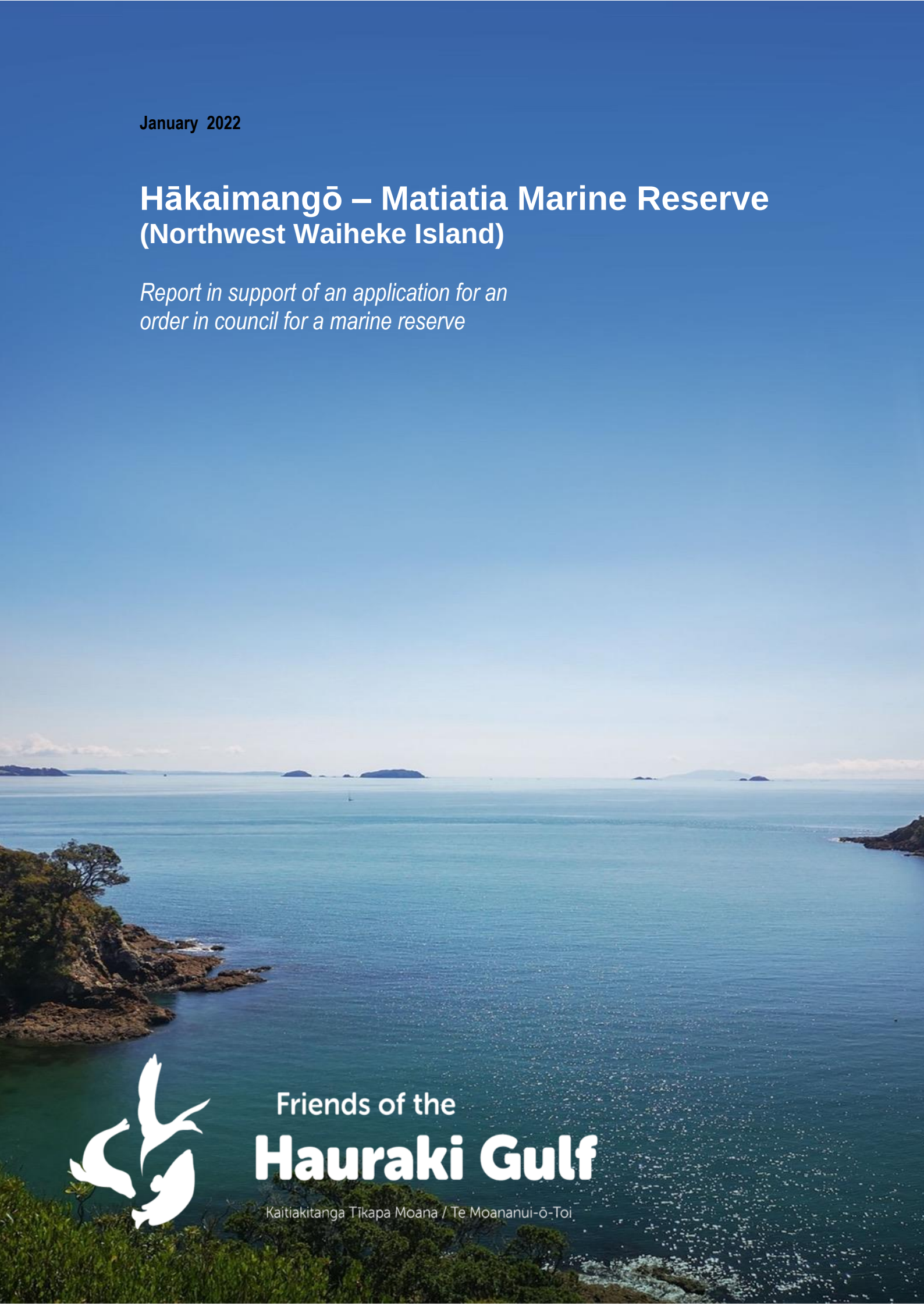
January 2022

Hākaimangō – Matiatia Marine Reserve
(Northwest Waiheke Island)

Report in support of an application for an order in council for a marine reserve



Friends of the
Hauraki Gulf
Kaitiakitanga Tīkapa Moana / Te Moananui-ō-Toi

Dedication

This application is dedicated to the memory of
Dr Roger Grace and Dr Bill Ballantine, conservation visionaries and tireless advocates for marine reserves.

Fig 1. Frontispiece. A view from Owhanake Bay, northwards over the proposed marine reserve. Photo Mike Lee.

Figs 2, 3 & 4. Aerial views, looking south-westward, over the coastline of the proposed Hākaimangō – Matiatia Marine Reserve, northwest Waiheke Island. Photos by Shaun Lee.

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Report in support of an application for an Order in Council for a Marine Reserve under Section 5 of the Marine Reserves Act 1971 for the area Hakaimango Point to Matiatia Point, Northwest Waiheke Island, Hauraki Gulf.

1.0 INTRODUCTION

Marine ecosystems in the Hauraki Gulf are generally under stress and in many cases damaged and disrupted. This is causally related to a precipitous decline of a wide range of marine biota.

This situation would be concerning enough in any area of our coastal environment, however Parliament in 2000 passed the Hauraki Gulf Marine Park Act formally recognising the national significance of the Hauraki Gulf, and of the life-supporting capacity of its waters, islands and catchments. The Act also established a marine park including all the waters of the Gulf.

1.1 The Hauraki Gulf Marine Park Act (2000).

The national significance of the Hauraki Gulf is the principal theme of the legislation which is evoked throughout the Hauraki Gulf Marine Park Act but sections 7 & 8 best articulate it.

Section 7: Recognition of national significance of Hauraki Gulf

'(1) *The interrelationship between the Hauraki Gulf, its islands, and catchments and the ability of that interrelationship to sustain the life-supporting capacity of the environment of the Hauraki Gulf and its islands are matters of national significance.*' (Note. The 'Life supporting capacity of the Gulf and its islands' is defined in section 7 (2) (c) *inter alia* as 'soil, air, water, and ecosystems'.).

Section 8: Management of the Hauraki Gulf

'To recognise the national significance of the Hauraki Gulf, its islands, and catchments, the objectives of the management of the Hauraki Gulf, its islands, and catchments are

(a) the protection and, where appropriate, the enhancement of the life-supporting capacity of the environment of the Hauraki Gulf, its islands, and catchments.'

Furthermore section 9 of the Act declares sections 7 & 8 to be a National Policy Statement and section 10 declares sections 7 & 8 to be a NZ Coastal Policy Statement. Finally, section 13 enjoins 'all persons exercising powers or carrying out functions for the Hauraki Gulf' to have 'particular regard' to the provisions of sections 7 & 8.

1.2 Marine Reserves Act

The Marine Reserves Act was enacted by parliament in 1971 after a campaign by recreational divers and marine scientists going back to at least 1965. At the time the legislation was considered world-leading and in many respects it still is. New Zealand now has 44 marine reserves which are administered by the Department of Conservation (DOC). The DOC website describes marine reserves as follows:

'Type 1 Marine reserves are the highest level of marine protection established under the Marine Reserves Act 1971….

The main aim of a marine reserve is to create an area free from alterations to marine habitats and life, providing a useful comparison for scientists to study. Marine reserves may be established in areas that contain underwater scenery, natural features or marine life of such distinctive quality, or so typical, beautiful or unique that their continued preservation is in the national interest'

(https://www.doc.govt.nz/nature/habitats/marine/type-1-marine-protected-areas-marine-reserves)

1.3 The Conservation Management Strategy Auckland 2014-2024

The Department of Conservation Management Strategy (CMS) acknowledges the crucial importance of the natural values of the Hauraki Gulf. The Auckland CMS accordingly commits to supporting the Hauraki Gulf Marine Park Act, sections 7 & 8 in particular [see CMS 7.5.1.1].

Section 6 of the CMS deals with the Hauraki Gulf and commits to *'enhance the special natural, historic, and cultural values of Auckland and the Hauraki Gulf Marine Park.'*

The Hauraki Gulf Marine Park and its nationally important ecological values are dealt with comprehensively in section 7.

Section 9 deals with 'Marine Reserve Places'. This section highlights the important conservation role of marine reserves but states that of the territorial sea only '0.163% is protected in Auckland (excluding the Kermadec Islands marine reserve,' Noting also that the oldest marine reserve Cape Rodney to Okakari Point is under 'the greatest pressure from increasing use with 300,000 visitors a year'.

The situation is analysed in some detail in the appendix 8. 'Marine habitats and ecosystems in Auckland'. Nine geographically defined ecosystem types are identified under the category 'Northeastern bioregion Te Arai Point to Miranda'. Of those nine ecosystem types, seven list 'overfishing' or as in the case of the Outer Hauraki Gulf '*overfishing resulting in trophic cascade'* as a major threat.

1.4 Public concern at environmental decline and lack of official action.

Despite Parliament's recognition of the national significance of the Hauraki Gulf, its gazetting of the Hauraki Gulf as a marine park and its statutory commitment to 'protect and enhance in perpetuity' its environment in 2000; and despite the recognition of the threats to its priceless values by DOC's Conservation Management Strategy, very little has actually been done to protect and enhance marine ecosystems and the 'life-supporting capacity' of the Hauraki Gulf. Especially by government agencies, and regional councils (including Auckland Council) despite obvious indications of environmental decline.

This deeply concerning trend has been highlighted in a series of Hauraki Gulf 'State of the Environment' three-yearly reports produced by the Hauraki Gulf Forum. Such reports are required under section 17 (1) (g) of the Hauraki Gulf Marine Park Act. The first report was produced in 2005. The most recent report in 2020, entitled 'State of Our Gulf' confirms a continuing trajectory of environmental decline 'since human arrival' but accelerated over recent decades. Among other findings, there is a major and continuing decline in key fish stocks and marine biodiversity, including:

- 57% decline in key fish stocks
- 83% decline in snapper,
- 76% decline in crayfish,
- near 100% decline in green-lipped mussels,
- 86% decline in all shark species
- 97% decline in whales and dolphins (Appendix 3: Hauraki Gulf Forum, *State of Our Gulf 2020*).
- A mass die-off of juvenile fur seals in 2021.

In response to this alarming information (periodically the subject of high-profile media attention), public support for meaningful conservation action by taxpayer and ratepayer funded agencies, the government and regional councils, to address the problem has grown.

A non-statutory 'Spatial Plan' for the Hauraki Gulf branded as 'Sea Change - Tai Timu Tai Pari' largely sponsored by Auckland Council was completed in 2017 but unfortunately along with the by-and-large exclusion of the general public, conflicting objectives and interests of various stakeholders' agendas, and the weight and influence of extractive resource users, nothing tangible emerged from this process by way of meaningful marine conservation measures. The 'Sea Change' report stated that 'marine protection is best left to the government' and thus was forwarded to the Ministers of Fisheries and Conservation.

Unfortunately, despite its Conservation Act (1987) mandate the Department of Conservation has not initiated any marine reserve proposals in northern New Zealand for more than a decade.

In May 2019 the Hauraki Gulf Forum formally voted to support 20% of the Hauraki Gulf Marine Park being protected as a 'long term aspirational goal'.[1]

From early 2019 a 'Waiheke Marine Project' group conducted a series of private and public meetings, workshops and hui on Waiheke Island with the purpose 'To protect and regenerate Waiheke's marine environment'. This culminated in a 'Future Search' process in November 2020 facilitated by a city-based Department of Conservation officer. Marine reserves were not considered, and no other practical measures were adopted save a commitment to further investigate a range of marine protection measures.

In January 2021, mana whenua iwi Ngāti Paoa, supported by the local Piritahi Marae declared a two-year rāhui against the taking of kōura / crayfish, tipa / scallops, pāua and kūtai / green-lipped mussels from around the coastline of Waiheke Island. This is arguably the most tangible attempt at marine resource conservation in the waters of the Hauraki Gulf in recent years. The rāhui application after consideration by the Ministry of Primary Industries under s186 (a) of the Fisheries Act, and assessment of public submissions, the majority of which were in support, was finally approved and came into effect on 1 December 2021 and will last for two years. However a rāhui by definition is limited both in time and scope, (this one being limited to four seafood species),

On Waiheke Island, awareness and concern among the island's community about the state of the marine environment has long been evident. This was confirmed by professional opinion polling undertaken on behalf of the Waiheke Local Board by Colmar Brunton in 2015. The survey revealed strong public support (67%) from residents for marine protection of the waters around Waiheke and the inner Gulf, and 64% specifically in support of marine reserves (see section 2 & Appendix 4).

The Waiheke Island community's strong support for marine reserves is in keeping with its long history of environmental awareness and activism, especially in regard to the marine environment. In 1901 Waiheke Island residents drew up a petition objecting to the destructive impacts of trawling in the inner Gulf – one of several from Aucklanders at that time (Peart 2016). In 1934 fifty Waiheke residents were among the first Aucklanders to express objections to the mid-20th century scheme to discharge the city's sewage into the Gulf at Browns Island / Motukorea. The scheme was famously overturned but only after a long and bitter battle led by Sir Dove-Myer Robinson (Bush 1980). Waiheke Island volunteers in large numbers led off the campaign to replant Tiritiri Matangi 'open sanctuary' in 1984 (Rimmer 2004); Waiheke

[1] A Hauraki Gulf Forum 'Work Plan' 2021 calls for 30% protection 'medium term' https://gulfjournal.org.nz/wp-content/uploads/2021/06/Work-Plan-Visual-09.pdf

islanders were prominent in the eventually successful movement to stop marine dumping within the Hauraki Gulf and actively protested against the dumping contaminated harbour dredgings off the Noises Islands in 1992.

Waiheke Islanders were also prominent in the long campaign to establish a Hauraki Gulf Marine Park. In the 1990s the Waiheke Royal Forest & Bird Protection Society branch successfully proposed a marine reserve at Te Matuku Bay on the south coast of Waiheke Island, which was finally gazetted in 2005, the first since the establishment of the Hauraki Gulf Marine Park.

The Waiheke community's support for marine reserves is backed by science, going back to at least Ballantine (1991). Recent international research, notably Edgar *et al*. (2014) and Sala & Giakoumi (2017) has confirmed that no-take marine reserves are by far the most effective means of achieving marine protection.

Fig.5. An artist's perspective view northward over the Hauraki Gulf. From an illustration in the 1983 publication *The Story of Hauraki Gulf Maritime Park*. The painting is believed to be the work of the marine biologist, conservationist and passionate advocate for marine reserves, Dr Roger Grace (1945-20

2.0 ORIGIN OF THIS PROPOSAL

2.1 The Friends of the Hauraki Gulf Inc

The Friends of the Hauraki Gulf is an incorporated society. Among its purposes are:

'*to research and advocate for the setting aside of marine protected areas, especially no-take marine reserves…'* and,

'to encourage and facilitate the scientific study of marine life and the natural history of the Hauraki Gulf.'

In 2013 the Friends of the Hauraki Gulf commissioned the first detailed underwater topographic survey of the northwest Waiheke coastline. This was carried out using side-scan sonar and undertaken by marine scientists Roger Grace and Vince Kerr with the assistance of Dan Breen. This research resulted in the paper *Subtidal and intertidal habitats of the North coast of Waiheke Island (Hauraki Gulf)* (Kerr & Grace 2013). This was followed by a survey of 15 sites in this area carried out by the University of Auckland Underwater Club.

