



Summary

Using ecosystem services to inform marine restorative economies

What are restorative economies?

Restorative economies combine business activities with environmental restoration, aiming to foster new investments and business opportunities that reverse environmental degradation instead of ignoring or contributing to it.

Healthy marine ecosystems provide many ecosystem services

Healthy marine ecosystems benefit people in many direct and indirect ways (ie multiple well-beings), many of which go unrecognised.

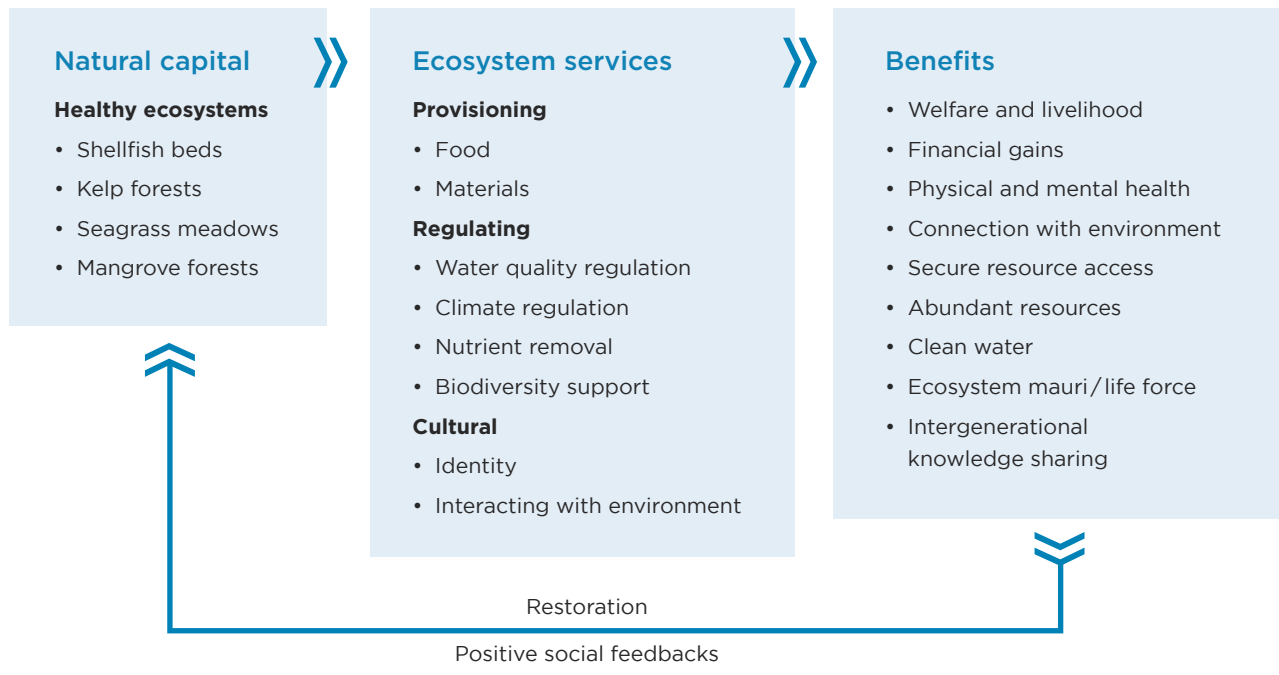
Ecosystems services or 'nature's contributions to people' are the goods and services that nature provides, which people benefit from. They include tangible values such as provision of food and materials, intrinsic and socio-cultural values such as indigenous and local knowledge, and relational values such as sense of place, sacredness, and identity.

A single ecological process can underpin multiple services, eg shellfish filter feeding improves water quality, supports the food web and leads to kaimoana. Using 'bundles' of ecosystem services is a valuable tool for communicating such benefits, which is important for community engagement, stakeholder buy-in, and ultimately restoration project success.

