# Te Angiangi Marine Reserve

## A generational review

Department of Conservation
*Te Papa Atawhai*

Te Mana o Ngāti Kere
Ngāti Kere Hapū Authority

*Cover: Russell Hughes*

**Te Angiangi Marine Reserve: A generational review**



ISBN 978-1-0670607-0-1 (print)
ISBN 978-1-0670607-1-8 (digital)

Department of Conservation Te Papa Atawhai
PO Box 10420, Wellington 6140
New Zealand

**Privacy statement**
All submissions are subject to the Official Information Act 1982 and can be released, if requested, under that Act. Please clearly indicate in your submission if you do not wish your name, or any other personal information, to be disclosed in any summary of submissions or external disclosures.

For further information, please refer to the Department of Conservation's privacy statement (www.doc.govt.nz/footer-links/privacy-and-security).

**Disclaimer**
While every effort has been made to ensure the information in this publication is accurate, DOC does not accept any responsibility or liability for error of fact, omission, interpretation or opinion that may be present, nor for the consequences of any decisions based on this information.

In the interest of forest conservation, we support paperless electronic publishing.

R280497

# Contents

# Preface

## Te Angiangi Marine Reserve and the mana moana of Ngāti Kere

The foreshore and seabed, and activities like gathering food, diving and fishing hold deep cultural significance for coastal Māori communities and are intrinsically linked to identity, tradition and livelihoods. Ngāti Kere holds the mana whenua (traditional authority) of the Pōrangahau district in Central Hawke's Bay, from Ōuepoto Stream in the north to Ākitio River in the south.[1] The exercise of such mana involves allocating rights for others to use the associated resources. Both mana and use rights could be inherited, won or lost in battle, exchanged or gifted, and, in that vein, Ngāti Kere granted assent to the Te Angiangi Marine Reserve area 25 years ago on the condition of a generational review. This report presents the findings of that review.

## Ngāti Kere occupation history

The 850-year Ngāti Kere link to this Te Angiangi site and the wider coastline story starts with a rangatira in the mid-1100s named Mahu who was chasing his brother-in-law Taewha after the disappearance of valued kūmara. On reaching this district, he climbed a cliff looking for his quarry and that story was remembered by the local Te Tini-o-Awa people in the name Te Pari-o-Mahu (Mahu's cliff). Our own story is taken up when a chiefly Te Tini-o-Awa woman, Te Rangipākihi, married an immigrant from Te Tairāwhiti, called Pōrangahau. Their daughter Te Whē grew up to marry a Ngāti Ira–Ngāi Tahu visitor from Te Tairāwhiti, called Ueroa. They started a new family line with mana from Pōrangahau to the East Coast and, living alongside the Rangitāne and Ngāi Tara occupant–owners of the land, they and their descendants traversed the coastal pathways 'keeping their fires alight'. Their great-grandson, Te Aomatarahi, migrated permanently to Hawke's Bay and, by conquest and marriage, held coastal mana south of the Tukituki River. His great-grandson, Te Angiangi, after losing a competition of feast exchanges, gifted the lands between Pōrangahau and Ākitio to Te Hika a Pāpāuma rangatira, Te Whatuiāpiti, who passed the mana straight on to the sisters Huingaiwaho and Taurito (the wives of his son Te Rangiwāwāhia), their brother Kaitahi and their hapū who had collected the food. They in turn settled their children on the lands, Kere and Kiore in the north and Te Rangihirawea in the south.

Local control from Ōuepoto to Ākitio by this Te Rangiwāwāhia rangatira family was secured by marriages into an ariki line, the conquests of two chiefly tīpuna of that line called Ngārangiwhakaūpoko (whose name flies on the Rongomaraeroa marae flag) and Tamanoho, and by a peaceful cohabitation with the descendants of Manuhiri, who was gifted the lands from Aramoana (Ōuepoto Stream) to Pōrangahau by Te Angiangi. The 700-year hegemony by present mana whenua is an essentially uninterrupted 25-generation line – as the daughter of Ngārangiwhakaūpoko married the scion of the Te Angiangi line who has maintained chieftainship on the coast under Tuanui, the widely recognised rangatira who met with Cook in 1773. Eventually, the people of this district were united under one mana. Henare Matua, a descendant of that marriage, exercised that same mana in 1865 when he forbade Hauhau fighters from crossing his Te Pootiririkore ('let no blood be shed') district between the Pōrangahau and Ākitio Rivers. That mana was upheld then and it has not been interrupted since.

[1] Ngāti Kere, Ngāti Manuhiri, Ngāti Pīhere and Ngāti Hine-te-wai hapū are the modern hapū of Pōrangahau. Although they are distinguishable by whakapapa, the people most often live and act as one community and Ngāti Kere is our collective label. Another 10 older hapū and Ngāti Parakiore also belong to this Ngāti Kere community.

## New landowners

Others now live here as well. The land north of the Pōrangahau River, including the Te Angiangi Marine Reserve site, has been owned and farmed by non-Māori since the 1858 Pōrangahau Block sale. Mostly, local Māori have had relationships with farming families and have had free access to the coast to fish and collect seafood. More recently, at Blackhead there is a community of three generations or so and a bach community of two generations, and at the Aramoana end of the marine reserve there is a new settlement of permanent occupants. They all have vested interests in this coastal area. These people own land but they do not hold mana. The two sit happily side by side and one does not negate the other.

Lately, the land directly adjacent to Te Angiangi Marine Reserve has been acquired by the Hawke's Bay Regional Council for a regional park. This park sits atop a huge pā site called Te Ikatīere in which Ngāti Kere (and Rangitāne before them) have vested interests. It is currently (and competently) run by the Aramoana Environmental & Education Charitable Trust.

## Ongoing Ngāti Kere coastal activity

Ngāti Kere and its ancestors once had complete control of this coast. James Cook observed miles-long nets along the Pōrangahau seacoast in 1773, and present-day Māori fishers have stories of their forebears exploiting deep-sea traditional fishing grounds found by using markers on the land. In more recent days, some have participated in commercial activity but most have fished and gathered seafood to feed the family and for guests at the marae. The Fisheries Act 1983 made provision for Māori input into fishing regulations, and the local hapū contribution started when the Taiāpure Management Committee was established in 1990. In August 1992, it was officially legislated from Cape Turnagain (Poroporo) to Blackhead Point (Parimahu). Notably, Ngāti Kere chose the inclusive taiāpure over the mātaitai model because it allows for input from across the wider community.

It was in those times when Ngāti Kere became an important player in the August 1997 establishment of Te Angiangi Marine Reserve. The intention to establish and maintain pristine eco-environments to support local fish stocks and provide educational and recreational opportunities was supported after much discussion by Ngāti Kere, who asked for a 25-year review clause.

In 2003, the Tangata Kaitiaki o Ngāti Kere were authorised to manage customary fishing activities between Ōuepoto Stream and Ākitio River out to the North and South Madden Banks. In the mid-2000s, local people did research projects with the Department of Conservation and Ministry for the Environment. The Māori Methods and Indicators for Marine Protection research project identified species of importance, Māori visions and values around coastal systems, and mātauranga Māori-based progress indicators. During the Heretaunga Tamatea Treaty of Waitangi claims (settled in September 2015), Ngāti Kere had insisted on return of the Blackhead Village sections and several small marginal strips at Parimahu. Renewed ownership of these isolated and relatively small areas was insisted upon to cement the hapū presence at the important Parimahu fishing ground, an area where land has been completely alienated into Pākehā ownership. Recently, in December 2022, a rāhui was placed by Ngāti Kere Tangata Kaitiaki and Te Taiāpure o Pōrangahau on the taking of pāua from immediately below Te Angiangi Marine Reserve to the outlet of Waikaraka Stream.

## Ngāti Kere: What should we do now?

We have evidence of widespread historic domination of the coastal area and significant contributing activity to this coastline by Ngāti Kere since colonisation. But, these days, control of sea-based resources involves a complex web of overlapping jurisdictions, including the coastal environment, the foreshore and seabed, the territorial sea, the Exclusive Economic Zone, and international waters, managed by six governmental bodies under 17 pieces of legislation.

The wide and overlapping span of governmental authority seems to leave little room for coastal hapū to influence management.

Before the 1980s neo-liberal economic changes, the Pōrangahau Māori community thrived off the farming economy and living off the seas. We have had significant Māori commercial fishers on our coast. But the possibility of foreshore and seabed ownership, Māori fishing rights as a local economic venture or any robust form of control over seacoast affairs have been whittled away as Crown agencies have reinterpreted, superseded or undermined Māori control. Very few opportunities are presenting themselves at the moment for a robust presence on the coast. I propose that Te Angiangi Marine Reserve is one.

At the time of its creation, it must have seemed little was to be gained in supporting a marine reserve – after all, this is a great fishing ground. But hapū members accepted the arguments that benefits were to be had from a pristine seacoast environment, opportunities for recreational visitors and the replenishment of fishing stocks. The conditions to that assent were this 25-year review. Marine reserves generally do meet their objectives, and this one is no exception despite being confounded by the 2011 landslide and slips in management along the way. Support of an ongoing marine reserve with robust Ngāti Kere partnership prospects will secure our Ngāti Kere presence at this beach community, will contribute to our wider presence along our coastline and will maintain the mana we have all fought to uphold. By working together in this venture, we can begin the creation of a future where the foreshore, seabed and fisheries resources are managed in a way that honours local Māori knowledge, promotes cultural inclusion and protects the natural heritage of this coastline of ours for generations to come.

David Tipene-Leach
Chair, Ngāti Kere Hapū Authority
October 2024

# Executive summary

Te Angiangi Marine Reserve (TAMR) was established in 1997 to protect the underwater scenery, natural features and marine life that are typical of the intertidal and shallow subtidal marine habitats of Central Hawke's Bay. At the time, the Crown committed to a 'generational' review at the request of Ngāti Kere, the hapū holding mana whenua over the area. In 2022, Ngāti Kere requested that this generational review should proceed.

The Department of Conservation (DOC) and Ngāti Kere partnered in 2023–24 to form a working group to conduct the review, focusing on whether the reserve had met the objectives for which it was established. The working group identified the questions to explore through the review and relied on subject-matter experts, key stakeholders and targeted public feedback to evaluate a dozen indicators. Based on this assessment, the working group has made recommendations designed to:

- better achieve TAMR objectives
- promote the role of Ngāti Kere in guiding management at the reserve
- foster the connection between the community and TAMR
- explicitly measure effects caused by climate change.

DOC Regional Operations in Ahuriri/Napier will lead development of an implementation plan to ensure recommendations are considered and adopted, as feasible. Several of the recommendations would require increased capital and operational expenditures.

## Key questions

1. Does TAMR preserve and protect marine ecosystems?
2. Does TAMR provide educational and recreational opportunities?
3. Does management of TAMR maintain a connection with the public?
4. Does management of TAMR promote Ngāti Kere mana moana on the coast and the connection between Ngāti Kere and TAMR?
5. Do the original management objectives reflect contemporary conservation priorities?

## Key findings

### Preserving and protecting marine ecosystems

- Surveys for the first 10 years after the reserve was established showed that the number and size of kōura/crayfish in shallow water were generally greater inside the reserve than outside. Surveys were discontinued after 2007.
- Surveys of significant species have not occurred regularly at the reserve and few recent data sets exist. Further sampling is needed to determine whether any trends have continued. Mapping of subtidal reef habitats is coarse and intertidal habitats have not been mapped.
- In April 2011, a severe storm and earthquake changed the habitat directly adjacent to the slip that occurred on the cliffs at the north end of the reserve.
- A June 2023 National Institute of Water and Atmospheric Research (NIWA) survey found no evidence of sediment effects inside the reserve from Cyclone Gabrielle in mid-February 2023.
- It is unclear whether compliance rates have changed over time due to, until recently, inconsistent record keeping and resourcing constraints within DOC.

### Providing educational and recreational opportunities

- The reserve provides opportunities for recreation, educational programmes and scientific studies.

### Maintaining a connection with the public

- Neither Ngāti Kere nor local community members have been significantly involved in management of the reserve.

### Promoting Ngāti Kere mana moana

- New signage at the reserve acknowledges the connection to Ngāti Kere.

### Reflecting contemporary conservation priorities

- No data are available to assess whether the reserve is resilient to the effects of climate change.
- Results analysing the presence of invasive species inside the reserve are inconclusive and need outside expert analysis because DOC staff do not have the expertise to do this.

## Key recommendations

- Promote Ngāti Kere mana moana on the coast and the connection between Ngāti Kere and TAMR:
  - DOC and tangata whenua, Ngāti Kere, partner to form a strategic oversight group setting the strategic vision for the reserve and guiding its operational management. The strategic oversight group liaises with the East Coast Hawke's Bay Conservation Board (ECHBCB) in developing strategic vision and guidance.
  - ECHBCB reviews and endorses any TAMR strategic vision or operational management plan.
  - DOC works with Ngāti Kere and the local community to ensure the strategic vision and Te Angiangi Marine Reserve Operational Plan are embedded in a Māori framework, incorporating mātauranga Māori.
  - DOC works with Ngāti Kere to help expand knowledge from TAMR across their rohe moana.
- Foster the connection between the community and TAMR:
  - DOC leads the establishment of a community-based management committee. Committee terms of reference should clearly describe the membership and roles each member and group has in reserve management.
  - DOC, with input from the management committee, updates the operational management plan, outlining objectives for management, monitoring and compliance for review by the strategic oversight group. DOC measures data collection against the plan every 2–5 years to ensure the data collected will facilitate 10-yearly review.
  - DOC, Ngāti Kere and the community hold a regular event celebrating TAMR, Ngāti Kere and local connections to the area.
- Do better in the achievement of TAMR objectives, especially preserving and protecting marine ecosystems:
  - DOC implements the proposed monitoring plan for TAMR, incorporating mātauranga Māori.
  - DOC works with Ngāti Kere to include oral histories as a baseline for monitoring.
  - DOC installs a surveillance camera at the reserve to ensure round-the-clock monitoring for compliance.

  - DOC facilitates training to increase local patrols at the reserve.
  - DOC commits to a review of the reserve every 10 years.
- Measure the effects of climate change:
  - DOC includes climate indicators in the proposed monitoring plan for TAMR.

# 1 Introduction

Ngāti Kere hold mana whenua and mana moana over the Te Angiangi Marine Reserve (TAMR) area and supported the reserve's establishment in 1997 conditional on a 'generational' review. Ngāti Kere wanted this review because of the centrality of kaimoana to local custom, the important contribution the reserve might have for sustainable kaimoana stocks and to allow the next generation to have input into decision making.

In 2023, the Department of Conservation (DOC) and Ngāti Kere formed a working group to undertake the generational review of TAMR. This report presents the results of the review.