An initial idea for a marine reserve on the northern coast of the island, though winning support from the Hauraki Gulf Forum in June 2013, never proceeded to a definitive application.

At this time the Waiheke Local Board assumed the leadership in progressing marine protection around Waiheke.

2.2 The Waiheke Local Board

In 2014 the Waiheke Local Board consulted on its Local Board Plan, highlighting an aspiration for a network of marine reserves around Waiheke Island and relating this to a formal commitment to '*improve protection and conservation of our coastal environment including the marine area'* (Waiheke Local Board Plan 2014-15).

After initial public consultation as part of its Local Board Plan in 2015 Auckland Council, on behalf of the Local Board, commissioned the market research agency Colmar Brunton to undertake an independent survey of registered Waiheke voters and off-island residential ratepayers to determine public opinion on the question of marine protection for Waiheke. The Colmar Brunton Survey sought to ascertain public views on marine protection in general and marine reserves in particular, via means of a postal and on-line public opinion survey. A total of 1999 residents responded to the survey as follows:

- 'Total Support' for marine protected areas from island residents was 67% and off-island ratepayers 54%.

- ‘Total Support for ‘no take’ marine reserves from island residents was 64% with off-island ratepayers 52%. (Colmar Brunton, Bing, 2015). (See Appendix 4 and figures 25 & 26).

In May 2015 the Waiheke Local Board approved funding and in 2016 commissioned additional scientific assessment of five areas in the Coastal Marine Area of Waiheke Island to advance the quest for formal marine protection around Waiheke. These five sites were identified and demarked by the Waiheke Local Board because they were largely contiguous with public land and natural areas. In June 2016, Auckland Council signed a Services Agreement with the Waiheke Local Board and the Hauraki Gulf Conservation Trust granting funds for a ‘Marine Reserves Assessment on Waiheke’ which was to include a final report and a colour brochure to present the results to the Waiheke Community.

Marine biologist Dr Tim Haggitt of eCoast, a marine and freshwater consultancy, was contracted by the council to evaluate and survey the five potential marine reserve sites located on the northern and southern sides of the island. This was undertaken in two parts. Phase One was a Gaps Analysis and Feasibility Study of the five sites identified as PMR1, PMR2, PMR3, PMR4 & PMR4a. This was completed in September 2016 (see Haggitt 2017a appendix 1).

A gateway review was undertaken by Auckland Council Infrastructure and Environmental Services officers at this point. Approval was granted on 14 September 2016 to proceed to Phase Two which resulted in completion of the Ecological Survey of Waiheke Island north-west coastline focussing on areas designated PMR1, PMR4 & PMR4a in December 2016.

Almost a year later the reports were published on the Waiheke Local Board agenda of 26 October 2017 and released for community consideration.
Upon formally receiving the eCoast reports Waiheke Local Board resolved:

That the Waiheke Local Board:

a) agree to release and promote the reports for community consideration

b) note that it does not consider it is the local board’s role to lead on any marine reserve applications(s) and encourages interested community groups to do so

c) note its view that the material gathered to date provides a good and robust basis for pursuing a marine reserve(s)

d) agree to consider any requests for support and assistance from applicants in due course

e) recommend that the Auckland Council Environment and Community Committee and the Sea Change – Tai Timu Tai Pari Hauraki Gulf Political

Reference Group investigate incorporating the proposed Waiheke marine reserves areas into the Auckland Council Sea Change – Tai Timu Tai Pari implementation programme.

f) approve the production of a colour brochure by the Hauraki Gulf Conservation Trust and delegate a board member to approve the scope.

Despite the Waiheke Local Board's resolution, the Haggitt eCoast reports, and the Colmar Brunton report which preceded them, were not formally accepted by Auckland Council's Environment and Community Committee. The colour brochure, despite being funded, is yet to be produced. In short nothing further was done to advance the Local Board proposal – until March 2021. At this time the Friends of the Hauraki Gulf, disappointed at the results of the two-year Waiheke Collective Marine Project 'Future Search' process, resolved to proceed with a formal application for an order-in-council for a type 1 marine reserve at northwest Waiheke, over the area identified and recommended by Dr Haggitt as PMR1.

2.3 'Revitalising the Gulf' – the government's Sea Change proposals

In June 2021 the government released its 'Revitalising the Gulf' proposals, the long-awaited response to 'Sea Change – Tai Timu Tai Pari, 2016'. Despite the government's statement that '*The Gulf is badly degraded from human activities; some fish and seabird populations are declining, and nature's delicate balance is being upset"* the measures announced according to most marine conservationists, fall short of dealing meaningfully with the crisis, let alone 'revitalising' the Hauraki Gulf.

The measures announced include undefined restrictions on trawling and scallop dredging and also what the government called 'new types' of marine protection. These comprise 5 'seafloor protection areas', 11 modest sized 'high protection areas' which are marine protected areas with exemptions for 'customary' fishing by iwi.[2] There are additions to two existing marine reserves, one at Cape Rodney to Okakari Point (Leigh) marine reserve and the other at Whanganui a Hei (Cathedral Cove) marine reserve on the eastern Coromandel. It appears that these additions may not have the same level of legal protection as the adjacent marine reserves and may be open to some form of human exploitation. The announced 'high protection' areas are experimental, subject to negotiation and are not planned to come into force until the end of 2024. There was not a single no-take marine protection area included in the 'Revitalising the Gulf' proposals.3.0.

[2] An application for a special High Protection Area around the Noises Islands was made in September 2021 by the Noises Trust in conjunction with Auckland Museum and the University of Auckland.

3.0 THE APPLICATION

Hakaimango Point to Matiatia Point proposed Hākaimangō-Matiatia Marine Reserve, northwest Waiheke Island, Hauraki Gulf (Ecological District. Inner Hauraki Gulf 09.05)

The proposed marine reserve in this application is located off the northwestern coastline of Waiheke Island, from Hakaimango Point to Matiatia Point. It covers some 2350 ha of the coastal marine area of the Hauraki Gulf. The area was identified after a series of scientific surveys and two comprehensive reports by Dr Tim Haggitt (Haggitt 2017a & b) commissioned by Auckland Council and the Waiheke Local Board.

Dr Haggitt considered the site he designated (PMR1) as being the preeminent of the Local Board's five identified possible marine reserve sites, as it provides the best habitat and is of sufficient scale for protecting and potentially restoring a whole range of marine biota, especially targeted species like snapper and crayfish. (See Haggitt 2017a & b, Appendices 1 & 2).

3.1 Boundaries of the proposed marine reserve

The boundaries of the proposed marine reserve encompass some 2350 ha and comprise of all the area (within the meaning of the Marine Reserves Act 1971) enclosed by a line commencing at a point on the mean-high water springs near Matiatia Point/Head on the north shores of Matiatia Bay at 36° 46.816' S, 174° 59.126' E; proceeding in a straight line in a westerly direction to point at 36° 46.816' S, 174° 57.406' E; then proceeding in a straight line in a northerly direction to point at 36° 44.126' S, 174° 57.406' E; then proceeding in a straight line in an easterly direction to point at 36° 44.126' S, 175° 0.962' E; then proceeding in a straight line in a southerly direction to a point 36° 46.151' S, 175° 0.962' E; then proceeding in a straight line in a westerly direction to a point on the mean-high water mark near Hakaimango Point at the north-western extremity of Oneroa Bay at 36° 46.151' S, 175° 0.882' E then proceeding in a northerly, westerly then generally south westerly direction along mean-high water springs to the point of commencement.

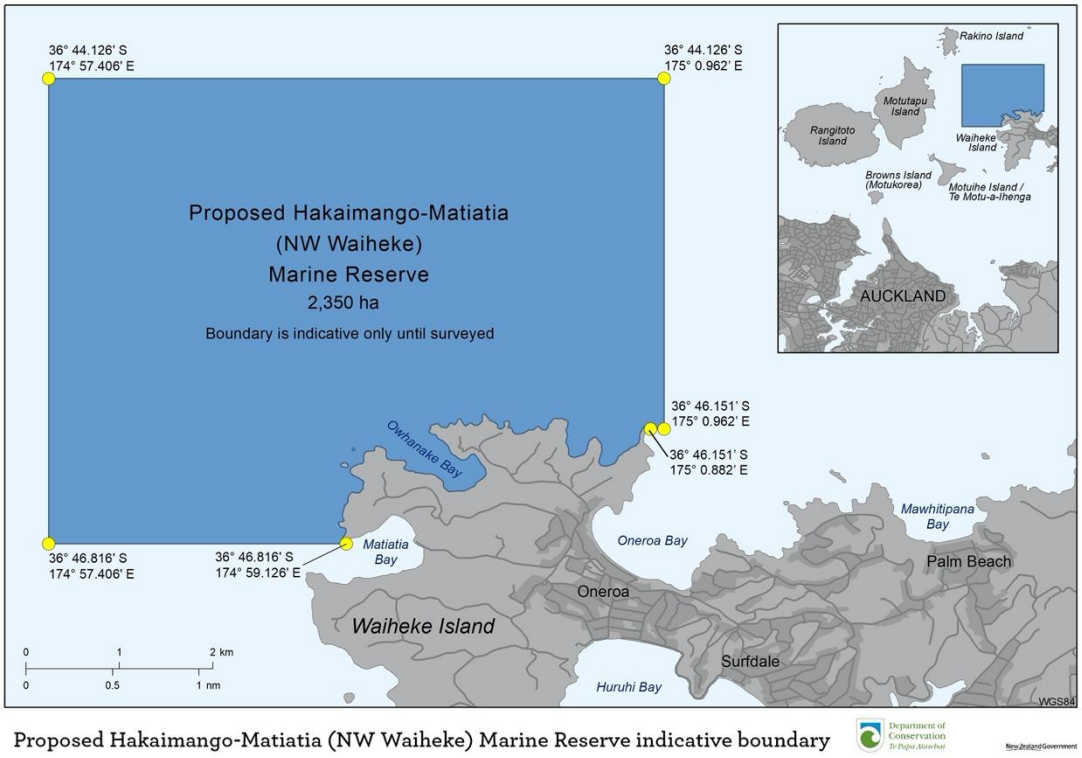

Fig.6. Boundaries of the proposed marine reserve

Note. The Friends of the Hauraki Gulf's proposal at 2350 ha in area is somewhat smaller than 'PMR1' (which was 2519.1 ha) largely because the southern boundary of this proposal does not extend to the southern head of Matiatia Bay, Whetumatarau. Instead, the southern boundary of this proposal stops at the northern head of Matiatia Point and so does not include Matiatia Harbour. Due to Matiatia Harbour's importance as a major transport hub; the need for periodic construction and other activities in the CMA, for instance to maintain wharf infrastructure, including it would introduce complexities into the application and future reserve management. Furthermore, the Friends consider marine transport and other land-based transport activities and uses, including consented discharges for road and carpark stormwater outfalls and treated wastewater discharges would not be fully compatible with the Marine Reserves Act (s 3) requirement to manage a marine reserve in a 'natural state'. Whereas the coastal foreshore, lying within the boundaries of this proposal from Matiatia Point to Hakaimango Point is in a 'natural state', with the coastal foreshore (adlittoral zone) bordered in regenerating native vegetation.

Note that the Friends also recognise the popularity and convenience of recreational wharf fishing at Matiatia, especially for people who don't own boats. It is proposed that the working name of the marine reserve be 'Hākaimangō – Matiatia (Northwest Waiheke Island) Marine Reserve' based as with other marine reserves on navigational boundary features. The formal name would be a matter of decision for the Crown, the NZ Geographic Board - Ngā Pou Taunaha o Aotearoa and mana whenua, Ngāti Paoa.

3.2 Māori History of the area Hakaimango Point to Matiatia Point

While ‘Matiatia Point’ is a well-known name and location, given the nearby ferry terminal and wharf, ‘Hakaimango Point’ is less well known but has a fascinating history. The name ‘Hākaimangō’ relates to the importance of shark fishing in the Māori history of the Hauraki Gulf, in the late 18th and mid-19th centuries (Campbell *et al.* 2021)

By the 1790s the Marutūahu tribes (iwi of the Hauraki region) had extended their summer fishing expeditions to the Mahurangi shark fishery, the richest fishery in the Gulf, located between Kawau Island and Whangaparaoa. Traditional sources state some 2000 rig sharks (*Mustelus lenticulatus*) known to Maori as mangō or kapetā (lemonfish, spotted dogfish) were taken by Ngāti Paoa on an annual basis from this fishery (Monin 2021).

The convergence of tribes from as far afield as the Firth of Thames, Manukau and the Waikato sometimes produced flashpoints between strangers. Hence, Ngāti Paoa repaired to their stronghold at the western end of Oneroa Beach to dry and store their catch. Drying racks could be up to several hundred metres long and could be smelt many kilometres away – hence the name Hā Kai Mangō.

Fig. 7. Shark drying rack near Rangitoto circa 1850. Shark drying by Ngāti Paoa at Hakaimango Peninsula is believed to have been on a much more extensive scale with some two thousand sharks dried and stored every season. (Charles Heaphy. Te Ara. Encyclopedia of New Zealand).

A significant find of Māori fishing gear, eroded from a midden, at that end of the beach, is held by the Waiheke Museum. A 19th century colonial official who expressly went to Matiatia in 1857 to meet the Ngāti Paoa chief Rawiri Takarua

(brother of Wiremu Hoete), found that he was unavailable, being away shark fishing at Mahurangi (Monin 2021).

The Hākaimangō pā site, which projects northwards at the western end of Oneroa Beach, occupies a long narrow peninsula more than 300 metres in length. No other headland pā on Waiheke boasts such spectacular natural features. For defence, apart from palisading, three or possibly four transverse ditches and associated banks were added to its precipitous slopes. The bulk of the habitation is likely to have occurred between the second and the third transverse ditches. The alignment of the peninsula, open to all day sun and winds would have been ideal for shark drying.

Occupation of the pā by those returnees from the Mahurangi fishery would have constituted only the final phase of the pā's life. Suffice to say, the archaeological record shows that the stretch of coastline between Matiatia and Oneroa, between Mokemoke Pā and Hākaimangō pā, was alive with Māori activity, in all probability dating back to the very beginnings of human settlement on Waiheke. (Note the recent finds of an 'Archaic' Maori presence, 1300-1500 A.D, at Otata in the Noises, a group of islands to the north of Waiheke's western end.)

Thus, as the landward boundary of a marine reserve, Hākaimangō comes with a long, rich cultural heritage. This heritage has been formally acknowledged by the Crown as part of the pending Treaty of Waitangi settlement with Ngāti Paoa in the form of a Statutory Acknowledgement over the Department of Conservation Matietie Historic Reserve. [Our thanks to historian Paul Monin for this information.]

Fig 8. A view eastward to the Hakaimango peninsula & its cluster of islets & beyond the northern coastline of Waiheke Island. The peninsula, once heavily fortified, was as its name suggests, used by Ngāti Paoa as a major shark drying platform for rig sharks (Mangō) taken at the Mahurangi shark fishery. Photo Andy Spence.

