



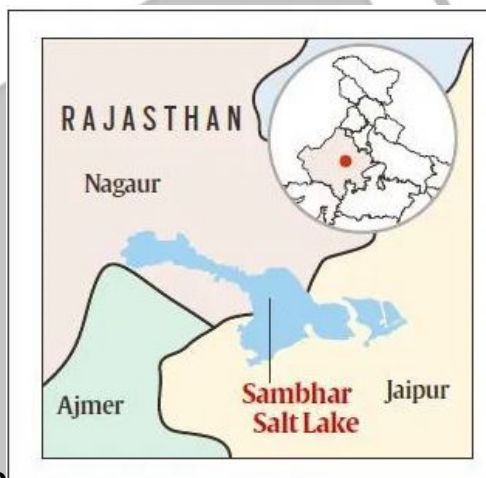
Avian Botulism at Sambhar Lake

Why in News

The Indian Veterinary Research Institute (IVRI), Uttar Pradesh has confirmed **avian botulism** as the reason for **mass mortality of birds**, at **Sambhar Lake** in **Rajasthan**.

Avian Botulism

- The avian botulism is a **neuro-muscular illness** caused by **Botulinum (natural toxin)** that is produced by a **bacteria — Clostridium botulinum**.
- The bacteria is **commonly found** in the **soil, rivers, and seawater**. It affects **both humans and animals**.
- The bacteria also need **anaerobic (absence of oxygen)** conditions and **do not grow** in **acidic conditions**.
- It affects the **nervous system** of birds, leading to **paralysis in their legs and wings**.
- The outbreaks of avian botulism tend to occur when **average temperatures are above 21 degrees celsius, and during droughts**.



Sambhar Lake

- The Sambhar Salt Lake is India's **largest inland saltwater body** located near Jaipur in Rajasthan.
- The lake is **surrounded on all sides by the Aravali hills**.
- It is the source of most of **Rajasthan's salt production**.
- Sambhar has been designated as a **Ramsar site (recognized wetland of international importance)** because the wetland is a key wintering area for tens of thousands of flamingos and other birds that migrate from northern Asia.

Mass Mortality at Sambhar Lake

- The **possible causes** for avian botulism at Sambhar lake are:

- **Reduced water levels:** This might have **increased** salinity levels leading to the **death of living organisms**.
 - The decaying plant or animal materials are capable of **hosting the bacteria for a longer period of time**.
- **A bird-to-bird cycle:** Since only insectivorous and omnivorous birds were affected and not herbivores, the birds feeding on dead birds could have been a possible cause of such mortality.
- The **possibility of external factors** like water pollution and eutrophication are **ruled out** as **no farming** is being carried out in the **vicinity of sambhar lake**.

Way Forward

- Sambhar Lake is **not the first instance** where deaths due to botulism have been recorded. 7,000 water birds died in Lake Michigan in 2007 and 2008. In Hawaii, the toxin killed around 183 Laysan Ducks in 2008.
- The botulism outbreaks are **likely to become more frequent as climate change** alters wetland conditions to favour bacteria and pathogens.
- Thus, the **establishment of rescue and medical centres** along with the mitigation of **climate change** need to be considered by the government as a **precautionary measure** for the future.

Source:TH

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