

UNDERWATER NOISE EMISSIONS BY SHIPS POSE THREAT TO MARINE SPECIES, SAYS STUDY

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The rising man-made (anthropogenic) underwater noise emissions (UNE) from ships in the Indian waters are posing a threat to the life of marine mammals like Bottlenose Dolphin, Manatees, Pilot Whale, Seal and Sperm Whale.

The main form of energy for multiple behavioural activities of marine mammals, which include mating, communal interaction, feeding, cluster cohesion and foraging, is based on sound.

However, the sound that radiates from ships on a long-term basis affects them and results in internal injuries, loss of hearing ability, change in behavioural responses, masking, and stress. There are Acute and Chronic noise categories in the emissions.

The UNE or underwater sound pressure levels in the Indian waters are 102-115 decibels, relative to one microPascal (dB re 1 μ Pa). The East Coast level is slightly higher than that of the West. There is an increase by a significant value of about 20 dB re 1 μ Pa.

Continuous shipping movement is identified to be a major contributor to the increase in the global ocean noise level, according to a new study titled "Measuring Underwater Noise Levels Radiated by Ships in Indian Waters" at the Visakhapatnam Port (for the East) and Goa's Mormugao port (for the West) by Andhra University's marine engineering research scholar G.V.V. Pavan Kumar under the guidance of Prof. V.V.S. Prasad.

"The frequencies of ships' underwater self-noise and machinery vibration levels are overlapping the marine species' communication frequencies in the low frequency range of less than 500 Hz. This is called masking, which could have led to a change in the migration route of the marine species to the shallow regions and also making it difficult for them to go back to the deeper water," Mr. Pavan Kumar tells *The Hindu*.

The measurement of the ambient noise levels was carried out by deploying a hydrophone autonomous system around 30 nautical miles from the Goa coastline. The depth of deployment of the sensor was 11 metres in a water depth of 22 metres. The single-channel hydrophone was deployed at different locations with in-water depth of 18 metres with a deployment depth of 3 and 5 metres off Visakhapatnam port.

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