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Better climate models predict worse outcomes for future marine ecosystems in our warming oceans

Reducing uncertainty in how marine ecosystems respond to climate change will support more effective adaptation planning, a new ecological modelling study has found.

Climate change caused by humans is a growing threat to marine ecosystems, with its impacts projected to intensify responses in marine animals, including increased mortality, reduced calcification, and changing species distributions, interactions, abundance and biomass. Coupled with stressors like overfishing, the societal benefits from the ocean and marine conservation efforts are also under threat.

Study co-author Dr Camilla Novaglio, from the Institute for Marine and Antarctic Studies (IMAS) and the Centre for Marine Socioecology (CMS), said it is vital to understand the risks of climate change for marine ecosystems and the benefit of mitigation.

Global marine animal biomass, and show that the impacts on fisheries are unevenly

and changes in the availability of nutrients and food,

Lead author, Associate Professor Derek Tittensor, is the Jarislowsky Chair in Marine Ecosystem Forecasting at Dalhousie University. Our results show worrying trends, but also highlight the importance of better understanding regional changes, where there is considerable uncertainty yet an urgent need to help support adaptation

Study co-author Dr Tyler Eddy, from Memorial University of

This study is especially relevant to the UN Climate Change Conference ([COP 26](#)) being held in Glasgow in early November, where world leaders will discuss their commitments to combat climate change

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