

Reform of the Wildlife Act 1953

AN OPPORTUNITY FOR TRANSFORMATIONAL CHANGE OF AOTEAROA NEW ZEALAND'S BIODIVERSITY LAW

Appendix D

Interface between the Wildlife Act
and protection of marine species



Environmental
Defence
Society

Photo by Raewyn Peart

Appendix D

Interface between the Wildlife Act and protection of marine species

Contents

Introduction

Aotearoa New Zealand's marine species

Issue 1: Most marine species are managed under laws other than the Wildlife Act (if they are managed at all)

Issue 2: The Wildlife Act fails to protect habitat important to the survival of marine species and this is not compensated by other marine related laws

Issue 3: There are large 'carve outs' from marine species protection (where it is in place) for accidental or incidental take

New approach for managing marine species

Figures

Figure 1. Summary of data from conservation status assessments for marine species in Aotearoa New Zealand

Abbreviations

DOC	Department of Conservation
EDS	Environmental Defence Society Incorporated
EEZ	Exclusive Economic Zone
EEZ Act	Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012
Fisheries Act	Fisheries Act 1996
IUCN	International Union for Conservation of Nature
MACA Act	Marine and Coastal Area (Takutai Moana) Act 2011
Marine Reserves Act	Marine Reserves Act 1971
MMPA	Marine Mammals Protection Act 1978
MSY	Maximum Sustainable Yield
NZCPS	New Zealand Coastal Policy Statement 2010
NZTCS	New Zealand Threat Classification System
QMS	Quota Management System
QMAs	Quota Management Areas
RMA	Resource Management Act 1991
SNAs	Significant Natural Areas
TAC	Total Allowable Catch

Introduction

Appendix D describes three main issues that have arisen at the interface between the Wildlife Act and other legislation providing protection and management of marine species:

Issue 1: Most marine species are managed under laws other than the Wildlife Act (if they are managed at all)

Issue 2: The Wildlife Act fails to protect habitat important to the survival of marine species and this is not compensated by other marine related laws

Issue 3: There are large 'carve outs' from marine species protection (where it is in place) for accidental or incidental take

Aotearoa New Zealand's marine species

There are over 17,000 known marine species in Aotearoa New Zealand's waters, of which 51 percent are endemic. This includes over 4,000 species that, although known, are yet to be scientifically described. New species are being discovered all the time.¹ There is thought to be about 1,400 fish species; 1,000 species of macroalgae; 1,100 species of jellyfish, anemones and rocky corals; and 1,500 species of sponges.² The number of different species of carnivorous sponges, rock sponges, glass sponges, black corals and gorgonians are some of the highest in the world.³

Aotearoa New Zealand has been described as a global centre for seabird biodiversity.⁴ More than 40 percent of the world's seabird species use New Zealand's marine environment; it supports the highest number of endemic seabird species in the world (33 species); and it is an important breeding area for 95 seabird taxa.⁵ In addition, around half of the world's whale and dolphin species are found in the country's waters, including 43 species of whales, dolphins and porpoises and nine species of seals and sea lions.⁶

This means that much of the country's biodiversity is found in the marine area, and so any legislative regime which is concerned with species protection needs to carefully address its application to marine species.

Conservation status assessments have been undertaken for only around 10 percent of the country's known marine species. Marine fish species are notably entirely absent from such assessments. Many of the species that have been assessed are categorised as 'Data Deficient', including over half of all assessed marine mammals and macroalgae species and nearly 40 percent of all assessed sharks and rays. However, the available data indicates that many marine indigenous species are threatened with extinction or are at risk of becoming threatened.⁷

This is very concerning and, along with the general paucity of information on marine species, is a strong indicator that the current management regime is not working as well for marine species as it needs to.

Issue 1: Most marine species are managed under laws other than the Wildlife Act (if they are managed at all)

Despite the large number of marine species in Aotearoa New Zealand most are not protected under the Wildlife Act. Only seabirds and marine reptiles (turtles and sea snakes) are included in the definition of "animal" under the Wildlife Act, with other marine species only able to be protected if they are listed in Schedule 7A of the Act, and thereby declared to be "animals". The very few listed

¹ Gordon et al, 2010, 1

² Gordon et al, 2010, 9

³ Gordon et al, 2010, 9

⁴ Croxall et al, 2012, 1-34

⁵ Fisheries New Zealand, 2020, 5

⁶ <https://www.doc.govt.nz/nature/habitats/marine/new-zealands-marine-biodiversity/>

⁷ Data sourced from Freeman et al, 2013; Robertson et al, 2021; Baker et al, 2019; Nelson et al, 2019; Hitchmough et al, 2021

species include four coral families and five shark, two ray and two grouper species. See *Spotlight: Protection of marine species* in the main report for further detail.

The reasons for these particular species being listed, and not others, include concerns about collection of corals for jewellery manufacture, localised depletion of an easily caught, slow growing fish species (although others that could be similarly described such as hāpuku remain unprotected), and the need to implement international obligations.⁸ Overall, this means that any protection of almost all marine species has been left to other statutes.

In addition to the Wildlife Act, there are several pieces of legislation that potentially apply to the protection of marine species, with the key statutes being the Marine Mammals Protection Act 1978 (MMPA), Fisheries Act 1996 (Fisheries Act), Resource Management Act 1991 (RMA) and Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act). The following discussion demonstrates the extent to which these can, and in practice do, provide effective protection for marine species. Spatial protection of species and habitats, including under the Marine Reserves Act 1971 (Marine Reserves Act), is addressed separately in Issue 2 below.

The MMPA provides a legislative framework for the protection of all marine mammals in Aotearoa New Zealand's waters (the territorial sea and exclusive economic zone) including whales, dolphins, seals and sea lions. Most of the species here are also present overseas, but endemic to Aotearoa New Zealand are the small coastal Hector's dolphin (largely confined to the South Island), the Māui dolphin (found along the west coast of the North Island), and the New Zealand sea lion which primarily breeds in the sub-Antarctic islands.

These all have a threat status, with the Hector's dolphin and New Zealand sea lion being Nationally Vulnerable and the Māui dolphin being Nationally Critical. Interestingly, the Hector's and Māui dolphin are both sub-species of the same dolphin species but their conservation status is assessed separately.

The MMPA specifies that "no person shall take any marine mammal" without a permit issued by the Minister of Conservation or delegated decision-maker (such as a Department of Conservation (DOC) official).⁹ There is a similar provision requiring a permit to hold marine mammals in captivity. The term "take" is defined broadly in the Act and includes:¹⁰

- To take, catch, kill, injure, attract, poison, tranquillise, herd, harass, disturb, or possess;
- To brand, tag, mark, or do any similar thing;
- To flense, render down, or separate any part from a carcass; and
- To attempt to do any act specified above.

In considering any application for a permit, the decision-maker must have regard to "the need to conserve, protect, or manage any marine mammal" alongside any international agreements and submissions received.¹¹ In practice, consents are not granted to hunt or kill marine mammals, but are granted from time to time for tagging and other procedures associated with scientific research.

Spotlight: Relationship between Māori and whales

⁸ See review by Miskelly, 2016, 81-115

⁹ Marine Mammals Protection Act 1978, s4(1)

¹⁰ Marine Mammals Protection Act 1978, s2

¹¹ Marine Mammals Protection Act 1978, s5(7)

Whales are considered a taonga species by many Māori and are frequently referenced in traditional tribal stories and place names. They can be a symbol of abundance and strength, in part due to the quantity of food and other materials, such as bones and teeth, they provide. Whales are also seen as guardians during long ocean voyages, being ready to provide help in a time of need. This is reflected in the legend of Paikea who was the founding ancestor of Ngāti Porou. It is said that after Paikea's waka sank mid-voyage from Polynesia, a whale came to the rescue and carried Paikea safely to Ahuahu (Great Mercury Island) on its back.¹²

Historically, Māori did not generally actively hunt whales, although they did harvest smaller marine mammals such as dolphins, seals and sea lions. But the carcasses of beached whales, which were considered a gift from Tangaroa, were extensively utilised. They provided meat for consumption and oil. Whale teeth and bones were used to make a wide range of items including ornaments, jewellery, weapons and fish hooks.¹³

Today, whale strandings are common around the New Zealand coast, with DOC responding to an average of 85 stranding incidents each year.¹⁴ The MMPA makes it illegal to recover material from a beached marine mammal without a permit through the definition of "take" including "to flense, render down, or separate any part from a carcass". This prevents iwi from utilising the carcasses of whales and dolphins beached within their rohe without a permit, potentially blocking access to whale products and accelerating the loss of customary practices associated with whale strandings. To address this issue, DOC and most coastal iwi have now agreed specific protocols for the management of whale strandings which include providing for a permit to be issued to the iwi for removal of bone and teeth from dead stranded animals.¹⁵ This practice develops tikanga and mātauranga o te taiao.

The original impetus of the MMPA was to protect whales, dolphins and other marine mammals from hunting,¹⁶ and it has been successful in achieving this aim. However, although a strong directive, the prohibition against "take" has not been sufficient to protect marine mammals from all direct harm. This is because of the significant 'carve out' for 'inadvertent take' which is discussed in Issue 3. In addition, when a marine mammal becomes threatened, or is adversely impacted by human activity, there is no requirement under the MMPA to undertake recovery actions.

Marine mammal tourism, whereby tourists seek to view marine mammals or to directly interact with them through activities such as swimming, is also caught by the MMPA due to the prohibition against attracting or disturbing marine mammals. The Marine Mammal Protection Regulations 1992 provide more detailed provisions to regulate human contact with, and behaviour around, marine mammals. They include general provisions that apply to all persons. They also require a permit to be obtained in order to undertake a commercial operation "where a purpose is to view or come into contact with any marine mammal".¹⁷ In the issue of permits, preference may be given to iwi in order to protect their Te Tiriti interests.¹⁸

Such a permit can only be issued by the Director-General if a number of criteria are met including that "the commercial operation should not have any significant adverse effect on the behavioural patterns of the marine mammals" and that "it should be in the interests of the conservation, management, or protection of the marine mammals that a permit be issued".¹⁹ Despite these

¹² Rodgers, 2017, 7

¹³ <http://www.TeAra.govt.nz/en/te-whanau-puha-whales/page-3> (accessed 22 September 2022)

¹⁴ <https://www.doc.govt.nz/nature/native-animals/marine-mammals/marine-mammal-strandings/>

¹⁵ Gillespie, 1999, 17

¹⁶ See Mulcahy and Peart, 2012, at 4, which summarises the historic context of marine mammal protection in Aotearoa New Zealand

¹⁷ Marine Mammals Protection Regulations 1992, s2

¹⁸ *Ngāi Tahu Māori Trust Board v Director-General of Conservation* [1995] 3 NZLR 553 (CA)

¹⁹ Marine Mammals Protection Regulations 1992, s6

provisions, permits have been issued for commercial activities which have cumulatively adversely impacted dolphin populations (see below *Spotlight: Management of tourism impacts on bottlenose dolphins*) and there has been some difficulty in enforcing the regulations.²⁰

Spotlight: Management of tourism impacts on bottlenose dolphins

The Nationally Endangered bottlenose dolphin population is estimated to have a population size of less than 1,000 animals.²¹ There are thought to be at least three geographically segregated sub-populations. The Bay of Islands has historically played an important role in sustaining the national population by providing critical habitat for breeding and nursing activities in north-eastern coastal waters.

