

CONSULTATION DRAFT

FISHERIES PROJECT

CONSULTATION
DRAFT

THE FUTURE CATCH

Preserving recreational fisheries
for the next generation

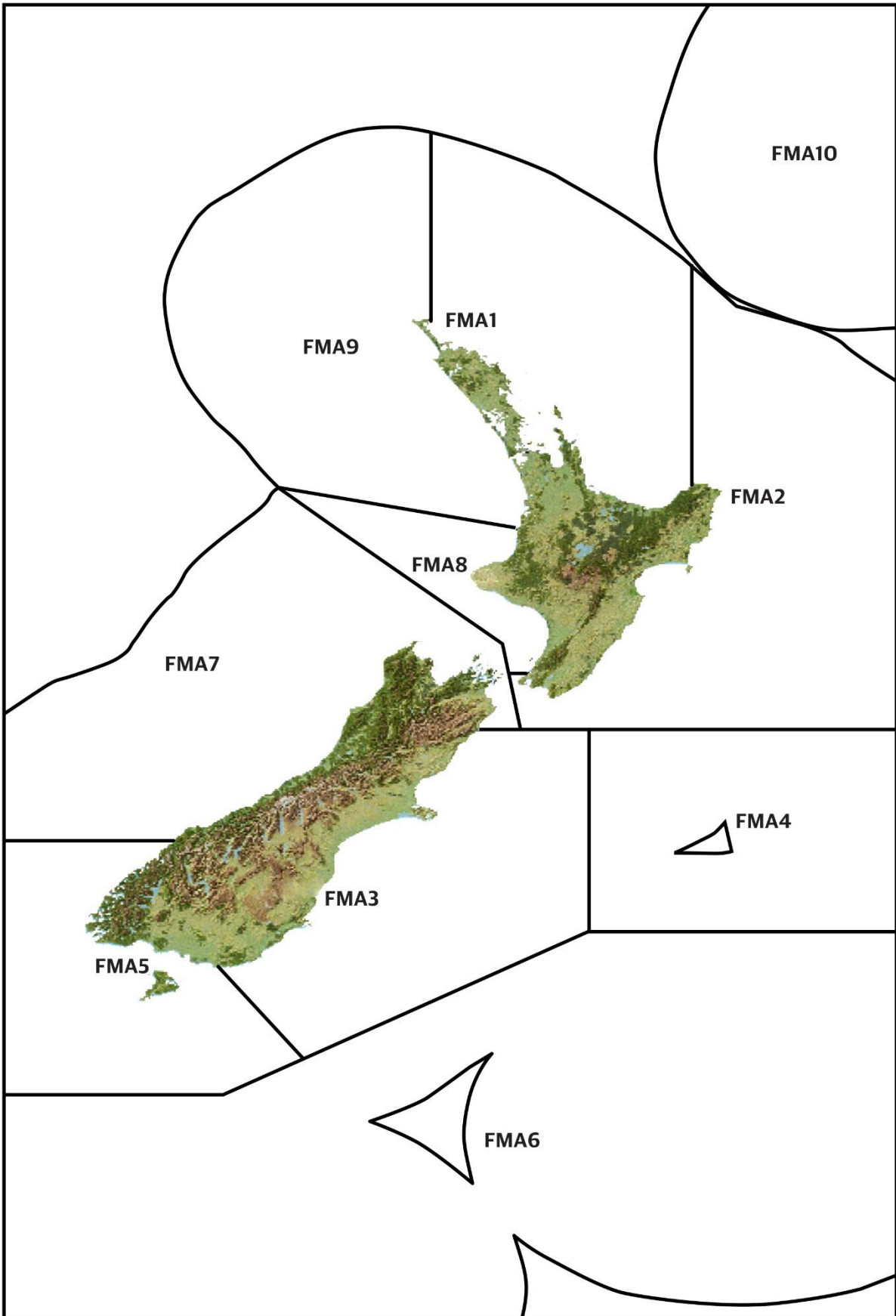
Randall Bess



**THE
NEW ZEALAND
INITIATIVE**

www.nzinitiative.org.nz

CONSULTATION DRAFT



Contents

Abbreviations	5
Executive summary	7
Introduction	11
Chapter 1: Fish stock sustainability	14
1.1 Overseas fisheries	15
1.2 Measuring sustainability	16
1.3 Status of key recreational fisheries	22
1.4 Recommendations	26
Chapter 2: Improved decision making	29
2.1 Overseas recreational fisheries policies	29
2.2 Overseas institutional arrangements	31
2.3 Importance of recreational fishing data	34
2.4 Improving data collection in New Zealand	35
2.5 Recommendations	37
Chapter 3: Allocation and reallocation mechanisms	41
3.1 Overseas allocation and reallocation processes	42
3.2 New Zealand's fisheries	45
3.3 Recommendations	46
Chapter 4: Sharing the costs	49
4.1 Overseas charges for fishing	49
4.2 Managing New Zealand's recreational fisheries	53
4.3 Recommendations on funding	54
Conclusion	60
References	63

Tables

Table 1: Comparison of fish stocks most commonly caught by recreational fishers	23
Table 2: Comparison of fish stocks that make up most of the commercial landings and annual value	25
Table 3: Comparison of recreational and commercial catches in important shared fisheries 2011–12	26
Table 4: Gulf of Alaska Area 2C Combined Catch Limit (CCL) formulaic process	44
Table 5: British Columbia Tidal Waters Sport Fishing Licence fees 2016/17	51
Table 6: Western Australia fishing licences, total number of licences in 2015/16, and costs in 2016/17	51

Figure

Figure 1: Representation of a fishery managed at high and low biomass levels	20
--	----

Abbreviations

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
NZRFC	New Zealand Recreational Fishing Council
NZSFC	New Zealand Sport Fishing Council
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 side 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

Executive summary

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.

