PARMAR SSC

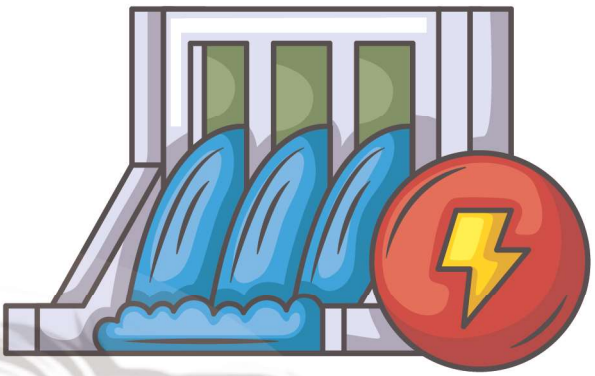
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Topic :

Dams , lakes & Waterfalls



Hydroelectric Power Projects and Multipurpose Projects



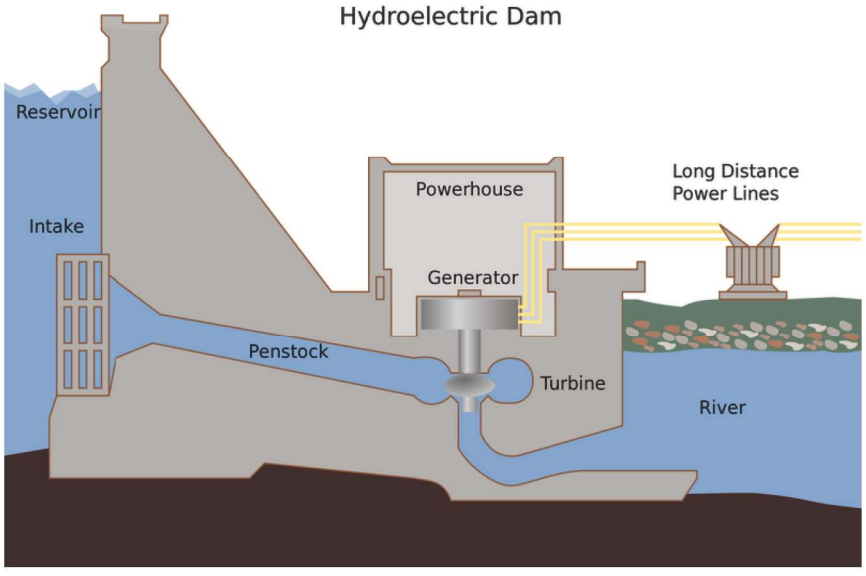
- A dam is a structure built across a river to store water, generate electricity, control floods, and irrigation. Many dams in India serve multiple purposes, such as irrigation, hydroelectric power, and drinking water supply and that is why they are also known as Multipurpose Projects.
- Jawaharlal Nehru called dams the **"Temples of Modern India".**

Drawbacks

- Displacement of communities: They displace a large number of tribals or peasants residing in the affected areas. Large-scale dam construction often leads to the forced relocation of thousands.
- Multi-purpose projects can significantly harm ecosystems. They cause biodiversity loss.
- These projects often create disputes between states and countries over water-sharing rights. This can lead to political tensions, legal battles, and conflicts over resource allocation.

Hydroelectric Power Generation

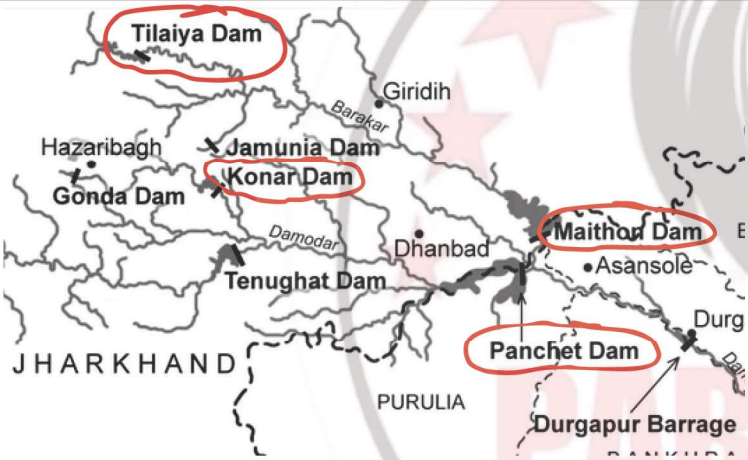
- In hydroelectric power plant Potential Energy of stored water is first converted to Kinetic Energy when the water falls into turbines which in turn convert it into electrical energy.