The presence of dolphins and other marine mammals in the Bay of Islands led to the development of a flourishing marine mammal sight-seeing industry. In 1992, the first permit was issued under the Marine Mammal Protection Regulations 1992 to authorise a tourist operation aimed at providing opportunities to swim and view dolphins in the Bay of Islands.²² The enterprise quickly became popular, attracting other operators to seek permits from DOC. To better understand the impacts of tourist vessels on the Bay of Islands bottlenose dolphin population, DOC commissioned scientific research in the mid-1990s, which was funded by a levy on the permit holders. As a result of that research, it became apparent that tourism activities were disrupting the normal behaviours of bottlenose dolphins. In 2004, DOC tightened up conditions on dolphin permits and established two exclusion zones in areas that were frequently used by the dolphins to rest. However, it did not put a moratorium on the issue of further permits.²³

By 2009, a scientific study of the local bottlenose dolphins indicated the population was in serious decline and there was a high rate of calf mortality.²⁴ Further conditions were put in place to reduce tourism impacts on the dolphins, including the shifting of exclusion areas to places that were considered more supportive of critical dolphin behaviours.²⁵ A moratorium was also placed on the issue of new permits. But by this time DOC had issued permits which authorised vessels to take up to 1,352 passengers into the Bay of Islands to view the dolphins each day, with 468 of those passengers authorised to swim with the wild animals.²⁶

In 2016 and 2020, DOC commissioned additional research to understand whether these measures were adequate to halt the observed population decline and calf mortality.²⁷ The research findings were alarming and indicated that:²⁸

- The Bay of Islands bottlenose population had declined significantly between 1997 and 2020, with the 2016 study finding a 65 per cent decline since 1999 and 40 per cent decline since 2005. The 2020 study identified only 26 individuals using the area.
- The rate of calf mortality was extremely high with around 75 per cent of calves not reaching adulthood.
- No new calves were observed during the peak calving season in 2019/20.

²⁰ See Mulcahy and Peart, 2012, chapter 7 and Peart, 2013, chapter 16 which describes the adverse impacts of tourism on bottlenose dolphins in the Bay of Islands

²¹ Baker et al, 2019, 6

²² Peart, 2013, 160

²³ Peart, 2013,173-4

²⁴ As described in TriOceans, 2020, <https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/bottlenose-dolphin-far-north-water-new-zealand.pdf>

²⁵ As described in TriOceans,2020, <https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/bottlenose-dolphin-far-north-water-new-zealand.pdf>

²⁶ Raewyn Peart, 2013, 179

²⁷ Department of Conservation, 2021a, 6

²⁸ Peters, 2016; TriOceans, 2020

- In the Bay of Islands, bottlenose dolphins were spending on average 86 percent of daylight hours in the presence of at least one vessel. After interacting with people and vessels, the dolphins were taking up to six hours to return to normal behaviour.

At the observed rate of population decline, there were concerns that the Bay of Islands subpopulation of bottlenose dolphins could rapidly become locally extinct.²⁹ The research prompted DOC to initiate a review of potential options for strengthening protection,³⁰ and in November 2021, the Minister declared the establishment of Te Pēwhairangi (Bay of Islands) Marine Mammal Sanctuary. It is not clear whether this will be in time to save the Bay of Islands dolphin population. The management response in this case was far too slow and reactive. It took 26 years from the identification of the issue to the establishment of a sanctuary, with earlier measures being insufficient to address the pressures on the dolphins. It highlights the difficulty of controlling impacts on a species once a commercial sector dependent on access to them has developed.



Dolphin watching in the Bay of Islands. Photo by Raewyn Peart

The MMPA also provides for the establishment of marine mammal sanctuaries (which can apply to the marine environment and to land). These can be established by the Minister of Conservation, and can specify activities which may and may not be undertaken within the sanctuary, as well as any conditions on them.³¹ The Act does not set out any specific purpose for marine mammal sanctuaries, leaving their purpose to be inferred from the Act's title the 'Marine Mammals *Protection Act*'.

Marine mammal sanctuaries have been established to protect Hector's dolphins and Māui dolphins (five along the coast), southern right whales and New Zealand sea lions (one in the Auckland Islands) and bottlenose dolphins (one in the Bay of Islands). The restrictions associated with marine mammal sanctuaries differ with the perceived risk. For example, the Hector's and Māui dolphin sanctuaries

²⁹ Department of Conservation, 2021a, 6

³⁰ Department of Conservation, 2021b

³¹ Marine Mammals Protection Act 1978, s22

restrict seismic surveying, seabed mining and fishing and the Bay of Islands sanctuary (as described above) controls vessel and in-water interactions with marine mammals. There have been differing approaches to addressing the risk of fishing activity on marine mammals, where in some cases rules have been promulgated under the Fisheries Act (e.g., set net restrictions off Banks Peninsula) and in others under the MMPA (e.g., set net restrictions off the Taranaki Coast).

The use of the Fisheries Act as the vehicle for regulation resulted in a series of High Court challenges by the fishing industry which delayed the introduction of the protections by some years.³² When set net protections off the Taranaki Coast were introduced under the MMPA, there were no legal challenges, and this may have been due to that legislation providing fewer legal ‘hooks’ for judicial review.³³ It would be useful for new wildlife legislation to require restrictions associated with sanctuaries to deal with threats, to the extent possible, to avoid other less protective legislation being utilised for this purpose instead.

Unlike sustainability measures, which can be set directly by the Minister of Fisheries under the Fisheries Act (see below), the MMPA lacks any specific rule-making provisions to directly control activities impacting on marine mammals.³⁴ There is provision for the making of regulations, but these require an order-in-council which is more onerous than a direct Ministerial decision. This has meant that marine mammal sanctuaries, which can be created on Ministerial notice, have been used to manage specific threats in particular areas rather than to provide for areas where marine mammals have real ‘sanctuary’ and are protected from all threats to the extent possible. It would be useful for Ministerial rule-making powers, which could be called ‘protection measures’, to be incorporated into new wildlife legislation.

The Fisheries Act focuses on managing “fisheries resources” with the purpose of providing for their “utilisation” while ensuring “sustainability”.³⁵ The term “fisheries resources” is defined very widely in the Act and incorporates “aquatic life” which is defined as “any species of plant or animal life that, at any stage of its life history, must inhabit water, whether living or dead; and includes seabirds (whether or not in the aquatic environment)”.³⁶ Fisheries management therefore potentially applies to any species of plant or animal that lives (for at least part of its life) in freshwater or the marine environment. This means the Act has very wide application in terms of species. However, it has a narrow focus in terms of the impacts managed, which solely relate to those generated by fishing activity.

Although the Fisheries Act has utilisation as its prime purpose, this does not mean that conservation or protection is excluded, at least for a period until populations have recovered sufficiently to enable harvest. “Utilisation” is defined in the Act to include “conserving” as well as using, enhancing, and developing fisheries resources, with conserving further defined as “the maintenance or restoration of fisheries resources for their future use”.³⁷ It therefore reflects a utilitarian approach to marine life.

The Fisheries Act focuses on the Quota Management System (QMS). The foundation of the QMS is the spatial delineation of the country’s entire territorial sea and Exclusive Economic Zone (EEZ) into a series of specific areas (Quota Management Areas (QMAs)). Individuals of a species within any particular QMA can be classified as a “stock”, thereby bringing them into the QMS. A single stock

³² Peart R, 2018, 122

³³ The Fisheries Act has a detailed purpose statement and set of principles that need to be applied to decision-making and these were used as a basis for the judicial review proceedings. The MMPA lacks both of these elements so provides broader discretion to the Minister

³⁴ See Mulcahy and Peart, 2012, 126

³⁵ Fisheries Act 1996, s8

³⁶ Fisheries Act 1996, s2

³⁷ Fisheries Act 1996, s2

typically includes just one species, so the QMS is largely a spatially orientated, species-specific management approach.

The QMS was largely designed as a tool to manage commercial harvest in an economically efficient manner. It was also used as the 'currency' to settle Māori Treaty claims to commercial fisheries. A final Treaty settlement reached in 1992 included the Crown giving \$150 million to Māori to purchase a half share in the fishing company Sealord Products, along with 20 per cent of all new quota species brought into the QMS. This was on top of an earlier agreement, in 1989, to transfer \$10 million and 10 per cent of existing quota to Māori.³⁸ This means that iwi now hold a significant share of fisheries quota, which is managed under the Fisheries Act.

For each stock, the Minister of Fisheries is required to set a Total Allowable Catch (TAC) which "maintains the stock at or above a level that can produce the maximum sustainable yield (MSY), having regard to the interdependence of stocks".³⁹ Fishing the stock down to below MSY can result in accelerated depletion and, if it goes too far, eventually stock collapse when the population is unable to effectively reproduce itself.⁴⁰ The concept of MSY is based on the idea that, by fishing down a stock to a certain level, its productivity (i.e., ability to reproduce and grow) will be maximised. However, the use of MSY as a fisheries management target has been heavily criticised for over four decades, due to its lack of a defensible ecological underpinning.⁴¹

The purpose of the TAC is to put a cap on the total quantity of each stock harvested each year. This is achieved through setting a lower cap for commercial fishing (total allowable commercial catch), which makes an allowance for other mortality caused by fishing and the harvest of recreational and customary fishers, in order to ensure that the total harvest does not exceed the TAC. Measures such as bag limits are then typically imposed on recreational fishing, if needed, to reduce harvest levels.

Where a stock is known to fall below MSY, the Fisheries Act requires a TAC to be set that will result in the stock being restored to a level "at above MSY". Restoration is to be achieved "within a period appropriate to the stock, having regard to the biological characteristics of the stock and any environmental conditions affecting the stock".⁴² The Harvest Strategy Standard, a non-statutory policy document, sets out more detail on the management of stocks that fall beneath MSY. It provides that a time-bound rebuilding plan should be put in place when a stock has reached a 'soft limit' (which indicates depletion), and the stock should be considered for closure when a 'hard limit' has been reached with the stock considered to be collapsed.⁴³

TAC's are regularly reduced when evidence indicates that stocks are depleted. Full harvest closures have also been implemented from time to time (see below *Spotlight: Managing a threatened species under the QMS*). These measures can be effective in enabling a rebuild of the stock, so long as the harvest reduction is sufficient, and the stock's productive capacity has not been significantly impaired. In practice, however, due to limitations in fisheries data and management resources, the status of many stocks is unknown and they can therefore fall below their MSY target without a timely management response.⁴⁴ This raises the question as to whether harvest of such stocks should be allowed at all, if there is insufficient information and resources available to adequately manage harvest impacts.

³⁸ Peart, 2018, 21-22

³⁹ Fisheries Act 1996, s13

⁴⁰ Peart, 2018, chapter 3

⁴¹ See Larkin P A, 1977, 1-11 and more generally Peart, 2018, 32-34

⁴² Fisheries Act 1996, s 13(2)(b)

⁴³ Ministry for Primary Industries, 2008, *Harvest strategy standard for New Zealand fisheries*, Ministry for Primary Industries, Wellington

⁴⁴ See Peart R, 2018, 40 which reported that of the 14 commercially harvested finfish species in the Hauraki Gulf, only one was known to be above its management target, and for 10 stocks the current status was unknown

The Harvest Strategy Standard makes no reference to the threat status of the species being harvested and, as indicated above, the threat status of almost all marine species managed under the QMS is not known.

Spotlight: Managing a threatened species under the QMS

There is one known threatened species which is managed under the QMS, the longfin eel (tuna kuwharuwharu, *Anguilla dieffenbachii*), which is categorised as 'At Risk – Declining'. Longfin eels are endemic to Aotearoa New Zealand and are found in lakes, rivers and estuaries. They are long-lived and can reach over 100 years of age. Although spending most of their life in freshwater, the eels migrate to the South Pacific (east of Tonga) to spawn and then die. The elvers are carried on oceanic currents back to the New Zealand coast where they migrate up rivers and grow into maturity.⁴⁵ Along with harvesting, the status of the species has been impacted by river channelisation, wetland drainage and the construction of dams and weirs impeding passage up rivers.