The 2017 Budget suggests a boost to fisheries management. So far, all that is known is the focus will be on the upcoming integrated electronic monitoring and reporting system. It is unclear how much of its cost will be recovered from the commercial sector and what resources, if any, will be left to improve recreational fisheries.

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

CONSULTATION DRAFT

This report argues 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, while recreational fishers have generally been unwilling to contribute towards managing recreational fisheries. It seems the Government is not prepared to invest further in recreational fisheries without some reciprocal means of sharing the costs, if not the responsibilities, with the recreational fishing sector.

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.² 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 licence fees. We found that these fees are supported because they are used to fund sector-level representation and projects and research that benefit recreational fishing.

We were also interested to learn how competing fishing sectors have been incentivised to put aside 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.

This report examines these lessons and provides the following policy recommendations.

² Bess, R. (2017). *The Overseas Catch: The state of recreational fisheries management abroad*. The New Zealand Initiative: Wellington.

CONSULTATION DRAFT

- The Government and all fishing sectors demonstrate a commitment to constructive and effective management of shared fisheries, where there is a shared interest in taking of the fish stock. This commitment includes:
 - reaching agreed abundance (biomass) targets for shared fisheries; and
 - designing indicators of core management or stock management performance that can be tracked over time.
- Integrate recreational fisheries into management policies and processes. This is accomplished 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 Western Australia-type institution recognised by the Government as the peak body or central point of contact and referral for recreational sector issues.
- Switch to a proportional basis for total allowable catch (TAC) allocations, only if the process to reallocate TACs is fair and equitable over time, and in ways that benefit recreational fishers and compensate quota holders where they have a case for unjustified losses.
- Alternatively, develop formulaic proportional TAC allocations for significant 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 new recreational fishing representative institution, and its work in developing better measures of recreational fish stocks, for an initial five-year period through the petrol excise duties 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 duties;
 - contributions from recreational fishers and non-fishers willing to support the work of the new representative institution; or
 - registration fees for recreational boats or trailers.

While the recommendations reflect the views of the participants in the Western Australia fisher exchange about how to change fisheries management for the better, any meaningful change needs to incorporate the views of the wider public. Our hope is that these recommendations stimulate public debate and enable policy change.

This is why The New Zealand Initiative and the fisher exchange participants will be holding meetings throughout the country during the next few weeks. We want to hear the public's views so we can bring about the type of change that has public support. Details of these meetings are set out on the New Zealand Initiative website. They will also be provided through various

CONSULTATION DRAFT

outlets, including fishing clubs and local media. After consultation, the recommendations will be finalised and presented to the new government by the end of the year.

Finally, it is important that what we collectively discuss as final recommendations uphold the secure rights associated with quota holdings and the principles of the Treaty of Waitangi and related Treaty settlement obligations.

Introduction

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 allowing better monitoring. But 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.³ 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 Government focus, particularly since MPI was established. Far less Government support is provided for fisheries in general, because limited public resources have been redirected to the primary industries that make a greater contribution to the export economy.

Nonetheless, New Zealanders remain passionate about fisheries, far more so than for most other primary industries. Stated another way, the Government's focus on doubling primary sector export earnings is antithetical to public expectations about access to healthy fish stocks and transparency and accountability in the way they are managed.

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. In response to public outcry, the Minister for Primary Industries stepped up to the challenge by directing MPI to fast track development of the integrated electronic monitoring and reporting system (IEMRS).

However, 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. Let us hope it meets its billing as world leading by mitigating known problems and their potential effect on the recreational fishing experience.

³ Bess, R. (2016). *What's the Catch? The state of recreational fisheries management in New Zealand*. The New Zealand Initiative: Wellington.

CONSULTATION DRAFT

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.⁴

Recreational fishing has continued to have a low profile in management priorities and public resourcing, with exceptions in 2000 and 2006 when efforts were directed at clarifying the public right to fish and the responsibilities that accompany this right.

These efforts encountered strong opposition by some who considered 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.⁵

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, there is consolation 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.

The 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 needed 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 outcome of this debate is

⁴ The New Zealand Initiative (2017). *The true value of recreational fishing* (<https://nzinitiative.org.nz/insights/opinion/the-true-value-of-recreational-fishing/>).

⁵ Bess, R. (2017). *The Overseas Catch: The state of recreational fisheries management abroad*. The New Zealand Initiative: Wellington.

CONSULTATION DRAFT

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 1: Fish stock sustainability

New Zealand is recognised as having some of the most sustainable fisheries worldwide.^{6,7} 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 due to their lacking sufficient commercial value to warrant the cost of quantitative stock assessments, which are largely recovered by the relevant stock quota holders.

Many overseas jurisdictions demonstrate greater levels of commitment to managing fisheries that are important to recreational fishers, in part, because those 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 they 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 important shared fisheries.

⁶ 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.

⁷ 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.

1.1 Overseas fisheries

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.⁸ Recently, several nations have made significant progress in rebuilding overfished and depleted stocks.⁹ This progress is mainly attributed to governments having set mandates to end overfishing.¹⁰

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.¹¹ 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 to 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 to eliminate overfishing and rebuild overfished stocks.¹² New Zealand developed an equivalent policy, the Harvest Strategy Standard, in parallel, published in 2008, but it 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.¹³ Accordingly, Western

⁸ 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.

⁹ 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.

¹⁰ 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.

¹¹ 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>).

¹² Department of Agriculture, Fisheries and Forestry (2007). *Commonwealth Fisheries Harvest Strategy: Policy and Guidelines*. Department of Agriculture, Fisheries and Forestry: Canberra, Australia.

