India
Nangal Wildlife Sanctuary

Designation date: 26 September 2019
Site number: 2407
Coordinates: 31°23′46″N 76°22′16″E
Area: 116,00 ha

https://rsis.ramsar.org/ris/2407
Created by RSIS V.1.6 on - 1 February 2020
1 - Summary

Nangal Wildlife Sanctuary is a human-made reservoir, which came into existence as a result of the Bhakra-Nangal Project in 1961. The Bhakra-Nangal Dams are among the first river valley multipurpose developmental projects undertaken by India immediately after independence. The Bhakra Dam is constructed across the river Sutlej and at a height of 207.26 m is the second highest dam in India. Some 13 km downstream of the Bhakra Dam, another dam was constructed across the Sutlej near the town of Nangal with the purpose of using it as a backup in case of fluctuation of the Bhakra Dam water levels. The construction of this dam, which is 29 m high and 304.8 m long, has led to the formation of a reservoir, which over the course of time has become a good habitat for wildlife.

The surrounding forests are rich in wildlife as it is situated in the highly eco-sensitive Shiwalik foothills and the presence of the reservoir has attracted several resident as well as migratory birds, making it a vibrant wetland. Recognising the ecological significance of the wetland, the Government of Punjab declared the wetland as a Wildlife Sanctuary in 2009. Nangal Sanctuary is a very important and strategic refuelling base for the very long distance/route migratory birds. Species of high conservation significance such as Axis porcinus, Manis crassicaudata, Panthera pardus, Sterna acuticuda, Aythya farina, Aythya nyroca, Ciconia episcopus, Clanga clanga, Neophron percnopterus, Mycteria leucocephala, Haliaeetus leucoryphus, Python molurus, Ompok pabda, Chitala chitala, Tor putitora, Cirrhinus cirrhosis and Wallago attu have been reported in the Nangal wildlife sanctuary. Department of Forests and Wildlife Preservation, Punjab along with WWF-India annually conducts Asian water bird census in Nangal wildlife sanctuary. The annual water bird count varies between 5312-6113. A total of 55 migratory water birds were recorded during Asian water bird census conducted in Nangal wildlife sanctuary from 2017-2019.

The Sanctuary attracts huge tourists as the wetland is not only famous for its wildlife but because of its historic importance. It was on the banks of the Nangal dam that Indian PM Nehru and Chinese PM Chou En Lai formalised the "Panchsheel" or the five Principles of Peaceful Coexistence in 1954.
2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1
Name: Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Punjab.
Institution/agency: Department of Forests & Wildlife Preservation.
Postal address: Forest Complex, Tower no 2, 2nd floor, Sec-68, S.A.S Nagar, Punjab.
E-mail: cwlwpunjab@gmail.com
Phone: 0172-2298010

Compiler 2
Name: Rivers, Wetlands and Water Policy
Institution/agency: World Wide Fund for Nature - India
Postal address: 172-B, Max Muller Marg, Lodi Estate, New Delhi - 110 003
E-mail: gkanwar@wwfindia.net
Phone: 011-43516280

2.1.2 - Period of collection of data and information used to compile the RIS
From year: 2012
To year: 2019

2.1.3 - Name of the Ramsar Site
Official name (in English, French or Spanish): Nangal Wildlife Sanctuary

2.2 - Site location

2.2.1 - Defining the Site boundaries
b) Digital map/image
Former maps: 0

Boundaries description:
The site’s boundary is exactly the same as the Nangal Wildlife Sanctuary. It is located at a distance of about 100 km from Chandigarh in Punjab in northwest India. The wetland is situated at 31°22'N 76°23'E / 31°.37'N, 76°.38'E and has an average elevation of about 1069 feet (326 metres).

NORTH: Boundary of Himachal Pradesh and private land of village Swamipur bagh and Khera bagh.

SOUTH: Urban area of Nangal town and expanse of Sutlej River.

EAST: Private / Urban land of villages Talwara, Dabheta and Hambewal.

