



Ramsar Information Sheet

Published on 6 August 2021

India

Thol Lake Wildlife Sanctuary



Designation date	5 April 2021
Site number	2458
Coordinates	23°08'29"N 72°24'39"E
Area	699,00 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

Thol lake wildlife sanctuary falls in Mehsana district of Gujarat between 23o 15' to 23o 30' N latitudes and 72o 30' to 72o 45' E longitudes covering an area 699 ha. Thol Sanctuary is a shallow water reservoir dominated by open water areas. The wetland doesn't have many reed beds thus it gives this a very distinct ambience. Originally constructed as an irrigation reservoir by the Gaekwad rulers in 1912 for the purpose of storing rainwater and prevention soil erosion and flooding (Vaghela 1993), it was declared as Thol Lake Wildlife Sanctuary in 1988 with the sole purpose to protect the avian diversity visiting the lake. The southern, western and eastern boundary of the lake is encrusted with an earthen bund, which helps in retaining water that flows into it during monsoon.

Thol is an extremely important wetland on the Central Asian Flyway. Out Of 574 species reported in the state of Gujarat, Thol Lake Wildlife Sanctuary is home to 327 species of birds (Ganpule 2017). The wetland is home to approximately 57% of total species of Gujarat, making it one of the most important Wildlife Sanctuaries of the state as far as avian diversity is concerned. Of the 257 species of water birds that India supports 112 species of water birds have been reported from Thol which is almost 43% of India's water bird population, sighted in one small area of 6 sq.kms. Out of these 112 species almost 30% are migratory water birds. Around 34 species of water birds belong to Critically Endangered, Vulnerable and Near Threatened category of IUCN. The notable species found in the site are sarus crane, painted stork, Oriental white ibis or black-headed ibis, lesser flamingo, white-backed or white-rumped vulture, sociable lapwing and Dalmatian pelican. The wetland regularly hosts more than 1% of the population of species like glossy Ibis. The wetland is a lifeline for a satellite population of blackbuck (*Antelope cervicapra*) and other mammals of surrounding area, which shift to this place in dry season. Several other faunal species like mammals (hedgehog, hare), reptiles (rock python, cobra), amphibians (bull frog) have been observed in the site. Livelihoods of the local communities is intrinsically linked with the wetland as it is the main source of drinking water and irrigation to fields. The vegetation provides excellent thatching material and also used as a fodder for cattle.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency	Forest Department
Postal address	Office of Deputy Conservator of Forest Nalsarovar Bird Sanctuary Near Kalhar Bungalow Department of Forest, Sanand Ahmedabad

National Ramsar Administrative Authority

Institution/agency	Ministry of Environment, Forest & Climate Change
Postal address	Office of the Additional Secretary (Wetlands), Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi 110003

2.1.2 - Period of collection of data and information used to compile the RIS

From year

To year

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image

<2 file(s) uploaded>

Former maps

Boundaries description

The boundaries of the wetland are shared with the state sanctuary. There are five villages in the periphery of the wetland; namely Bhimasan, Hajipur, Karoli, Jethlaj and Thol. The boundary of the notified sanctuary area has been considered for delineation of the proposed site. The notified sanctuary area has been demarcated with boundary cairns on the site.

The legal boundary notification is as follows :

(1) North : Radar Station of Air Force at Village Hajipura, survey nos. 1004, 1006, 8, 7, 9, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78

(2) East : O.N.G.C. Buildings, Jethalajpur and Jethalaj village Survey nos. 615, 35, 36, 46, 1, 2, 48

(3) South : Jethalaj village Survey nos. 451, 459, 410, 461, 462, 1, 2, 463, 491, 1, 495, 49, 2, 500, 1, 2, 3, 499, 1, 2, 508, 509, 510, 1, 2, 512, 513, 1, 2, 514, 526, 531, 533, 534, 537, 1, 2, 3, 538, 539, 540, 541, 542, 1, 2, 543, 544, village forest 385/1.

