

Wetlands

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Wetland

- A wetland is a place where the land is covered by water. Marshes, ponds, the edge of a lake/ocean, the delta at the mouth of a river, low-lying areas that frequently flood — all of these are wetlands.
- Wetlands are also considered the most biologically diverse of all ecosystems, serving as home to a wide range of plant and animal life.
आर्द्रभूमि जल एवं स्थल के मध्य का संक्रमण क्षेत्र आर्द्रभूमि कहलाता है जिसमें जीवों का अधिक उत्पादन होता है

- **National Wetland Conservation Programme (NWCP)** राष्ट्रीय आर्द्रभूमि संरक्षण कार्यक्रम
- Government of India operationalized National Wetland Conservation Programme (NWCP) in closed collaboration with concerned State Government during the year 1985/86.
- Under the programme 115 wetlands have been identified till now by the Ministry which requires urgent conservation and management initiatives.

NEED FOR CONSERVATION

WHAT IS WETLAND

- Land area covered by water, either temporarily/seasonally or permanently (marsh, fen and peatland come under this category)
- It has characteristics of a distinct ecosystem

WHY ARE THEY IMPORTANT

- Play a key role in hydrological cycle and flood control, water supply, providing food, fibre and raw materials
- Wetlands support lakhs of migratory birds from colder regions of the world in summers, apart from mangroves that protect coastlines and filter pollutants

WETLANDS IN NUMBERS

It mapped
2,01,503
wetlands

Isro had in 2011 prepared a national wetlands atlas on the basis of satellite images

They comprise around
4.63% of the
geographic area of India

No. of wetland sites in
India under Ramsar
Convention | **37**

PROHIBITED ACTIVITIES WITHIN WETLANDS

- Any kind of encroachment
- setting up of any industry
- Expansion of existing industries
- Solid waste dumping
- Discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements
- Poaching
- Any construction of a permanent nature except for boat jetties within **50 metres** from the mean high flood level observed in the past **10 years**

INDIA'S PROMINENT WETLANDS

Chilika lake areas (Odisha) | **Wular lake** (J&K) | **Renuka** (Himachal Pradesh) | **Sambhar lake** (Rajasthan) | **Deepor Beel** (Assam) | **East Kolkata wetlands** (West Bengal) | **Nal Sarovar** (Gujarat) | **Harika** (Punjab) | **Rudra Sagar** (Tripura) and **Bhoj wetland** (Madhya Pradesh)

- The main wetland types are [swamp](#), [marsh](#), [bog](#), and [fen](#)
- sub-types include [mangrove](#) forest, [carr](#), [floodplains](#), [sink](#), and many others.
- Many [peatlands](#) are wetlands.

दलदल

A **swamp** is a [wetland](#) that is forested.

Swamps are considered to be transition zones because both land and water play a role in creating this environment.



- A **marsh** is a wetland that is dominated by herbaceous rather than woody plant species.
- Marshes can often be found at the edges of lakes and streams, where they form a transition between the aquatic and terrestrial ecosystems. They are often dominated by grasses, rushes



- A **bog** or **bogland** is a wetland that accumulates peat, a deposit of dead plant material.



- **Fen:** Peat rich areas that receive nutrients from the water that flows through them (surface runoff, groundwater). Typically flooded in the winter and dominated by mosses, sedges, rushes, and shrubs. Streams and/or pools may be present.



If woody plants are present they tend to be low-growing shrubs, and then sometimes called [carrs](#)

Carrs are wetlands that are dominated by [shrubs](#) rather than [trees](#).



Uses of wetlands

- Water storage (flood control)
- Groundwater replenishment
- Shoreline stabilisation and storm protection
- Water purification
- Reservoirs of biodiversity
- Pollination
- Wetland products
- Cultural values
- Recreation and tourism
- Climate change mitigation and adaptation



The roots of wetland plants can bind and remove as much as 90 percent of sediments present in runoff or streamflow.

Ramsar Convention

- The **Ramsar Convention on Wetlands of International Importance** is an international [treaty](#) for the conservation and sustainable use of [wetlands](#).
- It is named after the city of [Ramsar](#) in [Iran](#), where the Convention was signed in 1971.
- Every three years, representatives of the Contracting Parties meet as the Conference of the Contracting Parties (COP).
- COP12 was held in [Punta del Este, Uruguay](#), in 2015.
- COP13 was held in [Dubai, United Arab Emirates](#), in October 2018.
- China to host next Ramsar COP14 in 2021
- The **2nd of February** each year is World Wetlands Day
- There are over 2,300 Ramsar Sites on the territories of 171 Ramsar Contracting Parties across the world.
- The countries with the most Sites are the [United Kingdom with 175](#) and Mexico with 142.
- [Bolivia](#) has the largest area under Ramsar protection.

International organization partners

- The Ramsar Convention works closely with six other organizations known as International Organization Partners (IOPs). These are:
- Birdlife International
- International Union for Conservation of Nature (IUCN)
- International Water Management Institute (IWMI)
- Wetlands International
- WWF International
- Wildfowl & Wetlands Trust (WWT)

- Other Partners
- Convention on Biological Diversity (CBD)
- Convention to Combat Desertification (UNCCD),
- Convention on the Conservation of Migratory Species of Wild Animals
- Convention on Migratory Species (CMS),
- World Heritage Convention (WHC) and
- Convention on International Trade in Endangered Species (CITES).
- Project funding is done by various groups like multilateral development banks, bilateral donors, **UN agencies such as UNEP, UNDP**, Non-governmental organisations etc.