3.3 The Coastal Marine Area (CMA)

The Resource Management Act Section 2 defines the coastal marine area:

coastal marine area *means the foreshore, seabed, and coastal water, and the air space above the water—*
(a) *of which the seaward boundary is the outer limits of the territorial sea:*
(b) *of which the landward boundary is the line of mean high water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of—*
(i) *1 kilometre upstream from the mouth of the river; or*
(ii) *the point upstream that is calculated by multiplying the width of the river mouth by 5*.

Therefore, the coastal marine area encompasses all the land and water on the seaward side of the line of mean high water springs out to a distance of 12 nautical miles. Twelve nautical miles is 22.2 kilometres. The line of mean high water springs is the average of the high tides that happen just after every new moon and every full moon.

The part of the Coastal Marine Area (CMA) proposed to be protected by this application lies within a maritime ecological transition zone between the cooler, shallow, turbid, low energy waters of the inner Gulf (Ecological District 09.05 in which it is located), and the warmer, clearer, deeper, higher energy waters of the outer Gulf. At its southern-most boundary at Matiatia Point, the proposed reserve extends approximately 2km westward into the northern Motuihe Channel. This channel lying to the west and north of the proposed reserve has a moderate-to-heavy current flowing northward round the eastern headland of Owhanake Bay, dissipating rapidly as it flows onwards past Hakaimango Point and across the entrance of Oneroa Bay. The channel is relatively shallow (Haggitt 2017b).

The proposed reserve would run from mean high waters springs (MHWS) to a depth of 15-17 metres near its northern boundary (Marine Chart NZ 5324 *Tamaki Strait and Approaches* [*including Waiheke Island*]). The seaway of the proposed reserve includes the ‘Harbour and Pilotage Limit’ line which runs northwestward from the eastern head of Owhanake Bay to South Point at Rakino. Submarine cables run from Cable Bay and Owhanake westward to Home Bay, Motutapu.

The proposed reserve contains a diverse range of intertidal and subtidal marine habitats, notably rocky reef systems, but also numerous gravel beaches and sand beaches extending out to soft sediment sea floors framed by headlands and extended complex reef systems.

The coastline of the reserve proceeds from the northeast Hakaimango Peninsula to the remarkable Double U Bay which contains geologically

significant fossil deposits, then Island Bay, southward to Owhanake Bay, Cable Bay and then southwestwards towards Matiatia Point, the entrance to Matiatia Bay. In between these named bays are innumerable beaches, some quite large, varying in size down to gravel floored runnels, carved between weathered rocky outcrops. As Haggitt (2017b) points out the boundary lines and scale of the proposed reserve would be adequate to protect the species that occur within it and potentially enable them and others to be restored to more natural levels.

4.0 TYPES OF MARINE HABITATS WITHIN THE PROPOSED MARINE RESERVE

The proposed marine reserve encompasses a remarkable complex of abiotic geologic features which in turn provide potentially rich habitats.

4.1 Rocky reef systems - geology

'*Marine communities on the hard bedrock between tides are some of the richest communities and the most accessible… Long before plants and animals were well established on land, there were shore communities not unlike today's. The territory between the tides has clearly been a cradle for life on earth'*. Professor John Morton in *A Natural History of Auckland* (Morton *et al.* 1993).

The intertidal shoreline of northwest Waiheke Island is notable for its rocky, cliffs, stacks, embayed islets and undersea reefs of eroded ancient greywacke which geologists identify as of the Waipapa Terrane (western association). This rock, the oldest in the Auckland region deposited 250 to 145 million years ago forms the bedrock of Waiheke Island (Hayward 2017).

Unlike mainland Auckland where it is deeply buried, because this ancient bedrock tilts upward towards the east, it emerges at the surface at Waiheke Island.

The rocky reefs projecting from this section of Waiheke's coast range in gradient from steep to moderate-flat and are often characterized by distinct zonation bands (barnacles, oysters to macroalgae) from high to low tide. Within the intertidal zone of the proposed marine reserve, rocky reefs comprise some 24 hectares (Haggitt 2017a). Intertidal rocky reefs are a particularly notable feature of Waiheke's indented northwestern coastline, especially between Hakaimango Point and Owhanake Bay. Overlaying the ancient greywacke, is sedimentary rock known as the Waitemata Group, which thickly covers the Auckland isthmus, deposited in the early Miocene epoch, 23 to 16 million years ago. In a few places, like Waiheke, the rock is fossil-bearing. The reefs and coastal cliffs in the area of the proposed marine reserve are remarkable for their geology.

The Auckland Council Hauraki Gulf Islands District Plan (2013) notes that several of the significant exposures of this ancient greywacke and the lava and cherts from the ancient Pacific Plate are located in this area is i.e.

- Cherts and their deformation - Island Bay, Waiheke; Pohutukawa Point, Waiheke
- Pillow lavas - Island Bay, Waiheke; Blackpool, Waiheke
- Trench sediments and their deformation (western association) - Island Bay, Waiheke. (See Hori, R.S. *et al*. 2011).

The geological make up of these rocky reefs is so significant they are scheduled as Outstanding Natural Features (ONF) in the Hauraki Islands District Plan.

Fig.9. The proposed marine reserve intertidal with kelp rich, geologically significant rocky reef terraces, interspaced with gravel and sand beaches and extending out to soft sediment sea floor. Photo Mike Lee.

4.2 Reef types within the proposed marine reserve

The 24 ha of reef types within the proposed reserve include:

- Low lying platform reefs or terraces
- Complex platform reefs characterised by overhangs and crevices
- Terrace and boulder reef mix
- Boulder reefs
- Cobbles

(Haggitt 2017b). These subtidal reefs typically extend to a depth of 10 to 15 metres. The subtidal reefs in this area form the substrate for a particularly rich kelp forest habitat.

4.3 Soft sediment habitats

Subtidal benthic habitats include large expanses of subtidal soft sediment that range from sand, sand and mud matrices, shell hash and gravel patches.

The dominant soft sediment immediately adjacent to rocky reefs and the main channel area is a coarse sand and whole shells habitat featuring communities of erect sponges and red algae. At Owhanake Bay, in sheltered areas of the shallows at the northeastern corner of the bay, probably as a result of modification of the intertidal by historic quarrying of beach shingle, and accumulation of sediments, (possibly from nearby dredge dumping) there are areas of soft muddy flats. (Haggitt 2017b). With increasing distance offshore the sea floor transitions to fine muddy sand, especially in the main channel area along the western coastline of Waiheke.

4.4 The nationally important marine fossil deposits of – Double U Bay 'Fossil Bay'

Waiheke's northwest coastline, west of Oneroa is particularly rich in fossils, especially at Double U Bay, (the western-most bay of which has become recently known as 'Fossil Bay'[3]), its cliffs and intertidal platforms. The fossils here were discovered by a geology student W.Tetley in 1927 whose family had a house on Waiheke.

[3] [3] A recent appellation following the naming of the nearby vineyard and school. The name Fossil Bay had been previously given to the fossilferous bay south of Squadron Bay, near Park Point on Waiheke's southwest coast (Bruce Hayward *pers. comm*. & see Eagle *et al*. 1995)

Fig 10. Fossiliferous cliffs of Double U Bay which hold nationally significant fossil deposits. Photo Mike Lee

Figs 11 & 12 .The fossilised remains of ancient bivalves which once lived in this area over 20 million years ago. Photos Mike Lee

In investigating these deposits Tetley was joined by the eminent biologist A.W.B. Powell and J.A. Bartrum. Together they found and described 78 fossilised ancient marine bivalves and gastropods.

Subsequently many more fossils of long extinct corals and crustacea species have been discovered here. The area is a precious graveyard of the ancient ancestors and precursors of today's marine species, which lived along the shoreline of the continent of ancient Zealandia some 20 million years ago. Fossils of 91 different marine species have now been recorded from this locality (Hayward & Brook 1994; Eagle *et al.* 1995). The proposed marine reserve would not only throw a korowai of protection over today's precious marine life but also the remains of their ancient ancestors.

5.0 BIOTA OF THE ROCKY REEF SYSTEMS

The rocky reefs and submarine terraces projecting from the heavily indented coastline provide habitat for a diverse range of marine species.

5.1 Marine algal species

Marine vegetation along this coastline is predominantly comprised of mixed algal habitat and algal habitat associated with subtidal reefs and terraces covering approximately 22 hectares within the proposed reserve (Haggitt 2017a). The balance is brown sea wrack kelp mixed habitat / sponge flats.

Twenty-two different macroalgal species are recorded, ranging from large brown, canopy-forming kelps such as paddleweed (*Ecklonia radiata*) and the fucoid seaweed flapjack (*Carpophyllum flexuosum*) through to fine filamentous turfing species. Species diversity of the macroalgal habitat was particularly high east of Owhanake (Haggitt 2017b).

The area from very shallow waters (<1m) to deep (>10m) vegetation is characterized by Neptune's necklace (*Hormosira banksii*) (extensive areas at Owhanake) co-occuring with brown seaweed (*Xiphophora chondrophylla*). Between 2-3m depth the common kelp (*E. radiata*) occurs in discrete monospecific stands alternating with similar sized patches of mixed fucoid algae species such as (*X. chondrophylla*) with the brown fucoid algae, sea (*C.flexuosum* and *C. maschalocarpum*).

Beyond the mixed algal zone i.e., between 3-15m depth, monospecific stands of *C. flexuosum* commonly occur. In mid depths *E. radiata* described as 'the kauri of the sea' is found at peak size and abundance (Haggitt 2017b). *E. radiata* is especially noticeable around Hakaimango point and associated islets.

The deeper parts of the proposed reserve are notable for the species diversity of the marine vegetation. In addition to tall forests of brown flapjack, large patches of the green seaweed, rimurimu (*Caulerpa geminata*) occur with 'a rich assemblage of ephemeral and perennial red foliose algae' (Haggitt 2017b). These deeper reef areas are also impacted by fine sediment, possibly from the 270,000 cubic metres of harbour dredgings dumped off the Noises Islands in 1992.

Fig.13. Rocky reefs, a prominent feature of the proposed Hākaimangō-Matiatia marine reserve, support rich kelp forests, colourful sponge communities and sessile molluscs like green-lipped mussels. Photo Roger Grace from *The Story of Hauraki Gulf Maritime Park* (1983).

5.2 Marine invertebrates – mobile and sessile

At the highest level of the intertidal reefs below the lichen zone, is the periwinkle zone. The common periwinkle (*Littorina littorea*) is a grazing sea snail. Below the periwinkle zone are found the sessile barnacle communities: the column barnacle (*Chamaesipho columna*), the brown barnacle and in more exposed positions the volcano shaped surf barnacle (*Epopella plicata*) with areas of the little black mussel (*Xenostrobus pulex*). Below the barnacles and mussels there are extensive beds of oysters, the smaller Auckland rock oyster / tio reperepe (*Saccostrea glomerata*), usually at more shallow levels, along with the more prevalent Pacific oyster (*Crassostrea gigas*). Further out in deeper water are found isolated patches of green-lipped mussels / kūtai (*Perna canaliculus*). This area, especially the reefs projecting out on either side of Owhanake Bay once supported high numbers of green-lipped mussels along with pāua (*Haliotis iris*)

before over exploitation over the past 30 years stripped them virtually bare (S. Farqhuar *pers. comm*.).

Subtidal mobile invertebrates, gastropods, crabs, urchins and chitons are found in moderate to high diversity within the proposed protected area. These include cats-eye (*Turbo smaragdus = Lunella smaragda)*, Cook's turban (*Cookia sulcata*), southern periwinkle (*Austrocochlea constricta*), spotted black topshell / pūpū (*Diloma aethiops*), green topshell (*Coelotrochus viridis*), the brilliantly coloured butterfly chiton (*Cryptoconchus porosus*) and the mud whelk (*Cominella glandiformis*), the large hermit crab (*Pagurus novizealandiae*), sea cucumber (*Stichopus mollis*) and the cushion star (*Patiriella regularis*). Kina or sea urchins (*Evechinus chloroticus*) are present but in lower numbers than in Enclosure Bay to the east where kina barrens of denuded kelp reefs are prevalent (Haggitt 2017b).

Sessile inverterbates include the encrusting sponge (*Cliona* cf*.celata*) and the hard coral (*Culicea rubeola*). At greater depths the sea sponge (*Halicondria moorei*), the erect branch sponge (*Callyspongia ramosa*), the large grey sponge, (*Ancorina alata*), the orange golf ball sponge (*Tethya burtoni*), ascidians or sea squirts, including *Cnemidocarpa bicornuta,* and solitary coral (*Monomycis rubrum*), are common components of this habitat type (Haggitt 2017b). The build-up of soft sediments at the northeastern side of Owhanake Bay provide habitat for cockles / tuangi (*Austrovenus stutchburyi*) (S. Farqhuar *pers.comm*). At greater depths there are occasional scallops / tipa (*Pecten novaezelandiae*) and beds of unidentified bivalves. These fine sand / mud habitats are also characterized by shrimp, worm and crab holes indicative of abundant infaunal communities containing patches of horse mussels / hururoa (*Atrina zelandica).* At greater depths still underwater species become less evident except for occasional crab / shrimp / worm holes.

Fig.14. Normally abundant in rocky reef systems the crayfish (*Jasus edwardsii*) has been driven to near extinction around Waiheke and the inner Gulf through over exploitation by people. Dr Tim Haggitt considers the area of the proposed marine reserve with its plethora of submarine rocky reef crevices and overhangs is one of the best sites in the inner Hauraki Gulf to enable the recovery of this important species. Photo Roger Grace from *The Story of the Hauraki Gulf Maritime Park.*

5.3 Crayfish species

Crayfish or kōura, spiny rock lobster (*Jasus edwardsii*) and packhorse crayfish (*Sagmariasus verreauxi*) are, or rather were, key predator species in the coastal reef system of the Hauraki Gulf. In the natural state or in protected areas both species of cray would be expected to be found in high abundance. Despite rigorous searches of crevices, ledges and boulder reefs in this area in late 2016 as part of the eCoast survey, no crayfish were found.

However a more intensive search by a team of volunteer divers in June 2021 found both species present in the proposed marine reserve albeit in low numbers, but in higher numbers than other sites along the northern Waiheke coast (Thorburn 2021). The complex reef systems within the proposed marine reserve are considered to be highly suitable for crayfish which were present in this area in good numbers until the 1960s at which time equipment became widely accessible for recreational scuba diving. The low numbers of crayfish of both species in what should be ideal habitat can only be attributed to excessive human harvesting. That they are still present here while absent at many other inner-Gulf sites is at least encouraging and a testament to the special habitat qualities of this area.

6.0 FISH SPECIES WITHIN THE PROPOSED MARINE RESERVE.

Cryptic reef fishes in the proposed marine reserve were found to be abundant compared with other reefs in the Hauraki Gulf. These include the following triplefins: spectacled triplefin (*Ruanoho whero*); mottled triplefin (*Forsterygion malcolmi*); variable triplefin (*F. varium*); yellow and black triplefin (*F. flavonigrum*); common triplefin (*F. lapillum*) [high abundance] scorpion fish (Scorpaenidae); slender roughy (*Optivus elongatus*) [low to moderate abundance]; crested blenny (*Parablennius laticlavius*) [low abundance] (Haggitt 2017).

