

Home » NATURE QUEST

12:00 AM, January 13, 2017 / LAST MODIFIED: 07:49 PM, January 20, 2018

Nature Quest: Dolphins evolving in the Bay



Bottlenose dolphins in crystal clear waters in the northern Bay of Bengal and Humpback dolphins displaying colour variations, bellow. Photo: Courtesy to Rubaiyat M Mansur/WCS-Bangladesh

Abida Rahman Chowdhury

The Bay of Bengal, the largest bay in the world, veiled in mystery, home to sea gods and goddesses, and full of stories of many travellers who braved the high seas to make it to the land of spices, is also one that boasts of incredible biological diversity.

Our waters are home to many different species including the charismatic, almost elf-like humpback dolphins, powder pink in colour, and the grey-blue Indo-Pacific bottlenose dolphins among others.

Conservation mingled with passion, curiosity and a drive for a better understanding of these gentle giants occupying our sea drove marine scientists to collect samples from

both Indo-Pacific bottlenose and humpback dolphins in the waters off the coast of Bangladesh.

Genetic research conducted by marine scientists on the Indo-Pacific bottlenose and humpback dolphins has found animals that are distinct from their neighbouring populations, according to a new study by the American Museum of Natural History (AMNH), Wildlife Conservation Society (WCS), and the Centre for Ecology, Evolution and Environmental Changes (cE3c), Universidade de Lisboa.

To understand what this means, we need to go back to the basics of evolution. It is the change in the characteristics of a species over several generations, and relies on the process of natural selection, driven by various geographical factors, for example, availability of water, food, types of nutrients, temperature etc.

Some of these characteristics may give the individual an advantage over other individuals which they can then pass on to their offspring.



The recent discovery by marine scientists that two species of dolphin in the waters off Bangladesh are genetically distinct from those in other regions of the Indian and western Pacific Oceans supports a growing body of evidence that the Bay of Bengal harbours conditions that drive the evolution of new life forms.

“Our findings indicate that there is a connection between the presence of these distinct populations of dolphins and the unique oceanic habitat that is found in the Bay of Bengal,” Amaral, the lead author of the study, said in an article published in the WCS Newsroom.

“The combination of a biologically rich yet isolated seascape could be driving speciation, or the emergence of new species,” the author was quoted as saying in the article.

The Bay of Bengal, which is located in the northern Indian Ocean, has a unique habitat with a combination of multiple factors: it receives huge amounts of freshwater and organic matter, including sediments and minerals, from the Meghna, Brahmaputra and Ganges rivers, and leaf litter and other bio-productivity from the world's largest mangrove forest, a unique ecosystem in its own right.

Along with that in deeper waters, a submarine canyon called the “Swatch of No-Ground” (SoNG) recycles nutrients through upwelling. All of this together creates a biologically productive coastal region explaining the genetic distinctiveness found in both bottlenose and humpback dolphin populations.

The researchers collected skin samples from 32 coastal Indo-Pacific and humpback dolphins for the study.

Genetic sequences were then extracted from the samples for comparison with previously published sequences for both species. The researchers found both dolphins to be genetically isolated from nearby populations.

Interestingly, a previously un-described likely new species of "river shark," was recently discovered in the waters of the Bay of Bengal, indicative of the unique ecosystem in the bay.

The study titled “Oceanic drivers of population differentiation in Indo-Pacific bottlenose (*Tursiops aduncus*) and humpback (*Sousa spp.*) dolphins of the northern Bay of Bengal” was recently published in *Conservation Genetics*.

[The authors of the study are Dr Ana R Amaral of cE3c, Universidade de Lisboa, Portugal and AMNH's Sackler Institute of Comparative Genomics; Brian D Smith and Rubaiyat M Mansur of WCS; and Dr Howard C Rosenbaum of WCS and affiliated with AMNH.]

Stay updated on the go with The Daily Star Android & iOS News App. [Click here to download it for your device.](#)

The Daily Star Breaking news alert on your phone

Grameenphone:

Type START <space> BR and send SMS it to 22222

Robi:

Type START <space> BR and send SMS it to 2222