36, 38, 39, 60, 136 to 139, 154 to 157, 183 to 185, 187 to 190, 196
39	Gurdaspur	Dhar Kalan	Phagli Tikka Kangwan	413	35.72	58 min, 59, 60 min, 61 min, 62 to 68, 69 min to 71 min, 72, 73 min, 78 min to 80 min, 125 min, 126 min, 134 min, 135 min, 136, 137 min, 138 min, 139 to 142, 143 min, 145 min.
40	Gurdaspur	Dhar Kalan	Phagli Tikka Kularra	413	367.76	53 to 56, 57 to 67
				Total	4608.24	

Himmat Singh
Special Chief Secretary, Government of Punjab

5

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Endst. No. 34/11/2017-Ft.5/1057477/2-? Chandigarh, dated the 5/2/2017

A copy is forwarded to the following for information and further necessary action: -

1. Principal Chief Conservator of Forests (HOFF), Punjab.
2. Principal Chief Conservator of Forests (HAG+) and Chief Wildlife Warden, Punjab.
3. A copy with a spare copy of the notification is forwarded to the Controller, Printing & Stationery, Punjab for publication the same in Government gazette. *through nodal officer, PCCF?*
4. Deputy Commissioner, Gurdaspur.
5. Senior Superintendent of Police, Gurdaspur.
6. Divisional Forests Officer (Territorial and Wildlife), Pathankot.

MS
Additional Secretary, Government of Punjab
Department of Forests and Wildlife Preservation

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Department of Forests and Wildlife Preservation
(Forest Branch)

NOTIFICATION

No.34/11/2017-FT-5/ 117774571 Chandigarh, dated the 5/3/2018

Whereas, Punjab Government vide its Notification No. 34/11/2017-Ft-5/1057477/1 dated 5.9.2017 declared 4608.24 Acres area of Ranjit Sagar Dam as **Ranjit Sagar Dam Conservation Reserve** under Wildlife (Protection) Act, 1972.

Whereas, Punjab Infrastructure Development Board (PIDB) has made a request to exclude 48.53 Acres area of village Naloh Tikka Plangi falling in the said Conservation Reserve which was transferred to them and forms a part of land proposed for the development of International Standard Tourism Theme Destination

In view of the above said para, after considering the request of PIDB, the Governor of Punjab is pleased to amend the area of Ranjit Sagar Dam Conservation Reserve from 4608.24 Acres to 4559.71 Acres after excluding following Khasra Nos. or their parts belonging to village Naloh Tikka Plangi land measuring 48.53 Acres that forms a part of land transferred to PIDB from the area of Ranjit Sagar Dam and earlier notified by Punjab Government vide Notification No. 34/11/2017-Ft-5/1057477/1 dated 5.9.2017 with immediate effect.

District	Tehsil	Name of Village	Khasra No.	Area	
				Kanal	Marla
Gurdaspur	Dhar	Naloh Tikka Plangi	6-min	9	22
Gurdaspur	Dhar	Naloh Tikka Plangi	7	41	4
Gurdaspur	Dhar	Naloh Tikka Plangi	8-min	36	1
Gurdaspur	Dhar	Naloh Tikka Plangi	9-min	2	10
Gurdaspur	Dhar	Naloh Tikka Plangi	30	16	8
Gurdaspur	Dhar	Naloh Tikka Plangi	32	5	3
Gurdaspur	Dhar	Naloh Tikka Plangi	34-min	56	6
Gurdaspur	Dhar	Naloh Tikka Plangi	35-min	4	11
Gurdaspur	Dhar	Naloh Tikka Plangi	36-min	54	19
Gurdaspur	Dhar	Naloh Tikka Plangi	38-min	92	10
Gurdaspur	Dhar	Naloh Tikka Plangi	136-min	102	9
Gurdaspur	Dhar	Naloh Tikka Plangi	139-min	87	6
Gurdaspur	Dhar	Naloh Tikka Plangi	5	0	0
Gurdaspur	Dhar	Naloh Tikka Plangi	137	0	0
Gurdaspur	Dhar	Naloh Tikka Plangi	138	0	0
Total				48.53 Acres	

Satish Chandra

Additional Chief Secretary, Govt. of Punjab,
Department of Forests and Wildlife Preservation.