Restoration success

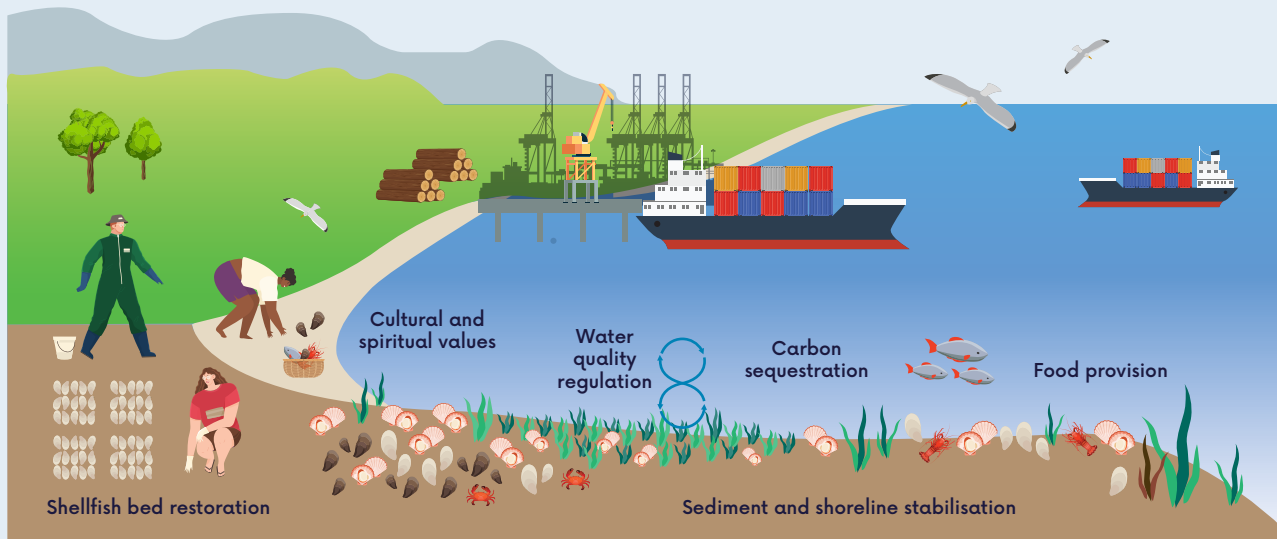
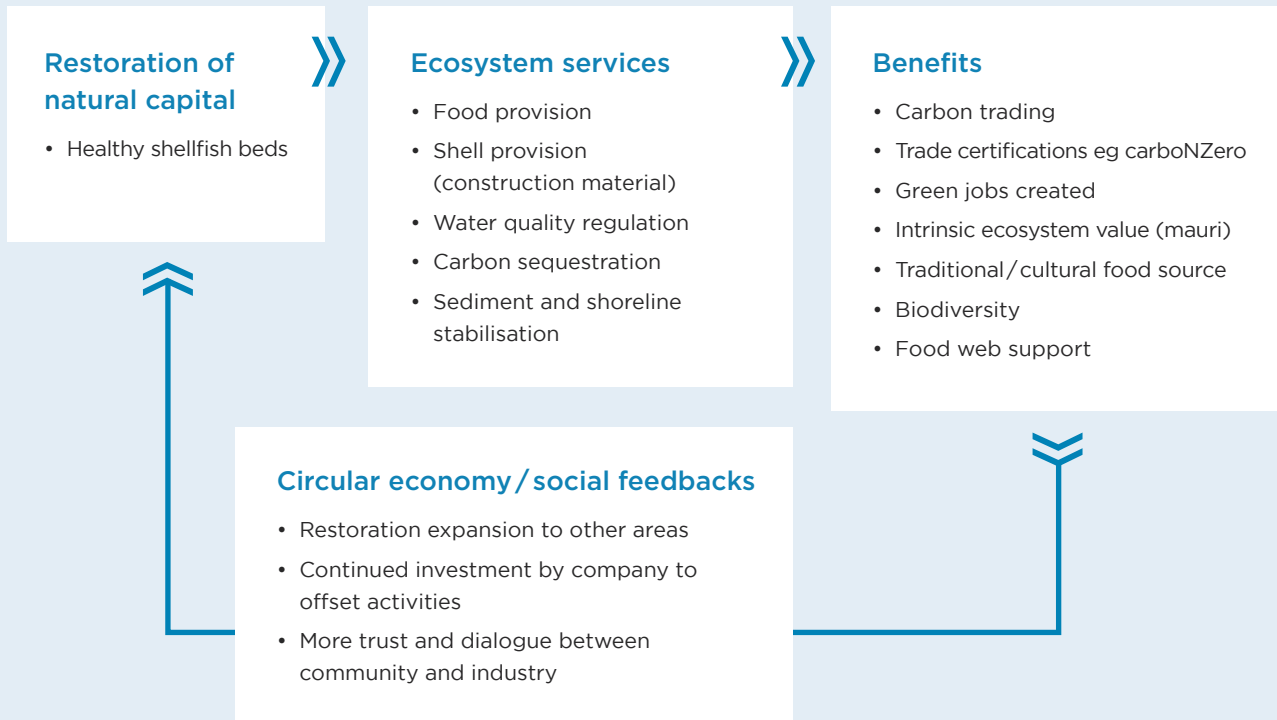
Demonstrating restoration success is imperative for ongoing financial and social support for a restoration project. However, this is difficult since benefits may be diverse, sparsely distributed or not observable for many years.

A multiple well-beings framework that encompasses social, ecological and financial benefits using ecosystem service 'bundles' will promote effective communication and monitoring of the multiple benefits obtained from restored ecosystems. This will increase the success of restorative economy projects and encourage successive restoration endeavours.



Hypothetical example: Restoring shellfish beds

A port company wishes to undertake restoration of local marine habitats to offset their environmental impacts and emissions. Marine habitats such as shellfish beds have multiple values, and potential ecosystem services including carbon sequestration and/or shoreline stabilisation. The company would consider the following in their investment/planning:



Rullens V, Pilditch C, Lohrer A, Townsend M (2019) *Ecological mechanisms underpinning ecosystem service bundles in marine environments – a case study for shellfish*. *Frontiers in Marine Science* 6: 409
 Douglas EJ and AM Lohrer. *The role of ecosystem services in restorative marine economies*. Submitted.



Using ecosystem service bundles to improve marine management
sustainableseaschallenge.co.nz/using-ecosystem-service-bundles-to-improve-marine-management

Learn more: sustainableseaschallenge.co.nz/restorative-marine-economies



sustainableseaschallenge.co.nz

National
SCIENCE
 Challenges

SUSTAINABLE
 SEAS

Ko ngā moana
 whakauka