## 1.1 Purpose

The review's purpose was to determine whether DOC's management of the reserve has produced the desired results. Specifically, the aim was to:

- determine whether TAMR is meeting the objectives for which it was established – that is, to preserve and protect marine ecosystems and provide educational and recreational opportunities
- evaluate whether objectives in the 2003 Te Angiangi Marine Reserve Operational Plan reflect community priorities and maintain the connection with the public[2]
- evaluate whether objectives in the reserve's Operational Plan promote the mana moana of Ngāti Kere
- evaluate whether objectives in the reserve's Operational Plan reflect contemporary conservation priorities
- make management recommendations for TAMR.

DOC has managed the reserve since its establishment in 1997. It seeks to evaluate whether the reserve is contributing to the conservation and protection of Aotearoa New Zealand's coastal and marine environments, consistent with the Marine Reserves Act 1971 and in such a way as to give effect to the principles of Te Tiriti o Waitangi (the Treaty of Waitangi) (Conservation Act 1987, section 4).

## 1.2 Background

The Marine Reserves Act 1971 provides for the establishment of reserves to preserve and protect marine life and habitat for scientific study. The Act does not require or describe a process for review. As noted, the Crown committed to a generational review when TAMR was established in 1997. This term was understood at the time to mean a review would occur after 25 years.

### 1.2.1 Reserve establishment and Ngāti Kere support

DOC began exploring the possibility for a new marine reserve on the Central Hawke's Bay coastline in 1988. DOC's Director-General submitted the application for the reserve in 1994 and TAMR was gazetted in July 1997. The principal objectives of the application were:

1. to give effect to the Marine Reserves Act 1971
2. to contribute to DOC's mission to conserve and protect the natural character and quality of New Zealand's coastal and marine environments, and to support establishment of a nationwide network of marine reserves that is representative of these environments

2 Department of Conservation. 2003. Te Angiangi Marine Reserve Operational Plan. Wellington: Department of Conservation. www.doc.govt.nz/te-angiangi-marine-reserve-operational-plan

3. to provide educational and recreational opportunities for non-extractive users of the Hawke's Bay coast.

The purpose of the Marine Reserves Act 1971 is to preserve areas for scientific study that contain underwater scenery, natural features or marine life of such distinctive quality, or so typical, beautiful or unique that their preservation is in the national interest. DOC proposed the reserve's location on the Central Hawke's Bay coast between Aramoana and Blackhead because of both its biodiversity and accessibility.

DOC consulted widely on the application for the proposed marine reserve with tangata whenua, other government agencies, the local community and other affected or interested parties. DOC met regularly with the tangata whenua of Central Hawke's Bay and the iwi of Ngāti Kahungunu to develop the application. DOC initially identified several preferred alternatives and asked for stakeholder input. During consultation, DOC heard feedback that kaimoana represented an important part of the diet of families within the rohe and that marine reserves created in perpetuity were culturally inappropriate. After a public hui called by Ngāti Whatuiāpiti at Mataweka marae, DOC was asked to form a committee of representatives from iwi and other affected groups to discuss siting of the reserve. The committee was formed and expressed support for the present location. Ngāti Kere asserts mana whenua over the area of the coast that includes the reserve and expressed opposition to the concept of marine reserves in perpetuity.

Following further discussions with DOC, Ngāti Kere wrote to the Minister of Conservation in June 1993 expressing support for the proposed marine reserve, conditional upon:

1. adequate and appropriate representation in management of the reserve
2. full involvement in scientific and educational programmes undertaken in the reserve
3. agreement to an ongoing review of the status of the reserve, referred to as a 'generational dialogue between our descendants and the Crown'.

On 11 March 1994, Ngāti Kere met with the Minister to discuss these matters. In the Director-General's report to the Minister of Conservation, he stated his belief that the conditions could be satisfied by appropriate representation of tangata whenua on the proposed Hawke's Bay Conservation Board subcommittee, a commitment by DOC to provide opportunities for Ngāti Kere to be involved in all of the reserve's scientific and educational programmes, and by including a condition in the Order in Council that review of the status of the reserve should be undertaken by the Minister of Conservation at set intervals (e.g. every 25 years).[3] This condition was not included in the Order in Council.

### 1.2.2 Reserve management

In April 1992, representatives of Te Runanganui o Ngāti Kahungunu met with DOC to discuss iwi involvement in managing the reserve through establishment of a subcommittee of the Hawke's Bay Conservation Board. The Hawke's Bay Conservation Board had oversight at the time and delegated management authority to the subcommittee (TAMR Committee) in 1997. The TAMR Committee comprised representatives from Ngāti Kere, Ngāti Whatuiāpiti, Taiwhenua o Tamatea, commercial fishers, campground users, local communities at Aramoana, Pourerere and Blackhead, adjoining landowners, and the Conservation Board. The TAMR Committee was authorised to advise on any conservation matter relating to TAMR, including a change in status or classification of the reserve.

3 Department of Conservation. 1994. Te Angiangi (Aramoana - Blackhead, Central Hawke's Bay) Marine Reserve Application. Napier: Department of Conservation. Hawke's Bay Conservancy Series No. 7; p. 381.

The reserve's 2003 Operational Plan[4] described the role of the TAMR Committee, stating that the:

> ... contribution that the community has to make to the management of Te Angiangi Marine Reserve at a policy level has been recognised and provided for through the establishment of a Ministerial appointed advisory committee. The importance of community contribution to management of the marine reserve has been reflected in the composition of the committee, which includes:

- Tangata whenua representatives from Ngāti Kere, Taiwhenua o Tamatea and Ngāi Te Whatuiapiti
- Commercial Fishers Representative
- Private land owners whose properties adjoin the reserve
- Representatives of the communities living at Pourerere, Aramoana and Blackhead
- An East Coast Hawke's Bay Conservation Board representative.[5]

The TAMR Committee was formally disbanded on 6 May 2011 because, by then, TAMR required less oversight.[6] Responsibility then reverted to the Hawke's Bay Conservation Board. Today, the East Coast Hawke's Bay Conservation Board (ECHBCB) has responsibility for TAMR, providing policy direction for DOC's management of the reserve. The ECHBCB liaison for TAMR reports to the Board at each meeting and helped with initiation of this review.

DOC's Ahuriri/Napier office carries out the day-to-day management of the reserve. It is guided by the reserve's Operational Plan, consistent with the Hawke's Bay Conservation Management Strategy, which requires DOC to manage the reserve in a way that gives effect to the principles of Te Tiriti o Waitangi.[7] The Operational Plan outlines objectives to promote compatible scientific research, foster safe recreational use while minimising visitor impacts, develop strong ties with the public, protect the reserve from activities both outside and inside its boundaries, and monitor the reserve over time to inform management. The plan calls for regular review and amendment, if necessary, to ensure it remains consistent with law and policy and is responsive to monitoring data.

### 1.2.3 Background to the review

Marine protected areas, including marine reserves, have reduced pressures compared with the surrounding environment and are therefore important scientific reference areas for study. Marine protected areas provide opportunities to learn about how marine ecosystems recover when some human impacts are removed. These areas also allow monitoring and study of large-scale, long-term patterns or changes in the environment over time (e.g., El Niño or climate change). Learning from these reference areas can increase our ability to understand and effectively manage the pressures on the marine environment. New Zealand has 44 marine reserves established under the Marine Reserves Act 1971. Marine reserves provide the strongest legal protection available to the New Zealand marine environment under current legislation. Various activities, including all forms of fishing, are generally prohibited. Marine reserves can be used together with other management tools, such as mātaitai, to conserve marine life, including kaimoana stocks.[8]

The Marine Reserves Act 1971 does not provide a process for an assessment or statutory 'review' of the protected area's effectiveness. Sometimes, however, DOC is obligated to conduct an assessment by the Order in Council establishing the area or by special legislation. In other cases,

4 Department of Conservation. 2003. Te Angiangi Marine Reserve Operational Plan. Wellington: Department of Conservation. www.doc.govt.nz/te-angiangi-marine-reserve-operational-plan

5 Department of Conservation (2003), note 4 above; p. 30.

6 Minutes, Wellington Hawke's Bay Conservation Board (6 May 2011). ftp.doc.govt.nz/public/folder/l3ou_sgc8ke30ssshwk2xa/wellington/archives-2011-meetings/whbcb-minutes-6-May-2011.pdf

7 Conservation Act 1987, section 4. www.legislation.govt.nz/act/public/1987/0065/latest/DLM103610.html

8 Mātaitai reserves recognise and provide for traditional fishing through local management. They allow customary and recreational fishing but usually do not allow commercial fishing. See: Ministry for Primary Industries. 2024. Managing customary fisheries. [accessed 19 December 2024]. www.mpi.govt.nz/fishing-aquaculture/maori-customary-fishing/managing-customary-fisheries

DOC may have committed to conduct a non-statutory review through an agreement with Treaty partners or stakeholders. DOC also has the discretion to complete a review at any time and may choose to do so, even where no obligation exists.

Reviews are good practice for protected areas in general to test whether they are achieving their objectives and to enable managers to respond to new information and protection needs.

Reviews assess the effectiveness of marine protected areas by measuring changes to biophysical, socio-economic and governance conditions. For example, indicators of success for a particular area might include species abundance, level of stakeholder participation in management activities and regulatory compliance. Reviews may result in management recommendations to improve the conservation and protection of New Zealand's coastal and marine environments and to ensure adherence to the principles of Te Tiriti o Waitangi. They may also raise awareness of areas of concern, suggest solutions and advocate for funding.

### 1.2.4 Ngāti Kere request review

In February 2022, Ngāti Kere wrote to DOC to register concerns with DOC's management of the reserve and to request evidence that the generational review the Crown had committed to in 1997 would be conducted as a Treaty partnership.[9] Ngāti Kere wrote to the Minister of Conservation in April 2022 asking the Minister to direct the DOC Ahuriri/Napier district office to engage 'in a mana-enhancing fashion with Ngāti Kere in order to do justice to the marine reserve review and perhaps create an ongoing Māori presence at this site'.[10] The Minister responded on 13 May 2022, acknowledging the kaitiakitanga of Ngāti Kere and its support for establishment of the reserve in 1997.[11] The Minister indicated her understanding that discussions regarding the review were under way, that DOC had committed to rebuilding the relationship with Ngāti Kere, and a new marine reserves ranger would be working on compliance and monitoring within the reserve and maintaining relationships with hapū and whānau at Pōrangahau. DOC met with David Tipene-Leach (as Chair of Ngāti Kere Hapū Authority) in late April 2022 and responded to concerns in writing on 20 May 2022.[12] DOC apologised for its inconsistent management and committed to rebuilding DOC's work at TAMR through added capacity in the Ahuriri/Napier district office. DOC also committed to meeting with Ngāti Kere formally and to engaging with the hapū about the review process.

In September 2022, DOC met with Ngāti Kere to initiate a discussion about the generational review. Ngāti Kere identified several issues of concern and asked for:

- evidence that TAMR contributes to more plentiful kaimoana on the coast
- improved management of the reserve and a true partnership with DOC
- more direct benefits flowing from the reserve to the hapū, particularly visibility on the coast and help with other coastal projects, such as fish stocks at Parimahu.

A second meeting on 27 January 2023 provided an opportunity for DOC to continue to address the concerns of the hapū, and the hapū raised the possibility of some form of harvest from TAMR for important occasions. DOC and Ngāti Kere, with oversight provided by ECHBCB, agreed to partner on the review. The joint working group held its first meeting in early February 2023. Cyclone Gabrielle struck the project area in mid-February delaying further meetings, which recommenced in June 2023.

9 Letter from Jim Hutcheson, Ngāti Kere Tangata Kaitiaki, and David Tipene-Leach, Chair, Ngāti Kere Hapū Authority, to Honourable Kiritapu Allan, Minister of Conservation (15 February 2022).

10 Letter from David Tipene-Leach, Chair, Ngāti Kere Hapū Authority, to Honourable Kiritapu Allan, Minister of Conservation (28 April 2022).

11 Letter from Honourable Kiritapu Allan, Minister of Conservation, to David-Tipene-Leach, Chair, Ngāti Kere Hapū Authority (13 May 2022).

12 Letter from Jack Mace, DOC Director Operations, Lower North Island, to David Tipene-Leach, Chair, Ngāti Kere Hapū Authority (20 May 2022).

## 1.3 Overview of Te Angiangi Marine Reserve

TAMR encompasses an area of around 446 hectares and is the only marine reserve located in the Hawke's Bay region (figure 1). The reserve benefits from the support of the Aramoana Environmental and Education Charitable Trust (AEECT), whose purpose includes raising the profile of, and increasing community commitment to, the reserve.[13]

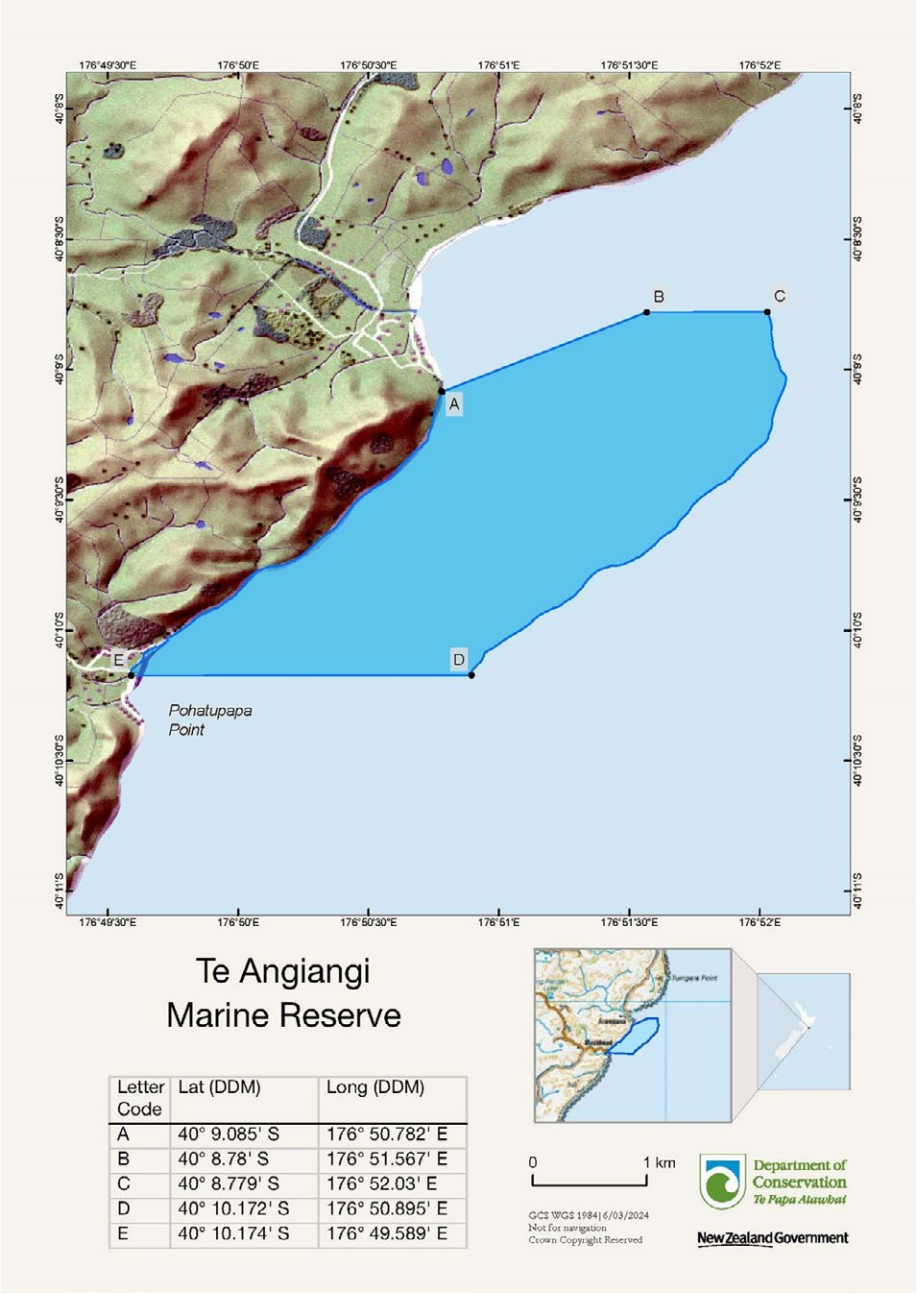


**Figure 1: Te Angiangi Marine Reserve location map**

13 Aramoana Environmental and Education Charitable Trust. 2024. [accessed 17 December 2024]. www.aramoana.co.nz
Additional purposes of the organisation are:

> … to facilitate the creation of visitor and education facilities at the [reserve], to promote the continued protection and restoration of the [reserve], to provide education to schools and the general public about the need to conserve and protect marine environments and also to provide schools and the general public with early coastal farming and Iwi history, to assist and work in conjunction with [DOC] or any successor to it with the protection of the [reserve], to assist people of all ages and all walks of life in gaining access to the [reserve] so they can experience the variety of marine species, habitats and ecosystems, and to facilitate the planting of native species along the Hawke's Bay Coast with an emphasis on the Ouepoto Reserve and the land surrounding [TAMR].