In 2000, longfins in the South Island were brought into the QMS along with shortfins (which are not endemic and are not threatened) as part of the same stocks. This meant that the same management measures were applied equally to the threatened and non-threatened eel species. It was only in 2017 that the two species were separated for management purposes. When North Island eels were brought into the QMS in 2004, the species were placed into separate stocks at the outset.⁴⁶

There are currently 12 longfin eel stocks managed under the QMS. Across all stocks, the total allowable commercial catch is 137,000 kilos and an allowance is made for 70,680 kilos of customary catch and 39,270 of recreational catch. There is no formal stock assessment available for longfin eel stocks, no estimate of current or virgin biomass, and no management target. Available data is brought together, including catch per unit effort, in order to provide some indication of the state of the stocks and this indicates that many appear stable. However catch per unit effort, which is the main indicator used, is recognised as having many potential issues.⁴⁷ The stock assessment in the Fisheries Assessment Plenary makes no reference to the threat status of the eel species.

The collapse of a fish stock can be a very different thing to a species being threatened with extinction. A stock is considered collapsed when it can no longer sustain itself under harvest pressure. However, sufficient individuals may remain at that point for the stock to rebuild once a harvest closure is put in place. The operational guidelines for the Harvest Strategy Standard advise that "limits (both 'soft' and 'hard') should be set well above extinction thresholds – rather, they should act as upper bounds on the zone where depensation may occur...".⁴⁸

As single fish species are typically divided into a number of different QMAs, even if the stock in one QMA has collapsed, other stocks of that species may still be healthy. In some cases, stock collapse can be permanent, particularly when habitat critical to recruitment has been significantly degraded by fishing and/or other activities (as occurred with the Challenger scallop fishery),⁴⁹ and may be indicative of localised extinction of the species.

Spotlight: Collapse of the north-eastern scallop fisheries

⁴⁵ Fisheries New Zealand, 2022a, Vol 1, 379

⁴⁶ Fisheries New Zealand, 2022a, Vol 1, 371

⁴⁷ Fisheries New Zealand, 2022a, Vol 1, 371

⁴⁸ Ministry of Fisheries, 2011, 9; this describes 'depensation' as "a situation where depleted populations may start to decline at an accelerated rate due to factors such as an inability to find mates, impaired breeding success, competition and predation"

⁴⁹ See Peart R, 2018, 74-75

Scallops are a fast-growing shellfish species that form discrete beds in coastal waters. In the right conditions they can grow very quickly and reach harvestable size in 18 months. The biological attributes of scallops mean their abundance is highly variable between years. They are sensitive to fluctuations in environmental conditions and vulnerable to overfishing.

In response to anecdotal reports of widespread declines in scallop abundance in north-eastern waters, a scientific evaluation of core scallop beds was undertaken in 2021. It was the first evaluation in 14 years for Northland scallops and in 9 years for Coromandel scallops.⁵⁰

The assessment found that the biomass of commercially fished scallop beds had declined by more than 80 percent in the Coromandel fishery over a 10-year period,⁵¹ and by more than 70 percent in the Northland fishery over a 14-year period.⁵²

Steeper declines were observed in certain areas. For example, the biomass of core scallop beds in the Hauraki Gulf declined from 1,005 tonnes in 2012 to 52 tonnes in 2021 (just 5 percent of the 2012 biomass).⁵³

Long-term declines were reported at all commercially targeted scallop beds except for Pakiri, where biomass was relatively low (7 tonnes). Similar declines were reported across recreationally targeted scallop beds in the Bay of Islands and the Hauraki Gulf. Historically, low levels of recruitment had been recorded across the fisheries, indicating a reduced capacity of scallop populations to rebuild efficiently.

The 2021 assessment demonstrated that the QMS management approach had not been effective - scallop populations had not been assessed over an extended period and numerous scallop beds were in a state of collapse.

As a result of the assessment findings, in March 2022, the Minister decided to impose a full closure of the Northland fishery to commercial and recreational harvest activities but decided to implement only a partial closure of the Coromandel fishery with provision made for ongoing commercial harvest at select scallop beds near Little Barrier and in the Colville Channel.⁵⁴ It is not clear whether this will be sufficient to enable the beds to recover or whether management action came too late to avoid irreversible harm.

Only 98 species (or species groups)⁵⁵ are managed within the QMS. This is a tiny fraction of the 17,000 known marine species. The QMS does, however, cover most commercially harvested species. For species not in the QMS, there are no restrictions on harvest unless the Minister of Fisheries decides to intervene, and there are no statutory triggers for such intervention. The Minister may deploy 'sustainability measures' under the Act which include a broad range of potential interventions such as restricting the quantity harvested; the size, sex or biological state of the species taken; the area within which the species can be harvested; the fishing methods which can be used; and the seasons during which harvest can take place. There is also room to impose other methods not specifically described in the Act, but aimed at managing the effects of fishing, such as full closures.⁵⁶

⁵⁰ Fisheries New Zealand, 2021,10

⁵¹ Fisheries New Zealand, 2021, 10

⁵² Fisheries New Zealand, 2021, 10

⁵³ Fisheries New Zealand, 2021, 10

⁵⁴ Parker, 29 March, 2022, 'Changes to fisheries sustainability measures for the 2022 April Round' <https://www.mpi.govt.nz/consultations/review-of-sustainability-measures-2022-april-round/>

⁵⁵ <https://www.mpi.govt.nz/legal/legislation-standards-and-reviews/fisheries-legislation/quota-management-system/#species>

⁵⁶ Fisheries Act 1996, s11

The Act requires the Minister to provide for the input and participation of tangata whenua who have a non-commercial interest in the stock concerned, or an interest in the effects of fishing on the aquatic environment, and to have particular regard to kaitiakitanga when setting sustainability measures.⁵⁷

Although such methods are used from time to time (and can be effective in reducing fishing pressure on stocks), for the bulk of marine species, no direct management measures have been deployed. Much of this is to do with a lack of information about non-commercially harvested species (with the bulk of fisheries information coming from reporting by commercial fishing vessels), as well as a lack of capacity within the fisheries management system to actively manage more than a few species at a time.⁵⁸

Spotlight: Species gaps in the management of recreational harvest

The lacuna in management of recreational harvest was recently highlighted in June 2021, when several recreational fishing vessels were observed landing hundreds of pink maomao, along with other species (e.g., banded perch, golden snapper, redfish, pigfish) at Tairua, on the east coast of the Coromandel Peninsula.⁵⁹ There was little scientific information available on the biological characteristics of these species, and no stock assessments had been undertaken on them, as they were not considered to be of commercial importance.

The take was legal, as under the Fisheries (Amateur Fishing) Regulations 2013 the daily bag limit was restricted to 43 specified species (which did not include the reef species landed at Tairua) and unlimited quantities of the hundreds of other finfish species could be lawfully harvested by recreational fishers. In April 2022, the Minister determined that all finfish species would be included in the combined daily bag limit for finfish under the Regulations.⁶⁰

Provision has been made for non-commercial customary fishing under the Fisheries Act and associated regulations, through the ability to create and manage spatially delineated mātaimai reserves (where commercial fishing is not normally permitted) and taiāpure-local fisheries; to initiate temporary fisheries closures; and to issue customary fishing authorisations.⁶¹ These provisions have been widely applied around the coast with 48 mātaimai, 10 taiāpure and 11 temporary closures currently in place.⁶²

A management committee appointed by the Minister makes recommendations on fishing regulations within taiāpure and, for mātaimai, the Minister appoints a Tangata Kaitiaki/Tiaki who can directly make bylaws restricting fishing activity. Temporary closures have often been used to protect depleted shellfish beds and some apply to all species in a defined area. In this way, as well as recognising Māori customary fishing rights, they have been used to plug gaps in the responsiveness of the broader fisheries management system. However, there has been some criticism of these customary fishing tools by Māori, on the basis that they do not adequately enable rangatiratanga and kaitiakitanga.⁶³

Spotlight: Use of rāhui to protect shellfish

⁵⁷ Fisheries Act 1996, s12(1)

⁵⁸ See Peart R, 2018, 54 which reported that for the main commercially harvested finfish species in the Hauraki Gulf the years since the last TACC adjustment ranged from 13 to 31 years

⁵⁹ <https://www.nzherald.co.nz/bay-of-plenty-times/news/fishermen-filmed-with-thousands-of-pink-maomao-in-bins-in-tairua/>

⁶⁰ Parker, 2022, 'New rules to include all finfish in combined daily bag limit for recreational fishers', press release, 20 April 2022, <https://www.beehive.govt.nz/release/new-rules-include-all-fish-in-combined-daily-bag-limit-recreational-fishers>

⁶¹ See Peart R, 2018, 29

⁶² <https://www.mpi.govt.nz/fishing-aquaculture/maori-customary-fishing/customary-fisheries-management-areas-rules-and-maps/>

⁶³ See for example, Van Halderen, 2019

In recent years, due to concerns about the status of the north-eastern scallop populations (see above *Spotlight: Collapse of the north-eastern scallop fisheries*), tangata whenua have placed rāhui over several coastal areas to support the recovery of nearshore beds. In 2017, Te Whanau Moana me Te Rorohuri placed a rāhui covering 384 ha at Maitai Bay, Karikari Peninsula. In 2021, Ngāti Pāoa placed a rāhui on the waters surrounding Waiheke Island, and Ngāti Hei placed a rāhui on waters extending along the east Coromandel coastline, including Opito Bay. Ngāti Pāoa and Ngāti Hei requested temporary closures to the harvest of scallops (and other taonga species), which were approved by the Minister.

On 4 February 2022, the Ngāti Manuhiri Settlement Trust signalled its intent to place a rāhui on the Hauraki Gulf on Waitangi Day (6 February 2022) to support the recovery of shellfish beds. In some areas, on the request of tangata whenua, the Minister for Fisheries has imposed legally enforceable closures to support the rāhui. In a future system, rāhui could become an automatic trigger for a broader review of the status of a species or group of species.

The RMA applies to the management of most activities in the coastal marine area (which extends 12 nautical miles seawards)⁶⁴ as well as freshwater, land and air. Decision-making under the RMA is largely devolved to councils, with regional councils preparing regional coastal plans which set the rule framework for management of the coastal marine area. In contrast to the management of activities on land, there is a presumption that most activities cannot be undertaken in the coastal marine area unless expressly authorised.⁶⁵ Decisions are made within the framework of Part 2 of the RMA and national policy statements, with the most pertinent to the marine environment being the New Zealand Coastal Policy Statement 2010 (NZCPS). The NZCPS provides more specificity on how the purpose and principles of the RMA are to be applied to the coastal environment which includes the territorial sea, islands and land significantly impacted by coastal processes.⁶⁶

The focus of the RMA is on protecting habitats rather than species (its habitat protection role in the marine environment is discussed under Issue 2 below).⁶⁷ However, the NZCPS does include a species protection element, with Policy 11(a)(i) and (ii) requiring adverse effects to be avoided on indigenous taxa that are listed as Threatened or At Risk in the New Zealand Threat Classification System (NZTCS), as well as those listed by the International Union for Conservation of Nature (IUCN) as threatened. Although the prime focus of the rest of Policy 11 is on habitat protection, a species-protection approach is required for threatened species in the marine (and coastal) area.

The NZCPS is to be implemented through provisions in regional policy statements and regional and district plans which are required to give effect to it, and this can be achieved through including policies and rules which set out how impacts on threatened species are to be avoided. This is particularly important when there are cumulative impacts which are hard to manage through case-by-case consenting. Regional coastal plans, which apply to the coastal marine area, are prepared by regional councils but unlike district and regional plans they must be finally approved by the Minister of Conservation.

