FISHERIES PROJECT

THE FUTURE CATCH

Preserving recreational fisheries for the next generation

Randall Bess
Foreword by Andrew Rowland

THE NEW ZEALAND INITIATIVE

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Dedicated to the late Sir Douglas Myers (1938–2017)

"I only hope there are enough who are prepared to push for change, and the new government will respond by showing some courage and leadership to get the job done."

About the New Zealand Initiative

The New Zealand Initiative is an independent public policy think tank supported by chief executives of major New Zealand businesses. We believe in evidence-based policy and are committed to developing policies that work for all New Zealanders.

Our mission is to help build a better, stronger New Zealand. We are taking the initiative to promote a prosperous, free and fair society with a competitive, open and dynamic economy. We develop and contribute bold ideas that will have a profound, positive, long-term impact.

ABOUT THE AUTHOR

Dr Randall Bess is a Research Fellow at The New Zealand Initiative on fisheries management policy. He has researched and published articles on New Zealand's fisheries, including the commercial fishing sector, the settlement of Treaty of Waitangi claims and conflicts between the commercial and non-commercial fishing sectors. He has also worked for the Ministry for Primary Industries and the former Ministry of Fisheries for 13 years. Before immigrating to New Zealand, he fished commercially and recreationally in Alaska. He holds a Bachelors of Arts (Philosophy), Masters in Business Administration, Masters in Public Management and Doctor of Philosophy applied to the New Zealand commercial fishing sector.

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CONTENTS

Map

Figure

Tables

ABBREVIATIONS

Bmsy	Biomass level that produces the Maximum Sustainable Yield
CCL	Combined Catch Limit
FLA 2	Flatfish fishery on the lower half of the North Island (FMAs 2 and 8)
FLA 3	Flatfish fishery on the east and south sides of the South Island (FMAs 3–6)
FMAs	Fisheries Management Areas
IEMRS	Integrated electronic monitoring and reporting system
KAH 1	Kahawai fishery on the northeast side of the North Island (FMA 1)
KIN 1	Kingfish fishery on the northeast side of the North Island (FMA 1)
MLS	Minimum legal size
MPI	Ministry for Primary Industries
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NRB	National Research Bureau
NOAA	National Oceanic and Atmospheric Administration
QMS	Quota Management System
SNA 1	Snapper fishery on the northeast side of the North Island (FMA 1)
SNA 2	Snapper fishery on the southeast side of the North Island (FMA 2)
SNA 7	Snapper fishery on the west and north sides of the South Island (FMA 7)
SNA 8	Snapper fishery on the west side of the North Island (FMAs 8 and 9)
TAC	Total allowable catch
TAR 7	Tarakihi fishery on the west and north sides of the South Island (FMA 7)
TRE 7	Trevally fishery on the west side of the North and South Islands (FMAs 7–9)
WAFIC	Western Australian Fishing Industry Council

Foreword

Andrew Rowland

The management of fisheries resources presents many challenges worldwide. It is important that we constantly look at new ways to address these challenges. Recreational fishing is far too important to the lifestyle and culture of New Zealanders to remain unprotected, which is indeed the case under current arrangements.

This report by Dr Randall Bess presents an opportunity to significantly advance fisheries management in New Zealand in ways that will benefit both resource sustainability and the recreational fishing experience.

The report identifies the missing links needed to attain more positive management outcomes for recreational fishers. Dr Bess has done the hard work in identifying and ground truthing options to create real opportunity for the recreational fishing sector. The report sets out a pathway to galvanize and fund leadership to represent the best interests of recreational fishers directly to government and finally secure a seat at the decision-making table, which is currently lacking.

An effective unified recreational fishing sector voice to the New Zealand government is a critical component in progressing towards better fishing for all New Zealanders.

As recreational fishers, we are a very diverse bunch. We have diverse values, opinions and solutions to the challenges. Healthy debate and different perspectives contribute to balanced decisions. The role of an effective peak representative body is to distil these ideas, take them forward to government and change policy for better fishing.

Moving forward is not without its challenges. It is important, however, that you do not let the perfect become the enemy of the good when looking for a new pathway. Successful fisheries management aimed at delivering an enhanced fishing experience is an incremental process. The first part of which I believe is getting a seat at the table because decisions are made by those who turn up and provide constructive input.

I was very fortunate to visit New Zealand for a short stint in September 2017. I wish to thank the New Zealand Sport Fishing Council for an invite to their annual general meeting and their wonderful hospitality. I was absolutely inspired by the level of passion, commitment and drive of so many in the fishing community who I met at the annual general meeting and the public meetings I attended.

While some of this passion was borne out of frustration at a broken management system, I saw plenty of enthusiasm for new approaches and the benefits they can provide for recreational fishers, as demonstrated by the work of Dr Bess.

The journey to establishing new ways to protect and grow recreational fishing in New Zealand will be well guided by the contents of this report.

Dr Andrew Rowland
Chief Executive Officer, Recfishwest
Perth, Western Australia

Map 1: New Zealand's Fisheries Management Areas

Executive summary

"It is encouraging to know the new government is prepared to invest in recreational fisheries, so long as reciprocal means are in place for sharing the responsibilities, if not the costs"

Slow decline is hard to notice. Each generation can have quite different views of natural or normal fish stock levels.

As the Research Fellow for the fisheries project, I was fortunate to hear first-hand from the late Sir Douglas Myers about his lifelong passion for fishing and how fishing had changed during his lifetime.

Sir Douglas recalled the abundance of fish species 60 to 70 years ago and lamented the destructive behaviours that led to the subsequent decline in abundance. He considered fisheries one of the most interesting policy areas in New Zealand. His desire to improve recreational fishing became the impetus for this project.

Fortunately, New Zealand's marine environment provides high levels of marine diversity and productivity. This, coupled with changes to our understanding of sustainability, has led to improved abundance of several fish stocks – at least in the high-value and high-volume commercial fisheries.

We know little, however, about most of the fish stocks commonly taken by recreational fishers. It is difficult to tell whether the management measures in place are effective in ensuring a sustainable fishery that can meet all fishing sectors' long-term interests. We know some fish stocks are overfished and need to be rebuilt.

Our knowledge about the effect that land-based activities have on inshore stocks is also limited. We do know the scale of the effect will increase with growth in the population and tourism. As noted in *What's the Catch?*, the first report in this series, this leaves most of New Zealand's recreational fisheries in a tenuous position.[1] The current level of access to fisheries that so many New Zealanders value cannot be taken for granted. We must work to maintain and improve it.

This report argues that the sharp discrepancy between the management of recreational and commercial fisheries has been driven by funding differences. The management of commercial fisheries is largely funded on a cost-recovery basis by quota holders, while recreational fishers have generally been unwilling to contribute towards managing recreational fisheries.

Successive governments did not invest much in recreational fisheries nor did they address the tough issues confronting shared fisheries, where the fishing sectors have a shared interest in the taking of a fish stock. This caused recreational fisheries to remain in the 'too hard basket'.

It is encouraging to know the new government is prepared to invest in recreational fisheries, so long as reciprocal means are in place for sharing the responsibilities, if not the costs.[2]

[1] Bess, R. (2016). *What's the Catch? The state of recreational fisheries management in New Zealand*. The New Zealand Initiative: Wellington.

[2] New Zealand Labour Party (2017). *Fisheries: Abundant, sustainable fisheries in a healthy marine environment*. Manifesto 2017 (https://tinyurl.com/y9kgkgn7).

"Despite the typical negative campaign that Legasea ran, meeting participants were generally supportive of most of the draft recommendations. They also expressed their appreciation for the opportunity to discuss the future of recreational fishing. Most meetings ended with applause"

All the overseas jurisdictions researched in *The Overseas Catch*, the second report in this series, require recreational fishing sectors to contribute towards the costs of managing recreational fisheries.[3] Of the jurisdictions researched, Western Australia was selected as the location for our 'fisher exchange' in May 2017. The exchange entailed The New Zealand Initiative and the US-based Environmental Defense Fund leading a group of New Zealanders involved in the recreational, commercial and customary fishing sectors to learn from Western Australia's example.

We were particularly interested in the high level of public trust and confidence in Western Australia in the way recreational fisheries are managed, despite the severe restrictions on recreational fishing access and fishers needing to pay license fees. We found that these fees are supported because they are used to fund sector-level representation, projects and research that benefit recreational fishing.

We were also interested to learn how competing fishing sectors have been incentivised to work through their differences and collaborate to improve fisheries for the long term. Furthermore, we wanted to study improved methods for collecting catch and effort data on recreational fishing, ways to use smartphone apps for catch reporting, and how to reallocate catch levels between sectors as social values change.

We readily acknowledge that our Western Australian counterparts have done some things well and, in several cases, far better than what we have accomplished here for recreational fisheries. We left inspired that many of the lessons learnt in Western Australia and elsewhere could be successfully adapted for New Zealand.

An earlier consultation draft of this report examined these lessons and outlined policy recommendations for discussion that occurred through a series of public meetings.[4] The draft recommendations were also presented at the New Zealand Sport Fishing Council's annual general meeting.

The challenge during these meetings was to address the misgivings many participants had after reading information prepared by Legasea, the advocacy offshoot of the Sport Fishing Council, on *The Future Catch* consultation draft. Much of Legasea's information deliberately misrepresented the content and intent of *The Future Catch* and criticised it based on simplistic and biased responses.

Despite the typical negative campaign that Legasea ran, meeting participants were generally supportive of most of the draft recommendations. They also expressed their appreciation for the opportunity to discuss the future of recreational fishing. Most meetings ended with applause.

Members of the public were also able to record their views on the draft recommendations through an online survey and hard copies available at the public meetings. Most of the feedback supported the recommendations, though three changes were made as a consequence of consultation.

[3] Bess, R. (2017a). *The Overseas Catch: The state of recreational fisheries management abroad*. The New Zealand Initiative: Wellington.

[4] Bess, R. (2017b). *The Future Catch: Preserving recreational fisheries for the next generation*. Consultation draft. The New Zealand Initiative: Wellington.

The final recommendations should be considered as a package to benefit both fish stock sustainability and the recreational fishing experience. These recommendations are summarised as follows.

- The new government and all fishing sectors demonstrate a commitment to constructive and effective management of shared fisheries. This commitment includes:
  - reaching agreed abundance (biomass) targets for shared fisheries; and
  - designing indicators of stock management performance that can be tracked over time (eg, satisfaction of the non-commercial (recreational and customary) fishing experience).
- Integrate recreational fisheries into management policies and processes by:
  - developing a recreational fisheries policy in the context of shared fisheries, so it addresses the causes of intersectoral conflicts that can adversely affect the management of fisheries;
  - improving representation of recreational fishing interests with the establishment of a Recfishwest-type institution, which is recognised by the Government of Western Australia as the peak representative body and central point of contact and referral for recreational sector issues; and
  - improving the culture in the Ministry for Primary Industries (MPI) to include a greater level of stakeholder participation and engagement.[5]
- Switch to a proportional basis for total allowable catch (TAC) allocations, but only if a process is in place to transfer portions of a TAC from the commercial sector to the recreational sector over time as demand for recreational fishing increases.
- Alternatively, develop formulaic proportional TAC allocations for key shared fisheries, like that used in the Gulf of Alaska halibut fishery. It would start with current TAC allocations set as the minimum levels to be increased as biomass targets are reached.
- Fund the costs of the proposed Recfishwest-type institution, and its work in developing better measures of recreational fishing, for an initial five-year period through the petrol excise duty already paid by recreational boat users.
- Afterwards, the government could review the institution's role and funding options. Those options include:
  - continued funding through the petrol excise duty;
  - contributions from recreational fishers (required or voluntary) and non-fishers willing to support the work of the peak representative body; or
  - required registration fees for recreational boats or trailers.

[5] On 26 October 2017, the new Prime Minister announced the primary industries will be divided along the traditional lines of agriculture, forestry and fisheries. Also, this division will not be an expensive exercise, because the agriculture and fisheries functions will remain in the same MPI building with a separation of responsibilities in place (http://home.nzcity.co.nz/news/article.aspx?id=258118&fm=psp,tsf). Considering this announcement, an alternative recommendation has been omitted from this report that proposed removing the fisheries function from MPI and combining it with related functions (and marine legislative obligations) in other central government organisations to establish a new Oceans Ministry.

"That Legasea has not been in the office of the Minister responsible for fisheries during the past nine years should be a warning to the Council about Legasea's lack of commitment to constructive engagement"

The Sport Fishing Council recently expressed its openness to becoming the peak representative body for all recreational fishing interests, if given the opportunity. But, at the time of writing, the Council reiterated its position during the annual general meeting, which was not to seek the peak body role. This inconsistency suggests dissension within the Council regarding its future role.

We believe the Sport Fishing Council could be best placed for the peak representative body role, and we would support it in considering the idea. In so doing, we would urge the Council to carefully consider necessary changes to its purpose, governance arrangements, funding and auditing requirements. We would also urge it to consider the benefits of adopting Recfishwest-type attributes, such as building relationships based on trust, respect and integrity, and the ability to work through differences.

Should the Sport Fishing Council seek the new Minister of Fisheries' approval as the peak representative body, occasions would arise when it had to go head-to-head with key decision makers on issues of importance to recreational fishers, as Recfishwest has done. But, relentless confrontation, deliberate misrepresentation and intolerance for contrary views, which characterise Legasea's approach, would be a significant liability, if not a barrier, to success as the peak body.

That Legasea has not been in the office of the Minister responsible for fisheries during the past nine years should be a warning to the Council about Legasea's lack of commitment to constructive engagement. Its preference for negative campaigns is divisive and shown to be ineffective in influencing key decision makers.

Accordingly, we recommend that a new peak representative body should be established. This could draw on the combined knowledge and experience of the Sport Fishing Council, Recreational Fishing Council, Our Fishing Future and the Angling and Casting Association, along with the fishing clubs and associations prepared to work collaboratively with the new Minister of Fisheries, MPI, Fisheries Inshore New Zealand and other groups.

All fishing sectors share the same goals of greater fish stock abundance, fair and equitable TAC allocations and a better fishing experience. As Ian Stagles, Co-Founder and inaugural Chair of Recfishwest, noted we have started, or blundered, along the road to sharing fisheries resources. The challenge is how quickly we can learn to do it a lot better.[6]

[6] Stagles, I. (2006). *Issues and solutions for resource sharing in Australia: Resource sharing – why we are getting it so wrong?* Paper presented at the Sharing the Fish '06 Conference, Fremantle, Western Australia, 27 February to 2 March. (www.fishallocation.com/papers/pdf/papers/IanStagles.pdf).

Introduction

"Recreational fishing has continued to have a low profile in management priorities and public resourcing"

New Zealand's management of marine fisheries is at a crossroads. The Quota Management System (QMS) needs modernisation to keep up with changes in social expectations around discards and bycatch, and with technological change that is allowing better monitoring. Recreational fisheries management also requires modernisation. This growing sector, and the causes of increasing conflict between competing fishing sectors, has been ignored for too long.

What's the Catch?, the first report in this series, summarises the current state of fisheries management. It maintains the Ministry for Primary Industries (MPI) is struggling to articulate its statutory purpose for managing fisheries. The obvious cause of this is a change in the former government's focus, particularly since MPI was established. Far less support and expertise have been provided for fisheries in general, because limited public resources have been redirected to the primary industries that make a bigger contribution to the export economy. Nonetheless, New Zealanders remain passionate about fisheries, far more so than for most other primary industries.

Amid reductions in public resources, MPI could not cope any better than its sector-specific predecessor, the Ministry of Fisheries, in resolving longstanding fisheries problems, such as misreporting commercial catches and illegal discarding. The new government intends to work alongside the commercial fishing sector to address these problems as it completes the development of the integrated electronic monitoring and reporting system (IEMRS). Its development should be driven by a much-needed landing and discard policy.

To date, IEMRS has been oversold as being world leading. Several systems overseas are already adept at what we hope IEMRS will be able to do. Some are proficient with on-board automated camera monitoring, near real-time electronic reporting and transparent dock-side monitoring. Companies independent of government and commercial fishing use these systems and others to provide full accountability of target species and bycatch, setting a high bar for IEMRS.

Recreational fisheries management is challenging, even in the best of times. We know recreational fishing provides social, cultural and psychological benefits. We also know it provides economic benefits, but much misinformation exists about the level of these benefits.[7] Recreational fishing has continued to have a low profile in management priorities and public resourcing. The exceptions were in 2000 and 2006 when efforts were directed at clarifying the public right to fish and the responsibilities that accompany this right.

[7] The New Zealand Initiative (2017). *The true value of recreational fishing* (https://nzinitiative.org.nz/insights/opinion/the-true-value-of-recreational-fishing/).

"It is vitally important the policy recommendations in this report are met with a political will to make tough decisions, in this case, to preserve recreational fisheries for the next generation"

These efforts encountered strong opposition by those who consider the right to fish should be defined differently or best left undefined. Despite the courts providing much needed legal clarification, the disputes continued. The recreational and commercial sectors remained at loggerheads, particularly when it came to allocating a total allowable catch (TAC).

In time, some Ministers opted to avoid the tough issues, lessening the prospect of legal action. The risk to their political capital could override the potential benefits of making decisions on these issues. Similarly, MPI avoided some of the tough issues. For example, it gave up on developing a recreational fisheries policy that addresses the causes of intersectoral conflicts. As highlighted in *The Overseas Catch*, the second report in this series, it can be difficult for decision makers to avoid falling into the trap of leaving these conflicts to worsen.

MPI needs support to meet its statutory purpose for managing fisheries. Fortunately, it secured added support by appointing the Technical Advisory Group in late 2016. This group is tasked with providing advice during the Future of our Fisheries review. While we may not be privy to that advice, and no formal reporting to MPI occurs, at least it is being sought.

The New Zealand Initiative's fisheries project also seeks to support MPI through observations regarding the current situation, comparison with overseas situations and policy recommendations – coupled with opportunities for public debate through the consultation draft of *The Future Catch*.

The fisheries project's overall aim is to elicit constructive debate about what we want for the future of recreational fisheries and the changes in policies and practices to get there. In so doing, our shared frustration can be directed towards what we can do collaboratively to improve shared fisheries for the benefit of all fishing sectors.

It is vitally important the policy recommendations in this report are met with a political will to make tough decisions, in this case, to preserve recreational fisheries for the next generation.

This is what the late Sir Douglas Myers hoped we would do.

CHAPTER 01

Public consultation

"Discussions during the public meetings were open and robust. The challenge was to address the misgivings many participants had after reading the information prepared by Legasea on the draft consultation of *The Future Catch*"

The policy recommendations in the consultation draft of *The Future Catch* largely reflect the views of participants in the Western Australian fisher exchange in May 2017.[8] The recommendations explain what they consider would change the management of fisheries for the better.

However, any meaningful change also needs to incorporate the views of the wider public. Our hope was the draft recommendations would stimulate public discussion that leads to policy improvements. This is why the New Zealand Initiative and the fisher exchange participants held meetings throughout the country. It was important to hear views from the public, so we could propose the types of policy improvements that have public support.