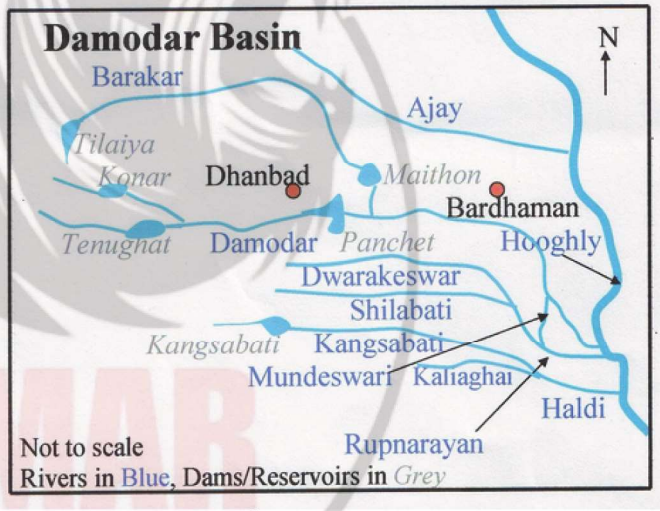


Damodar Valley Project

- It is India's first River valley project (1948) based on Tennessee River Project (USA)

Dams	Location	River
Maithon	Jharkhand	Barakar
Tilaiya	Jharkhand	Barakar
Panchet	Jharkhand	Damodar
Konar	Jharkhand	Konar

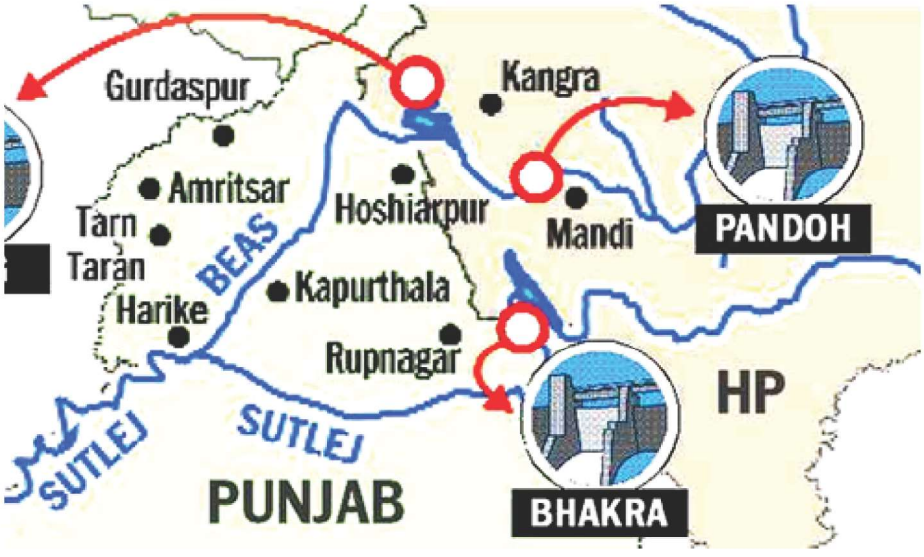




Damodar River Basin

Bhakra Nangal Project

- Built on: Sutlej river (during the First Five-Year Plan).
- It is India's highest Gravity Dam and the largest dam in terms of area.
- It consists of two dams: Bhakra Dam (located in Himachal Pradesh, which also forms Gobind Sagar Lake) and Nangal Dam (located in Punjab).