¹³ Ibid.

Australia implemented stringent requirements for rebuilding the mixed demersal (bottom dwelling) scalefish fishery. The rebuild required a 50 percent reduction in TACs.

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 reduced from two to one halibut per day.¹⁴

1.2 Measuring sustainability

In New Zealand, most commercial landings consist of the mid- and deep water stocks. They have received much 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.¹⁵ 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, none have management plans and, for some, management is completely absent.

1.2.1 Data-limited fish stocks

Because most 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).¹⁶ This can pose a significant challenge in meeting legal obligations to sustainably manage fisheries.¹⁷

¹⁴ Fisheries and Oceans Canada (2015). *Pacific Halibut* (www.dfo-mpo.gc.ca/fm-gp/sustainable-durable/fisheries-peches/halibut-fletan-eng.htm).

¹⁵ 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.

¹⁶ 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.

¹⁷ 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.

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 new data to improve assessments and support management decisions and optimal yield (catch in terms of weight).¹⁸ 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.¹⁹ It is uncertain whether this situation will be alleviated with the recent \$30.5 million boost in funding for fisheries management.²⁰

Some New Zealand fish stocks have been assessed with data-limited methods. For example, a simple catch-only method based on historical catch data has been used to estimate sustainable catch levels for barracoota and jack mackerel stocks.²¹

Various methods could be considered for other stocks, depending on the quality and type of available data. However, limited management resources mean these 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.

1.2.2 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 (*B_{msy}*).²²

¹⁸ 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.

¹⁹ 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.

²⁰ 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).

²¹ Ministry for Primary Industries (2014). *Fisbery Assessment Plenary, May 2014: Stock Assessments and Yield Estimates*. Compiled by the Fisheries Science Group, Ministry for Primary Industries, Wellington, New Zealand.

²² Ministry for Primary Industries (2008). *Harvest Strategy Standard for New Zealand Fisheries*. Ministry for Primary Industries, Wellington.

The Harvest Strategy Standard and its Operational Guidelines²³ 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 $\frac{1}{2} B_{msy}$, it triggers a required formal, time-constrained rebuilding plan.²⁴

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 population reaches its reference point (target), while considering social, cultural and economic factors. The Harvest Strategy Standard provides guidance that the target should be reached within a period no longer than twice the time the biomass would rebuild without fishing.²⁵

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 through a major reduction in mortality at the outset (eg, TAC reduction) and/or improved recruitment (fish growing to a catchable size).²⁶

1.2.3 Increasing target biomass

The worldwide focus on achieving fish stock sustainability includes implementing more conservative biomass targets. Generally, there has been a worldwide shift in biomass targets from 20 to 25 percent of the unfished biomass (20–25% B_0) to 30 to 40 percent of the unfished biomass (30–40% B_0) or higher, depending on fish stock productivity.²⁷

Even though targets set at around 30–40% B_0 are arbitrary and usually higher than B_{msy} , they are set in recognition of data and stock assessments being imperfect. Higher and more conservative biomass targets are set to reduce the risk of accidental overfishing.

MPI’s Operational Guidelines are increasingly used to apply targets at 30–40% B_0 . Accordingly, the common benchmark is a biomass target at 40% B_0 , although some stocks might warrant higher targets. For example, the kahawai (KAH 1) stock is managed at 52% B_0 . This higher

²³ Ministry for Primary Industries (2011). *Operational Guidelines for New Zealand’s Harvest Strategy Standard, Revision 1*. Ministry for Primary Industries, Wellington.

²⁴ Ministry for Primary Industries (2008). *Harvest Strategy Standard for New Zealand Fisheries*. Ministry for Primary Industries, Wellington.

²⁵ Ibid.

²⁶ 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>).

²⁷ Ministry for Primary Industries (2011). *Operational Guidelines for New Zealand’s Harvest Strategy Standard, Revision 1*. Ministry for Primary Industries, Wellington.

target is an example of ministerial discretion that allowed for maintaining the recreational fishing experience for this stock.

Higher biomass provides diverse potential benefits and costs. It is associated with more variation in the 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 B_{msy} , yields must decrease over both the short and long term.²⁸

The ideal 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 B_{msy} seems sound, unless discount rates are very high or growth in biomass is very slow and required effort and catch reductions are high. The case for achieving biomass in excess of B_{msy} requires a more difficult balancing of ecological benefits, enhancement of the recreational fishing 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 biomass goal as the target biomass.

