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TITLE: Marine and Coastal Cultural Ecosystem Services: knowledge gaps and research priorities

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ABSTRACT:

Cultural ecosystem services (CES) reflect peoples' physical and cognitive interactions with nature and are increasingly recognised for providing non-material benefits to human societies. Whereas coasts, seas, and oceans sustain a great proportion of the human population, CES provided by these ecosystems have remained largely unexplored. Therefore, our aims were (1) to analyse the state of research on marine and coastal CES, (2) to identify knowledge gaps, and (3) to pinpoint research priorities and the way forward. To accomplish these objectives, we did a systematic review of the scientific literature and synthesised a subset of 72 peer-reviewed publications. Results show that research on marine and coastal CES is scarce compared to other ecosystem service categories. It is primarily focused on local and regional sociocultural or economic assessments of coastal ecosystems from Western Europe and North America. Such research bias narrows the understanding of social-ecological interactions to a western cultural setting, undermining the role of other worldviews in the understanding of a wide range of interactions between cultural practices and ecosystems worldwide. Additionally, we have identified clusters of co-occurring drivers of change affecting marine and coastal habitats and their CES. Our systematic review highlights knowledge gaps in: (1) the lack of integrated valuation assessments; (2) linking the contribution of CES benefits to human wellbeing; (3) assessing more subjective and intangible CES classes; (4) identifying the role of open-ocean and deep-sea areas in providing CES; and (5) understanding the role of non-natural capital in the co-production of marine and coastal CES. Research priorities should be aimed at filling these knowledge gaps. Overcoming such challenges can result in increased appreciation of marine and coastal CES, and more balanced decision-supporting mechanisms that will ultimately contribute to more sustainable interactions between humans and marine ecosystems.

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