

Squid could thrive under climate change

June 13 2019



Squid are showing resilience to ocean acidification. Credit: Blake Spady

Squid will survive and may even flourish under even the worst-case ocean acidification scenarios, according to a new study published this week.

Dr. Blake Spady, from the ARC Centre of Excellence for Coral Reef

Studies (Coral CoE) at James Cook University (JCU), led the study. He said squid live on the edge of their environmental oxygen limitations due to their energy-taxing swimming technique. They were expected to fare badly with more [carbon dioxide](#) (CO₂) in the water, which makes it more acidic.

"Their blood is highly sensitive to changes in acidity, so we expected that future [ocean](#) acidification would negatively affect their aerobic performance," said Dr. Spady.

Atmospheric CO₂ concentrations have increased from 280 parts per million (ppm) before the industrial revolution to more than 400 ppm today. Scientists project atmospheric CO₂—and by extension CO₂ in the oceans—may exceed 900 ppm by the end of this century unless current CO₂ emissions are curtailed.

But when the team tested two-toned pygmy squid and bigfin reef squid at JCU's research aquarium, subjecting them to CO₂ levels projected for the end of the century, they received a surprise.

"We found that these two species of tropical squid are unaffected in their aerobic performance and recovery after exhaustive exercise by the highest projected end-of-century CO₂ levels," said Dr. Spady.

He said it may be an even greater boost for the squid as some of their predators and prey have been shown to lose performance under predicted climate change scenarios.

"We think that squid have a high capacity to adapt to [environmental changes](#) due to their short lifespans, fast growth rates, large populations, and high rate of population increase," said Dr. Spady.

He said the work is important because it gives a better understanding of

how future ecosystems might look under elevated CO₂ conditions.

"We are likely to see certain species as being well-suited to succeed in our rapidly changing oceans, and these species of [squid](#) may be among them."

"The thing that is emerging with most certainty is that it's going to be a very different world," he said.

More information: Blake L Spady et al, Aerobic performance of two tropical cephalopod species unaltered by prolonged exposure to projected future carbon dioxide levels, *Conservation Physiology* (2019). [DOI: 10.1093/conphys/coz024](https://doi.org/10.1093/conphys/coz024)

Provided by ARC Centre of Excellence for Coral Reef Studies

Citation: Squid could thrive under climate change (2019, June 13) retrieved 6 May 2024 from <https://phys.org/news/2019-06-squid-climate.html>

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