Hirakud Dam

- Built on: Mahanadi river (Sambalpur district of Odisha).
- It is the longest earthen dam in the world (the main dam is 4.8 km long and the dam and dykes together measure 25.8 km).



Tehri Dam

- Built on: Bhagirathi river (Uttarakhand).
- It is the highest dam of India (Height: 261 m).



Farakka Dam

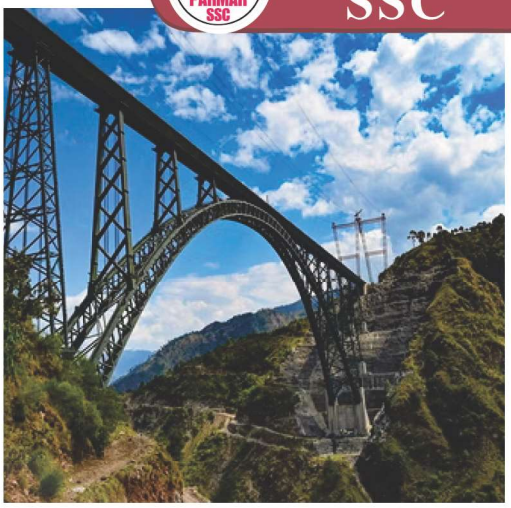
- Built on: Ganga river (West Bengal)
- This Dam was built to provide water to Hooghly River.



Dams of Jammu & Kashmir

Dams	River
Dul Hasti Dam	Chenab
Baglihar Dam	Chenab
Salal Dam	Chenab
Ratle Dam	Chenab
Kishanganga Project	Jhelum
Tulbul Project	Jhelum
Uri Project	Jhelum

Chenab Rail Bridge



- The Chenab Rail Bridge in J&K is the highest railway bridge in the world constructed on Chenab River near Salal Hydroelectric Project.
- Height : 359 m or 1178 Ft.
- Length : 1315 m.
- Built By : VSL India and Afcons Infrastructure in collaboration with South Korea's Ultra Construction & Engineering Company

Dams of Himachal Pradesh

Dams	River
Pong Dam	Beas
Chamera Dam	Ravi
Baira Siul Dam	Ravi
Bassi Dam	Ravi
Nathpa Jhakri Dam	Sutlej

- Pong Dam is in Kangra district and is also known as Maharana Pratap Sagar Dam.
- Baira Siul Dam is in Chamba District .

Dams of Punjab

Dams	River
Thein Dam	Ravi
Shahpur Dam	Ravi
Harike Dam	Beas + Sutlej

- Thein Dam is also known as Ranjit Sagar Dam
- Harike Dam is on the confluence of Sutlej and Beas River from where Indira Gandhi Canal (longest Canal in India) originates.

Dams of Uttar Pradesh

Dams	River
Matatila Dam	Betwa
Lakshmibai Dam	Betwa
Rihand Dam	Rihand

- Rihand Dam is also known as Govind Vallabh Pant Sagar Reservoir (Largest Artificial lake of India)

Dams of Gujarat

Dams	River
Ukai Dam	Tapi
Kakrapar Dam	Tapi
Sardar Sarovar Dam	Narmada
Kandana Dam	Mahi

Dams of Madhya Pradesh

Dams	River
Tawa Dam	Tawa
Omkareshwar Dam	Narmada
Ban Sagar Dam	Son
Gandhi Sagar Dam	Chambal
Indira Sagar	Narmada

- Tawa River is a tributary of Narmada River

Dams of Rajasthan

Dams	River
Mahi Bajaj Sagar	Mahi
Rana Pratap Sagar	Chambal
Jawahar Sagar	Chambal
Bisalpur Dam	Banas

- Rana Pratap Sagar is at Rawatbhata.