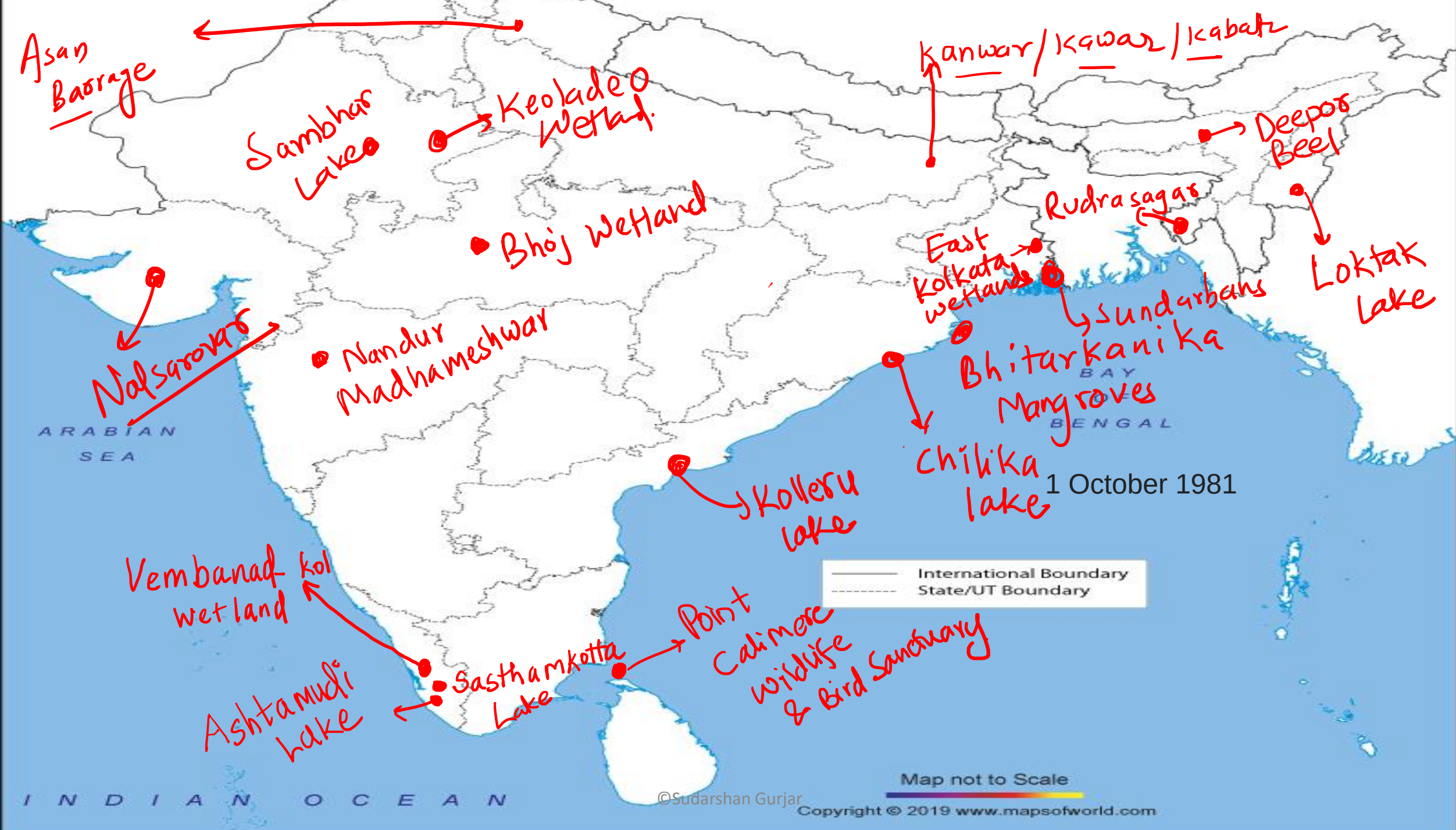
A wetland can be considered to be internationally important if any of the following criteria apply

- "it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region."
- "it supports vulnerable, endangered, or critically endangered species or threatened ecological communities."
- "it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region."
- "it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions."
- "it regularly supports 20,000 or more waterbirds."
- "it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend."