The inclusion of effective provisions in plans is dependent on sufficient information to identify the presence of threatened marine species and the potential (cumulative) impacts of activities on them. Often this information is lacking. As observed by the Parliamentary Commissioner for the Environment, “Marine biodiversity is poorly understood, and we have only limited understanding of

⁶⁴ But excluding controlling the taking, allocation or enhancement of fisheries resources for the purposes of managing fishing or fisheries resources controlled under the Fisheries Act, see Resource Management Act 1991, s31(2)

⁶⁵ Resource Management Act 1991, s12

⁶⁶ New Zealand Coastal Policy Statement 2010, policy 1

⁶⁷ See Resource Management Act 1991, s6(c)

the impact our various activities are having on our marine ecosystems”.⁶⁸ In addition, some regional coastal plans have simply not been updated since the NZCPS was promulgated in 2010 (e.g., the Canterbury regional coastal plan). If plans do not give effect to the NZCPS, its provisions are not decisive on individual applications. When considering an application for a resource consent, decision-makers are only required to “have regard to” the NZCPS, which means it can be outweighed by other matters.⁶⁹

There is also the issue of what activities can be controlled under the RMA (and NZCPS), and in particular whether regional councils are able to manage the impact of fishing activity on species (and habitats). This turns on the interpretation of section 30(2) of the RMA which provides that regional councils and the Minister of Conservation may not perform certain functions “to control the taking, allocation or enhancement of fisheries resources for the purpose of managing fishing or fisheries resources controlled under the Fisheries Act 1996”. The interpretation of this clause was recently considered by the Court of Appeal which confirmed that regional councils have jurisdiction to control the taking of fisheries resources, provided it is not for a Fisheries Act purpose but for the purpose of maintaining indigenous biodiversity or other resource management values under the RMA.⁷⁰ An issue with councils taking on a broader marine protection role is the lack of information and resource to undertake the initial planning, subsequent consenting, and compliance, monitoring and enforcement functions.

It is important to note that the RMA is being reformed and the Government has indicated an intention to introduce a new Natural and Built Environment Act into Parliament later this year. Current indications are that existing RMA national policy statements, including the NZCPS, will be brought together into the first National Planning Framework under the new legislation, so Policy 11 should endure.

Spotlight: Addressing vessel impacts on threatened marine mammals

Above we highlighted how the MMPA was utilised to provide protection to bottlenose dolphins in the Bay of Islands, to address the adverse impacts of tourism and recreational vessels, through the establishment of a marine mammal sanctuary. Similar protection could have been given to the dolphins under the RMA as regional councils have as one of their functions “the control of activities in relation to the surface of water”.⁷¹ Given the direction under Policy 11 of the NZCPS to avoid adverse effects on threatened species, it could be argued that the Northland Regional Council would have been obligated to take action if the threat had not been addressed through other means.

The range of tools available to protect threatened marine species from vessel impacts was canvassed in relation to the Bryde’s whales, which are listed as Nationally Critical in the NZTCS.⁷² The Hauraki Gulf is favoured habitat for the whales, with up to 50 Bryde’s whales regularly using the Gulf at any one time out of a larger national population of around 150. The Gulf is also the location of the country’s busiest port (Auckland). The Bryde’s whales and commercial vessels use overlapping water space which historically resulted in 17 known whale deaths through ship strike, an average of around two a year.

In 2010, when the issue was publicised by scientists studying the whales, many ships were travelling through the Hauraki Gulf at well over 14 knots. International research indicated that there was a high chance of a whale dying if hit by vessels travelling at this speed, but at less than 10 knots, an

⁶⁸ Parliamentary Commissioner for the Environment, 2019, 26

⁶⁹ Resource Management Act 1991, s104(1)(b)(iv)

⁷⁰ *Attorney-General v Trustees of the Motiti Rohe Moana Trust* [2019] NZCA 532

⁷¹ Resource Management Act 1991, s30(1)(d)(vii)

⁷² See Severinsen et al, 2021, 65

impacted whale had a good chance of surviving. For this reason, researchers concluded that in order to reduce the risk to the whales to acceptable levels, whilst maintaining safe ship navigation, vessels needed to slow down to speeds of 10 knots or less.

On investigation, four potential legal mechanisms were identified which could be used to reduce vessel speed to protect the whales. The first was for the Minister of Conservation to create a marine mammal sanctuary over the Hauraki Gulf under the MMPA with regulations setting a maximum speed within the sanctuary. The second was for Auckland Council to change the regional coastal plan component of the Unitary Plan under the RMA to incorporate a new rule that made operating a ship at speeds greater than 10 knots within the Hauraki Gulf a prohibited activity. The third was for the Minister of Transport to recommend the creation of a Maritime Rule by Order-in-Council under the Maritime Transport Act 1994 to restrict ship speed in the Hauraki Gulf. The fourth potential mechanism was to present a proposal to the International Maritime Organization for a ship routing measure.

In practice, none of the agencies with regulatory tools at their disposal took action to protect the threatened whales. Fortunately, a consortium of Auckland University scientists, the Hauraki Gulf Forum and the Environmental Defence Society Incorporated (EDS) initiated a collaborative process which resulted in a voluntary agreement to reduce ship speed. This has been effective and there have been no known further Bryde's whale ship strike deaths since September 2014.

A similar, but simplified, regime applies in the exclusive economic zone under the EEZ Act. The Act excludes the management of fisheries and maritime transport but addresses most other offshore marine activities, including seabed mining. Decision-making is centralised, with the Minister of Conservation in charge of policy and rule-making and consenting undertaken either by a Ministerially-appointed Board of Inquiry or the Environmental Protection Authority, a quasi-independent Crown agency.

The EEZ Act contains several references to marine species. Section 20(2)(g) lists activities which need consent which include "the destruction, damage, or disturbance of the seabed or subsoil in a manner that is likely to have an adverse effect on marine species or their habitat". When considering an application for a marine consent, the decision-maker must take into account "the importance of protecting the biological diversity and integrity of marine species" amongst other things.⁷³

The Minister of Conservation can declare a marine species to be a threatened or at-risk species but only if it is so classified under the NZTCS.⁷⁴ Such a declaration then feeds into other provisions of the EEZ Act including impact assessments undertaken by applicants which must "identify the effects of the activity on rare and vulnerable ecosystems and habitats of threatened species".⁷⁵ It also feeds into regulation making powers, with the Minister required to take into account "the importance of protecting rare and vulnerable ecosystems and the habitats of threatened species" when recommending regulations.⁷⁶

In 2013, the Minister of Conservation effectively declared all marine species which were listed as Threatened or At Risk under the NZTCS to be threatened or at-risk under the EEZ Act.⁷⁷ However, the Gazette notice has not been updated since 2013 so does not reflect any change in the threat status of species since that time. This indicates that the EEZ Act has adopted a more cumbersome approach

⁷³ Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012, s59(2)(d)

⁷⁴ Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012, s19

⁷⁵ Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012, s39(1)(f)

⁷⁶ Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012, s33(3)(e)

⁷⁷ <https://gazette.govt.nz/notice/id/2013-go4245>

than that taken in Policy 11 of the NZCPS, where the NZTCS is referred to directly and therefore any update in threat status of species is directly incorporated.

The interface between management of activities under the EEZ Act and marine species protected under the Wildlife Act or MMPA has been highlighted in two cases. The first involved an application by Chatham Rock Phosphate to mine phosphate nodules off the Chatham Rise.⁷⁸ The second was an application by Trans-Tasman Resources to mine iron-sands off the Taranaki coast.⁷⁹ Neither obtained consent, and one of the reasons for this was the potential impact of the proposals on protected species (see below *Spotlights: Seabed mining and protection of coral species and Sand mining and protection of seabirds and marine mammals*). This indicates that the Act has been effective in protecting vulnerable marine species in the case of impacts of large seabed mining proposals.

Spotlight: Seabed mining and protection of coral species

The Chatham Rock Phosphate application was declined by the decision-making committee and one of the prime reasons for this was the irreversible impacts of excavating phosphate nodules from the seabed on stony coral communities; with the stony coral being a protected species which was potentially unique to the crest of the Chatham Rise. It was accepted that coral communities would not re-establish once the mining ceased, due to the removal of the hard substrate that they relied on. The decision thereby protected the corals from the impacts of mining.⁸⁰

However, the decision did not mean that the corals were protected because bottom trawling still takes place on the Chatham Rise. At the time of the hearing, the applicant argued that the impacts of mining on the crest of the Chatham Rise, which would affect 450 square kilometres over 15 years, would be very small when compared to the area that had been and continued to be impacted by commercial fishing, with approximately 92,000 square kilometres of the Rise being bottom-trawled between 1989 and 2011.⁸¹ The impacts of trawling on protected species is permitted through the bycatch 'carve out' in the Wildlife Act as discussed in Issue 3 below.

Spotlight: Sand mining and protection of seabirds and marine mammals

The Trans-Tasman Resource application reached the Supreme Court with a decision released in September 2021.⁸² One of the matters considered by the Court was whether the decision-making committee, in granting the sand-mining application subject to conditions, made an error of law in terms of how it applied the requirement under the EEZ Act to favour caution and environmental protection in respect of the impacts of the proposal on seabirds and marine mammals. The Court noted that there was "incomplete evidence about habitats and population numbers in the area" as well as "uncertainties about effects, particularly of noise, on marine mammals".⁸³

Although the decision-making committee had included various conditions seeking to manage effects on these species, the Supreme Court found that these were inadequate because "given the uncertainty of information, it was not possible to be confident that the conditions would remedy, mitigate or avoid effects".⁸⁴ In particular, it noted that, given the challenging, dynamic and complex nature of the physical environment off the South Taranaki Bight, the margins might be extremely

⁷⁸ Environmental Protection Authority, 2015, <https://cer.org.za/wp-content/uploads/2016/08/EPA-New-Zealand-Chatham-Rock-Phosphate-Decision.pdf>

⁷⁹ Environmental Protection Authority, 2017, https://www.epa.govt.nz/assets/FileAPI/proposal/EEZ000011/Boards-Decision/TTRL_Marine_Consent_Decision_EEZ000011_FINAL_version.pdf

⁸⁰ See Brake L and Peart R, 2015, 267-270

⁸¹ See Brake L and Peart R, 2015, 267-270

⁸² *Trans-Tasman Resources Limited v Taranaki-Whanganui Conservation Board* [2021] NZSC 127

⁸³ *Trans-Tasman Resources Limited v Taranaki-Whanganui Conservation Board* [2021] NZSC 127 at [121]

⁸⁴ *Trans-Tasman Resources Limited v Taranaki-Whanganui Conservation Board* [2021] NZSC 127 at [129]

fine. “To take just one example, for those dolphin species which are critically endangered, a very small change in population could have a disastrous effect”.⁸⁵

The provisions in the Fisheries Act, RMA and EEZ Act discussed above apply equally to marine plants as they do to marine animals. Bladder kelp is the only plant species in the QMS, being included in 2010 and only in two QMAs off the east coast of the South Island and around the Chatham Islands. This means that the protection of almost all marine plants is left to the RMA and EEZ Act. Policy 11 of the NZCPS does refer to plants directly, and requires adverse effects of activities to be avoided on “vegetation types that are threatened in the coastal environment or are naturally rare”. This is in addition to any marine plant taxa that are listed as Threatened or At Risk which, as described above, includes 117 species of macroalgae (seaweed). In addition, significant adverse effects are to be avoided on “indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification”, including rocky reef systems (which include kelp communities), seagrass and saltmarsh.