Starting in mid-August 2017, a series of meetings was held. Five were scheduled in the South Island (Kaikoura, Blenheim, Nelson, Christchurch and Dunedin) and seven in the North Island (New Plymouth, Petone, Whitianga, Mount Maunganui, Paihia, Auckland and Napier). Two further North Island meetings (Paraparaumu and Hamilton) were requested by fishing clubs and added to the schedule. Most meetings had at least one participant in attendance from the Western Australian fisher exchange. They provided their insights into the lessons learnt.

Along with the public meetings, members of the public had the opportunity to record their views on the draft recommendations. They could do this through an online survey and hard copies were available at the public meetings. We also had the opportunity to present the draft recommendations at the Sport Fishing Council's annual general meeting.

This chapter discusses these meetings, which provided timely opportunities for public discussion on how best to improve the management of recreational fisheries. The discussion and consideration of overseas examples helped many to gain a better understanding of what is possible for the future of recreational fisheries. The chapter ends by outlining the changes to the draft recommendations as a consequence of public consultation.

1.1 Public meetings

Overall, the recreational fishing sector was very receptive to the public meetings. In total, 416 participants attended the 14 meetings. Most of the meetings had 20 to 40 people attend, which is a respectable rate for public meetings on fisheries issues.

Discussions during the public meetings were open and robust. The challenge was to address the misgivings many participants had after reading the information prepared by Legasea on the draft consultation of *The Future Catch*. Much of Legasea's prepared information deliberately

[8] New Zealand participants in the Western Australian fisher exchange were: Geoff Rowling, President of Our Fishing Future; Keith Ingram, Editor of *Professional Skipper Magazine* and former President of the New Zealand Recreational Fishing Council; Margaret Wind, Executive Officer, New Zealand Recreational Fishing Council; Dr Jeremy Helson, Chief Executive Officer, Fisheries Inshore New Zealand; Laws Lawson, Principal Advisor, Te Ohu Kaimoana and Chair of Fisheries Inshore New Zealand; Dave Turner, then Director of Fisheries Management, Ministry for Primary Industries (paid for by MPI); Chris McKenzie, Pou Hononga – Maori Enterprise, National Institute of Water and Atmospheric Research; Sir Mark Solomon, Deputy Chair of Te Ohu Kaimoana and former Chair of Te Runanga o Ngai Tahu; Nathan Reid, Supplier Supervisor Planner Wetfish, Moana New Zealand (paid for by Moana New Zealand).

misrepresented the content and intent of *The Future Catch* and criticised it based on simplistic and biased responses.

"In addition, Legasea's information makes outrageous assertions, such as proportionality precludes consideration of the effects of bulk harvesting methods, and any uncaught recreational TAC allocation could be gifted to quota holders in perpetuity"

For example, Legasea's information incorrectly states the fisheries project is sponsored by business interests. Legasea knew otherwise, because I had advised at the start of the project about its philanthropic funding sources. At that time, Legasea was very supportive, but this changed once Legasea realised it could not access these funds or control the direction of the project.

Legasea's prepared information erroneously states the policy recommendations would privatise recreational fishing by forcing it into the QMS, and the recommendations would only benefit commercial quota holders. Furthermore, it wrongly asserts that the project's series of reports refer to recreational fishers as free-loaders and recreational fishing as growing out of control and participant numbers exploding.

This information perverts what is proposed in *The Future Catch* regarding proportionality. *The Future Catch* recommends this only if a process is in place to transfer portions of a TAC from the commercial sector to the recreational sector over time as demand for recreational fishing increases, thus avoiding problems associated with a fixed proportion. The prepared information then criticises *The Future Catch* based on fixed proportionality.

In addition, Legasea's information makes outrageous assertions, such as proportionality precludes consideration of the effects of bulk harvesting methods, and any uncaught recreational TAC allocation could be gifted to quota holders in perpetuity. Finally, as expected, it presents a peak representative body in the worst possible way, despite Recfishwest's demonstrated success.[9]

Regardless of the typical negative campaign run by Legasea, it was apparent that participants benefited from discussing certain recommendations before reaching conclusions based on what they heard at the meetings. Participants were generally supportive of the draft recommendations and expressed their appreciation for the opportunity to discuss the future of recreational fishing. Most meetings ended with applause.

1.1.1 Public feedback

The New Plymouth and Auckland meetings had the lowest participation rates, because they were blacklisted. One of the 16 New Plymouth participants noted that it was embarrassing having so few fishing club members in attendance. The Auckland meeting had seven participants. Legasea attended the meeting and demonstrated a confrontational style of communication that has become its standard approach. Legasea belaboured the same points it did during the annual general meeting, while showing intolerance for contrary views.

Legasea or its supporters attended most of the other meetings, though the level of disruption was less than that displayed during the Auckland meeting. For example, during the Christchurch meeting, Legasea asserted

[9] Legasea's prepared information was released on 16 and 17 August 2017 and then on 29 August 2017 titled *Future Catch Report – Questions & Answers* and *A review of The Future Catch report* (www.legasea.co.nz).

"The common view was the need to improve the recreational voice to the Minister, MPI and the other fishing sectors to improve fisheries for the benefit of all sectors"

it had sent a researcher to Western Australia who came back with a different account of Recfishwest than what had been explained during the meeting. Legasea alleged that most of the Western Australian fishers the researcher approached did not know about Recfishwest, and those who did were the retailers. Legasea concluded we could have been more balanced in the way we presented Western Australia.

It so happened that a Western Australian, a former commercial fisher and current recreational fisher, attended the Christchurch meeting. He immediately refuted Legasea's account of Recfishwest and confirmed what we had stated about its effectiveness in improving recreational fisheries, including bringing about changes in some commercial fisheries.

During the Blenheim meeting, questions were raised regarding the inherent challenge of a peak representative body being able to address regional-level issues. The discussion included Recfishwest's role in presenting various regional fisheries issues to the government with one voice. The discussion also covered Recfishwest's use of local expertise through reference groups for particular fisheries, which have broader roles than those of MPI's science working groups.

The Blenheim, Nelson and Christchurch meetings, in particular, discussed the funding options for a peak representative body and individual contributions (licenses) and how they relate to Māori and customary fishing rights. In Christchurch, Sir Mark Solomon replied that most Māori do not exercise their customary rights, and fish under the recreational rules. Sir Mark stated he has never had a customary

"During the public meetings, it was encouraging to hear so many agree that recreational fishers need an effective voice, while also acknowledging we must uphold the rights associated with commercial quota holdings and Treaty of Waitangi settlement obligations"

authorisation, because the quantities under the recreational rules have been sufficient to feed his family. He also stated he "would be happy to pay an affiliation fee" for an institution working to improve fisheries. He expressed preference for collaborative processes, "like Te Korowai that took five years of discussion to get an agreed result". He added it was a tense environment until all got to know each other.[10]

Many of the discussions during the Nelson, Dunedin, Petone, Whitianga and Paihia meetings, in particular, were supportive of establishing a peak representative body. The common view was the need to improve the recreational voice to the Minister, MPI and the other fishing sectors to improve fisheries for the benefit of all sectors. Another common view was MPI's unresponsiveness to the concerns raised by the recreational fishing sector. This reinforced the need for a recreational voice that is responsive, not one that makes demands and threats.

One of the issues raised during the Petone and Napier meetings was about setting standards for recreational fishers to self-report their catches. Participants were in favour of self-reporting, including the use of smart phone apps to improve self-reported data and incorporate it into management decision making.

During the final meeting in Hamilton, consideration was given to whether the Sport Fishing Council could become the peak representative body. The discussion focused on the Council's historical unwillingness to accept the shared fisheries concept, and its objection to proportionality, which many Council members perceive only as fixed and, therefore, problematic. It was stated that these perspectives 'rightly or wrongly' have driven the Council's objections to proposed changes over the years.

Meeting participants were advised that, contrary to what was stated during the annual general meeting, the Sport Fishing Council has expressed an openness to becoming the peak representative body, if given the opportunity, though the idea had not been presented to the Council's Board for approval (as noted, the Council has reiterated its position not to seek the peak body role). By the end, the common view was the Council must change if it is to successfully represent more than its small proportion of the total number of recreational fishers, and for it to be effective in presenting collective concerns to the new government and other fishing sectors.

During the public meetings, it was encouraging to hear so many agree that recreational fishers need an effective voice, while also acknowledging we must uphold the rights associated with commercial quota holdings and Treaty of Waitangi settlement obligations.

The latter point was discussed at several meetings, particularly in Mount Maunganui, along with the problems of commercial discarding, high grading and misreporting and their effects on recreational fishing. While everyone acknowledged the need for MPI to address these problems, one participant advocated that quota holdings should be confiscated to benefit recreational fishers. The stated reason for confiscating quota was because "the people own the fish".

[10] Te Korowai o Te Tai o Marokura – Kaikoura Coastal Marine Guardians (www.teamkorowai.org.nz).

Several participants objected to this reasoning, with one replying, "Since there's a housing crisis, how would you feel if the government just took your house?" This type of reply exposed how simplistic and unacceptable the stated reasoning is for confiscating quota without consideration being given to compensation.

1.1.2 Recfishwest message

"Dr Rowland highlighted that, for genuine interactions to occur, the government, fishing sectors and others must move beyond the 'us versus them' approach"

Dr Andrew Rowland, Recfishwest's Chief Executive Officer, visited New Zealand in mid-September 2017. Dr Rowland presented at The New Zealand Initiative to various representatives, including central government officials, non-government organisations and people involved in recreational, commercial and customary fishing. Dr Rowland also presented at the Mount Maunganui and Paihia public meetings. His presentations were well received and prompted considerable discussion.

In summary, Dr Rowland's message focused on Recfishwest's vision, which is Western Australians having great fishing experiences forever. Recfishwest's commitment is to protect, promote and develop sustainable, accessible, enjoyable and safe fishing for Western Australians.

Recfishwest's guiding principles include demonstrating leadership, a solution focus, being respectful of others' opinions and beliefs, being trustworthy and having integrity by doing what it says, regardless. Its other principles are to consider relevant information before acting and to be accountable by taking responsibility for its actions.

These principles form Recfishwest's relationships with the Department of Fisheries and the Western Australian Fishing Industry Council. Dr Rowland portrayed these relationships as based on trust, respect and integrity, giving the organisations the ability to work through their differences. Their interactions were referred to as co-managing fisheries, where responsibilities and obligations for sustainable fisheries management are negotiated, shared and delegated between the government, fishers and other interest groups and stakeholders.

Dr Rowland highlighted that, for genuine interactions to occur, the government, fishing sectors and others must move beyond the 'us versus them' approach. For this to happen, the government must be willing to consider shared responsibility, and peak representative bodies must be effective. To be effective, they must have good governance arrangements, sufficient resources and skills, and the ability to communicate, commit to legally binding undertakings and display strong leadership.

1.1.3 Sport Fishing Council annual general meeting

Dr Rowland, Sir Mark Solomon and I were invited to present at the Sport Fishing Council's annual general meeting in Tauranga. The mood during the morning discussion was tense though more affable as it progressed.

During the discussion, Legasea took exception to the consultation draft of *The Future Catch* depicting the recreational fishing sector as being fragmented in its views and vision. Legasea refuted this statement by referring to the Sport Fishing Council, the Angling and Casting Association and others as being united in their views. Legasea also referred to these

"The common concern was about Legasea's behaviour and intolerance for contrary views, leading to breakdowns in important relationships"

organisations collectively as representing a purported 100,000 people.[11]

During the meeting, I acknowledged their shared views on some issues and the extent of their purported representation. I also acknowledged those fishers who choose not to have any affiliation with them, with the most common reason being they do not want to be associated with Legasea and its adversarial approach.

The discussion turned to Legasea seemingly boasting that it and the Sport Fishing Council have not been in the Minister's office for the past nine years (note: it was later clarified that Legasea has not been in the Minister's office for nine years). I responded that this breakdown in communication can be largely explained by looking at Legasea's behaviour during meetings with the Minister and MPI officials. It is clear why the former government might have avoided meeting with Legasea in particular and the Sport Fishing Council by association.

Some seemed to realise the draft recommendations and related discussion aligned with what the Sport Fishing Council and the Angling and Casting Association desire, which is abundant and sustainable inshore fisheries. We were invited to return after lunch to continue the discussion. We were later invited for dinner and to watch the All Blacks test match against South Africa.

During this time, we had several discussions with individual Sport Fishing Council executives and delegates. Some expressed concern about the Council's decision to decline The New Zealand Initiative's invitation for a Council representative to participate in the Western Australian fisher exchange free of charge. Others were concerned about Legasea's influence in the Council and how Legasea was perceived by the former Minister and MPI officials. The common concern was about Legasea's behaviour and intolerance for contrary views, leading to breakdowns in important relationships.

The Sport Fishing Council subsequently drafted feedback on the consultation draft of *The Future Catch*, which I requested during the annual general meeting discussions. The feedback reiterated much of the information prepared by Legasea that deliberately misrepresented the report's content and intent, particularly regarding proportionality. The feedback demonstrated a refusal to acknowledge the benefits of a process to transfer portions of a TAC over time as demand for recreational fishing increases. In addition, the feedback made a fallacious link between the US-based Environmental Defense Fund and the proposed Recfishwest-type institution. Finally, it stated the Council was not seeking the peak representative body role. This position reiterated what the Council stated during the annual general meeting, not what was said during the Hamilton public meeting.[12]

[11] Legasea's explanation of what comprises the purported 100,000 people and what specifically united them was unclear. The Sport Fishing Council represents over 31,000 members through 56 affiliated fishing clubs (www.nzsportfishing.co.nz). The Angling and Casting Association represents around 1,000 members through its 27 affiliated clubs (pers. comm., Jim Yeoman, 3 October, 2017). The other references were in relation to Ngapuhi iwi, whose affiliations alone exceed 100,000, and a letter from Yachting New Zealand.

[12] New Zealand Sport Fishing Council feedback to the NZ Initiative – The Future Catch report – DRAFT 24 October 2017.

1.2 Survey results

Members of the public had the opportunity to record their views on the draft recommendations through an online survey and hard copies available at the public meetings. We received 186 responses to the survey.[13] The survey results support most of the draft recommendations:

Q1 91.94 percent agree that some inshore fisheries are overfished – 5.91 percent disagree, 1.61 percent don't know and 0.54 percent did not answer.

Q2 73.12 percent agree the management of recreational fisheries should be reformed – 21.51 percent disagree and 5.38 percent don't know.

Q3 77.96 percent agree the satisfaction of the non-commercial (recreational and customary) fishing experience should be tracked over time – 10.22 percent disagree and 11.83 percent don't know.

Q4 76.88 percent agree the National Panel Survey for recreational fishing should be administered more frequently than every five to six years – 12.90 percent disagree and 10.22 percent don't know.

Q5 66.67 percent agree that a recreational fisheries policy should be developed in the context of shared fisheries – 18.82 percent disagree, 12.90 percent don't know and 1.61 percent did not answer.

Q6 66.67 percent agree that a Recfishwest-type institution should be established – 19.35 percent disagree, 13.44 percent don't know and 0.54 percent did not answer.

Q7 85.48 percent (159/186) responded to options for funding a Recfishwest-type institution:

- 43.55 percent agree to petrol excise duty already paid by recreational boat users being the funding source.
- 12.90 percent agree it should be funded through individual contributions (koha).
- 17.74 percent agree it should be funded through fees for registering boats or trailers.
- 11.29 percent don't know.
- 14.52 percent did not answer.

Q8 47.85 percent agree to setting TAC allowances on a proportional basis – 31.72 percent disagree, 19.35 percent don't know and 1.08 percent did not answer.

Q9 88.71 percent agree the effectiveness of longstanding practices (eg, use of minimum legal sizes) should be re-evaluated – 4.84 percent disagree, 5.38 percent don't know and 1.08 percent did not answer.

- Of the 136 respondents who agree the management of recreational fisheries should be reformed, 107 agree, 13 disagree and 16 don't know whether a Recfishwest-type institution should be established.

[13] One response is from a fishing club and represents the views of 16 of its club members.

- Of the 124 respondents who agree that a Recfishwest-type institution should be established, 81 agree, 22 disagree, 19 don't know and 2 did not answer regarding a switch from full ministerial discretion in setting TACs to proportional bases, if a reallocation process is in place that benefits recreational fishers and compensates quota holders.
- Of the 171 respondents concerned about inshore fisheries being overfished, 134 agree, 18 disagree and 19 don't know whether the satisfaction of the non-commercial fishing experience should be tracked over time.
- Of the 145 respondents who agree the satisfaction of the non-commercial fishing experience should be tracked over time, 120 agree, 10 disagree and 15 don't know whether the National Panel Survey for recreational fishing should be administered more frequently than every five or six years.
- Of the 165 who agree the effectiveness of longstanding practices, such as rules on minimum legal sizes, should be re-evaluated, 113 agree, 29 disagree, 20 don't know and 3 did not answer whether a recreational fisheries policy should be developed in the context of shared fisheries.

1.3 Recommendations

"The feedback provided during public meetings and the survey results support most of the draft recommendations"

The feedback provided during public meetings and the survey results support most of the draft recommendations. The exception is the proposed switch to proportionality in setting TAC allocations. Proportionality is fundamental to effective fisheries management, which explains why it is widely used overseas. The topic requires in-depth discussion.

That aside, the feedback influenced three changes in the policy recommendations, which are summarised below.

First, as noted, following the Sport Fishing Council's annual general meeting, the Council stated it had reconsidered the idea of becoming the peak representative body. The Council subsequently stated it was not seeking the peak body role. This inconsistency suggests dissension within the Council regarding its future role. We believe the Council could be best placed for the peak body role, and we would support it in considering the idea.

Accordingly, we recommend that a new peak representative body should be established. This could draw on the combined knowledge and experience of the Sport Fishing Council, Recreational Fishing Council, Our Fishing Future and the Angling and Casting Association, along with the fishing clubs and associations prepared to work collaboratively with the new Minister of Fisheries, MPI, Fisheries Inshore New Zealand and other groups (refer chapter 3).

Second, we recommended that MPI improves its culture by including a greater level of stakeholder participation and engagement than has previously been the case. Otherwise, several recommendations outlined in this report, including establishing a peak representative body, will likely fail. The reason is it takes two to tango or contribute to a downturn in relationships. It is encouraging to note that changes along these lines are likely under the new government (refer chapter 3).

Finally, we heard several objections to implementing a recreational fishing licensing system, despite its demonstrated benefits for managing New Zealand's exotic fish species, along with the benefits for Western Australian fisheries. If the preferred petrol excise duty option becomes unworkable or insufficient, then individual contributions (licenses) could be the preferred funding source for a peak representative body. The change made to this option is that individual contributions could be either required or voluntary. Valid arguments exist for both, and a decision should be based on what best suits the type of peak body established (refer chapter 5).

CHAPTER 02

Fish stock sustainability

"What is apparent is that several overseas fisheries are receiving greater levels of management attention and research than what most shared fisheries receive in New Zealand"

New Zealand is recognised as having some of the most sustainable fisheries worldwide.[14], [15] This recognition acknowledges that past TACs were reduced to avoid overfishing problems experienced overseas. However, there were exceptions, such as orange roughy stocks. But, they too have recently improved and been recognised as such.

So, what is the problem? Well, orange roughy is found too deep to be caught by recreational fishers. The same goes for many other high-value and high-volume commercial fisheries that have received fisheries management attention. These fisheries also receive higher priority for quantitative stock assessments, which form the basis for setting TACs to prevent overfishing.

