

FROM THE AIR

DRONE VIEWS OF WHALES DELIVER SOME SURPRISES



Perhaps you know that whales can dive deep in search of food, but did you know some also do headstands? Recently, scientists have been flying drones to catch new glimpses of whales and orcas near the water's surface. It's a way to understand more about whales' lives and see how they're doing without disturbing them. As researchers study what the drones have recorded, they're discovering that whales are up to some intriguing things.



Two J-pod orcas surface together, as we now know orca friends often do. This is a composite image that combines two photographs, one of an octocopter drone and one of orcas. Orca photo credit: Center for Whale Research/University of Exeter, taken under NMFS permit number 21238.

Orca Pals

The endangered Southern Resident orcas are known to be very social animals. But research drones in Washington State recently revealed they don't just interact randomly with family members in their pod. They have buddies!

Michael Weiss from the Center for Whale Research captured aerial footage of young orcas rubbing heads and backs and surfacing to breathe simultaneously with pals of the same sex and similar age.

Two young males named Nova (also known as J51) and T'ilem Ing'es (J49), for example, aren't close relatives. But Weiss's video showed them frequently hanging out.

"I wouldn't hesitate to use the word friendship here," Weiss says.

Meanwhile, marine biologists Holly Fearnbach of SeaLife Response, Rehabilitation, and Research and John Durban of Southall Environmental Associates take photos from drones to monitor the body condition of these whales, which helps them better understand the health of the population. They alert management agencies when individual whales look particularly thin or are heavily pregnant, so boaters can be urged to give them more space to find food. Fearnbach says that they can monitor the health of Southern Residents throughout the year, which can help them detect any changes.

Southern Resident orcas sprint together.
Photo credit: Center for Whale Research/ University of Exeter, taken under NMFS permit number 21238.



Gray Whale Acrobatics

Leigh Torres, a marine ecologist at Oregon State University, uses drones to photograph gray whales' bodies and track their health over time. Examining videos taken by the drones, she noticed gray whales sometimes pointed vertically in the water with their tail flukes up, like they were doing underwater headstands. It's likely a maneuver to get food from crevices between rocks, different from what scientists understood to be their usual method of plowing along the bottom to suck up food. "They use a bunch of different bizarre feeding strategies, and the drones helped us see that," Torres says.

Torres was even more surprised to see footage of gray whales swimming upside-down. "I've seen it for minutes at a time," she says. "It must help them feed or see things better."

Now, Torres's team is looking at individual gray whales' body measurements alongside observations of them doing headstands, upside-down swimming, and other behaviors. Clara Bird, a graduate student, hopes to discover if whales get fatter and healthier when they use particular strategies to find food. "This research question is especially exciting because it combines all of our drone data," Bird says.

Who knows what else might be revealed in the coming years? With drones in many ways just getting started, more surprises could be on the horizon.

Nora Nickum works on policies to support recovery of the endangered orcas, including by reducing noise from ships and small boats. She'd like to be friends with an orca and watch a gray whale do gymnastics.

A gray whale named Peak (on top) does a headstand on a reef, while Pacman swims nearby. *Photo credit: Clara Bird, taken under NOAA permit number 16111.*