The Montreux Record

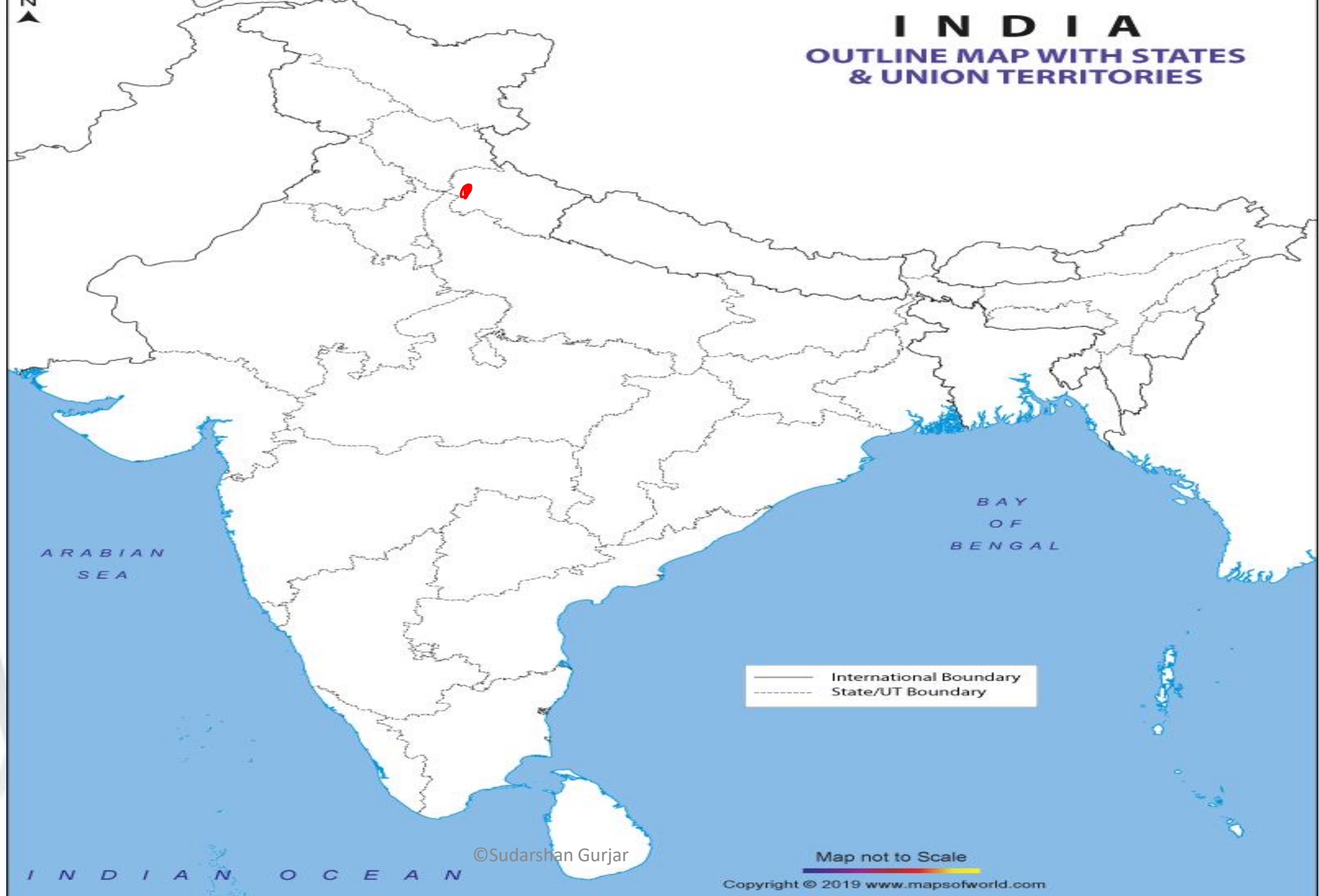
- **The Montreux Record** is a register of wetland sites on the List of Ramsar wetlands of international importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.
- It is a voluntary mechanism to highlight specific wetlands of international importance that are facing immediate challenges.
- It is maintained as part of the List of Ramsar wetlands of international importance
- The Montreux Record was established in 1990