In contrast, several of the stocks commonly caught by recreational fishers are not well understood scientifically. So, we do not know how they rate against sustainability measures. This is mainly because they lack sufficient commercial value to warrant the cost of quantitative stock assessments, which are largely recovered by the relevant stock quota holders. In such cases, the cost recovery system has not provided sufficient levels of scientific research for shared fisheries. A new funding system may be required.

Many overseas jurisdictions demonstrate greater levels of commitment to managing fisheries that are important to recreational fishers, in part, because the species are also of commercial interest in those places. For some fisheries, these commitments are in place because they have reached worse states than most New Zealand fisheries. What is apparent is that several overseas fisheries are receiving greater levels of management attention and research than what most shared fisheries receive in New Zealand.

This chapter focuses on the gap between the management of fish stocks valued by commercial fishers versus recreational fishers. It discusses worldwide interest in rebuilding overfished stocks. It then examines how New Zealand's fish stocks are measured for sustainability, followed by a comparison of how fish stocks important for commercial versus recreational fishing rate against sustainability measures. The chapter ends with recommendations regarding improved commitment to managing and researching key shared fisheries. None of the recommendations changed as a consequence of public consultation.

[14] Adler, J., Cullis-Suzuki, S., Karpouzi, V., Kaschner, K., Mondoux, S., Swartz, W., Trujillo, P., Watson, R. and Pauly, D. (2010). Aggregate performance in managing marine ecosystems of 53 maritime countries. *Marine Policy*, 34, 468–476.

[15] Worm, B., Hilborn, R., Baum, J.K., Branch, T.A., Collie, J.S., Costello, C., Fogarty, M.J., Fulton, E.A., Hutchings, J.A., Jennings, S., Jensen, O.P., Lotze, H.K., Mace, P.M., McClanahan, T.R., Minto, C., Palumbi, S.R., Parma, A.M., Ricard, D., Rosenberg, A.A., Watson, R. and Zeller, D. (2009). Rebuilding global fisheries. *Science*, 325(5940), 578–585.

2.1 Overseas fisheries

"Recently, several nations have made significant progress in rebuilding overfished and depleted stocks. This progress is mainly attributed to governments having set mandates to end overfishing"

Worldwide, fisheries managers and scientists are focused on achieving fish stock sustainability. As explained in *What's the Catch?*, this focus follows decades of overfishing that led to widespread stock depletion and resulting environmental and socioeconomic problems.[16] Recently, several nations have made significant progress in rebuilding overfished and depleted stocks.[17] This progress is mainly attributed to governments having set mandates to end overfishing.[18]

While each fish stock presents unique challenges to rebuilding efforts, many successful examples incorporate common characteristics. These include consistent means of setting rebuild (biomass) targets and political support for substantial, measurable reductions in fishing mortality at the outset, rather than relying on incremental small catch reductions over time.[19] These characteristics were observed during our overseas research.

For example, since 2006, when the US Magnuson–Stevens Fishery Conservation and Management Act was amended, fisheries management plans in the United States have had to include science-based TACs for all fish stocks managed in federal waters. The amendment also required these plans to stipulate specific timeframes for ending overfishing. The timeframes must be as short as possible, and, in most cases, not exceed 10 years. We saw in *The Overseas Catch* that, in 2006, the TAC for the Gulf of Mexico red snapper fishery was cut by 45 percent.

In 2007, the Australian Commonwealth Government released its Harvest Strategy Policy with the intent of eliminating overfishing and rebuilding overfished stocks.[20] New Zealand developed an equivalent policy, the Harvest Strategy Standard, in parallel, which was published in 2008 but has not been implemented as actively as the Australian policy. The Australian policy includes tight timeframes for developing harvest strategies that specify biomass targets and limits, along with management actions for achieving the targets and avoiding the limits.[21] Accordingly, Western Australia implemented stringent requirements for rebuilding the mixed demersal (bottom dwelling) scalefish fishery. The rebuild required a 50 percent reduction in TACs.

16 Ibid.

17 Sissenwine, M.M., Mace, P.M. and Lassen, H.J. (2014). Preventing overfishing: Evolving approaches and emerging challenges. *ICES Journal of Marine Science*, 71(2), 153–156.

18 Carruthers, T.R., Punt, A.E., Walters, C.J., MacCall, A., McAllister, M.K., Dick, E.J. and Cope, J. (2014). Evaluating methods for setting catch limits in data-limited fisheries. *Fisheries Research,* 153, 48–68.

19 Murawski, S.A. (2010). Rebuilding depleted fish stocks: The good, the bad, and, mostly, the ugly. *ICES Journal of Marine Science*, 67(9), 1830–1840 (https://academic.oup.com/icesjms/article/67/9/1830/621607/Rebuilding-depleted-fish-stocks-the-good-the-bad#10430493).

20 Department of Agriculture, Fisheries and Forestry (2007). *Commonwealth Fisheries Harvest Strategy: Policy and Guidelines*. Department of Agriculture, Fisheries and Forestry: Canberra, Australia.

21 Ibid.

"The commercial mid- and deep water fisheries have received the majority of the management attention, research budgets and monitoring coverage"

Finally, in response to declining Pacific halibut biomass during the past decade, the International Pacific Halibut Commission's recommendations have led to significant reductions in total catch levels. Canadian commercial catch limits have decreased by almost 50 percent since 2006, along with the recreational bag limit reducing from two to one halibut per day.[22]

2.2 Measuring sustainability

In New Zealand, most commercial landings consist of the mid- and deep water stocks. The commercial mid- and deep water fisheries have received the majority of the management attention, research budgets and monitoring coverage. These costs are largely recovered from relevant stock quota holders.

The efforts to improve the status and reporting of catches for several mid- and deep water stocks have been directed at meeting criteria for Marine Stewardship Council (MSC) certification, which has promotional value for domestic and overseas markets.[23] Pursuit of MSC certification accelerated the uptake of New Zealand's Harvest Strategy Standard for the mid- and deep water fisheries, where almost all stocks have management plans and targets and limits guided by the standard (discussed below).

In contrast, none of the shared inshore fisheries have been assessed against MSC certification, and uptake of the Harvest Strategy Standard has been slow, although steady progress is being made. Worse yet, outside the SNA 1 fishery, along the northeast portion of the North Island, none have management plans and, for some, management is completely absent.

2.2.1 Data-limited fish stocks

Because many stocks commonly caught by recreational fishers lack the biological information needed for quantitative stock assessments, they can be classified as data limited. Data-limited stocks have low-quality scientific data (poor data) or limited data (data poor).[24] This can pose a significant challenge in meeting legal obligations to sustainably manage fisheries.[25]

Fisheries scientists and managers worldwide have responded to government mandates to end overfishing by developing more cost-effective data-limited methods for setting sustainable catch and/or effort levels. The momentum overseas has focused on identifying and applying methods that take advantage of existing data and cost-effective ways of collecting

[22] Fisheries and Oceans Canada (2015). *Pacific Halibut* (www.dfo-mpo.gc.ca/fm-gp/sustainable-durable/fisheries-peches/halibut-fletan-eng.htm).

[23] The MSC is an international non-profit organisation established to address the problem of unsustainable fishing and safeguard seafood supplies for the future. MSC certification for sustainable fishing and supply chain traceability has value in an increasing number of seafood markets worldwide.

[24] Costello, C., Ovando, D., Hilborn, R., Gains, S.D., Deschenes, O. and Lester, S.E. (2012). Status and solutions for the world's unassessed fisheries. *Science*, 338, 517–520.

[25] Carruthers, T.R., Punt, A.E., Walters, C.J., MacCall, A., McAllister, M.K., Dick, E.J. and Cope, J. (2014). Evaluating methods for setting catch limits in data-limited fisheries. *Fisheries Research*, 153, 48–68.

"However, more cost-effective methods of collecting data are often the only way to overcome data poor status"

new data to improve assessments and support management decisions and optimal yield (catch in terms of weight).[26] However, more cost-effective methods of collecting data are often the only way to overcome data poor status.

New Zealand strongly relies on catch and effort data provided by the commercial fishing sector, instead of independent survey data. This is partly due to the fisheries research budget, which is mainly cost recovered, having steadily declined in real terms for the past 30 years.[27] It is uncertain whether this situation was lessened with the former government's $30.5 million boost in funding for fisheries management.[28]

Perhaps the greater challenge will be overcoming reluctance to apply more cost-effective, data-limited methods for some stocks, depending on the quality and type of available data. However, limited management resources mean that data-limited methods cannot be applied to all fish stocks. Trade-offs must be made regarding which fish stocks warrant priority for limited management resources, including research budgets.

2.2.2 Harvest Strategy Standard

What's the Catch? refers to the term Maximum Sustainable Yield (MSY), which is the theoretical average level of harvesting at which yield can be maximised over the long term. New Zealand developed the Harvest Strategy Standard to help meet the legislative requirement for most QMS-managed stocks, which is to set TACs that maintain stocks at or above the biomass level (B) that can produce MSY (*Bmsy*).[29]

The Harvest Strategy Standard and its Operational Guidelines[30] use MSY-compatible reference points (targets), which can be determined as biomass (abundance), fishing mortality or proxies for them. Guidance is also provided on setting biomass limits and overfishing thresholds designed to be avoided. For example, if stocks fall below the 'soft' limit, generally set at ½ *Bmsy*, it triggers a required formal, time-constrained rebuilding plan.[31]

New Zealand's fisheries legislation does not prescribe stock rebuild timeframes. The Minister has discretion in deciding the rate at which the biomass of a fish stock reaches its reference point (target), while considering social, cultural and economic factors. The Harvest Strategy Standard

[26] Newman, D., Berkson, J. and Suatoni, L. (2015). Current methods for setting catch limits for data-limited fish stocks in the United States. *Fisheries Research*, 164, 85–93.

[27] Mace, P., Sullivan, K.J. and Cryer, M. (2014). The evolution of New Zealand's fisheries science and management system under ITQs. *ICES Journal of Marine Science*, 71(2), 204–215.

[28] Guy, N. (25 May 2017). *Budget 2017 Delivering for New Zealanders: $30.5m boost to fisheries management* (www.beehive.govt.nz/release/305m-boost-fisheries-management).

[29] Ministry for Primary Industries (2008). *Harvest Strategy Standard for New Zealand Fisheries*. Ministry for Primary Industries, Wellington.

[30] Ministry for Primary Industries (2011). *Operational Guidelines for New Zealand's Harvest Strategy Standard, Revision 1*. Ministry for Primary Industries, Wellington.

[31] Ministry for Primary Industries (2008). *Harvest Strategy Standard for New Zealand Fisheries*. Ministry for Primary Industries, Wellington.

provides guidance that the target should be reached within a period no longer than twice the time the biomass would rebuild without fishing.[32]

"It is important to note that, while rebuilding a stock's demographic complexity (eg, age and size) may take an extended timeframe, early and obvious signs of rebuilding can often occur"

It is important to note that, while rebuilding a stock's demographic complexity (eg, age and size) may take an extended timeframe, early and obvious signs of rebuilding can often occur. These can be evident through a major reduction in mortality at the outset (eg, TAC reduction) and/or improved reproductive success (which tends to be environmentally driven) or recruitment (fish growing to a catchable size).[33]

2.2.3 Increasing target biomass

The worldwide focus on achieving fish stock sustainability includes implementing more conservative *Bmsy* targets. Generally, a worldwide shift has occurred in *Bmsy* targets, from 20 to 25 percent of the unfished biomass (20–25% B0) to 30 to 40 percent of the unfished biomass (30–40% B0) or higher, depending on fish stock productivity. The general rule is the lower the stock productivity the higher percentage of B0.[34]

Bmsy targets are set at around 30–40% B0 or higher, in recognition of the fluctuating nature of fish stocks, environmental and species interaction complexities, uncertainty in data and stock assessments, and the role of individual species in their ecosystems. Higher and more conservative *Bmsy* targets are set to ensure optimal levels of harvesting and reduce the risk of accidental overfishing.

MPI's Operational Guidelines are increasingly being used to apply *Bmsy* targets of 30–40% B_0. The common benchmark is a biomass target of 40% B_0 for temperate water finfish stocks, although some stocks might warrant higher targets. For example, the kahawai (KAH 1) stock is managed at 52% B_0. This higher target is an example of ministerial discretion that allows for maintaining the recreational fishing experience for this stock.

Higher biomass provides diverse potential benefits and costs. It is associated with a higher average age and size of fish, and better distribution throughout suitable habitat. It is also associated with a fish stock's ability to withstand adverse natural conditions. Furthermore, higher biomass increases the chances of fishers obtaining better catch rates but, to maintain biomass above *Bmsy*, yields must decrease over both the short and long term.[35]

The target biomass, and associated sustainable yield, should be developed through rigorous cost-benefit assessment. The case for reducing fishing effort and catch to achieve biomass consistent with *Bmsy* is sound. The case for achieving biomass in excess of *Bmsy* requires a more difficult balancing of ecological benefits, enhancement of the recreational fishing

[32] Ibid.

[33] Murawski, S.A. (2010). Rebuilding depleted fish stocks: The good, the bad, and, mostly, the ugly. *ICES Journal of Marine Science*, 67(9), 1830–1840 (https://academic.oup.com/icesjms/article/67/9/1830/621607/Rebuilding-depleted-fish-stocks-the-good-the-bad#10430493).

[34] Ministry for Primary Industries (2011). *Operational Guidelines for New Zealand's Harvest Strategy Standard, Revision 1*. Ministry for Primary Industries, Wellington.

[35] Ibid.

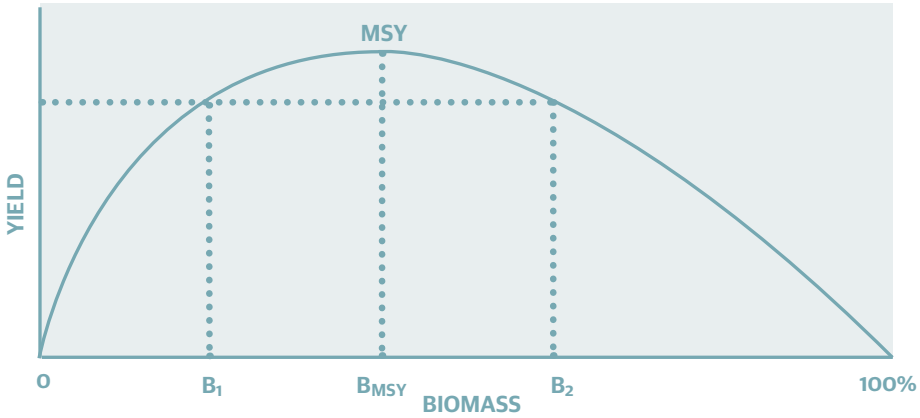
"MPI has not identified these fisheries nor has it set out any detailed planning for TAC reductions that accommodate the short-term lost opportunities to fish and may be necessary to reach certain biomass targets"

experience and reductions in total catches. This assessment is beyond the scope of this report but warrants further study. We consequently take MPI's stated *Bmsy* goal as the target biomass.

Figure 1 depicts a fishery managed below MSY and *Bmsy* where yield (Y) corresponds to B1. In the long term, yield (Y) will increase to MSY, so long as the catch remains relatively low (for example, fishing mortality is less than the level that would provide MSY). However, increasing biomass beyond *Bmsy* to B2 will not result in increased yield; rather, it requires a decrease in yield. In other words, managing at higher and lower biomass comes at a cost to yield (Y).

MPI's 2016 consultation document, *The Future of Our Fisheries*, stipulates that current catches in some fisheries would need to be reduced to allow stocks to rebuild to *Bmsy* or higher. MPI has not identified these fisheries nor has it set out any detailed planning for TAC reductions that accommodate the short-term lost opportunities to fish and may be necessary to reach certain biomass targets.[36]

Figure 1: Representation of a fishery managed at high and low biomass levels



It is difficult, however, to compare the rebuild efforts of New Zealand's inshore fish stocks with efforts overseas. Some overseas stock sizes are increasing more rapidly than in New Zealand, partly because the overseas stocks are often being rebuilt from a lower base due to decades of overfishing. Despite the rapid rebuild of these overseas stocks, they could still be in a poorer state than some in New Zealand.

2.2.4 SNA 1 fishery

The SNA 1 fishery has the only management plan for a shared fishery. However, the plan's stated intentions for rebuilding the snapper stock raise questions about its effectiveness.

In 2013, the former Minister tasked representatives from across the fishing sectors with developing a management plan that ensures the SNA 1 fishery provides for all sectors' long-term interests. These representatives, referred to as the Strategy Group, acknowledged that, due to the projected

[36] Ministry for Primary Industries (2016). *Te Huapae Mataora Mo Tangaroa, The Future of Our Fisheries, Volume II: The Fisheries Management System Review, Consultation Document 2016*. Ministry for Primary Industries: Wellington.

population growth in the region, meeting long-term interests will require an increase in the snapper biomass.[37]

The 2015 management plan includes increasing the current biomass at around 20% B0 to an interim target of 30% B0 within 10 years (by 2025), and to an ultimate target of 40% B0 within 25 years (by 2040). The 40% B0 target is appropriate, based on snapper biological characteristics.[38] However, the 25-year rebuild timeframe, set at the maximum for a productive stock according to the Harvest Strategy Standard rule, does not include any analysis or explanation of why the maximum timeframe is preferable or optimal.

Also, the management plan does not recommend any TAC reduction at the outset, despite the science-based conclusion that overfishing is likely occurring, particularly in the Bay of Plenty, based on the modelling results.[39]

Instead, the Strategy Group sought scientific advice on the expected yield gains by improving the survival of released juvenile (under-sized) snapper and increasing the minimum legal size (MLS) and characteristics of the main commercial and recreational fishing methods.

The Strategy Group's intent was to know, after testing various simulation modelling options, whether the expected yield gains would

37 *Snapper (SNA 1) Management: Plan Prepared by the SNA Strategy Group with assistance from the Ministry for Primary Industries 2016* (www.mpi.govt.nz/document-vault/13801).

38 Ibid.

39 Minister for Primary Industries letter to stakeholders 2013. Review of Sustainability Measures and Other Management Controls for Snapper 1 (SNA 1) (www.mpi.govt.nz/document-vault/7803).

"While the modelling results for different options vary, overall, they suggest the SNA 1 stock will not rebuild within 25 years (by 2040) without a substantial TAC reduction"

be sufficient to avoid the need to reduce the TAC.[40] While the modelling results for different options vary, overall, they suggest the SNA 1 stock will not rebuild within 25 years (by 2040) without a substantial TAC reduction.[41]

For the management plan to be effective in rebuilding the SNA 1 stock, a significant TAC reduction will likely be required sooner than later. It appears, however, the Strategy Group was unwilling to propose a reduction (presumably all sectors were involved). If proposed, then the tough questions would need to be addressed regarding who will pay the cost of conservation by foregoing current catch levels. This situation illustrates the importance of having certainty in TAC allocations. As it stands, the plan appears to be stalling what is, in all likelihood, inevitable.

The expected yield gains from improving the survival of released juvenile (under-sized) snapper and increasing the recreational MLS have become contentious issues. Soon after the recreational MLS for SNA 1 was increased from 27 to 30 centimetres, concerns were raised about the number of snapper in that size range that were dying needlessly when returned to the sea.[42] Questions were raised about the effectiveness of the intended rebuild, when the number of under-sized snapper dying is increasing because of the requirement to discard fish based on the increased recreational MLS.