Issue 2: The Wildlife Act fails to protect habitat important to the survival of marine species and this is not compensated by other marine related laws

As well as protecting marine species directly, it is important to protect their habitats in order to enable individuals to survive, grow and reproduce. A study by MacDiarmid et al (2012) identified 62 distinct marine habitats within the territorial sea and EEZ.⁸⁶ At the coastal interface, estuaries are highly productive ecosystems that provide critical nursery habitat for marine fish as well as feeding and breeding grounds for seabirds. Important intertidal soft sediment habitats include seagrass meadows, tube worm beds, shellfish beds and unvegetated fine sand. In shallow coastal waters, rocky reef habitat and associated kelp forests provide important breeding and nursery areas for juvenile fish, refuge from predators, and substrate for settlement by shellfish larvae. ‘Fixed’ benthic organisms that are habitat-forming, such as kelp forests, coral reefs, sponge gardens, mangrove forests, sea grass meadows and shellfish beds, are especially important because they fulfil important functional roles in the wider marine environment (i.e., primary production, water filtration and wave dissipation).⁸⁷

Seamounts are highly productive due to their physical hard structure providing substrate for species to grow on, disruption of ocean currents, and nutrient rich upwellings which support high levels of plankton productivity.⁸⁸ They also provide critical habitats, such as sites of spawning aggregations for some deep-sea fish species (e.g., orange roughy).⁸⁹ In deep water where sunlight is absent, the nutrients and heat delivered through vents and seeps in the seafloor support distinct assemblages of chemosynthetic species that use chemicals, rather than sunlight, as an energy source.⁹⁰

These habitats can be impacted by a multitude of activities, but the most significant after climate change impacts are thought to be trawling, sediment and dredging.⁹¹ As fishing equipment is dragged along the seabed, it destroys fragile marine habitats (e.g., sponge gardens, bryozoan beds and coral thickets) that create three-dimensional structural complexity in an otherwise relatively featureless environment.⁹² Studies indicate that the recovery of benthic marine species and habitat

⁸⁵ *Trans-Tasman Resources Limited v Taranaki-Whanganui Conservation Board* [2021] NZSC 127 at [129]

⁸⁶ MacDiarmid A et al, 2012

⁸⁷ Anderson et al, 2019

⁸⁸ Goddard, 2021, https://www.greenpeace.org/static/planet4-aotearoa-stateless/2021/11/c0068dfe-report-on-the-biodiversity-associated-with-seamounts-and-similar-features_goddard_oct-2021-3.pdf

⁸⁹ Goddard, 2021

⁹⁰ Rowden, 2006, 4

⁹¹ MacDiarmid et al, 2012, 40

⁹² Refer Fisheries New Zealand, 2022b, Chapter 11

from bottom-contact fishing impacts can take many years.⁹³ Hard biogenic structures (e.g., coral thickets and reefs, bryozoan mounds) are predicted to recover most slowly, and some studies have shown that sensitive habitat is permanently degraded by bottom contact fishing methods.⁹⁴

Although marine habitat protection is envisaged under the Wildlife Act,⁹⁵ only a few areas have been protected - a lagoon and a rivermouth, and the Westhaven wildlife management reserve which covers 2,112 ha of Whanganui Inlet. Instead, the provision of marine protected habitat, or lack thereof, is done under other Acts, all of which have different purposes. Some of these protections are only partial.

Under the Marine Reserves Act, marine reserves can be established within the territorial sea but not within the EEZ (which remains without 'no-take' marine reserve legislation). The purpose of marine reserves under the Act is for the scientific study of marine life. This reflects the origins of the legislation which was initiated by a group of scientists at the Leigh marine laboratory.

Marine reserves established under the Act afford a high level of protection. Section 3(2) sets out principles that are to be applied to the management of marine reserves, which include:⁹⁶

- Marine reserves “shall be preserved as far as possible in their natural state”;
- Marine life within reserves is to be “protected and preserved” as far as possible; and
- The value of marine reserves as the natural habitat of marine life is to be “maintained” as far as possible.

The principles also provide for public access, but only to the extent it does not undermine the preservation of marine life or the general welfare of the marine reserve.⁹⁷ The taking or disturbance of marine materials (living or dead) is generally inconsistent with the purposes of marine reserves, and section 3(3) of the Act creates a *prima facie* prohibition on fishing within reserves. In practice, marine reserves have been deployed to protect important coastal marine habitats, including rocky reef systems. They can provide protection for the habitat of threatened marine species, but this is not their prime purpose. Their creation has also been inconsistent and *ad hoc*⁹⁸ and they have been sparsely used, with 9.8 percent of the territorial sea protected in no-take reserves, but 96.5 percent of that coverage located around offshore islands in the northern and southern extremes of the territorial sea.⁹⁹

The Marine Reserves Act is widely acknowledged as being dated and not fit for purpose and the government has indicated an intention to reform the legislation. There is no current direct linkage between the Marine Reserves Act and protected species legislation, but such linkage could be created through the reform process.

Spotlight: Marine protection in the Hauraki Gulf

Although several mechanisms are available to protect habitat of importance to marine species, they are sparsely used. Proposals to establish marine reserves typically generate vigorous opposition from fishers. The difficulty in achieving marine protection is highlighted by the experience in the

⁹³ Refer Fisheries New Zealand, 2022b, Chapter 11

⁹⁴ Refer Fisheries New Zealand, 2022b, Chapter 11

⁹⁵ Wildlife Act 1953, ss9(1)(aa), 14(1)(aa), 14A(1)(b)

⁹⁶ Marine Reserves Act 1971, s3(2)

⁹⁷ Marine Reserves Act 1971, s3(2)(d)

⁹⁸ See Peart R, 2005, Table 12.1

⁹⁹ Greg Severinsen et al, 2022, 227

Hauraki Gulf. The Gulf supports an important commercial fishery and more than 220,000 recreational fishers each year.¹⁰⁰

The ongoing decline of the environmental health of the Gulf has been regularly reported on by the Hauraki Gulf Forum¹⁰¹ and is summarised in the Government's Revitalising our Gulf report which describes "A taonga in trouble" where "Waters once abundant with tāmure (snapper) and terakihi have been overfished, and reefs that used to bristle with kōura (rock lobster) and kūtai/kuku (mussels) have been depleted. In turn, kina, preyed on by rock lobster and snapper, have soared in numbers stripping kelp forests to bare rock and depriving other kelp-dwelling species of their habitat".¹⁰² Despite this evident degradation, it has been exceedingly difficult get marine protection measures put in place.

The first marine reserve in the country was created in the Hauraki Gulf at Leigh in 1975 and covered just 5.2 square kilometres. It took 21 years before a second small marine reserve was established at Whanganui A Hei-Cathedral Cove in 1992. Two others followed three years later at Long Bay-Okura and Motu Manawa-Pollen Island. There was then a lacuna for another decade before the Te Matuku Bay marine reserve was established in 2005. Then progress stalled. Over the past 17 years there has been no increase in marine reserves in the Hauraki Gulf apart from the conversion of the Tāwharanui marine park (which was already a no-take area) into a marine reserve in 2011. In total, these hard fought¹⁰³ marine reserves protect just 0.3 percent of the Hauraki Gulf Marine Park.

The paucity of marine protection was well recognised in the Sea Change Tai Timau Tai Pari collaborative process which commenced in 2013. The Sea Change Plan which was finalised at the end of 2016 proposed the creation of a network of no-take marine reserves and benthic protection areas within the Hauraki Gulf Marine Park. But it took until mid-2021 (over four years later) for the government to provide its response to the Sea Change Plan.

This proposed establishing 11 new high protection areas (which will exclude commercial and recreational fishing but make provision for customary practices), extending two existing marine reserves, and establishing five seafloor protection areas.¹⁰⁴ It has taken yet another year for further revised proposals to be put out for public consultation, and almost six years after the Sea Change Plan was released, final decisions have yet to be made. The government has indicated an intention to progress the marine protected areas through a bespoke Hauraki Gulf Marine Protection Bill, rather than using the Marine Reserves Act.¹⁰⁵

Spatial protections can be created under the Fisheries Act to protect habitat from the impacts of fishing activity (but not other activities). This is primarily through section 9(c) of the Fisheries Act which requires that all persons undertaking functions or exercising powers under the Act must take into account the principle that habitat of particular significance to fisheries management should be protected. "Take into account" is a weak condition and does not require that the habitat be protected. Spatial protections also relate to "avoiding, remedying and mitigating any adverse effects of fishing on the aquatic environment" as set out in the purpose of the Act.

The term "habitat of particular significance to fisheries management" is not defined in the Act and has yet to be considered by the Courts. Fisheries New Zealand has recently released draft guidelines

¹⁰⁰ Hauraki Gulf Forum et al, 2017, 59

¹⁰¹ For the latest report see Hauraki Gulf Forum, 2020, <https://www.aucklandcouncil.govt.nz/about-auckland-council/how-auckland-council-works/harbour-forums/docsstateofgulf/state-gulf-full-report.pdf>

¹⁰² Department of Conservation et al, 2021, 112

¹⁰³ See Peart R, 2016, chapter 16 for a description of the difficulties in getting this small amount of marine protection in place

¹⁰⁴ Department of Conservation et al, 2021, 56

¹⁰⁵ See Department of Conservation, 2022a, <https://www.doc.govt.nz/get-involved/have-your-say/all-consultations/2022-consultations/help-revitalise-hauraki-gulf/>

for the identification of such habitat and has proposed a working definition that such habitat consists of “an area or areas of particular significance in supporting the productivity of fisheries resources”.¹⁰⁶ This would include biogenic habitat, horse mussel beds and sea grass beds which are known to be important juvenile nursery areas. The draft guidelines propose that a register of potential habitats could be established and uploaded onto the Fisheries NZ website and that a list could be appended to fisheries plans.

Once the habitats are identified, Fisheries NZ proposes to consider the adverse risks of fishing on them based on their sensitivity, exposure to adverse effects, and resilience to fisheries impacts. This would inform advice on any sustainability measures to protect them the Minister might consider. The advice would depend on the likelihood and consequences of adverse effects in the short and long term, the scale at which the habitat functions, the scale at which the adverse effect on it occurs, and how species use the habitat. However, as noted above, there is no absolute requirement that such habitats be protected, they are matters to be taken into account by the Minister and can be outweighed by other considerations.¹⁰⁷

Spatial exclusions of fishing activity have been put in place under the Fisheries Act from time to time. For example, in 2000, 18 seamount areas covering 81,000 square kilometres of the EEZ were protected from bottom trawling and dredging and, in 2007, and benthic protection areas covering 1.1 million square kilometres (30 percent) of the EEZ were closed to dredging and bottom trawling.¹⁰⁸ The level of biodiversity protection provided by the latter is an issue of scientific debate, and their selection criteria have been criticised. They were initially proposed by the fishing industry and a large proportion of them (82 percent) protect areas which are too deep to trawl in any event.¹⁰⁹ The regulations also do not prohibit other activities from occurring in the protected zones (e.g., mineral extraction operations) and this was highlighted in the Chatham Rock Phosphate application where mining was proposed to take place within one of the benthic protection areas (see above *Spotlight: Seabed mining and protection of coral species*).

Recently there has been interest in applying an ecosystems approach to fisheries management. This can be contemplated under the Fisheries Act through the environmental principles. An ecosystems approach is being piloted in the first regional fisheries plan being developed by Fisheries NZ which applies to the Hauraki Gulf Marine Park. The draft plan describes ecosystems-based fisheries management as being “an integrated approach to managing the competing values and uses of fisheries resources while maintaining the ecosystems that support them”. It includes “taking into account the interactions among species, the physical environment and human activities”.¹¹⁰ Such an approach, which looks at the ecosystem as a whole, has the potential to strengthen protection of marine species.

Under the RMA, restrictive zoning in regional coastal plans can protect marine areas and species within them. Given the requirement to avoid adverse effects on threatened species in the NZCPS, it is arguable that regional councils have an obligation to protect habitat that is important to such species from adverse effects. The mapping of Significant Natural Areas (SNAs) in the Auckland Unitary Plan (see below *Spotlight: Mapping of SNAs in the Auckland region*) illustrates how some councils have approached this task. It illustrates how knowledge gaps undermine the potential for significant marine areas to be identified, mapped and protected through regional planning controls under the RMA to give effect to Policy 11 of the NZCPS.