At low tide, many types of birds take advantage of rich feeding areas on the reserve's intertidal platforms. Kingfishers, gulls, herons, tōrea pango/variable oystercatchers, poaka/pied stilts and flocks of kuaka/bar-tailed godwits are common. At high tide, small flocks of gulls, tara/white-fronted terns and threatened taranui/Caspians terns can be seen roosting on the sand at the mouths of small streams. Pohowera/banded dotterels and tūturiwhatu/New Zealand dotterels can also be seen on some of the beaches within the reserve.

A broad mudstone platform is exposed at low tide, revealing beds of Neptune's necklace, pink coralline seaweeds and patches of eelgrass (seagrass), mixed with a diverse rockpool community of fish and shellfish, including golden limpets (classified as At Risk in the New Zealand Threat Classification System), crabs, juvenile pāua and kina.

Stingray Bay is almost completely cut off from the open sea at low tides, forming a sheltered lagoon perfect for snorkelling.

Beyond the edge of the intertidal rock platform are about 138 hectares of reef. Common reef animals include pāua, opal shells, rock lobsters, and reef fish such as red and blue moki, butterfish, banded wrasse, marblefish and sweep. In deeper water, nudibranchs, butterfly perch and tarakihi are found, along with sea perch, scarlet wrasse, blue cod and common roughy.

Offshore, the mix of the warm East Cape current and the colder South Wairarapa current means many typically 'northern' and 'southern' marine species occur in the reserve. In summer, pods of aihe/common dolphins and terehu/bottlenose dolphins are often observed.

In April 2011, a heavy rainfall event (more than 500 mm of rain in 48 hours) followed by a shallow magnitude 4.5 earthquake, caused inundation of the rock platform (figure 2). More than 14 landslides covered the entire width of the platform (more than 100 metres), completely burying or sweeping away the biological communities living there (see images below). Within months, however, wave action had begun to uncover parts of the platform.


**Figure 2: The shoreline between Aramoana (bottom right) and Blackhead (top right)**
Sediment fans from the collapsed coastal hills within the reserve boundary extend onto the intertidal shore platform. Extensive landsliding is also evident on the coastal headland south of Blackhead. View is looking south.
Source: Macpherson DJ. 2013. Effects of catastrophic landslides on the Te Angiangi Marine Reserve, Hawke's Bay, New Zealand (unpublished, available upon request).

# 2 Ngāti Kere and Te Angiangi Marine Reserve establishment

Section 2 summarises the views, values and experiences of members from the Ngāti Kere hapū who have been involved in the establishment of TAMR since initial discussions began in 1988. It in no way represents the views of the hapū of Ngāti Kere but, rather, draws on the conversations, stories and materials available at the time of writing this review.[14]

**1987–1988**
DOC Head Office held internal discussions to increase New Zealand's marine reserve national coastline percentage to 10%.

Coastlines and regional options in preliminary mapping were spread into areas not currently occupied. Most New Zealand marine reserve areas were clustered and close to one another and, at the time, heavily concentrated in the northern region of the North Island. Recognition of the need to reduce the concentration of existing areas in the north led to new regions being explored and proposed. At the time of the proposals in 1988, no marine reserves were located in the Hawke's Bay Conservancy and only one had been fully established.

**1988**
Piri Sciascia (Ngāti Kere) worked for DOC. He presented DOC discussions for feedback from whānau and hapū. At his first hui with my parents, Marina Sciascia and Hoko Ropiha, at Wanstead, my mother exclaimed, "You are nuts if you think our hapū will give up our coast and kai in perpetuity to the Government." She ended up helping with the process and was an advocate for the marine reserve from the time of inception until her passing in 2022.

Garth Cassidy was a local community member and held discussions for Blackhead and Aramoana. He saw the value in the same vein that Piri Sciascia had envisaged and helped him in engaging the local community.

Dennis Marshall was DOC Leader for the project at the first hui held in Palmerston North to address multiple hapū and iwi and the proposed increase of marine reserves around the country.

Many hui-a-iwi were taking place around the motu, and Ngāti Kere sent representatives to attend hui all over the North Island to observe the hapū and iwi reactions to DOC's proposals for new marine reserves in their rohe. Ngāti Kere kaumatua wanted to gauge if our hapū questions and hesitations were the same as other coastal hapū, and learn what actions they were taking.

It was difficult for Māori to engage at every hui for each legal change on the table as a result of the Fisheries Settlement negotiations from 1988 until the full and final settlement was signed in 1992. Multiple laws affecting Māori were being negotiated and rewritten simultaneously, to align settlement agreements with Te Tiriti o Waitangi, honouring our rights to tino rangatiratanga (self-determination) and requiring reviews of relevant government policy and legal accountability.

The issues of the time were compounding the difficulty in making well-informed decisions. These included the following:

- The New Zealand Māori Council had shut down the entire New Zealand fishing industry and took the New Zealand Government to the Privy Council.
- The Quota Management System, adopted in the Fisheries Amendment Act 1986, stating the Government owned New Zealand fisheries and the quiet removal of section 88(2) of the Fisheries Act 1986, which had stated 'Nothing in this Act shall affect any Māori fishing rights'.

14 An account by Keri Ropiha, Ngāti Kere. Sources available upon request.

- Commercial fisheries were settled in the Sealord Deal of 1992, taking 5 years to negotiate. It was given effect by the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 and saw the creation of the Treaty of Waitangi Fisheries Commission. The settlement was for commercial, not customary, fishing.
- The Treaty Tribes Coalition was set up with four members, including a Ngāti Kere appointee. The coalition was to represent the interests of iwi seeking to secure allocation of fisheries assets held by the Treaty of Waitangi Fisheries Commission.
- The State-Owned Enterprises Act 1986 led by Sir Graham Latimer (as per recordings of the Privy Council judgement).
- The Crown Forestry Rental Trust 1989 established after the New Zealand Māori Council and Federation of Māori Authorities took court action to protect Māori interests in the Crown's commercial forests. The Act allowed the Crown to sell licences for forestry but prevented it from selling the land itself until the Waitangi Tribunal recommended who had ownership of the land: Māori or the Crown.
- Māori Affairs $286 million annual budget was reduced to $100 million: the Government was throwing crumbs at Māori rights and Te Tiriti.

Māori were being overwhelmed by the amount of legislative changes and time-consuming travel, at their own cost. The magnitude of the issues and poor communication from the Government led to uninformed decisions.

DOC started marine reserve discussions right after fisheries settlements were initiated. Māori lost 90% of their fishery, with the Government claiming it owned it. The introduction of the Quota Management System in 1986 removed statutory recognition of Māori customary rights to fishing and fisheries. In 1989, Māori and Crown negotiators reached an interim settlement resulting in the Fisheries Act 1989.

The Māori Fisheries Commission was established and settlement was agreed that the Commission received 10% of all fish species that were in the Quota Management System and around $10 million to hold and manage on behalf of all Māori.[15] Commercial fishing claims were settled with the signing of a Deed of Settlement (the Sealord Deal) in September 1992.

Many comments around the motu were about the value lost by Māori, given the recent settlement negotiations with the Government.

**1989–1992**

A series of hui and surveys took place around the motu. A public questionnaire was circulated by the East Coast Hawke's Bay Conservancy that identified seven general areas in Hawke's Bay warranting further investigation as marine reserves:[16]

1. Waipatiki/Aropaoanui
2. Pania Reef
3. Cape Kidnappers
4. Waimarama
5. Karamea
6. Kairakau
7. Pourerere

Sites were further refined by preliminary assessments of Mangakuri, Paoanui Point and Tuingara Point. All were strongly opposed by local commercial kōura/crayfish/lobster fishers because the area represented 30% to 35% of their catch. A pamphlet for marine reserves was produced with four alternatives for southern Hawke's Bay for public feedback.

15 The Spinoff. 2021. Te hī ika: How Māori fishing rights were saved – but only just. [accessed 17 January 2025]. thespinoff.co.nz/atea/02-07-2021/te-hi-ika-how-the-crown-almost-robbed-maori-of-fishing-rights

16 Department of Conservation. 1994. Hawke's Bay Conservation Management Strategy. Napier: Department of Conservation; p. 90. www.doc.govt.nz/hawkes-bay-cms

A trip to Goat Island showed different customary values for having a marine reserve because it was set up and supported by the tourism industry.

Extensive consultation and surveys followed that showed an area of intertidal platforms and associated subtidal reef systems between Aramoana and Blackhead beaches. The area was proposed for a marine reserve.

Two liaison people were appointed, John Black and Toro Waaka, who were supported by John Mackie on behalf of the iwi.

Te Taiwhenua o Heretaunga and Ngāti Kahungunu iwi were against marine reserves due to the fisheries settlements and the ongoing issues forcing Māori to make quick and uninformed major decisions.

Ngāti Kere initially objected to the plan but agreed to support the discussion and sought to identify DOC roles and capacity available to provide administrative support to manage the reserve. The hapū lent their authority to establish Te Angiangi Marine Reserve.

DOC's Director-General formally applied for a marine reserve in this area.

**1996**
The Minister of Conservation and Fisheries New Zealand approved establishment of Te Angiangi Marine Reserve.

**1997**
Te Angiangi Marine Reserve was formally established in August.

The boundary extends 1 nautical mile offshore from the mean high water springs mark between Blackhead and Aramoana.

At the same time, an advisory committee was created to provide advice to DOC on various matters, including identifying issues to be addressed in the reserve's Operational Plan.

**2003**
Te Angiangi Marine Reserve Operational Plan was produced.

Excerpts from the reserve's Operational Plan show the level of engagement Ngāti Kere expected to have in management when they agreed to the marine reserve:

> The operational plan is a non-statutory document, however, the Department will adhere to the provisions in good faith. ... [The operational plan];
>
> - provides an effective mechanism for the advice provided by Te Angiangi Marine Reserve Committee to influence the management of the reserve;
> - contains specific policy to guide the Department in the management of the reserve and would provide more detailed guidance, clarity and certainty than is currently contained in the Conservation Management Strategy;
> - is an efficient use of the Department's resources through expedient and cost-effective development of the operational plan;
> - may be used as the basis for policy development for the Conservation Management Strategy or Plan in future and provide interim guidance to the Department prior to statutory policy development;
> - ... reflects a diverse range of community views through the involvement of the committee.[17]

17 Department of Conservation. 2003. Te Angiangi Marine Reserve Operational Plan. Wellington: Department of Conservation; p. 1. www.doc.govt.nz/te-angiangi-marine-reserve-operational-plan

The Operational Plan sets out the TAMR vision statement:

> Mauri of marine habitats restored, the marine reserve treasured by the community, providing opportunities for scientific study and for the public enjoyment of a natural marine environment[18]

It goes on to cover various measures and outcomes that would be provided for in the establishment of the marine reserve. The examples below have caused continued concern due to a lack of administration.

## School visits

One objective of the Operational Plan is 'to encourage co-ordination of school field trips to the marine reserve with the Department'.[19]

The marine reserve was heavily used by schools, with day trips as part of science and conservation studies. This duty has not been carried out. Currently, an AEECT Board member arranges school visits, managed and arranged through the AEECT website.

## Signage

Another objective calls for DOC to promote:

> … an environmental care code and 'pack in, pack out' policy. This will be included on signage associated with the reserve and promoted through Department staff liaising with users of the reserve.[20]

## Public awareness and facilities

Under the Operational Plan:

> [p]ublic awareness has been focused on the development of pamphlets, signage and releasing news items … of the gazettal of the new reserve and of the type of restrictions that the public must adhere to when recreating in the reserve.[21]

The strategies outlined went no further because they relied on the review and development of a national strategy for public awareness. This was never carried through, and so the lack of resources and information have thwarted hapū efforts to receive monitoring and survey information.

## Interpretation kiosk

An interpretation kiosk was to be 'located at the Stingray Bay and it is important that the facility provides relevant and accurate information'.[22]

Results and monitoring information were to be available at this site. It has never been established and information was not shared with hapū or the local community.

