

Restoring marine ecosystems through better management and financing

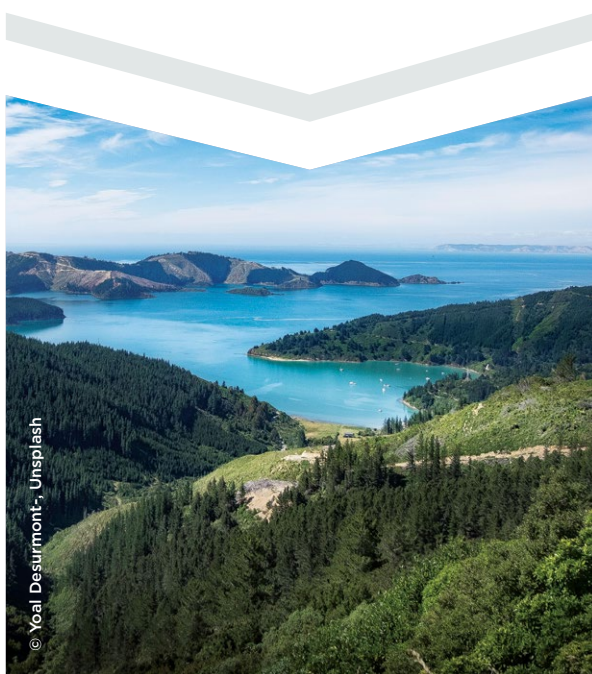
A healthy marine ecosystem is critical to support a thriving, sustainable blue economy – and vice versa. Investment is needed to develop legal, policy, and finance mechanisms to support the enduring restoration of marine ecosystems.

But coastal marine ecosystems in Aotearoa New Zealand are declining in health. This decline is characterised by biodiversity loss and the loss of valuable ecosystem functions and services that we rely on. To move forward, we need to improve how we manage marine ecosystems and how we fund restoration activities.

About this document

This document summarises why we need to improve how we manage and finance the restoration of marine ecosystems and recommends ways to support a restorative blue economy, which we envisage will be a key focus of marine management in the future.

For more information see our full *Guidance document on restoring marine ecosystems through better management and financing*. The recommendations are based on research findings from the Sustainable Seas National Science Challenge.



Recommendations

These recommendations aim to support the ecological, social, and economic enabling factors to foster a restorative blue economy, which we envisage will be a key focus of future environmental management.

Short-term recommendations

In the short-term, we recommend the following.

- » Enhance ongoing collaborative action and cross organisation leadership between iwi and hapū, central and regional government, researchers, business, and community to determine:
 - » what restorative or recovery actions are needed where and by who
 - » how to best achieve these actions to result in ecosystem recovery
 - » how to measure the effectiveness of restorative action.
- » Shift management focus from managing and monitoring activity and stressor footprints to managing ecological responses to support recovery, for example by incorporating ‘managed recovery’ as an objective within coastal plans.
- » Invest in marine restoration research and new ways of valuing all the benefits (economic and non-economic) provided by healthy marine ecosystems.
- » Strengthen social and management feedback so that the relationship between downstream issues in coastal ecosystems and upstream activities on land is acknowledged and appropriately managed.
- » Increase the size and number of marine protected areas in the network (via various tools such as Mātaitai reserves) and consider these areas in the context of ecological connectivity and enhancing the blue economy through restorative activities.

- » Add details of recovery activities to a portal so everyone knows what's going on and can learn from them (for example, ACRN portal, Tuhono Taio, and Department of Conservation's estuaries hub). Through this portal, finance opportunities can also be linked to recovery priorities and restoration economy opportunities.
- » Use adaptive processes to support action now (despite knowledge gaps) and use research to mitigate risks and inform successful restoration and recovery action. Use case studies (codeveloped with iwi, hapū, community, government, and investors) as a proof of concept to inform future restorative action and attract further investment.
- » Expand research and prototyping of new revenue and business models for restorative marine economies, including investment in ecosystem (seascape) level solutions. This requires greater understanding, knowledge building, and skills-sharing about revenue activation models and benefit-sharing mechanisms.

Long-term recommendations

- » Set long-term priorities and management actions that transcend political cycles. Pathways forward include identifying universal political priorities, for example by quantifying the benefits provided by marine ecosystems in order to meet international obligations and responsibilities. As ecosystem recovery requires significant long-term investment, this also includes assigning the necessary funding to meet restoration finance gaps and recognising our aspirations and commitments as a country.
- » Develop legal, policy, and market mechanisms to support enduring restorative action, for example via nature markets and payments for ecosystem services, credit systems, targeted levies, and subsidies to better align costs of environmental degradation and the benefits of recovery.
- » Establish restoration and recovery as a mainstream asset class (green taxonomy).
- » Provide clarity and accountability around roles and responsibilities of central and regional government, researchers, business, iwi and hapū, and build greater collaboration between all parties.



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To support ecosystem recovery, we need to change how we manage marine environments

New Zealanders have an intimate relationship with the coast, value their marine environments and clean green image, rely on the environment for wellbeing and livelihoods, and have a deep cultural and ethical responsibility to sustain the environment for future generations. However, coastal marine ecosystem health is in decline.