Dams of Maharashtra

Dams	River
Jayakwadi Dam	Godavari River
Koyna Dam	Koyna River
Dhom Dam	Krishna River
Ujjaini Dam	Krishna River
Isapur Dam	Penganga River
Bhusi Dam	Indrayani River

- Maharashtra has most number of Dams in India followed by Madhya Pradesh and Gujarat

Dams of Jharkhand

Dams	River
Panchet Dam	Damodar River
Maithon Dam	Barakar River
Tilaiya Dam	Barakar River
Patratu Dam	Nalkari River
Konar Dam	Konar River
Massanjore Dam	Mayurakshi River

- Barakar River is a major tributary of Damodar River.
- Massanjore Dam is located in Dumka, which is sub-capital of Jharkhand

Dams of Chhattisgarh

Dams	River
Indravati Dam	Godavari River
Hasdeo Bango Dam	Hasdeo River

- Hasdeo River is a tributary of Mahanadi.

Dams of Telangana

Dams	River
Pochampad Dam	Godavari River
Kaleshwaram Dam	Godavari RIver
Nagarjuna Sagar Dam	Krishna River
Nizam Sagar Dam	Manjira River

- Pochampad Dam is also known as Sriram Sagar Project
- Kaleshwaram Dam is a lift irrigation Project.
- Manjira River is right bank tributary of Godavari.

Dams of Karnataka

Dams	River
Linganamakki Dam	Shravati River
Shivanasamudram Dam	Kaveri River
Krishna Raja Sagar Dam	Kaveri RIver
Almatti Dam	Krishna River

Dams of Kerala

Dams	River
Idukki Dam	Periyar River
Mullaperiyar Dam	Periyar River

Dams of Tamil Nadu

Dams	River
Mettur Dam	Kaveri River
Pykara Dam	Pykara River

Dams of Andhra Pradesh

Dams	River
Srisailam Dam	Krishna River
Nagarjun Sagar Dam	Krishna River
Somasila Dam	Pennar River

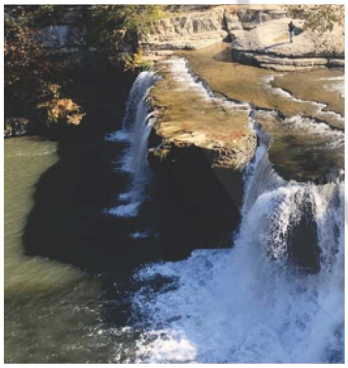
- Somasila Dam is located in Nellore District of Andhra Pradesh.

Waterfalls

- There are three types of Waterfalls :

1 Cataract Waterfall

- A large powerful waterfall that occurs when large amount of fast moving water (or large volume of water) falls over a clip.



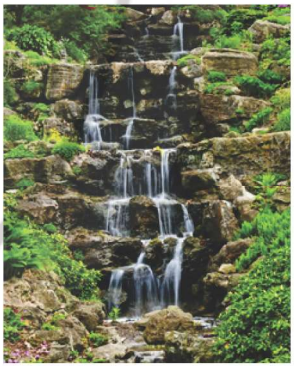
2 Plunge Waterfall

- A waterfall where water falls straightly down without touching the cliff face below (Water velocity is very high)



3 Cascade Waterfall

- A waterfall that consists of series of small falls where water flows over rocks or boulders (multi-step waterfalls).