## Public involvement in management

> The Department welcomes offers of assistance with operational management of the reserve … [and] may include assistance with monitoring the reserve … use of vessels, for example when deploying boundary markers, … compliance work, … [or being] available for honorary ranger positions.[23]

18 Department of Conservation. 2003. Te Angiangi Marine Reserve Operational Plan. Wellington: Department of Conservation; p. 2. www.doc.govt.nz/te-angiangi-marine-reserve-operational-plan

19 Department of Conservation (2003), note 18 above; p. 20.

20 Department of Conservation (2003), note 18 above; p. 21.

21 Department of Conservation (2003), note 18 above; p. 27.

22 Department of Conservation (2003), note 18 above; p. 28.

23 Department of Conservation (2003), note 18 above; p. 30.

Policy contributions from the community to the management of the reserve were recognised and provided for through:

> … the establishment of a Ministerial appointed advisory committee … which includes:
>
> – Tangata whenua representatives from Ngati Kere, Te Taiwhenua o Tamatea and Te Whatuiapiti;
> – Commercial Fishers Representative;
> – Private land owners whose properties adjoin the reserve
> – Representatives of the communities living at Pourerere, Aramoana and Blackhead
> – An East Coast Hawke's Bay Conservation Board representative.[24]

The Operational Plan also recognised the importance of honorary rangers and, because of their significant responsibilities, explained that:

> … suitable volunteers will only be appointed where necessary and where the Department is in a position to adequately train and support rangers. ... In addition to considering the advice of the Marine Reserves Committee, the opinion of tangata whenua will be considered when appointing honorary rangers.[25]

Only one honorary ranger has been appointed since 1997, Selina Wakefield (appointed 2023).

Management issues identified in the 2003 Operational Plan need to be reconsidered because they are as relevant today as they were when Ngāti Kere agreed to give the coastline in perpetuity. Over the years, these issues have been discussed and highlighted, including through the Marine Reserve Committee. Unfortunately, this was disestablished in 2011 without warning or consultation. The importance of these issues gives support to the notion of re-establishing a marine reserve committee. The committee needs to be skills based to match its initial set up in 1997.

Although these issues should be reconsidered now, the reserve itself should not be. It has been a mistaken belief over time that, when the review was due, Ngāti Kere could decide whether to keep the marine reserve or not. The decision available to hapū is to determine the value of seeking co-management for the continuation of the marine reserve. We have no rights to ownership.

24 Department of Conservation. 2003. Te Angiangi Marine Reserve Operational Plan. Wellington: Department of Conservation; p. 30. www.doc.govt.nz/te-angiangi-marine-reserve-operational-plan

25 Department of Conservation (2003), note 24 above; p. 38.

# 3 Review process

The review process is drawn largely from the guidebook *How is your MPA doing? A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness* (the Guidebook).[26] The Guidebook was informed by field-testing its methodology across 18 pilot sites around the world. Since then, more than 200 sites have used the Guidebook to measure marine protected area performance, although wide variability exists across the indicators[27] examined and the methods used to measure them.[28] The working group has adapted the process to include seven basic steps:

1. Plan for a review
2. Select indicators for review
3. Conduct the review
4. Finalise the review report
5. Share review results
6. Recommend management actions
7. Capture learnings

DOC's Marine Monitoring and Reporting Framework (MMRF)[29] helps ensure it achieves and measures the objectives of *Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020*.[30] The MMRF provides for nationally consistent monitoring of marine reserves and species in the ocean to determine whether management is effective.

Some overlap exists between the indicators described by the Guidebook and those described by the MMRF (e.g., focal species abundance). Where the working group has chosen to evaluate one or more of these overlapping indicators, data collection and analysis have followed the MMRF methodology.[31]

## 3.1 Methodology

### 3.1.1 Planning for the review

Planning included scoping the review with Treaty partners and other stakeholders, establishing a working group, and drafting a project plan, terms of reference, a communications plan and report outline.

In this case, Ngāti Kere approached DOC to request the promised review. DOC met with the hapū and heard a request for a focused and timebound review. DOC considered the request and agreed that to proceed with a timebound review after concluding this approach would be consistent with the Marine Reserves Act 1971 and would allow a thorough evaluation of whether TAMR is meeting

26 Pomeroy RS, Parks JE, Watson LM. 2004. How is your MPA doing? A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness. Gland, Switzerland, and Cambridge, UK: IUCN.

27 An indicator is a unit of information measured over time that allows you to document changes in specific attributes of a marine protected area. It helps you to understand where you are, where you are going and how far you are from the goal (Pomeroy et al. [2004], note 26 above; p. 214).

28 Fox HE, Holtzman JL, Haisfield KM, McNally CG, Cid GA, Mascia MB, Parks JE, Pomeroy RS. 2014. How Are Our MPAs Doing? Challenges in assessing global patterns in marine protected area performance. Coastal Management. 42(3):207–226. DOI: 10.1080/08920753.2014.904178.

29 Department of Conservation. No date. Marine Monitoring and Reporting Framework. [accessed 17 December 2024]. www.doc.govt.nz/mmrf

30 Department of Conservation. 2020. Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020. www.doc.govt.nz/anzbs-2020

31 Department of Conservation. 2024. Te Angiangi Marine Reserve: A summary of the studies and monitoring 1996–2023 (unpublished, available upon request).

the objectives for which it was established. The working group agreed the review would be limited to a report examining the reserve's benefits and recommending ongoing management actions, as appropriate. It also agreed that the implementation of any recommendations, while outside the scope of the review itself, would follow completion of the report.

The working group included members of DOC's National Marine Protection Programme team and Hawke's Bay District Operations team and two Ngāti Kere members nominated as representatives at the 2022 September hui, David Tipene-Leach and Keri Ropiha. For the duration of the review, the working group held meetings every 3 weeks to review progress and assign tasks.

Ngāti Kere representatives sought and incorporated feedback from the hapū into the review.

The working group initially limited input to DOC, Ngāti Kere, the AEECT as an important community stakeholder and the ECHBCB.

### 3.1.2 Identifying Te Angiangi Marine Reserve objectives and selecting indicators

Indicators measure how well management is meeting the reserve's objectives. The selection of indicators, or measurements, is critical to meaningful review. Indicators assess how well management has achieved biological and ecological, social, and governance objectives.

The first step in selecting indicators was to identify TAMR goals and objectives. These are set out in the Marine Reserves Act 1971, the TAMR application and the reserve's 2003 Operational Plan.[32] The purpose of the Act is to preserve:

> … as marine reserves for the scientific study of marine life, areas of New Zealand that contain underwater scenery, natural features, or marine life, of such distinctive quality, or so typical, or beautiful, or unique, that their continued preservation is in the national interest.[33]

The objectives of the TAMR application were:

1. to give effect to the purposes and principles of the Marine Reserves Act 1971
2. to contribute to DOC's function to conserve and protect the natural character and quality of New Zealand's coastal and marine environments, and the establishment of a nationwide network of marine reserves that is representative of these
3. to provide educational and recreational opportunities for non-extractive users of the Hawke's Bay coast.[34]

**The Operational Plan** sets out objectives to promote compatible scientific research, foster safe recreational use while minimising visitor impacts, develop strong ties with the public, protect the reserve from activities both outside and inside its boundaries, and monitor the reserve over time to inform management. The Operational Plan explains the connection between Ngāti Kere and the reserve, and that the area covered by its mana now includes the reserve.

**The working group then identified additional objectives** specific to TAMR. These included increased visibility of Ngāti Kere mana moana on the coast and the continued connection between Ngāti Kere and TAMR, including increased involvement in decision making for the reserve. The working group also concluded that the original objectives did not address climate change – a contemporary conservation priority – and chose indicators to assess whether the reserve is resilient to climate change.

32 Department of Conservation. 2003. Te Angiangi Marine Reserve Operational Plan. Wellington: Department of Conservation. www.doc.govt.nz/te-angiangi-marine-reserve-operational-plan

33 Marine Reserves Act 1971, section 3. www.legislation.govt.nz/act/public/1971/0015/latest/dlm397838.html

34 Department of Conservation. 1994. Te Angiangi (Aramoana - Blackhead, Central Hawke's Bay) Marine Reserve Application. Napier: Department of Conservation. Hawke's Bay Conservancy Series No. 7; p. 27.

The working group summarised TAMR's current management objectives as:

1. preserving and protecting marine ecosystems
2. providing educational and recreational opportunities
3. maintaining a connection with the public
4. promoting Ngāti Kere mana moana and their connection to TAMR
5. reflecting contemporary conservation priorities (i.e., climate change resiliency).

After identifying the reserve's goals and objectives, the working group matched them with indicators. The working group then selected several indicators for each objective (12 in total) to assess whether the reserve's objectives have been met.[35] The indicators are discussed further in section 4 as noted below:

- Preserving and protecting marine ecosystems: the working group chose to evaluate three indicators – **focal species abundance** (section 4.1.1), **habitat type and condition** (section 4.1.2) and **the level of compliance/number of prosecutions for illegal catches and takes** (section 4.1.3).
- Providing educational and recreational opportunities: the working group chose to consider two indicators – **existence and activity level of community organisations** (section 4.1.4) and **local marine resource use patterns** (section 4.1.5).
- Maintaining a connection with the public: the working group chose two indicators – **whether there is a decision-making and management body with an adopted management plan** (section 4.1.6) and **level of stakeholder participation and satisfaction in the management of resources at the reserve** (section 4.1.7).
- Promoting Ngāti Kere mana moana on the coast and their connection to TAMR: the working group chose two indicators – **the level of rangatira and kaitiaki participation in biodiversity activities/level of hapū involvement in marine management** (section 4.1.8) and **hapū/local community perceptions of kaimoana availability on the coast** (section 4.1.9).
- Reflecting contemporary conservation priorities (i.e., climate change resiliency): the working group chose three indicators – the **effect of extreme events on marine ecosystems** (section 4.1.10), **ocean acidity and sea surface temperature** (section 4.1.11), and the **prevalence and location of invasive species** (section 4.1.12).

35 The working group selected the 12 indicators from a list of 60 developed to evaluate a broad range of marine protected areas. The working group also considered indicators Ngāti Kere had previously developed that are specific to monitoring the health of their rohe moana and coastal and marine area. Two of these indicators, the level of hapū involvement in marine management (tohu tuawha) and the number of prosecutions for illegal catches and takes (tohu tuawaru), overlap with the level of rangatira and kaitiaki participation in biodiversity activities and the level of compliance. The indicators are evaluated at section 4.1.8 and section 4.1.3, respectively. See: Ngāti Kere, Ministry for the Environment, Department of Conservation. 2007. Maori methods and indicators for marine protection: A process to identify tohu (marine indicators) to measure the health of the rohe moana of Ngati Kere. www.doc.govt.nz/globalassets/documents/science-and-technical/sap238.pdf

The kete tohu consists of the following (p. 21–22):
Tohu tuatahi – number and size of kōura/crayfish/rock lobster in shallow water
Tohu tuarua – number and size of hapuka/groper close to the coast
Tohu tuatoru – level of Ohinemuhu rock above sand and abundance of pipi
Tohu tuawha – level of involvement in marine management
Tohu tuarima – availability of native plant resources
Tohu tuaono – number and type of customary take permits issued
Tohu tuawhitu – number, size and distribution of no-take areas
Tohu tuawaru – number of prosecutions for illegal catches and takes
Tohu tuaiwa – level of rohe moana knowledge within the hapū and community

# 4 Analysis

Each objective and its corresponding indicators are addressed separately below. The working group developed questions for each of the 12 indicators to determine whether each of the five objectives had been met. These questions were answered by subject-matter experts, key stakeholders and the public. Solicitation of public feedback was targeted.

For example, 'Preserving marine ecosystems: Focal species abundance' measures species abundance to determine how well the reserve has preserved marine ecosystems. To measure species abundance, the working group asked four questions and considered responses to each of them. Based on the answers, the working group has made management recommendations relevant to each indicator. These recommendations are meant to guide implementation of the 13 main recommendations derived from this report (section 5).

## 4.1 Results: Evaluating the indicators

### 4.1.1 Preserving marine ecosystems: Focal species abundance

To evaluate focal species abundance, the working group relied on the expertise of DOC's Marine Ecosystems team, which considered four questions relating to the abundance and size of key species.

#### 1. Has the abundance of key species[36] changed within the protected site?

**Answer: Not enough data are available for the monitored species (reef fish, pāua, kina and kōura/crayfish/rock lobster) to make an assessment. Further monitoring would help understanding.**

DOC's analysis of the evidence found that:

> Both pāua and kina are important grazer species, feeding on algae. Kina are capable of large-scale habitat change, as they feed on kelp, and can completely replace kelp forests with a habitat referred to as 'urchin barrens.' Pāua are a taonga species and their presence and size are an indicator of ecosystem health. Pāua and kina were surveyed in shallow channels inside and outside the reserve from 1999-2003, and again in 2023 ... Pāua numbers were greater inside the reserve (Figure 4) and pāua were, on average, 15 mm larger in the marine reserve. While numbers of kina were low within the marine reserve and high outside the reserve (Figure 5), large kina were more common in the marine reserve than in nearby non-reserve areas.[37]

Numbers of pāua were lower in 2023 than 2003 and were around the same as in 1999 (figure 3). It is unclear to what extent the 2011 landslips affected the pāua population. Continued monitoring is necessary to observe trends.

Kina numbers may be low within the reserve because ocean currents may make settlement of young kina on reefs outside the reserve more likely (figure 4),[38] or the higher numbers of kōura/crayfish/rock lobsters in the reserve may be the cause. Rock lobsters are predators of kina and can consume all sizes. In other marine reserves, the recovery of predators like kōura/crayfish/rock lobsters has led to lower kina numbers and an increase in kelp cover.[39]

36 See: Ngāti Kere, Ministry for the Environment, Department of Conservation. 2007. Maori methods and indicators for marine protection: A process to identify tohu (marine indicators) to measure the health of the rohe moana of Ngati Kere. www.doc.govt.nz/globalassets/documents/science-and-technical/sap238.pdf

37 Department of Conservation. 2024. Te Angiangi Marine Reserve: A summary of the studies and monitoring 1996–2023 (unpublished, available upon request).

38 Department of Conservation (2024), note 37 above; p. 10.

39 Department of Conservation (2024), note 37 above; p. 9.

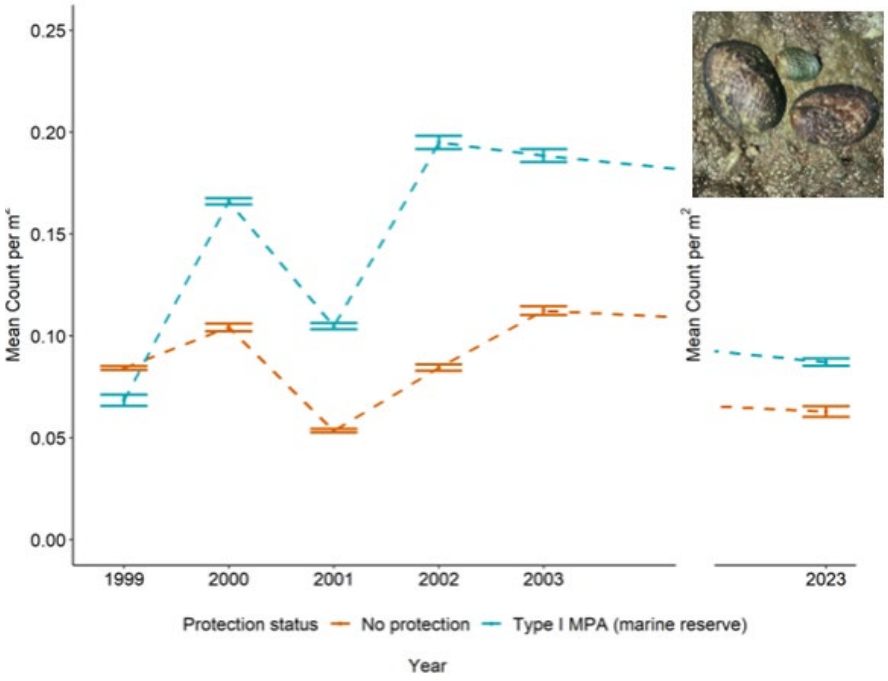


**Figure 3: Mean count per square metre of pāua in the marine reserve and two non-reserve areas (Blackhead and Aramoana), 1999–2003 and 2023 (error bars represent the standard error)**

Source: Department of Conservation. 2024. Te Angiangi Marine Reserve: A summary of the studies and monitoring 1996–2023 (unpublished, available upon request). Note: MPA = marine protected area.