Marine ecosystems in Aotearoa have traditionally been managed by limiting environmental stressors from a single activity or stressor to minimise the decline of the ecosystem's health in the hopes it will recover, for example, reducing the amount of land-based sediment or nutrients entering coastal waterways. While this approach may reduce the speed of ecosystem decline, little evidence exists of ecosystem recovery occurring at scale.

As well as a focus on a 'limit stress and let recover approach', a key contributor of marine ecosystem degradation is the current practice of isolating environmental management and social-ecological research into ecosystem domains (land, freshwater, and sea), each with different management approaches and associated consequences.

For ecosystems to recover, a shift in marine management is required from a single focus on stressor management (and slowing ecological decline), to a dual focus on stressor management and restoration activities.



Successful ecosystem recovery requires investment

Investment in restoration or recovery action is needed now and at multiple scales, to meet our legislative, cultural and ethical responsibilities, and international agreement obligations. However, a significant restoration finance gap exists in Aotearoa New Zealand – especially in marine ecosystems.

The blue economy is where marine activities generate economic value and contribute positively to ecological, cultural and social well-being. Figure 1 shows the interaction between ecosystem-based management, healthy ecosystems, and the blue economy.

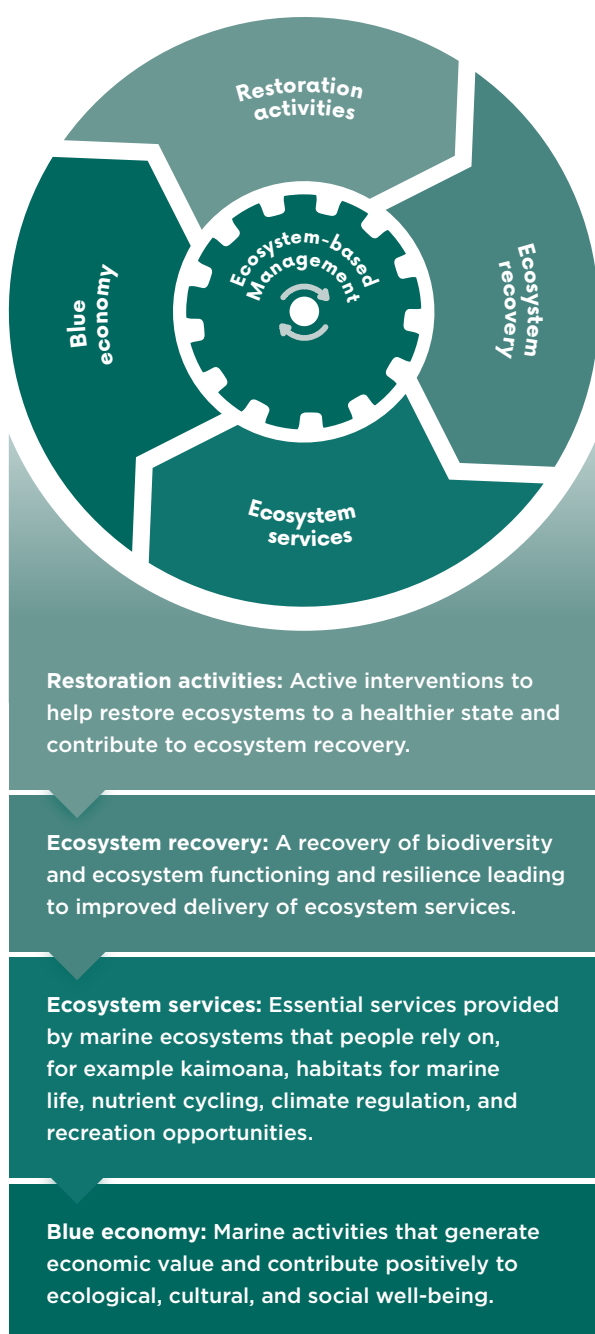


Figure 1 Healthy ecosystems and a thriving blue economy are interdependent

Better information on the benefits of ecosystem services and restoration can help mobilise necessary investment

Aotearoa has an opportunity to support sustainable livelihoods through restoration actions and incentivise restoration through supporting existing economic activities. However, further investment in the development of legal, policy, and market mechanisms to support and incentivise enduring restorative action is required.

Around the globe, donors and governments have made major investments in marine restoration and enhancing the blue economy. In comparison, restoration actions undertaken in New Zealand are limited to smaller scales and led by iwi/hapū, community groups, government agencies for example, DOC and regional councils, or researchers at a project-by-project scale (eg restoration of mussel beds in the Hauraki Gulf and Ōhiwa Harbour, seagrass in Nelson estuaries, and saltmarsh in the Bay of Plenty). New Zealand doesn't have large-scale initiatives and funding mechanisms built into our consenting processes.

Poor measurement of the benefits of ecosystem restoration and recovery is a major barrier to attracting and securing investment. Without quantifying the contributions of these ecosystem services, the benefits (economic and non-economic) and cost of their loss due to ecosystem decline is often not considered in management actions or by the public.

The costings and methods for restoration action are also still largely undefined, which increases the likelihood that restoration action will fail if other support mechanisms are not put in place, and this too hampers investment.

Our full guidance document, *Restoring marine ecosystems through better management and financing*, presents steps we can take to address these challenges.



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This document was prepared by Richard Bulmer and Georgina Flowers. We thank Challenge researchers and co-development partners for participating in workshops and reviewing drafts that informed the content.

For more information and support with marine management decisions, please see our other synthesis project summaries and guidance documents in this series.