¹⁰⁶ Fisheries New Zealand, 2022c, 7, <https://www.mpi.govt.nz/dmsdocument/51901-Draft-guidelines-for-identifying-a-habitat-of-particular-significance-for-fisheries-management>

¹⁰⁷ Fisheries New Zealand, 2022c

¹⁰⁸ Fisheries (Benthic Protection Areas) Regulations 2007

¹⁰⁹ See Leathwick et al, 2006, 29 and Reiser et al, 2013, 75

¹¹⁰ Department of Conservation et al, 2021, 110

Spotlight: Mapping of SNAs in the Auckland region

The Auckland Unitary Plan includes criteria to guide determination of significant ecological areas located within the coastal and marine environment. Based on the criteria, three categories of 'significant ecological areas - marine' have been mapped and are included in Schedule 4 to the plan. The categories are:

- Areas that are vulnerable to any adverse effects of inappropriate subdivision, use and development;
- Areas of regional, national or international significance that are "more robust"; and
- Significant wading bird areas.

The criteria for determining whether an area should be protected as a marine significant ecological area requires an assessment of ecological values relating to five factors: recognised international or national significance; threat status and rarity; uniqueness or distinctiveness; diversity; stepping stones, buffers and migration pathways; and representativeness.

Important ecological values listed under the "threat status and rarity" criteria are informed by the national threat status of species that have been assessed and assigned to a category under the NZTCS and/or the IUCN Red List. In addition, specific criteria are informed by the protection status of a marine species under the Wildlife Act. For example, if a habitat that occurs naturally in the Auckland region is required to provide for the life cycle of protected marine wildlife, then it will be assessed as having high value.

Although the criteria recognise the need to protect critical habitat for marine species that have been assessed and assigned a threat status under the NZTCS or IUCN Red List and/or protected under the Wildlife Act, as discussed above, many marine species have not been assessed or protected. This demonstrates the importance of thorough and regular threat assessments for marine species.

Spatial protections of habitat are also possible under the EEZ Act, but they require regulations to be put in place. To date there has not been the political appetite to do this and consequently this possibility has never been attempted. However, the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Permitted Activities) Regulations 2013 do recognise the importance of sensitive habitats. The Regulations require permitted activities (marine research, seismic surveys and submarine cables) to undertake an initial environmental assessment which must identify and describe any sensitive environments that are likely to exist in areas where the activity will be undertaken. A sensitive environment contingency plan must then be produced to assess ways of reducing impacts on such environments. Sensitive environments are identified in Schedule 6 of the Regulations and include stony coral thickets and reefs, bryozoan thickets, sponge gardens, rhodolith beds, and deep-sea hydrothermal vents among others.

The Marine and Coastal Area (Takutai Moana) Act 2011 (MACA Act) is also particularly relevant when it comes to spatial management of marine species and habitat, through providing for the recognition of mana tuku iho (inherited right or authority derived in accordance with tikanga) in the marine area.¹¹¹ Under the Act, Māori groups can claim customary rights and title over parts of the "common marine and coastal area" which broadly equates to the territorial sea. Under the Act, affected iwi, hapū and whānau have the right to participate in conservation processes in that area. There is also a process to apply for recognition of a protected customary right, or customary marine

¹¹¹ Marine and Coastal Area (Takutai Moana) Act 2011, s9(1)

title, whether by direct negotiation with the responsible Minister on behalf of the Crown, or by an order of the High Court.

Once a customary marine title is recognised, holders have broad rights to decline permission for many activities to occur within the title area where a consent is required under the RMA, or where a conservation activity (including a marine reserve) is proposed.¹¹² The Director-General of Conservation must also recognise and provide for the views of a customary marine title group when determining whether to issue a marine mammal watching permit.¹¹³ Such rights do not extend to decisions made under the Fisheries Act, however. But if regional councils become more active in controlling fishing activity under the RMA, in the wake of *the Motiti* decision, then this may enable iwi/hapū with customary marine title to exercise decision-making power in relation to consents sought for fishing activity.

A large number of applications have been made for customary marine title (including 190 received by the High Court), and these cover much of the country's territorial sea. Only two have been resolved so far.¹¹⁴ Once these are determined, it seems likely that iwi, hapū and whanau will play a much stronger role in decision-making affecting marine species within the territorial sea. The MACA Act relates to Māori customary rights, but there are also Treaty rights in the marine area which are yet to be resolved, including in the Kaipara Harbour and Hauraki Gulf. These may result in co-governance arrangements for management of marine area. Interestingly, the Hauraki Gulf Forum has already voluntarily adopted a co-governance structure.¹¹⁵

Issue 3: There are large 'carve outs' from marine species protection (where it is in place) for accidental or incidental take

Protected species such as seabirds, marine reptiles, marine mammals and corals are regularly taken as bycatch during fishing activity. For example, marine mammals are caught in trawl nets, long lines, set nets, pots and purse seine nets and the numbers affected can be significant. Between 1992 and 2017 there were 3,582 observed captures of fur seals, 349 observed captures of sea lions and 253 observed captures of common dolphins. As the observer coverage on commercial fishing vessels is very low (overall less than 10 per cent) the actual number of captures is thought to be much higher because reported bycatch numbers are consistently higher for boats with an observer.¹¹⁶ The MMPA restricts the use of purse seine nets (but not other nets known to be a risk to dolphins such as set and trawl nets), by providing that any purse seine nets used for fishing must have an escape panel for dolphins.¹¹⁷

Seabirds are also vulnerable to a range of commercial fishing activities including trawl, long-line and set-netting operations. Baits and offal used to lure fish also attract seabirds, increasing the risk of incidental entanglement in nets, capture on hooks, and collisions with moving vessels ('deck strike'). It is estimated that approximately 12,900 seabirds are killed each year as a result of commercial fishing activities in Aotearoa New Zealand.¹¹⁸ Trawl fisheries are responsible for the highest number of seabird fatalities annually (8,840 birds), followed by bottom-longline fisheries (2,840 birds), surface-longline fisheries (1,100 birds) and set-net fisheries (128 birds).¹¹⁹ The vulnerability of seabirds to fishing operations differs depending on their biological attributes and foraging behaviours. Certain fishing methods pose particular threats to some guilds or types of seabirds. For

¹¹² Marine and Coastal Area (Takutai Moana) Act 2011, ss68 and 71

¹¹³ Marine and Coastal Area (Takutai Moana) Act 2011, ss76

¹¹⁴ Severinsen G, R Peart, B Rollinson, T Turner and P Parson, 2022, Appendix 1

¹¹⁵ <https://ouraukland.aucklandcouncil.govt.nz/news/2020/05/co-chairs-to-lead-hauraki-gulf-forum/>

¹¹⁶ Tremblay-Boyer et al, 2020

¹¹⁷ Marine Mammals Protection Act 1978, s17

¹¹⁸ Richard et al, 2020,10

¹¹⁹ Richard et al, 2020, 10

example, diving species such as penguins are particularly vulnerable to set net operations, while large albatrosses appear to be vulnerable to most forms of longlining.¹²⁰ Two threatened seabirds have been identified as the most at risk from commercial fishing operations - the nationally vulnerable black petrel and the nationally critical Salvin's mollymawk.¹²¹

Bycatch of seabirds and marine mammals also occurs in recreational fisheries. However, to date there have been few studies of the recreational catch of these (or other) protected species in Aotearoa New Zealand.¹²² Abraham (2021) recently undertook an assessment of the incidental capture of seabirds based on survey data of recreational fisheries.¹²³ That assessment estimated that approximately 12,656 seabirds were caught by recreational fisheries in the 2017-18 fishing year. The data used to inform the assessment were limited to boat-based line and longline fishing and therefore did not consider the impacts of set-net fisheries.¹²⁴

Fishing methods that involve the deliberate towing or dragging of trawl and dredge gear across the seabed have caused widespread and permanent damage to benthic communities including threatened species of corals.¹²⁵ Because deep-water corals are fragile, slow growing, long-lived and restricted to certain habitats such as seamounts, they often have limited larval dispersal and are especially susceptible to damage from bottom trawling. Once damaged they can take a very long time to recover, if they recover at all.¹²⁶ Because corals are crushed by the heavy trawl gear, they are not usually retained in the net once it is brought up to the vessel, so it is unclear the extent of the damage. However, a risk assessment evaluating the overlap between the bottom trawling footprint and predicted coral habitat identified a large overlap (greater than 50 percent of habitat) across the entire EEZ for the stony coral *Goniocorella dumosa*, which can form large reef structures and is mainly distributed in Aotearoa New Zealand waters.¹²⁷

Both the Wildlife Act and the MMPA provide a defence to prosecution for taking a protected species without a permit, where the killing or injuring of the animal is accidental or incidental and it is reported, to a fisheries officer or a wildlife ranger in the case of the Wildlife Act, and to a marine mammals officer or a fisheries officer in the case of the MMPA.¹²⁸ If the bycatch is reported to a fisheries officer, there is no requirement that DOC be notified. There is also no requirement for Fisheries NZ to pass the information onto DOC, meaning that DOC may not be apprised of the risks to a protected species in a timely manner. These reporting arrangements could be improved so that DOC is apprised of current information.

So long as the protected species bycatch is reported, the presumption is there is no cap on the number of species that can be caught as bycatch. The Minister may action specific controls, however, there is no requirement for the Minister to act based on the number of individuals caught as bycatch, the mortality rate or the threat status of the species concerned.

Both the Wildlife Act and the MMPA provide a mechanism to manage protected species bycatch through the development of population management plans, which can set a maximum allowable level of fishing-related mortality for a species. This can apply nationally or to a particular area. The plans are prepared by the Director-General of Conservation and are approved by the Minister of

¹²⁰ Fisheries New Zealand, 2022b, 222

¹²¹ Richard et al, 2020, 11

¹²² This context is documented in Abraham, 2021

¹²³ Abraham, 2021

¹²⁴ Abraham, 2021, 29

¹²⁵ A summary of fishing impacts on benthic communities is provided in Chapter 11 of Fisheries New Zealand, 2022b

¹²⁶ There is little information about the recovery of coral systems after trawling damage but a study of coral mounds west of Scotland found no coral recolonisation and very little regrowth eight years after the cessation of trawling, see Huvenne et al, 2016, 60-69

¹²⁷ Hale L Z et al, 2017, 110-111

¹²⁸ Wildlife Act 1953, s63B(2); Marine Mammals Protection Act 1978, ss26(4) and 16

Conservation with the concurrence of the Minister of Fisheries. There is a specific requirement for Māori representatives to be consulted during the plan preparation, along with other interests.¹²⁹

Once approved by both Ministers, the plans still do not have direct effect on fisheries bycatch. They interface with the Fisheries Act under which the Minister of Fisheries is required to “take all reasonable steps to ensure the maximum allowable fishing-related mortality level set by the relevant population management plan is not exceeded”.¹³⁰ Despite several attempts to develop population management plans for protected marine species, including two species of wandering albatross, New Zealand sea lion and Hector’s dolphin, no plans have ever been finalised.¹³¹

A key reason for the lack of progress with finalising population management plans is a statutory requirement that any fishing-related mortality limits be set at a level that would enable the achievement of non-threatened status for a protected species within a maximum timeframe of 20 years. Where available, quantitative risk assessments of cumulative threats to protected marine species indicate that it would be difficult (if not impossible) to achieve the 20-year goal, even if fishing-related mortality was reduced to zero.¹³² This is because marine species are subject to a range of threats including natural (e.g., disease, predation, environmental perturbations affecting food availability) and human-induced pressures (e.g., climate change, pollution, fishing, tourism, vessel strike). Although fishing is an important threat that is directly controllable, a reduction in fishing effects on a species does not *necessarily* halt the decline of a species’ population in the absence of other management controls. For some species, the 20 year timeframe is also unachievable. If population management plans or similar are to be a feature of a future species management system, the statutory provisions for their design, development and implementation will need to be overhauled.

