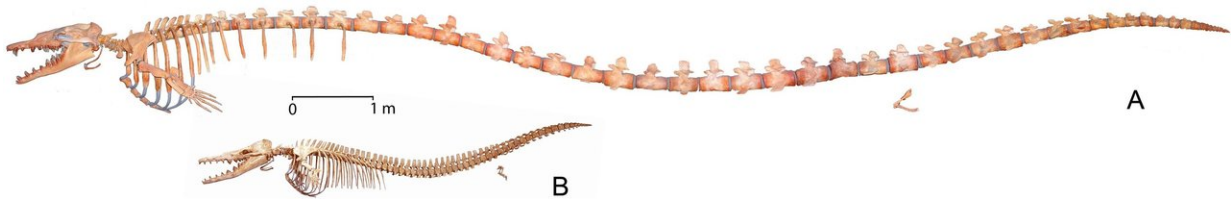


# 15-meter-long ancient whale *Basilosaurus isis* was top marine predator

January 9 2019

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Skeletons of *Basilosaurus isis* (A; CGM 42195) and *Dorudon atrox* (B; CGM 42183 and UM 97512, 100146, 101215, 101222) from Wadi Al Hitan, Egypt, as exhibited at the University of Michigan. Both are adult, fully grown, and illustrated at the same scale (scale bar equals 1 meter). CGM 42195 shows a cast of a 15 meter long *B. isis* specimen. Credit: Voss *et al.*, 2019

The stomach contents of ancient whale *Basilosaurus isis* suggest it was an apex predator, according to a study published January 9, 2019 in the open-access journal *PLOS ONE* by Manja Voss from the Museum für Naturkunde Berlin, Germany, and colleagues.

The authors uncovered an adult *B. isis* specimen in 2010 in the Wadi Al Hitan ("Valley of Whales") site in Cairo, Egypt. This site was once a shallow sea during the late Eocene period and is remarkable for its wealth of marine fossils. While excavating this main *B. isis* specimen, the authors also revealed the remains of sharks, large bony fish, and, most numerous, bones from *Dorudon atrox*, a smaller species of ancient

whale. The *Basilosaurus* skeleton was distinct from other skeletons in the cluster, containing pointed *B. isis* incisors and sharp cheek teeth as well as bones. Most of the fish, and Dorudon whale remains showed signs of breakage and [bite marks](#), were fragmented, and tended to be clustered within the body cavity of the *B. isis* specimen.

One hypothesis to explain the clustering of these remains was that *D. atrox* had scavenged the *B. isis* carcass and fish. However, the *D. atrox* were juveniles, capable only of drinking mother's milk. Bite marks on prey skulls also indicated predation rather than scavenging, since predators commonly target the head. The authors therefore position *B. isis* as a top [predator](#) which ate its prey live, rather than by scavenging. They propose that the remains of fish and juvenile *D. atrox* in the cluster are remnants of previous *B. isis* meals, while the teeth of sharks indicate postmortem scavenging.

Voss and colleagues draw a comparison with the modern-day killer whale (*Orcinus orca*), another toothed whale [apex predator](#) which often feeds on smaller [whales](#) and frequently hunts humpback whale calves during humpback calving season. The authors hypothesize that the Wadi Al Hitan site was a whale calving site for prey whale Dorudon, making it a hunting site for top predator *B. isis* during the late Eocene.

**More information:** Voss M, Antar MSM, Zalmout IS, Gingerich PD (2019) Stomach contents of the archaeocete *Basilosaurus isis*: Apex predator in oceans of the late Eocene. *PLoS ONE* 14(1): e0209021. [doi.org/10.1371/journal.pone.0209021](https://doi.org/10.1371/journal.pone.0209021)

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