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India’s marine mammal research set to advance with new acoustic tracking efforts

Kochi, Nov 6 (PTI) India’s marine mammal research could soon take a major leap forward with new initiatives to track whales, dolphins, and other species by capturing their sounds from several kilometres away. At a special session on marine mammal research, held alongside the fourth International Symposium on Marine Ecosystem (MECOS4) at the ICAR–Central Marine Fisheries Research Institute, experts discussed the growing use of PAM—a sound-based technology that enables scientists to track marine mammals more effectively, a press release said on Thursday.

According to experts, sound travels much faster and farther underwater than light, making acoustic monitoring an ideal tool to detect and study marine life even in challenging oceanic conditions. Unlike visual surveys that depend on clear weather and daylight, Passive Acoustic Monitoring offers round-the-clock monitoring across vast stretches of the ocean, the release said. "The technology uses various systems such as bottom-mounted moorings, surface buoys, drifting buoys, towed arrays, and even acoustic tags attached to individual animals," said Dr Divya Panicker of Ashoka University.

These devices capture underwater sounds produced by marine mammals, helping researchers determine their presence, abundance, and distribution patterns. "By analysing these sound signals, scientists can even trace migration routes and behavioural patterns of species," she said, adding that integrating Artificial Intelligence (AI) and Machine Learning (ML) could further enhance the accuracy of species identification and classification. With India’s vast coastline and rich marine biodiversity, developing indigenous acoustic systems could revolutionise marine mammal conservation, the session observed. Amid growing concerns over the challenges faced by marine mammals along India’s coasts, experts called for the formulation of a National Plan of Action for Marine Mammal Conservation to ensure long-term protection of these ecologically significant species. The discussions also highlighted that CMFRI’s research on marine mammals recently helped India clear a major hurdle in seafood exports to the United States.

Dr A Bijukumar, Vice-Chancellor of the Kerala University of Fisheries and Ocean Studies (KUFOS), who chaired the session, said, "There is a need for a national multi-institutional marine mammal network to coordinate research, monitoring, and conservation activities across the country." "India urgently needs a coordinated and well-funded conservation plan with defined roles for research institutions, enforcement agencies, and coastal communities," said CMFRI Director Dr Grinson George. He underscored the importance of allowing qualified marine scientists and research institutes to handle stranded marine mammals and conduct autopsies (post-mortem examinations) to determine causes of death, the release added. Dr J Jayasankar, Dr E Vivekanandan, Dr Sijo Varghese, Dr Isha Bopardikar, Dr Joice V Thomas, Dr Prajith, Dr Frances Gulland, Dr Dipani Sutaria, and Dr Ratheesh Kumar R also spoke at the session.