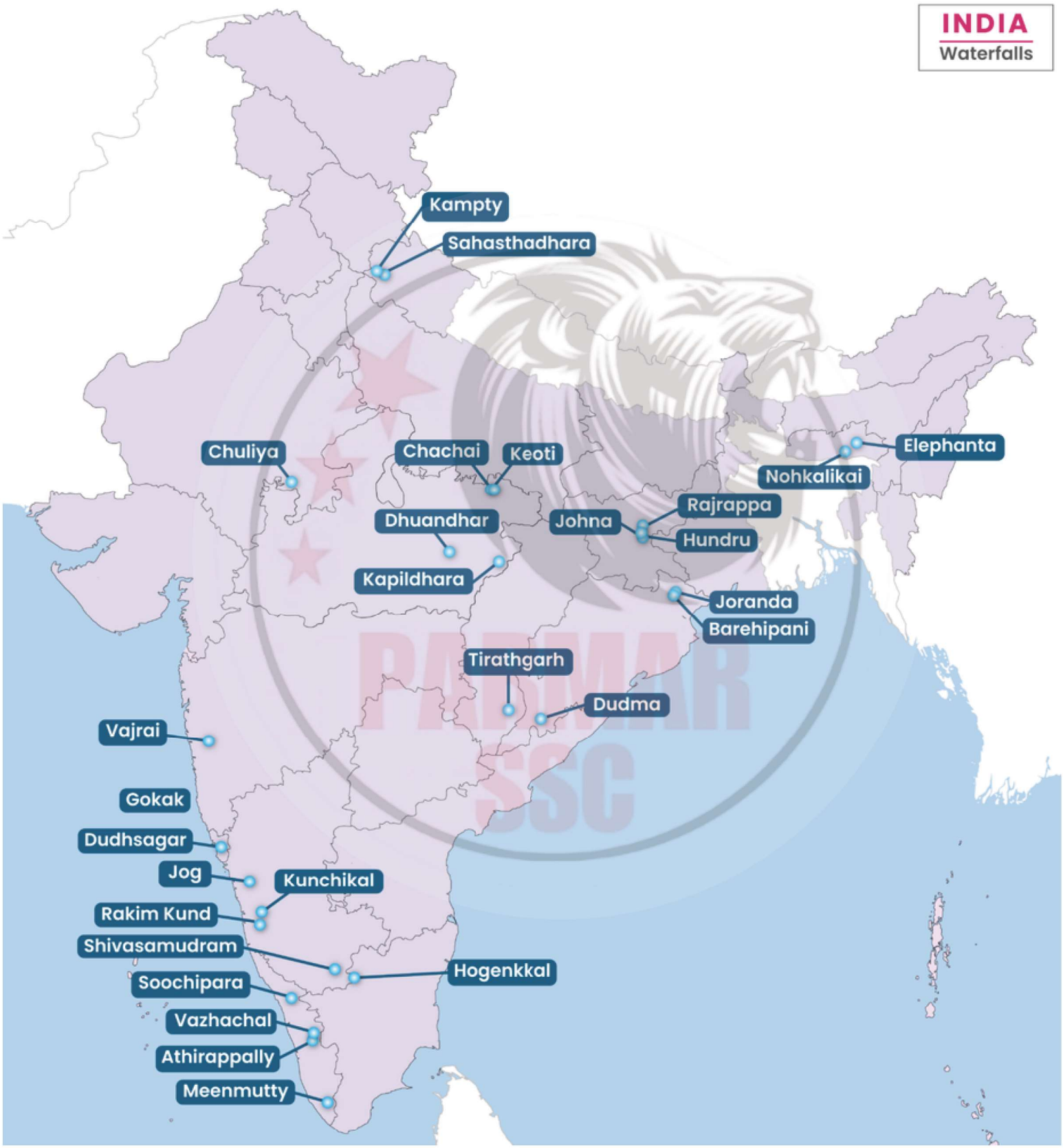
Which is the highest Water fall in World?

- Highest waterfall in the world: Angel waterfall (979 m) in Venezuela
- Second highest in the world: Niagara Falls (in USA-Canada border)
- Niagara Falls of India: Chitrakoot waterfall in Chhattisgarh

DID YOU KNOW?



Some Important Waterfalls



Some Important Waterfalls

Name	River	State
Kunchikal (highest Waterfall : 455 m)	Varahi	Karnataka (Shimoga)
Jog / Gersoppa / Mahatma Gandhi (2nd highest Waterfall in India)	Shravati	Karnataka
Shivsamundram	Kaveri	Karnataka
Chulia	Chambal	Rajasthan
Dhuandhar and Kapildhara	Narmada	Madhya Pradesh
Hundru	Subarnarekha	Jharkhand
Dudh Sagar	Mandovi	Goa
Nohkalikai	Fed by Rain water	Meghalaya
Vajrai	Urmodi	Maharashtra
Kune	Ulhas	Maharashtra
Hebbe	Bhadra	Karnataka
Duduma	Machkund	Odissa
Barehipani	Budhabalanga	Odisha
Gokak	Ghatprabha	Karnataka

State-Wise Lakes

Jammu & Kashmir

- Largest freshwater lake in India: Wular Lake on Jhelum liver (it was formed as a result of tectonic activity).
- Anchar lake, Mansar lake, and Dal lake (Jewel of Srinagar).