(4) West : Nasmed village Survey nos. 49, 2, 50, 51, 70, 1, 2, 71, 1, 2, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 1, 2, 83, 84, 85, 86, 1, 2, 93, 94, 95, 96, 97, 99.

2.2.2 - General location

a) In which large administrative region does the site lie?

b) What is the nearest town or population centre?

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

Official area, in hectares (ha): Area, in hectares (ha) as calculated from GIS boundaries

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Other scheme (provide name below)	Thol wetland is a non forest area located in biotic province 4-B Gujarat Rajwada in semi arid bio geographical zone of the country as per the classification of Panwar and Rodgers WII-1988, Dehradun
Freshwater Ecoregions of the World (FEOW)	Semi-arid biogeographic Zone

Other biogeographic regionalisation scheme

Rodgers W. A. and Panwar, H S. (1988) Planning a Protected Area Network in India. 2 volumes. Wildlife Institute of India, Dehra Dun.

Islam, M. Z. and Rahmani, A. R. (2008) Potential and Existing Ramsar Sites in India. Indian Bird Conservation Network: Bombay Natural History Society, BirdLife International and Royal Society for the Protection of Birds. Oxford University Press. Pp. 592

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

<no data available>

Criterion 2 : Rare species and threatened ecological communities

Criterion 3 : Biological diversity

Justification

The wetland is a crucial habitat for waterbirds which include cranes, geese, flamingos, pelicans, egrets, herons, spoonbills, ducks and whistling teals. Thol wetland has two flagship species namely sarus crane (*Grus antigone*) and osprey (*Pandion haliaetus*). Along with water birds there are many species of mammals such as blackbuck (*Antilop cervicapra*), jackal (*Canis aureus*), pale hedgehog (*Parachinus micropus*), striped hyena (*Hyaena hyaena*), Indian flying fox (*Pteropus giganteus*), reptiles like cobra (*Naja naja*), garden lizard (*Calotes versicolor*), Bengal monitor lizard (*Varanus bengalensis*), Indian flapshell turtle (*Lissemys punctata*). In addition amphibians such as bull frog (*Hoplobatrachus tigerinus*) and marbled toad (*Bufo stomaticus*) are also reported from Thol Lake Wildlife Sanctuary.

Criterion 4 : Support during critical life cycle stage or in adverse conditions

Criterion 5 : >20,000 waterbirds

Overall waterbird numbers

Start year

Source of data:

Criterion 6 : >1% waterbird population

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

<no data available>

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
Others																	
CHORDATA / MAMMALIA	<i>Antilope cervicapra</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Schedule 1 as per Wildlife Protection Act 1972	Schedule 1 as per Indian Wildlife Protection Act 1972, and seen in large population
CHORDATA / REPTILIA	<i>Python molurus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	Schedule 1 as per Wildlife Protection Act	Schedule 1 as per Indian Wildlife Protection Act 1972, and seen in large population

