

Study shows sharks have personalities

May 27 2016



Port Jackson shark. Credit: Evan Byrne

For the first time a study led by researchers at Macquarie University has observed the presence of individual personality differences in Port Jackson sharks.

A team of researchers from Macquarie's Department of Biological Sciences observed the behaviour of [sharks](#) from the east coast of Australia and found that individual sharks had distinct and consistent

responses when exposed to an unfamiliar environment and stress.

In humans our personality defines who we are and how we are likely to respond to certain situations. If you know someone well enough, it is possible to predict how they will likely respond in given situations. That is, their behaviour tends to demonstrate repetition over time or in similar situations. It is this behavioural stability and predictability that defines personality.

"Over the past few decades, personality research has shown that nearly 200 species of animals demonstrate individual personality. Personality is no longer considered a strictly human characteristic, rather it is a characteristic deeply engrained in our evolutionary past," says lead author Evan Byrnes.

Trials were designed to test the sharks' boldness, which is a measure of their propensity to take risks, but also an influencer of individual health through its correlation with stress hormones and associated physiological profiles.

The sharks were first introduced to a tank where they were provided with shelter, and timed to see how long it took for each shark to emerge from their refuge box into a new environment. The second behaviour test exposed each shark to handling stress, similar to handling by a fisherman, before releasing them again and observing how quickly they recovered.

The results demonstrated that each shark's behaviour was consistent over repeated trials, indicating ingrained behaviours rather than chance reactions. That is, some sharks were consistently bolder than others, and the sharks that were the most reactive to handling stress in the first trial were also the most reactive in a second trial.

"We are excited about these results because they demonstrate that sharks are not just mindless machines. Just like humans, each shark is an individual with its unique preferences and behaviours," said Associate Professor Culum Brown.

"Our results raise a number of questions about individual variation in the behaviour of top predators and the ecological and management implications this may have. If each shark is an individual and doing its own thing, then clearly managing [shark populations](#) is much more complicated than we previously thought.

"Understanding how personality influences variation in shark behaviour – such as prey choice, habitat use and activity levels – is critical to better managing these top predators that play important ecological roles in marine ecosystems."

More information: E. E. Byrnes et al. Individual personality differences in Port Jackson sharks, *Journal of Fish Biology* (2016). [DOI: 10.1111/jfb.12993](#)

Provided by Macquarie University

Citation: Study shows sharks have personalities (2016, May 27) retrieved 18 April 2024 from <https://phys.org/news/2016-05-sharks-personalities.html>

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