Fig.15. Snapper / tamure (Chrysophrys auratus), the iconic fish of the Hauraki Gulf, targeted by recreational and commercial fishers alike, now under threat with stocks only at some 25% of virgin biomass. Dr Tim Haggitt considers the area of the proposed marine reserve one of best sites around Waiheke to enable the recovery of this important species. Photo Roger Grace from The Story of the Hauraki Gulf.

Pelagic and larger reef fish, including commonly targeted finfish species such as snapper / tamure (*Chrysophrys auratus*), kingfish / haku (*Seriola lalandi lalandi*) and kahawai **(***Arripis trutta*) are all present within the proposed reserve, as is the endemic wrasse spotty / pakirikiri (*Notolabrus celidotus*) which is numerically dominant here as in other parts of the inner Gulf – as opposed to the outer Gulf. In regard to snapper 'legal sized' individuals and schools of juveniles were found to be present at all sites, particularly around rocky reefs.

Other reef species recorded were the ray-finned fishes, red moki (*Cheilodactylus spectabilis*), silver drummer (*Kyphosus sydneyanus*), NZ goat fish or red mullet / ahururu (*Upeneichthys porosus*), the endemic koheru

(*Decapterus koheru*), silver sweep (*Scorpis lineolata*) and butterfish (*Odax Pullus*). Also present was the leather jacket (*Parika scaber*) (a reef fish usually found in the outer Gulf) and the benthic red gurnard / kumukumu (*Chelidonichthys cuculus*) (Haggitt 2017). John dory (*Zeus faber*) jack mackerel (*Trachurus novaezelandiae*) were not recorded during the survey but should be present. A school of blue mackerel was recorded here in early January 2022 (Shaun Lee *pers. comm*.).

Despite the reported major decline in sharks within the Hauraki Gulf, shark species recorded in the general area according to MPI recreational fishing boat ramp survey records from 1990-2020, complied by NIWA, provided by DOC, include mako (*Isurus oxyrinchus*), hammerhead (*Sphyrna zygaena*), thresher (*Alopias vulpinus*) and bronze whaler (*Carcharhinus brachyurus*), school shark (*Galeorhinus galeus*), rig shark (*Mustelus lenticulatus*) and spiny dogfish (*Squalus acanthias*). Lesser numbers of blue (*Prionace glauca*), carpet (*Cephaloscyllium isabellum*), small toothed (*odontaspis ferox*) and even the occasional white pointer shark (*Carcharodon carcharias*) have been taken in the general area.

For further information of species taken by recreational fishers in this general area see:
https://marlin.niwa.co.nz/files/dataHoldings/scientificResearchDbs/rec_data.pdf

New Zealand eagle ray / whai repo (*Myliobatis tenuicaudatus*) frequent Owhanake Bay at full tide and nearby Matiatia feeding in the shallows – a familiar sight and heartening reminder of the natural world to Waiheke ferry commuters hurrying along the wharf from a day's work in the city.

Haggitt (2017b) points out that there is a paucity of data on the quantities of fish (and other sea food) is being harvested within the surveyed area – and all around Waiheke. However the area is adjacent to the Motuihe Channel and the Noises Islands which are subject to heavy recreational fishing pressure. Despite the unremitting impact of human exploitation, 'boil-ups', spectacular interactions between schooling fish such as pilchards, fish predators like kahawai, kingfish, sharks, and sea birds, once a regular feature of the Hauraki Gulf still occasionally occur in this seaway but on a much smaller scale.

7.0 SEABIRD SPECIES WITHIN THE PROPOSED MARINE RESERVE

> '...many populations of resident seabirds remain in a poor state because of our devastation of the Gulf's food webs through overfishing and habitat damage. Tara-iti / New Zealand fairy terns are but a few wing beats from extinction with only 39 individual birds, maintained only through intensive management from a dedicated team. The Hauraki parekareka / spotted shags are not far behind, hanging on in three small colonies.'

– *Chris Gaskin State of our Seabirds 2021.*

7.1 Seabirds foraging in or breeding near the proposed marine reserve

The proposed marine reserve is also an important feeding ground for seabirds. The *State of Our Gulf 2020* reported a 67% decline in seabirds and shorebirds within the Hauraki Gulf since the arrival of humans.

Fig.16. A scene more typical nowadays of the outer Gulf, and of Waiheke 50 years ago. Boil-ups still occur around northern Waiheke, including in the proposed marine reserve, especially in the late summer. This photo is of a 'boil-up' in the Outer Gulf with mixed flocks of seabirds, petrels, shearwaters and terns and other sea birds, diving into schooling kahawai, pilchards, kingfish and often including sharks. (Photo Frederic Pelsy, from *Seabirds of the Hauraki Gulf* [Gaskin & Rayner 2017]).

The recently published *State of our Seabirds 2021* report reveals that while seabirds feeding outside the Hauraki Gulf are holding their own, seabirds in the inner gulf continue to decline, notably Australasian gannets, which appear to be moving to the outer Gulf. However, the following species are recorded as breeding within or in the general area of the proposed marine reserve:

- white-fronted terns / tara (*Sterna striata*)
- red-billed gulls / tarāpunga or akiaki (*Larus novaehollandiae. scopulinus*)
- southern black-backed gulls / karoro (*Larus dominicanus*)
- Australasian gannets / tākapu (*Morus serrator*)
- variable oystercatchers / tōrea (*Haematopus unicolor*)
- fluttering shearwaters / pakahā (*Puffinus gavia*)
- pied shags / kawau (*Phalacrocorax varius*)
- little shags / kawau paka (*Ph. melanoleucos brevirostris*)
- little black shags / kawau tui (*Ph. sulcirostris*)
- spotted shags / kawau pāteketeke (*Stictocarbo p. punctatus*)
- white-faced storm petrels / takahikare (*Pelagodroma marina maoriana*)
- grey-faced petrels / titi /ōi (*Pterodroma macroptera gouldi*)
- common diving petrels / kuaka (*Pelecanoides urinatrix urinatrix*) and
- northern little penguins / kororā (*Eudyptula minor iredale*) (Gaskin & Rayner 2017).

Fig 17. Bullers Shearwater (*Puffinus bulleri*) a frequent visitor to the proposed marine reserve. Photo Neil Fitzgerald from Sea birds of the Hauraki Gulf (Gaskin & Rayner 2017).

Furthermore, the endemic Bullers shearwaters (*Puffinus bulleri*) which breeds almost solely on the Poor Knights Islands, some 150 km to the north, are regularly seen foraging in this area and further down the Motuihe channel, especially during the late summer (Lee 1999).

Long term residents recall fluttering shearwaters, white-fronted terns and spotted shags breeding on the cliffs and embayed islets of the northwest coastline, (S.Farquhar; M. Delamore pers. comm.). Two separate, recent

surveys by Mike Lee, on 19 December, and by Dr Matt Rayner, Ricky-Lee Erikson and Rebecca Braye on 21 December 2021 (the latter a more extensive survey of the inner Gulf, part of an annual count of white-fronted terns) revealed significant numbers of white-fronted terns breeding on the outer-most islet off Hakaimango Point, with black-backed gulls breeding on the inner islet and on the end of the peninsula itself.

Recently the community has shown its support and concern for local seabirds, in particular kororā / little blue penguin. There has been significant media coverage along with petitions and protests and legal proceedings relating to disturbance of penguin nesting sites at Kennedy Point due to the construction of a marina.

Fig. 18. Northern little penguin / kororā (*Eudyptula minor iredale*) breeds along the coastline on the proposed marine reserve and on nearby islets. Little penguins are highly vulnerable to the loss of nesting areas and food sources. They feed in the area of the proposed marine reserve. Photo Adrien Lambrechts.

The coastal fringe of the proposed marine reserve was partially surveyed in 2016 and 2017, along with 35 km of the island's coastline by Auckland Council for penguins and petrels (Lovegrove 2017): https://infocouncil.aucklandcouncil.govt.nz/Open/2017/04/WHK_20170427_AGN_7150_AT_files/WHK_20170427_AGN_7150_AT_Attachment_52854_1.PDF

This revealed the area from Owhanake Bay to Matiaita to be a hotspot for penguin burrows. However, the section Hakaimango Point to Owhanake Bay was not surveyed, presumably due to difficulty of access. One could reasonably presume this section of coastline, largely free from the impact of people and

dogs would support as least as many penguin (and petrel?) burrows as the rest of the area.

7.2 The restoration of spotted shags

The Hauraki Gulf based spotted shag population has suffered 'catastrophic decline' over the past 50 or 60 years. While research into the foraging ecology of the spotted shag is underway (Rayner *et al.* 2021) surprisingly little is known about the Hauraki Gulf spotted shag. That this species struggling back from the brink of local extinction is re-establishing in this area is suggestive of another aspect of its ecological significance.

The spotted shag parēkareka (*Stictocarbo p. punctatus*) is an endemic New Zealand cormorant. There are basically two populations of spotted shags in New Zealand which are considered genetically distinct. The largest population is in the South Island, especially round the Marlborough Sounds, Cloudy Bay and Banks Peninsula. A second population was once common in the Hauraki Gulf and on Auckland's west coast.

On Waiheke spotted shags bred within living memory on Rooster Point, the Needles, Thompsons Point and on Hakaimango Point (S. Farquhar pers. comm). Spotted shags also roosted and bred in good numbers throughout the nearby Noises Islands including David Rocks. However, over the last 45 years they have disappeared altogether from Auckland's west coast and in the Gulf they have been reduced to a small population breeding on Tarahiki Island near Pakatoa, off the eastern end of Waiheke with an even smaller number on Waiheke's Thumb Point.

Their decline has been attributed to historic shooting, a major decline in small fish stock (due to over-fishing, habitat damage and toxic algal blooms) (J. McCallum *pers. comm*.). Also, as spotted shags are the only shag to breed on the ground, their eggs and chicks are likely to be vulnerable to mammalian predators like rats. Apart from the plight of the Hauraki Gulf birds, as the southern population is now also threatened as a consequence of the Canterbury earthquakes of 2010/11, the species conservation status has recently been down-graded from *Not Threatened* to *Threatened – Nationally Vulnerable*.

Research into the foraging ecology of the spotted shags of the Hauraki Gulf is ongoing (Rayner *et al.* 2021). This indicates spotted shags feed higher up the trophic level than for instance red-billed gills and fish are a major component of their diet. In 2019, in an intervention led by Auckland Museum, and Auckland Council ornithologists Matt Rayner and Tim Lovegrove created a replica 'colony' of six model 3D printed spotted shags on Otata, the largest Island in the neighbouring Noises Group. In the last two years spotted shags have been attracted to the site by the decoys and by calls transmitted from a solar powered sound system (Conomos 2019).

Fig.19. Spotted shags back on Otata in neighbouring the Noises Islands lured by realistic decoys which are difficult to tell apart in this picture from real shags. Photo Rod Neureuter.

7.3 North Auckland Seabird Flyway

The northwestern boundary of the proposed marine reserve meets the southern boundary of the ecologically significant North Auckland Seabird Flyway.

This flyway is used in the summer season by thousands of Cooks petrels / (*Pterodroma cookii*) and likely, grey-faced petrels / tītī, and even black petrels / tāiko (*Procellaria parkinsoni*) moving from the Outer Gulf feeding grounds in the Tasman Sea (Gaskin & Rayner 2017). So even the sky above this proposed reserve is ecologically significant.

7.4 Pest-free islands and the marine reserve

The proposed marine reserve is fringed at varying distances by a chain of rodent-free islands, islets and stacks. From north to south, these include the Noises group, Rakino and its surrounding stacks and islets, Motutapu Island Motuihe Island and Crusoe (Papakohatu).

On all of these islands large and small, seabirds are now breeding, free of predators, for the first time in over 100 years. These regenerating islands as havens for seabirds would have a significant ecological relationship with the marine reserve particularly in the transfer of marine nutrients. Such predator-free islands are deemed ‘lifeboats’ for the recovery of our seabirds by Gaskin & Rayner (2017) – but recovering seabird populations also need protected feeding grounds – as do marine mammals.

8.0 MARINE MAMMALS OF THE PROPOSED MARINE RESERVE

8.1 Marine mammals recorded within or near the proposed marine reserve

Marine Mammals seen and therefore expected to forage in the reserve include:

- short-beaked common dolphins / aihe (*Delphinus delphis*)
- bottlenose dolphins / terehu (*Tursiops truncatus*)
- orca / kera wēra (*Orcinus orca)*
- long-finned pilot whales (*Globicephala melas*) – known to local fishermen as 'black fish', these were regularly seen in the area within living memory (S. Farquhar, pers. comm)
- New Zealand fur seals / kekeno (*Arctocephalus forsteri*) – were hunted to extinction in northern New Zealand hundreds of years ago but are slowly re-establishing in the Gulf; up to ten adult fur seals haul out on the eastern side of Otata Island (Neureuter in Cameron 2021)

Fig 20. The common dolphin / aihe (*Delphinus delphis*) frequently seen feeding in the proposed marine reserve. Photo Shaun Lee.

Fig 21. New Zealand fur seal / kekeno (*Arctocephalus forsteri*) (juvenile). Photo Shaun Lee.

Fig. 22. A small population of up to 10 New Zealand fur seals (at least 5 in this photo – the one to the left magnified) has re-established in the Gulf and hauls out at nearby Otata in the Noises Islands. Photo Mike Lee.

8.2 Mass die-off of juvenile fur seals in the Hauraki Gulf Marine Park

July-October 2021 saw at least 50 (S. Lee in prep.) confirmed carcasses of fur seals wash up on beaches within the Hauraki Gulf Marine Park, including Waiheke and Rakino Islands. The only known pathological investigation undertaken was of a seal pup found distressed on an Auckland North Shore beach in late September which died despite intensive veterinary care. A necropsy found its stomach to be empty but also revealed a major parasitical infestation. The natal area(s) or rookeries of these young seals is unknown. The major fur seal rookeries are located at the lower North Island and South Island. Kawera Island (5 ha) near Tauranga is the nearest known rookery to the Hauraki Gulf.