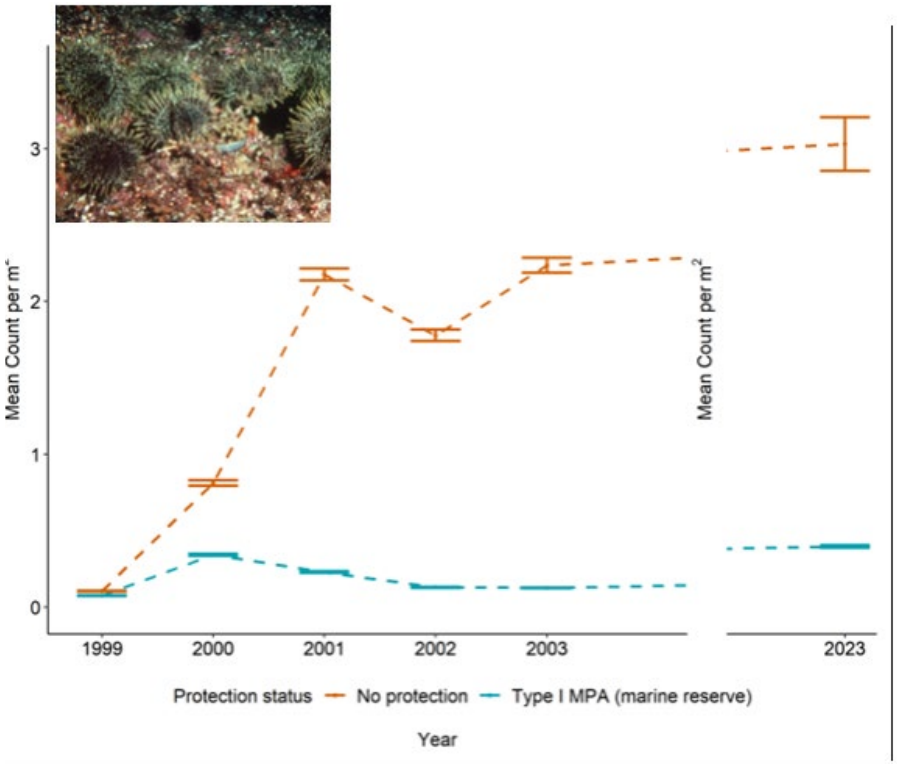


**Figure 4: Mean count per square metre of kina in the marine reserve and two non-reserve areas (Blackhead and Aramoana), 1999–2003 and 2023 (error bars represent the standard error)**

Source: Department of Conservation. 2024. Te Angiangi Marine Reserve: A summary of the studies and monitoring 1996–2023 (unpublished, available upon request). Note: MPA = marine protected area.

Surveys done between 1995 and 2007 show the number and size of kōura/crayfish/rock lobsters in shallow water were generally greater inside the reserve than outside (figure 5).[40] Within 'two years after establishment of the marine reserve, lobsters were consistently larger inside the reserve compared to outside' (figure 6),[41] and 'lobster surveys in 2007 found that on average, males were 24.4 mm and females were 6.4 mm bigger in the marine reserve (measured as carapace length)'.[42] It is not known whether this trend has continued because no monitoring was done between 2007 and 2024. In January 2024, DOC undertook additional sampling inside and outside the reserve using lobster potting, and is currently processing the data.

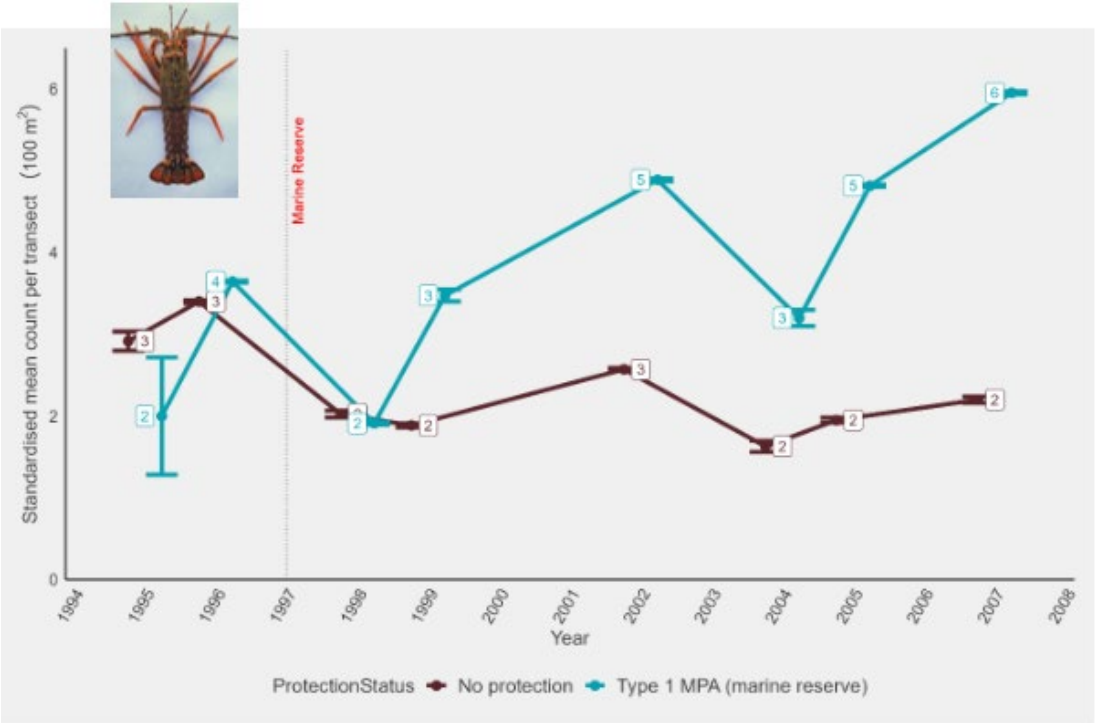


**Figure 5: Standardised mean count of lobster per 100 square metres, 1995–2007 (error bars represent the standard error)**
Note: MPA = marine protected area.

40 Department of Conservation. 2024. Te Angiangi Marine Reserve: A summary of the studies and monitoring 1996–2023 (unpublished, available upon request); p. 8.

41 Department of Conservation (2024), note 40 above; p. 7.

42 Department of Conservation (2024), note 40 above; p. 9.

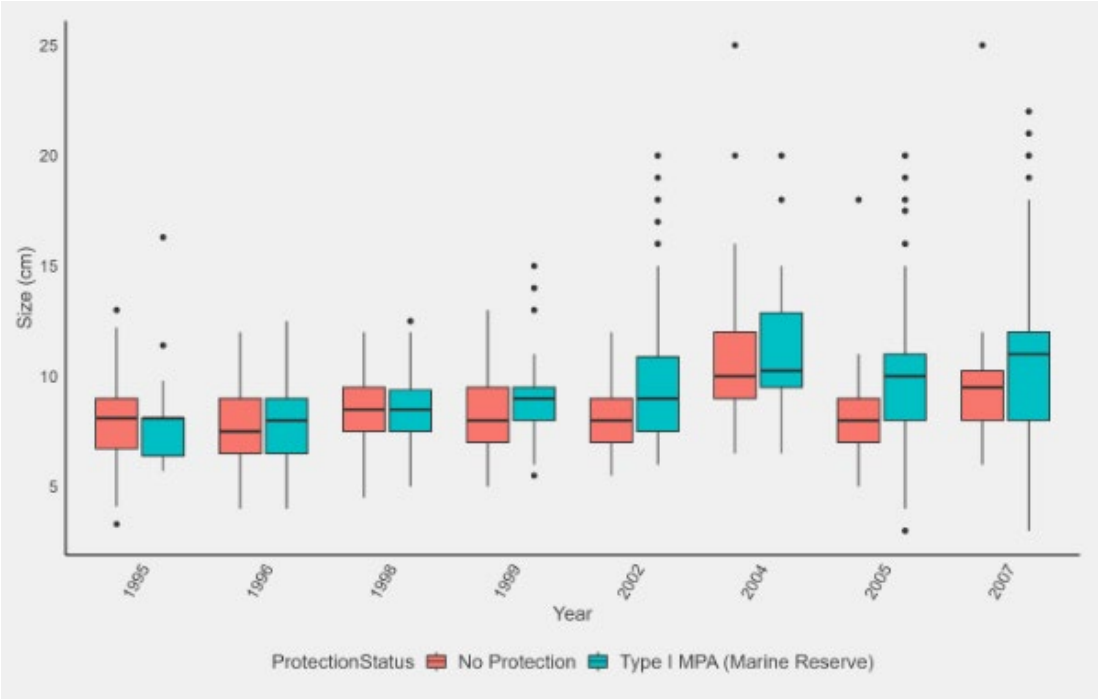


**Figure 6: Boxplot of lobster sizes inside and outside Te Angiangi Marine Reserve, 1995–2007**
Note: MPA = marine protected area.

Before the reserve's establishment, fishing in the area consisted of methods targeting a variety of finfish species. From 1995 to 2005, divers conducted reef fish surveys both inside and outside the reserve. No trend was observed for butterfish (*Odax pullus*). For the first 5 years of protection, numbers of banded wrasse (*Notolabrus fucicola*), spotty wrasse (*Notolabrus celidotus*) and scarlet wrasse (*Pseudolabrus miles*) seem to have remained stable, while after 5 years, the scarlet wrasse seemed to be increasing both inside and outside the marine reserve.

> In multiple marine reserves around the country, protection has resulted in higher numbers and larger individuals for blue cod, snapper, and other key species after longer periods of reserve establishment (seven years+). Reef fish have not been monitored at TAMR for almost 20 years. Further monitoring is needed to understand how protection has changed the number and size of fish within Te Angiangi marine reserve.[43]

## 2. Has the size of key species changed within the protected site?

**Answer: Data collected for some species (reef fish, pāua, kina and kōura/crayfish/rock lobster) showed no clear trend. Further monitoring would aid understanding. See discussion above.**

## 3. Has the number of key species changed over time within the protected site?

**Answer: Data were insufficient to determine whether the establishment of TAMR has changed the number of key species over time.**

Environmental DNA (eDNA) sampling in 2021 and 2023 was insufficient to determine whether key species are located inside the reserve. The kete tohu for the rohe moana of Ngāti Kere includes two key species that have not been studied in the area: hāpuku and pipi.[44]

43 Department of Conservation. 2024. Te Angiangi Marine Reserve: A summary of the studies and monitoring 1996–2023 (unpublished, available upon request); p. 6.

44 See: Ngāti Kere, Ministry for the Environment, Department of Conservation. 2007. Maori methods and indicators for marine protection: A process to identify tohu (marine indicators) to measure the health of the rohe moana of Ngati Kere. www.doc.govt.nz/globalassets/documents/science-and-technical/sap238.pdf

### 4. Has the size of key species changed over time within the protected site?

**Answer: Data collected for some species (reef fish, pāua, kina and lobster) showed no clear trend. Further monitoring would aid understanding. See discussion above.**

No data were collected on fish sizes for the surveys between 1999 and 2007. Results from lobster surveys from 1995 to 2007 show that their size increased slightly over time, both inside and outside the reserve (figure 6). As discussed above, pāua were, on average, 15 mm larger inside the reserve in 2023.[45] Although kina numbers were lower inside the reserve than outside, large kina were more common in the reserve than in nearby non-reserve areas. Additional monitoring is necessary to conclude if kina are larger in the reserve.

#### Recommendations

- The next round of intertidal (kina/pāua) surveys should use the rāhui space at Parimahu to compare areas with different types of protection.
- Lobster monitoring needs to be re-established to understand if numbers have continued to recover since 2007 and to determine whether average size has continued to increase. DOC and Ngāti Kere started this monitoring (via potting) in 2024.
- The kete tohu Ngāti Kere published in 2007 includes hāpuku and pipi, which have not been studied in the area. If Ngāti Kere continues to consider these species a priority, discussions should be had as to how to monitor them.
- Baited underwater video is the recommended method for monitoring fish, given the conditions at TAMR. This method would allow the quantification of the size and density of carnivorous fish species inside and outside the reserve. This is a good method for the hapū to be involved with.

## 4.1.2 Preserving marine ecosystems: Habitat type and condition

To determine habitat type and condition, DOC's Marine Ecosystem Team explored several questions.

### 1. What habitats are present within TAMR?

**Answer: The intertidal area is dominated by a rocky reef platform with a small amount of seagrass. Five major reef habitat types are found in the subtidal area: encrusting invertebrates, sponge flat, mixed algae, *Ecklonia* forest and a small amount of shallow *Carpophyllum maschalocarpum*, a brown alga (figure 7).**

In 2005, the reserve and surrounding areas were mapped using side-scan sonar and remote video imagery, which revealed the five major reef habitat types. Much of the shallow habitat was not surveyed due to sea conditions and no diving was undertaken to collect species for accurate identification. Although the remote survey technique involved a lack of certainty, it did allow for broad habitat classifications.

45 Department of Conservation. 2024. Te Angiangi Marine Reserve: A summary of the studies and monitoring 1996–2023 (unpublished, available upon request).