2.3 Status of key recreational fisheries

As discussed in *What's the Catch?*, the 2011–12 National Panel Survey provides the most comprehensive survey results of marine recreational fishing ever undertaken in New Zealand. The results list, amongst other things, the stocks most commonly caught by recreational fishers.[43]

Table 1 compares the status of some of these stocks. It shows whether each stock is at or above its target biomass level, which is generally 40% B0, below its soft limit, generally set at ½ *Bmsy*, and relative to the overfishing threshold, or the rate of extraction that should not be exceeded, because this would soon lead to the biomass declining below the target and/or biomass limit.

The green circles in table 1 indicate favourable stock status and the orange squares indicate unfavourable status. The number of circles or squares indicates the degree to which the status is favourable or unfavourable. The grey shading indicates the stock status is unknown. This could be due to insufficient or inadequate catch and effort data, or, for

40 *Snapper (SNA 1) Management Plan Prepared by the SNA Strategy Group with assistance from the Ministry for Primary Industries 2016* (www.mpi.govt.nz/document-vault/13801).

41 Ibid (refer to appendices C and D).

42 One News Now (13 October 2014). *New snapper regulations see population drop – fishermen* (www.tvnz.co.nz/one-news/new-zealand/new-snapper-regulations-see-population-drop-fisherman-6105099).

43 Wynne-Jones, J., Gray, A., Hill, L. and Heinemann, A. (2014). *National Panel Survey of Marine Recreational Fishers 2011–12: Harvest Estimates*. New Zealand Fisheries Assessment Report 2014/67. Wellington: Ministry for Primary Industries.

some stocks, a quantitative stock assessment not having been undertaken, or that the assessment was not definitive.[44]

Table 1 shows mixed results, with some fish stocks' status considered favourable, although for most not enough is known to determine their status. The stocks with the most favourable status include two snapper (SNA 2, SNA 7), one kahawai (KAH 1), most blue cod and red gurnard, one tarakihi (TAR 7), one trevally (TRE 7), one kingfish (KIN 1) and two flatfish (FLA 2, FLA 3), when considering their status in relation to their management targets and soft biomass limits and corresponding low probabilities of overfishing.

Most of the remaining finfish stocks do not rate so well against sustainability measures; SNA 1 sub-stocks, SNA 8, most tarakihi, trevally and kingfish stocks, for example. Also, the low level of knowledge or complete lack of it means we do not know the status of several stocks, including all sea perch, groper, grey mullet, yellow-eyed mullet, kina, pipi, green-lipped mussel and tuatua stocks.

[44] Ministry for Primary Industries (2 May 2017). *Stock Status* (https://fs.fish.govt.nz/Page.aspx?pk=16&tk=478).

Table 1: Comparison of fish stocks most commonly caught by recreational fishers

Fish stocks	Last assessed	At or above target level?	Below the soft limit?	Overfishing?	Healthy stock status
Snapper					
SNA 1 – sub-stocks	2013	■■■	■	■■	
SNA 2	2010		●●		✓
SNA 7	2015	■■■	●●	●●	✓
SNA 8	2005	■■■	■■■		
Kahawai					
KAH 1	2015	●●●	●●●	●●●	✓
KAH 2, 3, 8	–				
Blue cod					
BCO 1, BCO 8	–	●	●●		✓
BCO 3	2015	●	●●	■	✓
BCO 4	2015	●	●●●	■	✓
BCO 5	2013	●	●●●	●●	✓
BCO 7	–				
Red gurnard					
GUR 1W	2013	●	●●	●●	✓
GUR 1E, GUR 1BOP	2013	●	●●		✓
GUR 2	2014	●	●●	●●	✓
GUR 3	2015	●●	●●●	■	✓
GUR 7	2014	●	●●	●●	✓
GUR 8	–				
Tarakihi					
TAR 1, TAR 2, TAR 3	2012				
TAR 5, TAR 8	–				
TAR 7	2014	●●	●●		✓
Trevally					
TRE 1	2006			■	
TRE 2	–				
TRE 7	2015	●●●	●●●	●●●	✓
Sea perch					
SPE (all stocks)	–				
Groper					
HPB1-5, 7, 8	–				
Kingfish					
KIN 1 BOP, EN/HG offshore	2016	●●		●●	✓
KIN 1 EN/HG inshore	2016	■■		■■	
KIN 1 (EN), 2, 7, 8	–				
Flatfish					
FLA 1	2015				
FLA 2	2014	●	●●●	●●●	✓
FLA 3 (ESO)	2015	■■	■	■■	
FLA 3 (LSO)	2015	●		■■	
FLA 3 (SFL)	2015	●●●	●●●	■	✓
FLA 7	–				
Grey mullet					
GMU 1	2007				
Yellow-eyed mullet					
YEM 1, 9	–				
Kina					
SUR 1A, 1B, 2A, 2B, 3, 4, 5, 7A, 7B, 9	–				
Pipi					
PPI 1A	2015	■■■	■■■	*Closed*	
PPI 1B, 1C, 3	–				
Green-lipped mussels					
GLM 1, 7A, 9	–				
Tuatua					
TUA 9	–				

Source: Ministry for Primary Industries (2016). *Stock Status Table.* Ministry for Primary Industries: Wellington

"The low level of knowledge of many inshore stocks places most of New Zealand's recreational fisheries in a tenuous situation"

The low level of knowledge of many inshore stocks places most of New Zealand's recreational fisheries in a tenuous situation. Stated another way, we do not know enough about most of these stocks to determine if the management measures in place are effective in meeting legislative obligations to manage them sustainably, and if they are able to meet all sectors' long-term interests. This is primarily because of a lack of adequate funding and data-gathering methods to conduct scientific stock assessments, particularly for many multispecies inshore stocks that have diverse and competing interests. Another contributing factor is the lack of management plans that specify how these fisheries are to be managed.

Table 2 compares the fish stocks that make up most of the commercial landings and annual value of wild capture fisheries. The status of these stocks is expected to be favourable, because they were generally well managed from the beginning of any appreciable harvesting activities, rather than after several decades of little or no management.

The favourable status especially applies to those stocks that have earned MSC certification: hake, hoki, ling, southern blue whiting, albacore tuna and orange roughy (being an example of the early TACs set too high).[45]

Those orange roughy stocks that have not earned MSC certification clearly show less favourable status, because they are still recovering from overfishing. However, the rock lobster and paua stocks, with some stocks being the exception, show that similar favourable status can be maintained without MSC certification.

Most of the commercially valued fish stocks in table 2 demonstrate a sharp contrast to those commonly caught by recreational fishers, as set out in table 1. These differences relate to a greater number of stocks with unknown sustainability status and relatively fewer known to have healthy status. It is important to note, from a purely economic perspective, some stocks in table 1 do not warrant the same level of attention and expenditure as most of those in table 2.

[45] Marine Stewardship Council (2017). *Track a fishery* (https://fisheries.msc.org/en/fisheries/@@search?q=new+zealand&search=).

Table 2: Comparison of fish stocks that make up most of the commercial landings and annual value

Fish stocks	Last assessed	At or above target level?	Below the soft limit?	Overfishing?	MSC Certification
Albacore (not in Quota Management System)					
ALB 1	2015	●	●●	●●●	✓
Hake					
HAK 1	2014	●●●	●●●●	●●●	✓
HAK 4	2012	●●	●●●●	●●●●	✓
HAK 7	2012	●●●	●●●	●●●	✓
Hoki					
HOK 1 East	2016	●●●●	●●●●	●●●●	✓
HOK 1 West	2016	●●●	●●●	●●	✓
Ling					
LIN 1	2013				
LIN 2	2014		●●		
LIN Cook Strait	2010	●●	●●●●	●●●	✓
LIN 3,4	2014	●●●	●●●●	●●●	✓
LIN 5	2014	●●●●	●●●●	●●●●	✓
LIN 6	2014	●●●●	●●●●	●●●●	✓
LIN 6B	2006	●●●	●●●	●●●	✓
LIN 7WC	2013	●●●	●●●●		
Orange roughy					
ORH 1 Northern NI	2007				
ORH 1 Mercury-Colville	2001	■■	■■		
ORH 2A North	2003	■■	●●		
ORH 2A South, ORH 2B, ORH **3A**	2014	■■■	■■	■	
ORH 3B NW Chatham Rise	2014	●●	●●●	●●●●	✓
ORH 3B East and South **Chatham Rise**	2014	●	●●	●●●	✓
ORH 3B Puysegur	1997	■■	■■	●●	
ORH 3B Other					
ORH 7A	2014	●●●	●●●	●●●	✓
ORH 7B	2004	■■■	■■	●●● *Closed*	
Southern blue whiting					
SBW 6I	2014	●●●	●●●●	●●●	✓
SBW 6B	2014	●	●●	●●	✓
SBW 6R	2002	●●	●●		✓
SBW 6A					
Rock lobster					
CRA 1, CRA 3	2016	●●●●	●●●●	●●●●	
CRA 2	2016	■■	●●●●	●●	
CRA 4	2016	■■■	●●●●	■■	
CRA 5, CRA 8		●●●●	●●●●	●●●	
CRA 6	1996				
CRA 7	2016	●●●	●●	●●●	
CRA 9	2015				
Paua					
PAU 2	2014		●●		
PAU 3	2014	●●●	●●●	●●●	
PAU 4	2004				
PAU 5A – northern	2014	●●	●●●	●●●	
PAU 5A – southern	2014	●	●●●	●●	
PAU 5B	2014	●	●●●	●●●	
PAU 5D	2013	■■	●●●	■	
PAU 7	2015	■■■	■	■■■	

Source: Ministry for Primary Industries (2016). *Stock Status Table*. Ministry for Primary Industries: Wellington

"The focus of shared fisheries management should be those fish stocks where non-commercial catches are considered significant and the benefits outweigh additional management costs"

Table 3 outlines several of the key shared fisheries. It compares the recreational and commercial catches in tonnes based on the 2011–12 data provided in the National Panel Survey. The table shows the recreational catch comprised varied proportions of the combined catch (recreational and commercial). Recreational fishers caught 42 percent of the combined snapper catch, 43 percent of the kahawai catch, 4 percent of the tarakihi catch and 6 percent of the trevally catch. The recreational catch of kingfish and scallops exceeded the commercial catch. The focus of shared fisheries management should be those fish stocks where non-commercial catches are considered significant and the benefits outweigh additional management costs.

Table 3: Comparison of recreational and commercial catches in key shared fisheries 2011–12[46]

Species	Recreational catch (tonnes)	Commercial catch (tonnes)
Snapper	4,812	6,548
Kahawai	1,785	2,326
Blue cod	333	2,216
Red gurnard	203	3,351
Tarakihi	239	5,347
Trevally	209	3,132
Sea perch	78	1,108
Groper	219	1,506
Kingfish	662	235
Flatfish	59	2,865
Rock lobster	186	2,752
Paua	149	947
Scallops	185	113

Source: National Panel Survey

2.4 Recommendations

The new government's announcement to have fisheries as a separate portfolio provides a timely opportunity to demonstrate a commitment to collaboration in managing shared fisheries. This recommendation acknowledges the level of existing commitment displayed in some areas, although it is not necessarily directed at finding workable solutions for the long term.

This commitment needs to address anticipated increases in demand for shared fish stocks. It should also acknowledge the importance of recreational fishing (for example, its growth potential and ability to provide social, cultural, psychological and economic benefits).

[46] This comparison includes the species that had more than 50 tonnes caught by the recreational and commercial sectors. It does not include all species considered key shared fisheries.

"The intended consequence of this recommendation is to reach a new balance between the prioritisation of management resources allocated to commercially valued fisheries relative to the non-commercial sectors (recreational and customary), particularly with respect to the limited research budget"

Furthermore, it should acknowledge the legislative obligations to uphold the rights associated with customary fishing and quota holdings.

The intended consequence of this recommendation is to reach a new balance between the prioritisation of management resources allocated to commercially valued fisheries relative to the non-commercial sectors (recreational and customary), particularly with respect to the limited research budget. This rebalance should shift the focus to managing shared fisheries for the benefit of all fishing sectors.

As the demand for research increases, there will be a corresponding call to increase the research budget. Options for funding a further budget increase to benefit recreational fishing are covered in chapter 5. Nonetheless, questions remain about the low level of resourcing for the fisheries management function since MPI's establishment.

2.4.1 Increase stock biomass

Reaching an agreed abundance (biomass) target, which in most cases is 40% B0, for shared fisheries should be one of the first expressions of this commitment because of the potential to benefit all fishing sectors in the long term. However, reaching management targets in a timely manner for some fish stocks may require several changes to management measures, including:

- implementing new methods for assessing data-limited stocks or more cost-effective data collection to support quantitative stock assessments and other monitoring methods;
- reducing fishing mortality and developing policies that outline who pays the cost of conservation and the extent to which this should include the public (taxpayers) who have a vested interest in ensuring the viability of our marine ecosystems, even if they do not fish;
- reconsidering existing measures (for example, whether an MLS is contributing to stock conservation) or determining the research necessary to assess their effectiveness;
- preventing further habitat degradation for stock conservation measures to be successful; and
- identifying and protecting areas for juvenile stocks and their habitats from fishing.

We also recommend fundamental reconsideration of the rules for management plans. The SNA 1 management plan is ineffective because the rules are currently inadequate. Unless rules are set appropriately, development of further management plans will also be ineffective.

2.4.2 Reporting on shared fisheries

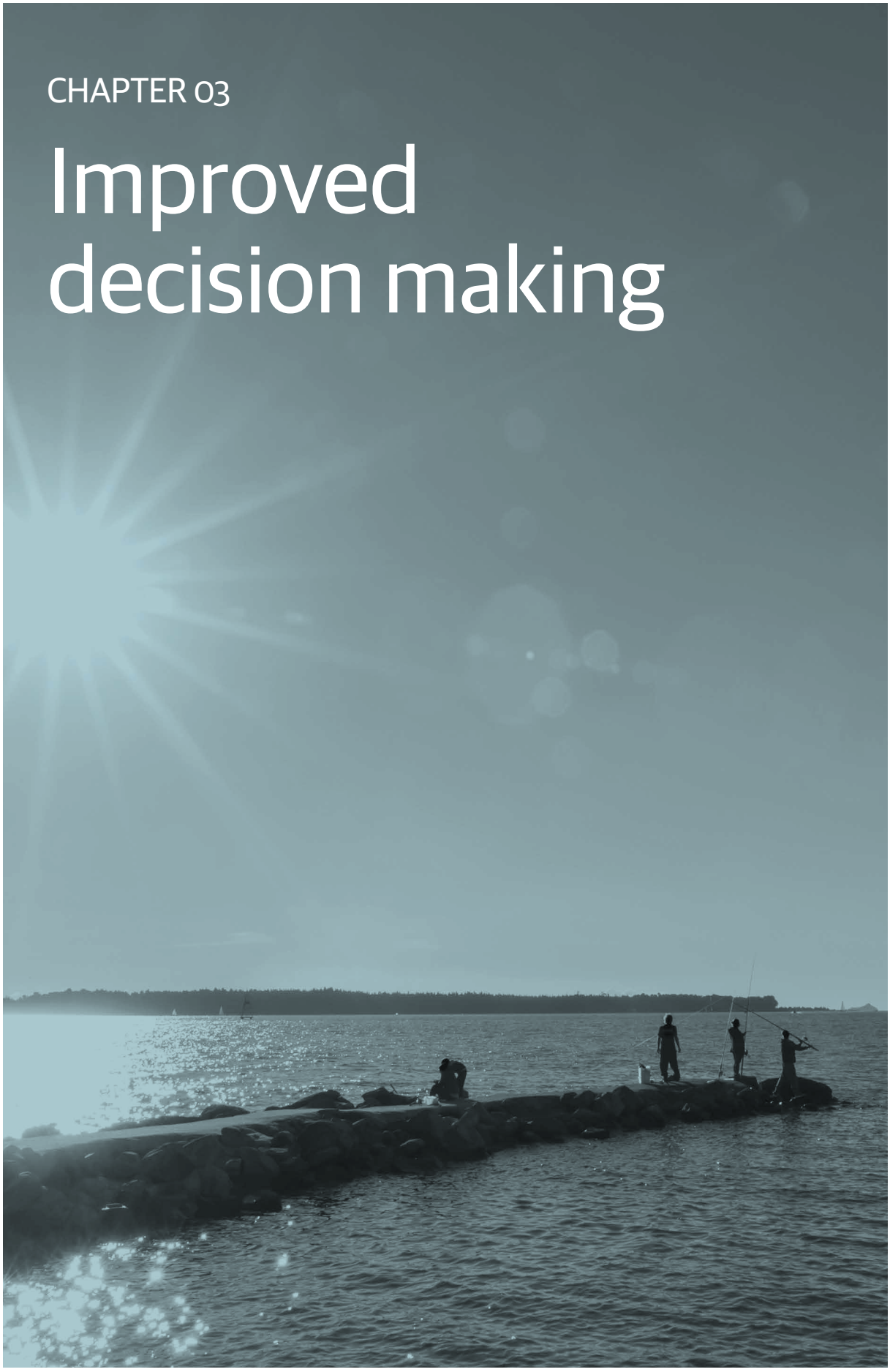
The next expression of commitment is to design indicators of stock management performance that can be tracked over time for those stocks that are important for non-commercial fishing. For example, improvements in the available knowledge for low-data stocks and changes in their status can be tracked, along with the effectiveness of relevant management measures, and reported on a regular basis, in addition to reporting in the Fisheries Assessment Plenary annual series. These types of science-based measures, along with measuring satisfaction of the non-commercial fishing experience, should be publicly reported in MPI's annual reports.

In comparison, in Western Australia, stocks that are most important for recreational fishers are measured against an annual tolerance catch or effort range for each of the major recreational fisheries and reported in the Department of Fisheries' annual reports.[47] With appropriate representation, this type of reporting should be developed for New Zealand's stocks that are important to recreational and customary fishers.

[47] Department of Fisheries (2016). *Department of Fisheries Annual Report to Parliament 2015/16*. Department of Fisheries: Perth, Western Australia (www.fish.wa.gov.au/Documents/annual_reports/annual_report_2015-16.pdf).

CHAPTER 03

Improved decision making



"The integration of recreational fisheries into management policies and processes is generally signalled by formulation of a policy that acknowledges the importance of recreational fishing and the benefits it provides"

The Overseas Catch notes that, without some level of integration of recreational fisheries into management policies and processes, competing fishing sectors just continue demanding that their rights prevail over others, with the resulting fights hurting each sector and the shared fishery.

Integration is important for management decision making because growth in demand for recreational fishing increasingly affects fish stock sustainability. The extent of integration will be driven by the level of shared interest in the fishery and the need to address conflicts that could adversely affect the management of the fishery.

To cope with the increased complexity from integrating recreational fisheries into management policies and processes, our research suggests that institutional arrangements with demonstrated, effective (and accepted) representation for recreational fishers are critical in improving overall management and decision making.

