Mystery of whales' eight-foot tooth solved

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A Harvard researcher has solved a long-standing marine mystery: why does the narwhal whale have an eight-foot tooth emerging from its head.

The tooth, or tusk, emerges from the left side of its upper jaw and its unique spiral, asymmetry, and odd distribution among most males and some females are all unique expressions of teeth in mammals.

The narwhal, growing up to 15 feet in length and weighing between 2,200 and 3,500 pounds, lives in the Atlantic portion of the Arctic Ocean and, in fewer numbers, in the Greenland Sea.

Nweeia determined the tooth has hydrodynamic sensor capabilities, capable of detecting changes in water temperature, pressure and particle gradients. Nweeia said there's no comparison in nature and certainly none more unique in tooth form, expression, and functional adaptation.

He collaborated with Dr. Frederick Eichmille of the Paffenbarger Research Center at the National Institute of Standards and Technology, and James Mead, curator of Marine Mammals at the National Museum of Natural History of the Smithsonian Institution.

Nweeia, a clinical instructor in restorative dentistry and biomaterials sciences, presented his conclusions Tuesday during the 16th Biennial Conference on the Biology of Marine Mammals in San Diego.