Keoladeo National Park
Loktak Lake



INDIA

OUTLINE MAP WITH STATES & UNION TERRITORIES



Jammu & Kashmir

PUNJAB

Districts

- District headquarter
- District boundary

Himachal Pradesh

Nangal wild life Sanctuary
Ropar wetland

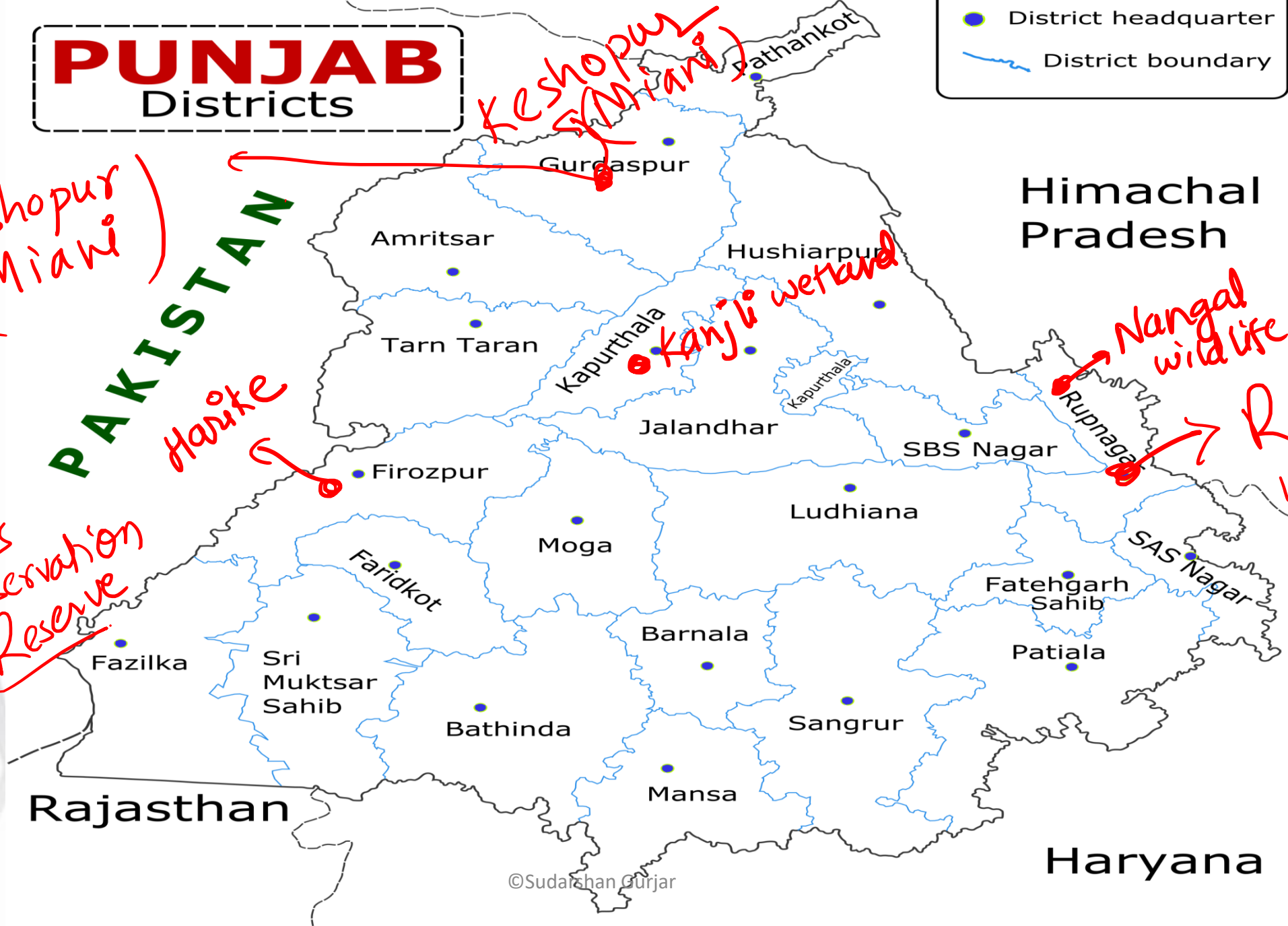
Haryana

PAKISTAN

Harke

G. Beas Conservation Reserve

Keshopur
Miani



Uttar Pradesh



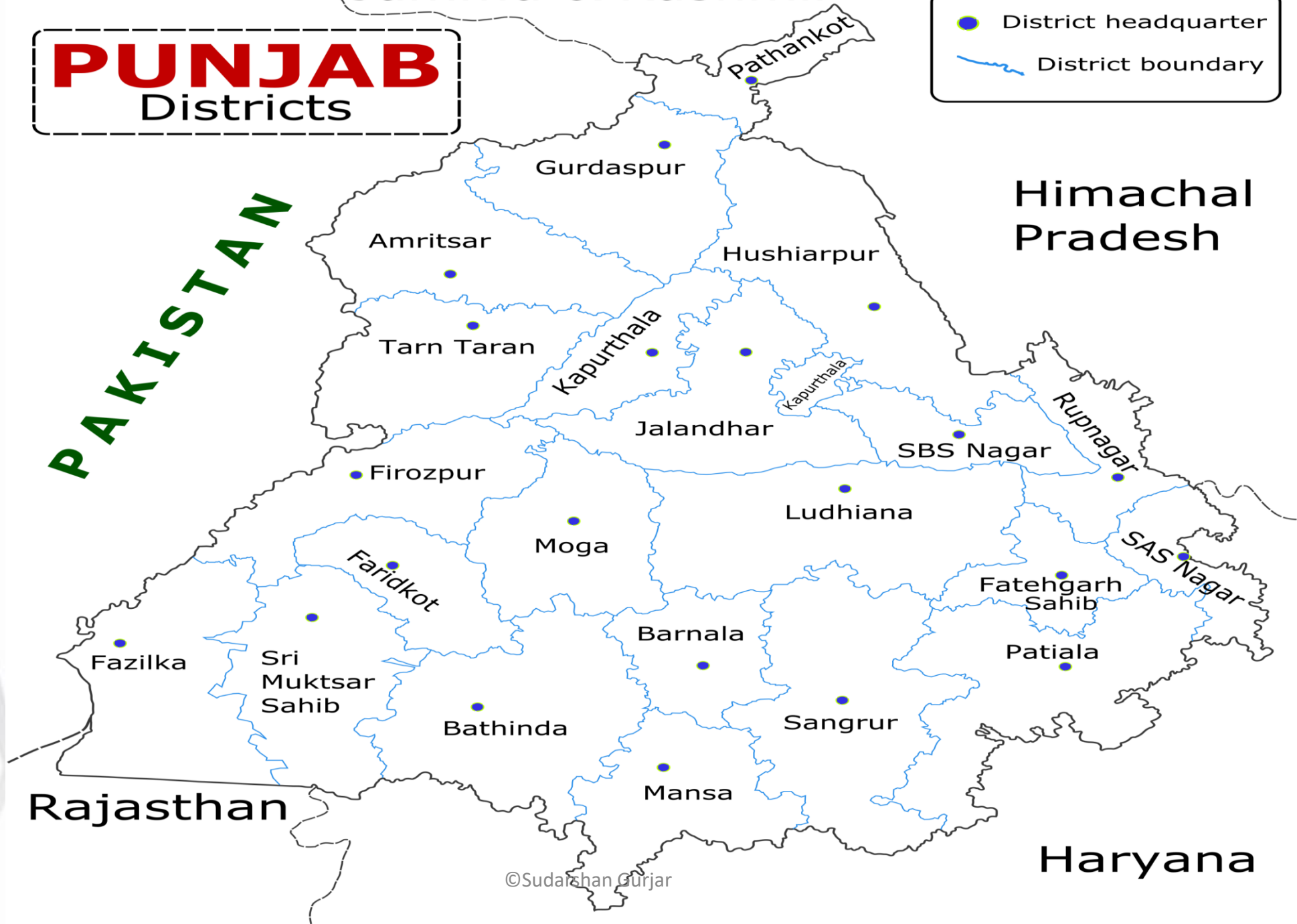
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www.mapsopen.com