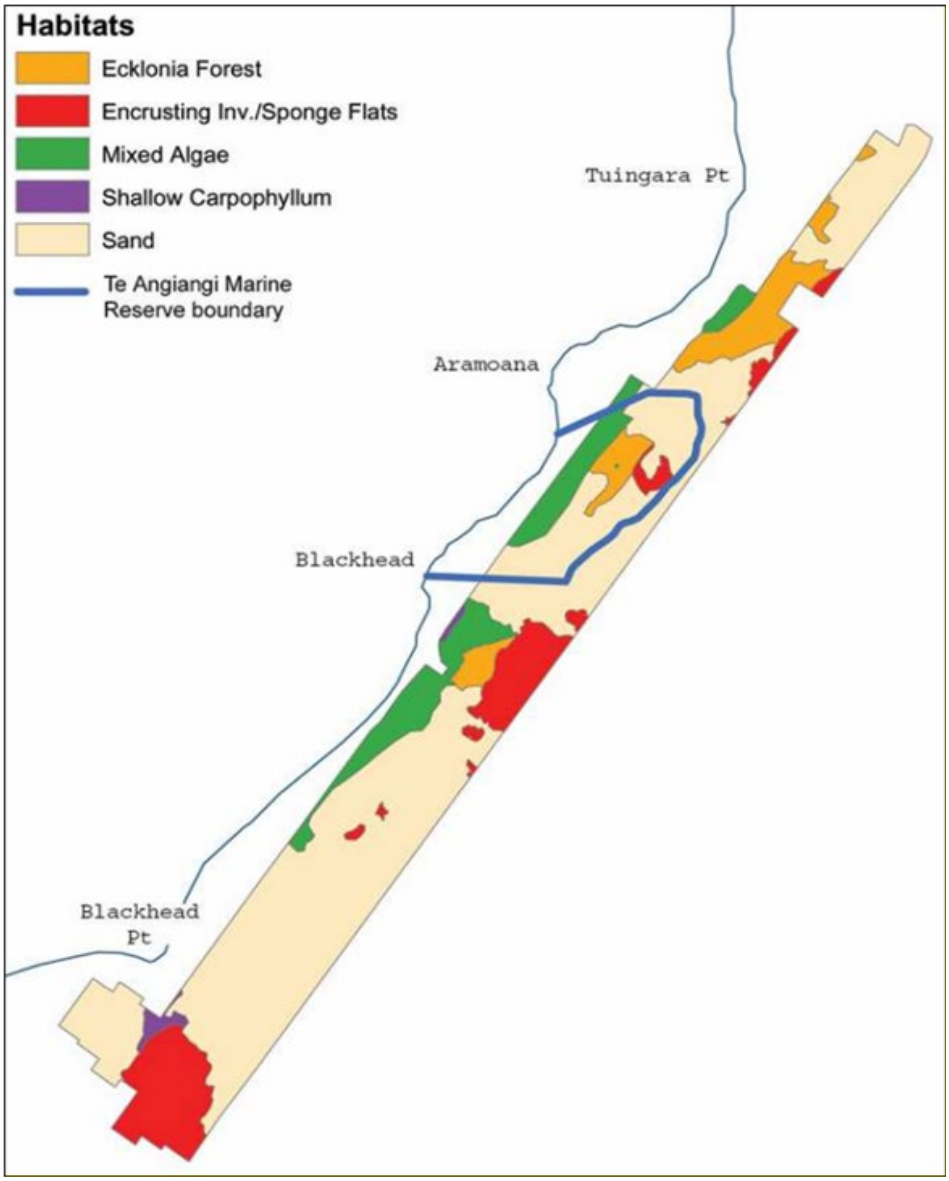


**Figure 7: Subtidal reef habitats based on side-scan sonar and video information in 2005**
Source: Funnell GA, Hancock N, Williston T, Drury J. 2005. Tuingara to Blackhead Point Habitat Mapping. NIWA Client Report (unpublished, available upon request).

In addition, parts of the marine reserve were mapped using multibeam sonar in June 2023 following Cyclone Gabrielle. NIWA and the *RV Kaharoa* crew sampled 36 sites in Hawke's Bay, including inside the reserve (Paoanui Point) (figure 8). Kelp (*Ecklonia radiata*) occurred at four locations, including Paoanui Point inside the reserve, at sufficiently high densities to constitute kelp forest.[46] Densities outside the reserve at Blackhead Point were too low to constitute kelp forest. Of the plants surveyed inside the reserve, 98% were healthy, and of the plants surveyed at Blackhead Point, 100% were healthy.

46 Leduc D, Collins C, Gall M, Lundquist C, Macdonald H, Mackay K, Mountjoy J, Morrison M, Orpin A, Pinkerton M, et al. 2024. Cyclone impacts on fisheries. Wellington: Fisheries New Zealand, Ministry for Primary Industries. New Zealand Aquatic Environment and Biodiversity Report No. 326. fs.fish.govt.nz/Doc/25605/AEBR-326-Cyclone-Impacts-On-Fisheries-2024-4461.pdf.ashx

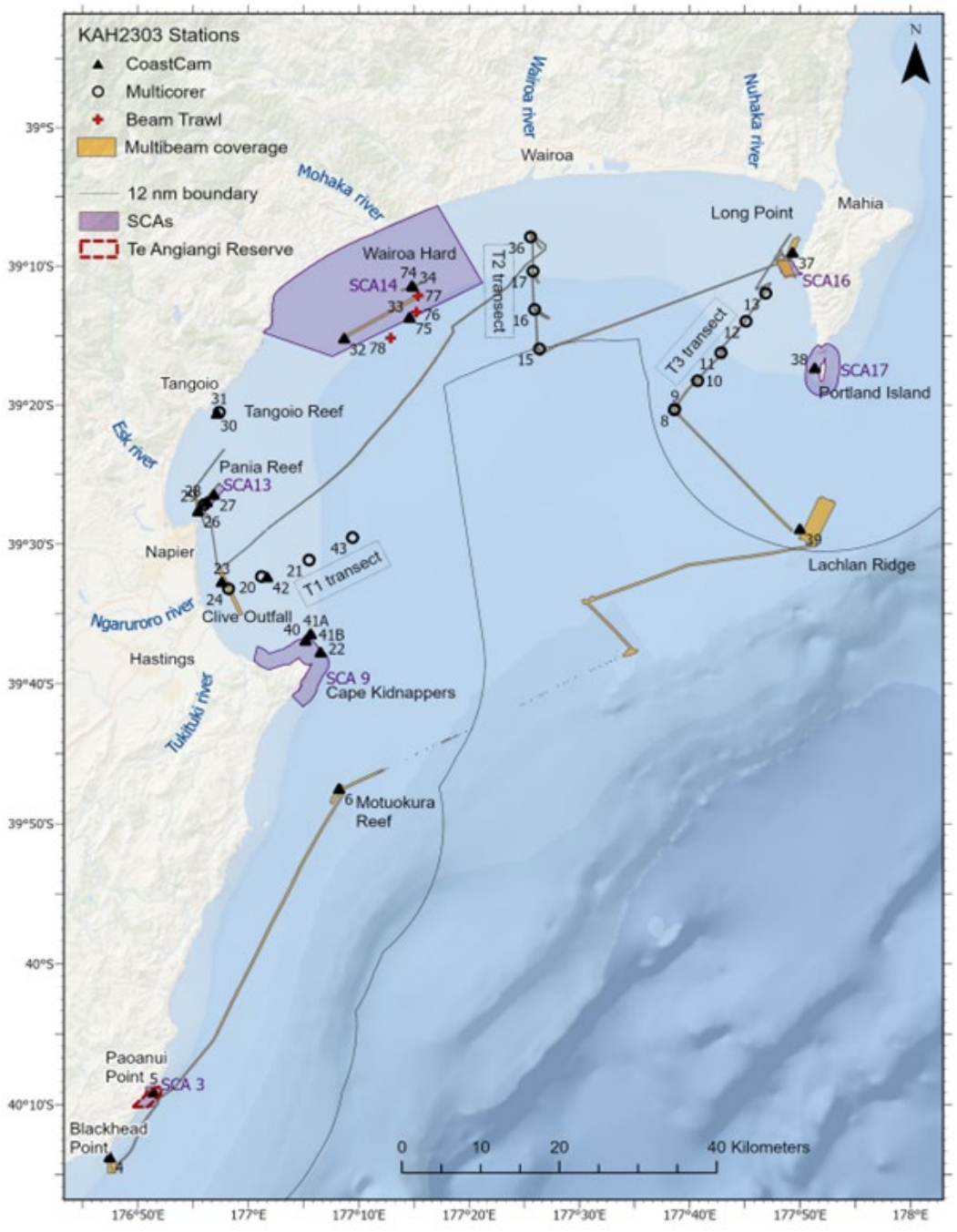


**Figure 8: Location of Hawke's Bay sampling sites and multibeam coverage during the June 2023 *RV Kaharoa* survey, including Paoanui Point, Significant Conservation Area (SCA) 3**

With respect to the habitats and ecological assemblages at a site within TAMR and at nearby Blackhead Point, the 2024 Cyclone Impacts on Fisheries report, stated:

> **Paoanui Point and Blackhead Point**
>
> Water clarity was good at both Paoanui Point and Blackhead Point in the southern Hawke's Bay coastal region when surveyed in June 2023 ... *Ecklonia radiata* kelp plants were largely healthy, and no evidence of fine sedimentation was seen on the reefs or the adjacent rippled sand. Collectively, the ecological assemblages at these locations were in line with what would be expected for an open coastal reef away from major sediment inputs, and there was no evidence of sediment impacts.

> At Paoanui Point within the Te Angiangi Reserve, extensive reef extended out from the shore, interspersed with patches of sand ... An *Ecklonia radiata* kelp forest was present across the main reef area ... This forest occurred as patches, and was not continuous, occurring on both rock outcrops, and on flat bedrock with a thin sand veneer. A small, foliose red alga was common, along with patches of remnant rhizomes of green alga *Caulerpa* sp. without blades (note that this alga was not the invasive exotic species *Caulerpa brachypus* or *Caulerpa parvifolia*). At least five other species of red macroalgae were also present, along with patches of the green alga *Codium* sp. Pink coralline algae were widespread as small patches. The soft bryozoan *Margaretta barbata* was common and widespread, as well as sponges, gastropods, sea cucumbers and fish.[47]

Figure 9 shows imagery of the seafloor at Paoanui Point from a survey conducted by NIWA in June 2023.

**Figure 9: Paoanui Point seafloor imagery (June 2023 survey)**
Top left: *Ecklonia radiata* kelp forest; top right: green macroalgae *Codium sp*. and coralline algae (pink); bottom left: boulder habitats with coralline algae and soft bryozoans (*Margaretta barbata*); bottom right: deeper reef with the sponge *Ecionemia alata* and the yellow zoanthid anemone *Epizoanthus* sp.

## 2. What is the spatial extent of habitats present within TAMR?

**Answer: See figure 7. Subtidal reef habitats were broadly mapped based on side-scan sonar and video information in 2005. Intertidal habitats have not been mapped.**

## 3. Are the extent and conditions of focal habitats within the reserve changing over time?

**Answer: More research is needed to quantify the changes in habitats over time and more accurately estimate the percentage cover of habitat types.**

As noted in section 1, the severe storm and associated earthquake 2011 changed the habitat directly adjacent to the slip that occurred on the cliffs at the north end of the reserve. A survey of the sediment types revealed that the change was largely in grain size; where there was previously medium-sized sand, there became fine sand.[48]

47 Leduc D, Collins C, Gall M, Lundquist C, Macdonald H, Mackay K, Mountjoy J, Morrison M, Orpin A, Pinkerton M, et al. 2024. Cyclone impacts on fisheries. Wellington: Fisheries New Zealand, Ministry for Primary Industries. New Zealand Aquatic Environment and Biodiversity Report No. 326; p. 73. fs.fish.govt.nz/Doc/25605/AEBR-326-Cyclone-Impacts-On-Fisheries-2024-4461.pdf.ashx

48 Macpherson DJ. 2013. Effects of catastrophic landslides on the Te Angiangi Marine Reserve, Hawke's Bay, New Zealand (unpublished, available upon request).

### Recommendation

- A drop camera survey would allow DOC to validate the results of the multibeam survey and thereby quantify the changes in habitats over time and more accurately estimate the percentage cover of habitat types.

## 4.1.3 Preserving marine ecosystems: Level of compliance and number of prosecutions for illegal catches and takes

DOC's marine reserves ranger is on location at TAMR around one day a week. Ministry for Primary Industries fishery officers patrol TAMR up to three times a week in the summer or when they are aware of periods of high risk. New Zealand Police also patrol through the reserve, but not on a regular basis. The local hapū have trained staff who often patrol the marine reserve and adjacent areas. Local hapū patrols do not have powers of authority under the Marine Reserves Act 1971 and so are limited to using preventative tools, such as intervention and education. When Fisheries New Zealand comes across a marine reserve offence, it puts together an evidence file, including photographs and interviews with offenders, and passes this on to DOC. According to the Senior Compliance Officer for Fisheries New Zealand, no files have been passed on to DOC for several years.

Since September 2020, DOC has used an application 'CLE Works' to record law enforcement incidents. Before that, all incidents were manually recorded. Many interactions are addressed before any violation occurs and so are not recorded in CLE Works.

Between 2007 and September 2020, DOC reported 33 offences, with 16 court cases and prosecutions. No offences, however, were reported between 2009 to 2015. No incidents were reported between 2020 to 2022, while DOC reported eight incidents in 2023. Details were not available for all incidents before 2020, but, from the information available, most offences involved illegal take of kina and pāua.

The DOC Marine Reserves Ranger Programme, created in 2020, resourced a dedicated marine reserves ranger for TAMR in 2022. Since this ranger has been on board and able to focus on the reserve, their presence has provided consistent compliance monitoring of the reserve. The increase in reports from 2023, compared with previous years, shows the benefits of having a ranger dedicated to the reserve.

DOC's Regional Operations team answered several questions that contextualise the compliance data. Answers to the following questions are based on the experience and opinion of DOC employees.

### 1. Where and why are people most likely to comply or not comply?

**Answer: The presence of law enforcement officers appears to be most effective at reducing illegal activities.**

People know that sea life is plentiful within TAMR and have taken advantage of the lack of patrolling officers and non-threatening fines to try to harvest from the reserve. The DOC Marine Reserves Ranger has increased DOC patrols and the effectiveness of interagency compliance monitoring.

Signage works to deter most people from illegal activities. The signage has been updated recently to provide adequate boundary marking and information about the reserve and the rules. Compliance signs have been upgraded with the Ngāti Kere logo to acknowledge their guardianship of the area.

### 2. What is the extent of advocacy and education efforts?

**Answer: DOC made extensive efforts up until 2011, when efforts were reduced due to a lack of funding. Recently, the dedicated marine reserves ranger has increased advocacy and education efforts.**

The TAMR ranger has been working hard to bring the community together around TAMR. DOC funded a compliance safety course with local hapū to train tangata whenua who would like to educate visitors to the coastal area and reserve. As a result, local hapū regularly patrol the reserve and adjacent rāhui but are not warranted officers (WO) under the Marine Reserves Act 1971.

### 3. What effect does DOC presence have on compliance?

**Answer: The DOC presence appears to be very effective in deterring illegal activities.**

DOC closely communicates with New Zealand Police for serious incursions and is in contact with Fisheries New Zealand officers, who also patrol the area regularly, both openly and covertly.

DOC has also been involved in joint agency patrolling, including checkpoints with Fisheries New Zealand and New Zealand Police. DOC, New Zealand Police and Fisheries New Zealand communicate regularly and work cohesively to monitor compliance of the reserve.