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
Birds																	
CHORDATA / AVES	<i>Anas acuta</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3554	2020		LC	<input type="checkbox"/>	<input type="checkbox"/>		Winters in Thol, Thol provides ideal feeding habitat
CHORDATA / AVES	<i>Anas clypeata</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2326	2020			<input type="checkbox"/>	<input type="checkbox"/>		Winters in Thol
CHORDATA / AVES	<i>Anas crecca</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6040	2020	1.51	LC	<input type="checkbox"/>	<input type="checkbox"/>		Wintering in Thol
CHORDATA / AVES	<i>Anas penelope</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	936	2020			<input type="checkbox"/>	<input type="checkbox"/>		Very good wintering ground
CHORDATA / AVES	<i>Anas querquedula</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	737				<input type="checkbox"/>	<input type="checkbox"/>		Wintering ground and home to large population
CHORDATA / AVES	<i>Anas strepera</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	389	2020			<input type="checkbox"/>	<input type="checkbox"/>		Wintering ground for a huge population
CHORDATA / AVES	<i>Anser anser</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	912	2020	3.64	LC	<input type="checkbox"/>	<input type="checkbox"/>		Wintering ground and feeding ground
CHORDATA / AVES	<i>Anser erythropus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	2020		VU	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Very few places, where this bird is sighted in the state, Thol being one of them
CHORDATA / AVES	<i>Anser indicus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1498	2020	2.65	LC	<input type="checkbox"/>	<input type="checkbox"/>		Thol is key wintering ground with excellent feeding habitat for this species
CHORDATA / AVES	<i>Aythya ferina</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	838			VU	<input type="checkbox"/>	<input type="checkbox"/>		Thol is one of the places that is wintering home to this species in large population
CHORDATA / AVES	<i>Aythya nyroca</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Wintering in Thol
CHORDATA / AVES	<i>Bubulcus ibis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1918	2020		LC	<input type="checkbox"/>	<input type="checkbox"/>		Nests in Thol
CHORDATA / AVES	<i>Ciconia episcopus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10			NT	<input type="checkbox"/>	<input type="checkbox"/>		Almost observed through out the year
CHORDATA / AVES	<i>Fulica atra</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1049	2020		LC	<input type="checkbox"/>	<input type="checkbox"/>		Wintering ground as well as feeding and roosting ground
CHORDATA / AVES	<i>Grus antigone</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>	Sch-IV under wildlife protection act-1972	The globally threatened Sarus Crane (<i>Grus antigone</i>) also take refuge at this wetland during summer when other water bodies are dry
CHORDATA / AVES	<i>Grus grus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1782	2020	2.55	LC	<input type="checkbox"/>	<input type="checkbox"/>		Key wintering ground
CHORDATA / AVES	<i>Gyps bengalensis</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
CHORDATA / AVES	<i>Himantopus himantopus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	380	2020		LC	<input type="checkbox"/>	<input type="checkbox"/>		Wintering ground as well good nesting place

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence ¹⁾	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA / AVES	<i>Limosa limosa</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5052	2020	3.37	NT	<input type="checkbox"/>	<input type="checkbox"/>		Winters in Thol regularly in huge numbers
CHORDATA / AVES	<i>Pelecanus crispus</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Wintering and feeding habitat
CHORDATA / AVES	<i>Pelecanus onocrotalus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	288			LC	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Wintering and feeding ground
CHORDATA / AVES	<i>Philomachus pugnax</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7954	2020			<input type="checkbox"/>	<input type="checkbox"/>		Winters here in Thol
CHORDATA / AVES	<i>Plegadis falcinellus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15600	2020	62.4	LC	<input type="checkbox"/>	<input type="checkbox"/>		Thol is roosting site for Glossy Ibis specially in winter months and it is also a site where nesting has been recorded.
CHORDATA / AVES	<i>Recurvirostra avosetta</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	130			LC	<input type="checkbox"/>	<input type="checkbox"/>		Wintering ground
CHORDATA / AVES	<i>Sterna aurantia</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>		Seen in Thol round the year
CHORDATA / AVES	<i>Tadorna ferruginea</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1024	2020	2.05	LC	<input type="checkbox"/>	<input type="checkbox"/>		Thol is excellent wintering ground and feeding ground for this species
CHORDATA / AVES	<i>Vanellus gregarius</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

1) Percentage of the total biogeographic population at the site

The wetland is lifeline for a satellite population of black buck (*Antilop cervicapra*) and other mammals of surrounding area, which shift to this place in dry season. Other mammal species found in the area are common langur (*Presbytis entellus*), jungle cat (*Felis chaus*), common mongoose (*Herpestes edwardsi*), jackal (*Canis aureus*), pale hedgehog (*Parachinus micropus*), grey mask shrew (*Suncus murinus*), Indian flying fox (*Pteropus giganteus*) and nilgai (*Boselaphus tragocamelus*). Thol wetland is an important habitat for several water birds species. The globally threatened sarus Crane (*Grus antigone*) takes refuge at this wetland during summer when other water bodies are dry. Globally threatened species like darter, painted stork, black-necked stork, oriental white ibis, lesser flamingo, ferruginous pochard take refuge during the migration and this is very important place to hold during return migration.