WEST: Private land of village Bhabour Sahib and Naya Nangal

2.2.2 - General location
a) In which large administrative region does the site lie? Rupnagar
b) What is the nearest town or population centre? Nangal

2.2.3 - For wetlands on national boundaries only
a) Does the wetland extend onto the territory of one or more other countries? Yes No ☑️
b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party?
Yes ☐ No ☑

### 2.2.4 - Area of the Site

<table>
<thead>
<tr>
<th>Official area, in hectares (ha):</th>
<th>116</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area, in hectares (ha) as calculated from GIS boundaries</td>
<td>116.353</td>
</tr>
</tbody>
</table>

### 2.2.5 - Biogeography

<table>
<thead>
<tr>
<th>Biogeographic regions</th>
<th>Biogeographic region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater Ecoregions of the World (FEOW)</td>
<td>Lower &amp; Middle Indus</td>
</tr>
</tbody>
</table>

Other biogeographic regionalisation scheme

Biogeographic regionalization scheme: Terrestrial Eco-regions of the World.

- **Scientific Code:** IM1304
- **Eco-Zone:** Indomalayan
- **Biome:** Desert and xeric scrub-land
- **Eco-region:** Northwestern scrub forest
- **Country:** India. North-western part in State of Punjab.
3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

- Criterion 2: Rare species and threatened ecological communities
- Criterion 3: Biological diversity

Justification

Species of conservation significance - Axis porcinus, Manis crassicaudata, Panthera pardus, Python molurus, Ompok pabda, Chitala chitala, Tor putitora, Cirrhinus cirrhosis and Wallago attu.

3.2 - Plant species whose presence relates to the international importance of the site

3.3 - Animal species whose presence relates to the international importance of the site
<table>
<thead>
<tr>
<th>Phylum</th>
<th>Scientific name</th>
<th>Common name</th>
<th>Species qualifies under criterion</th>
<th>Species contributes under criterion</th>
<th>Pop. Size</th>
<th>Period of pop. Est.</th>
<th>% occurrence 1)</th>
<th>IUCN Red List</th>
<th>CITES Appendix I</th>
<th>CMS Appendix I</th>
<th>Other Status</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds</td>
<td>CHORDATA</td>
<td>Aquila clanga</td>
<td>Greater Spotted Eagle</td>
<td>✔️򄇀 ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHORDATA</td>
<td>Aethya ferina</td>
<td>Common Pochard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>VU</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>CHORDATA</td>
<td>Haliaeetus leucoryphus</td>
<td>Pallas's Fish Eagle</td>
<td>✔️򄇀 ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
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<tr>
<td></td>
<td>CHORDATA</td>
<td>Mycteria leucocephala</td>
<td>Painted Stork</td>
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<td>NT</td>
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</tr>
<tr>
<td></td>
<td>CHORDATA</td>
<td>Neophron percnopterus</td>
<td>Egyptian Vulture</td>
<td>✔️򄇀 ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
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</tr>
<tr>
<td></td>
<td>CHORDATA</td>
<td>Sterna acuticuda</td>
<td>Black-bellied Tern</td>
<td>✔️򄇀 ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
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<td></td>
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<tr>
<td>Others</td>
<td>CHORDATA</td>
<td>Axis porcinus</td>
<td>Hog deer</td>
<td>✔️򄇀 ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
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<td></td>
<td>EN</td>
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</tr>
<tr>
<td></td>
<td>CHORDATA</td>
<td>Manis crassicaudata</td>
<td>Indian Pangolin</td>
<td>✔️򄇀 ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
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<td>EN</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHORDATA</td>
<td>Panthera pardus</td>
<td>Leopard</td>
<td>✔️򄇀 ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
<td></td>
<td></td>
<td></td>
<td>VU</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHORDATA</td>
<td>Python molurus</td>
<td>India Rock Python</td>
<td>✔️򄇀 ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Near Threatened</td>
<td></td>
</tr>
</tbody>
</table>

1) Percentage of the total biogeographic population at the site

Note

Other accepted scientific name/synonym of important species are:

1. Greater spotted eagle: Clanga clanga (IUCN), Aquila clanga
2. Indian rock Python: Python molurus molurus (IUCN); Python molurus, (Linnaeus, 1758)

3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>
4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

