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

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