

Harbour porpoises are skilled hunters and eat almost constantly

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Harbour porpoise in the vicinity of a fish. Credit: Fjord & Belt

Harbour porpoises have sometimes been described as "living in the fast

lane." Being smaller than other cetaceans and living in cold northern waters means that the porpoises require a lot of energy to survive, making them prone to starvation. Now researchers reporting in the Cell Press journal *Current Biology* on May 26 have monitored harbour porpoises in the wild with tiny computers attached to them by suction cups show that the animals hunt and eat almost constantly.

The findings by researchers in Denmark, Germany, and Scotland suggest that even a moderate level of disturbance in the busy shallow waters that they share with humans—anything that might limit their ability to feed—could put the animals in serious jeopardy.

"Our results show that porpoises hunt small fish, typically less than five centimeters, nearly continuously day and night at ultra-high rates, attempting to capture up to 550 fish per hour, and frequently more than ten per minute with a remarkable success rate of more than 90 percent," says Danuta Wisniewska of Aarhus University in Denmark. "The tiny fish targeted by porpoises are not of interest in commercial fisheries; however, relying on such small prey makes porpoises especially vulnerable to disturbances, because there is no room for compensation."

To study the animals' foraging behaviors, the researchers attached miniature computers developed at University of St. Andrews to five wild porpoises. The computers recorded the porpoises' echolocation calls and the echoes that came back as those calls bounced off of nearby prey. By analyzing the sound, the researchers were able to determine how often porpoises attempted to catch fish. They could also estimate the size of those fish and whether the fish managed to escape.

"This is the first time we have been able to measure simultaneously how a marine mammal hunts and how often it is successful," Wisniewska says. "The trick here was to tap into the echolocation sounds that porpoises use to sense their environment. Porpoises make hundreds of

clicks a second as they approach prey, and the echoes coming back give us incredible detail about what the prey are doing."

The data showed that the porpoises hunt around the clock. They are also incredibly successful in landing their prey.

"We were surprised by the efficiency with which these small predators feed," Wisniewska says. "A success rate of over 90 percent, translating into as many as 3,000 fish caught per day, means that porpoises are amongst the most successful known hunters."

The study also shows that harbour porpoises live on an energetic "knife edge," the researchers say. To meet their energy demands, they must eat all of the time, with little room for error.

The team will continue to explore different foraging tactics of the [harbour porpoises](#), including foraging in different parts of the water column. They'll also investigate whether and how noise from ship traffic or other human activities affects the [porpoises'](#) foraging rates.

More information: *Current Biology*. [DOI: 10.1016/j.cub.2016.03.069](https://doi.org/10.1016/j.cub.2016.03.069)

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