Nangal Wildlife Sanctuary has abundant flora and fauna. It supports migratory waterbirds both in summer and winter. It provides important feeding & nesting areas for a wide range of resident waterbirds. The wildlife sanctuary offers a variety of habitats to different bird's species throughout the year. It is an abode to several vulnerable and near threatened species. These include hog deer, Indian pangolin, Indian rock python, common pochard, ferruginous pochard and Pallas's fish eagle. The characteristic vegetation of the wetland includes Typha elephantine, Phragmites karka and tall grasses, mainly Saccharum spontaneum and Saccharum bengalense. There are also Cenchrus species (anjan grass) in sandy places and Desmostachys bipinnata (dab) flourishes under dry conditions. Vetiveria zizanoides, Arundo donax (nara), Eragrostis atrovirens, Cyperus rotundus, Cyperus difformis (nut grass) are the other major species in the marshy areas. Some of the plankton identified from Nangal wetland are Ulothrix sp., Pinnullaria sp., Chlorella sp., Spirogyra sp., Volvox sp., Chlamydomonas sp., Phyllanthus emblica (Amla), Ankoistrodesmus sp., Navicula sp., Keratella sp., Euglena sp., Diatoma sp., and Brachionus sp.

Nangal Wildlife Sanctuary is an important ecosystem for its significant hydrological values it helps to regulate the water cycle, stabilize micro-climate, helps in recharging of groundwater and maintains the quality and quantity of water. It plays a major role in trapping the sediments and also in preventing and reducing the heavy flow of water and save public and property from devastating floods. It also regulates nutrient cycling which help in optimum functioning of hydrological, ecological and biological processes of nature.

4.2 - What wetland type(s) are in the site?

<table>
<thead>
<tr>
<th>Inland wetlands</th>
<th>Local name</th>
<th>Ranking of extent (1: greatest - 4: least)</th>
<th>Area (ha) of wetland type</th>
<th>Justification of Criterion 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water &gt; Flowing water &gt;&gt; M Permanent rivers/streams/creeks</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Human-made wetlands</th>
<th>Local name</th>
<th>Ranking of extent (1: greatest - 4: least)</th>
<th>Area (ha) of wetland type</th>
<th>Justification of Criterion 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>6: Water storage areas/Reservoirs</td>
<td>Nangal</td>
<td>1</td>
<td>116</td>
<td></td>
</tr>
</tbody>
</table>

4.3 - Biological components

4.3.1 - Plant species

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>Common name</th>
<th>Position in range / endemism / other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aegle marmelos</td>
<td>Bel</td>
<td></td>
</tr>
<tr>
<td>Bambusa bambos</td>
<td>Bamboo</td>
<td></td>
</tr>
<tr>
<td>Cadotropis procera</td>
<td>Aak</td>
<td></td>
</tr>
<tr>
<td>Cassia fistula</td>
<td>Amaltas</td>
<td></td>
</tr>
<tr>
<td>Nelumbo nucifera</td>
<td>sacred lotus</td>
<td></td>
</tr>
<tr>
<td>Phoenix sylvestris</td>
<td>Khajur</td>
<td></td>
</tr>
<tr>
<td>Phyllanthus emblica</td>
<td>Amla</td>
<td></td>
</tr>
<tr>
<td>Terminalia arjuna</td>
<td>Arjun</td>
<td></td>
</tr>
</tbody>
</table>

| Invasive alien plant species | Common name | Impacts | |
|-----------------------------|-------------|---------|
| Eichhornia crassipes | Water Hyacinth | Potentially | No change |

4.3.2 - Animal species

<no data available>

4.4 - Physical components

What is the Site like?, S4 - Page 1
4.4.1 - Climate

<table>
<thead>
<tr>
<th>Climatic region</th>
<th>Subregion</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: Dry climate</td>
<td>BWk: Mid-latitude desert (Mid-latitude desert)</td>
</tr>
</tbody>
</table>

Not known

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres) 326

a) Maximum elevation above sea level (in metres) 330

- Entire river basin
- Upper part of river basin
- Middle part of river basin
- Lower part of river basin
- More than one river basin
- Not in river basin
- Coastal

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Sutlej River Basin

4.4.3 - Soil

- Mineral
- Organic
- No available information

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)?

- Yes
- No

Please provide further information on the soil (optional)

The soil is moderately acidic in reaction and sandy loam in texture in the wetland.

