

## **New discovery by Australian and American researchers reveals ancient, super-snouted dolphins fed in a similar way to swordfish.**



Dr Matthew McCurry, Australian Museum Research Institute and lead author of the study.  
With fossil dolphin skulls. © James DiLoreto, Smithsonian Institution

7 November, 2018. Sydney, Australia: A team of palaeontologists from the Australian Museum Research Institute (AMRI) (Sydney, Australia), the University of New South Wales (UNSW) (Sydney, Australia), and the Smithsonian Institution's National Museum of Natural History (Washington DC, USA) have found that prehistoric long-snouted dolphins fed in a similar way to marlin and swordfish, sweeping their snouts through the water to hit and stun fish. The exciting research findings were published today in the prestigious scientific journal *Paleobiology*.

This collaborative project allowed scientists from both continents to examine fossil dolphin species held in the Smithsonian's national collection to make this landmark discovery.

Dr Matthew McCurry, palaeontologist from AMRI and UNSW and lead author of the study, said, "These fossil species have extremely long snouts, far longer than anything we have living today. They are really unusual looking animals dating from the Neogene Period, some 2.5-20 million years ago."

The strange appearance of these fossil species led the researchers to question what the ancient animals were doing in their environment, and why we no longer have long-snouted dolphins like this surviving today.

The Australian Museum Research Institute is widely recognised for applying its deep knowledge of biodiversity and geodiversity to its natural history collections to shine a light on the evolution of our environment and origins of Australia's unique fauna.

"This work is a wonderful example of why studying the past informs so much of what we see around us today. These fossils provide fascinating insights into dolphin species in prehistoric times and open up questions about what selective pressures or environmental changes may have contributed to their extinction." Professor Rebecca Johnson, Director of AMRI, said.

Until now, scientists have only speculated on how these dolphins behaved. This research found that long-snouted dolphins had characteristics similar to modern billfish: not only did they possess similarly long snouts, but in some cases their lower jaw was proportionally shorter. The shape of the snout in

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cross-section also indicates that these species were sweeping their snouts through the water at speed.

It is thought that changes in climate likely led to the species' evolution and extinction.

“We found that a number of long-snouted dolphins evolved during the same time from short-snouted ancestors, which suggests that there was something going on in the oceans at that time to encourage the evolution of extremely long snouts,” Dr McCurry added.

As the global temperature and sea level became more erratic in the early Pliocene Epoch, all of these long-snouted species died out.

“These particular fossil dolphins had snouts proportionally unrivalled by any other mammal, ever,” said Dr Nick Pyenson, curator of fossil marine mammals at the Smithsonian.

“What we did in this study, by functional analogy, is delimit the possible ways that these animals used these extraordinary snouts in their long-extinct worlds.” he said.

**Ends**

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The AM, founded in 1827 is the nation's first museum, and is an internationally recognised natural science and culture institution focused on Australia and the Pacific. As custodian of more than 18 million objects, the AM is uniquely positioned to provide a greater understanding of the region through its scientific research, exhibitions and public and education programs. Through the Australian Museum Research Institute (AMRI), the AM also has a leading role in conserving Australia's biodiversity through understanding the environmental impacts of climate change, potential biosecurity threats and invasive species.

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