

Sharks dive deep on moonlit nights

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(Phys.org) —The Moon, water temperature and even time of day affect the diving behaviour of sharks, according to new research at The University of Western Australia.

A study of about 40 grey reef sharks - common on [coral reefs](#) in northern Australia and throughout the Indo-Pacific - found that the sharks stayed in deep waters on nights of a full Moon but rose to the night-time shallows with the new Moon.

The sharks were tagged near Palau, east of the Philippines, and followed for two years using acoustic telemetry as part of a study by scientists from UWA's Oceans Institute and the Australian Institute of Marine Science.

UWA researcher Gabriel Vianna, lead author of the study published in the international online science journal *PLOS ONE*, said researchers believed the changes were ultimately related to feeding and possibly [predator avoidance](#).

"We also found that the diving behaviour of grey reef sharks was related to water temperature."

The sharks, mostly [adult females](#), were recorded diving to an average depth of 35 metres in winter and 60 metres in spring.

In winter - when [deeper waters](#) were colder - the sharks remained closer to the surface where the water was warmer and temperature more constant.

In summer - when the warmer layer of surface water expanded - the sharks tended to move in a broader range of depths.

The authors suggested that because sharks are cold-blooded, they may prefer warmer waters to conserve energy.

The research also found that the time of day could also affect how deeply sharks dive.

"We were surprised to see sharks going progressively deeper during the morning and the exact inverse pattern in the afternoon, gradually rising towards the surface," Mr Vianna said.

"This matches how light changes on the reef during the day.

"To our knowledge, this is the first time such patterns have been observed in detail for reef sharks."

Vianna said the research had conservation implications because sharks tended to congregate around reefs in many places across the Indo-Pacific and their diving behaviour might make them susceptible to being inadvertently caught by people fishing at different times of the day.

Better knowledge of shark behaviour might help reduce this chance.

"In places such as Palau, which relies heavily on marine tourism and where sharks are a major tourist attraction worth \$18 million a year, the fishing of a few dozen [sharks](#) from popular dive sites could have a very negative impact on the national economy," Mr Vianna said.

"This is potentially a big concern because it could happen in just a couple of days."

More information: [dx.plos.org/10.1371/journal.pone.0060331](https://doi.org/10.1371/journal.pone.0060331)

Provided by University of Western Australia

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