4.4.4 - Water regime

Water permanence

<table>
<thead>
<tr>
<th>Presence?</th>
<th>Usually permanent water present</th>
<th>No change</th>
</tr>
</thead>
</table>

Source of water that maintains character of the site

<table>
<thead>
<tr>
<th>Presence?</th>
<th>Predominant water source</th>
<th>No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water inputs from rainfall</td>
<td></td>
<td>No change</td>
</tr>
<tr>
<td>Water inputs from surface water</td>
<td></td>
<td>No change</td>
</tr>
</tbody>
</table>

Water destination

<table>
<thead>
<tr>
<th>Presence?</th>
<th>To downstream catchment</th>
<th>No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeds groundwater</td>
<td></td>
<td>No change</td>
</tr>
</tbody>
</table>

Stability of water regime

<table>
<thead>
<tr>
<th>Presence?</th>
<th>Water levels largely stable</th>
<th>No change</th>
</tr>
</thead>
</table>

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site

Significant accretion or deposition of sediments occurs on the site

Significant transportation of sediments occurs on or through the site
Sediment regime is highly variable, either seasonally or inter-annually. Sediment regime unknown.

<table>
<thead>
<tr>
<th>(ECD) Water turbidity and colour</th>
<th>Clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ECD) Light - reaching wetland</td>
<td>Not assessed</td>
</tr>
<tr>
<td>(ECD) Water temperature</td>
<td>24-25 degree Celsius (in summer), 16-19 degree Celsius (in winter)</td>
</tr>
</tbody>
</table>

### 4.4.6 - Water pH

- Acid (pH<5.5)
- Circumneutral (pH: 5.5-7.4)
- Alkaline (pH>7.4)
- Unknown

Please provide further information on pH (optional):

The quality of water in river Sutlej at Nangal reservoir conforms to Class-C in October, 2016 and Class-B in April, 2017 as per Designated Best Use (DBU). The water quality deteriorates due to Total Coliform count.

### 4.4.7 - Water salinity

- Fresh (<0.5 g/l)
- Mixohaline (brackish)/Mixosaline (0.5-30 g/l)
- Euhaline/Eusaline (30-40 g/l)
- Hyperhaline/Hypersaline (>40 g/l)
- Unknown

### 4.4.8 - Dissolved or suspended nutrients in water

- Eutrophic
- Mesotrophic
- Oligotrophic
- Dystrophic
- Unknown

Please provide further information on dissolved or suspended nutrients (optional):

Not investigated.

### 4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the:

- i) broadly similar
- ii) significantly different

- Surrounding area has greater urbanisation or development
- Surrounding area has higher human population density
- Surrounding area has more intensive agricultural use
- Surrounding area has significantly different land cover or habitat types

### 4.5 - Ecosystem services

#### 4.5.1 - Ecosystem services/benefits

Provisioning Services
<table>
<thead>
<tr>
<th>Ecosystem service</th>
<th>Examples</th>
<th>Importance/Extent/Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food for humans</td>
<td>Sustenance for humans (e.g., fish, molluscs, grains)</td>
<td>Medium</td>
</tr>
<tr>
<td>Fresh water</td>
<td>Water for irrigated agriculture</td>
<td>Medium</td>
</tr>
<tr>
<td>Wetland non-food products</td>
<td>Reeds and fibre</td>
<td>Low</td>
</tr>
</tbody>
</table>

### Regulating Services

<table>
<thead>
<tr>
<th>Ecosystem service</th>
<th>Examples</th>
<th>Importance/Extent/Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance of hydrological regimes</td>
<td>Groundwater recharge and discharge</td>
<td>Low</td>
</tr>
<tr>
<td>Maintenance of hydrological regimes</td>
<td>Storage and delivery of water as part of water supply systems for agriculture and industry</td>
<td>High</td>
</tr>
</tbody>
</table>

### Cultural Services

<table>
<thead>
<tr>
<th>Ecosystem service</th>
<th>Examples</th>
<th>Importance/Extent/Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation and tourism</td>
<td>Nature observation and nature-based tourism</td>
<td>Low</td>
</tr>
<tr>
<td>Spiritual and inspirational</td>
<td>Spiritual and religious values</td>
<td>Medium</td>
</tr>
<tr>
<td>Scientific and educational</td>
<td>Educational activities and opportunities</td>
<td>Low</td>
</tr>
</tbody>
</table>

