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TITLE: Science and Societal Partnerships to Address Cumulative Impacts

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ABSTRACT:

Funding and priorities for ocean research are not separate from the underlying sociological, economic, and political landscapes that determine values attributed to ecological systems. Here we present a variation on science prioritisation exercises, focussing on inter-disciplinary research questions with the objective of shifting broad scale management practices to better address cumulative impacts and multiple users. Marine scientists in New Zealand from a broad range of scientific and social-scientific backgrounds ranked 48 statements of research priorities. At a follow up workshop, participants discussed five over-arching themes based on survey results. These themes were used to develop mechanisms to increase the relevance and efficiency of scientific research while acknowledging socio-economic and political drivers of research agendas in New Zealand's ocean ecosystems. Overarching messages included the need to: 1) determine the conditions under which 'surprises' (sudden and substantive undesirable changes) are likely to occur and the socio-ecological implications of such changes; 2) develop methodologies to reveal the complex and cumulative effects of change in marine systems, and their implications for resource use, stewardship, and restoration; 3) assess potential solutions to management issues that balance long-term and short-term benefits and encompass societal engagement in decision-making; 4) establish effective and appropriately resourced institutional networks to foster collaborative, solution-focused marine science; and 5) establish cross-disciplinary dialogues to translate diverse scientific and social-scientific knowledge into innovative regulatory, social and economic practice. In the face of multiple uses and cumulative stressors, ocean management frameworks must be adapted to build a collaborative framework across science, governance and society that can help stakeholders navigate uncertainties and socio-ecological surprises.

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