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SOUND POLLUTION

IT'S GETTING TOO LOUD FOR MAMMALS FROM 'SILENT WORLD'

Scientific research links episodes of stranding and deaths of marine mammals to exposure to high noise levels

The carcass of a dolphin washed ashore at Tanjung Bungah beachfront, George Town, on Dec 29 last year. Two dolphins have been found dead at the Tanjung Bungah beachfront last week. EPA PIC

WITHIN the last week, barely days into the new year, a couple of dolphins washed up dead on the shores of Penang (NST, Jan 4).

This tragic incident is approximately nine months after a less tragic one, involving a beached baleen whale that was set free by firemen and villagers in Miri, Sarawak (NST, May 4, 2017).

Ironically, over the span of a year prior to the above whale incident, four dolphins were reported to have washed up dead on Miri beach.

In February 2016 near Pontian, Johor, following a sad twist of fate, a beached baleen whale that appeared to have been successfully towed out to sea was found dead a couple of days later (NST Feb 8, 2016).

The situation appears to be just as bleak for the dugongs, a mammal species closely related to dolphins. At least five dugong carcasses were reported to have washed up on Johor beaches in the last couple of years.

News of stranded or dead marine mammals has become all too common despite the fact that living, wild specimens are rather inconspicuous even to scientists who seek to study them.

Sadly, these episodes may only be the tip of the iceberg. Many similar incidents have been reported throughout the country in recent years. The cause of these beaching and deaths seems to be a bit of a mystery, especially when no observable injury was apparent. Is something really fishy going on here?

The truth may actually be quite deafening. Most dolphins and whales possess some of the biggest brains among mammals. Some say they are as smart; if not smarter, than us.

Since dolphins 'see' using sound, the challenges faced by a dolphin when navigating in murky, noisy coastal waters is comparable to a human navigating through a dark, noisy cave.

These majestic beasts roamed the oceans long before humans walked the earth and as such, must have adapted themselves to the various changes in the oceans caused by human activities.

Nonetheless, marine pollution has often been blamed for otherwise unexplained marine mammal deaths. There is yet a less obvious cause — underwater noise pollution. We perhaps do not appreciate the extent to which marine mammals rely on acoustic communication to live in the ocean. This explains the mammals' disproportionately small eyes and sophisticated sound production/reception systems.

They literally eat, prey and mate using sound. A slight noise increase (less than 6dB underwater), in addition to their usual ambient noise, may just irritate and alter certain behaviours.

Higher noise increase (more than 6dB underwater), however, could overwhelm their sensory system and cause misinterpretation of signals, misguiding them into unfamiliar territories.

Too much noise increase (more than 10dB underwater) could physically injure the ears and cause haemorrhage of vital organs. A dolphin's exposure to such auditory overload is nothing short of an assault and is usually fatal.

The worrying fact is that noise under the ocean is getting louder by the day. Over the last five decades, scientists reckon that the average noise levels in the oceans have risen by as much as 9dB to 12dB in some frequency bands, and will continue to rise at a rate of approximately 0.5 dB per decade.

Worse still, it is inherently louder in coastal waters due to the vicinity of numerous sound sources (ships, coastal settlement, developments etc) as well as the amplification of noise by the reverberative effect of shallow waters.

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It makes getting lost and bumping into walls all the more likely and, in the case of a dolphin or a whale, beaching all the more frequent, too.

What is troubling is the lack of effort in alleviating this problem. Evidence from scientific research all around the world has clearly linked episodes of stranding and deaths of a wide variety of marine mammals to exposure to high noise levels.

Naval exercises (explosives and sonar pings) and seismic exploration for oil (seismic airgun arrays) top the list for the loudest acute source of underwater noise. Ships, too, cause adverse behavioural change in marine mammals due to the chronic nature of its ensonification.

Happily, many developed nations now consider underwater noise pollution as an environmental issue. Sadly, this is still considered trivial in our part of the world.

However, there is hope. For the past few years, small batches of marine scientists from the Marine Ecosystem Research Centre of Universiti Kebangsaan Malaysia (Ekomar, UKM) have been monitoring the underwater soundscape of coastal waters around the country.

Currently, via collaboration with the Department of Marine Parks and Taman Laut Sultan Iskandar in Johor, underwater sound recordings of thriving corals, seagrass and mangroves are being studied.

The recordings of the distinctive biological noise of snapping shrimps and fish provide some assurance that the natural underwater soundscape of these habitats is in relatively good shape, and would continue to serve as a navigational signpost to marine animal inhabitants, mammals included.

The late renowned ocean explorer Jacques Cousteau had never been so wrong when he portrayed the ocean as "The Silent World".

Now we are witnessing the "silence" being deafeningly loud. So loud that whales and dolphins are beaching themselves out of confusion.

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