### Supporting Services

<table>
<thead>
<tr>
<th>Ecosystem service</th>
<th>Examples</th>
<th>Importance/Extent/Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity</td>
<td>Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part</td>
<td>Medium</td>
</tr>
<tr>
<td>Pollination</td>
<td>Support for pollinators</td>
<td>Low</td>
</tr>
</tbody>
</table>

Other ecosystem service(s) not included above:

Nangal wetland system helps to regulate the water cycle, stabilize micro-climate, helps in recharging of groundwater and maintains the quality and quantity of water. It plays a major role in trapping the sediments and also in preventing and reducing the heavy flow of water. This helps saves lives and property in the surrounding villages from devastating floods. It also regulates nutrient cycling which help in optimising the productivity of the floodplains of the surrounding villages. More than 150,000 people of the surrounding villages are directly benefiting from the ecosystem services of the wetland and nearly half a million downstream are indirectly benefited.

Within the site: Nil (no inhabitants)

Outside the site: 500000

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes ☐ No ☐ Unknown ☑

#### 4.5.2 - Social and cultural values

i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and ☐

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland ☐

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples ☐

iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland ☐

<no data available>

#### 4.6 - Ecological processes

<p>| (ECD) Primary production               | Unknown and not investigated                  |
| (ECD) Nutrient cycling                 | Unknown and not investigated                  |
| (ECD) Carbon cycling                   | Unknown and not investigated                  |
| (ECD) Animal reproductive productivity| Unknown and not investigated                  |
| (ECD) Vegetational productivity, pollination, regeneration processes, successional role of fire, etc. | Unknown and not investigated |</p>
<table>
<thead>
<tr>
<th>Topic</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notable species interactions, including grazing, predation, competition, diseases and pathogens</td>
<td>Unknown and not investigated</td>
</tr>
<tr>
<td>Notable aspects concerning animal and plant dispersal</td>
<td>Unknown and not investigated</td>
</tr>
<tr>
<td>Notable aspects concerning migration</td>
<td>The wildlife sanctuary is used by migratory birds in both summer and winter seasons.</td>
</tr>
<tr>
<td>Pressures and trends concerning any of the above, and/or concerning ecosystem integrity</td>
<td>Unknown and not investigated</td>
</tr>
</tbody>
</table>
5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

<table>
<thead>
<tr>
<th>Public ownership</th>
<th>Within the Ramsar Site</th>
<th>In the surrounding area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local authority, municipality, (sub)district, etc.</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Public land (unspecified)</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>National/Federal government</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>Provincial/region/state government</td>
<td>☑</td>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Private ownership</th>
<th>Within the Ramsar Site</th>
<th>In the surrounding area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperative/collective (e.g., farmers cooperative)</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Other types of private/individual owner(s)</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Religious body/organization</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>

5.1.2 - Management authority

Rupnagar Wildlife Division, Department of Forests and Wildlife Preservation, Punjab

| Please list the local office/offices of any agency or organization responsible for managing the site: | | |
|-----------------------------------------------|-----------------|
| DFO Wildlife (Rupnagar) | | |

<table>
<thead>
<tr>
<th>Provide the name and title of the person or people with responsibility for the wetland:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DFO Wildlife (Rupnagar)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Postal address:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:dfowildliferopar@gmail.com">dfowildliferopar@gmail.com</a></td>
<td></td>
</tr>
</tbody>
</table>

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site’s ecological character

**Human settlements (non agricultural)**

<table>
<thead>
<tr>
<th>Factors adversely affecting site</th>
<th>Actual threat</th>
<th>Potential threat</th>
<th>Within the site</th>
<th>In the surrounding area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing and urban areas</td>
<td></td>
<td>Low impact</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Tourism and recreation areas</td>
<td>Low impact</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>

**Water regulation**

<table>
<thead>
<tr>
<th>Factors adversely affecting site</th>
<th>Actual threat</th>
<th>Potential threat</th>
<th>Within the site</th>
<th>In the surrounding area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canalsation and river regulation</td>
<td>Low impact</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>

