

1. Dolphin-Fisher Cooperation - Environment

Researchers to study rare dolphin-fisher kinship in Ashtamudi Lake. The issue involves a rare, strategic cooperative behaviour in Ashtamudi Lake, Kerala, where Endangered Indo-Pacific humpback dolphins signal artisanal fishers to cast nets, leading to mutual benefits. An international research project is currently studying the ecological and cultural mechanisms that enable this complex interspecies interaction.

The Phenomenon - Dolphin-Fisher Cooperation

This represents a rare example of strategic human-wildlife cooperation.

Mechanism of Cooperation - The dolphins drive dense schools of fish toward shallow shoreline waters. The dolphins then signal the fishers using a distinctive action, typically a tail-slap or a roll. This signal prompts the fishers to immediately cast their nets, securing a successful catch.

Mutual Benefit (Reciprocity)

Fishers - Secure a successful catch.

Dolphins - Feed on the scattered fish that escape the nets.

The Study - Ecology and Evolution of Cooperation

The international research project aims to understand the mechanisms and factors driving this interspecies cooperation.

Title - The Ecology and Evolution of Cultural and Cooperative Behaviour among Dolphins and Humans.

Support & Coordination - Supported by the National Geographic Society. Coordinated globally by Oregon State University.

Aim & Objective

Aim - To understand the mechanisms driving cooperation between wild dolphins and fishers.

Objective - To conduct a comparative analysis across three countries (India, Brazil, and Myanmar) and two continents, focusing on the evolution of complex interspecies cooperation and the cultural and ecological factors enabling such behaviors.

Indo-Pacific Humpback Dolphins (*Sousa plumbea*)

The Indo-Pacific humpback dolphin (*Sousa plumbea*), commonly referred to as the Indian Ocean humpback dolphin, is a coastal marine mammal known for its high social intelligence and distinctive physical features.

Overview and Classification

Type - Coastal marine mammal found in the Indian Ocean and the western Pacific region.

Distinctive Features - Known for a hump-like dorsal area and high levels of social intelligence.

Taxonomy

Genus - *Sousa*.

Species - *plumbea*.

Classification History - It was earlier considered part of *Sousa chinensis* but was later classified as a distinct species.

Distribution and Habitat - This species prefers shallow, highly productive coastal environments, generally in water depths less than 30 metres.

Distribution Range - It is found in coastal waters across -

1. East Africa to the Bay of Bengal.
2. Arabian Sea.
3. Coast of India (both east and west coasts).
4. Sri Lanka and Maldives.

