

## Migratory birds dying in Sambhar Lake

### What is the issue?

- Thousands of migratory birds have been found dead at Sambhar Lake, Rajasthan and officials have buried over 18,000 carcasses so far.
- While there is no clarity yet on what has caused the deaths, investigations so far suggest avian botulism.

### What birds have been found dead?

- **Sambhar Lake** - India's largest inland saltwater lake at 230 sq km, spread mostly across Jaipur and Nagaur districts, and a part of Ajmer.
- It has a catchment area of 5,700 sq.km. with the water depth fluctuating between 60 cm in the dry season to about 3 m at the end of the monsoon.
- Every year, the lake attracts thousands of migratory birds which is a total 83 species of water birds have been recorded at the lake.
- **Species that died** - Birds of about 25-30 species have been found dead which includes northern shoveller, Brahminy duck, pied avocet, etc.
- The trend began on November 10, 2019 when visitors found a large number of dead birds.
- Until November 20, the Rajasthan government had buried nearly 18,000 bird carcasses to prevent the spread of infection.
- Officials said the number of dead birds being found each day is declining. However, combing operations are still on.

### How much is known so far about the cause of death?

- On the basis of history, epidemiological observations, classical clinical symptoms and post-mortem findings, the most probable diagnosis is **avian botulism**.
- Avian botulism is a paralytic and frequently fatal disease caused by the ingestion of toxins.
- **Signs observed** - The clinical signs exhibited by affected birds included dullness, depression, anorexia, flaccid paralysis in legs and wings, and neck touching the ground.
- The birds were unable to walk, swim, or take flight.
- There was no rise of body temperature, no nasal discharge, no respiratory distress or any other sign.

- **Commonality** - There have been several waterfowl botulism outbreaks in the past.
- For example, in Canada, an estimated 1 lakh birds died in Alberta, 1.17 lakh in Manitoba, and 1 million in Saskatchewan between 1995 and 1997.

### **Why is it taking so long to establish the cause of death?**

- The government is waiting for reports from various sources to establish the exact cause.
- One source, the Rajasthan University of Veterinary and Animal Sciences (RAJUVAS) suggested that the cause is avian botulism.
- But the National Institute of High Security Animal Diseases (NIHSAD) has ruled out bird flu.
- Partial reports have been received from the Wildlife Institute of India (WII), Dehradun, and the Rajasthan State Pollution Control Board.

### **Is there a concern for human health?**

- Humans are primarily at risk from avian botulism **only if they eat infected fish or birds.**
- While NIHSAD has ruled out bird flu, this was what was feared initially.
- Personnel were directed to adopt appropriate prophylactic measures such as use of masks and gloves and burial of carcasses in deep pits with limestone.

### **What could be other possible reasons for the bird deaths?**

- The Rajasthan government listed the likely reasons,
  1. Viral infection;
  2. Toxicity, as a new area has been filled up after almost 20 years, and there could be higher concentration of salts along the edges;
  3. Bacteriological infection; and
  4. Higher temperature and high water levels due to a good monsoon.
- The last reason might have led to an increase in competition for resources.
- The weaker individuals, exhausted from the long journey, perhaps were unable to compete.
- They may have succumbed to stress emanating from the shortage of food, susceptibility to disease/pollutants/toxins and other habitat-related factors in the wintering grounds.
- This is what the government suggested.
- If that is the reason, the government said it is expected that with fall of temperature and lowering of water levels, incidence of such mortality will go down.

### **What are the reasons that make salt concentration a concern?**

- In a 2016 directive, the National Green Tribunal had noted the impact of the salt industry on the ecosystem of Sambhar Lake.
- It asked the state government to cancel allotment of salt pans.
- Over the last week, the WII, the State Pollution Control Board and Sambhar Salts Ltd have collected samples to test for water quality.
- Part of the lake has been leased to Sambhar Salts, a joint venture of Hindustan Salts Limited and the state government.
- Sambhar Salts produces 196,000 tonnes of clean salt every year, which is around 9% of India's salt production.
- The lake was recognised as a wetland of international importance when it was designated as a UNESCO Ramsar Site in 1990.
- Today, as per NGO Wetlands International, it has the worst possible Wetland Health Score at E.

**Source: The Indian Express**