In the absence of population management plans, non-statutory documents called threat management plans (for Hector’s and Māui dolphin and New Zealand sea lion) and national plans of action (seabirds and sharks) have been developed. The strength of these plans is that they can address a wide range of risks affecting a particular species rather than just those generated by fishing activity. The weakness is that they have no direct statutory effect and need to be implemented through other statutory processes. Given that, considerable progress has been made in addressing threats identified in these plans. For example, controls have been put on commercial and recreational set netting, trawling, seismic surveying and seabed mining under both the MMPA and Fisheries Act as a result of the development of Hector’s and Māui dolphin threat management plans.¹³³

In the absence of a population management plan, under section 15(2) of the Fisheries Act “the Minister may, after consultation with the Minister of Conservation, take such measures as he or she considers necessary to avoid, remedy or mitigate the effect of fishing-related mortality on any protected species, and such measures may include setting a limit on fishing-related mortality”.¹³⁴

Section 15(5) specifically provides that the Minister may prohibit “all or any fishing methods in an area” for the purpose of ensuring the maximum fishing-related mortality limit is not exceeded.¹³⁵ Fishing-related mortality limits have been used to manage bycatch impacts on New Zealand sea lions in the southern squid trawl fishery, and the fishery has been closed from time to time when the limit

¹²⁹ Wildlife Act 1953, s14(1)(a); Marine Mammals Protection Act 1978, s3H(1)(a)

¹³⁰ Fisheries Act 1996, s15(1)

¹³¹ See Mulcahy and Peart, 2012, chapter 6 for other barriers to the use of population management plans

¹³² Roberts et al, 2016, 42

¹³³ See Department of Conservation et al, 2020, 7-10

¹³⁴ Fisheries Act 1996, s15(2)

¹³⁵ Fisheries Act 1996, s15(5)

has been met.¹³⁶ The fishing-related mortality limit is currently 52 sea lions, and if that limit is reached in any fishing year, the fishery is closed immediately for that year. In addition, all vessels must deploy a sea lion exclusion device in their trawl nets.¹³⁷

However, unlike the provisions guiding the development of population management plans, which set out a clear goal and timeframe that must be met for achieving non-threatened status, the provisions of the Fisheries Act have no mandatory conservation goal specified. The Minister must take into account the environmental principle that associated or dependent marine species should be “maintained above a level that ensures their long-term viability”, but can then choose to override this in favour of social, economic and/or cultural considerations. Also of significance is that the Minister is required to consider what is “necessary” to address the impacts, setting a high bar.

The Fisheries Act includes funding mechanisms for “conservation services” which are defined as “outputs produced in relation to the adverse effects of fishing on protected species” and include research into bycatch issues, development of mitigation technologies and development of population management plans.¹³⁸ “Protected species” are defined in the Act as marine wildlife absolutely protected under the Wildlife Act, and marine mammals as defined under the MMPA.

The Conservation Services Programme is managed by DOC and the costs are spread across quota owners. For the 2022-23 year the programme has a budget of just over \$4.5 million.¹³⁹ This funding, which is mainly levied from entities undertaking activities which create the species’ threat, has facilitated progress on a range of protected species bycatch issues. It is a model which could have more wider application in order to raise funds for species management on the ‘polluter pays’ principle.

New approach for managing marine species

On the face of it, there does not appear to be any obvious reason why marine species should not be given the same level of protection as terrestrial species. Aotearoa New Zealand’s marine species are numerous, diverse and have significant endemism. We also know much less about them, with likely thousands of species yet to be discovered. This suggests that greater precaution is merited for marine species, when compared to land-based species, because of the paucity of information and knowledge about them. We risk losing known species, and also many others before they are discovered or named.

It could be argued that protecting indigenous marine species, as a starting point, would be unworkable because (unlike for indigenous terrestrial species) we undertake wild harvest of them. However, the fact that we harvest indigenous marine species suggests that it is essential to ensure that we do so sustainably. We need to be more careful and mindful of when and how we harvest our marine species to ensure longevity of such practice.

As outlined above, only 98 species are managed under the QMS, and for many of these, there is insufficient information to determine the current status of the populations. Some are known to have collapsed which means they are no longer self-sustaining under fishing pressure. For the vast majority of marine species, there is no protection or management of harvest, and most are left to languish in a legal ‘no man’s land’.

¹³⁶ Pursuant to section 15(2) of the Fisheries Act 1996, implemented through the Squid 6T Operational Plan. For discussion of closures and associated litigation see Mulcahy and Peart, 2012, 64

¹³⁷ Fisheries New Zealand, 2019

¹³⁸ Fisheries Act 1996, s2 and Part 14

¹³⁹ Department of Conservation, 2022b, 96-97

One way to address this would be to provide a statutory starting point that *all* indigenous marine species are protected unless expressly excluded from protection. Providing for the protection of marine species from all activities, as an initial starting point, would provide more blanket protection and would encompass a broader range of activities impacting on them including those taking place on the seabed, in the water column, and on land. It would mean that impacts on marine species would need to be specifically considered. For practical reasons there likely would need to be some exceptions to this requirement for some activities (e.g., walking on the intertidal area and anchoring). These could be deemed permitted activities under the respective legislation.

Species included in the QMS could automatically be excluded from the protective provisions, or at least those where there is sufficient information available to undertake a rigorous stock assessment. This would serve to protect both the interest of quota owners and the integrity of the Māori fisheries settlement. Non-QMS species could also be excluded from protection on case-by-case basis when it is demonstrated that we know enough about the species, and have adequate management measures in place, to sustainably manage harvest pressures on it.

Such exclusions could be location-specific, so that harvest of a species is only permitted in specific locations where populations are healthy and active management measures are in place, including effective monitoring and enforcement. The species under the QMS, and other non-QMS species which are explicitly excluded from protection, would be available for commercial, recreational and customary harvest (unless sustainability measures prevented this).

Additional provision may be needed for customary harvest of species not addressed by the above measures. If so, the customary fishing regulations could be amended to make it clear that any authorisation issued by a Tangata Kaitiaki/Tiaki (appointed under the customary fisheries regulations)¹⁴⁰ for customary food harvest could authorise limited customary take of specific species, with the likely exclusion of those that are Threatened or whose stock is known to have collapsed.

For practical reasons, there would likely need to be other exceptions to the absolute protection of marine species for some activities (e.g., walking on the intertidal area and anchoring). Overall, the system would be more mindful of where and how we use marine species and whether we know enough and have sufficient controls in place to use them wisely.

There is also the question of what to do when a stock within the QMS has collapsed. This is a clear sign that the QMS has failed to protect the sustainability of the stock and indicates that more protective measures are required. In the case of collapse (i.e., when the stock has reached the 'hard limit'), instead of dealing with the fishery via the Fisheries Act (under its utilisation purpose) the stock could automatically revert to the protective provisions of new wildlife legislation (the statutory 'starting point' described above), with a ban on take and quota ownership in the stock being 'parked' for the time being. This approach is similar to the management 'flag' approach being discussed in Australia, whereby management of the species reverts to a protective statutory framework if the extractive statutory framework fails to appropriately sustain the species (see *Spotlight: The conservation dependent scalloped hammerhead shark* in Appendix A).

Once it had been established that the species had recovered sufficiently to withstand harvest, and that sufficiently robust management measures were in place to ensure ongoing sustainability, the Minister could decide that the species should again be managed under the QMS. At that point, the quota ownership in harvest of the stock would be re-activated. If a stock collapses more than once, this could act as an indicator that it is not a suitable candidate for management under the QMS, and a higher evidentiary bar would need to be met for it to be returned to that management regime.

¹⁴⁰ Under the Fisheries (Kaimoana Customary Fishing) Regulations 1998 and Fisheries (South Island Customary Fishing) Regulations 1998

Such an approach would provide greater surety that our marine species are well managed, as well as a greater incentive for quota owners and fisheries managers to ensure that stocks do not collapse in the first place.

The protection of habitat important to threatened marine species is more complex. As described above, there are many mechanisms for spatial protection that could be deployed, but the coverage of each is only partial. It may be more effective to have one piece of legislation in the driving seat for this, providing a regime under which important habitat is identified and a mechanism through which that interfaces with the other regimes, with a statutory requirement to avoid adverse effects on such habitat. Options for marine spatial protection are covered in EDS's recent oceans report called *The Breaking Wave*.¹⁴¹ They will be further developed in phase 2 of EDS's oceans reform project. Further, EDS's phase 2 report on the conservation system is reconciling all spatial protections provided for under conservation laws, including wildlife sanctuaries and refuges (which can apply to the marine environment). In addition to those areas, new wildlife legislation could focus on protecting Threatened marine species residence.

Where fishing impacts important marine habitat either by direct physical damage (such as trawling and dredging) or through destabilising the food web (such as through fishing down bait fish or predators) protective measures could be deployed to address the threat, such as through restricting certain fishing methods within those habitats. For example, trawling could be excluded in areas where bryozoan or coral beds were known to exist. There could be a prohibition on the harvest of crayfish on coastal reefs known to be susceptible to trophic cascades (resulting in kina barrens) which is largely those located between 4 and 10 metres deep and subject to moderate wave exposure.¹⁴² Reef areas at greater or lesser depths, and those which are subject to either high or low wave exposure, are not as vulnerable and could be the places where rock lobster harvest could take place. Such important marine habitat may well overlap with habitat of particular significance for fisheries management, which should be protected under the Fisheries Act in any event.

Perhaps the most challenging aspect to deal with in terms of the protection of marine species is the management of fisheries bycatch. With the failure of population management plans to provide a useful tool for bycatch management, there is a lacuna in this area.

First, a stronger duty of care could be placed on the fishers to avoid bycatch. If it occurs, the report of the incident could be required to include the avoidance measures taken before and after the incident occurred, and a 'move on' rule could be applied. If a vessel has repeated incidents of bycatch, it could be excluded from participating in the fishery where the bycatch has occurred for a period of time and only be let back in after demonstrating that equipment and methods have been put in place to avoid it in the future. Fines could also be issued. This would rely on effective monitoring of bycatch, such as through the placing of surveillance cameras on commercial fishing vessels, which is currently happening in any event.

Managing recreational bycatch in this way is trickier because of the lack of any registration or licencing system, but restrictions on the use of gear that risks bycatch, or on fishing in seasons where seabirds are more prolific in an area, could be considered.

Secondly, population management plans for threatened species need to be improved and renamed something more appropriate such as 'threat management and recovery plans'. They could be mandatory where there is bycatch of a Threatened species. The plans could have direct effect

¹⁴¹ Severinsen et al, 2022

¹⁴² Choat et al, 1987, 257-284

through creating restrictions on fishing activity (rather than requiring a second decision by the Fisheries Minister under the Fisheries Act).

Thirdly, provision could be made in new wildlife legislation to regulate activities negatively impacting threatened marine species through protection rules (which could operate in a similar manner to sustainability measures under the Fisheries Act). As noted above, the absence of such a tool in the MMPA has proved problematic.

