

Executive summary

Coastal ecosystems and climate change

Over the past decade, interest in the use of coastal ecosystems as a solution to help mitigate the effects of climate change and increase community resilience has significantly increased both within Aotearoa New Zealand and globally.

Aotearoa has greenhouse gas (GHG) emissions reduction targets for 2030 and 2050, a primary focus of which is reducing gross GHG emissions (MfE 2022). However, nature also plays a crucial role in removing some of the carbon that has already been emitted.

Improving the health of coastal wetlands (saltmarshes, mangroves, seagrass meadows and unvegetated tidal flats) will not only increase their ability to capture and store carbon (referred to as blue carbon sequestration) but also increase protection against storm surges, improve water quality, support cultural resources and practices, enhance fish nurseries and increase biodiversity.

There is significant potential to accelerate this work in Aotearoa.

Progress to date

Increased interest in coastal ecosystems has seen a relatively ad hoc growth of coastal wetland blue carbon research and implementation in Aotearoa. This research has yielded some high-quality, high-impact outcomes. There is scope to advance this with an overarching national-scale strategy, which will support connections between research practitioners, mana whenua and communities (as has happened with the South Australia Blue Carbon Strategy⁴).

Scientists, planners and communities have already established connections through various past coastal wetland blue carbon hui (meetings) run by the Department of Conservation (DOC), the Ministry for the Environment (MfE), The Nature Conservancy Aotearoa New Zealand (TNC) and the Tasman Environmental Trust (TET).

In 2023, DOC and TNC brought together this evolving coastal wetland blue carbon 'community' (CWBC community) to further progress strategic outcomes, and a project catalogue was collated as a very valuable output from the hui. As part of this process, a timeline and mapping exercise built a picture of milestones and progress from ongoing coastal wetland blue carbon projects in Aotearoa. The catalogue also identified initiatives that would enhance carbon sequestration science, covering areas such as carbon stocks and sediment dynamics, and includes broader, national-level projects, such as mapping coastal wetlands, which will be crucial for providing a comprehensive national overview.

⁴ environment.sa.gov.au/topics/climate-change/government-action-on-climate-change/climate-change-blue-carbon-strategy

A number of partnerships with mana whenua are already focused on coastal wetland blue carbon and include te ao Māori (the Māori world view) and mātauranga Māori (traditional knowledge). However, there is great potential to grow the leadership, partnership and involvement of mana whenua in coastal wetland blue carbon practice.

The hui participants suggested that six interrelated pou (pillars), each representing a particular work theme, should be established to progress work by the CWBC community: 1) Socio-Ecological Research; 2) Empowering Communities; 3) Market Development and Policy; 4) Te Ao Māori and Mātauranga Māori; 5) Coastal Wetland Habitat Protection and Restoration; and 6) National Coastal Wetland Blue Carbon Strategy.

Over the course of the 9 months from the first in-person hui, discussions explored the scope and questions for each pou and suggested the next key actions for the CWBC community to work towards.

Where to from here?

A more strategic and coordinated approach is needed to accelerate coastal wetland work in Aotearoa. Resourcing an overarching marine carbon forum would enable coordination to advance the wider marine carbon removal approaches, and the CWBC community could then progress actions under this holistic umbrella group.

The participants in this process identified a number of next steps, as outlined in sections 4 and 5. Some of these can be actioned in the near future, while others depend on resourcing being made available.



Build the CWBC community kaupapa (purpose)

An independent process is underway to establish a marine carbon forum. Collaboration with the steering group who are working on establishing the Aotearoa Marine Carbon Forum was identified as a key next step to maintain the momentum of the CWBC community and encourage participation. This is also a potential mechanism for progressing recommendations in this report. This steering group will seek funding for pou leads and administrative support, and including this report as an appendix to a forum proposal would demonstrate the level of thinking the CWBC community has already done.

The actions of the forum could build on this report and could include:

- developing guidance for running each pou and creating a process to enable information sharing among the pou leads;
- appointing pou leads to clearly define the objectives and scope, oversee activities, ensure project collaboration, and facilitate communication;
- establishing a pou core working group of genuinely interested individuals who can actively participate – i.e. through face-to-face engagement, virtual platforms/spaces, sharing ideas and collaborating; and
- providing opportunities for wider contribution, discussion and activities (e.g. themed workshops, webinars).

It is envisaged that the informal CWBC community could then continue as a formal coastal wetland Community of Practice (CoP),⁵ which would operate under the umbrella of this wider marine carbon forum.

Advance research to strengthen the development of a coastal wetland blue carbon credit scheme in Aotearoa

(Market Development and Policy Pou)

TNC and MfE have already partnered to conduct a research analysis on the policy, legal and market conditions necessary for establishing a blue carbon credit scheme focused on coastal wetlands (including seagrass, mangrove and saltmarsh habitats) in Aotearoa. This included leading a workshop on 5 December 2023 to which the CWBC community was invited. The CWBC community should continue to engage with this important work.

⁵ A community of practice is a group of people who share an interest, or expertise, in a topic and who come together to fulfil both individual and group goals.

Develop a National Coastal Wetland Blue Carbon Strategy

(National Coastal Wetland Blue Carbon Strategy Pou)

A national strategy would link the various strands of work together. GNS Science has proposed to host a systems-thinking approach project, with hui planned from February to June 2024 to advance thinking towards a National Coastal Wetland Blue Carbon Strategy.

Future actions

As resources become available, additional actions can be progressed, including:

- creating a decision-making tree for restoration and protection projects to assist action on the ground – this tree would guide which parts of a landscape to protect and/or restore to maximise the overall benefits, would be tailored for different users (e.g. protection versus restoration interest from government agencies, mana whenua, community groups, landowners and the private sector who care about the environment and/or are looking for carbon offsets), and would identify the potential data needs and where the data might come from (Coastal Wetland Habitat Protection and Restoration Pou);
- arranging for the many project leads of the mapping projects presented in the project catalogue (Appendix 4) to come together to better understand the opportunities arising from these projects, how spatial data can be accessed and priority gaps for future investment (Coastal Wetland Habitat Protection and Restoration Pou);
- exploring options to resource mana whenua to wānanga (a Māori method of sharing and acquiring knowledge) to develop a vision for the Te Ao Māori and Mātauranga Māori Pou – the outcomes of the wānanga would then be used to define what the CWBC community could do to support mana whenua in their aspirations related to coastal wetland blue carbon (Te Ao Māori and Mātauranga Māori Pou);
- bringing together a communication plan for the CWBC community – examples include defining the audience(s), articulating the main focus areas of coastal wetland blue carbon versus restoration work, and organising relevant activities such as webinars, online presence and case studies (Empowering Communities Pou);
- ensuring that there is a comprehensive understanding of the breadths of the other pou and how the intent and actions interact with the Socio-Ecological Research Pou before defining key next steps in the research agenda (Socio-Ecological Research Pou); and
- potentially maintaining the project catalogue as a living resource.