### 4. What causes changes in compliance rates over time?

**Answer: Factors that influence compliance rates include trained staff, especially a dedicated marine reserves ranger, a compliance and law enforcement plan for TAMR that is executed over busy periods, such as summer and long weekends, the availability of law enforcement staff (both DOC and external) locally at TAMR, a constant presence at the reserve, clear signage, and marked reserve boundaries communicated to the public.**

Prosecutions do not appear to be making any difference in compliance rates over time. Rather, the constant presence of WOs seems to be the most successful deterrent.

### 5. How much time is spent on patrol and surveillance?

**Answer: At a minimum, weekly DOC patrols are conducted between October and April.**

### 6. How has the number of offences changed over time?

**Answer: We are unable to answer this question because, before 2020, CLE Works record-keeping appears to have been inconsistent.**

Before 2020, WOs would pass on their compliance files to managers and then the legal team, who would decide appropriate outcomes. Different operations managers may have made decisions to elevate compliance files differently.

Current processes: Since 2020, the WOs have had decision-making authority (with auditing from national compliance officers) for the recommended enforcement action for an alleged offence. Every WO follows the DOC decision-making matrix to make their recommendations, creating a consistent national and district approach to an offence. This ensures no bias or unfairness occurs to those who are alleged to have offended in the reserve. Marine reserve prosecutions may have decreased since 2020, and may continue to do so into the future, because many offences are better suited for infringement notices, which have only been put into legislation since 2020.

The enforcement rates (prosecution, infringements, warning letters, official advocacy) may appear inconsistent due to changes in the presence of rangers in the reserve who are able to either intercept offences or prevent them. DOC WOs are trained to prevent an offence if they can see it may be committed (rather than waiting for it to happen and then apprehending an alleged offender), and DOC is working on a system to better record those numbers in its compliance data nationally.

Since changes were implemented in 2020, WOs may be inconsistent with how they approach alleged offences if a safety or perceived safety issue occurs in the field. If staff feel unsafe, then they must judge how best to approach an incident to ensure their safety. This may result in not collecting adequate evidence for an offence. Other non-WO staff may be included in the roster of staff undertaking patrolling or monitoring of the reserve. These individuals may be more likely to be inconsistent in their approach to alleged offenders because they are not as extensively trained and it may be best for them to educate, verbally warn or simply record that an alleged offence took place.

#### Recommendations

The constant presence of law enforcement officers appears to be most effective at reducing illegal activities. To achieve a constant presence, the following may be effective:

- Sustained funding for a dedicated marine reserves ranger and supporting staff, along with continued resources to train locals, community groups and hapū to patrol the reserve.
- Relationship building between DOC and the local community to encourage residents to report illegal take with the confidence that it will be investigated.
- Establishing a local base or hub for DOC rangers to undertake work and stay overnight to reduce travel time and increase DOC presence at TAMR.
- Ongoing training for staff who are able to undertake law enforcement.
- Increasing signage.
- Using surveillance camera(s); explore combining cameras with a weather station and/or a video feed of the reserve to interface with the public. TAMR is a good candidate for CCTV because of the long travel time from the DOC base in Ahuriri/Napier to the reserve, the fact that gang-related illegal activity poses a high risk for face-to-face interactions, and because most illegal activity is from shore, and cameras would capture cars entering and exiting the reserve and would allow WOs to search number plates for identification details remotely.
- Using the Automatic Identification System, which alerts DOC if any commercial vessel enters the reserve.

### 4.1.4 Providing educational and recreational opportunities: Existence and activity level of community organisations

#### 1. Are community organisations engaged at TAMR? How are they engaged?

**Answer: The AEECT is the community organisation most engaged at TAMR.**

In drafting the review report, the working group sought input from the AEECT. According to the AEECT, its mission includes raising the profile and increasing the community commitment to TAMR. The AEECT was established in 2010 and looks after the Ōuepoto Reserve and Te Ikatīere Reserve, which are adjacent to TAMR, and the group coordinates school education camps at TAMR. Other groups are also engaged at TAMR, as highlighted below.

### 4.1.5 Providing educational and recreational opportunities: Local marine resource use patterns

DOC evaluated local marine resource use patterns by answering a series of questions.

#### 1. What marine-related activities are taking place at sea?

**Answer: Recreational activities include guided youth snorkelling trips to observe sea life, Wāhine Divers to teach women how to gather kai safely and family snorkelling trips.**

Recently, the Dive School and the Tangata o te Wai Charitable Trust, founded by Robert Houkamau (Ngāti Kere) and Waimaria Hurinui, have received funding from Water Safety

New Zealand to deliver water safety programmes to people within Central Hawke's Bay and the surrounding areas. The Dive School provides knowledge and skill-based classes from beginner to advanced divers. The Dive School led one snorkel dive at TAMR in 2024 and plans to hold up to 30 more classes at the reserve in the coming year.

### 2. What related activities are taking place on land?

**Answer: Several educational programmes and recreational activities are taking place at the reserve.**

In the past, DOC has run educational programmes for school-aged children over the summer. These were discontinued due to reduced resources. Since then, educational resources have been developed and are available for schoolteachers.

More recently, DOC has worked with interested stakeholders, such as the AEECT and the National Aquarium of New Zealand, on various projects, including educational programmes and school camps. In addition, Victoria University of Wellington postgraduate students visit the reserve annually to study conservation management.

Since 2011, the Hawke's Bay Regional Council and AEECT have partnered on a planting and regeneration project on 44 hectares of steep land above the reserve between Aramoana and Blackhead. So far, 15,000 native plants have been planted. The main aim of the project is to protect the reserve from sedimentation caused by significant erosion. The project will create a habitat of rich biodiversity for the whole community to enjoy.

Self-directed recreational uses include diving, swimming and boat launching. In addition, motorbikes, four-wheel drive vehicles and light utility vehicles are in use on the beach.

### 3. What impacts are these activities having on marine resources?

**Answer: Most activities appear to have a minimal impact on marine resources.**

While no monitoring has been done of the impact of activities on marine resources within the reserve, it is unlikely they will be having a significant effect. Resources that spill over from the reserve (e.g., kōura/crayfish/rock lobster) are targeted hard. High demand in the surrounding area increases the risk of illegal activities at TAMR.

### 4. Who is involved in education and recreational activities?

**Answer: Many groups and individuals participate in activities at the reserve, as set out below.**

### 5. How many people are involved in each activity?

A**nswer:**

- **Diver-led youth snorkelling: 1 local and 5 to 10 children**
- **Planting: 40 volunteers, DOC, the AEECT, Hawke's Bay Regional Council**
- **Programmes run by the AEECT: 2 Victoria University of Wellington staff and 20 to 30 students.**

### 6. What are their basic characteristics?

**Answer: Many of the programmes on site are designed for school-age children and university students.**

### 7. How are the uses conducted?

**Answer: Educational and volunteer uses vary, depending on the objectives of the programmes**.

### 8. How do these methods affect the marine resources?

**Answer: Scientific studies, recreational uses and educational uses appear to have a low impact on marine resources. Effects of research are managed through appropriate conditions on permits granted by DOC.**

### 9. Where do stakeholders live and work?

**Answer: Stakeholders include residents of Shoal Bay, Aramoana and Blackhead, and members of the Ngāti Kere hapū, Pōrangahau. Others reside in Hastings, Kereru, Waipukurau and Waipawa.**

### 10. Where are the marine resources located for comparison?

**Answer: Pōrangahau is about 30 kilometres from the reserve. Shoal Bay, Aramoana and Blackhead are geographically adjacent to TAMR. Ahuriri/Napier is about 100 kilometres from the reserve.**

### 11. When do the uses take place and what changes occur at particular times (e.g., daily, seasonally)?

**Answer: Most uses take place between October and March, with the heaviest use in summer.**

### 12. Why do these changes occur?

**Answer: Summer weather conditions and holidays are more conducive to scientific fieldwork and recreational activities.**

Changes in use have also occurred over time. DOC used to lead environmental education programmes at TAMR by actively running summer programmes (i.e., every Saturday in January 2003) and school talks and walks (329 people total in March 2007). DOC also developed numerous resources for schools, including resource kits and a promotional DVD (2002). Since about 2015, this has continuously reduced and all educational programmes are currently run by the AEECT. Some of the resource kits and education programmes were modified and offered to various Hawke's Bay schools as part of the Cape to City programme, but this also stopped at the end of the Cape to City funding in 2021.

#### Recommendation

- Conduct community outreach to learn how management of the reserve could better support the community's educational and recreational priorities.

## 4.1.6 Developing strong ties with the community: Existence of a decision-making and management body with an adopted management plan

As noted above, DOC's Regional Operations team based in Ahuriri/Napier is charged with managing the reserve. The team explained how management functions by answering a series of questions.

### 1. Is there a current management plan for TAMR?

**Answer: An Operational Plan has been in place since May 2003 but not updated since then. A more recent species monitoring plan has been developed by the Marine Ecosystem team.[49]**

49 DOC has prepared a provisional monitoring plan for TAMR that it has not fully implemented (plan available upon request).

## 2. Who is responsible for TAMR management?

**Answer: DOC is responsible for the administration, management and control of the reserve (Marine Reserves Act 1971, section 9).**

DOC's management must be undertaken in accordance with the Hawke's Bay Conservation Management Strategy and the Conservation General Policy, and in such a way as to give effect to the principles of Te Tiriti o Waitangi (Conservation Act 1987, section 4).

In the earlier years of the reserve, DOC also provided administrative and secretarial support to the TAMR Committee, which was a committee of the Wellington Hawke's Bay Conservation Board (now the ECHBCB). The committee was disestablished following a review in September 2011. The review found the committee had played a major role in the establishment and initial management of the reserve but the need for it had lessened to a point where it was no longer required. Safeguards for community involvement from 'Friends' groups, like the Friends of Taputeranga Marine Reserve, and community initiatives driven by DOC were proving an efficient and effective model to help in DOC's responsibility to maintain the reserves under the Conservation Act 1987.

The Wellington Hawke's Bay Conservation Board agreed to the disestablishment of the TAMR Committee and noted it would resume responsibility for any statutory decisions necessary concerning TAMR. The Conservation Board agreed that its preference for maintaining effective community consultation and relationships relating to the reserve was to hold an annual community meeting or event and to use existing iwi and community relationships.[50]

## 3. Where is the decision-making and management body sited?

**Answer: Operational decisions sit with DOC, and the ECHBCB is responsible for any statutory decisions necessary concerning TAMR.**

## 4. Which individual is responsible for its operation?

**Answer: The Director-General of DOC is responsible for TAMR's operation.**

According to the Marine Reserves Act 1971, the Director-General of DOC 'shall administer, manage, and control marine reserves in accordance with approved general policies, conservation management strategies, and conservation plans'.[51] In terms of day-to-day operations, the TAMR Operational Plan does not identify a responsible individual.

## 5. Where is the authority documented?

**Answer: The TAMR Operational Plan, section 2.3, identifies DOC as responsible for the administration, management and control of the reserve.**

## 6. How often does the management body meet?

**Answer: No meetings are regularly scheduled for any management body.**

The TAMR Committee met every 3 months until its disestablishment in 2011. Meetings with hapū and other interested parties have been irregular since then and not well documented. The ECHBCB liaison reports on TAMR activity and issues from Ngāti Kere and contacts the ECHBCB at least quarterly. From time to time, ECHBCB raises specific issues with DOC. DOC provides updates to the ECHBCB every 3 or 4 months.

In 2021, the local operations team established another group to communicate issues relevant to the reserve. That group, which comprised the DOC Operations Manager, Ngāti Kere representatives and representatives from the AEECT, is not currently active. The DOC Marine Reserves Ranger is in regular contact with Ngāti Kere and the AEECT and updates them on management of the reserve.

50 Minutes, Wellington Hawke's Bay Conservation Board (6 May 2011). ftp.doc.govt.nz/public/folder/l3ou_sgc8ke30ssshwk2xa/wellington/archives-2011-meetings/whbcb-minutes-6-May-2011.pdf

51 Marine Reserves Act 1971, section 9.

### 7. Does Ngāti Kere participate in management decisions?

**Answer: No, Ngāti Kere does not participate in management decisions.**

When the TAMR Committee was active, Ngāti Kere members sat on it and were actively involved in management decisions. Since 2011, DOC activities at TAMR have been reduced almost entirely to law enforcement. DOC has made attempts since 2015 to re-engage with stakeholders and establish a working group, including Ngāti Kere representatives; however, this has not been successful. DOC currently informs Ngāti Kere on operations at the reserve.

#### Recommendations

- Re-establish a management committee with clear terms of reference for the roles each member or group has in terms of TAMR management.
- The management committee meets regularly (e.g., every 6 months).
- Review the TAMR Operations Plan regularly and update as appropriate.

## 4.1.7 Developing strong ties with the community: Level of stakeholder participation and satisfaction in management processes

DOC sought to gauge stakeholder participation and satisfaction by distributing short surveys to trustees of the AEECT. DOC also distributed the surveys to interested members of the public on an ad hoc basis. These were intended to be qualitative, assessing perceptions of reserve management, rather than quantifying data. Participation was limited with only a handful of responses received. Survey questions were as follows.

### 1. On a scale of 1 to 10, how informed/involved are you with management of Te Angiangi Marine Reserve?

**Answer: 5, because information from DOC has been difficult to get and, historically, there has been a lack of care regarding management of the reserve.**

**Answer: 4, because DOC has not been good at communicating with those who reside in the local community.**

### 2. On a scale of 1 to 10, how satisfied are you with your level of involvement?

**Answer: 5, because, until recently, it has been difficult to work with DOC.**

**Answer: 1, because of feeling excluded from discussion about the review and concern that Ngāti Kere may have its own goals, which do not reflect those of the community.**

### 3. Who do you believe should be responsible for the management of resources at Te Angiangi Marine Reserve?

**Answer: One response listed the Ngāti Kere hapū, DOC, the AEECT and local communities, and one listed DOC.**

#### Recommendations

- Continue community hui amongst Ngāti Kere, DOC, the AEECT and local communities, with the ultimate decision-making authority sitting with Ngāti Kere and DOC.
- '[M]ore consultation, more policing of the Reserve. (Just last week there were poachers with a trolley used to take their loot on three weekdays). [The Marine Reserves Ranger] needs more help if he has any chance of succeeding. Also there is a joint responsibility, this includes Ngāti Kere, who have been missing in action also.'
- Install additional signage.

### 4.1.8 Developing strong ties with the community: Level of rangatira (leadership) and kaitiaki (guardianship) participation in biodiversity activities/level of hapū involvement in marine management

To assess the visibility of Ngāti Kere mana moana on the coast and the continued connection between Ngāti Kere and TAMR, the working group evaluated the level of rangatira and kaitiaki participation at the reserve. The working group addressed the following questions.