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

Thol lake Wildlife Sanctuary is a man-made fresh water lake in Mehsana district of Gujarat, covering an area of 699 ha. Originally constructed as an irrigation reservoir by the Gaekwad rulers in 1912 for the purpose of storing rainwater, prevention soil erosion and flooding (Vaghela 1993), it was declared as Thol Lake Wildlife Sanctuary in 1988 with the sole purpose to protect the avian diversity visiting the lake especially in winters. The boundary of the lake is 5.62 km long and lake is aligned in an east west direction. The southern, western and eastern boundary of the lake is encrusted with an earthen bund, which helps in retaining water that flows into it during monsoon. The depth of the pond is variable throughout.

Thol Wetlands is positioned in the ecotonal or transitional zones between terrestrial and aquatic ecosystems where the water table is usually at or near the surface of the land, which is covered by the shallow water. The main habitat types are (i) Deep open water habitat; (ii) Shallow open water habitat; (iii) Emergent aquatic vegetation; (iv) Muddy habitat ; (v) Shore land and island ; (vi) Cultivation in surrounding area; (vii) Fallow land in surrounding area; (viii) Wood land habitat. The wetland comprises of a diverse array of vegetation from emergent and floating aquatic plants to trees species. The observed vegetation cover can be categorized into aquatic emergent vegetation, submerged vegetation, shoreline and peripheral vegetation, and vegetation in the nearby cultivation area. The notable aquatic and emergent species are *Cyperus* spp., *Phragmites* spp., *Najas minor* and *Najas major* spp. *Cyperus* and *phragmites* provides roosting habitat and escape cover to waterfowl.

Submerged species like *najas* are staple food for the herbivorous ducks and coots. Other floral vegetation include tree species like *Prosopis juliflora*, *Azadiracta indica*, *Cenchrus ciliaris*, *Dichanthium annulatum* and *Zizyphus numularia*, which are found in the periphery. These species provide excellent cover and serves as a roosting-nesting site for many species of water birds. In agricultural areas, surrounding the sanctuary, paddy, wheat, gram and cotton are grown. While the wasteland in the down stream side and other surrounding area is infested by *Prosopis juliflora*. Over all, *Acacia nilotica* and *Azadiracta indica* are the dominant species in these patches.

Thol is an extremely important wetland on the Central Asian Flyway. It is a winter home to a large number of migratory and resident birds. It is strategically located on the migratory route of the birds and is a crucial habitat for around 112 species of water birds of which 78 species are migratory. On an average the wetland supports 23,317 water birds during winter and above 20,000 water birds in summer. It supports more than 1% of the individuals in a population of species like Glossy ibis. The wetland is lifeline for a number of mammals of the surrounding area, which shift to this Site during the dry season. Notable faunal species include blackbuck, sarus crane (*Grus antigone*), Oriental darter, ruffs (*Philomachus pugnax*), Oriental white ibis (*Threskiornis melanocephalus*), black-bellied tern and the Indian soft shelled turtle (*Lissemys punctata*). Thol wetland can be termed as a lifeline for the surrounding villages. It is the main source of drinking water and irrigation to fields for six villages. Marshy vegetation growing in the area provides excellent thatching material and is also used as fodder for cattle. Local people also earn their livelihood through tourism based activities. The ecological character of the wetland has been negatively impacted by the excessive withdrawal of water by the local communities.