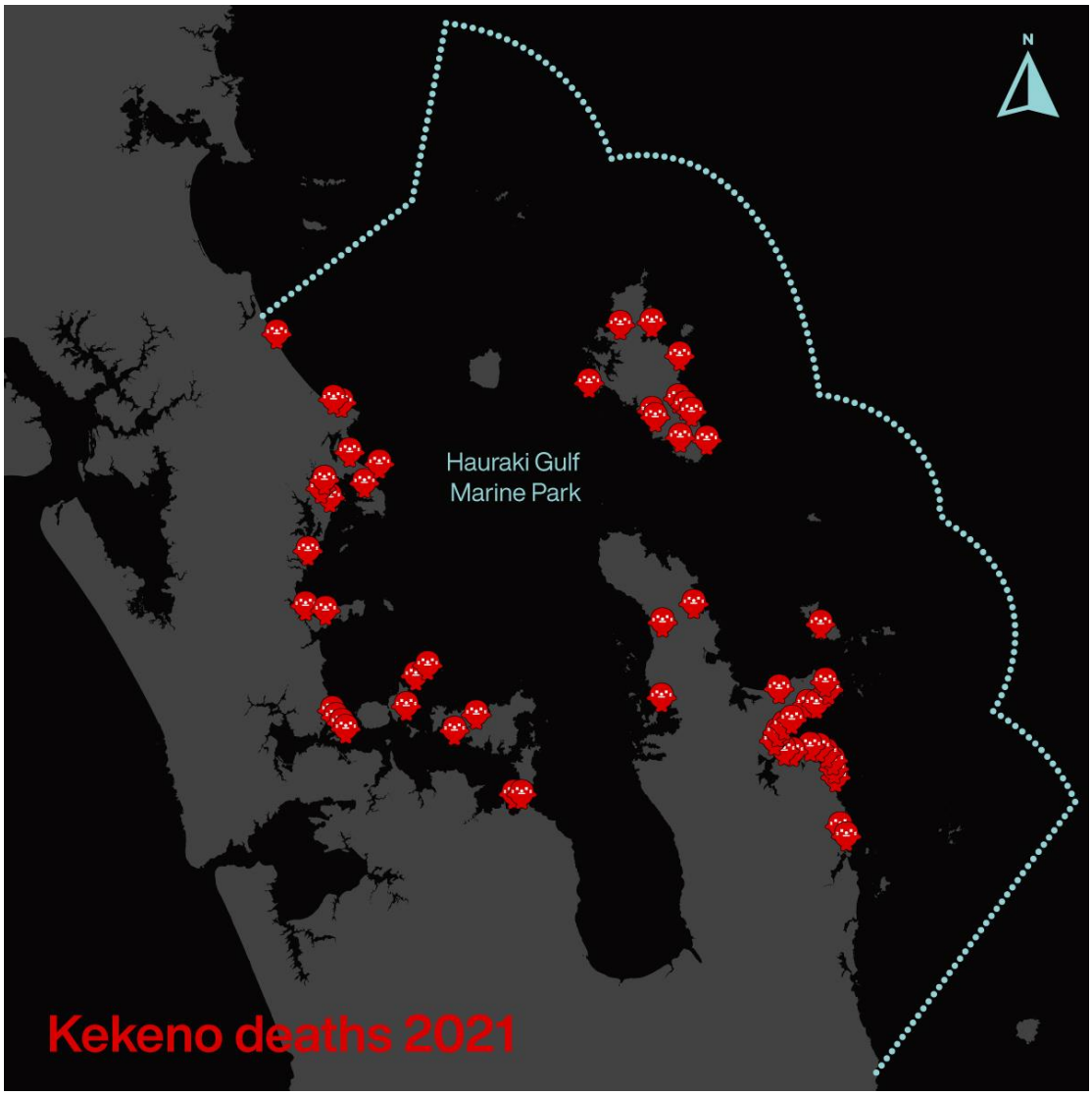

Fig. 23. At least 50 carcasses of New Zealand fur seal pups washed up in the beaches of the Hauraki Gulf Marine Park in 2021. Graphic Shaun Lee. (S. Lee in prep.)

It is significant that fur seals are attempting to re-establish in the Hauraki Gulf and have chosen to haul out at nearby Otata Island, just 2 nautical miles to north of the proposed marine reserve. It is possible that fur seal breeding is now taking place closer to or even within the Gulf but questions about the origins of these seal pups and the cause of the mass mortality event underscores just how little is known about fur seals.

Fur seals have been persecuted by humans for centuries and are only now making an attempt to return to a place where they once thrived. The seasonal mass die-off of juvenile fur seals in the Hauraki Gulf is another reminder that all is not well within the marine ecosystem. This is another reason for meaningful action to improve marine protection in the Hauraki Gulf, especially by way of provision of no-take marine reserves.

Fig. 24. Dead fur seal pup at the Esplanade Waiheke Island. One of 57 dead juvenile seals washed up on beaches and around the Hauraki Gulf Marine Park between August & October 2021. Photo Tane Feary.

9.0 THE COASTAL ENVIRONMENT

The proposed marine reserve is bounded by a topographically diverse coastal fringe over 7km in length which includes 3.7km of Waiheke's northern coastline to the west of Oneroa, and 3.5km of western coastline to the north of Matiatia Harbour. The length of this coastal interface is within the 5 to 10 kilometres minimum range for marine reserve design, as recommended by Thomas and Shears (2013).

The land is mainly elevated and deeply indented by literally dozens of inlets and bays, the largest being Owhanake Bay at the head of which is a protected raupo / flax wetland, the smallest being no more than narrow runnels between reef platforms carved out by the sea.

Formerly farmland, almost all the coastal and littoral zone bounding the proposed reserve is in Council foreshore reserve and the DOC Matietie Historic Reserve donated to the public by the Delamore family. it is intended the reserve will have a Statutory Acknowledgement placed on the title acknowledging Ngāti Paoa's historical association with this part of Waiheke, as part of a proposed Treaty of Waitangi settlement between the Crown and Ngāti Paoa. The area is linked with Auckland Council public walkways. There are eight rural properties bordering the coastline.

9.1 The rural buffer zone

The hinterland buffering this coastal fringe from the township of Oneroa, immediately to the east, is zoned rural-lifestyle:

- Rural 1 (landscape amenity),
- Rural 2 (western landscape) and
- Open space 1 (ecology and landscape).

Due to the conservation requirements of these District Plan zones, the buffer zone is mainly in regenerating bush, some of which is natural, but much of which is the result of restoration plantings some 25 years ago, undertaken as a condition of subdivision. The balance is in pasture and economically significant vineyards. The private land is in large lifestyle blocks with gated estate high end homes and some boutique visitor accommodation.

There are also some further small council reserves which feature World War 2 archaeological sites, including a coastal defence lookout bunker, dormitory and cookhouse and the Korora reserve adjacent to Hakaimango Point.

9.2 Coastal walkways and public accessibility

A network of walkways including the island-wide Te Ara Hura trail enable good public access and provide a splendid panorama of views overlooking the proposed reserve to almost all points of the compass.

- Eastwards: Beginning at Hakaimango Point, the view looks eastwards across the entrance to Oneroa Bay along the northern coastline of Waiheke, to the Thames estuary and Coromandel peninsula beyond.
- Northwards: Turning anticlockwise northwards one sees out to Moehau and the outer Gulf. Great Barrier Island (Aotea), Little Barrier (Hauturu) can be seen on the skyline and more proximate, the islands and islets of the Noises, Ahaaha and David Rocks, Maria, Otata and Motuhoropapa.
- Northwestwards: This direction looks out to Tiritiri Matangi, Rakino, with Tāwharanui's Takatu Point on the horizon.
- Westwards: Next you see Motutapu and Rangitoto, then beyond to the high-rise skyline of the Auckland City central business district and the Waitakere ranges beyond.
- Southwards: finally, one looks down the Motuihe Channel to the Tāmaki Strait with the distant Hunua Ranges beyond.

Interestingly while the foreshore is directly accessible over much of the coastline, sections of the northern and western coastline, while readily viewable, have land access restricted by the steep cliffs. Perhaps not such a bad thing for a natural area.

Kayaks are available for hire at Matiatia, which would also enable accessibility by sea to the marine reserve itself. Accessibility and excellent visibility over the surrounding sea would also facilitate monitoring and enforcement of the protected status of the marine reserve.

9.3 The proposed marine reserve and public transport

The proposed reserve is within an easy 10-minute walk from the Matiatia ferry terminal, just 35 minutes via ferry from downtown Auckland. There is public transport (Waiheke Link bus service) within a few minutes' walk to and from the reserve's Oneroa and Matiatia entrances. This unique proximity of public transport services and good walking tracks makes this marine reserve very convenient, especially for scientific research and visits by students and educational groups.

10.0 WHAT HAS BEEN LOST – MARINE BIOTA ONCE PRESENT AROUND WAIHEKE ISLAND

The ecological decline of the Hauraki Gulf is something Aucklanders are well aware of – and are very concerned about. The decline and loss of various marine species, vertebrate and invertebrate, has been identified and highlighted in numerous scientific *studies*, notably in the three yearly, State of the Environment of the Hauraki Gulf reports.

These reports do not generally cover however, the species which have already been driven into local extinction or are at very low numbers through over exploitation. Many of these species were found around Waiheke in living memory of people today. The absent or depleted species that we are advised should be in the area in healthy numbers include, long-finned boarfish (*Zanclistius elevatus*), giant boarfish (*Paristiopterus labiosus*), splendid perch (*Callanthias australis*), conger eel (*Conger wilsoni*), marble fish (*Aplodactylus arctide*), red moki (*Cheilodactylus spectabilis*), blue maomao (*Scorpis violacea*), blue cod (*Parapercis colias*), Sandagers wrasse (*Coris sandeyeri*), blue moki (*Latridopsis ciliaris*), schools of trevally (*Pseudocaranx dentex*), large hāpuku / hapuka (*Polyprion oxygeneios*). (S. Marsh; S. Farquhar *pers comm*).

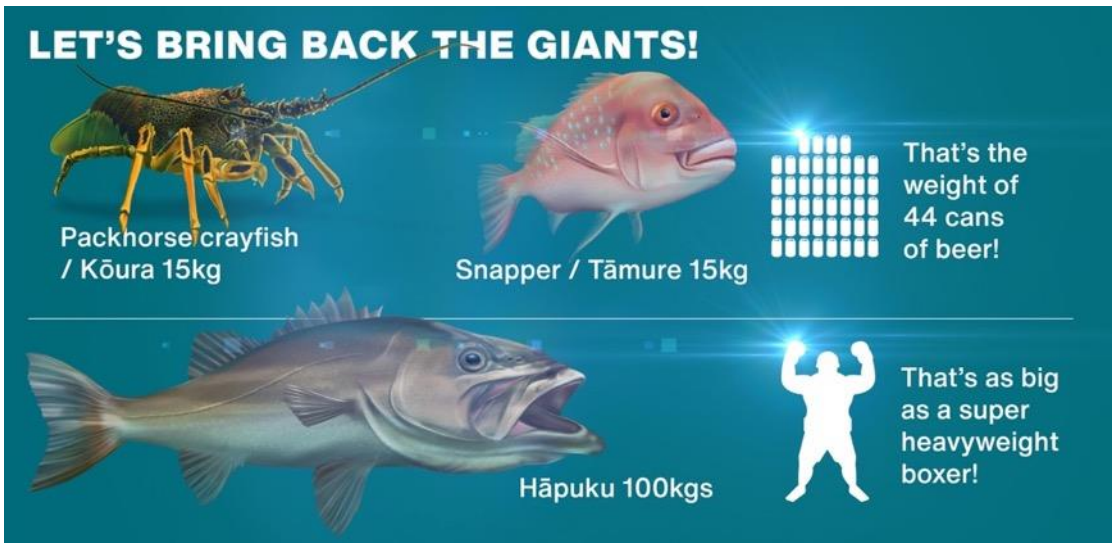

Fig. 25. Graphic Shaun Lee.

While a range of shark species is still present in the area of the proposed marine reserve as the latest *State of Our Gulf 2020* reports, their numbers have been significantly reduced throughout the Hauraki Gulf, In the past there were occasional seasonal appearances of skipjack tuna (*Katsuwonus pelamis*) and various billfish e.g., marlin spp. (S. Farquhar *pers comm*.)

Amazing assemblages of fish were once seen in vast boil-ups which sometimes extended as far as the eye could see, joined by hosts of seabirds (S. Farquhar *pers comm*). Not anymore. The same could be said about the crayfish species: the spiny rock lobster (*J. Edwardsii*) and its cousin the packhorse crayfish (*Sagmariasus verreauxi*) which should be in high numbers among the reef

systems on the northern side of the island right into shallow waters. However, while functionally extinct in most of the inner Gulf, both species are still present in the area of the proposed marine reserve – albeit in very low numbers which is a testament to values of the habitat of this area.

The process of local extinction need not be inexorable. The Hākaimangō-Matiatia Marine Reserve will be a significant step to help to turn things around.

Fig.26. Embayed Islet at Matiatia Point, at the western boundary of the proposed reserve near Mokemoke pā. A ten-minute walk along the shore from the Waiheke ferry terminal. Photo Mike Lee.

11.0 WHY MARINE RESERVES?

11.1 Marine Protected Areas or Marine Reserves?

It is sometimes argued that time-limited marine protection (ranging from short temporary closures up to 25 years); or allowance of selective exploitation ('customary take') might be just as efficacious as no-take marine reserves, but research shows this is not the case. A recent meta-analysis of previous studies published in the ICES Journal of Marine Science by Enric Sala and Sylvaine Giakoumi in 2017 shows that biomass of whole fish assemblies in marine reserves is on average:

- 670% greater than in adjacent unprotected areas, and
- 343% greater than in partially protected Marine Protected Areas.

'*By comparison fish biomass in partially protected MPAs was only 183% greater than in unprotected areas, and often it was not different. In addition, fish biomass was restored in marine reserves over time after protection, but not in partially-protected MPAs or unprotected areas.'* Sala & Giakoumi (2017).

This international study supports the study by Shears *et al.* (2006) which compared crayfish populations over time in a partially fished local 'marine park' (Mimiwhangata) with the Tāwharanui no-take MPA (and since 2011 'type 1' marine reserve). They concluded:

'On average, legal-sized lobster were eleven times more abundant and biomass 25 times higher in the no-take marine park following park establishment, while in the partially protected marine park there has been no significant change in lobster numbers. Furthermore, no difference was found in densities of legal-sized lobster between the partially protected marine park and nearby fully-fished sites (<1 per 500 m^2).'

11.2 Marine Reserves within the Hauraki Gulf

Significantly less than 1% of the Hauraki Gulf is currently protected in no-take marine reserves. The five reserves are:

- Cape Rodney-Okakari Point 547 ha (Leigh or Goat Island) (1975)
- Long Bay-Okura 980 ha (1995)
- Motu Manawa-Pollen Island 500 ha (1995)
- Te Matuku 700 ha (2005)
- Tāwharanui 394 ha (2011)

Total area 3121 ha.

Additionally, Te Whanganui a Hei (Cathedral Cove) Marine Reserve 840 ha (1992) Is located outside the Hauraki Gulf but within the Hauraki Gulf Marine Park. Therefore, a total of only 3961 ha is fully protected in a Hauraki Gulf Marine Park of more than 1.2 million ha, which amounts to only 0.33%. The addition of the Hākaimangō – Matiatia marine reserve's 2350 ha would substantially increase the area of fully protected marine habitat within the Hauraki Gulf, making a significant contribution towards a more ecologically sustainable Marine Park.