#### 1. How many hapū members are involved in species monitoring activities?

**Answer: Several hapū members are involved in species monitoring. The number has varied over time.**

#### 2. In what capacity are hapū members involved in monitoring activities?

**Answer: Hapū members are involved as boat operators for kōura/crayfish/rock lobster.**

#### 3. How many hapū members are involved in leadership positions associated with monitoring activities?

**Answer: None.**

#### 4. How many hapū members are involved in surveillance and enforcement?

**Answer: Hapū members are involved in enforcement as volunteer advocates for the reserve, patrolling the beach.**

Further information was gathered at a hui at the Rongomaraeroa marae on 19 May 2024. The consensus was that the young people of the hapū are the future. The hapū must lead education for its members and the wider community to grow the community available to look after the reserve and to participate in monitoring. The hapū needs a strategic plan and local leaders to connect young people to TAMR, tīpuna, whenua and moana.

#### Recommendations

- Establish two levels of governance: 1) a strategic oversight committee made up of Ngāti Kere and the DOC District Operations Manager, and 2) a management group made up of various groups involved in activities at the reserve (i.e., DOC, Ngāti Kere [tangata whenua], the AEECT, Tangata Kaitiaki, community representatives).
- To incorporate knowledge held by tīpuna, include oral histories as a baseline for monitoring.

### 4.1.9 Developing strong ties with the community: Hapū/local community perceptions of kaimoana availability on the coast

Two questionnaires from community stakeholders were returned addressing ‘perceptions of kaimoana availability on the coast’. These questions were presented at the 19 May hui with Ngāti Kere but were not directly addressed by the hapū, although concern was expressed about how to feed hapū members.

#### 1. What species do you fish and harvest?

**Answer: One respondent mainly harvests kōura/crayfish/rock lobster and, to a lesser extent, pāua.**

**Answer: One respondent harvests both kōura/crayfish/rock lobster and pāua.**

### 2. Compared to 25 years ago, how has the quantity of those species changed along the Hawke's Bay coastline?

**Answer: Don't know. It is their opinion that the reserve is beneficial to maintaining the level of biodiversity and fish stocks at healthy levels in the areas surrounding the reserve.**

**Answer: The quantity of lobster has increased due to the success of the commercial quota system, not the reserve. The quantity of pāua has decreased due to illegal activity.**

### 3. Compared to 10 years ago, how has the quantity of those species changed along the Hawke's Bay coastline?

**Answer: Don't know. More scientific work should be done to confirm whether the reserve is beneficial to the abundance and diversity of species.**

**Answer: The quantity of lobster has increased. The quantity of pāua has stayed the same.**

### 4. What impact do you believe Te Angiangi Marine Reserve has had on your ability to fish or harvest your desired species?

**Answer: The respondent believes the reserve has had a beneficial impact on their ability to fish and harvest in the area because it supports marine biodiversity and fish stocks in the areas surrounding the reserve. In addition, they value the recreational opportunities associated with the reserve, including snorkelling, diving and observing marine life in an undisturbed environment.**

**Answer: The reserve has decreased the ability to fish for lobster although there are still other areas to fish. The reserve has decreased the ability to harvest pāua and pāua stocks have decreased because of illegal activity on the coast. The reserve and subsequent rāhui have placed more pressure on other areas of the coast.**

#### Recommendations

- Conduct more comprehensive research on the benefits of TAMR to achieve a more informed level of consultation across all stakeholders.
- DOC should review its approach to ongoing management, analysis and support of the reserve and partner with local communities or organisations on how this could be better managed.

## 4.1.10 Managing to reflect contemporary conservation priorities: Effect of extreme events on marine ecosystems

The working group reviewed the original objectives and concluded they did not address climate change, a contemporary conservation priority. The working group decided to select indicators to assess whether the reserve is resilient to climate change. Extreme weather events are predicted to increase in frequency and intensity due to climate change. The working group therefore chose to evaluate the effect of extreme events on TAMR.

### 1. Identify the extreme events, including landslides, earthquakes and cyclones.

**Answer: Two major events have affected TAMR: 1) a severe storm and nearby earthquake in 2011 that caused a slip inside the reserve, and 2) Cyclone Gabrielle on 14 February 2023.**

### 2. For each event, describe the effect, generally, in the marine reserve.

**Answer: In April 2011, 650 mm of intense rain fell over a 4-day period, which resulted in a significant amount of sediment being delivered to the coast through catastrophic coastal landslides. An accompanying trigger was a magnitude 4.5 earthquake centred only 10 km offshore from Pourerere at a depth of 20 km, which exacerbated the impacts at the reserve.**

**Cyclone Gabrielle hit New Zealand's North Island East Coast on 14 February 2023 and devastated coastal regions. Hawke's Bay was severely affected by a category 3 cyclone and unprecedented rainfall.**

### 3. For each event, what were the long-term effects on marine resources?

**Answer: The long-term impacts of the landslips have not been evaluated. Cyclone Gabrielle is a recent event, occurring just a year ago.**

### 4. For each event, what were the short-term effects on marine resources?

**Answer: The debris from the 2011 coastal landslides inundated the immediate intertidal platform adjacent to the hillside, which posed a serious threat to marine life both within and outside the reserve. There was evidence of seagrass and marine organism mortality, especially in the upper intertidal zone. Intertidal populations of pāua (*Haliotis* spp.), kina (*Evechinus chloroticus*) and seagrass (*Zostera capricorni*) have generally indicated a greater abundance and larger size in protected populations at TAMR and adjacent areas, and a generally healthier reef platform compared with the non-reserve locations.[52]**

A 2023, post-cyclone research voyage was undertaken to assess the impact of the cyclone. While the results cannot be directly compared to historical data, they show that similar habitats still exist inside and outside the reserve, suggesting the underwater impacts of the cyclone were minimal, particularly inside the reserve where large, healthy, intact *Ecklonia* forests were found.

### Recommendations

- To understand the long-term impacts of the landslides, implement the proposed monitoring plan for TAMR.
- Further research is needed to compare the data from the current (2023) research survey with historical data to understand the impacts of landslides.

## 4.1.11 Managing to reflect contemporary conservation priorities: Ocean acidity and sea surface temperature

The working group also chose to evaluate ocean acidity and sea surface temperature because an increase in both ocean acidity and sea surface temperature is associated with climate change.

### 1. How has sea surface temperature changed over the last 25 years?

**Answer: No data exist. Sea surface temperature is not measured at TAMR.**

### 2. How has sea surface temperature changed over the last 10 years?

**Answer: No data exist. Sea surface temperature is not measured at TAMR.**

### 3. How has ocean acidity changed over the last 25 years?

**Answer: Acidity monitoring at TAMR began in 2019/20 and not enough data are available to look at trends.**

### 4. How has ocean acidity changed over the last 10 years?

**Answer: Acidity monitoring at TAMR began in 2019/20 and not enough data are available to look at trends.**

52 Macpherson DJ. 2013. Effects of catastrophic landslides on the Te Angiangi Marine Reserve, Hawke's Bay, New Zealand (unpublished, available upon request).

### Recommendations

- To determine changes in sea surface temperature and ocean acidification, begin measuring the sea surface temperature at the reserve and collect and measure water samples consistently.
- Explore using marine boundary buoys to measure ocean acidity, sea surface temperature and other indicators (e.g., turbidity and tidal fluctuations).

## 4.1.12 Managing to reflect contemporary conservation priorities: Prevalence and location of invasive species

Invasive alien species (invasive species) are 'animals, plants or other organisms that are introduced into places outside their natural range, negatively impacting native biodiversity, ecosystem services or human well-being'.[53] Climate change facilitates the spread and establishment of many invasive species and reduces the resilience of habitats to biological invasions.[54] Because of the concern of invasive species, the working group chose to evaluate whether such species are known to occur in TAMR.

### 1. Are invasive species present in TAMR?

**Answer: Inconclusive.**

Summer and winter surveys of Napier Port and Ahuriri Upper Harbour completed by NIWA on behalf of Biosecurity New Zealand occurred from 24 to 28 April and 25 to 29 September 2023, respectively. These surveys are part of a national surveillance programme that searches for non-native marine organisms that could impact on New Zealand's marine environment, kaimoana, economy and wider values that marine and coastal areas provide for us all. The following non-indigenous species were found:

- The bryozoan *Celleporaria umbonatoidea*
- The colonial ascidians *Botrylloides diegensis*, *Didemnum vexillum* and *Diplosoma listerianum*
- The solitary ascidians *Ciona savignyi* and *Ciona intestinalis*
- The seaweeds *Grateloupia turuturu* and *Undaria pinnatifida*
- Pear crab (*Pyromaia tuberculata*)
- The tubeworm *Ficopomatus enigmaticus*
- Asian Semele (*Theora lubrica*)[55]

None of these species were found using eDNA in either 2021 or 2023 in the reserve. This does not mean they are not there, because the ability of eDNA to detect species precisely is still being developed.

### 2. How abundant are the invasive species present in TAMR?

**Answer: Data are insufficient to answer the question. No surveys have been conducted to estimate the abundance of invasive species in TAMR.**

### 3. How has the abundance of invasive species present in TAMR changed over the last 25 years?

**Answer: Data are insufficient to answer the question. No surveys have been undertaken to estimate the abundance of invasive species in TAMR.**

53 IUCN. 2021. Invasive alien species and climate change. [accessed 18 December 2024]. https://iucn.org/resources/issues-brief/invasive-alien-species-and-climate-change

54 IUCN (2021), note 53 above.

55 eDNA results back from TAA Wilderlab job nos. 604902 and 601034 (available upon request).

### 4. How has the abundance of invasive species present in TAMR changed over the last 10 years?

**Answer: Data are insufficient to answer the question. No surveys have been undertaken to estimate the abundance of invasive species in TAMR.**

#### Recommendations

- Understanding the presence and absence of species in the marine reserve is more efficient than determining abundance. It is recommended that any effort with respect to invasive species in TAMR is dedicated to identifying their presence and then removing them, rather than trying to quantify how many individuals are there.
- eDNA results are inconclusive and need to be analysed by an expert.

## 4.2 Are goals and objectives for Te Angiangi Marine Reserve clearly defined, measurable and useful for future management purposes?

The goals for TAMR are defined in the application documents, the Operational Plan and through this review. The working group has summarised TAMR goals and objectives as:

- preserving and protecting marine ecosystems
- providing educational and recreational opportunities
- maintaining a connection with members of the public
- promoting Ngāti Kere mana moana and their connection to TAMR
- reflecting contemporary conservation priorities.

### 1. Are these goals measurable?

Most of the goals are qualitative rather than quantitative. By assigning indicators to each objective, the working group was able to evaluate their effectiveness. This report notes where the data were insufficient to make an assessment.

### 2. Are these goals useful for future management purposes?

The goals are useful as guideposts, but further work is needed to ensure sufficient information is collected and considered so that management may respond to it.

## 4.3 Is TAMR meeting the goals and objectives for which it was established?

The review was able to confirm that, in part, TAMR is meeting the goals for which it was established. Where it is not meeting the objectives, recommendations have been made to address shortcomings.

Based on the available information, focal species generally appear to be increasing in abundance and size, habitats appear to be protected and relatively resilient to large-scale weather events, like Cyclone Gabrielle, and the reserve is a scientific, educational and recreational resource.
On the other hand, the working group was not able to conclude that DOC has consistently protected the reserve from illegal activities. DOC has not implemented a compliance and law enforcement plan. DOC has not implemented the species monitoring plan for the reserve, so data are almost entirely lacking on fish species and are sporadic on other focal species. For many years, DOC did not maintain strong ties with the community and did not promote the visibility of Ngāti Kere mana moana on the coast or the connection between Ngāti Kere and the reserve.

The working group was unable to determine whether objectives in the reserve's Operational Plan continue to reflect community priorities. The working group recommends that the proposed strategic oversight group and management committee seek input from the wider community to help shape an up-to-date operational management plan.

The working group identified climate change as one of the most pressing contemporary conservation priorities. This issue is excluded from TAMR objectives and the working group was largely unable to assess the impacts of climate change. Although data were available to support the conclusion that habitats inside the reserve are comparably resilient to extreme events, not enough information is available to evaluate trends in ocean acidity or sea surface temperature, or to determine whether invasive species are present in the reserve.

## 4.4 How could goals and objectives be revised to better meet management needs?

As discussed above, the working group identified additional goals specific to TAMR that were not included at the time of its establishment. These are: 1) increased visibility of Ngāti Kere mana moana on the coast and the continued connection between Ngāti Kere and TAMR, and 2) climate change resilience. As the recommendations below are implemented, the working group suggests that these two goals and any relevant objectives are included in a revised operational management plan.

# 5 Recommendations

Based on the findings of the review, the working group makes the following 13 recommendations. These recommendations are designed to better achieve TAMR objectives, promote the role of Ngāti Kere in guiding management at the reserve, foster the connection between the community and TAMR, and explicitly measure effects caused by climate change.

To promote Ngāti Kere mana moana on the coast and the connection between Ngāti Kere and TAMR:

1. DOC and tangata whenua, Ngāti Kere, partner to form a strategic oversight group setting the strategic vision for the reserve and guiding its operational management; the strategic oversight group liaises with the ECHBCB in developing vision and guidance
2. ECHBCB reviews and endorses any TAMR strategic or operational plan
3. DOC works with Ngāti Kere and the local community to ensure the strategic vision and Te Angiangi Marine Reserve Operational Plan are embedded in a Māori framework, incorporating mātauranga Māori
4. DOC works with tangata whenua, Ngāti Kere, to help expand knowledge on TAMR across their rohe moana.

To foster the connection between the community and TAMR:

5. DOC leads the establishment of a community-based management committee; the committee terms of reference should clearly describe the membership and roles each member and group has in reserve management
6. DOC, with input from the management committee, updates the Operational Plan outlining objectives for management, monitoring and compliance for review by the strategic oversight group; DOC measures data collection against the plan every 2–5 years to ensure the data collected will facilitate a 10-yearly review
7. DOC, Ngāti Kere and the community hold a regular event celebrating TAMR, Ngāti Kere and local connections to the area.

To better achieve TAMR objectives, especially preserving and protecting marine ecosystems:

8. DOC implements the proposed monitoring plan for TAMR, incorporating mātauranga Māori
9. DOC works with Ngāti Kere to include oral histories as a baseline for monitoring
10. DOC installs a surveillance camera at the reserve to ensure round-the-clock monitoring for compliance
11. DOC facilitates training to increase local patrols at the reserve
12. DOC commits to a review of the reserve every 10 years.

To measure the effects of climate change:

13. DOC includes climate indicators in the proposed monitoring plan for TAMR.

# 6 Next steps

DOC's Regional Operations team will lead the development of an implementation plan to ensure DOC considers and adopts recommendations, as feasible.[56] DOC will solicit and incorporate public feedback into the implementation plan, which should be completed within 6 months of the date that DOC's Deputy Director-General, Strategy and Policy approves this report.

56 DOC's implementation of the recommendations is subject to DOC funding, resourcing constraints and government priorities, which may change over time.