

Whales' foraging strategies revealed by new technology

January 9 2013

Marine biologists are beginning to understand the varied diving and foraging strategies of filter-feeding whales by analyzing data from multisensor tags attached to the animals with suction cups. Such tags, in combination with other techniques such as echolocation, are providing a wealth of fine detail about how the world's largest creatures find and trap their prey.

Recent studies on the behavior of [baleen whales](#)—which filter small fish or [invertebrate animals](#) from seawater—are described in the February issue of *BioScience*. Jeremy A. Goldbogen of the Cascadia Research Collective in Olympia, Washington, and his colleagues point out that tags can report not only the depth but also the acceleration of the animal carrying them, which reveals information on its pitch and rolling motion. Together with special software, this can allow foraging dives to be visualized in three dimensions, along with the timing. Studying whale behavior is logistically challenging, as it may be necessary to coordinate the actions of several research vessels and large research teams. Yet despite the difficulties, patterns are becoming clear.

[Right whales](#) and bowhead whales have a very different feeding strategy from rorquals—the group that includes the biggest animal on earth, the [blue whale](#). Right and [bowhead whales](#) filter-feed by swimming relatively slowly through prey patches, a mode called continuous ram feeding. This keeps their energy expenditure low and makes possible dives of 10 minutes or longer, but means they miss out on prey able to take evasive action. Rorquals, in contrast, make high-speed lunges at

prey patches that enable them to catch elusive species. They must then pause to filter water engulfed in their large mouths, however, and they have to surface more often to breathe than continuous ram feeders. The new tools available mean researchers can study the efficiency of diving and foraging in different whales and relate it to the availability of prey of different types. Because whales are considered keystone predators that structure oceanic food webs, such insights will shed important light on ocean ecology.

Provided by American Institute of Biological Sciences

Citation: Whales' foraging strategies revealed by new technology (2013, January 9) retrieved 9 April 2024 from

<https://phys.org/news/2013-01-whales-foraging-strategies-revealed-technology.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--