

## Why did we undertake this study?

Oceans and coasts provide important ecosystem, livelihood, and cultural values but they are under threat. To respond to these threats (e.g., through policies and management actions), there is a need to first systematically understand and categorise them.

## How was it done?

We undertook a systematic literature review of papers addressing threats to Australia's marine and coastal environments published between 2010-2020. The term "threat" was broadly interpreted to consider all actions that cause harm to the ocean or coasts, from climate change to governance and other socio-political factors. Scopus and Web of Science databases were searched using terms: Australia, threat\*, coast\*, ocean\* and marine\*; and inclusion and exclusion criteria applied. 226 papers were included in the final review. In each paper, threats were identified and categorised, first into 19 threat categories, and then into three macro categories: (i) threat from use and extraction; (ii) environmental and human induced threats; and (iii) policy and socio-political threats.

## What did we find?

- A total of 307 threats to Australian oceans and coasts were described, with many threats interlinked and overlapping, yet only 45 of the 226 papers (20%) discussed multiple threats.
- Threats across all categories increased over time, with threats associated with use and extraction increasing more rapidly during 2017–2020.
- Threats were most often described for their impacts on environmental values (68%), followed by economic (14%), socio-cultural (12%), and Indigenous (6%) values.

Silos between sectors, case-by-case approvals processes, and logistical challenges of creating and maintaining cumulative impact assessments, may all serve to reduce understanding of cumulative threats.

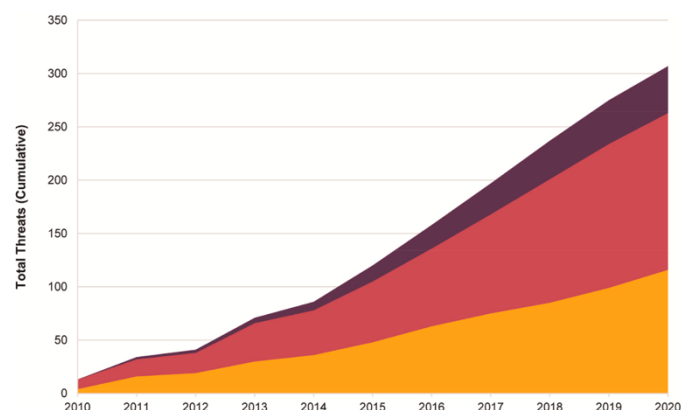


Figure 1: The cumulative number of threats identified per macro category over time (Laubenstein et al 2022)

## What are the implications?

Ocean and coastal management could be improved through greater consideration of cumulative threats. In its absence there is an underestimation of the severity and extent of current and future threats to Australia's ocean and coasts. More resources should also be devoted to investigating impacts on Indigenous values, which is comparatively under researched.

## Want more information?

The full paper is available from: <https://www.sciencedirect.com/science/article/pii/S0964569122003076>

Citation: Laubenstein T, Smith TF, Hobday AJ, Pecl GT, Evans K, Fulton EA, O'Donnell T (2023) Threats to Australia's oceans and coasts: A systematic review. *Ocean & Coastal Management*.

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## Coastal Governance: Embracing Vulnerability and Change

