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Cameras on whale sharks reveal they are the snackers of the sea

Photos and video available here.

New video evidence has revealed whale sharks, the largest fish in the sea, are serial snackers, feeding on large amounts of small prey at all ocean depths, according to research led by the Australian Institute of Marine Science (AIMS) and Murdoch University.

The study, made possible by mounting cameras on whale sharks aggregating at Ningaloo Reef and from reviewing around 100 journal articles, identified 36 whale shark behaviours – the most comprehensive catalogue ever built for the species.

Despite being a shark, whale sharks are filter feeders, and their prey mostly consists of plankton and tiny animals like copepods.

Twelve of the 36 behaviours described in the research involved foraging for food, and six of these behaviours are new to science. These include 'gliding slow feeding', where the whale shark effectively sinks with its mouth open to catch prey slowly, or 'dive feeding', where the shark actively swims straight down to the sea floor, catching as much prey as possible along the way.

Lead author and PhD candidate at AIMS and Murdoch University's Harry Butler Institute Christine Barry said the research showed whale sharks have a larger number of different feeding behaviours compared to other giant filter feeders like baleen whales and basking sharks.

"It's not surprising that the biggest fish in the oceans is so food oriented, given they eat some of the smallest prey. But what we didn't realise, is just how many ways they go about it, compared to other large filter-feeding animals like whales and basking sharks," said Ms Barry.

"Their wide range of feeding strategies, from actively suctioning prey-filled water to effectively sinking with their mouths open, means they can maximise their feeding opportunities across different environments.

"This flexibility likely explains how they thrive in tropical waters, where food is more scarce and patchy."

From camera footage attached to the dorsal fins of five whale sharks, slow feeding behaviours were found to be the most frequent and were captured at all depths.

Research co-author and AIMS research scientist Dr Luciana Ferreira said the study also highlighted the importance of Ningaloo Reef as an aggregation site for whale sharks.

"These findings show how Ningaloo is a safe pantry for the sharks to snack and shows the importance of the ongoing protection for Ningaloo Reef," she said.

A paper on this research has been published in the journal *Marine Biology*.

Co-authoring institutions also include The University of Western Australia, California State University and Macquarie University. The research was funded by Santos Ltd and AIMS.

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Photos and video available here.

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