Jammu & Kashmir

PUNJAB

Districts

- District headquarter
- District boundary



Hokersa/Hokersar lake

Wular lake

Surinsar-Mansar lake

Tso kar

Tsomori Lake





HIMACHAL PRADESH DISTRICT MAP

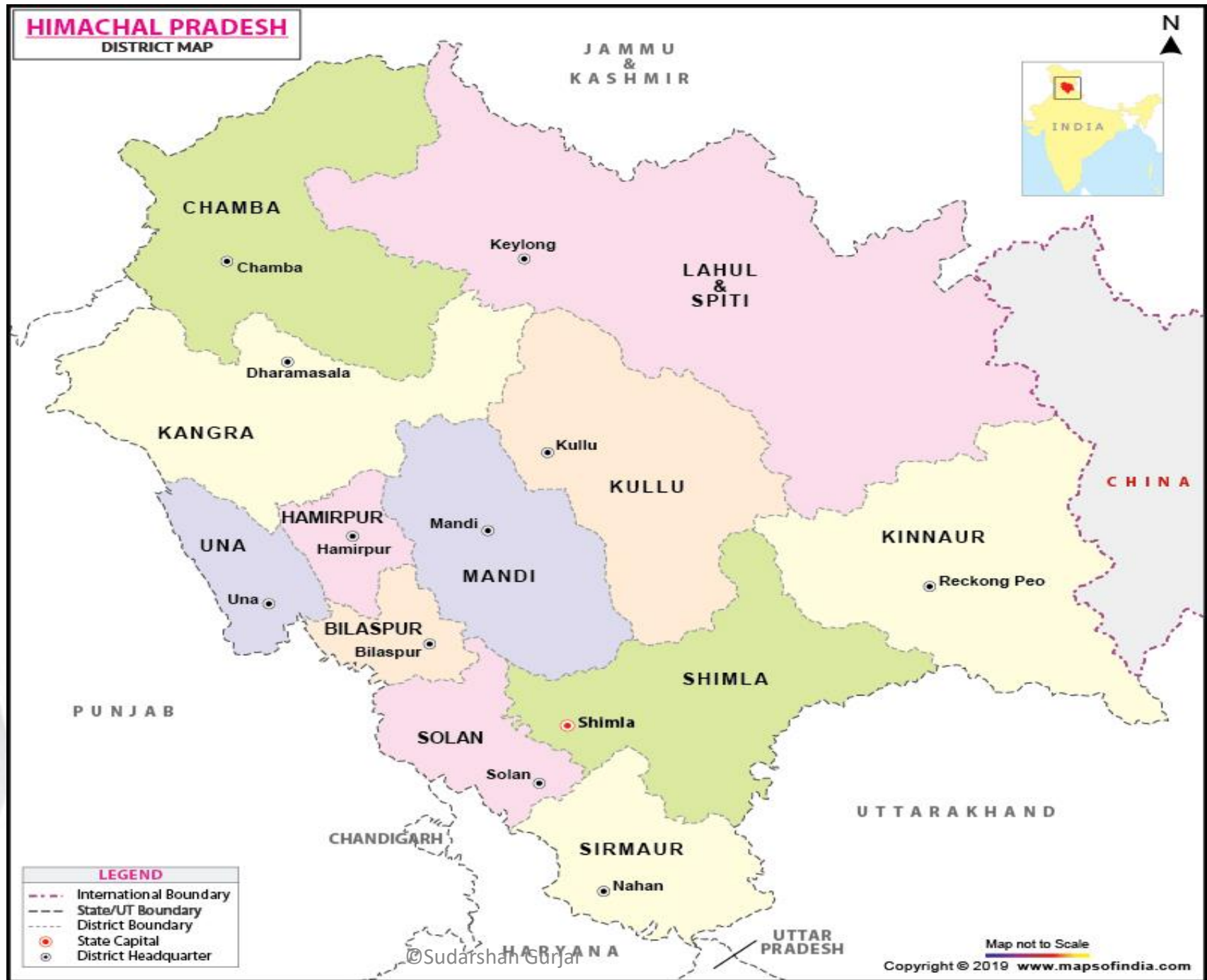


Pong Dam Lake
of
Maharana
Pratap

Chandra Tal

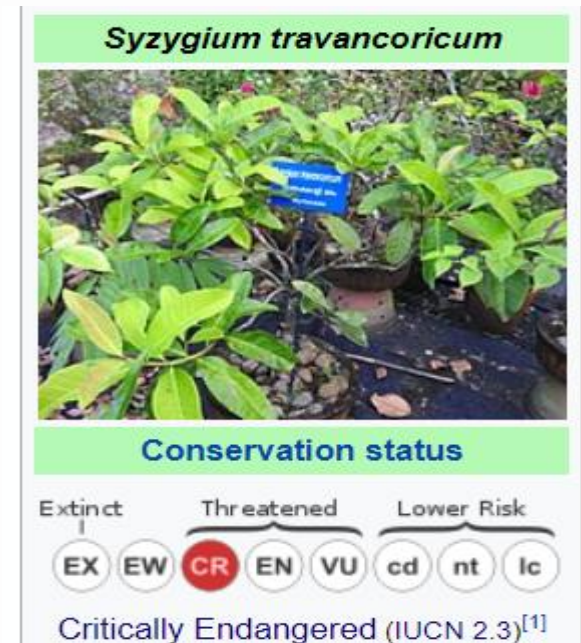
Renuka

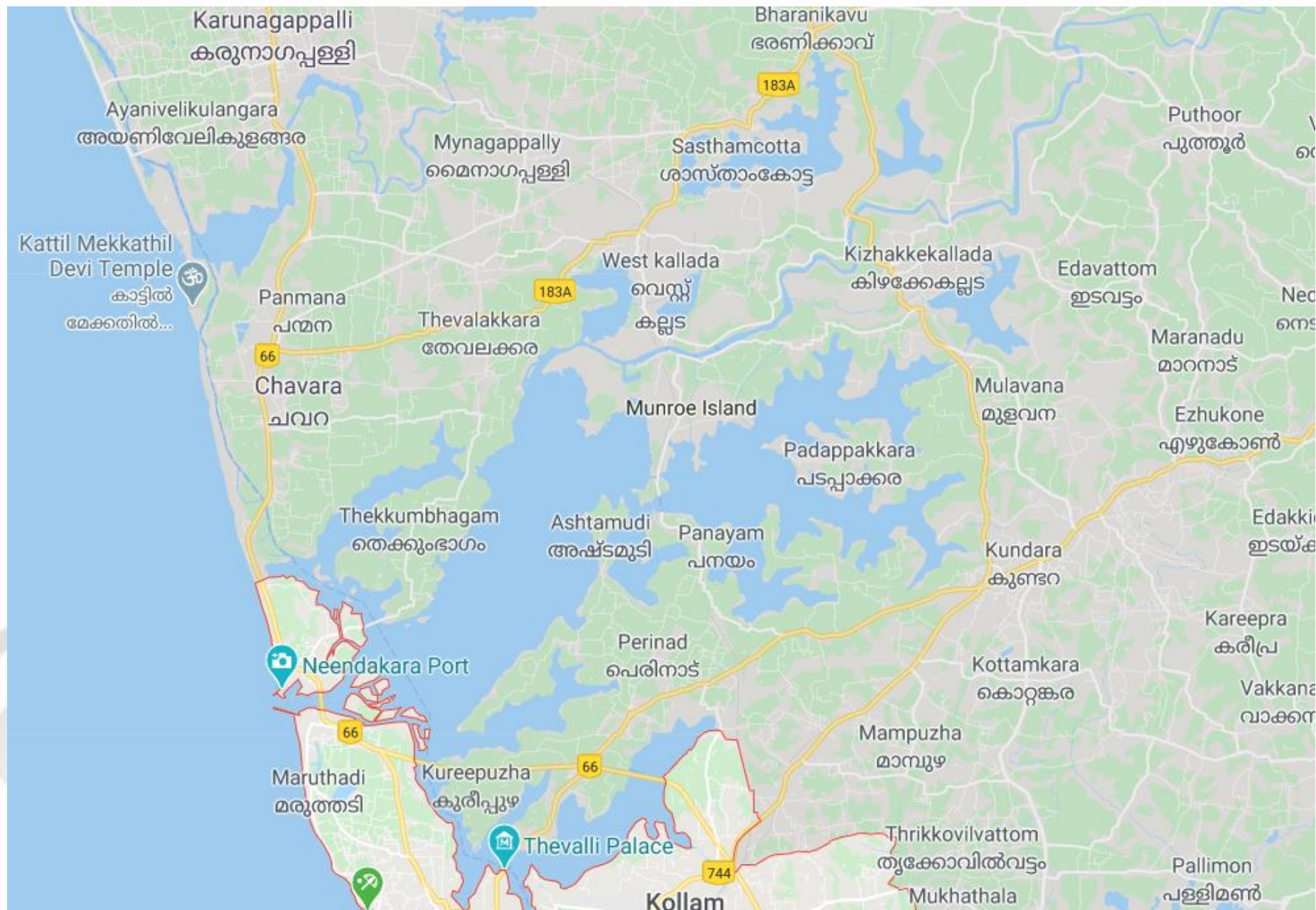
HIMACHAL PRADESH DISTRICT MAP



Ashtamudi Lake

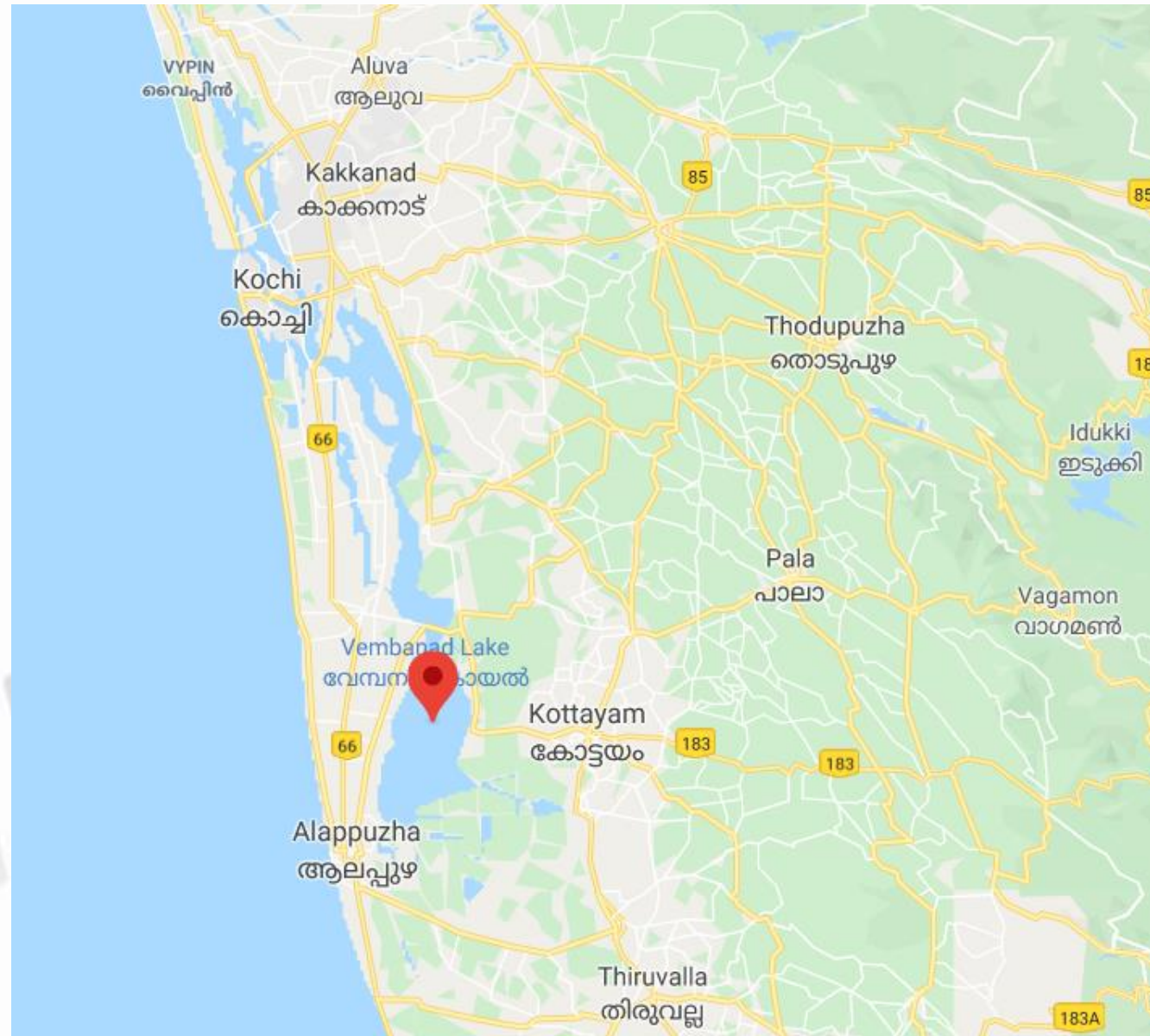
- [Kollam District](#) of the Indian state of Kerala
- the [Neendakara](#) port at the confluence offer a means of transport for the state's trade and commerce.
- [Kallada River](#) is a major river discharging into the Ashtamudi Lake.
- [Munroe Island](#)
