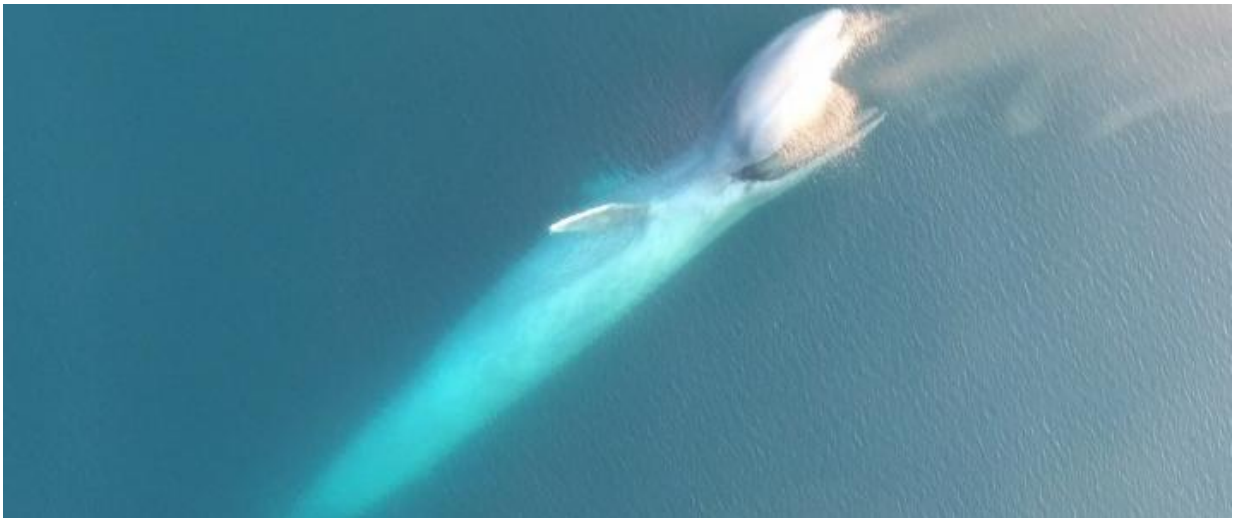


New video shows how blue whales employ strategy before feeding

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Credit: Oregon State University

Blue whales didn't become the largest animals ever to live on Earth by being dainty eaters and new video captured by scientists at Oregon State University shows just how they pick and choose their meals.

There is a reason for their discretion, researchers say. The whales are so massive – sometimes growing to the length of three school buses – that they must carefully balance the energy gained through their [food intake](#) with the energetic costs of feeding.

"Modeling studies of blue whales 'lunge-feeding' theorize that they will not put energy into feeding on low-reward prey patches," said Leigh Torres, a principal investigator with the Marine Mammal Institute at Oregon State, who led the expedition studying the blue whales. "Our footage shows this theory in action. We can see the whale making choices, which is really extraordinary because aerial observations of blue whales feeding on [krill](#) are rare."

"The whale bypasses certain krill patches – presumably because the nutritional payoff isn't sufficient – and targets other krill patches that are more lucrative. We think this is because blue whales are so big, and stopping to lunge-feed and then speeding up again is so energy-intensive, that they try to maximize their effort."

The video, captured in the Southern Ocean off New Zealand, shows a [blue whale](#) cruising toward a large mass of krill – roughly the size of the whale itself. The animal then turns on its side, orients toward the beginning of the krill swarm, and proceeds along its axis through the entire [patch](#), devouring nearly the entire krill mass.

In another vignette, the same whale approaches a smaller mass of krill, which lies more perpendicular to its approach, and blasts through it without feeding.

"We had theorized that blue whales make choices like this and the video makes it clear that they do use such a strategy," explained Torres, who works out of Oregon State's Hatfield Marine Science Center in Newport, Oregon. "It certainly appears that the whale determined that amount of krill to be gained, and the effort it would take to consume the meal wasn't worth the effort of slowing down."

"It would be like me driving a car and braking every 100 yards, then accelerating again. Whales need to be choosy about when to apply the

brakes to feed on a patch of krill."

The researchers analyzed the whale's lunge-feeding and found that it approached the krill patch at about 6.7 miles per hour. The act of opening its enormous mouth to feed slowed the whale down to 1.1 mph – and getting that big body back up to cruising speed again requires a lot of energy.

The rare footage was possible through the use of small drones. The OSU team is trained to fly them over whales and was able to view blue whales from a unique perspective.

"It's hard to get good footage from a ship," Torres said, "and planes or helicopters can be invasive because of their noise. The drone allows us to get new angles on the [whales](#) without bothering them."

Provided by Oregon State University

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