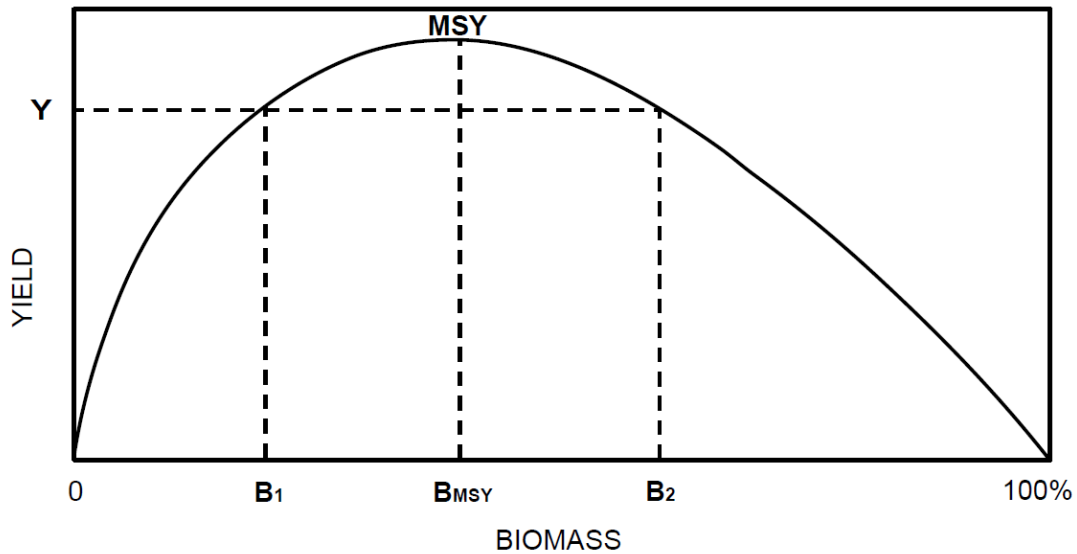
Figure 1 depicts a fishery managed below MSY and B_{msy} where yield (Y) corresponds to B_1 . In the long term, yield (Y) will increase to MSY, so long as the catch remains relatively low (for example, fishing mortality is less than the level that would provide MSY). However, increasing biomass beyond B_{msy} to B_2 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 B_{msy} or higher. But, it does not set out any detailed planning for reductions in TACs and associated lost opportunities to fish.²⁹

²⁸ Ibid.

²⁹ 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.

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, 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 New Zealand.

1.2.4 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 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 population growth in the region, meeting long-term interests will require an increase in the snapper biomass.³⁰

The management plan includes increasing the current biomass at around 20% B_0 to an interim target of 30% B_0 within 10 years (by 2025), and to an ultimate target of 40% B_0 within 25 years (by 2040). The 40% B_0 target is appropriate, based on snapper biological characteristics.³¹ However, the 25-year rebuild timeframe, set at the maximum for a productive stock according to

³⁰ *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).

³¹ Ibid.

CONSULTATION DRAFT

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 assumptions.³²

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 be sufficient to avoid the need to reduce the TAC.³³

While the modelling results for different options vary, overall, they suggest the SNA 1 stock will not rebuild within 25 years (by 2040).³⁴

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, that the Strategy Group was unwilling to propose a reduction. If proposed, then the tough questions would need to be addressed regarding who will pay the cost of conservation by foregoing current catch levels. 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 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.³⁵ Questions were raised about the effectiveness of the intended rebuild, when the number of under-sized snapper dying is increasing because of the increased MLS.

³² 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).

³³ *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).

³⁴ Ibid (refer to appendices C and D).

³⁵ 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).

1.3 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.³⁶

Table 1 compares the status of some of these stocks. It shows whether or not each stock is at or above its target biomass level, which is generally 40% B_0 , below its soft limit, generally set at $\frac{1}{2} B_{msy}$, and relative to the overfishing threshold, or the rate of extraction that should not be exceeded, because it would 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 some stocks, a quantitative stock assessment not having been undertaken, or that the assessment was not definitive.³⁷

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 flat fish (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 mean 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.

The low level of knowledge of several 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.

³⁶ 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.

³⁷ Ministry for Primary Industries (2 May 2017). *Stock Status* (<https://fs.fish.govt.nz/Page.aspx?pk=16&tk=478>).

CONSULTATION DRAFT

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

CONSULTATION DRAFT

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).³⁸

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, with respect 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.

³⁸ Marine Stewardship Council (2017). *Track a fishery*
(<https://fisheries.msc.org/en/fisheries/@@search?q=new+zealand&search=>).

CONSULTATION DRAFT

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	■■	●●●●	●●	
CRA4	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

CONSULTATION DRAFT

Table 3 outlines several of the important 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 would 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 important shared fisheries 2011–12

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

1.4 Recommendations

We recommend the Government and all fishing sectors demonstrate a commitment to constructive and effective 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 and psychological benefits). Furthermore, it should acknowledge the statutory 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 4. Nonetheless, questions remain about the low level of resourcing for the fisheries management function since MPI's establishment.

1.4.1 Increase stock biomass

Reaching an agreed abundance (biomass) target, which in most cases is 40% B_0 , 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 to set out who pays the cost of conservation;
- 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.

1.4.2 Reporting on shared fisheries

The next expression of commitment is to design indicators of core management or 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 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

CONSULTATION DRAFT

fisheries and reported in the Department of Fisheries' annual reports.³⁹ With appropriate representation, this type of reporting should be developed for New Zealand's stocks that are important to recreational and customary fishers.

³⁹ 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 2: Improved decision making

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 fisheries.

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.

2.1 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.⁴⁰

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.⁴¹

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.⁴²

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.⁴³

2.1.1 New Zealand and fisheries policies

As noted in *What's the Catch?*, the New Zealand Government developed a recreational fisheries policy soon after the QMS was implemented and as Māori claims to fisheries resources gained momentum.⁴⁴ The Government acknowledged the significant changes made to managing

⁴⁰ 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).

⁴¹ 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).

⁴² Department of Fisheries (2012). *Western Australian Government Fisheries Policy Statement*. Department of Fisheries: Perth, Western Australia.

⁴³ Ibid.

⁴⁴ 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.

commercial and customary fisheries left little effort and attention directed toward improving recreational fisheries management.⁴⁵

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.⁴⁶

Also noted in *What's the Catch?*, though attempts have been made with the 2000 *Soundings*⁴⁷ and 2006 *Shared Fisheries*⁴⁸ 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 momentum for improving the management of recreational fisheries. There appears to be 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.⁴⁹ 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.

2.2 Overseas institutional arrangements

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

⁴⁵ 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.

⁴⁶ 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.

⁴⁷ 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.

