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RESEARCH REVIEW

Adaptation strategies to climate change in marine systems

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Abstract

The world's oceans are highly impacted by climate change and other human pressures, with significant implications for marine ecosystems and the livelihoods that they support. Adaptation for both natural and human systems is increasingly important as a coping strategy due to the rate and scale of ongoing and potential future change. Here, we conduct a review of literature concerning specific case studies of adaptation in marine systems, and discuss associated characteristics and influencing factors, including drivers, strategy, timeline, costs, and limitations. We found ample evidence in the literature that shows that marine species are adapting to climate change through shifting distributions and timing of biological events, while evidence for adaptation through evolutionary processes is limited. For human systems, existing studies focus on frameworks and principles of adaptation planning, but examples of implemented adaptation actions a evaluation of outcomes are scarce. These findings highlight potentially useful strategi given specific social–ecological contexts, as well as key barriers and specific information gaps requiring further research and actions.

Supporting Information

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