Ladakh

- Salt water lakes: Pangong Tso lake (In Aksai-Chin border), Tso kar, Tso Moriri.

Uttarakhand

- Dodital lake, Bhimtal lake, Roop Kund lake (Skeleton Lake), Nainital lake, Suryadhar lake.

Bihar

- Largest ox-bow lake (on Burhi Gandak River): Kanwar Tal
- Gogabil lake.

Madhya Pradesh

- Asia's largest artificial lake: Bhojtal/Bhopal lake which was formally known as Upper lake was constructed by Raja Bhoj (Parmar Dynasty's most famous and powerful ruler, who also established Bhopal city).

Himachal Pradesh

- Govind Sagar lake, Renuka lake and Khajjar Lake

Maharashtra

- Bhushi lake and Lonar lake (also called crater lake (created due to meteorite impact) in Buldhana district).

Tamil Nadu

- India's second largest brackish water lake: Pulicat lake is located between Andhra Pradesh and Tamil Nadu.
- Kaliveli lake.

Andhra Pradesh

- Kolleru lake (located between Godavari and Krishna) and Pulicat lake (located between Andhra and Tamil Nadu).

Haryana

- Surajkund lake.

Gujarat

- Nalsarovar lake, Rann of Kutch lake, and Thol lake (Ramsar site in 2021).

Rajasthan

- Pushkar lake in Ajmer.
- Largest inland saltwater lake: Sambhar lake (Chilika is a coastal lake).
- Second largest artificial lake in Asia: Jaisamand/Dhebar lake (Udaipur).

Kerala

- Longest lake in India: Vembanad lake (Pamba river falls on it).
- Sasthamkotta lake and Ashtamudi lake.

Telangana

- Srisailam lake, Nagarjuna Sagar lake, Hussain Sagar lake (connects Hyderabad and Secunderabad), and Nizam Sagar lake.

Odisha

- Anshupa lake
- Largest brackish water (freshwater + salt water) lake in India: Chilika lake (first Ramsar site to be added in the year 1981).

Uttar Pradesh

- Man-made reservoir: Keetham lake/Sur Sarovar (in Agra) added to Ramsar site in the year 2020.
- Largest artificial lake in India: Govind Ballabh Pant Sagar (in Sonbhadra district).

Sikkim

- Highest lake in India: Gurudongmar lake
- Tso Lhamo lake/Cholamu lake and Tsomgo Chho lake.

Meghalaya

- Barapani/Umiam lake in Shillong.