⁴⁸ Ministry of Fisheries (2009). *Shared Fisheries: Proposals for Managing New Zealand's Shared Fisheries – A Public Discussion Paper*. Ministry of Fisheries: Wellington.

⁴⁹ Ministry for Primary Industries (18 November 2016). *Recreational Fishing Initiative* (www.mpi.govt.nz/travel-and-recreation/fishing/fishing-rules/recreational-fishing-initiative/).

CONSULTATION DRAFT

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 bodies or 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 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.⁵⁰

2.2.1 New Zealand institutional arrangements

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 portion, around 40,000, are members of fishing clubs and/or regional- or national-level organisations.

Historically, the two largest recreational fishing representative organisations are the New Zealand Sport Fishing Council (NZSFC) and New Zealand Recreational Fishing Council (NZRFC). The organisation, Our Fishing Future, also recently began as a government-supported initiative. While the NZSFC and NZRFC have cooperated in the past, lately their approaches towards recreational fisheries management have diverged.⁵¹ Both were invited, along with Our Fishing Future, to participate in the exchange to Western Australia. The NZRFC and Our Fishing Future took part in the exchange, and the NZSFC declined the invitation.

As is often the case overseas, the recreational fishing sector here remains fragmented in its views and vision for the future. The Government has encouraged it to work through its differences and come back with a unified voice and vision. But, as the situation in Western Australia has shown, this is an unrealistic expectation without government showing initiative to create change.

In Western Australia, Recfishwest would not have become the peak body and central point of contact and referral for the recreational fishing sector without the Minister having made that decision. Existing fishing clubs and regional- and/or national-level organisations continued with their own purposes and functions.

What changed with the Minister's decision was that if the clubs or organisations 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 the recreational sector.

⁵⁰ Department of Fisheries (2016). *Department of Fisheries Annual Report to Parliament 2015/16*. Department of Fisheries: Perth, Western Australia.

⁵¹ Walshe, R.A.R. (2010). *The Fisheries' Trinity: Re-conceptualising New Zealand's Inshore Fisheries Management*. PhD thesis. The University of Auckland: Auckland.

2.3 Importance of recreational fishing data

Collecting data on recreational fishing is more difficult than collecting data on commercial fishing. The reasons are generally that 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.

2.3.1 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.

Nonetheless, the development of smartphone apps for recreational fisher self-reporting is pushing ahead. For example, in 2015, the United States' federal government set up the Electronic Monitoring and Reporting Grant Program to support integrating electronic technologies into data collection.⁵² 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 report 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 2017.⁵³

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.

2.4 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 added as the app develops further.

⁵² 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).

⁵³ 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).

CONSULTATION DRAFT

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 fish club level or other situations where the number of fishers is 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 that self-reporting is unwarranted, given the extent of catch, effort and mode data collected in the National Panel Survey.

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.⁵⁴

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 Licence 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 management purposes and so supported the Fishing from Boat Licence 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 licence system database.

In comparison, the National Panel Survey comes at a higher cost that is not offset by licence 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.

⁵⁴ 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.

There is merit in finding lower-cost ways to administer the National Panel Survey more frequently.

2.5 Recommendations

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

2.5.1 Recreational fisheries policy

We recommend that MPI, in conjunction with representatives of all fishing sectors, set a timeframe for developing a recreational fisheries policy. We recommend 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 recognising the statutory 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, which will 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 and non-commercial fishing. Instead, a more fitting policy should reflect the view that, in certain fisheries, the recreational fishing right does and will have priority status, while in other fisheries that may not be possible.

Accordingly, where improved recreational access to fisheries resources is desirable, it may not be feasible to simply appropriate the commercial portion of the TAC and reallocate it without compensation. Instead, workable solutions should focus on collective shared efforts to enhance stocks for the benefit of all fishing sectors. Where reallocation from the commercial sector to the recreational sector is desirable, that reallocation should involve compensation where there is a case for unjustified losses. 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.

2.5.2 Institutional arrangements

We recommend the formation of a new professional institution that provides broad representation of recreational fishing interests to the Government, Fisheries Inshore New

CONSULTATION DRAFT

Zealand and representatives of customary fisheries. It is envisioned that this new institution 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.

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

- 1) Recognised as a major stakeholder in aquatic ecosystem management and participates in fisheries management to ensure the sustainability of fisheries resources and their habitats;
- 2) Promote and advocate responsible recreational fishing and help with fisher education;
- 3) Represent and advocate the interests and rights of recreational fishers on issues that affect the participation, development and sustainability of recreational fishing; and
- 4) Ensure recreational fishers have an adequate and reasonable share of fisheries resources.

The Recfishwest constitution sets out strong governance arrangements for its eight-member board of directors and the Board electing a non-voting chairperson. Five directors are elected by the Recfishwest membership and three are appointed for specific skills sets (for example, legal and accounting; biological, environmental and marketing expertise). Recfishwest directors are appointed for a two-year period with half voted in by the membership every year, which reduces the loss of corporate knowledge at any one time.

These types of governance arrangements should be adapted for the new institution, and in ways that ensure each major region is well represented (for example, South Island, lower North Island and upper North Island).

Development of the proposed new institution should occur with ongoing dialogue with Recfishwest's board and staff to ensure their learnings are fully incorporated. Also, the new institution might first be trialled as a regional project and expanded to other regions and then nationwide as it builds capacity and capability. For this purpose, it would start with a focus on communities and existing fishing clubs and regional- and/or national-level organisations, and building networks to address regional- and national-level management issues. The new institution

could also be reviewed after five years. At that time, a decision could be made regarding whether to continue the institution, with consideration of funding options (refer chapter 4).

