Troubled waters ahead for marine life

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The common triplefin. Credit: Victoria University

Research from Victoria University of Wellington is investigating how coastal marine species may struggle with Earth's increasingly intense storms.

The Intergovernmental Panel on Climate Change has forecasted that rising global temperatures will mean increased intensity of storms, including tropical cyclones with higher wind speeds, a wetter Asian

monsoon and possibly more intense mid-latitude storms.

Victoria PhD student Becky Focht is looking to understand how species will cope with this kind of environmental disturbance by studying the common triplefin, a small marine fish found along shallow reefs and tidal pools throughout New Zealand. The triplefin experience some of the hardest impacts of big waves.

Her study has found that the triplefin eat a higher proportion of their prey in calmer conditions.

"Fish that live in more wave-exposed areas are bigger, but when there are more waves they eat significantly less prey," says Ms Focht.

"I'm not yet sure why—but it does suggest that predators are more adversely affected by environmental stress than prey. This could have larger implications—a decline in predation rate or boost to populations of prey."

Ms Focht says marine species have mechanisms to survive these events but human activity is pushing the limit.

"Humans rely on the oceans for food, transport, energy and recreation, but this takes a toll on the millions of marine species that live in them.

"It's important that we understand what their coping strategies are to determine the long-term impacts of humans."

The study was conducted at the Victoria University Coastal Ecology Laboratory (VUCEL) in Wellington's Island Bay using a dump bucket system to simulate waves. The triplefin were fed food in buckets that were either experiencing wave events, had no waves, or had been in waves and then were moved to calm water.