

# Rare sighting reveals deep-sea octopus's unusual breakfast

Video confirms the cephalopod feeds on gelatinous creatures.

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MBARI

A 'seven-arm' octopus chows down on an egg-yolk jellyfish.

Using rare video footage from a deep-diving robot, marine biologists have for the first time identified the diet of the elusive 'seven-arm' octopus.

The discovery, published on 27 March in *Scientific Reports*<sup>1</sup>, provides insight into the habits of the shy cephalopod (*Haliphron atlanticus*), which was spotted nearly four years ago eating an egg-yolk jellyfish (*Phacellophora camtschatica*). But it also helps to scramble the idea that gelatinous creatures such as jellyfish are nutritional dead-ends — [a reputation that is slowly being overturned](#).

"It's an unusual observation, but it's not as surprising as you might think," says Mike Vecchione, a marine zoologist with the US National Oceanic and Atmospheric Administration in Washington DC. The dominant organisms in the deep sea are gelatinous, he explains. "So it makes sense that other things eat them."



## Over easy

Scientists from the Monterey Bay Aquarium Research Institute (MBARI) spotted the female octopus in July 2013 off the coast of California — only the team's third sighting of the species in 27 years. The seven-arm octopus actually has eight arms, but the male carries one tucked in a sac beneath its eye, giving rise to its common name.

The species is part of a larger group of octopuses that are known for their close interactions with jellies and other gelatinous creatures, says Steve Haddock, a marine biologist at MBARI in Moss Landing, California, and one of the authors of the study. Some species of octopus in this group live inside jellyfish or salps — gelatinous, barrel-shaped animals related to vertebrates (including people). Others brandish the stinging tentacles of the Portuguese man-of-war and other gelatinous animals, possibly to use in catching prey. *Haliphron atlanticus* was the last one in the group that didn't seem to be interacting with jellies — until now, Haddock says.

Researchers corroborated their seven-armed-octopus footage with the gut contents of preserved museum specimens collected in the 1970s and 1990s. Every one of the preserved octopuses had the remnants of animals such as jellies and salps in its stomach, says Haddock.

Despite the fact that female *H. atlanticus* can grow up to 4 metres long, the species doesn't require as much energy to stay alive as other octopuses do. "They're running on a slower clock," Haddock says. So eating low-calorie jellies works for them, especially if they focus on nutritious parts such as the stomach, an area that was missing from the egg-yolk jelly in the 2013 video.

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## References

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1. Hoving, H. J. T. & Haddock, S. H. D. *Sci. Rep.* **7**, 44952 (2017).