However, for this new institution to be effective, it would require the Government to commit to a greater level of participation and engagement than has been the case previously. As a comparison, Recfishwest referred to its arrangements with the Department of Fisheries, WAFIC and interest groups as collaboration or co-management, which it considers comprises shared, negotiated and delegated responsibilities and obligations for improving fisheries for the long term. But, as Recfishwest emphasised, these arrangements require a shift from a ‘them and us’ mentality to demonstrating joint problem solving and genuine interaction and leadership.⁵⁵

Formation of the proposed new institution would be a critical step towards integrating recreational fisheries into management policies and processes, and attaining the level of co-management that we observed in Western Australia.

2.5.3 Recreational fishing data collection

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 frequency and sampling intensity would greatly improve the information available for managing recreational fisheries. It would also provide an improved basis for management options, including TAC reallocations in shared fisheries (refer chapter 3).

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

⁵⁵ Presentation by Andrew Rowlands, Chief Executive Officer of Recfishwest, to the fisher exchange participants, 23 May 2017.

CONSULTATION DRAFT

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 licence system databases. We recommend an Australian-type licencing or equivalent registration system could be the best solution for New Zealand, particularly for species like paua and rock lobster.

A licencing 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 3: Allocation and reallocation mechanisms

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 full discretion regarding how best to allocate TACs.

The downside, however, is the 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.

3.1 Overseas allocation and reallocation 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 approaches towards TAC allocations.

3.1.1 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 for shifts in TAC allocations either through market-based and/or administrative processes. 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.⁵⁶ 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*).

3.1.2 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.⁵⁷

⁵⁶ 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).

⁵⁷ Fisheries and Oceans Canada (27 October 2003). *Minister Thibault Announces Pacific Halibut Allocation Framework*. News release. Fisheries and Oceans Canada: Vancouver, British Columbia.

In 2012, the Minister increased the recreational allocation from 12 to 15 percent, reducing the commercial allocation to 85 percent.⁵⁸ 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 mechanism or another form of compensation.⁵⁹

After reviewing various market-based mechanisms, in 2011, the Minister announced the experimental licence programme designed to let licence holders fish for halibut beyond the limits and time available under the normal recreational licence.⁶⁰ If fishers wished to catch additional halibut, the licence allows them to acquire quota at market rates.

The 12/85 TAC split has remained intact, while the experimental licence 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 licence programme catches on, the political fight over who gets how much halibut would be resolved by letting people trade.

3.1.3 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.⁶¹

The Gulf of Alaska halibut fishery also has a formulaic process for proportional TAC allocations, referred to as the annual Combined Catch Limit (CCL), between the charter boat and commercial sectors. A fixed percentage of the 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

⁵⁸ Fisheries and Oceans Canada (7 February 2012). *Greater Certainty in the Pacific Halibut Fishery*. News release. Fisheries and Oceans Canada: Vancouver, British Columbia.

⁵⁹ *Malcolm v. Canada* (Minister of Fisheries) 2014 FCA 130.

⁶⁰ 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.

⁶¹ National Oceanic and Atmospheric Administration (24 March 2016). *New 2016 Regulations for Charter Halibut Anglers* (<https://alaskafisheries.noaa.gov/sites/default/files/chfactsheet2016.pdf>).

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?

3.1.4 Western Australian fisheries

Since 2004, proportional allocations and the intent to reallocate them over time have 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.^{62, 63} 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.⁶⁴

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.

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

⁶² 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.

⁶³ 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.

⁶⁴ Ibid.

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.

3.2 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.⁶⁵ The Minister also has no specific legislative guidance for setting the recreational allocation relative to the commercial allocation but 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.

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.⁶⁶

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.

⁶⁵ *New Zealand Fishing Industry Association Inc & Ors v Minister of Fisheries* (CA 82/97).

⁶⁶ McMurrin, 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.

3.2.1 SNA 1 fishery

The SNA 1 fishery is a case in point. The Minister has stated his intention to increase the non-commercial TAC allocation from 36 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, however, were 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.

3.3 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 where they have a case for unjustified losses.

A significant hurdle to proportional allocations is, however, the imprecise account of recreational catches, which the courts have already noted.⁶⁷ 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 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.

⁶⁷ *New Zealand Fishing Industry Association Inc & Ors v Minister of Fisheries* (CA 82/97).

CONSULTATION DRAFT

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, public perception of cheating within the QMS, through misreporting of catches and illegal discarding, makes this option currently too difficult. This solution is also difficult to implement, due to 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 undersized fish, and many species are subject to high mortality rates, both initial and delayed. The issue can and 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, because they continue to develop their temporary and long-term 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.

CONSULTATION DRAFT

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 4 provide for a broader discussion regarding where the burden of funding reallocations could fall.

Chapter 4: Sharing the costs

Our research shows that most overseas recreational fishers pay a nominal cost (in terms of licence 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, fishing 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 licences for residents and licences 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 licences 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 Government's current level of expenditure on managing recreational fisheries and the unlikely prospect that it will increase significantly. This expenditure is compared with that in Western Australia, along with the benefits recreational fishers receive from paying fishing licence fees. The chapter ends by discussing three options for funding the policy recommendations set out in this report.

4.1 Overseas charges for fishing

All the overseas fishing licence systems described in *The Overseas Catch* require fishers to carry licences 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 catches and effort (see chapter 2). Western Australia's system is an exception because licences also fund sector-level representation and projects and research that benefit recreational fishing. Each one is considered briefly.

