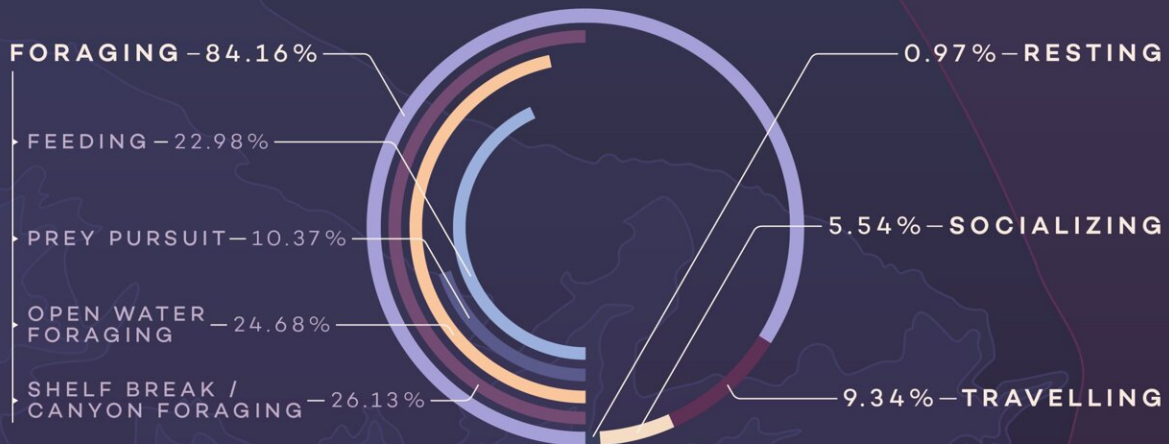


Killer whales use specialized hunting techniques to catch marine mammals in the open ocean

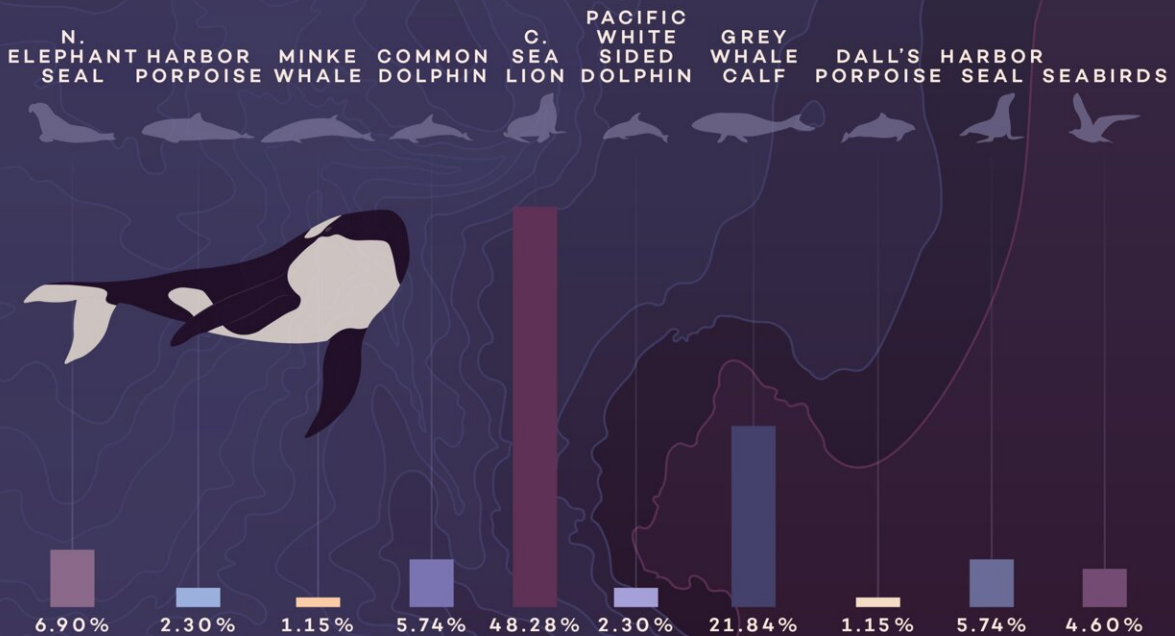
March 20 2024

KILLER WHALE BEHAVIOR AROUND MONTEREY BAY, CALIFORNIA

PERCENTAGE OF TIME SPENT BY KILLER WHALES ON VARIOUS BEHAVIORS



PREY SPECIES TARGETED BY KILLER WHALES



GRADIENT MAP OF THE STUDY AREA AROUND MONTEREY BAY CANYON

Researchers observed how transient killer whales (orcas) in Monterey Bay, California spent their time through 270 hours of behavioral observations. Foraging accounted for 84.16% of the time spent by orcas, with other activities including traveling, socializing and resting. Additionally, this study presents the main targeted prey species: mostly California sea lions, and gray whale calves. The findings provide insights into predator-prey interactions in this submarine canyon/deep-water environment. Credit: Infographic by Anne-Lise Paris, (www.in-graphidi.com), *PLOS*, [CC-BY](#)

Killer whales foraging in deep submarine canyons off the coast of California represent a distinct subpopulation that uses specialized hunting techniques to catch marine mammals, Josh McInnes at the University of British Columbia and colleagues report on March 20 in the open-access journal *PLOS ONE*.

Killer whales (*Orcinus orca*) are found in oceans around the world, but they form separate populations, or "ecotypes," that have their own social structure, food preferences and hunting behaviors.

One ecotype, known as transient [killer whales](#), specialize in hunting marine mammals. This ecotype can be divided into two groups—inner coast whales that feed in shallow coastal waters, and outer coast whales that hunt in deep water—but relatively little is known about the outer coast whales.

Researchers compiled data from marine mammal surveys conducted between 2006 and 2018 and whale-watching ecotours between 2014 and 2021, to investigate the [foraging](#) behavior of outer coast transient killer whales around Monterey Submarine Canyon in California.

Members of this subpopulation were only sighted in open water and mainly preyed on California sea lions, gray whale calves and northern

elephant seals. They use specialized techniques to hunt in open water, where prey can't easily be cornered. They often subdued their prey by ramming it with their head or body, and used their tail to hit or catapult sea lions into the air.

The researchers identified two main types of foraging behavior—distributed groups diving independently in the open water, and tightly coordinated groups foraging along the contours of the submarine canyons.



Transient killer whale attacking a California sea lion off Big Sur, California.
Credit: Josh McInnes, [CC-BY](#)

These results suggest that the outer coast whales are a distinct subpopulation that has developed specialized hunting techniques to catch marine mammals in this [deep-water](#) habitat. Their distinct foraging behaviors may be culturally transmitted from generation to generation, the authors say.

The authors add, "Transient (mammal-hunting) killer whales have been studied primarily in coastal shallow water habitats, and there is currently little known regarding their behavior in offshore and deep pelagic systems.

"This study highlights the complex foraging behavior and ecology of transients and how they act as [apex predators](#) in productive deep submarine canyon systems and how their behavior is linked to multiple marine mammal prey populations in the North Pacific Ocean."

More information: Foraging behaviour and ecology of transient killer whales within a deep submarine canyon system, *PLOS ONE* (2024). [DOI: 10.1371/journal.pone.0299291](#)

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