Our research shows that success in integrating recreational fisheries is also dependent on improving data collected on recreational fishing. The benefits for New Zealand would arise from increasing the frequency of data collection, including the use of electronic self-reporting tools, such as smartphone apps and tablets, in certain circumstances. Improved data collection would benefit decision making for management purposes, particularly for those shared stocks where TAC reallocation could be a consideration.

This chapter discusses overseas progress on integration and institutional arrangements for recreational fishing representation, with a focus on Western Australia. It examines the importance of improving recreational fishing data. The chapter ends with recommendations for policy development, improved institutional arrangements and data collection. Some recommendations changed as a consequence of public consultation.

3.1 Overseas recreational fisheries policies

The integration of recreational fisheries into management policies and processes is generally signalled by formulation of a policy that acknowledges the importance of recreational fishing and the benefits it provides. In so doing, the policy clarifies the government's role in providing public access to fisheries resources and the position of recreational fisheries relative to competing fishing sectors. The overseas jurisdictions in our research have developed such policies.

Since 2010, British Columbia, Canada has had a policy framework for developing goals, initiatives and actions that support achieving a collective vision for recreational fisheries. The framework's primary objective is to provide broad guidance to fisheries managers, decision makers and recreational fishers.[48]

[48] Government of Canada and Sport Fishing Advisory Board (2010). *A Vision for Recreational Fisheries in British Columbia 2009–2013*. Ottawa: Ontario, Canada (www.pac.dfo-mpo.gc.ca/consultation/smon/sfab-ccps/docs/rec-vision-eng.pdf).

In 2015, the United States' Federal Government released the National Saltwater Recreational Fisheries Policy. It is based on various principles, including the promotion of public access to quality recreational fishing opportunities, and recurring evaluation of fishery allocations to facilitate equitable distribution of those opportunities.[49]

Western Australia began developing policies on integrated fisheries management in 2000. The overall aim of the policies developed in 2004 and 2009 was to develop an integrated approach for sustainable use and management for fisheries and areas shared between commercial, recreational and indigenous fishers and aquaculture.

In 2012, the Government of Western Australia, in association with the Western Australian Fishing Industry Council (WAFIC) and Recfishwest, developed the Fisheries Policy Statement. This focuses on, amongst other things, fisheries access rights that provide certainty and confidence to each fishing sector, and sound processes for sharing and allocating fisheries resources.[50]

The Government of Western Australia is also working with Recfishwest to develop a recreational fisheries policy in response to impacts generated by non-fishing activities, such as the offshore petroleum industry, or public works, such as marina development.[51]

3.2 New Zealand and fisheries policies

In comparison with Western Australia, and as noted in *What's the Catch?*, the government developed a recreational fisheries policy soon after the QMS was implemented and as Māori claims to fisheries resources gained momentum.[52] The government acknowledged the significant changes made to managing commercial and customary fisheries left little effort and attention directed toward improving recreational fisheries management.[53]

The policy provided the recreational right with priority status where abundance was insufficient to support both commercial and non-commercial fishing. But, the policy was not taken to Cabinet for legislative approval nor has it been endorsed by any subsequent governments.[54]

49 NOAA Fisheries (2015). *National Saltwater Recreational Fisheries Policy*. National Marine Fisheries Service: Silver Spring, Maryland, United States of America. (www.nmfs.noaa.gov/sfa/management/recreational/documents/noaa_recfish_policy.pdf).

50 Department of Fisheries (2012). *Western Australian Government Fisheries Policy Statement*. Department of Fisheries: Perth, Western Australia.

51 Ibid.

52 Ministry of Agriculture and Fisheries (June 1989). *National Policy for Marine Recreational Fisheries*. Ministry of Agriculture and Fisheries: Wellington. The Hon Colin Moyle put the policy in place, which became known as Moyle's promise.

53 Kearney, R.E. (2001). Fisheries property rights and recreational/commercial conflict: Implications of policy developments in Australia and New Zealand. *Marine Policy*, 25, 49–59.

54 Lock, K. and Leslie, S. (2007). *New Zealand's Quota Management System: A History of the First 20 Years*, Motu Working Paper 07-02. Motu Economic and Public Policy Research: Wellington.

"Compared with the nations we have researched, New Zealand is lagging in the recreational fisheries policy arena and in momentum for improving the management of recreational fisheries"

Also noted in *What's the Catch?*, though attempts have been made with the 2000 *Soundings*[55] and 2006 *Shared Fisheries*[56] documents, successive governments have been unsuccessful in gaining broad support for a recreational fisheries policy.

Compared with the nations we have researched, New Zealand is lagging in the recreational fisheries policy arena and in momentum for improving the management of recreational fisheries. There has been no political will to develop policy for recreational fisheries.

MPI is signalling that longstanding challenges are being addressed, such as improving communication with recreational fishers through its Recreational Fishing Initiative.[57] Similarly, the Future of our Fisheries review raises several longstanding challenges (for example, maximising the value of shared fisheries and developing principles for TAC allocations). However, it will be problematic to progress these challenges in the absence of a recreational fisheries policy set out in the context of shared fisheries.

[55] Ministry of Fisheries and New Zealand Recreational Fishing Council (2000). *Soundings. Cast your line! Sounding out New Zealanders' views on the future of recreational fishing.* Ministry of Fisheries: Wellington.

[56] Ministry of Fisheries (2009). *Shared Fisheries: Proposals for Managing New Zealand's Shared Fisheries – A Public Discussion Paper*. Ministry of Fisheries: Wellington.

[57] Ministry for Primary Industries (18 November 2016). *Recreational Fishing Initiative* (www.mpi.govt.nz/travel-and-recreation/fishing/fishing-rules/recreational-fishing-initiative/).

3.3 Overseas institutional arrangements

"It is no surprise that Western Australians rank the Department with an 86 percent satisfaction rating in meeting its management objectives"

The overseas jurisdictions in our research demonstrate diverse institutional arrangements, with some more able to contribute to improved management and decision making than others.

The institutional arrangements for the Gulf of Mexico red snapper fishery reflect a fishery in a management crisis. The United States Federal Government's management institution has previously advocated for integrating the for-hire sector (for example, party and charter boats) into the QMS-type system for managing the commercial fishery. But, those who fish from private boats remain frustrated at the lack of progress in increasing the length of their annual season in federal waters (9 to 200 nautical miles), which has been nine days since 2014 and just three days for 2017. These drastic reductions in the season for federal waters are mainly due to systemic overharvesting by the private-boat fishers during lengthier seasons in state waters (0 to 9 nautical miles).

The Coastal Conservation Association advocates on behalf of these fishers, although it does not represent the entire recreational fishing sector as Recfishwest does in Western Australia. Nonetheless, it is instrumental in promoting the proposed shift from federal management of the red snapper fishery to Gulf state-level authorities. The future management of this fishery remains highly uncertain.

The northern California red abalone fishery shows how a crisis of a different sort can help bring together volunteer divers, scientists, government and non-governmental organisations to better ensure the fishery remains sustainable. This fishery, and others like it, demonstrates the potential widespread benefits when institutional arrangements strengthen both management and community capacity. It also demonstrates the potential benefits for government when valuing what non-governmental organisations and volunteers can provide to scientific research and monitoring and management decision-making.

The British Columbia halibut fishery includes several institutional arrangements. The Sport Fishing Advisory Board is the longstanding official advisor to the Commonwealth Government. The Sport Fishing Institute of British Columbia addresses many recreational and tourism issues, and advocates for the social and economic benefits generated by recreational fishing. First Nations, the indigenous people, have rights that are integrated into the broader management systems.

The Western Australia Department of Fisheries has service level agreements with Recfishwest and WAFIC and funding to uphold those agreements, thereby recognising them as the peak representative bodies and central points of contact and referral for sectoral issues. The funding for service level agreements includes accountability requirements upheld through strong governance arrangements (as discussed in *The Overseas Catch*).

The Western Australia Department of Fisheries is another example of an effective institutional arrangement in and of itself. The Minister and Department have shown leadership in improving recreational fisheries by investing considerable amounts of human and financial resources. It is no surprise that Western Australians rank the Department with an 86 percent satisfaction rating in meeting its management objectives.[58] MPI must be a bit envious of this rating.

[58] Department of Fisheries (2016). *Department of Fisheries Annual Report to Parliament 2015/16*. Department of Fisheries: Perth, Western Australia.

3.4 New Zealand institutional arrangements

"A rift exists within the recreational fishing sector between those who are prepared to work collaboratively with the government and other fishing sectors and those who demand changes on their own terms"

In comparison, the 600,000 people who fish each year in New Zealand are poorly represented and have few opportunities to voice their concerns (outside casting votes in general elections). A small number, around 40,000, are members of fishing clubs and/or regional associations.

As noted in *What's the Catch?*, historically, the two largest recreational fishing representative organisations have been the Sport Fishing Council and Recreational Fishing Council. Another is the Angling and Casting Association, which represents affiliated fishing clubs whose main interests are shore-based and small boat fishing. The organisation, Our Fishing Future, recently began as an initiative supported by the former government.

The Sport Fishing Council and Recreational Fishing Council were invited, along with Our Fishing Future, to participate in the fisher exchange to Western Australia. The Recreational Fishing Council and Our Fishing Future took part, and the Sport Fishing Council declined the invitation.

A rift exists within the recreational fishing sector between those who are prepared to work collaboratively with the government and other fishing sectors and those who demand changes on their own terms. In so doing, they fail to accept the strong legislative support in place for the QMS and Treaty of Waitangi settlement obligations. This rift is fuelled by the lack of policy on recreational fisheries.

Successive governments have viewed the recreational fishing sector as fragmented in its voice and vision for the future. Successive governments have encouraged the recreational sector to work through its differences and come back with a more unified voice and vision that are also more aligned with those of the government.[59] But, as the situation in Western Australia has shown, this is an unrealistic expectation without the government showing initiative to create change.

In Western Australia, Recfishwest began as the state-wide Western Australian Recreational and Sportfishing Council. The Council would not have successfully transitioned into the peak representative body without the Minister having made that decision and supporting its establishment. The Minister's decision was buoyed by the Council having had ongoing working relationships with the Minister and the Department of Fisheries. After the Council took up its peak representative body role, existing fishing clubs and regional-level associations continued with their own purposes and functions.

What changed with the Minister's decision was that if the clubs or associations wished to meet with the Minister and Department of Fisheries, they did so as part of Recfishwest. Through its broad representation, Recfishwest continues to provide the Minister and the Department with a single sector-level voice on the issues important to recreational fishers.

[59] Walshe, R.A.R. (2010). *The Fisheries' Trinity: Re-conceptualising New Zealand's Inshore Fisheries Management*. PhD thesis. The University of Auckland: Auckland.

3.5 Importance of recreational fishing data

"The development of smartphone apps for recreational fisher self-reporting is pushing ahead worldwide"

Collecting data on recreational fishing is more difficult than collecting data on commercial fishing. Generally, this is because a recreational fishery often includes many fishers who fish across a range of places, often using several different methods. Some fishers travel great distances to fish, while others fish from nearby access points. Some fish frequently, while others seldom fish. Also, fishers might often release some of their catch, especially when the release of under-sized fish is required, which makes assessment of total mortality even more difficult.

While the above also applies to commercial fisheries, recreational fisheries typically have higher numbers of fishers fishing at low levels of intensity. This complicates enforcement of a recreational catch and effort reporting requirement, even if considerable levels of enforcement capability are expended.

Our research found that neither the Gulf of Mexico private-boat red snapper fishery nor recreational fisheries in Western Australia require recreational fishers to report their catches or effort. In contrast, the recreational-only fishery for red abalone in northern California has comprehensive catch reporting requirements, as does the recreational halibut fishery in British Columbia.

Even where recreational fishers are required to report catches and effort, governments undertake or outsource data collection through various survey methodologies. Data are collected from onsite interceptions, or creel surveys, web camera-based monitoring and aerial surveys. An important part of survey design is to reduce bias or systematic errors in sampling or interview techniques that can lead to selecting or encouraging one outcome or answer over others.

3.5.1 Self-reporting recreational fishing data

It can be feasible to collect self-reported recreational catch and effort data in limited situations, such as charter boat fisheries and where the number of fishers is easily identifiable, or the number of enforceable access points is limited. In most other situations, it is problematic to have recreational fishers self-report their fishing data. This is because a variety of behavioural issues can result in biased and inaccurate data, which can affect data representativeness.

In other words, those who prefer to report may do so to obtain a particular outcome, and may have incentives to over- or under-report their catches, while others might not report. This can lead to not knowing whether the sample of reported catches is representative of the wider fishery. This situation emphasises the importance of randomly sampling those who report, along with the assumption that those randomly selected will report accurately. If not, then they too introduce biases.

The development of smartphone apps for recreational fisher self-reporting is pushing ahead worldwide. For example, in 2015, the United States' Federal Government set up the Electronic Monitoring and Reporting Grant Program to support integrating electronic technologies

"It is important that these trial self-reporting methods be validated against existing survey methods to assess the direction and extent of any bias in reporting"

into data collection.[60] One of the many grant recipients is the project for the iSnapper app for the Gulf of Mexico red snapper fishery. This app allows fishers to voluntarily report the number of snapper caught and released and the general fishing location.

In addition, the Governor of Louisiana recently proposed a two-year pilot programme to allocate red snapper to 150 recreational fishers who are agreeable to reporting their catches on their smartphones. If approved by the federal fisheries institution, this proposed pilot project would allow participating fishers to take their red snapper allocation throughout the fishing year, instead of just during the annual season in federal waters, which is, as noted, down to three days in 2017.[61]

The Sport Fishing Institute of British Columbia has an app in the early stages of development. It is working with Fisheries and Oceans Canada to integrate the data reported through the app into fisheries management processes. Also, the Abalone Working Group for the northern California red abalone fishery is considering the benefits of an app for the same purpose.

Other apps may also be appealing for recreational fishers, such as Fishbrain and Fishidy, which are social network platforms and fishing forecast apps. Another is Fishhunter, which is a fish finder app, and My Fishing Forecast, which is like an almanac or fishing table.

3.6 Improving data collection in New Zealand

Terra Moana, a New Zealand-based company, has developed an app, Fish4All that provides fishers with a free personal fishing diary. The app can have default settings that include where fishing occurs, the fishing method used and the species caught, both legal and under-sized. The app shows the names and pictures of all popular recreational fish species, with more being added as the app develops further.

Fishers using the app can opt to have their data stored in a central database. The data could be collated for management purposes, such as overall catch per unit of time statistics by region. However, the data may not provide accurate statistics, if collected beyond the fishing club level or in other situations where the number of fishers is not identifiable.

It is important that these trial self-reporting methods be validated against existing survey methods to assess the direction and extent of any bias in reporting.

New Zealand's recreational fishing sector has shown mixed levels of support for self-reporting. Some consider it is unwarranted, given the extent of catch, effort and mode data collected in the National Panel Survey.

[60] National Fish and Wildlife Foundation (No date). *Electronic Monitoring and Reporting Grant Program 2016 Grant Slate*. National Fish and Wildlife Foundation: Washington, DC, United States of America. (www.nfwf.org/fisheriesfund/documents/emr_2016grants.pdf).

[61] Louisiana Department of Wildlife and Fisheries (25 May 2017). *Gov. Edwards Announces Management Pilot Program to Provide More Access to Red Snapper in State, Federal Waters*. Louisiana Department of Wildlife and Fisheries: Baton Rouge, Louisiana, United States of America (www.wlf.louisiana.gov/news/41160).

"For this policy to be effective, it must be designed in the context of shared fisheries"

As noted in *What's the Catch?*, the National Panel Survey uses face-to-face recruitment, a frequent contact system and structured interviews. The aim is to involve the same randomly selected fishers for the entire one-year period. Because the National Panel Survey is based on a complete sample frame (captures all modes of fishing for all species), it can be used to quantify all forms of recreational fishing.[62]

The Western Australian survey methodology might well be an example of the next best methodology for data collection. It uses the database for the Fishing from Boat License system, which means the sample frame covers only boat-based fisheries. The Department of Fisheries is developing survey methodologies for those fisheries that have a significant land-based component.

The main advantage of the Western Australian survey methodology is its wide public support. The public understood the need to collect better data on recreational fishing for management purposes and so supported the Fishing from Boat License because of the database it would provide. Another advantage is the survey methodology can be administered annually at a relatively low cost, due to the annually updated license system database.

In comparison, the National Panel Survey comes at a higher cost that is not offset by license fees. While more frequent use of the survey would greatly improve the level of information for decision making, its relatively high administrative costs limit its use to every five to six years. There is merit in finding lower-cost ways to administer the National Panel Survey more frequently.

3.7 Recommendations

We make four recommendations for integrating recreational fisheries into management policies and processes. All are critical to successful integration.

3.7.1 Recreational fisheries policy

We recommend that MPI, along with representatives of all fishing sectors, set a timeframe for developing a recreational fisheries policy and that policy development starts as soon as practicable.

For this policy to be effective, it must be designed in the context of shared fisheries. This means acknowledging the importance of recreational fishing and supporting industry while recognising the legislative obligations that uphold the rights associated with customary fishing and quota holdings; by law these rights cannot be rendered ineffective. It also means developing principles for TAC allocation and reallocations that address the primary cause of intersectoral conflicts.

It is futile to continue drawing from the late 1980s policy, without fail, that the right to fish for recreational purposes will have priority status where the abundance is insufficient to support both commercial

[62] Wynne-Jones, J., Gray, A., Hill, L. and Heinemann, A. (2014). *National Panel Survey of Marine Recreational Fishers 2011–12: Harvest Estimates*. New Zealand Fisheries Assessment Report 2014/67. Wellington: Ministry for Primary Industries.

and non-commercial fishing. Instead, a more fitting policy should accept that, in certain fisheries, it would be appropriate to reflect the stock's importance for the recreational fishing sector by increasing that sector's access to the resource.

Accordingly, workable solutions should focus on collective shared efforts to enhance the stock for the benefit of all fishing sectors. Where reallocation from the commercial sector to the recreational sector is desirable, it would be inequitable to simply confiscate the commercial portion of the TAC and reallocate it without consideration being given to compensation. The policy should also reflect that decisions must be made regarding whether the burden of funding that reallocation should fall, in full or in part, on the beneficiaries of the reallocation.

"Where reallocation from the commercial sector to the recreational sector is desirable, it would be inequitable to simply confiscate the commercial portion of the TAC and reallocate it without consideration being given to compensation"

3.7.2 Peak representative body

We recommend a professional, well-funded peak body be formed that represents all recreational fishing interests at the highest levels.

As noted, we were encouraged to hear the Sport Fishing Council had reconsidered the idea of a role as the peak representative body and that it was open to this, if given the opportunity. We believe the Council could be best placed for this role, but at the time of writing, it reiterated its position during the annual general meeting, which was not to seek the peak body role. This inconsistency suggests dissension within the Council regarding its future role

We would support the Sport Fishing Council in considering the idea of a peak body role. In so doing, we would urge it to carefully consider changes to its purpose, governance arrangements, funding and auditing requirements. We would also urge the Council to consider the benefits of adopting Recfishwest-type attributes, such as building relationships based on trust, respect and integrity, and the ability to work through differences.