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

Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type
6: Water storage areas/Reservoirs		1	699

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
woodland	

4.3 - Biological components

4.3.1 - Plant species

Invasive alien plant species

Phylum	Scientific name	Impacts
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Prosopis juliflora</i>	Actual (minor impacts)

Optional text box to provide further information

Though *Prosopis juliflora* is abundant in the sanctuary, it is well managed by the local administrative division and it acts as an important nesting and roosting habitat for many waterbirds as well as terrestrial bird species

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/MAMMALIA	<i>Hemiechinus auritus</i>				Good habitat for this mammal (the species is reported only in Gujarat and Rajasthan)
CHORDATA/MAMMALIA	<i>Hystrix indica</i>				(schedule IV species-INDIAN WLDLIFE (PROTECTION)) ACT, 1972) Found in good population
CHORDATA/MAMMALIA	<i>Lepus nigricollis</i>				Good habitat for this species (schedule IV species-INDIAN WLDLIFE (PROTECTION)) ACT, 1972

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
B: Dry climate	BSh: Subtropical steppe (Low-latitude dry)

Average annual temperature ranges between 7°C to 45°C. Rainfall is erratic. Average annual rainfall is about 500 mm. The number of annual rainy days is roughly around 18 to 20 days. Rain water reaches Thol wetland through surrounding canals. In addition to these canals the wetland also receives run off water from the catchment. When the water level touches 9 ft., water is diverted to waste weir which runs along eastern boundary to reach the Nalsarovar Bird Sanctuary. Minimum water levels between 3 ft to 6 ft are being ensured by the State Government with Forest and Irrigation Department to maintain a suitable habitat for waterbirds. During winter, wind direction is from North and Northeast to South and Southwest. This wind comes from the Western Himalayan regions. The maximum wind velocity in winter is around 15 km/hour, which reaches to 30-40 km/hour during summer, increasing the rate of evaporation of the water of Thol lake.

4.4.2 - Geomorphic setting

a) Mnimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

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

4.4.3 - Soil

- Mneral
- 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

4.4.4 - Water regime

Water permanence

Presence?	
Usually permanent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	
Water inputs from precipitation	<input checked="" type="checkbox"/>	No change

Water destination

Presence?	
Feeds groundwater	No change

Stability of water regime

Presence?	
Water levels largely stable	No change

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

(ECD) Water turbidity and colour	13.7 NTU
(ECD) Water temperature	26.8 degree Celcius

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 average pH is 7.9, which indicates that the water is slightly alkaline.

4.4.7 - Water salinity

- Fresh (<0.5 g/l)
- Mxohaline (brackish)/Mxosaline (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

(ECD) Dissolved organic carbon	1.21%
(ECD) Water conductivity	321.8 µs/cm

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 site itself: 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

Please describe other ways in which the surrounding area is different:

Thol Lake Wildlife Sanctuary is surrounded by village settlements, agricultural fields and a few industries. An area of 2 kms from the sanctuary on all sides has been marked as Eco-Sensitive Zone and industrialization is prohibited in the surrounding area.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Fresh water	Water for irrigated agriculture	High

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High
Erosion protection	Soil, sediment and nutrient retention	Medium
Climate regulation	Local climate regulation/buffering of change	Low
Biological control of pests and disease	Support of predators of agricultural pests (e.g., birds feeding on locusts)	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	High
Scientific and educational	Educational activities and opportunities	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	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	High
Soil formation	Sediment retention	Low
Nutrient cycling	Carbon storage/sequestration	Medium
Pollination	Support for pollinators	High

Within the site:

Outside the site:

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 use that maintain the ecological character of the wetland

Description if applicable

The area is an inland wetland. People residing on the periphery of the wetland accrue many direct and indirect benefits. Marshy vegetation growing in the area provides excellent thatching material and is also used as fodder for cattle. Local people earn their livelihood through activities related to tourism. The wetland is a century old lake which is the only source of irrigation in the command area.

- 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

Description if applicable

People from surrounding villages draw water for irrigation. Excessive withdrawal of the water alters the characteristics of the wetland. This activity has some negative impacts upon the area

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

4.6 - Ecological processes

<no data available>

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
Provincial/region/state government	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Other

Category	Within the Ramsar Site	In the surrounding area
No information available	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Provide further information on the land tenure / ownership regime (optional):

(a) within the Ramsar site - The entire area is notified as sanctuary under the wildlife protection act-1972. As it is a notified area the State Government has the ownership rights over the land. There are 21 O.N.G.C. crude oil wells situated in the sanctuary area.