4.1.1 Texas licencing

In Texas, the Texas Parks and Wildlife Department administers a licence system for both freshwater and saltwater fishing. A private-boat angler residing in Texas over 17 years of age must have a valid fishing licence 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 licence 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) licence was US\$11 and US\$16, respectively.⁶⁸

4.1.2 Northern California licencing

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 licence 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.⁶⁹

An annual California sport fishing licence costs US\$47.01 for residents and US\$126.36 for non-residents. California residents and non-residents can also buy one-day licences for US\$15.12, two-day licences for US\$23.50 and 10-day licences for US\$47.01. Annual reduced-fee sport fishing licences can be bought for US\$6.95 by those who qualify. Lifetime licences 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.

4.1.3 British Columbia licencing

All recreational fishers aged over 16 are required to hold a Tidal Waters Sport Fishing Licence when fishing in tidal waters (saltwater). The licence is issued by the Province of British Columbia and its cost varies, depending on age and duration of the licence (see table 5). A salmon conservation stamp must be affixed to the licence of anyone wishing to catch and retain any

⁶⁸ Texas Parks and Wildlife Department (2016). *Outdoor Annual Hunting & Fishing Regulations 2016–17*. Texas Parks and Wildlife Department: Austin, Texas, United States of America.

⁶⁹ 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).

CONSULTATION DRAFT

species of salmon. No conservation stamp is needed for catching halibut. Since 2008, around 300,000 licences have been issued each year.⁷⁰

Table 5: British Columbia Tidal Waters Sport Fishing Licence 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

4.1.4 Western Australian licensing

Western Australia has five fishery-specific licences. In addition, in 2010, the Department of Fisheries implemented the Recreational Fishing from Boat Licence.⁷¹ The licence is not tied to a boat but is for individual fishers who fish from a powered boat.

The licence does not apply to fishing from non-powered boats.⁷² Also, it does not apply to Aboriginal customary fishing.⁷³ Table 6 shows a breakdown in the licences issued in 2015/16, the total number of licences, and the cost of each licence in 2016/17.

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

	Fishing from Boat	Rock lobster	Net fishing	Abalone	Marron	Freshwater	Total no. of licences
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

⁷⁰ Fisheries and Oceans Canada (No date). *Fishing Licences – Pacific Region* (www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/stat-eng.htm).

⁷¹ Department of Fisheries (2016). *Department of Fisheries Annual Report to Parliament 2015/16*. Department of Fisheries: Perth, Western Australia.

⁷² Ibid.

⁷³ 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).

CONSULTATION DRAFT

The Recreational Fishing from Boat Licence was established with broad public support for the data it would generate, not so much for the revenue generated.⁷⁴ The licence system's database has been used to develop more cost-effective approaches for data collection. This, in conjunction with logbooks completed annually by a survey sample of licence holders, provides the most comprehensive survey conducted in Western Australia.⁷⁵

All fees collected from recreational fishing licences 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 licence 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).

For example, 25 percent of recreational fishing licence 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.⁷⁶

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.⁷⁷

⁷⁴ Department of Fisheries (2014). *Department of Fisheries Annual Report to Parliament 2013/14*. Department of Fisheries: Perth, Western Australia.

⁷⁵ 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.

⁷⁶ Recfishwest (2014). *RFIF – Round 4 Projects* (<http://recfishwest.org.au/rfif-round-4-projects/>).

⁷⁷ Recfishwest (<http://recfishwest.org.au/>).

4.2 Managing New Zealand's recreational fisheries

In contrast, MPI does not undertake or fund any initiatives that directly benefit recreational fishing. The exception is the recreational fishing team consisting 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.⁷⁸

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 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 these 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).⁷⁹ The annual reports do not include any measures of performance with respect to

⁷⁸ OIA16-0767 MPI response received 4 April 2017.

⁷⁹ Ministry for Primary Industries (2016). *Annual Report 2015/16*. Wellington: Ministry for Primary Industries.

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.

4.2.1 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 1).⁸⁰ 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 recreational fishing initiatives.

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 and staff, who collectively operate as the peak body or central point of contact and referral for sectoral issues for 740,000 recreational fishers.

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

A further consideration is the unlikelihood of the Government increasing the limited resources dedicated to the management of recreational fisheries. Recreational fishing does not feature in the recent budget increase of NZ\$30.5 million for fisheries management. The Government's preparedness to invest further in recreational fisheries is unlikely without some reciprocal means of sharing the costs, if not the responsibilities, with the recreational fishing sector.

4.3 Recommendations on funding

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 2016–17.⁸¹ Recreational fishers have understandably been unwilling to contribute towards managing

⁸⁰ 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).

⁸¹ OIA17-0196 MPI response received 5 May 2017.

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.

4.3.1 Option 1 Petrol excise duties

Petrol excise duties work 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 duties have 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. And, no feasible system exists for either exempting petrol used in boats from excise duties or for refunding the excise duties collected from recreational boat users.

It is not possible to determine the precise amount of annual petrol excise duties paid by those who operate petrol-powered recreational boats and pleasure craft. In 2009, the petrol excise duties collected were 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.⁸²

The current annual excise duties paid are expected to be significantly higher, given the duty increasing from 42.5 cents in 2009⁸³ to 67 cents per litre currently⁸⁴ (exclusive of goods and service tax), and the number of recreational boats increasing from 409,000 in 2009 to 960,000 over this period.⁸⁵

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 duties paid by recreational boat and pleasure craft users the following activities and services:

⁸² 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.

⁸³ Ibid.

⁸⁴ Fuel Tax Back (2017). *FAQs* (www.fueltaxback.co.nz/faq-s/).

⁸⁵ Maritime New Zealand (2016). *Annual Report 2015/16*. Maritime New Zealand: Wellington.