Fig. 27. Marine reserves in the Hauraki Gulf (Department of Conservation)

11.3 Towards a marine reserve network within the Hauraki Gulf

The proposed Hākaimangō – Matiatia (Northwest Waiheke) Marine Reserve is located near the following marine reserves:

- 29 km from Motu Manawa-Pollen Island
- 25 km from Long Bay-Okura, and
- 17 km from Te Matuku Marine Reserve

The distances between the proposed reserve, and these reserves, are within the recommended guidelines for marine reserve network design (Thomas & Shears 2013).

The proposed Hākaimangō – Matiatia (Northwest Waiheke) Marine Reserve is representative of a marine transition zone between the Inner and the Outer Hauraki Gulf. This strategic placement provides a significant contribution and an important step along the path to achieving the long-held objective of a representative marine reserve network in the Hauraki Gulf as advocated by Roger Grace and others (see Grace 2014).

11.4 Marine Reserves and climate change

In 2020 the parliament of New Zealand declared a climate emergency, following earlier declarations from local authorities such as Auckland Council. The governments of the world are in race against time to reduce carbon emissions. Reducing emissions and the likelihood of the effects of global warming, sea level rise and coastal inundation is considered to be of the highest priority for our government. People are encouraged to drive electric cars or cycle, and reduce carbon emissions on the principle that every bit helps.

Sala and Giakouni (2017), studying the impact of climate change on the marine environment, found that marine reserves can provide resilience against the impacts of sea warming.

In 2016, a strong El Niño event caused the most severe coral bleaching event in history, which killed 67% of the coral in the northern part of the Great Barrier Reef in Australia in just nine months (Hughes *et al.,* 2017). However, corals in the Line Islands affected by the strong 1997–1998 El Niño recovered in fully protected reefs within a decade, whereas they did not in unprotected islands (Sandin *et al*. 2008): https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0001548

In Baja California, Mexico, a mass mortality event caused by climate-driven oxygen depletion affected pink abalone populations, but they replenished faster within marine reserves because of large body size and high egg production of the protected adults (Micheli *et al*. 2012).

See also Sala *et al.* 2021 'Protecting the global ocean for biodiversity, food and climate':
https://www.nature.com/articles/s41586-021-03371-z

In New Zealand we are already seeing mass die-offs of kelp: https://www.frontiersin.org/articles/10.3389/fmars.2019.00084/full
and shellfish:
https://www.theguardian.com/world/2020/feb/18/hundreds-of-thousands-of-mussels-cooked-to-death-on-new-zealand-beach-in-heatwave

These events have been attributed to climate change. Slow recovery of native species (like *Ecklonia radiata* due to the ecological consequences of overfishing) create opportunities for invasive species (e.g. wakame *Undaria pinnatifida*).

Ocean acidification impacts on marine life will be most pronounced at the larval stage and have been shown to impact settlement on pāua (*Haliotis iris*) in laboratory experiments:
https://academic.oup.com/icesjms/article/78/1/340/5859739?login=true

One can only concur with Roberts *et al.* (2017):

'*Well-managed marine reserves may help marine ecosystems and people adapt to five prominent impacts of climate change: acidification, sea-level rise, intensification of storms, shifts in species distribution, and decreased productivity and oxygen availability, as well as their cumulative effects*.'

Moreover, the proposed marine reserve will provide resilience by increasing larval supply of hundreds of species of marine biota to surrounding waters of the Hauraki Gulf as recent research by Auckland University scientists on snapper has revealed.

11.5 The economic benefits of marine reserves

The recent publication of break-through research by Auckland university marine scientists focussing on the Cape Rodney to Okakari Point (Goat Island) Marine Reserve, near Leigh, identified considerable economic benefits generated by the relatively high productivity of marine life within the marine reserve, in this case the highly sought-after, by commercial and recreational fishers alike, snapper (*Chrysophrys auratus*). This through the widespread dispersal of adults and larvae to the rest of the Gulf.

To quote the paper: '*Empirical evidence shows that **10.6%** of newly settled juvenile snappers sampled up to **55 km** outside of the Cape Rodney - Okakari Point (Leigh) marine reserve were the offspring of adult snappers from the marine reserve. This suggests a significant boost to the commercial fishery of **$NZ 1.49 million** catch landing value per annum and **$NZ3.21 million** added*

from recreational fishing activity associated spending per annum. These values all come from the recruitment effects associated with one species, from only ***0.08%*** *of the marine space in the Hauraki Gulf, New Zealand. The economic valuation of this marine reserve's snapper recruitment effect demonstrated* ***$NZ 9.64 million*** *in total spending accruing to recreational fishing per annum and* ***$NZ 4.89 million*** *in total output to commercial fisheries annually.*' (Qu *et al.* 2021).

While some caution is needed, projecting these figures onto the area of the proposed Hākaimangō - Matiatia marine reserve, more than four times the size of Leigh or Goat Island, would amount to some NZ$19 million per annum to the recreational fishery industry alone. More importantly if marine reserves are functioning as significant biomass generators in the way these scientists have discovered at Leigh, then there will be a significant increase in snapper recruited all around the inner Gulf as an outcome of establishing this new marine reserve. And snapper is just one species. One can also assume populations of other species including notably crayfish would also be enhanced by the addition of a significantly sized marine reserve in this locality.

12.0 CONSULTATION WITH THE PUBLIC & WITH MANA WHENUA

12.1 A history of marine protection public consultation & awareness raising

Community aspirations for a 'northern side' marine reserve have been well socialised on Waiheke since the early 1990s and there have been several rounds of consultation and public discussion relating to this – especially since 2013, led by the Waiheke Local Board supported by the Friends of the Hauraki Gulf. The Waiheke Local Board engaged with 'Sea Change' and presented to the stakeholder working group at a meeting at Rotoroa Island. It was apparent however that 'Sea Change' had no intention of recommending any marine reserves around Waiheke but did however acknowledge the work that was underway in the community in this regard. After a period of public consultation in 2013, the Waiheke Local Board resolved *inter alia*:

'*Local board decisions for 2013/2014 Waiheke Local Board Plan*

b) That the Waiheke Local Board:…

ii) confirms an updated list of advocacy areas for the Governing Body and council-controlled organisations, for inclusion in the Annual Plan 2013/2014, namely to 'Support the creation of a network of marine reserves in the area under the board's jurisdiction, in particular, an initial marine reserve in the northern side of Waiheke, on condition that a significant level of community support is obtained.'

The Waiheke Local Board then sought to establish a robust view of the level of community awareness and support for marine protection and marine reserves around Waiheke. As mentioned in section 1.4 of this proposal the board engaged Colmar Brunton to undertake a survey of resident and ratepayer views. Out of a total of 1999 responses: 'Total Support' for marine protected areas from island residents was 67% and from off-island ratepayers 54%. 'Total Support for 'no take' marine reserves from island residents was 64% and from off-island ratepayers 52%. (Colmar Brunton, Bing 2015).

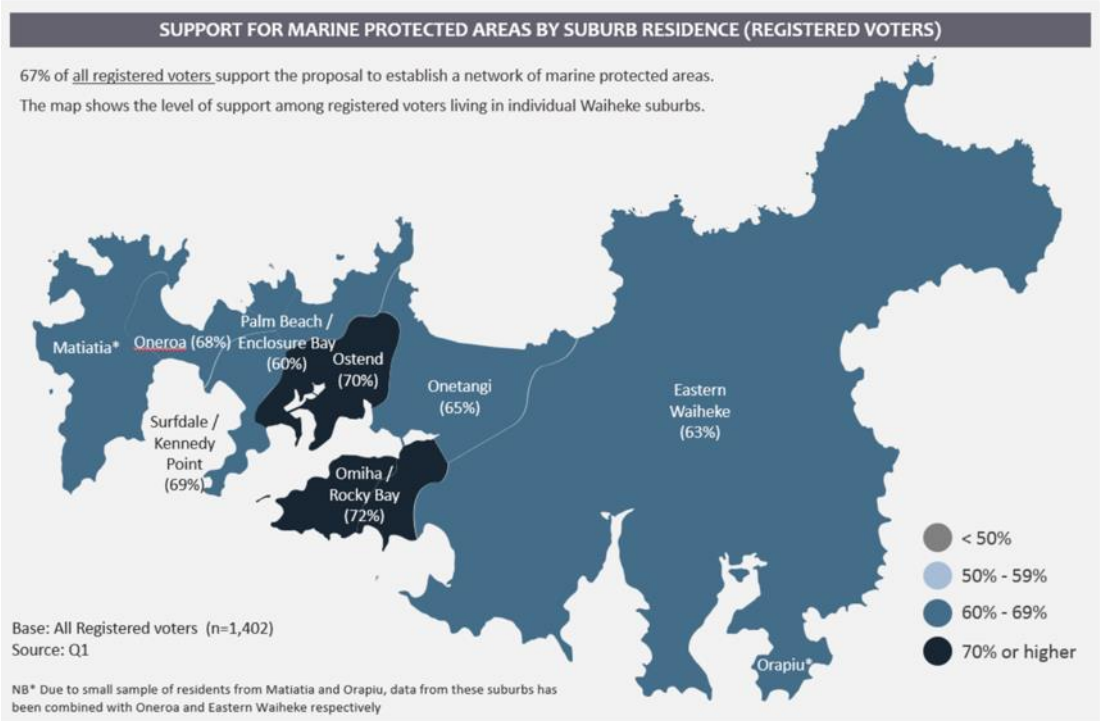

Fig. 28. Graphic Colmar Brunton public opinion survey report

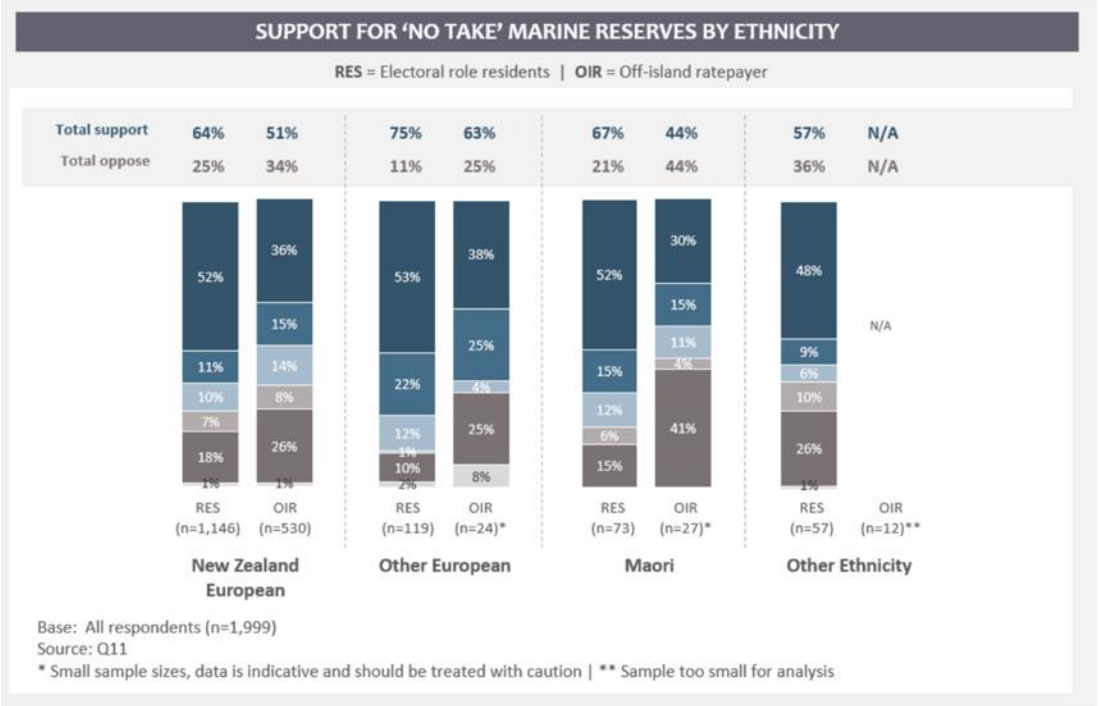

Fig. 29. Graphic Colmar Brunton public opinion survey report

See Fig. 26 (above). Support for ‘no take’ marine reserves by ethnicity indicated 64% ‘total support’ by New Zealand European island residents and 67% ‘total support’ among Māori island residents (Bing, Colmar Brunton 2015).

Support from Māori for 30% of the Hauraki Gulf Marine Park to be protected (which most people will consider no-take) has grown to 77% (Hauraki Gulf Forum 2021, sample size 228, margin of error + or - 5.5%). Hauraki Gulf Forum. 2021. Results of Hauraki Gulf poll. https://gulfjournal.org.nz/2021/11/results-of-hauraki-gulf-poll/

During its years of advocacy and consultation in regard to marine protection and its preference for a marine reserve on Waiheke’s northern coastline, the Waiheke Local Board engaged with representatives of Ngāti Paoa, especially the late George Kahi, Ngāti Paoa’s popular special representative to Waiheke.

The Friends of the Hauraki Gulf Inc from its inception has taken every opportunity to discuss marine protection and its support of marine reserves with the Māori community of Waiheke and with representatives of mana whenua of Waiheke Ngāti Paoa beginning with a meeting at Piritahi Marae in March 2013. In June 2013 it presented to the Hauraki Gulf Forum including Hauraki Gulf mana whenua representatives, winning support for a marine reserve in Waiheke’s northern coast. The Friends participated in the hui at Piritahi Marae to discuss the Ngāti Paoa rāhui in January 2021.

12.2 Pre notification consultation with mana whenua on the Hākaimangō – Matiatia Marine Reserve

In April 2021 when we first sent the draft proposal to the Director-General of the Department of Conservation as per section 5 of the Marine Reserves Act we also sent copies of the full proposal to the Ngāti Paoa Iwi Trust (NPIT) and the Ngāti Paoa Trust Board (NPTB) formally seeking their views. We are still working with the Department of Conservation, acknowledging in particular the work of Hauāuru Rawiri Pou Tairangahau / Māori Engagement Strategic Manager, on engagement with both boards, seeking mana whenua views on the proposed marine reserve. In the spirit of the Marine and Coastal Area (Takutai Moana) Act 2011, we have sent our application to representatives of whānau with important Waiheke rangatira links, and landowning whānau of the Te Huruhi 12B block Mataurau Point, Matiatia. We acknowledge here the support of Moana Clarke and Denny Thompson descendants of leading Waiheke rangatira and the much appreciated messages of goodwill from NPIT chairman Glen Tupuhi and board member Teddy Andrews in particular.

In August 2021 the full committee of the Friends of the Hauraki Gulf met with the Piritahi Marae Committee to present and discuss our Hākaimangō-Matiatia marine reserve proposal. The marine reserve proposal met with warm approval from members of the Marae Committee. On 9 December the Friends wrote to Ngaitai ki Tāmaki, another tribe with mana in this area with a copy of the draft application document. Meanwhile DOC has been working to set up a general

hui with mana moana tribes to discuss the application and other marine related issues

The Friends of the Hauraki Gulf also have been systematically consulting and presenting our proposal to a wide range of community organisations from the Waiheke Local Board to the Rotary Club of Waiheke. We have also been sharing information and informing the public through articles and letters in the local *Gulf News,* also on the local Waiheke Radio Station: https://waihekeradio.org.nz/podcast/mike-lee-marine-reserve/
and also on our website: https://friendsofhaurakigulf.nz

We currently have 1,549 contacts in our email database whom we regularly send progress updates. We also share this e-newsletter via Waiheke's social media channels, which potentially reach a much wider audience:

- Waiheke Trading Facebook page - 11,700
- Waiheke Community - 10,500
- Latines en Waiheke - 7,300
- Great Barrier Island - 2,400
- Waiheke Island Peoples' Parliament - 1,500
- What's On Waiheke - 1,500
- Waiheke Musicians - 1,500
- Mauri o te Moana 1,400
- Friends of Rakino – 753
- Kahui Creative Network – 280
- Waiheke Artists – 132

The Friends of the Hauraki Gulf also has its own popular Facebook page https://www.facebook.com/TFOTHG which is regularly updated.

