

Humpback whales catch prey with bubble-nets

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Marine biologist David Wiley of the National Oceanic and Atmospheric Administration (NOAA) and others report in the latest issue of *Behaviour* (Volume 148, Nos. 5-6) how humpback whales in the Gulf of Maine catch prey with advanced water technology. Humpback whales (*Megaptera novaeangliae*) are large baleen whales (up to 14 m long) that feed on a small prey in dense concentrations, such as krill or herrings.

Humpbacks whales have large flukes relative to their size providing greater thrust for quick maneuvers. While other baleen whales feed by swimming rapidly forward, humpbacks are adapted for fine-scale movement to create bubble nets.

Behaviorally, humpback whales capture [prey](#) by engaging in complex feeding maneuvers that are often accompanied by the apparently directed use of air bubble clouds (the production of single or multiple bursts of seltzer-sized bubbles) to corral or herd fish. These whales create bubble nets to corral and contain planktonic prey into a small area so that they can more efficiently scoop them up in their large filter-feeding mouths. Based on surface observations, these bubble-feeding behaviors appear to vary in nature among both individuals and regions.

To learn more about how these whales use bubble nets in feeding David Wiley and colleagues attached digital suction cup tags to whales that recorded depth and orientation in 3D, allowing the scientists to recreate [three dimensional images](#) of whale swimming behavior and bubble release. The data revealed the release of bubbles while swimming in

upward spirals and during a novel behavior called "double-loops" not previously known (see figure). Double-loops consist of one upward spiral to corral the prey, a smack of the fluke on the [ocean surface](#) (known as a "lobtail") then a second upward lunge to capture the corralled prey.

This sequence of tools and targeting of prey seems as complex as the tool use of apes in the forest. The study also reports that [humpback whales](#) work in teams of at least two individuals and are not beyond robbing the prey from the bubble nets set up by others.

Provided by Brill

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