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Endst. No.34/11/2017-FT-5/1177745728 Chandigarh, dated the 5/3/2018

A copy is forwarded to the following for information and further necessary action: -

1. Principal Chief Conservator of Forests (HOFF), Punjab.
- ✓ 2. Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Punjab.
3. Managing Director, Punjab Infrastructure Development Board, Sector 34A, Chandigarh.
4. Nodal officer o/o Principal Chief Conservator of Forests, Forest Complex, Sector 68, Mohali with a request to send a copy with a spare copy of the notification to the Controller, Printing & Stationery, Punjab for publication the same in Government gazette.
5. Deputy Commissioner, Gurdaspur.
6. Senior Superintendent of Police, Gurdaspur.
7. Divisional Forests Officer (Territorial and Wildlife), Pathankot.

Additional Secretary, Govt. of Punjab,
Department of Forests and Wildlife Preservation.

ਪਿੱਟ ਅੰਕ ਨੰਬਰ 7815-19

ਮਿਤੀ: 06-03-2018

ਉਪਰੋਕਤ ਦੀ ਇੱਕ ਨਕਲ ਹੇਠ ਲਿਖਿਆਂ ਨੂੰ ਸੂਚਨਾ ਤੇ ਲੋੜੀਂਦੀ ਕਾਰਵਾਈ ਲਈ ਭੇਜੀ ਜਾਂਦੀ ਹੈ:-

1. ਮੈਨੇਜਿੰਗ ਡਾਇਰੈਕਟਰ, ਪੰਜਾਬ ਬੁਨਿਆਦੀ ਢਾਂਚਾ ਵਿਕਾਸ ਬੋਰਡ, ਸੈਕਟਰ 34-ਏ, ਚੰਡੀਗੜ੍ਹ।
2. ਵਣ ਪਾਲ (ਜੰਗਲੀ ਜੀਵ) ਸ਼ਿਵਾਲਕ ਸਰਕਲ, ਐਸ.ਏ.ਐਸ ਨਗਰ
2. ਡਿਪਟੀ ਕਮਿਸ਼ਨਰ ਕਮਿਸ਼ਨਰ, ਗੁਰਦਾਸਪੁਰ।
4. ਵਣ ਮੰਡਲ ਅਫਸਰ (ਇਲਾਕਾਈ) ਅਤੇ ਵਣ ਮੰਡਲ ਅਫਸਰ (ਜੰਗਲੀ ਜੀਵ), ਪਠਾਨਕੋਟ।

ਪ੍ਰਧਾਨ ਮੁੱਖ ਵਣ ਪਾਲ (ਜੰਗਲੀ ਜੀਵ) ਅਤੇ
ਮੁੱਖ ਜੰਗਲੀ ਜੀਵ ਵਾਰਡਨ, ਪੰਜਾਬ,
ਐਸ.ਏ.ਐਸ ਨਗਰ।

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

ਪੰਜਾਬ ਸਰਕਾਰ
 ਵਣ ਅਤੇ ਜੰਗਲੀ ਜੀਵ ਸੁਰੱਖਿਆ ਵਿਭਾਗ,
 ਦਫਤਰ ਵਣ ਮੰਡਲ ਅਫਸਰ (ਜੰਗਲੀ ਜੀਵ) ਫਾਰੈਸਟ ਕੰਪਲੈਕਸ, ਡਲਹੋਜੀ ਰੋਡ, ਪਠਾਨਕੋਟ ।
 E.mail- dfowildlifepathankot@gmail.com.
 ਫੋਨ ਨੰਬਰ: 0186-2250092

ਸੇਵਾ ਵਿਖੇ

ਪ੍ਰਧਾਨ ਮੁੱਖ ਵਣ ਪਾਲ (ਜੰਗਲੀ ਜੀਵ)
 ਅਤੇ ਮੁੱਖ ਜੰਗਲੀ ਜੀਵ ਵਾਰਡਨ,
 ਪੰਜਾਬ, ਐਸ.ਏ.ਐਸ ਨਗਰ ।

ਨੰਬਰ: 1643 ਮਿਤੀ: 04/12/2018

ਵਿਸ਼ਾ:

ਰਣਜੀਤ ਸਾਗਰ ਡੈਮ ਕੰਜਰਵੇਸ਼ਨ ਰਿਜ਼ਰਵ ਦੀ ਜੰਗਲੀ ਜੀਵ (ਸੁਰੱਖਿਆ) ਐਕਟ, 1972 ਦੀ ਧਾਰਾ 36ਬੀ ਅਧੀਨ ਕੰਜਰਵੇਸ਼ਨ ਰਿਜ਼ਰਵ ਮੈਨੇਜਮੈਂਟ ਕਮੇਟੀ ਦਾ ਗਠਨ ਕਰਨ ਲਈ ਤਜਵੀਜ਼ ਭੇਜਣ ਬਾਰੇ ।