References

Appendix D

Legislation

Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012

Fisheries Act 1996

Marine and Coastal Area (Takutai Moana) Act 2011

Marine Mammals Protection Act 1978

Marine Reserves Act 1971

Resource Management Act 1991

Wildlife Act 1953

Secondary Legislation

Fisheries (Kaimoana Customary Fishing) Regulations 1998

Fisheries (South Island Customary Fishing) Regulations 1998

Marine Mammals Protection Regulations 1992

New Zealand Coastal Policy Statement 2010

Cases

Attorney-General v Trustees of the Motiti Rohe Moana Trust [2019] NZCA 532

Ngāi Tahu Māori Trust Board v Director-General of Conservation [1995] 3 NZLR 553 (CA)

Trans-Tasman Resources Limited v Taranaki-Whanganui Conservation Board [2021] NZSC 127

Publications

Brake L and Peart R, 2015, *Sustainable seas: Managing the marine environment*, Environmental Defence Society, Auckland

Haami B, 'Te whānau puha – whales - Whales and Māori society', Te Ara - the Encyclopedia of New Zealand, <http://www.TeAra.govt.nz/en/te-whanau-puha-whales/page-3>

Hewitt J, Edhouse S and Simpson J, 2009, *Biodiversity of intertidal soft-sediment habitats in the Auckland Region: Client Report prepared for Department of Conservation*, National Institute of Water and Atmospheric Research

MacDiarmid A, McKenzie A, Sturman J, Beaumont J, Mikaloff-Fletcher S, and Dunne J, 2012, *Assessment of anthropogenic threats to New Zealand marine habitats New Zealand Aquatic Environment and Biodiversity Report No. 93*, Ministry of Agriculture and Forestry, Wellington

Mulcahy K and Peart R, 2012, *Wonders of the Sea: The protection of New Zealand's marine mammals*, Environmental Defence Society, Auckland

Parliamentary Commissioner for the Environment, 2019, *Focusing Aotearoa New Zealand's environmental reporting system*, Wellington

Peart R, 2005, *Looking out to sea: New Zealand as a model for ocean governance*, Environmental Defence Society, Auckland

Peart R, 2013, *Dolphins of Aotearoa: Living with New Zealand dolphins*, Craig Potton Publishing, Nelson

Peart R, 2016, *The Story of the Hauraki Gulf*, Bateman, David Bateman Limited, Auckland

Peart R, 2018, *Voices from the sea: Managing New Zealand's fisheries*, Environmental Defence Society, Auckland

Rowden A, 2006, 'Sea floor – Vents and seeps', *Te Ara – the Encyclopedia of New Zealand*, <https://teara.govt.nz/en/sea-floor/page-4>

Severinsen G, Peart R and Rollinson B, 2021, *The breaking wave: A conversation about reforming the oceans management system in Aotearoa New Zealand*, Environmental Defence Society, Auckland

Severinsen, Peart R, Rollinson B, Turner T and Parson P, 2022, '*The Breaking Wave: Oceans Reform in Aotearoa New Zealand*', Environmental Defence Society, Auckland,

Severinsen G, Peart R, Rollinson B, Turner T and Parson P, 2022, *The Breaking wave: Oceans reform in Aotearoa New Zealand – Appendices, Appendix 1: A description of the current oceans management system*, Environmental Defence Society, Auckland

Papers and reports

Abraham E, 2021, *Capture of protected species in New Zealand recreational marine fisheries: Report prepared for Department of Conservation*, Department of Conservation, Wellington

Anderson T, Morrison M, MacDiarmid A, Clark M, D'Archino R, Nelson W, Tracey D, Gordon D, Read G, Kettles H, Morrissey D, Wood A, Anderson O, Smith A, Page M, Paul-Burke K, Schnabel K, and Wadhwa S, 2019, *Review of New Zealand's Key Biogenic Habitats: Prepared for the Ministry for the Environment*, National Institute of Water & Atmospheric Research Ltd, Wellington

Baker C, Boren L, Childerhouse S, Constantine R, van Helden A, Lundquist D, Rayment W and Rolfe J, 2019, *Conservation status of New Zealand marine mammals, 2019, New Zealand Threat Classification Series 29*, Department of Conservation, Wellington

Department of Conservation and Fisheries New Zealand, 2020, *Hector's and Māui dolphin threat management plan 2020*

Department of Conservation, 2021a, *A proposal to establish a marine mammal sanctuary in Te Pēwhairangi (Bay of Islands): Public consultation document Tuhinga take korero*, Department of Conservation, Kerikeri

Department of Conservation, 2021b, *Supporting information on Te Pēwhairangi (Bay of Islands) marine mammal sanctuary proposal*, Department of Conservation, Kerikeri

Department of Conservation, Fisheries New Zealand and Ministry for Primary Industries, 2021, *Revitalising the Gulf: Government action plan on the Sea Change Plan*

Department of Conservation, 2022a, *Revitalising the Gulf: Marine protection proposals*
<https://www.doc.govt.nz/get-involved/have-your-say/all-consultations/2022-consultations/help-revitalise-hauraki-gulf/>

Department of Conservation, 2022b, *Conservation services programme annual plan 2022/23*,
<https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/marine-conservation-services/plans-and-submissions/202223/final-csp-annual-plan-2022-23.pdf>

Environmental Protection Authority, 2015, *Decision on marine consent application, Chatham Rock Phosphate Limited to mine phosphorite nodules on the Chatham Rise*, <https://cer.org.za/wp-content/uploads/2016/08/EPA-New-Zealand-Chatham-Rock-Phosphate-Decision.pdf>

Environmental Protection Authority, 2017, *Decision on marine consents and marine discharge consents application, Trans-Tasman Resources Limited, Extracting and processing iron sand within the South Taranaki Bight*, https://www.epa.govt.nz/assets/FileAPI/proposal/EEZ000011/Boards-Decision/TTRL_Marine_Consent_Decision_EEZ000011_FINAL_version.pdf

Freeman D, Schnabel K, Marshall B, Gordon D, Wing S, Tracey D, Hitchmough, 2013, *Conservation status of New Zealand marine invertebrates, 2013, New Zealand Threat Classification Series 9*, Department of Conservation, Wellington

Fisheries New Zealand, 2019, *Operational plan to manage the incidental capture of New Zealand sea lions in the southern squid trawl fishery (SQU6T): 22 November 2019- 30 September 2023*

Fisheries New Zealand, 2020, *National Plan of Action – Seabirds 2020 Reducing the incidental mortality of seabirds in fisheries*, Wellington

Fisheries New Zealand, 2021, *Review of Sustainability Measures for New Zealand scallops (SCA 1 & SCA CS) for 2022/23 FNZ Discussion Paper No: 2021/30*

Fisheries New Zealand, 2022a, *Fisheries Assessment Plenary May 2022: stock assessment and stock status*, Volume 1, Fisheries New Zealand, Wellington

Fisheries New Zealand, 2022b, Chapter 11, *Aquatic Environment and Biodiversity Annual Review 2021*, Fisheries New Zealand, Wellington

Fisheries New Zealand, 2022c, *Draft guidelines for the identification of habitat of particular significance for fisheries management*, <https://www.mpi.govt.nz/dmsdocument/51901-Draft-guidelines-for-identifying-a-habitat-of-particular-significance-for-fisheries-management>

Gillespie A, 1999, *The bi-cultural relationship with whales: Between progress, success and conflict*, Te Matahauariki Research Institute, Waikato

Hale L Z and Rude J, 2017, *Learning from New Zealand's 30 years of experience managing fisheries under a quota management system*, The Nature Conservancy, Arlington,

Hauraki Gulf Forum, Ministry for Primary Industries, Department of Conservation, Waikato Regional Council and Auckland Council, 2017, *Sea Change Tai Timu Tai Pari: Hauraki Gulf Marine Spatial Plan*

Goddard K, 2021, *Biodiversity on Seamounts in Aotearoa*, Greenpeace, https://www.greenpeace.org/static/planet4-aotearoa-stateless/2021/11/c0068dfe-report-on-the-biodiversity-associated-with-seamounts-and-similar-features_goddard_oct-2021-3.pdf

Hitchmough R, Barr B, Knox C, Lettink M, Monks J, Patterson G, Reardon J, van Winkel D, Rolfe J and Michel P, 2021, *Conservation status of New Zealand reptiles, 202, New Zealand Threat Classification Series 35*, Department of Conservation, Wellington

Hon Minister David Parker, 2022, 'Changes to fisheries sustainability measures for the 2022 April Round' <https://www.mpi.govt.nz/dmsdocument/50542-Minister-for-Oceans-and-Fisheries-decision-letter-Review-of-sustainability-measures-for-selected-fish-stocks-April-2022-round>

Leathwick J, Julian K and Francis M, 2006, *Exploration of the use of reserve planning software to identify potential Marine Protected Areas in New Zealand's Exclusive Economic Zone*, National Institute of Water and Atmospheric Research Ltd

Ministry of Fisheries, 2011, *Operational guidelines for New Zealand's harvest strategy*, Ministry of Fisheries, Wellington

Ministry for Primary Industries New Zealand Government, 2008, *Harvest strategy standard for New Zealand fisheries*, Wellington

Nelson W, Neill K, D'Archino R and Rolfe J, 2019, *Conservation status of New Zealand macroalgae, 2019, New Zealand Threat Classification Series 30*, Department of Conservation, Wellington

Richard Y, Abraham E and Berkenbush K, 2020, *Assessment of the risk of commercial fisheries to New Zealand seabirds, 2006-07 to 2016-17: New Zealand Aquatic Environment and Biodiversity Report 237*, Ministry for Primary Industries, Wellington

Roberts J and Doonan I, 2016, *Quantitative Risk Assessment of Threats to New Zealand Sea Lions: New Zealand Aquatic Environment and Biodiversity Report No 166*, Ministry for Primary Industries, Wellington

Robertson H, Baird K, Elliot G, Hitchmough R, McArthur N, Makan T, Miskelly C, O'Donnell C, Sagar P, Scofield R, Taylor G and Michel P, 2021, *Conservation status of birds in Aotearoa New Zealand, 2021 New Zealand Threat Classification Series 36*, Department of Conservation, Wellington

Rodgers R P, 2017, *The connection of Māori to whales*, Antarctic Studies Project Report, University of Canterbury

Severinsen G, Peart R, Rollinson B, Turner T and Parson P, 2022, *The Breaking Wave, Oceans reform in Aotearoa New Zealand*, Environmental Defence Society, Auckland

Tremblay-Boyer L and Berkenbusch K, 2020, *Characterisation of marine mammal interactions with fisheries & bycatch mitigation*, Report for Project INT2019-03 prepared for Department of Conservation, Dragonfly Science, Wellington

TriOceans, 2020, *Identifiable individuals, behavioural responses to vessel activity and calf survival of bottlenose dolphins (Tursiops truncatus) in Far North waters, New Zealand* <https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/bottlenose-dolphin-far-north-water-new-zealand.pdf>

Van Halderen L, 2019, *Investigating rāhui as a customary fisheries management tool*, Master of Science thesis, University of Otago, Otago

Journal articles

Choat J H and Ayling A M, 1987, 'The relationship between habitat structure and fish faunas on New Zealand reefs', *Journal of Experimental Marine Biology and Ecology*, 110(3), 257-284

Gordon D, Beaumont J, MacDiarmid A, Robertson DA, Ahyong S, 2010, 'Marine Biodiversity of Aotearoa New Zealand', *Plos One* 5(8), e10905

Huvenne V A I, Bett B, Massin D, Le Bas T and Wheeler A, 2016, 'Effectiveness of a deep-sea cold-water coral Marine Protection Area following eight years of fisheries closure', *Biological Conservation*, 200, 60-69

Jones G "Ecology of rocky reef fish of northeastern New Zealand: 50 years on New Zealand" (2013) *Journal of Marine and Freshwater Research* 47(3) 334-359.

Larkin P A, 1977, 'An Epitaph for the Concept of Maximum Sustained Yield', *Transactions of the American Fisheries Society*, 106,1-1

Miskelly C, 2016, 'Legal protection of New Zealand's indigenous aquatic fauna – an historical review', *Tuhinga*, 27, 81-155

Peters C and Stochin A, 2016, *Responses of bottlenose dolphin (Tursiops truncatus) to vessel activity in Northland, New Zealand*, Final progress report for the Department of Conservation, Massey University

Rieser A, Watling L and Guinotte J, 2013 'Trawl fisheries, catch shares and the protection of benthic marine ecosystems: Has ownership generated incentives for seafloor stewardship?' *Marine Policy*, 40 75-83

News Media

A Smith, 2021, 'Fishermen filmed with 'thousands' of pink maomao in bins in Tairua' *Bay of Plenty Times*, <https://www.nzherald.co.nz/bay-of-plenty-times/news/fishermen-filmed-with-thousands-of-pink-maomao-in-bins-in-tairua/>

Press and information releases

Hon David Parker, 2022, 'New rules to include all finfish in combined daily bag limit for recreational fishers', press release, 20 April 2022, <https://www.beehive.govt.nz/release/new-rules-include-all-finfish-combined-daily-bag-limit-recreational-fishers>