Habitat Characteristics

The dolphin is often associated with the following turbid, shallow waters -

1. Shallow coastal waters.
2. Estuaries and river mouths.
3. Lagoons and mangrove belts.

4. Brackish ecosystems like Ashtamudi Lake, Kerala.

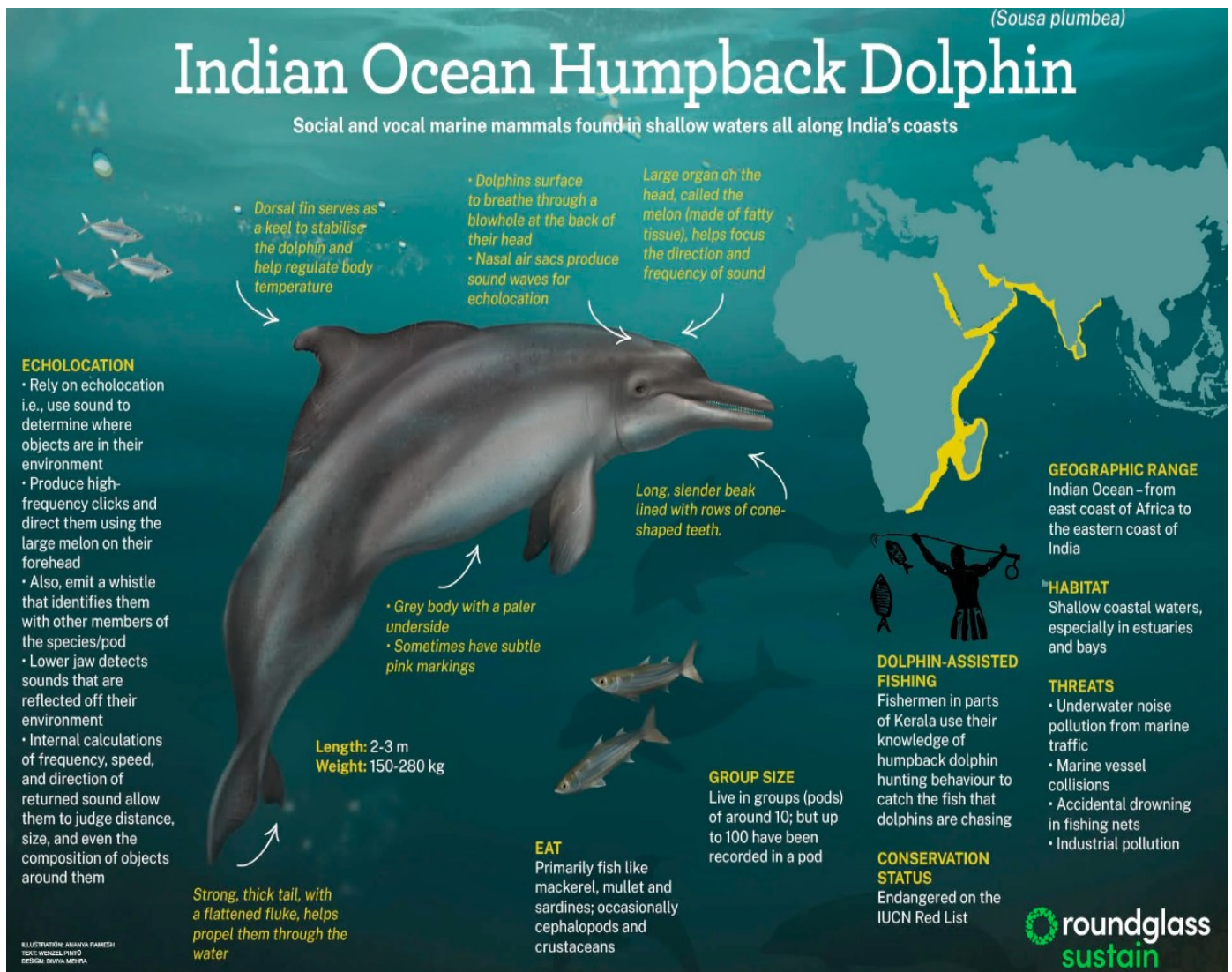
Presence in India

The Indo-Pacific humpback dolphin is found in the coastal waters of several Indian states –

West Coast – Kerala, Goa, Maharashtra, Gujarat (Gulf of Kutch and Gulf of Khambhat).

East Coast – Odisha, West Bengal.

Physical and Behavioural Characteristics



Morphology

Length – 2–2.8 metres.

Colour – Light grey to dark grey, with juveniles being lighter.

Distinctive Feature – Recognized by a distinctive hump below the dorsal fin.

Behaviour – Highly social and intelligent species. Displays complex behaviours such as cooperative hunting, tool-like use of group coordination, acoustic communication, and synchronised foraging strategies.

Diet – Feeds on fish, crustaceans, and cephalopods. It often hunts in turbid, shallow waters where fish density is high.

Conservation Status and Threats – The species faces significant threats primarily due to its reliance on rapidly developing coastal habitats.

Conservation Status

Authority	Classification	Protection Level
IUCN Status	Near Threat-ened.	(Indicates facing a high risk of extinction in the wild in the near future)

CITES	Appendix I.	Highest level of protection against international trade.
Indian Wildlife (Protection) Act, 1972	Schedule II species.	(Offers high protection but not the highest, Schedule I).

Major Threats

Habitat Stress - Coastal habitat loss and degradation, including the impact of climate change on coastal ecosystems.

Pollution - Noise pollution (ports, shipping, dredging), heavy metals, industrial effluents, and plastics.

Fisheries Impact - Overfishing and prey depletion, and bycatch in fishing nets.

Conservation Measures

Conservation efforts require a multi-pronged approach -

Habitat Protection - Habitat-based conservation in lagoons, estuaries, and mangroves.

Fisheries Management - Reduction of bycatch through gear modification.

Regulatory Zones - Establishment of Marine Protected Areas and coastal zone regulation.

Community Involvement - Community engagement for sustainable fishing.

Research - Continued research on behaviour, migration, and population dynamics.

The study focuses on this specific species due to its involvement in the cooperative behavior.

Overview and Habitat

Feature	Description
Over-view	A coastal dolphin species found in shallow tropical and subtropical waters along the Indian Ocean.
Habitat	Found in localized areas of patchy distributions, mainly in shallow waters very close to the shore and around river mouths and estuaries.
Diet	Primarily feeds on fish like mackerel, mullet, sardines, and pomfret found along the shallow

Source - https://www.thehindu.com/news/national/kerala/researchers-to-study-rare-dolphin-fisher-kinship-in-ashtamudi-lake/article70283643.ece#google_vignette