Should the Sport Fishing Council seek the new Minister of Fisheries' approval as the peak representative body, occasions would arise when it had to go head-to-head with key decision makers on issues of importance to recreational fishers, as Recfishwest has done. But, relentless confrontation, deliberate misrepresentation and intolerance for contrary views, which characterise Legasea's approach, would be a significant liability, if not a barrier, to success as the peak body.

That Legasea has not been in the office of the Minister responsible for fisheries during the past nine years should be a warning to the Council about Legasea's lack of commitment to constructive engagement. Its preference for negative campaigns is divisive and shown to be ineffective in influencing key decision makers.

Accordingly, we recommend that a new peak representative body should be established. This could draw on the combined knowledge and experience of the Sport Fishing Council, Recreational Fishing Council, Our Fishing Future and the Angling and Casting Association, along with the fishing clubs and associations prepared to work collaboratively with MPI, Fisheries Inshore New Zealand and other groups.

Either way, the peak representative body should be established while having ongoing dialogue with Recfishwest's former and current executives,

recfishwest
fish today for tomorrow

Community Fishing Fun Day,
Source: Recfishwest

including the Chief Executive Officer, Dr Andrew Rowland. This should ensure the lessons learnt are fully considered, particularly those the Western Australian Recreational and Sportfishing Council learnt as it transitioned to Recfishwest. Some of these lessons are outlined below.

First, the Western Australian Recreational and Sportfishing Council understood the benefits of taking up the peak representative body role. That is, the Council could enhance its standing and profile with both the government and the wider community. The idea of the peak body role was readily accepted by the community, because the Council's main issues for improving recreational fishing had public support and the issues were already points of discussion with the government. However, the Council acknowledged at the start that it was not able to offer or deliver on any service level agreements.

Second, it was important the Council understood what was of interest to the Minister of Fisheries. The Minister wanted to gain comprehensive information on the recreational fishing sector to improve fisheries management. The Minister was also interested in having some distance between himself and certain people in the recreational sector. During these discussions, the phrase "keeping the lunatics away" was used. The Minister's initial support was gained, once these points of interest were addressed.

Third, it was important the Council understood the Minister's concern about funding a peak representative body that could become a problem that "bit him on the arse". Governance arrangements needed to

"Governance arrangements needed to be implemented that were commensurate with Recfishwest's duties and responsibilities, before the Minister could approve service level agreements and funding"

be implemented that were commensurate with Recfishwest's duties and responsibilities, before the Minister could approve service level agreements and funding.

Recfishwest continued to improve its governance arrangements as its service level agreements expanded and funding increased. For this purpose, Recfishwest implemented structural changes based on ASX Corporate Governance Council principles.[63] The Finance, Audit and Risk Committee operates under a charter endorsed by the Board, and the Governance Committee reviews the governance systems and maintains a compliance report that is included in the Recfishwest report to its annual general meeting.[64]

Fourth, Recfishwest learnt lessons regarding how to improve its constitution's effectiveness. Recfishwest's initial constitution allowed for a 16-member representative board. However, such broad representation lacked cohesiveness, with some representatives continuing to work on their preferred issues with the government.

Recfishwest changed its constitution, including reducing Board membership from 16 to eight, and the eight-member Board electing a non-voting chair. The constitution also allows five Board directors to be elected by the Recfishwest membership and three appointed by the Board for their specific skills and experience (for example, legal, accounting, biological, environmental and marketing expertise). Board directors are appointed for a two-year period, with half voted in every year, which reduces the loss of corporate knowledge at any one time. The constitution also allows Board directors to be reappointed.

Finally, as noted, the transition from the Western Australia Recreational and Sportfishing Council to Recfishwest was possible because of the Council's existing working relationships with the Minister and Department of Fisheries. These relationships were formed by gaining trust and respect over time. They led to Recfishwest being trusted to work closely with the government on all matters relating to recreational fishing (pers. comm., Ian Stagles, 2 October 2017).

Western Australia's emphasis on effective working relationships should drive the establishment of New Zealand's peak representative body. Without working relationships based on trust, respect and integrity, the peak body will be vulnerable to influences that could jeopardise its purpose.

It is envisioned that New Zealand's peak representative body would have fully funded service level agreements similar to those of Recfishwest, which include:

- providing recreational representation, consultation and engagement;
- providing peak body advice and a central point of contact and referral for recreational fishing sector issues;
- promoting important sustainability messages; and
- project management.

[63] ASX Corporate (2017). *Corporate Governance Council* (www.asx.com.au/regulation/corporate-governance-council.htm).

[64] Recfishwest constitution (http://recfishwest.org.au/about/recfishwest-governance/).

"A peak representative body will not succeed unless MPI accepts an increased level of participation and engagement and does its part to move beyond an 'us versus them' approach"

We also recommend the peak representative body's constitution and governance arrangements should be developed based on the Recfishwest arrangements, which, as noted, have been amended over time to reflect the following objectives (paraphrased):

- recognised as a major stakeholder in aquatic ecosystem management and participates in fisheries management to ensure the sustainability of fisheries resources and their habitats;
- promote and advocate responsible recreational fishing and help with fisher education;
- represent and advocate the interests and rights of recreational fishers on issues that affect the participation, development and sustainability of recreational fishing; and
- ensure recreational fishers have an adequate and reasonable share of fisheries resources.

Furthermore, we recommend that New Zealand's peak representative body adopts a board structure that is limited to no more than 10 members. Also, board representation should cover each major region (for example, South Island, lower North Island and upper North Island). It is suggested three-fourths of the Board directors consist of regional representation and the remainder be selected for their desired skills and experience (eg, legal, accounting, biological, environmental and marketing) with two-year appointments that can be rolled over. It is strongly suggested that the peak representative body has governance arrangements like Recfishwest's that provide accountability and transparency in all of its finances, irrespective of the funding sources.

3.7.3 Ministry for Primary Industries' culture

We recommend that MPI improves its culture by including a greater level of stakeholder participation and engagement than has previously been the case. A peak representative body will not succeed unless MPI accepts an increased level of participation and engagement and does its part to move beyond an 'us versus them' approach.

As noted in *What's the Catch?*, since the merger that established MPI, the fisheries policy, operational management and enforcement capabilities have significantly declined to reduce costs and resource other primary industry functions. The lack of leadership for fisheries policy has created an environment of complacency in meeting obligations under the fisheries legislation.

The fisheries literature is rich with examples of conflicts arising between fishing sectors, because they are almost unavoidable. But, conflicts can be exacerbated when the regulator fails to listen to each fishing sector's concerns and ideas, and fails to establish policies and institutional structures that better define the legal rights and responsibilities and standards for effective performance.[65]

[65] Pomeroy, R.S. and Berkes, F. (1997). Two to tango: The role of government in fisheries co-management. *Marine Policy*, 21(5), 465–480.

3.7.4 Recreational fishing data collection

"Increased survey frequency and sampling intensity would greatly improve the information available for managing recreational fisheries"

We recommend the relevant MPI working group review management requirements and available information on the planned five- to six-year administration of the National Panel Survey, and compare them with the benefits and costs of administering the survey more frequently, say every two or three years. Increased survey frequency and sampling intensity would greatly improve the information available for managing recreational fisheries. This could be done spatially and temporally to reflect the importance of the fisheries. It could also provide an improved basis for management options, including TAC reallocations in shared fisheries (refer chapter 4).

The National Research Bureau (NRB) undertakes the National Panel Survey. NRB has proposed, amongst other things, augmenting the frequency of the survey with the use of a smartphone app in intervening years. The use of an app could potentially provide similar prompts for reporting catches but at much lower costs.

For example, greater frequency of the National Panel Survey with intermittent application of an app would provide comparative data that could be analysed to show whether the response rates with the use of interviewers versus the app are comparable. We support NRB and MPI experimenting with the use of an app and related comparative analyses.

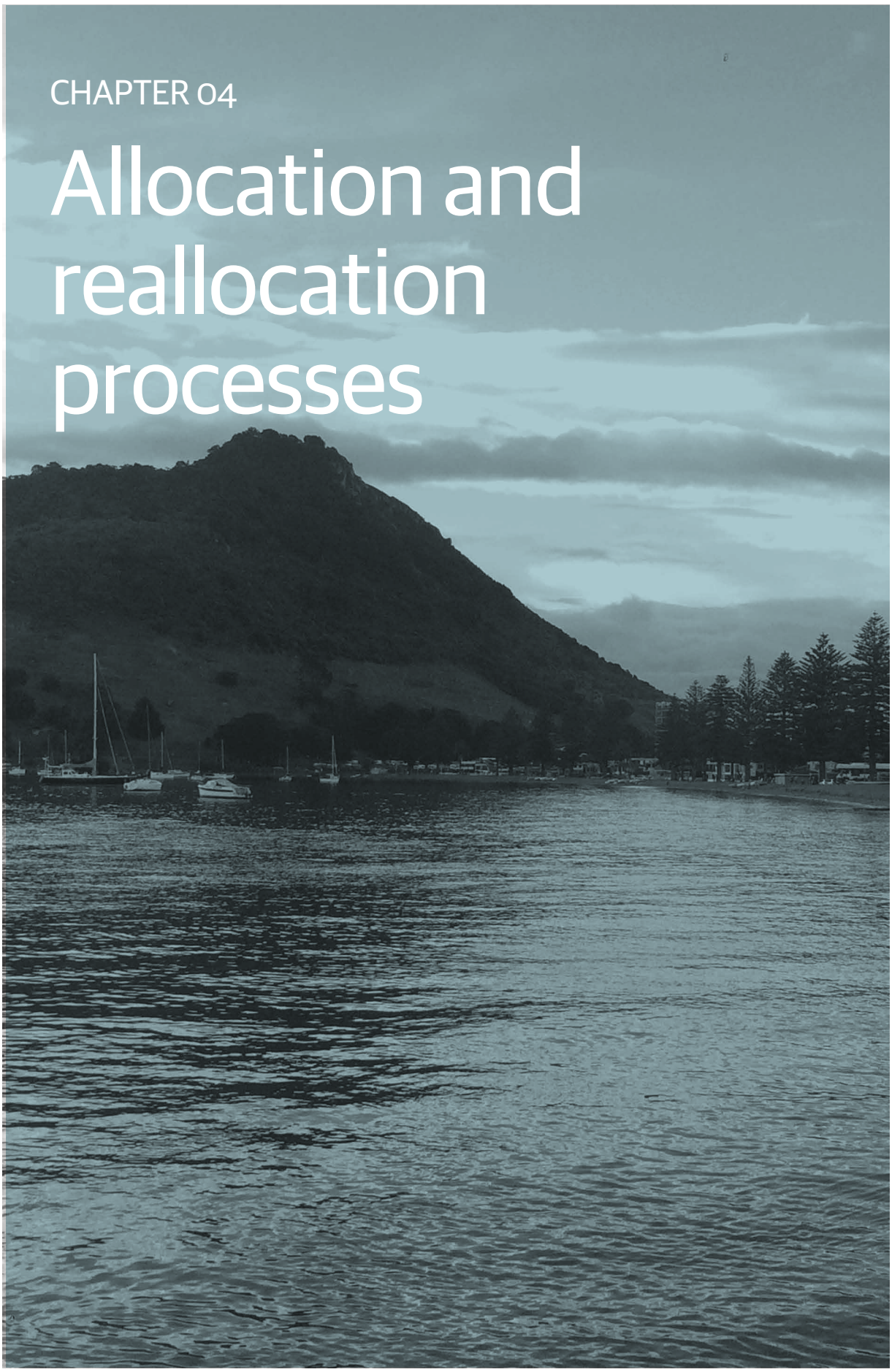
Web camera-based monitoring is also used to monitor key finfish fisheries in intervening years. Web cameras do not provide a monitoring solution for some fisheries, such as paua and rock lobster, because of the multiple access points. Similarly, those who fish for paua and rock lobster are not well represented in the National Panel Survey. Accordingly, estimates of their catches are less precise. They would be more precise if a targeted survey could be used.

For example, Western Australia and Tasmania conduct targeted surveys of rock lobster fishers, and the surveys rely on the rock lobster license system databases. We recommend an Australian-type licensing or equivalent registration system could be the best solution for New Zealand, particularly for species like paua and rock lobster.

A licensing or equivalent registration system for such high-value species might well be the best place to introduce the use of a smartphone app. The fishers could use their smartphones to enter any of these species on the day harvested, providing near real-time monitoring that would make a significant contribution to improved management.

CHAPTER 04

Allocation and reallocation processes



"The red snapper fishery in the United States' Gulf of Mexico demonstrates what can happen when the government fails to manage all fishing sectors in a sustainable way and does not provide a process to transfer portions of a TAC from one fishing sector to another"

Often, the most contentious issue in shared fisheries is the allocation of TACs between competing fishing sectors. TAC allocations can become increasingly contentious for recreational fishers, if they are fixed and fail to change as social values change. Our research shows that in overseas jurisdictions there is increasing interest in implementing processes that allow for equitable transfers of TACs over time.

While New Zealand's fisheries legislation does not have explicit provisions for reallocating TACs, the courts have clarified that the Minister has full discretion in setting and adjusting TAC allocations. It is common for Ministers or other decision makers overseas to also have discretion regarding how best to allocate TACs.

The downside to ministerial discretion is that the TAC allocation decision-making process can lack transparency if it becomes heavily politicised by competing self-interests and conflicts. When the process allows competing fishing sectors to apply extensive effort lobbying for more favourable TAC allocations, the outcome provides little certainty about future allocations. It also undermines incentives for competing fishing sectors to work together to improve fish stocks. This is the situation in New Zealand.

Our research shows that overseas decision makers generally allocate TACs on a proportional basis, expressed as a percentage of the TAC or set tonnage. The difference, however, is that proportional TACs are often accompanied by administrative and/or market-based processes for shifting proportions of the TACs. Our research suggests there would be benefits from exploring proportionality, in conjunction with developing a process for shifting TAC allocations between fishing sectors.

This chapter discusses overseas experiences with TAC allocations and processes for reallocation. It examines the legislative process in New Zealand for setting and adjusting TACs and its consequential incentives for wasteful, competitive intersectoral behaviour. The chapter ends with recommendations for the use of proportional allocations in conjunction with developing a reallocation process that incentivises collaboration to improve shared fisheries for the benefit of all sectors. None of these recommendations changed as a consequence of public consultation. It is noted, however, that the topic of proportionality is complex but fundamental to effective fisheries management. It warrants in-depth discussion.

4.1 Overseas processes

The experiences of the United States' Gulf of Mexico red snapper fishery, the British Columbia halibut fishery, the Gulf of Alaska halibut fishery and Western Australia's fisheries demonstrate various processes for allocating TACs.

4.1.1 Gulf of Mexico red snapper fishery

The red snapper fishery in the United States' Gulf of Mexico demonstrates what can happen when the government fails to manage all fishing sectors in a sustainable way and does not provide a process to transfer portions of a TAC from one fishing sector to another. The red snapper TAC was allocated so 51 percent went to the commercial sector and 49 percent to the recreational sector.

Based on a recalibration of data for estimating catches since 2015, the 51/49 TAC split was reallocated by 2.5 percent, making it a 48.5/51.5 split favouring the recreational sector. However, in 2017, a federal court cancelled this reallocation, because it had been based on the recreational sector having repeatedly exceeded its TAC allocation. The 2.5 percent reallocation, therefore, violated the legislative requirement that allocations should be fair and equitable.[66] It is worth highlighting there are no provisions for the use of compensation for reallocation purposes, because intersectoral trading is prohibited.

This court determination might exacerbate the current situation for private-boat anglers whose outlook is to face a decreasing number of days to fish in federal waters. As noted, in 2017, the season was reduced to just three days, down from nine days from 2014 to 2016 (as discussed in *The Overseas Catch*).

4.1.2 British Columbia halibut fishery

British Columbia's halibut fishery is the best example of a market-based process for reallocating portions of the TAC. In 2003, the Minister announced a TAC split with 12 percent allocated to the recreational sector and 88 percent to the commercial sector. The recreational allocation exceeded the 9 percent estimated recreational catch level, allowing for growth in the recreational sector.[67]

66 Order Granting Plaintiffs' Motion for Summary Judgment in Part, *Guindon v. Ross*, No. 1:15-cv-02256, Dkt. # 30 (D.D.C. Mar. 3, 2017).

67 Fisheries and Oceans Canada (27 October 2003). *Minister Thibault Announces Pacific Halibut Allocation Framework*. News release. Fisheries and Oceans Canada: Vancouver, British Columbia.

"The Gulf of Alaska halibut fishery also has a formulaic process for proportional TAC allocations between the charter boat and commercial sectors"

In 2012, the Minister increased the recreational allocation from 12 percent to 15 percent, reducing the commercial allocation to 85 percent.[68] Although legally challenged by the commercial fishing sector, the courts upheld the Minister's decision, rejecting the argument that the Minister had abused his discretion in reallocating 3 percent of the TAC without using a market-based approach or another form of compensation.[69]

After reviewing various market-based approaches, in 2011, the Minister announced the experimental license programme designed to let license holders fish for halibut beyond the limits and time available under the normal recreational license.[70] If fishers wished to catch additional halibut, the license allows them to acquire quota at market rates.

The 15/85 TAC split has remained intact, while the experimental license programme allows for two-way quota purchase and lease transactions between the commercial and recreational sectors and within the recreational sector. These transactions, however, account for less than 1 percent of total recreational catches. If the experimental license programme catches on, the political fight over who gets how much halibut would be resolved by letting people trade.

4.1.3 Gulf of Alaska halibut fishery

Since 2014, the United States' Gulf of Alaska halibut fishery has had a similar, though voluntary, programme that allows Alaskan charter boat operators to lease halibut quota from commercial fishers. By leasing quota, charter boat operators provide guided anglers the opportunity to retain halibut up to the limits for an unguided (private-boat) angler, if management measures restrict a guided angler's catch more than an unguided angler's catch.[71]

[68] Fisheries and Oceans Canada (7 February 2012). *Greater Certainty in the Pacific Halibut Fishery*. News release. Fisheries and Oceans Canada: Vancouver, British Columbia.

[69] *Malcolm v. Canada* (Minister of Fisheries) 2014 FCA 130.

[70] Fisheries and Oceans Canada (15 February 2011). *Statement by Gail Shea, Minister of Fisheries and Oceans – Pacific Halibut.* News release. Fisheries and Oceans Canada: Vancouver, British Columbia.

[71] National Oceanic and Atmospheric Administration (24 March 2016). *New 2016 Regulations for Charter Halibut Anglers* (https://alaskafisheries.noaa.gov/sites/default/files/chfactsheet2016.pdf).

The Gulf of Alaska halibut fishery also has a formulaic process for proportional TAC allocations between the charter boat and commercial sectors. A fixed percentage of the annual Combined Catch Limit (CCL) is allocated to each sector, although it varies with changes in halibut abundance. The charter boat sector's percentage of the CCL is higher when halibut abundance is lower, and then its percentage of the CCL is lower when the CCL is higher. At intermediate abundance levels, the charter boat sector receives a fixed poundage (lbs) allocation. Through this formulaic process, each sector has security in access to set proportions of the TAC, providing both with incentives to increase the CCL. The formulaic process for Area 2C, which covers the eastern portion of the Gulf of Alaska, is shown in table 4.