- National Waterway 3 passes through it.





Vembanad

- **Vembanad (Vembanad Kayal or Vembanad Kol)** is the longest [lake](#) in [India](#) and the largest lake in the state of [Kerala](#).
- Several groups of small islands including [Vypin](#), [Mulavukad](#), [Vallarpadam](#), [Willingdon Island](#) are located.
- [Kochi Port](#) is built around the [Willingdon Island](#) and the [Vallarpadam](#) island.
- The [Nehru Trophy Boat Race](#) is conducted in a portion of the lake.
- including the six major rivers of central Kerala namely the [Achenkovil](#), [Manimala](#), [Meenachil](#), [Muvattupuzha](#), [Pamba](#) and [Periyar](#).
- The [Kumarakom Bird Sanctuary](#)



Beas Conservation Reserve

- The Beas Conservation Reserve is a 185-kilometre stretch of the Beas River located primarily in the north-west of the State of Punjab.
- The Reserve also hosts the only known population in India of the endangered Indus river dolphin





Gharial



Alligator

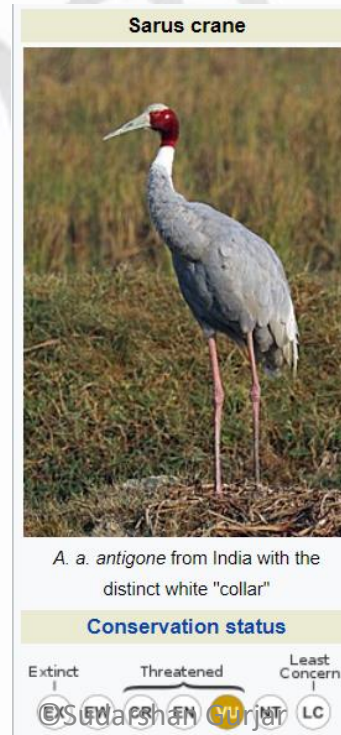


Crocodile

Bhitarkanika Mangroves

- Bhitarkanika Mangroves
- [The Gahirmatha Marine Wildlife Sanctuary](#), which bounds the Bhitarkanika Wildlife Sanctuary.
- [Olive ridley turtles](#)

- The **Bhoj Wetland** consists of two lakes located in the city of Bhopal, the capital of the central Indian state of Madhya Pradesh. The two lakes are the Bhojtal (Upper Lake) & the Lower Lake, which lie to the west of the city center.