The Waiheke Dive & Snorkel shop also attaches our email newsletters to its own letters to its extensive database. (Thanks to Adam Whatton).
See Appendix 5. Pre-notification Consultation Diary.

In spirit of the Marine and Coastal Area (Takutai Moana) Act 2011 we will continue to consult with iwi, hapū, whānau.

13.0 BENEFITS OF A HĀKAIMANGŌ – MATIATIA (NORTHWEST WAIHEKE) MARINE RESERVE

- Protecting and enhancing the life-supporting capacity of the coastal marine area of the Hauraki Gulf which is considered nationally significant under the Hauraki Gulf Marine Park Act (2000).
- Protecting and enhancing an ecologically rich maritime transition zone between the inner Hauraki Gulf and the outer Gulf.
- Protecting all fish species within this area from line fishing, spear fishing, potting, netting and dredging.
- Protecting and enhancing highly productive, ecologically vital, kelp forest rocky reef systems.
- Protecting and enhancing a diverse range of sand and soft sediment habitats and associated biological communities.
- Protecting an area containing nationally important 20 million-year-old Miocene fossil deposits.
- Protecting and enhancing those natural, historic, and physical resources (including kaimoana) of the Hauraki Gulf, its islands, and catchments with which tangata whenua have an historic, traditional, cultural, and spiritual relationship.
- Protecting and enhancing the rāhui declared by Ngāti Paoa in its role as kaitiaki.
- Protecting and enhancing an area of highly suitable habitat for the recovery of pāua (*Haliotis iris*), a species presently subject to the rāhui
- Protecting and enhancing an area of highly suitable habitat for the recovery of green-lipped mussel / kūtai (*Perna canaliculus*) presently subject to the rāhui.
- Protecting and enhancing an area of highly suitable habitat for the recovery of scallop / tipa beds (*Pecten novaezealandiae*) presently subject to the rāhui.
- Protecting and enhancing an area of habitat highly suitable for the recovery of spiny rock lobster / kōura (*Jasus edwardsii*) in the inner Gulf, a species presently subject to a rāhui by mana whenua and kaitiaki, Ngāti Paoa.
- Protecting and enhancing one of the very few populations of packhorse crayfish *Sagimariasus verreauxi* in the inner Gulf.
- Protecting and enhancing an area involved in the spawning of snapper / tāmure (*Chrysophrys auratus*) significantly enhancing the productivity of the wider snapper population.
- Protecting and enhancing an ecologically rich area enabling significantly higher productivity of a wide range of marine biota throughout the area.
- Generating some $19 million per annum by enhancing the size and value of the commercial and recreational fishery of the Hauraki Gulf.
- Protecting and enhancing the natural and physical resources of the Hauraki Gulf / Tīkapa Moana / Te Moananui-ā-Toi.
- Protecting and enhancing an area of the Hauraki Gulf used by marine mammals, including common dolphins / aihe (*Delphinus delphis*),

bottlenose dolphins / terehu (*Tursiops truncatus*), orca / kera wēra (*Orcinus orca*) and a recovering population of New Zealand fur seals, kekeno (*Arctocephalus forsteri*).

- Protecting and enhancing the marine feeding resources of at least 15 seabird species that have been recorded breeding and/or foraging in this area including endangered endemic species.
- Protecting and enhancing fish and invertebrate (including shellfish and crayfish) larval export due to the strong tidal currents associated with the waters of the proposed marine reserve to the inner and outer Gulf, thus facilitating the recovery of fish stocks and kai moana outside the protected area.
- Protecting and enhancing marine ecosystems and biota of the Hauraki Gulf for their own intrinsic value.
- Protecting and enhancing the opportunity for the comparative scientific study of marine ecosystems, and marine biota in the Hauraki Gulf.
- Protecting and enhancing the opportunity for scientific study of seabirds and their restoration in the Hauraki Gulf.
- Protecting and enhancing seabird and shore bird nesting areas along the coastal fringe, especially at Island Bay and on nearby islets.
- Protecting and enhancing the opportunity for scientific study of marine mammals and their restoration in the Hauraki Gulf.
- Protecting and enhancing the traditional conservation values of Waiheke Island and the strongly stated aspirations of its people.
- Protecting and enhancing the conservation values of Tāmaki Makaurau and the strongly stated aspirations of the people of Auckland.
- Enabling ideal outdoor education opportunities for the young people of Waiheke and of Auckland via an easily accessible marine reserve, which would for example enhance Waiheke High School's Seasports Academy (snorkelling and scuba) integrating it with the sciences curriculum.
- Enabling aspirational management goal setting including the restoration of locally extinct iconic species such as hāpuku / groper and crayfish species kōura to this part of the Hauraki Gulf.
- Enhancing the resilience of the Hauraki Gulf to climate change impacts, particularly heatwaves, invasive species and ocean acidification.
- Advancing long held aspirations by marine scientists and the public for a network of marine reserves in the Hauraki Gulf.
- **Finally doing something tangible and meaningful to protect the Hauraki Gulf and the precious threatened wildlife which lives here – instead of just talking about it.**

14.0 SUMMARY – THE CASE FOR A HĀKAIMANGO – MATIATIA MARINE RESERVE

The proposed marine reserve contains an especially diverse array of high-quality marine habitats provided by a unique series of rocky reefs, deep inlets and bays from rocky to soft sediment seabed, enabling rich kelp forests, marine invertebrates, sponge beds as well as bivalve beds to rejuvenate. The latter are associated with both rocky reef and soft sediments within the proposed reserve.

Subtidal rocky reef habitat between Hakaimango Point and Matiatia Point is predominantly kelp dominated, with kelp diversity particularly high at greater depths, east of Owhanake Bay. Urchin barrens, a sign of ecological dysfunction have been found to be negligible within the proposed reserve in contrast to other neighbouring areas and in many other parts of the Hauraki Gulf.

Fig. 30. Typical coastal shoreline of the proposed Hākaimangō-Matiatia Marine Reserve. Photo Andy Spence.

Pelagic and reef fish, especially prized and commonly targeted finfish species such as snapper / tāmure, kahawai and kingfish / haku, as well as the benthic red gurnard / kumukumu, are present throughout the proposed reserve.

These features indicate the area's high suitability for habitat repair and ecosystem regeneration, especially to help the restoration of key species like snapper and crayfish, promoting through larval spread the restoration of these and other marine biota in the inner Hauraki Gulf.

The proposed marine reserve would protect a part of the Hauraki Gulf which lies in a central transition zone between the inner and outer Gulf and of which no other representative example is protected.

The area is still an important feeding ground for seabirds and marine mammals and could become much more so.

The proposed marine reserve at 2350 ha would be the largest in the Hauraki Gulf and will become a central element in a Hauraki Gulf marine protection network.

The proposed marine reserve at 2350 ha would at one stroke almost double the size of the area of protected marine environment in the Hauraki Gulf.

The proposed marine reserve is within an easy 10-minute walk from the Matiatia ferry terminal, (35 minutes from downtown Auckland) and to bus services enabling public transport access and an easy walk to both its Matiatia and Oneroa ends. This unique proximity of public transport services and good walking tracks makes this marine reserve very convenient for scientific research and visits by students and educational groups with excellent accessibility for the general public.

Fig. 31. Graphic Shaun Lee.

The proposed marine reserve would also have an economic benefit, enabling a unique opportunity for sustainable water-based eco-tourism and kayaking activities. But even more importantly make a significant contribution to enhancing fish stocks in the wider Gulf. The proposed Hākaimangō-Matiatia Marine Reserve provides an opportunity for active partnership between mana whenua as kaitiaki, the Crown and the local community in governance and management of the proposed marine reserve.

The proposed Hākaimangō-Matiatia Marine Reserve would strengthen the historic, traditional, cultural, and spiritual relationship of the tangata whenua of the Hauraki Gulf and generations to come, with the waters and the restored marine creatures of Tikapa Moana, the children of Tangaroa, a living reminder of the heroic times of the tribal ancestors.

The Hākaimangō-Matiatia marine reserve over time would become a biological treasure house, a 'jewel in the crown' of the Hauraki Gulf Marine Park, enhancing the life-supporting capacity of the marine species protected therein and a source of pride which by its very existence, would enrich the lives and wellbeing of the people of Waiheke, the islands of the Gulf, the Auckland region and beyond.

Fig.32. A marine transition zone between the inner and outer Hauraki Gulf. Photo Andy Spence.

To make a submission on this application to the Director-General of Conservation:

- Fill out the online submission form at: www.doc.govt.nz/waihekeproposal
- Or mail your submission: waihekeproposal@publicvoice.co.nz

15.0 ACKNOWLEDGEMENTS

The authors Michael Lee and Dr Leith Duncan on behalf of the Friends of the Hauraki Gulf would like to acknowledge and thank the following people who have assisted in the preparation of this application report: Dr Tim Haggitt, Paul Monin, Shaun Lee, Stuart Farquhar, Paul Walden, Sid Marsh, Alex Stone, Chris Curreen, Captain Christopher Barradale, Peter Green, Dr Andrew Jeffs, Mike Delamore and Dr Bruce Hayward. Thanks also to Katherine Mason for editing work and to Charles Palmer for further editing and formatting the document. We also wish to acknowledge and thank the Department of Conservation National Marine Protection Programme team Rebecca Bird and Mandy Leathers and their staff and also DOC GIS analyst Doug Anderson for advice and assistance. Thanks also to Statutory Manager John Galilee for facilitating and overseeing our engagement with the DOC. Also to Tyler Northern of MPI, Fisheries for providing recreational fishing data. All the forementioned have provided valuable contributions in different ways to the production of this document.

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17.0 APPENDICES

Appendix 1

Haggitt, Tim eCoast (2017a) Waiheke Island Marine Reserve Network – Gaps Analysis and Feasibility Study
https://www.aucklandcouncil.govt.nz/about-auckland-council/how-auckland-council-works/local-boards/all-local-boards/waiheke-local-board/docswaihekeplans/waiheke-marine-reserve-gaps-feasibility.pdf

Appendix 2

Haggitt, Tim eCoast (2017b). *Ecological survey of Waiheke Island northwest coastline December 2016*. Prepared for Auckland Council and Hauraki Gulf Conservation Trust.
https://www.aucklandcouncil.govt.nz/about-auckland-council/how-auckland-council-works/local-boards/all-local-boards/waiheke-local-board/docswaihekeplans/waiheke-north-western-coastline-ecologoical-survey.pdf

Appendix 3. Hauraki Gulf Forum 'The State of our Gulf' (2020).

https://www.aucklandcouncil.govt.nz/about-auckland-council/how-auckland-council-works/harbour-forums/docsstateofgulf/state-gulf-full-report.pdf

Appendix 4. Bing, Emily. (2015). Marine Protection Research. Colmar Brunton.

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Appendix 5. Pre-notification consultation Diary 2021

Date	Consultation Event	Discussion	Action
23 April	Ngāti Paoa Iwi Trust Ngāti Paoa Trust Board	Immediately after lodging our intention to apply for a marine reserve under s5 to the Director-General DOC FoHG forwarded formal letters to the chair of the NPIT Glen Tupuhi & the chairs of the NPTB with the full application document for their consideration & requested a meeting to hear their views on the application	Follow up letter & emails
5May	**Waiheke Local Board** workshop –briefing to board members **Cath Handley, Kylee Matthews, Bob Upchurch, Robin Tucker** Mike Lee, Chris Cureen FoHG	Our PowerPoint presentation was favourably received by all Board members present. Mike and Chris answered questions. The comments were very positive from board members, though board chair Cath Handley was more circumspect. She said was pleased that we had informed her before her meeting with Minister of Oceans on Fri 28 April.	Keep WLB informed
22 May	**Waiheke Radio Greg Treadwell Mike Lee**	Community Radio. Saturday morning interview by Greg enabling Mike to explain the marine reserve, its background, its benefits for the marine environment and the application process going forward https://waihekeradio.org.nz/podcast/mike-lee-marine-reserve/	n/a
23 April	**Adjacent landowners including gated community residents** at the home of Barry & Meg Fentons, 56 Korora Rd. Mike Lee Chris Cureen FoHG	The meeting with 24 neighbouring property owners lasted more than 2 hours. It was arranged as a follow up to personally addressed letters to all residents living in the area. All present assured us they were conservationists and working hard on their properties to this end. One resident Andrew Barnes complained at the lack of consultation and challenged the validity of the 2015 Colmar Brunton public opinion survey. We explained we were beginning of the consultation process and that our meeting with them following up on our letter to residents, was the first. Main concerns raised were about the effects of visitor impacts including school students and consequent congestion on the narrow road to Owhanake Bay especially from buses.	Will remove references from our application document to tourism. Ease of access road link and carpark. Consult with the Local Board about the status of Korora Road to restrict bus access
	Katina Conomos Tom Trnski of Noises Marine Restoration Trust Mike Lee FoHG	Meeting and briefing at Auckland Museum Mike presented a bound copy of Hākaimangō-Matiatia MR application document	Mike & Katina to keep in contact
10th June	Denny Thompson, kaumatua, trade	Meeting and briefing. Denny is a direct descendant of the leading Waiheke chief Rawiri Takarua who is buried at the Te	Mike followed up with Denny in Sept & he is

	union activist, active member of Ngati Paoa iwi. Denny has a high profile on social media. With Mike Lee FoHG.	Huruhi Urupā on Waiheke. Denny was happy to receive the proposal and made some helpful suggestions mentioning Kahui Legal the tribe's legal advisers. Denny agreed to give some thought to our marine reserve application was assured it is not about increasing Waiheke property values (one of his public criticisms of similar conservation proposals).	willing to support the marine reserve
10 June	DOC. John Galilee Bledisloe House and by Zoom marine protection team leader Rebecca Bird and Mandy Leathers with Mike Lee FoHG	Meeting. The meeting lasted 1 hour and 10 minutes. The meeting was led by Rebecca. She complimented us on the proposal. She also said the marine protection team had not received an application from the public in anyone's memory, so they were still gearing up to deal with it. DOC will appoint a contracted manager to oversee it. Assurances were sought and given that whatever political decisions are made in government regarding Sea Change our efforts will not be wasted. The proposal will be allowed to run its full course regardless. In regard to the report itself they could find no problems or technical flaws at that stage. DOC asked for information on FoHG consultation process which was based on the requirements of the s5 Marine Reserves Act but also based on current best practice. FoHG consulted the Director-General as required under the Act but also both boards of Ngāti Paoa (current best practice) & requirement of MACA Act. Counter-intuitively did NOT broadcast the application but kept it more or less confidential for a month to enable both DOC and Iwi to consider it without being required to comment by the local media and other parties. Also reported on the FoHG meeting with neighbouring landowners and steps have taken to mitigate effects they were concerned about impacts of visitors. FoHG has readily accepted DOC's advice to undertake wide pre-notification for which at least the next 2 months will be devoted to before moving into formal public notification. DOC raised the question of consulting with other Iwi in the Hauraki Gulf which FoHG have not yet done and will wait for DOC's advice on this sensitive matter. FoHG focus on Ngāti Paoa is not just based on best practice but under the proposed Treaty Settlement the Crown has given	Meeting with Hauauru Rawiri, Pou Tairangahau Māori Engagement Strategic Manager