Table 4: Gulf of Alaska Area 2C Combined Catch Limit (CCL) formulaic process

Area 2C CCL	Charter boat allocation	Commercial allocation
0 to 4,999,999 lbs	18.3 percent	81.7 percent
5,000,000 to 5,755,000 lbs	915,000 lbs	Area 2C CCL minus 915,000 lbs
5,755,001 lbs	15.9 percent	84.1 percent

Source: North Pacific Fishery Management Council

The Federal Government is exploring ways to increase the availability of the halibut resource for the charter boat guided anglers by establishing a recreational quota entity. This would act on behalf of the charter boats and guided anglers by purchasing halibut quota and holding it in a common pool. The question remains, however, who will bear the cost of purchasing quota to be held by the recreational quota entity?

4.1.4 Western Australian fisheries

"Since 2004, proportional allocations and the intent to reallocate them over time between fishing sectors has been integral to the Government of Western Australia's policies on integrated fisheries management"

Since 2004, proportional allocations and the intent to reallocate them over time between fishing sectors has been integral to the Government of Western Australia's policies on integrated fisheries management. The policy developed in 2004 also stated the importance of reallocating TACs between sectors in the future.[72,73] The importance of reallocation was highlighted in the 2009 and 2012 policies on integrated management. The 2012 policy also provides assurance that compensation should be payable where commercial fishing and related industries have a case for any detrimental impact.[74]

New legislation, effective from 1 January 2018, states that proportional allocations of TACs will continue to be provided through an administrative decision by the Minister. This is because of the public nature of recreational fishing access rights and the need to ensure a proper balance of economic and social outcomes.

[72] Crowe, F.M., Longson, I.G. and Joll, L.M. (2013). Development and implementation of allocation arrangements for recreational and commercial fishing sectors in Western Australia. *Fisheries Management and Ecology*, 20, 201–210.

[73] Kalis, G. (2006). Integrated fisheries management: implementation and allocation of rights. In: *Rebuilding fisheries in an uncertain environment*. Proceedings of the 13th biennial conference of the International Institute of Fisheries Economics and Trade. Portsmouth, United Kingdom.

[74] Ibid.

"Ongoing intersectoral battles and undesirable behaviour over TAC allocations are antithetical to intersectoral collaboration to improve the management of key shared fisheries"

The new legislation includes reallocation provisions between fishing sectors on temporary and long-term bases. A temporary reallocation may occur by an adjustment to the commercial or recreational allocations, with willing buyers and sellers in each sector negotiating the quantum and price of the exchange. A long-term reallocation can occur by adjusting the TAC proportions between the recreational and commercial sectors, following a public policy process and a ministerial decision. The Department of Fisheries acknowledges the new legislation is moving into uncharted territory, because no examples exist worldwide regarding how reallocations might work in practice.

4.2 New Zealand's fisheries

As mentioned, in New Zealand, the Minister is charged with setting a TAC based on the best available biological information and the statutory obligation to manage the stock biomass at or above the level that will produce MSY. Once the TAC decision is made, the Minister apportions the TAC for customary fishing, other fishing-related sources of mortality (including estimated illegal take and discards), and then for the recreational and commercial fishing sectors.

As noted in *What's the Catch?*, the courts have determined that the Minister has full discretion in allocating TACs. The Minister has no legislative duty to fix or vary an allocation against any proportion of the TAC.[75] The Minister has no specific legislative guidance for setting the recreational allowance (allocation) relative to the commercial allocation. The Minister must use discretion in weighing up competing self-interests when deciding what would be reasonable in the circumstances.

Allocations based on ministerial discretion and with no proportional basis incentivise each fishing sector to argue its case for a greater allocation of the TAC. Each exerts as much influence as possible to gain favourable allocations, at the expense of the other. Both commercial and recreational fishing representative organisations have taken staunch positions for this purpose.

[75] *New Zealand Fishing Industry Association Inc & Ors v Minister of Fisheries* (CA 82/97).

"We recommend switching to a proportional basis for TAC allocations, only if a fair and equitable process also exists to reallocate TACs over time, and in ways that benefit recreational fishers and compensate quota holders"

The lobbying and counter-lobbying, rent-seeking behaviour displayed by the commercial and recreational sectors can consume much time and effort, which diverts attention from building collaborative efforts that could improve fish stock management and benefit all fishing sectors.[76]

It is difficult to see how continued intersectoral battles over TAC allocations at each opportunity, along with undesirable behaviour directed at influencing ministerial decision-making, will help us achieve our shared goals of increasing fish stock abundance, fair and equitable allocations and a better recreational fishing experience. Ongoing intersectoral battles and undesirable behaviour over TAC allocations are antithetical to intersectoral collaboration to improve the management of key shared fisheries.

4.2.1 SNA 1 fishery

The SNA 1 fishery is a case in point. The former Minister stated his intention to increase the non-commercial TAC allocation from 36 percent to 50 percent over time. While this is favourable for recreational fishers, it may have hindered good management decision making for the SNA 1 fishery.

As noted, for the SNA 1 management plan to be effective in rebuilding the stock, a significant TAC reduction will likely be required sooner than later. The Strategy Group members were, however, unwilling to propose a TAC reduction. The members are incentivised to avoid the tough questions on who pays the cost of conservation of foregoing current catch levels, while the prospect exists of favourably influencing future ministerial TAC allocations, potentially leaving the other sector to bear the costs of conservation.

4.3 Recommendations

We recommend switching to a proportional basis for TAC allocations, only if a fair and equitable process also exists to reallocate TACs over time, and in ways that benefit recreational fishers and compensate quota holders.

A significant hurdle to proportional allocations is, however, the imprecise account of recreational catches, which the courts have already noted.[77] It will be problematic to switch to proportional allocations, and any reallocation process, without greater precision in the estimates of recreational catches. We are recommending, therefore, more frequent use of the National Panel Survey to improve the precision around catches, especially for stocks that might warrant TAC reallocation.

In the interim, progress should be made on the recommended commitment to attain agreed biomass targets, which in most cases is 40% B0, at least for the key shared fisheries, thus benefiting all fishing sectors.

Once more precise recreational catch data are available, and stocks in the key shared fisheries have rebuilt, proportional allocations would be less

[76] McMurran, J. (2000). Property rights and recreational fishing: Never the twain shall meet? *Use of Property Rights in Fisheries Management.* Proceedings of the FishRights99 Conference, Fremantle, Western Australia. FAO Fisheries Technical Paper 404/1. Food and Agriculture Organization of the United Nations: Rome, 184–187.

[77] *New Zealand Fishing Industry Association Inc & Ors v Minister of Fisheries* (CA 82/97).

"This lesson takes on greater importance in New Zealand where the settlement of Treaty of Waitangi claims could be eroded if reallocations were uncompensated. In all likelihood this situation would create a contemporary Treaty grievance"

contentious. One benefit would be the security of access it provides to fishing sectors. Another would be diminished rent-seeking behaviour that politicises the decision-making process in attempts to gain favourable TAC allocations.

Alternatively, a formulaic proportional TAC allocation framework, like that used in the Gulf of Alaska halibut fishery, could be developed and applied in the near term. It would start with current TAC allocations set as the minimum level for switching to proportionality. It might provide the incentives for all fishing sectors to collaborate in rebuilding stocks for the benefit of all sectors, based on agreed biomass targets.

This type of allocation moves from an initial fixed proportion to variations in proportions for each sector as stock abundance changes. While this may not avoid a TAC reduction, it would provide agreed certainty of access in the event a reduction became necessary. A reallocation process should be designed for occasions when an even greater need exists for variation in TAC allocation (as discussed in *The Overseas Catch*).

We also recommend the TAC reallocation process avoids, at least in the medium term, going in the direction of British Columbia's market-based solution. While such a solution provides ongoing opportunities for recreational fishers to gain greater access to fisheries resources, it would incentivise both fishing sectors to misreport catches to avoid the need for market transfers. This solution is also difficult to implement, due to the public perception of the QMS and the poor level of estimated recreational catches.

It is worth noting that issues of misreporting are hardly limited to the commercial sector. Recreational fishers have no reporting requirements for released under-sized fish, and many species are subject to high mortality rates, both initial and delayed. This issue should be revisited when more effective and trusted methods are in place to monitor the integrity of the QMS.

We consider there is considerable merit in continuing the fisher exchange with the Western Australian Department of Fisheries, Recfishwest and WAFIC, as they continue to develop their reallocation processes. The development of processes for both jurisdictions would be enhanced through ongoing collaboration.

The approach the Department is taking on long-term reallocations is not that different from the status quo in New Zealand. That is, TAC adjustments are made through a public policy process and a ministerial decision. What we can learn from their process is that the offer of compensation to affected commercial fishers removes the grounds for and reduces the likelihood of legal action. This lesson takes on greater importance in New Zealand where the settlement of Treaty of Waitangi claims could be eroded if reallocations were uncompensated. In all likelihood this situation would create a contemporary Treaty grievance.

We can also learn from their collaborative approach and avoid the wasteful practice of diverting attention from improving fish stock management to benefit all fishing sectors. Within a collaborative environment, a constructive focus on TAC reallocations may well work better than can be imagined currently. We should remain open to this possibility.

The options outlined in chapter 5 provide for a broader discussion regarding where the burden of funding reallocations could fall.

CHAPTER 05

Sharing the costs

"The recreational right to fish in New Zealand's marine environment is one of the few remaining free-of-charge public goods available to everyone. However, managing fisheries is not costless"

Our research shows that most overseas recreational fishers pay a nominal cost (in terms of license or other fees) to fish for food or fun. In comparison, New Zealand has a long history of free-of-charge fishing in the marine environment.

The recreational right to fish in New Zealand's marine environment is one of the few remaining free-of-charge public goods available to everyone. However, managing fisheries is not costless. As noted in *What's the Catch?*, the cost of managing inshore fish stocks is partly borne by the commercial fishing sector through cost-recovery levies; the remaining costs of management and enforcing rules are borne by taxpayers, although most do not fish.

In the overseas jurisdictions researched in *The Overseas Catch*, all require recreational fishing licenses for residents and licenses with higher fees for non-residents. This is similar to sport fishing for exotic species, such as trout and salmon, in New Zealand. These species are managed by Fish and Game New Zealand, which has nine licenses for residents or non-residents that range from NZ$20 for a resident's one day of fishing to NZ$163 for a resident family to fish year-round.

This chapter discusses overseas experiences with user-pay charges that accompany the recreational right to fish. It examines New Zealand's situation regarding the right to fish free of charge. It also discusses the former government's level of expenditure on managing recreational fisheries. This expenditure is compared with that in Western Australia, along with the benefits recreational fishers receive from paying fishing license fees. The chapter ends by discussing three options for funding the policy recommendations set out in this report. One of the recommendations changed as a consequence of public consultation.

5.1 Overseas charges for fishing

All the overseas fishing license systems described in *The Overseas Catch* require fishers to carry licenses while engaged in fishing. Their purpose is to generate revenue to partially cover the costs of managing recreational fisheries; some also collect data on recreational catch and effort (refer chapter 3). Western Australia's system is an exception because licenses also fund sector-level representation and projects and research that benefit recreational fishing. Each one is considered briefly.

5.1.1 Texas licensing

In Texas, the Texas Parks and Wildlife Department administers a license system for both freshwater and saltwater fishing. A private-boat angler residing in Texas over 17 years of age must have a valid fishing license and saltwater "endorsement" to possess in state waters any fish taken in federal waters or possess fish on a boat in the tidal waters of Texas. The 2016–17 fishing license and saltwater endorsement fee was US$35, while the same package for a non-resident was US$63. The one-day all-water (freshwater and saltwater) license was US$11 and US$16, respectively.[78]

[78] Texas Parks and Wildlife Department (2016). *Outdoor Annual Hunting & Fishing Regulations 2016–17*. Texas Parks and Wildlife Department: Austin, Texas, United States of America.

5.1.2 Northern California licensing

The California Department of Fish and Wildlife administers the marine recreational fishing licensing system for California residents and non-residents. A resident who is aged 16 years and older must have a license to take any kind of fish, mollusc, invertebrate, amphibian or crustacean in California, except for people angling from a public pier in ocean or bay waters.[79]

An annual California sport fishing license costs US$47.01 for residents and US$126.36 for non-residents. California residents and non-residents can also buy one-day licenses for US$15.12, two-day licenses for US$23.50 and 10-day licenses for US$47.01. Annual reduced-fee sport fishing licenses can be bought for US$6.95 by those who qualify. Lifetime licenses can be bought for US$517.00 to US$844.50, depending on age categories. Marine recreational anglers must also buy a Sport Ocean Enhancement Validation for US$5.14 for fishing in southern California waters. In 2002, a red abalone report card was implemented. Only one report card can be issued per person, at a cost of US$22.42.

5.1.3 British Columbia licensing

All recreational fishers in British Columbia aged over 16 are required to hold a Tidal Waters Sport Fishing License when fishing in tidal waters (saltwater). The license is issued by the Province of British Columbia and its cost varies, depending on age and duration of the license (see table 5). A salmon conservation stamp must be affixed to the license of anyone wishing to catch and retain any species of salmon. No conservation stamp is needed for catching halibut. Since 2008, around 300,000 licenses have been issued each year.[80]

Table 5: British Columbia Tidal Waters Sport Fishing License fees 2016/17

Category	Resident (CAN$)	Non-resident (CAN$)
Adult (16–64 years)	22.05	106.05
Seniors (65+)	11.55	106.05
5 day	16.80	32.55
3 day	11.55	19.95
1 day	5.51	7.35
Salmon conservation stamp	6.30	6.30

[79] California Department of Fish and Wildlife (2016–17). *California Ocean Sport Fishing Regulations 2016–2017 Effective March 1, 2016 through February 28, 2017* (www.wildlife.ca.gov/fishing/ocean/regulations/sport-fishing).

[80] Fisheries and Oceans Canada (No date). *Fishing Licences – Pacific Region* (www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/stat-eng.htm).

5.1.4 Western Australian licensing

Western Australia has five fishery-specific licenses. In addition, in 2010, the Department of Fisheries implemented the Recreational Fishing from Boat License.[81] The license is not tied to a boat but is for individual fishers who fish from a powered boat.

The license does not apply to fishing from non-powered boats.[82] Also, it does not apply to Aboriginal customary fishing.[83] Table 6 shows a breakdown in the licenses issued in 2015/16, the total number of licenses and the cost of each license in 2016/17.

Table 6: Western Australia fishing licenses, total number of licenses in 2015/16, and costs in 2016/17

	Fishing from Boat	Rock lobster	Net fishing	Abalone	Marron	Freshwater	Total no. of licenses
2015/16	139,485	52,046	16,828	17,082	10,972	9,992	246,405
Cost (AUS$)	30.00	40.00	40.00	40.00	40.00	40.00	

Source: Recfishwest

"All fees collected from recreational fishing licenses are placed in a special trust account dedicated to recreational fisheries management in Western Australia, referred to as the Recreational Fishing Account"

The Recreational Fishing from Boat License was established with broad public support for the data it would generate, not so much for the revenue generated.[84] The license system's database has been used to develop more cost-effective approaches for data collection. This, along with logbooks completed annually by a survey sample of license holders, provides the most comprehensive survey conducted in Western Australia.[85]

All fees collected from recreational fishing licenses are placed in a special trust account dedicated to recreational fisheries management in Western Australia, referred to as the Recreational Fishing Account. According to Andrew Cribb, Principal Policy Officer for the Department of Fisheries, in 2015/16, the Department received AUS$7.7 million from recreational license fees, and other funds came from consolidated revenue appropriations. In total, AUS$17.9 million was spent on recreational fisheries management, research, education and compliance.

As a matter of policy, the Minister of Fisheries sets aside funds within the Recreational Fishing Account for specific purposes. At present, these include AUS$1.1 million each year in funding for Recfishwest as the peak non-governmental representative body for recreational fishers. Also, up to AUS$2.5 million each year has been set aside for various initiatives. Various business rules govern how these funds may be used and acquitted (pers. comm., Andrew Cribb, Department of Fisheries, 3 February 2017).

[81] Department of Fisheries (2016). *Department of Fisheries Annual Report to Parliament 2015/16*. Department of Fisheries: Perth, Western Australia.

[82] Ibid.

[83] Department of Fisheries (2016). *Recreational fishing licences 2016/17 Information and application form*. Department of Fisheries: Perth, Western Australia (www.fish.wa.gov.au/Fishing-and-Aquaculture/Recreational-Fishing/Pages/Recreational-Fishing-Licences.aspx).

[84] Department of Fisheries (2014). *Department of Fisheries Annual Report to Parliament 2013/14*. Department of Fisheries: Perth, Western Australia.

[85] Ryan, K.L., Hall, N.G., Lai, E.K., Smallwood, C.B., Taylor, S.M. and Wise, B.S. (2015). *State-wide survey of boat-based recreational fishing in Western Australia*. Fisheries Research Report No. 268. Department of Fisheries: Perth, Western Australia.

"Unlike the Western Australia Department of Fisheries, MPI does not track its total expenditure for managing recreational fisheries"

For example, 25 percent of recreational fishing license fees each year is allocated to the Recreational Fishing Initiatives Fund. This fund has invested over AUS$8 million in more than 20 projects that improve recreational fishing. These projects include habitat restoration and enhancement, including artificial reefs and fish aggregating devices, development of young leaders within the recreational fishing sector, construction of a recreational fishing and crabbing platform, including full disabled access, restocking efforts, re-establishing a recreational prawn fishery and projects that increase community participation in fisheries.[86]

Recfishwest's efforts also include a community grant scheme for projects that tackle local issues or wider issues with significant local implications, reference groups that use the knowledge of recreational fishers who have expertise in specific fisheries, and policy development.[87]

5.2 Managing New Zealand's recreational fisheries

In contrast, MPI has undertaken comparatively few initiatives that directly benefit recreational fishing. The more recent ones are the SNA 1 management plan, which as noted has shortcomings, and the current development of the National Blue Cod Strategy.[88]

Another is the Recreational Fishing Initiative, which comprises a recreational fishing team of two full-time staff established in 2015. This team's focus is to develop ways to better engage with the recreational fishing sector and support work on recreational fishing issues, and, in so doing, complement MPI's inshore fisheries management team.

Unlike the Western Australia Department of Fisheries, MPI does not track its total expenditure for managing recreational fisheries. In response to a request for the actual or estimated annual expenditure, MPI advised that it would be impossible to estimate this expenditure.

> It is not possible to separately estimate the proportion of the budget … spend on recreational fisheries management, as work that benefits the recreational fishing sector is undertaken by all of the fisheries teams at various times.[89]

MPI's response does note that the recreational fishing team of two full-time staff has a budget totalling NZ$520,285 (with 74 percent allocated for overheads). The question should be raised, is this use of funds providing the best possible benefits for the recreational fishing sector?

Based on knowledge gained while working at MPI and its predecessors for 13 years, I consider it is feasible to estimate the annual total expenditure for managing recreational fisheries. A reasonable estimate is to double the total budget for the recreational fishing team of two, totalling around

86 Recfishwest (2014). *RFIF – Round 4 Projects* (http://recfishwest.org.au/rfif-round-4-projects/).

87 Recfishwest (http://recfishwest.org.au/).

88 Ministry for Primary Industries (26 September 2017). *National Blue Cod Strategy* (www.mpi.govt.nz/protection-and-response/sustainable-fisheries/national-blue-cod-strategy).