Tripura

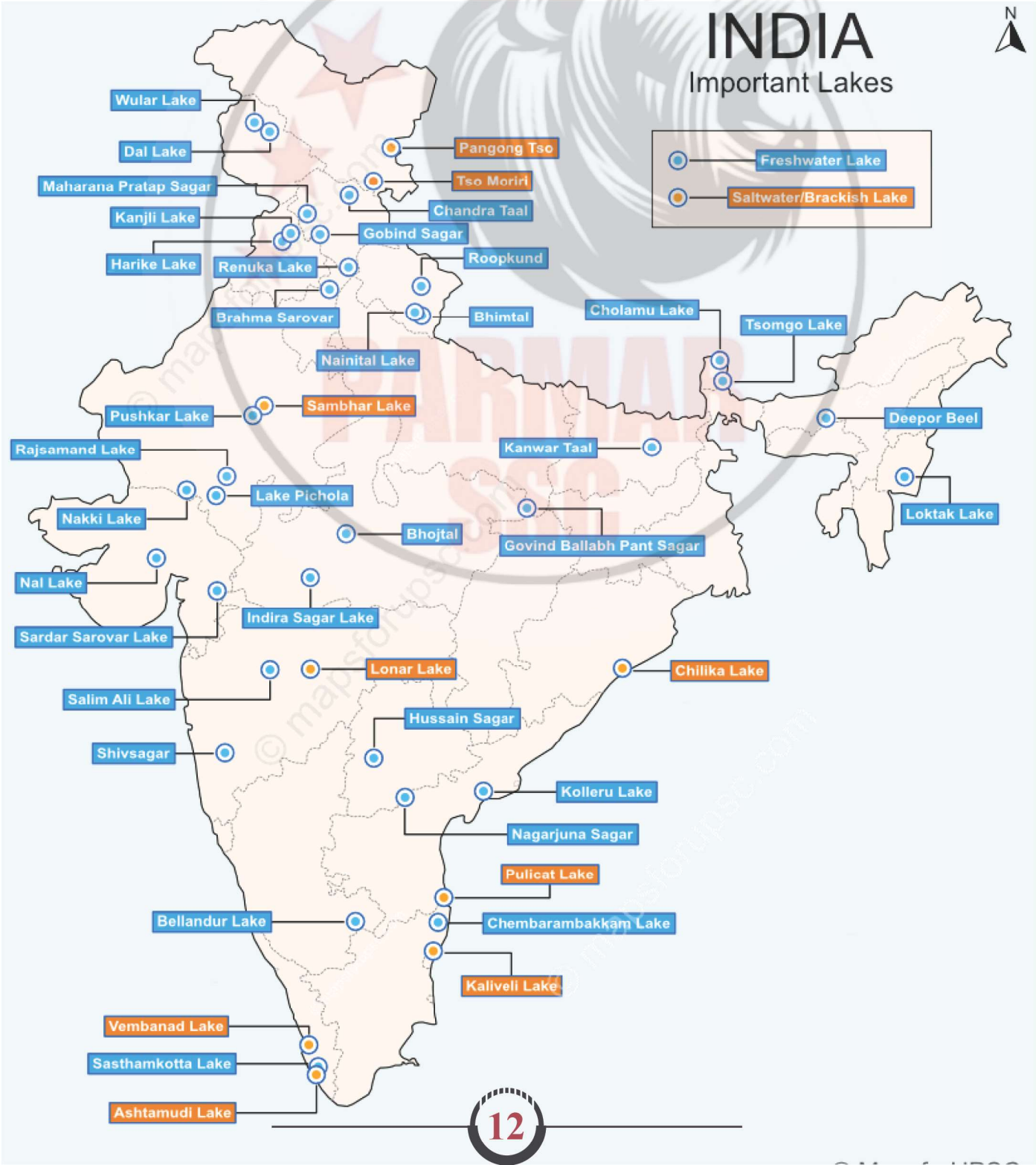
- Rudrasagar lake

Assam

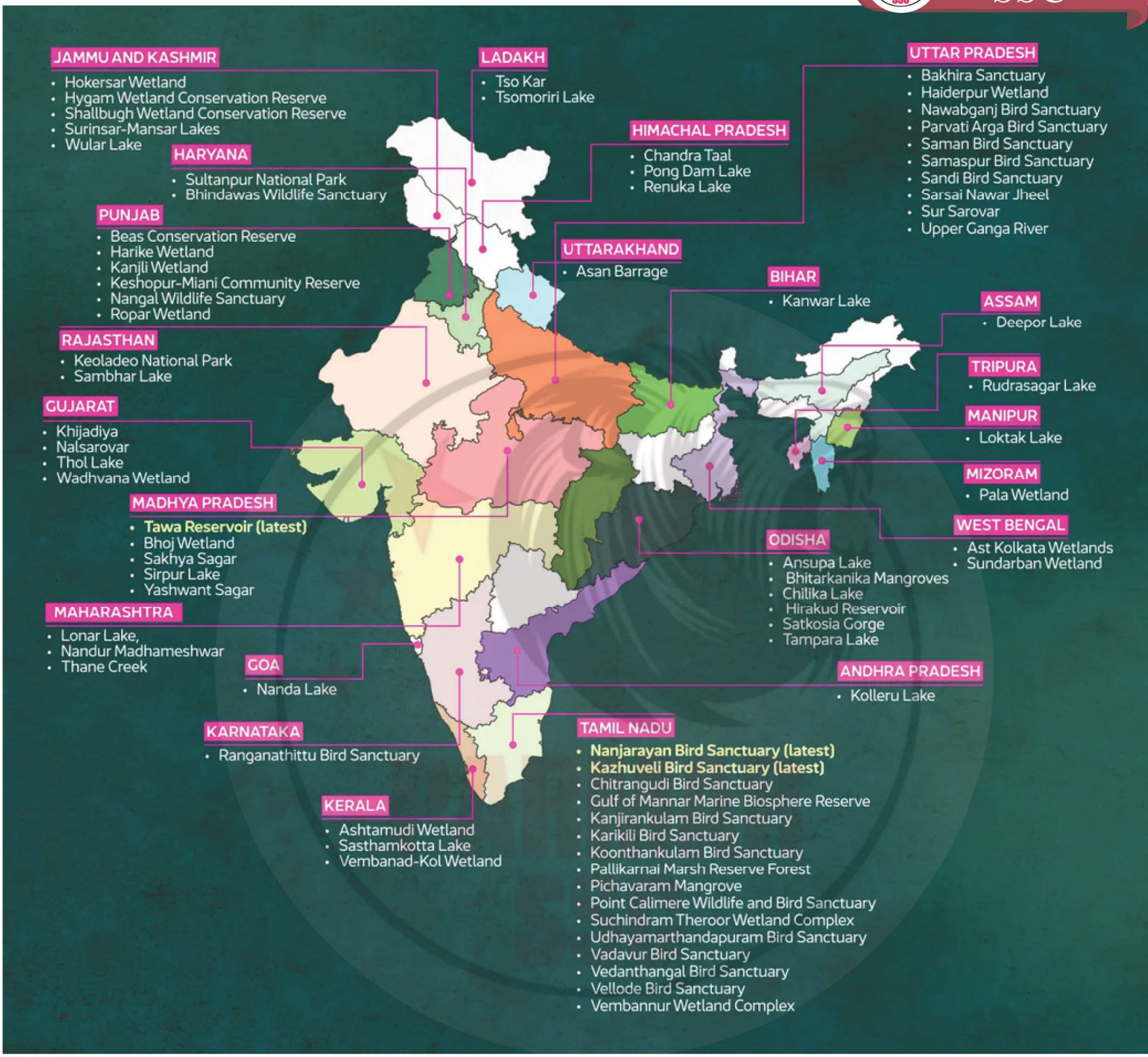
- Haflong lake, Chandubi lake, and Deepor Beel lake.

Manipur

- World's only floating lake: Loktak lake (it is famous for phumdis floating over it. Keibul Lamjao National Park (world's only floating National Park) is located here).



Ramsar Sites



- Ramsar sites are wetlands of international importance designated under the Ramsar Convention (2nd Feb 1971 in Iran), an international treaty for the conservation of wetlands.
- 1st Ramsar site of India : Chilika Lake in Odisha and Keoladeo National Park in Rajasthan
- At Present (Oct 2025) total 93 Ramsar sites in India.
- Most No. of Ramsar Sites in Tamil Nadu.
- **Montreux Record** : Wetlands that are experiencing, or likely to experience, changes in ecological character due to factors like pollution or human interference

Some Facts

- Largest lake in the world: Caspian Sea
- Highest Navigable lake in the world: Lake Titicaca (Peru & Bolivia)
- Deepest lake of the world: Lake Baikal (Russia)
- Largest Freshwater Lake in the world: Lake Superior (USA & Canada)