**Agriculture and aquaculture**

<table>
<thead>
<tr>
<th>Factors adversely affecting site</th>
<th>Actual threat</th>
<th>Potential threat</th>
<th>Within the site</th>
<th>In the surrounding area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual and perennial non-timber crops</td>
<td>Low impact</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>

**Biological resource use**

<table>
<thead>
<tr>
<th>Factors adversely affecting site</th>
<th>Actual threat</th>
<th>Potential threat</th>
<th>Within the site</th>
<th>In the surrounding area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gathering terrestrial plants</td>
<td>Low impact</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Logging and wood harvesting</td>
<td>Low impact</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>

**Human intrusions and disturbance**

<table>
<thead>
<tr>
<th>Factors adversely affecting site</th>
<th>Actual threat</th>
<th>Potential threat</th>
<th>Within the site</th>
<th>In the surrounding area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreational and tourism activities</td>
<td>Low impact</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>

**Natural system modifications**
## 5.2.2 - Legal conservation status

### National legal designations

<table>
<thead>
<tr>
<th>Designation type</th>
<th>Name of area</th>
<th>Online information url</th>
<th>Overlap with Ramsar Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wildlife Sanctuary</td>
<td>Nangal Wildlife Sanctuary</td>
<td><a href="http://www.pbforests.gov.in/community_reserves.html">http://www.pbforests.gov.in/community_reserves.html</a></td>
<td>whole</td>
</tr>
</tbody>
</table>

### 5.2.3 - IUCN protected areas categories (2008)

- **Ia Strict Nature Reserve**: ☑️
- **Ib Wilderness Area**: protected area managed mainly for wilderness protection
- **Ii National Park**: protected area managed mainly for ecosystem protection and recreation
- **Iii Natural Monument**: protected area managed mainly for conservation of specific natural features
- **Iv Habitat/Species Management Area**: protected area managed mainly for conservation through management intervention
- **V Protected Landscape/Seascape**: protected area managed mainly for landscape/seascape conservation and recreation
- **Vii Managed Resource Protected Area**: protected area managed mainly for the sustainable use of natural ecosystems

### 5.2.4 - Key conservation measures

#### Legal protection

<table>
<thead>
<tr>
<th>Measures</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal protection</td>
<td>Implemented</td>
</tr>
</tbody>
</table>

#### Habitat

<table>
<thead>
<tr>
<th>Measures</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil management</td>
<td>Partially implemented</td>
</tr>
<tr>
<td>Re-vegetation</td>
<td>Partially implemented</td>
</tr>
<tr>
<td>Catchment management initiatives/controls</td>
<td>Partially implemented</td>
</tr>
</tbody>
</table>

#### Human Activities

<table>
<thead>
<tr>
<th>Measures</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisheries management/regulation</td>
<td>Implemented</td>
</tr>
<tr>
<td>Harvest controls/poaching enforcement</td>
<td>Implemented</td>
</tr>
<tr>
<td>Regulation/management of recreational activities</td>
<td>Partially implemented</td>
</tr>
<tr>
<td>Communication, education, and participation and awareness activities</td>
<td>Partially implemented</td>
</tr>
</tbody>
</table>

### 5.2.5 - Management planning

Is there a site-specific management plan for the site?  **No**

How is the Site managed?, S5 - Page 2
Has a management effectiveness assessment been undertaken for the site? Yes ☐ No ☐

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes ☐ No ☐

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No need identified

5.2.7 - Monitoring implemented or proposed

<table>
<thead>
<tr>
<th>Monitoring</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds</td>
<td>Implemented</td>
</tr>
<tr>
<td>Animal species (please specify)</td>
<td>Proposed</td>
</tr>
</tbody>
</table>
6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references


6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

ii. a detailed Ecological Character Description (ECD) (in a national format)

iii. a description of the site in a national or regional wetland inventory

iv. relevant Article 3.2 reports

v. site management plan

vi. other published literature

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:

- Nangal wetland (Gitanjali Kanwar, 02-01-2019)
- Bar-headed Goose and Greater white-fronted Goose at Nangal wetland (Gitanjali Kanwar, 11-01-2019)
- Landscape view of Nangal wetland (Rochishnu Dutta, 10-02-2018)

6.1.4 - Designation letter and related data

Designation letter

Date of Designation: 2019-09-26