Chandra Taal

- [Kunzum Pass](#)

[Chenab River](#) of the Western Himalayas

Chilika Lake

- **Chilika Lake** is a [brackish water lagoon](#), spread over the [Puri](#), [Khurda](#) and [Ganjam](#) districts of [Odisha](#)
- It is the largest wintering ground for [migratory birds](#)
- Birds from as far as the [Caspian Sea](#), [Lake Baikal](#), [Aral Sea](#) and other
- remote parts of [Russia](#), [Kirghiz steppes](#) of [Kazakhstan](#), [Central](#) and [southeast Asia](#), [Ladakh](#) and [Himalayas](#) come here.
- **Nalbana Bird Sanctuary** or **Nalbana Island** is the core area of the Ramsar designated wetlands of [Chilika Lake](#)

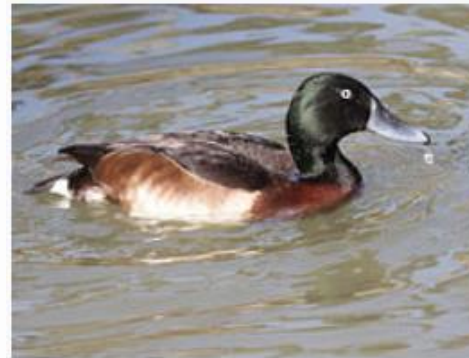
[Daya River](#),



- **Dipor Bil, Deepor Beel**

It is a few kilometres to the left of **Guwahati** whereas **Pobitora Wildlife Sanctuary** is around 35 km to the right.

Baer's pochard



Adult male (drake)

Conservation status



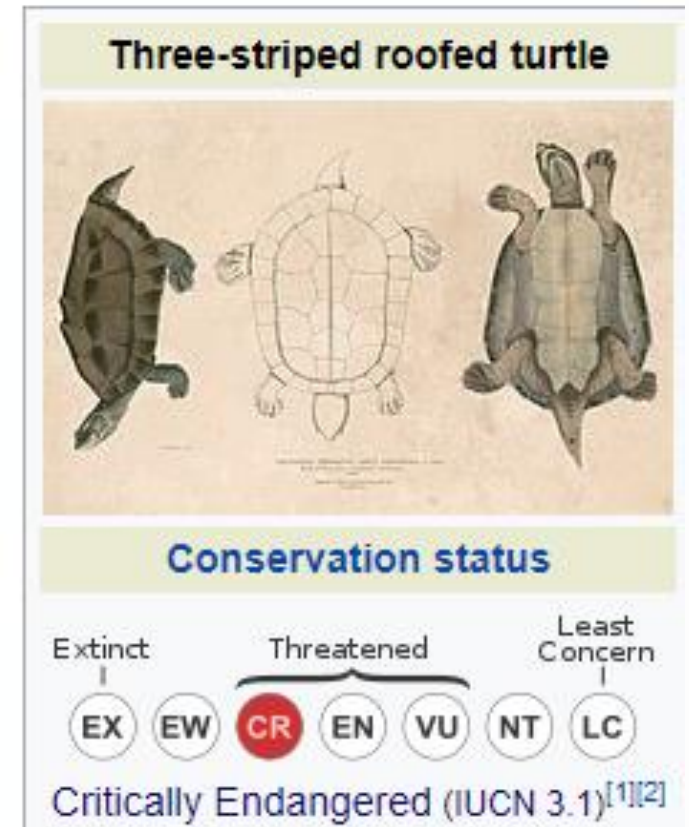
Spot-billed pelican



Conservation status



Rudrasagar Lake



Nawabganj Bird Sanctuary

- It was renamed as **Chandra Shekhar Azad Bird Sanctuary** in 2015.

Nangal Wildlife Sanctuary



Nandur Madhameshwa



Deolali minnow

Conservation status



Tsomoriri

- The site is said to represent the only breeding ground outside of China for one of the most endangered cranes, the [black-necked crane](#) and the only breeding ground for [bar-headed goose](#) in India.



- Asan Barrage
- Uttarakhand
- The Asan Conservation Reserve is a 444-hectare stretch of the Asan River running down to its confluence with the Yamuna River in Dehradun district.

Parvati Arga Bird Sanctuary

- The lake is naturally able to sustain resident birds throughout the year and migratory birds during winter season. It was a part of the Saryu River. As the river changed its flow path these lakes were left as its remains. Thus, both the lakes are oxbow lakes.



Kanwar Taal or Kabar Taal Lake

- Bihar, Begusarai
- Kanwar jheel, as it is locally called, is located 22 km north-west of Begusarai town. It is a residual oxbow lake, formed due to meandering of Gandak river, a tributary of Ganga

Nal Sarovar Bird Sanctuary

The Indian wild ass population has been increasing in numbers and extending its range from Little Rann of Kutch, where the world's last population of this subspecies had got confined to in recent years, and has gradually started moving out and colonizing the [Greater Rann of Kutch](#), also extending into the neighboring Indian [State of Rajasthan](#) in the bordering villages in [Jalore district](#) bordering the Rann of Kutch of Gujarat



Point Calimere Wildlife and Bird Sanctuary



- Sur Sarovar
- Uttar Pradesh, Agra district

- Lonar Lake
- Maharashtra, Buldhana district

- Tso Kar
- Ladakh, Leh district

Largest Ramsar Sites in India

Ramsar Site	State	Area in Sq. km
1) Sunderbans Wetland	West Bengal	4230
2) Vembanad Kol Wetland	Kerala	1512
3) Chilka Lake	Orissa	1165

Smallest Ramsar Sites in India

1) Renuka Wetland	Himachal Pradesh	0.2
2) Chandertal Wetland	Himachal Pradesh	0.49
3) Nangal Wildlife Sanctuary	Punjab	1

Oldest Ramsar Sites in India

1) Chilka Lake

Orissa

1981

2) Keoladeo Ghana NP

Rajasthan

1981