ਹਵਾਲਾ:

ਆਪ ਜੀ ਦਾ ਪੱਤਰ ਨੰਬਰ 4438 ਮਿਤੀ 25.10.2018

ਉਪਰੋਕਤ ਹਵਾਲੇ ਅਧੀਨ ਪੱਤਰ ਦੇ ਸਬੰਧ ਵਿੱਚ ਆਪ ਜੀ ਨੂੰ ਬੇਨਤੀ ਕੀਤੀ ਜਾਂਦੀ ਹੈ ਕਿ ਰਣਜੀਤ ਸਾਗਰ ਡੈਮ ਕੰਜਰਵੇਸ਼ਨ ਰਿਜ਼ਰਵ ਦੀ ਮੈਨੇਜਮੈਂਟ ਕਮੇਟੀ ਜੰਗਲੀ ਜੀਵ ਐਕਟ, 1972 ਦੀ ਧਾਰਾ 36ਬੀ ਅਧੀਨ ਦੀ ਚੋਣ ਕਰਨ ਉਪਰੰਤ ਤਜਵੀਜ਼ ਹੇਠ ਅਨੁਸਾਰ ਆਪ ਜੀ ਨੂੰ ਪ੍ਰਵਾਨਗੀ ਲਈ ਭੇਜੀ ਜਾਂਦੀ ਹੈ :-

ਲੜੀ ਨੰ:	ਨਾਂ/ਸਰਵ ਸ਼ੀ	ਕਮੇਟੀ ਅਹੁੱਦਾ
01	ਵਣ ਪਾਲ (ਜੰਗਲੀ ਜੀਵ ਸ਼ਿਵਾਲਿਕ ਸਰਕਲ) ਪੰਜਾਬ	ਚੇਅਰਮੈਨ
02	ਵਣ ਮੰਡਲ ਅਫਸਰ (ਜੰਗਲੀ ਜੀਵ) ਪਠਾਨਕੋਟ ।	ਮੈਂਬਰ ਸੈਕਟਰੀ
03	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਬੜਾ ਉਪਰਲਾ (H.B. No. 399/2)	ਮੈਂਬਰ
04	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਧਾਰਕਲਾਂ (H.B.No. 402)	ਮੈਂਬਰ
05	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਚਿੱਬੜ (H.B.No. 403)	ਮੈਂਬਰ
06	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਸਾਰਟੀ (H.B.No. 404)	ਮੈਂਬਰ
07	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਦਰਨੂਆ (H.B.No. 405)	ਮੈਂਬਰ
08	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਦਰਬਾਨ (H.B.No. 406)	ਮੈਂਬਰ
09	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਦੁਖਨਿਆਲੀ (H.B.No. 407)	ਮੈਂਬਰ
10	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਬਾੜ ਸੁਡਾਲ (H.B.No. 409)	ਮੈਂਬਰ
11	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਭਮਲਾਦਾ (H.B.No. 410)	ਮੈਂਬਰ
12	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਨਿਆੜੀ (H.B.No. 411)	ਮੈਂਬਰ
13	ਮੈਂਬਰ ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਫੋਗਲੀ (H.B.No. 413)	ਮੈਂਬਰ
14	ਵੈਟਨੇਰੀ ਅਫਸਰ ਧਾਰ ਕਲਾਂ	ਮੈਂਬਰ
15	ਖੇਤੀਬਾੜੀ ਅਫਸਰ ਬਲਾਕ ਧਾਰ ਕਲਾਂ	ਮੈਂਬਰ
16	ਬਲਾਕ ਵਿਕਾਸ ਅਤੇ ਪੰਚਾਇਤ ਅਫਸਰ ਧਾਰ ਕਲਾਂ	

ਇਸਤੋਂ ਇਲਾਵਾ ਤਿੰਨ NGO's ਦੇ ਮੈਂਬਰ ਵੀ ਪਾਏ ਜਾਣੇ ਹਨ ਜੋ ਕਿ ਮੁੱਖ ਦਫਤਰ ਵੱਲੋਂ ਆਪਣੇ ਪੱਧਰ ਤੇ ਸ਼ਾਮਲ ਕਰ ਲਏ ਜਾਣ ਜੀ । ਰਿਪੋਟ ਯੋਗ ਕਾਰਵਾਈ ਲਈ ਭੇਜੀ ਜਾਂਦੀ ਹੈ ।

