Syllabus subtopic: Conservation, environmental pollution and degradation, environmental impact assessment

Prelims and Mains focus: about the census and its findings; about Irrawaddy dolphins and why they are important; about Chilika lake

News: Odisha Forest Department officials, wildlife experts and researchers on Sunday sighted 146 endangered Irrawaddy dolphins in Chilika Lake, which boasts of the highest single lagoon population of the aquatic mammal in the world.

About the dolphin census and its findings

- The dolphin census was simultaneously taken up in Chilika and off Odisha coast. The Chilika Development Authority (CDA) is elated that the direct sighting of 146 dolphins meant that its population in the lake would stabilise well above 150. According to last year’s census, the Irrawaddy dolphin population in Chilika was 151.

- The CDA does counting of dolphins round the year using hydrophones. According to hydrophone monitoring carried out round the year in Chilika, the highest number of Irrawaddy dolphins (20-25) was moving around Rajhans, followed by the Magarmukh and Malatikuda areas, where dolphins numbering between 17-20 were expected.

- The dolphins were colonising new areas, which had been freed from encroachments by prawn farming gherries.

- The officials expressed hopes that that the population is likely to increase in the next couple of years as there are enough signs of dolphins migrating from the Satpada (town in Puri district, Odisha) side to other areas.

[The SOFAR channel (short for Sound Fixing and Ranging channel), or deep sound channel (DSC), is a horizontal layer of water in the ocean at which depth the speed of sound is at its minimum.]
The SOFAR channel acts as a waveguide for sound, and low frequency sound waves within the channel may travel thousands of miles before dissipating. This phenomenon is an important factor in submarine warfare. The deep sound channel was discovered and described independently by Maurice Ewing, Stanley Wong and Leonid Brekhovskikh in the 1940s.

About Irrawaddy dolphins

- About Irrawaddy Dolphin is not a true river dolphin, but an oceanic dolphin that lives in brackish water near coasts, river mouths and in estuaries in South and Southeast Asia.

- It is slaty blue to slaty gray throughout, with the underparts slightly paler. It is identified by a bulging forehead, a short beak.

- It has established subpopulations in freshwater rivers, including the Ganges and the Mekong, as well as the Irrawaddy River from which it takes its name.

- Its habitat range extends from the Bay of Bengal to New Guinea and the Philippines. They do not appear to venture off shore.

- **Protection Status:** The status has been raised from “Vulnerable” to “Endangered” according to the latest Red List of threatened species produced by the International Union of Conservation of Nature (IUCN)

- **Threats:** fishing nets, developmental projects like construction of dams, tourism and diseases.

- The total population of these aquatic mammals in the world is estimated to be less than 7,500. Of these, more than 6,000 Irrawaddy dolphins have been reported from Bangladesh, while the dolphin distribution in Chilika is considered to be the highest single lagoon population.
Why are they important?

- If you see a lot of dolphins in an area, then it generally means that the local ecosystem is healthy enough to support them. They are **apex predators that make sure that the populations of their prey remain healthy and do not grow too big**, which can disrupt the food chain. They help maintain their ecosystem by having a diet of fish, mollusks, and aquatic crustaceans such as crab and shrimp.

- Irrawaddy dolphins **provide income for coastal communities** through ecotourism. They are well recognized for their “smiling” faces and are known for their **ability to spit water** which is **thought to be used as a way to herd fish**.

About Chilika Lake

- Chilika Lake is a **brackish water lagoon**, spread over the Puri, Khurda and Ganjam districts of Odisha state on the east coast of India, at the **mouth of the Daya River**, flowing into the Bay of Bengal, covering an area of over 1,100 km.

- It is the **largest coastal lagoon in India** and the **second largest brackish water lagoon in the world** after The New Caledonian barrier reef. It has been listed as a **tentative UNESCO World Heritage site**.

- It is the **largest wintering ground for migratory birds on the Indian sub-continent**. The lake is home to a number of threatened species of plants and animals. The lagoon hosts over 160 species of birds in the peak migratory season. 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. These birds travel great distances; migratory birds probably follow much longer routes than the straight lines, possibly up to 12,000 km, to reach Chilika Lake.

- The lake is an ecosystem with large fishery resources. It sustains more than 150,000 fisher–folk living in 132 villages on the shore and islands.
In 1981, Chilika Lake was designated the first Indian wetland of international importance under the Ramsar Convention.

According to a survey, 45 percent of the birds are terrestrial in nature, 32 percent are waterfowl, and 23 percent are waders. The lagoon is also home to 14 types of raptors. Around 152 rare and endangered Irrawaddy dolphins have also been reported. Plus, the lagoon supports about 37 species of reptiles and amphibians.

The highly productive Chilika Lagoon ecosystem with its rich fishery resources sustains the livelihood for many fishermen who live in and near the lagoon. The water spread area of the lagoon ranges between 1165 and 906 km² during the monsoon and summer respectively. A 32 km long, narrow, outer channel connects the lagoon to the Bay of Bengal, near the village Motto. More recently a new mouth has been opened by CDA which has brought a new lease of life to the lagoon.

Microalgae, marine seaweeds, sea grasses, fish and crab also flourish in the brackish water of the Chilika Lagoon. Especially the recovery of seagrass beds in recent years is a welcoming trend which may eventually result in re-colonization of endangered dugongs.