89 Official Information Act 1982 (OIA16-0767 MPI response received 4 April 2017).

"New Zealand's recreational fisheries could improve greatly if the sector had levels of capacity and capability like that of Recfishwest"

NZ$1 million per annum. Most of this budget would also apply to overheads and the remainder to statutory processes that must consider recreational fishing interests, not necessarily improving the management of recreational fisheries.

MPI priority spending for recreational fisheries is on enforcement and monitoring. MPI provided the actual annual amounts spent for enforcement and monitoring purposes (in NZ dollars): $14.8 million in 2010/11, $14.8 million in 2011/12, $15.8 million in 2012/13, $14.1 million in 2013/14, $18.3 million in 2014/15 and $16.9 million in 2015/16.

It is worth noting that MPI's annual reports include the number of recreational fishing (enforcement) inspections delivered (29,529) and (unspecified) educational contacts with fishers (3,167).[90] The annual reports do not include any measures of performance with respect to recreational fisheries, nor any recreational fishing-related outcomes that could be attributed to the output of the recreational fishing team of two or the wider inshore management team.

5.2.1 Comparison with Western Australia

In contrast, the Western Australia Department of Fisheries' annual reports include indicators of performance measured against an annual tolerance range (catch and effort) for each of the major recreational fisheries (refer chapter 2).[91] Annual reports also include the total annual expenditure for managing recreational fisheries: as noted, AUS$17.9 million in 2015/16, including funding for Recfishwest and projects and research that directly benefit recreational fishing.

Recfishwest's AUS$1.1 million funding, plus other funding sources, covers the costs for an eight-member Board of directors, a non-voting chair elected by the Board, a chief executive officer, an operations manager and staff, who collectively operate as the peak body and central point of contact and referral for sectoral issues for 740,000 recreational fishers.

New Zealand's recreational fisheries could improve greatly if the sector had levels of capacity and capability like that of Recfishwest. Awareness is increasing regarding the consequences of the former government having established MPI, which redirected resources away from the fisheries function to the larger primary industries that make greater contributions to the export economy, and fund their own sectors on cost-recovery bases.

It is encouraging to know the new government is prepared to invest in recreational fisheries, so long as reciprocal means are in place for sharing the responsibilities if not the costs.[92]

[90] Ministry for Primary Industries (2016). *Annual Report 2015/16*. Wellington: Ministry for Primary Industries.

[91] Department of Fisheries (2016). *Department of Fisheries Annual Report to Parliament 2015/16*. Department of Fisheries: Perth, Western Australia (www.fish.wa.gov.au/Documents/annual_reports/annual_report_2015-16.pdf).

[92] New Zealand Labour Party (2017). *Fisheries: Abundant, sustainable fisheries in a healthy marine environment*. Manifesto 2017 (https://tinyurl.com/y9kgkgn7).

5.3 Recommendations

"Because the same petrol used for cars is also used for recreational boats, petrol used in boats is taxed as though it were being used on roads"

We have argued that the sharp discrepancy between the management of recreational and commercial fisheries is driven by funding differences. The management of commercial fisheries is largely funded on a cost-recovery basis by quota holders. The total average annual amount of the fisheries and conservation services levied was NZ$32.2 million from 2005–06 to 2016–17.[93] Recreational fishers have understandably been unwilling to contribute towards managing recreational fisheries. Our recommendations address this discrepancy in ways that benefit recreational fishers.

With the funding available through these recommendations, a broader discussion could occur regarding whether the burden of funding any TAC reallocation should fall, in full or in part, on the beneficiaries of the reallocation. This discussion could also include the cost recovery system with respect to scientific research of shared fisheries. It is in the public interest to have a sufficient level of research funding to ensure shared fisheries are healthy and sustainable.

5.3.1 Option 1 – Petrol excise duty

Petrol excise duty works as a user charge for road use. Collected excise duty revenue goes into the National Land Transport Fund to cover road construction, maintenance and related services. Normally, earmarked (hypothecated) taxes are discouraged. But, petrol excise duty has been simpler than other ways of charging road users for use of the roads.

Because the same petrol used for cars is also used for recreational boats, petrol used in boats is taxed as though it were being used on roads. Plus, no feasible system exists for either exempting petrol used in boats from excise duty or for refunding the excise duty collected from recreational boat users.

It is not possible to determine the precise amount of annual petrol excise duty paid by those who operate petrol-powered recreational boats and pleasure craft. In 2009, the petrol excise duty collected was estimated at around $25 million, though a more realistic estimate of $61 million was made based on assumptions verified with boating survey results and industry experts.[94]

The current annual excise duty paid is expected to be significantly higher, given the duty increasing from 42.5 cents in 2009[95] to 67 cents per litre currently[96] (exclusive of goods and service tax), and the number of recreational boats increasing from 409,000 in 2009 to 960,000 over this period.[97]

93 OIA17-0196 MPI response received 5 May 2017.

94 In 2009, the estimated total number of boats using petrol was 204,500 (from a total population of 409,000). Refer to New Zealand Institute of Economic Research (2009). *Recreational boating activity: Review of fuel excise revenue estimate. Final report to the Ministry of Transport*. New Zealand Institute of Economic Research: Wellington.

95 Ibid.

96 Fuel Tax Back (2017). *FAQs* (www.fueltaxback.co.nz/faq-s/).

97 Maritime New Zealand (2016). *Annual Report 2015/16*. Maritime New Zealand: Wellington.

"Funding recreational fisheries management activities from petrol excise duty already collected from recreational boat users makes more sense than either putting that collected excise duty into road projects or funding recreational fisheries management from general tax revenues"

Under section 9(1) of the Land Transport Management Act 2003, the Minister of Transport and Minister of Finance can decide to fund from the petrol excise duty paid by recreational boat and pleasure craft users the following activities and services:

- search and rescue activities, whether in relation to pleasure craft or otherwise;
- recreational boating safety and safety awareness;
- maritime safety services that benefit the users of pleasure craft; and
- administration by the Secretary in relation to the activities and services described above.

Payments made under section 9(1) of the Land Transport Management Act 2003 go to Maritime New Zealand, with most going towards search and rescue services on land and sea.[98] In 2013, the Minister of Transport and Minister of Finance increased the section 9(1) payment to Maritime New Zealand from $5.6 million to $7 million.[99] In 2015, the payment was $9 million.[100]

If recreational fishers already contribute substantially through petrol excise duty, then there would be reason to add recreational fisheries management activities to the purposes listed under section 9(1) of the Land Transport Management Act 2003. Without further information on the amount of excise duty collected from recreational boat users, and its relation to expenditure on services benefiting recreational boaters, it is difficult to determine how much of the funding gap could be covered by boaters' excise duty contributions.

Recreational boaters are far more likely to benefit from expenditure on fisheries management than taxpayers in general. Funding recreational fisheries management activities from petrol excise duty already collected from recreational boat users makes more sense than either putting that collected excise duty into road projects or funding recreational fisheries management from general tax revenues.

We strongly recommend an amendment to the Land Transport Management Act 2003 to allow for payment under section 9(1) to fund recreational fisheries management activities. These activities include broad representation to government and the other fishing sectors, education, and projects and research that align with the priorities of the recreational fishing sector. Specifically, we recommend the section 9(1) payment should be made to the proposed peak representative body (refer chapter 3), which would provide a layer of statutory accountability, in addition to accountability measures to be set out in its constitution.

[98] Maritime New Zealand is a Crown entity with national regulatory, compliance and response functions for the safety, security and environmental protection of coastal and inland waterways.

[99] Office of the Minister of Transport (2013). Future Funding of Maritime New Zealand – Amendments to Levies, Fees and Charges Regulations. Cabinet Economic Growth and Infrastructure Committee. Office of the Minister of Transport: Wellington.

[100] New Zealand Transport Authority (2016). *National Land Transport Fund Annual Report 2016.* New Zealand Transport Authority: Wellington.

5.3.2 Option 2 – Individual contributions

"This option emphasises the benefits resulting from individual's contributions, which would be used to fund work that benefits all recreational fishing interests. It is not simply another tax"

Option 2 is conditional on the level of payment available under section 9(1) of the Land Transport Management Act 2003 and the duration of that payment. If the payment is not forthcoming, too low or concluded after a five-year review, then Option 2 could be a feasible source of funding for recreational fisheries management activities. If the section 9(1) payment is sufficient, then Option 2 would not be warranted.

Option 2 proposes a Western Australian-type licensing system that uses license fees to provide direct and tangible benefits for recreational fishing. Option 2 also proposes that New Zealand residents who fish in the marine environment contribute a minimum of $10 each year, with exemptions for those who qualify, and non-residents (tourists) pay a minimum of $40, irrespective of the amount of time spent fishing in the year.

Based on the estimated 600,000 New Zealanders who fish each year and the estimated 100,000 tourists who fish, this option would generate around $10 million in annual gross revenue. This option emphasises the benefits resulting from individual's contributions, which would be used to fund work that benefits all recreational fishing interests. It is not simply another tax.

Administration service companies exist that could cover the services required for Option 2. These include Eyede Solutions, which has the current agreement with Fish and Game New Zealand for its license administration, and FishServe's subsidiary business development company, FishServe Innovations New Zealand Ltd (FINNZ). FINNZ currently administers the charter boat registration system for MPI. The New Zealand-based ABCorp, or equivalent, could manufacture and distribute the contributor member card.

As a consequence of the public consultation, a change was made to the proposed individual contributions. They could be required (eg, license) or voluntary (eg, an affiliation fee for a peak representative body). Valid arguments exist for both. A decision should be based on what best suits the type of peak body established.

Either way, membership to a peak representative body should also be open to those who do not fish. Some may wish to make contributions or gifts, knowing the funds will go towards ensuring sustainable use of the marine environment and its resources. No limit should be placed on the amount that can be contributed or gifted.

For these reasons, the contributions or gifts made are aligned with the Māori concept of koha. In this case, koha is to be provided for Tangaroa. Tangaroa is considered the atua (ancestor) that has continual influence over the sea and fish. Koha suggests reciprocity between those who give and those who receive.

Option 2 has the new government agree to ratify regulations that allow the selected administration service company to collect public funds and distribute them to the proposed peak representative body, along with administration of the contributor member card or Koha Card.

Also, once nationwide, the Koha Card system would provide a comprehensive database of all fishers. It could be used for more cost-effective approaches for data collection and surveys of all modes of fishing. These surveys could be done more frequently and likely at a lower cost than the National Panel Survey.

5.3.3 Option 3 – Boat or trailer and land-based fishing registration

"The rationale for developing a boat registration system, or use of the existing boat trailer registration system, is it would provide the same information-gathering benefits as the Fishing from Boat License in Western Australia"

Similarly, Option 3 is conditional on the level and duration of payment available under section 9(1) of the Land Transport Management Act 2003.

Option 3 is similar to the Fishing from Boat License in Western Australia. The difference is that Option 3 proposes a registration system for boats, not a license applied to individuals who fish from a power boat. Alternatively, the existing trailer registration system could be amended to distinguish their use for power boats and be the source of funds for recreational fisheries management activities.

Using the existing trailer registration system reduces administrative cost but fails to include boats berthed at marinas or multi-use trailers used to haul small-size boats. A boat registration system would be more comprehensive, but it would have higher administrative costs. A Fishing from Boat License, mirroring Western Australia's, would be more coherent, because it would encompass only those actually fishing but would be inferior to the more comprehensive licensing system proposed in Option 2.

The rationale for developing a boat registration system, or use of the existing boat trailer registration system, is it would provide the same information-gathering benefits as the Fishing from Boat License in Western Australia. These benefits include a database of registered recreational fishing boats, or their trailers, which can be used for more cost-effective approaches for data collection and surveys of boat owners. This database and resulting surveys would complement the National Panel Survey.

The selected administration service company could develop the new boat registration system or, along with the Ministry of Transport, extend the existing trailer registration system to raise funds.

No accurate data exist on the number of boats that recreationally fish, either in fresh water or inshore marine waters.[101] If one-half of the estimated 960,000 recreational boats and pleasure craft, or 480,000 boats, fish in the marine environment, a $20 annual registration fee per boat would generate around $9.6 million in annual gross revenue.

For Option 3 to broadly cover recreational fishing activities, it should also include the significant number of fishers who fish from land. The National Panel Survey shows substantial differences in fishing platforms between the Fisheries Management Areas (FMAs). In FMAs 1 and 7, fishing from trailer boats was more frequent, while shore-based fishing was more common in the other FMAs.[102]

[101] Neither MPI nor Maritime New Zealand collect information on recreational boats. Recreational boat owners are not required to have a Maritime Safety Authority number, an approved Maritime Safety Authority safety plan nor registration under the Ship Registration Act 1992. Refer Maritime New Zealand (2009). *Recreational vessel activity in New Zealand: Fact Sheet, October* (www.maritimenz.govt.nz/Publications-and-forms/Recreational-boating/recreational-vessel-activity-fact-sheet.pdf); Maritime New Zealand (2017). *Briefing to the Incoming Associate Minister of Transport*. Maritime New Zealand: Wellington.

[102] Wynne-Jones, J., Gray, A., Hill, L. and Heinemann, A. (2014). *National Panel Survey of Marine Recreational Fishers 2011–12: Harvest Estimates*. New Zealand Fisheries Assessment Report 2014/67. Wellington: Ministry for Primary Industries.

For this reason, Option 3 includes consideration of some type of registration system for shore-based fishers, particularly those who fish for paua and rock lobster (refer chapter 3). A registration system would contribute towards more cost-effective approaches for data collection on recreational fishing, particularly for shore-based fishers who are not well represented in the National Panel Survey. The registration fee could be set at a nominal amount, say $10 annually (with exemptions), which could be dedicated to improving land-based fishing, particularly in the FMAs where it is more common.

Option 3 also proposes that the new government agrees to ratify regulations that would allow the selected administration service company to collect public funds through the proposed recreational fishing boat registration or extended use of the existing trailer registration system, and land-based fisher license or registration system.

Conclusion

"This report highlights the need to speed up the evolutionary process for recreational fishing rights and management as demand for recreational fishing increases and intersectoral conflicts intensify"

Albert Einstein is attributed with the definition of insanity as doing the same thing over and over and expecting different results. This definition comes to mind when considering the way recreational fisheries are managed in New Zealand.

What's the Catch? highlights the evolution of commercial fishing rights and the way commercial fisheries are managed, while the same evolution for non-commercial fishing has been shorter, slower and far less well documented. This report highlights the need to speed up the evolutionary process for recreational fishing rights and management as demand for recreational fishing increases and intersectoral conflicts intensify.

We know the status quo for several recreational fisheries cannot be sustained for the long term. For this reason, the former Minister directed efforts toward developing the SNA 1 management plan. In some respects, the plan should be commended as the first attempt to address the potentially significant effects of population growth and tourism on overfishing in the north-eastern regions. However, the plan has the effect of deferring action that is necessary to rebuild the stock (eg, a major reduction in mortality). It was a politically-expedient way of stalling what is, in all likelihood, inevitable.

We also know that the rights associated with quota holdings address several endemic problems, particularly those related to overcapacity. But, quota holdings alone do not elicit a resource stewardship role. Quota holders have incentives to trade off the certainty of the present against the uncertainty of the future; taking extra catch benefits (for example, through misreporting and discarding) in the short term that causes the long-term consequences to be shared amongst all quota holders.[103] Recreational and Māori customary fishers also share these consequences through the increased effort needed to catch daily limits and customary authorisations.

Public outcry over longstanding misreporting and discarding problems has prompted a political will to address them. The new Minister of Fisheries must deal with these problems to restore public trust and confidence in the way commercial fisheries are managed. Electronic technology is readily available that will improve monitoring and reporting of commercial catches, but putting a camera on every boat is not the sole solution. We have yet to hear how overseas best practices and standards will address the underlying problems and incentivise more acceptable behaviour. Quota holders' incentives to change their behaviour are reduced when much of the benefit is enjoyed by recreational fishers.

For this reason, the recommendations in this report highlight the

[103] Mace, P.M. (1996). Developing and sustaining world fisheries resources: The state of the science and management. In: Hancock D.A., Smith, D.C., Grant, A. and Beumer, J.P. (eds) *Proceedings of the second World Fisheries Congress*, Developing and Sustaining World Fisheries Resources. Brisbane, Australia.

importance of improving the overall management of shared fisheries, those where there is a shared interest in taking more of the stock. *The Overseas Catch* emphasises shared fisheries because they warrant greater proportions of management attention, research and intersectoral involvement. This is because intersectoral conflicts, if allowed to worsen, could adversely affect the management of fisheries to the detriment of all fishing sectors.

It is difficult to comprehend how the management of shared fisheries will improve, so long as there is inherent uncertainty in the way TACs are allocated. Without a greater level of certainty, and a reallocation process, intersectoral conflicts will inevitably worsen.

Improvements in management will also require changes for both commercial and recreational fishers. Some longstanding practices may need to be reconsidered. For example, the recreational requirement to release under-sized fish could be found to hinder stock rebuild. Increases in the minimum legal size can have a corresponding increase in the rate of discarding fish that will die when released. Several species, including snapper, have high rates of initial and delayed mortality because of barotrauma, which could hinder rebuild efforts more than they help.

Practices such as switching from minimum legal sizes to fishers keeping all fish caught, regardless of size, until reaching the daily limit could make greater contributions to rebuilding some stocks. We need research to steer our debates over these issues, because we know we cannot rebuild stocks by doing the same thing over and over.

Similarly, we need to seriously question the commercial requirement to legally discard under-sized fish when the catch is dead, and to kill and land fish that could be released alive. A landing and discard policy is vital. It raises complex issues that warrant careful consideration.

We share the same goals of greater fish stock abundance, fair and equitable TAC allocations and a better fishing experience. The New Zealand Initiative's fisheries project aims to elicit constructive debate about these shared goals, particularly the changes in policies and practices needed to get there.

It is timely to debate and act on this, before tensions and conflicts worsen.

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The formation of a recreational peak body happened in Western Australia because little progress was being made towards improving the status of recreational fishing across the whole of government. Recreational fishers were increasingly becoming overwhelmed by the loss of access and lack of consideration for their interests, which was impacting on their activities and lacked an effective voice to deal with this. Most of us had our own jobs to do but even so were spending hundreds of voluntary hours a year advocating for and protecting the rights of the sector, at times with little success.

We saw the commercial sector with a fully funded peak body, the Western Australian Fishing Industry Council, and wanted a similar structure to have our voice in government decision-making processes. We achieved this in 1994, with the establishment of Recfishwest.

The path for Recfishwest was challenging at times, but with significant effort and encouragement the old adversarial commercial versus recreational fisher has largely disappeared. With hard work and diligence, the organisation has grown in stature and earned hard-won respect along the way. Respect being a vital commodity here.

The future for both commercial and recreational fishing will continue to change in Western Australia and to provide challenging situations, so the imperative for Recfishwest is to identify issues as they arise and work with government to deliver the best possible equitable outcomes for the state.

Well-managed sustainable fisheries that can provide future quality recreational fishing experiences are a worthy objective, and I commend The New Zealand Initiative for their efforts in this regard.

Ian Stagles
Co-Founder and inaugural Chair of Recfishwest
Kallaroo, Western Australia

PHOTO ABOVE: *Ian Stagles*

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