ਮਸ
 ਵਣ ਮੰਡਲ ਅਫਸਰ
 ਜੰਗਲੀ ਜੀਵ ਮੰਡਲ
 ਪਠਾਨਕੋਟ ।

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

Notification 01

No. 34/11/2017-FT-5/1392630/1 Chandigarh, dated 11/11/2019

The Government of Punjab vide its notification No. 34/11/2017-FT-5/1177745/1 dated 5.3.2018 declared 4559.71 acres area of Ranjit Sagar Dam as Ranjit Sagar Dam Conservation Reserve. In exercise of the powers conferred under Section 36(B)(1) of the Wildlife (Protection) Act, 1972, the Governor of Punjab is pleased to constitute "**Conservation Reserve Management Committee**" for Ranjit Sagar Dam Conservation Reserve. The Committee shall consist of following members.

1.	Official Members Divisional Forest Officer (Wildlife) Pathankot	Chairman ✓
2.	Representatives of Panchayati Raj Institutions	
(i)	Block Development Officer, Dhar	Member
(ii)	Sarpanch/Member Gram Panchayat, Village Thara Uperla (Hadbast No. 399/2)	Member
(iii)	Sarpanch/Member Gram Panchayat, Village Dhar Kalan (Hadbast No. 402)	Member
(iv)	Sarpanch/Member Gram Panchayat, Village Chibber (Hadbast No. 403)	Member
(v)	Sarpanch/Member Gram Panchayat, Village Sarti (Hadbast No. 404)	Member
(vi)	Sarpanch/Member Gram Panchayat, Village Darkua (Hadbast No. 405)	Member
(vii)	Sarpanch/Member Gram Panchayat, Village Darbhan (Hadbast No. 406)	Member
(viii)	Sarpanch/Member Gram Panchayat, Village Dukhniali (Hadbast No. 407)	Member
(ix)	Sarpanch/Member Gram Panchayat, Village Barsudal (Hadbast No. 409)	Member
(x)	Sarpanch/Member Gram Panchayat, Village Bhamlada (Hadbast No. 410)	Member
(xi)	Sarpanch/Member Gram Panchayat, Village Niari (Hadbast No. 411)	Member
(xii)	Sarpanch/Member Gram Panchayat, Village Phogli (Hadbast No. 413)	Member
3.	Department of Animal Husbandry & Agriculture.	
(i)	Veterinary Officer, Dhar Kalan	Member
(ii)	Agriculture Officer, Block Dhar Kalan	Member
4.	Representatives of NGOs	
(i)	NGO (To be nominated)	Member
(ii)	NGO (To be nominated)	Member
(iii)	NGO (To be nominated)	Member
5.	Range Forest Officer (Wildlife) Pathankot	Member Secretary ✓

1. The Committee shall render advice on measures to be taken for better Conservation and Management of the Ranjit Sagar Dam Conservation Reserve to Chief Wildlife Warden, Punjab.

MANAGEMENT PLAN FOR RANJIT SAGAR DAM CONSERVATION RESERVE.

2. The Committee shall regulate its own procedure including quorum.
3. The ex-officio members mentioned at Sr. No. 4 shall be nominated for only two years.
4. No TA/DA shall be paid to the members of this Committee for performing their duties as members.
5. The Committee shall meet at least once in a three months and will submit its report to Chief Wildlife Warden, Punjab.


Chandigarh
dated, the 8th January, 2019

Dr. Roshan Sunkaria
Additional Chief Secretary to Govt. of Punjab,
Department of Forests and Wildlife Preservation
Chandigarh, dated: 11/1/2019

Endst. No. 34/11/2017-FT-5/1392630/2-10

A copy is forwarded to the followings for information and necessary action: -

1. Principal Chief Conservator of Forests (HoFF), Punjab.
2. ✓ Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Punjab.
3. Conservator of Forests (Wildlife), Shiwalik Circle, Punjab.
4. Conservator of Forests, North Circle, Hoshiarpur.
5. Deputy Commissioner, Pathankot.
6. Sr. Superintendent of Police, Pathankot.
7. Divisional Forest Officer, Territorial/Wildlife, Pathankot.
8. A copy with a spare copy of the notification is forwarded to the Controller, Printing & Stationery, Punjab for printing this notification in the Extra-ordinary Gazette with a request to supply 50 copies of the printed notification may be supplied to this department.
9. Concerned Members.


Additional Secretary, Govt. of Punjab
Department of Forests and Wildlife Preservation.