CONSULTATION DRAFT

- a) search and rescue activities, whether in relation to pleasure craft or otherwise; and
- b) recreational boating safety and safety awareness; and
- c) maritime safety services that benefit the users of pleasure craft; and
- d) 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.⁸⁶ 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.⁸⁷ In 2015, the payment was \$9 million.⁸⁸

If recreational fishers already contribute substantially through petrol excise duties, 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 duties collected from recreational boat users, and its relation to expenditures 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 expenditures on fisheries management than taxpayers in general. Funding recreational fisheries management activities from excise duties 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 commercial fishing sector, education, and research and projects that align with the priorities of the recreational fishing sector. Specifically, we recommend the section 9(1) payment should be made to the proposed recreational representative institution (refer chapter 2), which would provide a layer of statutory accountability, in addition to accountability measures to be set out in the institution's constitution.

⁸⁶ 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.

⁸⁷ 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.

⁸⁸ New Zealand Transport Authority (2016). *National Land Transport Fund Annual Report 2016*. New Zealand Transport Authority: Wellington.

4.3.2 Option 2 Individual contributions

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 licencing system that uses licence 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 \$20, 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 \$8 million in annual gross revenue. Option 2 emphasises the benefits resulting from individual's contributions. It is not simply another tax. The contributions will be used to fund work that benefits all recreational fishing interests.

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 licence 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 that would be required for fishing in the marine environment.

Membership 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 requires the Government's agreement to ratify regulations that allow the selected administration service company to collect public funds and distribute them to the proposed recreational representative institution, 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.

4.3.3 Option 3 Boat or trailer and land-based fishing registration

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 Licence in Western Australia. The difference is that Option 3 proposes a registration system for boats, not a licence 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 Licence, 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 benefits as the Fishing from Boat Licence in Western Australia. These benefits include a database of registered recreational fishing boats, or their trailers, that 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.

CONSULTATION DRAFT

No accurate data exist on the number of boats that recreationally fish, either in fresh water or inshore waters.⁸⁹ 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.⁹⁰

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 (see chapter 2). 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 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 licence or registration system.

⁸⁹ 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.

⁹⁰ 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.

Conclusion

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.

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 also highlights the need to speed up the evolutionary process for recreational fishing rights and management as demand for recreational fishing increases.

We know the status quo for several recreational fisheries cannot be sustained for the long term. For this reason, the Minister directed efforts toward developing the SNA 1 management plan. Irrespective of the plan's shortcomings, it should be commended. It is the first attempt to address the potentially significant effects of population growth and tourism on overfishing in the north-eastern regions. Technological advances like global positioning systems, colour sounders and improved fishing gear technology also increase pressure on recreational fisheries.

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.⁹¹ Recreational and Māori customary fishers also share these consequences through 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 Minister 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.

⁹¹ 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.

CONSULTATION DRAFT

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 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 these 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.

Improvements in the management of shared fisheries will require changes for both commercial and recreational fishers. Some longstanding practices may need to be reconsidered. For example, the recreational requirement to release undersized 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 question the commercial practice of legally discarding under-sized fish when the catch is dead. A landing obligation would incentivise commercial fishers to avoid certain fishing grounds, communicate the location of under-sized fish and develop markets for the amount caught, with the aim of ending the waste.

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 this now, before tensions and conflicts worsen. The New Zealand Initiative looks forward to receiving public comments on the recommendations in this consultation draft report so they can be considered in the final recommendations presented to the new government late this year.

References

- 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.
- Bess, R. (2017). *The Overseas Catch: The state of recreational fisheries management abroad*. The New Zealand Initiative: Wellington.
- Bess, R. (2016). *What's the Catch? The state of recreational fisheries management in New Zealand*. The New Zealand Initiative: Wellington.
- 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).
- 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.
- 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.
- 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.
- Department of Agriculture, Fisheries and Forestry (2007). *Commonwealth Fisheries Harvest Strategy: Policy and Guidelines*. Department of Agriculture, Fisheries and Forestry: Canberra, Australia.
- 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).
- 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).
- Department of Fisheries (2014). *Department of Fisheries Annual Report to Parliament 2013/14*. Department of Fisheries: Perth, Western Australia.
- Department of Fisheries (2012). *Western Australian Government Fisheries Policy Statement*. Department of Fisheries: Perth, Western Australia.
- Fisheries and Oceans Canada (No date). *Fishing Licences – Pacific Region* (www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/stat-eng.htm).
- Fisheries and Oceans Canada (2015). *Pacific Halibut* (www.dfo-mpo.gc.ca/fm-gp/sustainable-durable/fisheries-peches/halibut-fletan-eng.htm).
- Fisheries and Oceans Canada (7 February 2012). *Greater Certainty in the Pacific Halibut Fishery*. News release. Fisheries and Oceans Canada: Vancouver, British Columbia.

CONSULTATION DRAFT

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.

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

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

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).

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).

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.

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.

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.

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).

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.

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.

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

Maritime New Zealand (2017). *Briefing to the Incoming Associate Minister of Transport*. Maritime New Zealand: Wellington.

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

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).

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).

McMurrin, 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.

CONSULTATION DRAFT

FAO Fisheries Technical Paper 404/1. Food and Agriculture Organization of the United Nations: Rome, 184–187.

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

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

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

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

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.

Ministry for Primary Industries (2014). *Fisbery Assessment Plenary, May 2014: Stock Assessments and Yield Estimates*. Compiled by the Fisheries Science Group, Ministry for Primary Industries, Wellington, New Zealand.

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

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

Ministry of Agriculture and Fisheries (June 1989). *National Policy for Marine Recreational Fisheries*. Ministry of Agriculture and Fisheries: Wellington.

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

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.

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>).

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).

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

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.

CONSULTATION DRAFT

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.

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

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).

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.

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).

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

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.

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.

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

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

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

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.

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.

