

Call for Papers

Ocean Ecosystems in a High-CO₂ World: Biological Responses from Organisms to Ecosystems



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Rising atmospheric CO₂ concentrations are reshaping ocean systems at every level, from seawater chemistry to ecosystem functioning and global biogeochemical cycles. As acidification, warming, and deoxygenation intensify, marine organisms and ecosystems face unprecedented physiological and ecological pressures.

This Collection brings together interdisciplinary research that advances our understanding of ocean ecosystems under high-CO₂ conditions. Contributions examine the mechanisms, impacts, and broader implications of carbon-driven change across biological, chemical, and ecological dimensions. Topics of interest include, but are not limited to:

- Ocean acidification and its impact on marine organisms, communities, and ecosystems
- Ocean warming, deoxygenation, and interactions among multiple climate stressors
- Changes in marine biodiversity, community structure, and ecosystem functioning under elevated CO₂
- Shifts in ocean biogeochemical cycles, including carbon, nutrient, and oxygen dynamics
- Physiological responses and adaptive capacity of marine organisms to carbon-driven stress
- Ecosystem-level consequences of high-CO₂ conditions, including productivity and food-web dynamics
- Ecological implications of marine carbon dioxide removal approaches
- Modelling and forecasting future ocean states in a high-CO₂ climate
- Long-term observations and experimental studies on carbon-related ocean change
- Management, conservation, and resilience strategies for carbon-stressed marine ecosystems

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For submissions to *Ocean Ecosystems* in 2026, waivers are available upon request.