		Ngati Paoa a 'Statutory Acknowledgement' relating to the publicly owned Matietie historic reserve. In effect when it comes to RMA consents and other matters (eg marine reserve applications) this gives Ngāti Paoa a status rather similar to neighbouring landowners under the Marine Reserves Act. Next steps. DOC will arrange a meeting with their Maori protocol adviser Hauauru Rawiri. Finally, DOC congratulated FoHG on the proposal and thanked us for what we are trying to do.	
10 June	Dr Andrew Jeffs and Shaun Lee at Auckland University Mike Lee FoHG	Meeting. Andrew was asked if he could review the document from a technical point of view, but he replied that under the MR Act it was adequate as it was. He outlined his experience (working for DOC) with the Whanganui -a- Hei and Kapiti Island Marine Reserve. Andrew advised we should try to meet with individual Ngāti Paoa board members. He also advised us to consult with the Federation of Commercial Fishers. Sandford's new sustainability manager Peter Logdill. Andrew was asked to give consideration that he arranges students to survey Te Matuku Bay marine reserve.	Appointment made with Peter Longdill. Meeting with Rawiri Hauauru
18 June	Liz Waters, editor/owner Gulf News Mike Lee, Chris Cureen FoHG	Meeting, Mike advised that DOC had indicated our document was suitable but is reviewing and has advised us to enter a pre-notification consultation phase. Though this is not required by the Marine Reserves Act it is considered best practice.DOC has employed a project manager to oversee our application. Liz is writing an editorial. Liz thinks we need to work with the community. The concerns of the local landholders were discussed and our commitment to work with the Local Board and Auckland Transport to ban buses from Korora Road, should the application succeed. We are actively working to address local landowner concerns by amending the wording in our application relating to possible future visitors.	
1 July	Hauāuru Rawiri DOC Mike Lee	Meeting with Hauauru Rawiri Pou Tairangahau Māori Engagement Strategic Managerto discuss the Marine Reserve proposal and to hear Hauauru's advice on consultation with Ngāti Paoa	Hauauru to liase with DOC. FoHG invited Hauauru to

			visit Waiheke to view the site
4 July	Matariki Festival Waiheke Art Gallery Alex Stone FoHG	Presentation at the Art Gallery to celebrate Matariki by Alex Stone: Alex used our PowerPoint to introduce the audience to our marine reserve project. It was received very positively and there were lots of questions from interested people.	
15 July	DOC Rebecca Bird (National marine protection), Mandy Leathers, Glen Carbines, John Galilee. Mike Lee, Chris Cureen FoHG.	Meeting at DOC. Bledisloe House July 15 2020 Meeting started at 12.30pm Mike summarized our progress to date. He asked for an assessment of our application and requested a timeline for when we can move forward. Chris went over the consultation we are doing in the community. Rebecca outlined the principles of engagement 1. Public engagement prior to notification 2. Working together for the notification process - display of maps etc 3. Plan for the pre-notification period. She stated that an external application is different to an internal application, so she needed assistance in dealing with it. The statutory project plan is Glen Carbines' role. Glen introduced himself and described at length his work in the conservation space, including working on three marine reserve proposals. Mike noted his membership of rec fishing groups & requested an objective, unbiased view on our application. Glen said his professional reputation depends on his being impartial and gave his assurance that we would be given a "fair go." Rebecca on the Assessment: Our application seems thorough and sound. She would like to assess it against the Act - that would be the scope of the process. She asks for the time to make a formal assessment against the Act. Mike said he has already asked if there are any gaps and that the assessment could only be helpful.	Report on consultation 25 August

		He stated that we would like to notify late August after we have met with the local Piritahi Marae. **Decision: Assessment will be made 28th August** Consultation with Iwi Iwi Trust is the post settlement government entity. Settlement does not exclude any other groups in the Iwi. The Iwi Trust Board is included in this. FoHG agreed that any reference to comments from DOC will be sent to them for approval prior to printing. Rebecca - Consistency with the legislation is the main purpose of the review. She requested a formal report on our consultation with the community by mid-August. Meeting finished 1 50pm	
15 July	Peter Longdill Sustainability Manager Sanford Fishing Mike Lee, Chris Cureen FoHG	Meeting at Sanford Fisheries, Wynyard Quarter, Thursday 14th July Mike outlined our proposal. Peter talked about his role as manager in charge of sustainability at Sanford and outlined some of the actions Sandford were taking in this area. Sandford were most unlikely to object to our proposal. We asked for their support for the marine reserve, and he undertook to consult within the company on that issue.	Mike followed up with email
16 July	Kai Conscious Cafe Sustainability Centre Waiheke Alex Stone, Sid Marsh FoHG	Presentation by Alex Stone: Alex Stone assisted by Sid Marsh presented the marine reserve proposal to a very supportive group of 85 people – including fieldworkers and staff of the Waiheke Resources Trust	Names of supporters collected for Newsletter database
28 July	University of 3rd Age Dr Anne Hume Mike Lee, Chris Cureen, (in support Leith Duncan) FoHG	Presentation at Club Waiheke (Surfdale BowlingClub) 11am Mike supported by Chris presented a PowerPoint to an interested group of over 70 people who asked thoughtful questions. There were offers of help and 18 emails were volunteered for our database.	Names of supporters collected for Newsletter database
29 July	Waiheke Marine Project Steering Group Navigator Miranda O'Connell, Matt von Sturmer	Presentation to WMP Steering Committee Library 6pm Discussion which followed Mike's presentation clarified issues and progress was made in agreeing common goals. We all agreed that there were many forms of marine protection and that our marine	Edit application report as requested. Compose joint press release for *Gulf News*

	Grant Crawford, Ian Burrows, Jeanine Clarkin and paid staffers Mike Lee, Chris Curreen, Alex Stone, Leith Duncan, Sid Marsh, Andy Spence FoHG	reserve proposal complements the work of WMP. FoHG agreed to amend reference to 'Future Search' from the draft application document. WMP members pointed to the rāhui as an outcome of Future Search. An agreed joint press release was sent to the local *Gulf News*	
9 Aug	**Piritahi Marae** Pita Mahaki Claire Mahaki Judy Davies Bianca Ransome Huhanna Davies Maikora Ropata Mike Lee, Chris Curreen, Alex Stone, Leith Duncan, Sid Marsh, Andy Spence FoHG	**Meeting at Piritahi Marae with Marae committee 9 Aug 2021** A successful meeting with the Piritahi Marae Committee led by chair Pita Mahaki who hosted a deputation of the full committee of Friends of the Hauraki Gulf led by chair Mike Lee. Mike congratulated Pita and the Marae Committee on its work on behalf of all Waiheke Islanders before giving a PowerPoint presentation on the proposed Hākaimangō-Matiatia Marine Reserve. FoHG members answered questions from marae committee members. Pita and his committee, notably Whaea Huhana Davis, expressed support for the marine reserve proposal and thanked the Friends for their work on behalf of marine protection. The Friends were gratified by the warmth and aroha of our reception. Marae committee members articulated similar concerns about the state of the Gulf and the decline of marine wildlife shared by many Waiheke Islanders - and the need to do more to turn things around.	FoHG to keep in communication with Piritahi
16 Aug	The Rotary Club of Waiheke Tim Baker president, executive and members Mike Lee & Alex Stone FoHG	Mike and Alex jointly presented a Power Point to a meeting of about 40 Rotary members. Constructive questions were asked, and the response was very positive	Names of supporters collected for Newsletter database
9 Dec	Ngaitai ki Tāmaki	Formal letter to Ngaitai ki Tāmaki rangatira Laurie Beamish with the application document for Ngaitai consideration & input	To be followed up by ML
20 Dec	Green Party MPs Chloe Swarbrick, Eugenie Sage & Teanau Tuiono	Zoom meeting with Alex Stone, Chris Curreen, Andy Spence from FoHG	Chloe Swarbrick offered to

			facilitate a further meeting
13 Jan	National Party/Blue Greens. Scott Simpson MP Simon Watts MP Chris Severne Karleen Reeve Charles Palmer	Teams meeting arranged by Karleen Reeve. Presentation by ML & CC of FoHG. Constructive questions and supportive comments	Further info to be shared
TBA	Onetangi Residents Assn	TBA delayed post Covid	
TBA	Waiheke High School		
TBA	Devonport Yacht Club		

Chris Curreen Jan 2022

Appendix 6. Formal Notice of the intention to apply for an Order in Council for a marine reserve under section 5 of the Marine Reserves Act (1971).

Hākaimangō – Matiatia (Northwest Waiheke) Marine Reserve Proposal
Notice under Section 5, Marine Reserves Act 1971

Pursuant to Section 5 of the Marine Reserves Act 1971, the Friends of the Hauraki Gulf Inc hereby gives notice of its intention to apply for an Order in Council declaring a part of the coastal marine area (sea and intertidal foreshore) off the northwest coast of Waiheke Island, a marine reserve. The proposed name of the reserve is 'Hākaimangō – Matiatia Marine Reserve.'

The boundaries of the proposed marine reserve encompass 2350 ha and comprise of all the area (within the meaning of the Marine Reserves Act 1971) enclosed by a line commencing at a point on the mean-high water springs near Matiatia Point/Head on the north shores of Matiatia Bay at 36° 46.816' S, 174° 59.126' E; proceeding in a straight line in a westerly direction to point at 36° 46.816' S, 174° 57.406' E; then proceeding in a straight line in a northerly direction to point at 36° 44.126' S, 174° 57.406' E; then proceeding in a straight line in an easterly direction to point at 36° 44.126' S, 175° 0.962' E; then proceeding in a straight line in a southerly direction to a point 36° 46.151' S, 175° 0.962' E; then proceeding in a straight line in a westerly direction to a point on the mean-high water mark near Hakaimango Point at the north-western extremity of Oneroa Bay at 36° 46.151' S, 175° 0.882' E then proceeding in a northerly, westerly then generally southwesterly direction along mean-high water springs to the point of commencement.

The plan of the proposed marine reserve showing all tidal waters and the boundaries and extent of the area sought to be declared a marine reserve may be inspected at the Department of Conservation office Bledisloe House in central Auckland, and at Waiheke Public Library, Ocean View Road, Oneroa Waiheke Island, the Citizens Advice Bureau, Oneroa and the Waiheke Local Board offices, Belgium Street, Ostend. The full application document may be viewed online and downloaded at FriendsofHaurakiGulf.nz. Hard copies of the full application document will be available at a cost of $32 from the Friends of the Hauraki Gulf. Please email friends.hg21@gmail.com and request a copy.

Any person or organisation may object to the making of an Order in Council establishing the marine reserve by specifying the grounds of the objection in writing and submitting it to the Director-General, Department of Conservation within two months from the date of the first publication of this notice.

To make a submission on this proposal to the Director-General of Conservation:

- Fill out the online submission form at: www.doc.govt.nz/waihekeproposal
- Or mail your submission: waihekeproposal@publicvoice.co.nz
- Or post a hard copy to:
  RE: Proposed Hākaimangō-Matiatia (Northwest Waiheke Island) marine reserve
  Planning Permissions and Land Unit
  Department of Conservation
  PO Box 10420
  Wellington 6143
  New Zealand

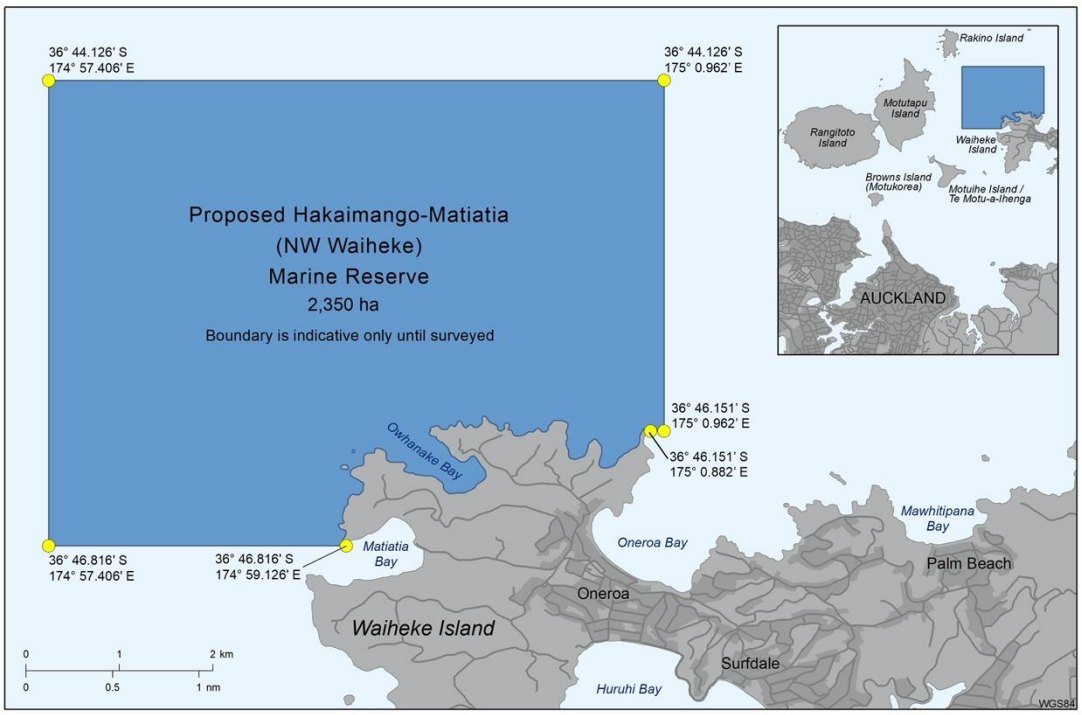
The date of the first publication of this notice is 20 January 2022. The period for submitting objections closes (two months later) on 20 March 2022

This notice of intention to apply for a marine reserve is given by the Applicant, The Friends of the Hauraki Gulf inc.

For any questions about the application, contact the Applicant directly:

Michael Lee
Chairman
Friends of the Hauraki Gulf Inc
c/- 21 Tetley Road, Surfdale, Waiheke Island. 1081

Appendix 7. Plan of proposed Marine Reserve as per section 5 (2) of the Marine Reserves Act (1971).



Proposed Hakaimango-Matiatia (NW Waiheke) Marine Reserve indicative boundary