(b) in the surrounding area - Surrounding area consists of mainly agriculture farms and fallow with some wasteland. Farms and fallow land are owned by farmers whereas the wasteland belongs to the State Government.

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

Office of Deputy Conservator of Forests
Nalsarovara Bird Sanctuary
Department of Forest, Sanand
Ahmedabad - 382110

Provide the name and/or title of the person or people with responsibility for the wetland:

Mr Brijesh Chaudhary- Deputy Conservator of Forests

Postal address:

Office of Deputy Conservator of Forests
Nalsarovara Bird Sanctuary
Near kalhar bungalows
Department of Forest, Sanand
Ahmedabad - 382110

E-mail address:

dfonalsarovar@gmail.com

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)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Housing and urban areas	unknown impact	High impact	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Water releases	Medium impact		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Annual and perennial non-timber crops	Low impact		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Energy production and mining

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Oil and gas drilling	Medium impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Roads and railroads	Medium impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Fishing and harvesting aquatic resources	Medium impact		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Unspecified/others	Medium impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Vegetation clearance/ land conversion	High impact		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Unspecified	unknown impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Household sewage, urban waste water	Medium impact		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Geological events

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Unspecified	unknown impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Habitat shifting and alteration	Medium impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
wildlife Sanctuary	Thol wildlife sanctuary		whole

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Important Bird Area	Thol wildlife Sanctuary		whole

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
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

<no data available>

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Habitat

Measures	Status
Habitat manipulation/enhancement	Implemented

Species

Measures	Status
Control of invasive alien plants	Implemented

Human Activities

Measures	Status
Management of water abstraction/takes	Implemented
Communication, education, and participation and awareness activities	Partially implemented

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

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

Monitoring	Status
Water regime monitoring	Implemented
Water quality	Proposed
Birds	Implemented

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

- (1) Islam, M. Z., & Rahmani, A. R. (2008). Potential and Existing Ramsar Sites in India. Indian Bird Conservation Network: Bombay Natural History Society, BirdLife International and Royal Society for the Protection of Birds. Oxford University Press. Pp. 592
- (2) Pandit, S.J. (2002). Management Plans of Thol 2002 to 2011. Gujarat Forest Department, Gandhinagar.
- (3) Perennou, C., & Mundkhar, T. (1992). Asian waterfowl census 1992, IWRB, Slim bridge U.K.
- (4) Rodgers, W. A., & Panwar, H.S. (1988). Planning a Protected Area Network in India. 2 volumes, Wildlife Institute of India, Dehra Dun.
- (5) Thakkar, P.S. (1982). Flamingos breeding in Thol lake Sanctuary near Ahmedabad. JBNHS 79(3) : 668
- (6) Bhadrecha, M.H. (2018). Ecosystem assessment of Thol Bird Sanctuary with special reference to benthic macro invertebrate community. Ph. D Thesis. <http://hdl.handle.net/10603/278919>
- (7) Kothandapani, S. (2014). Management of Plan of Thol 2014-15-2023-24. Gujarat Forest Department, Gandhinagar
- (8) Vaghela, D. K. (1993) Fishes of Pond and Annual Survey. M. Phill. Dissertation, Department of Zoology, Gujarat University, Ahmedabad.

6.1.2 - Additional reports and documents

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

<1 file(s) uploaded>

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

<1 file(s) uploaded>

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

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

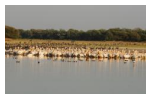
<1 file(s) uploaded>

vi. other published literature

<no file available>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



landscape of Thol (Wildlife Division - Sanand , 27-02-2019)



landscape of Thol (wildlife Division - Sanand , 06-01-2021)



landscape of Thol (wildlife Division - Sanand , 19-12-2019)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation