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BCBC2019-07c: Stakeholder
engagement in assessment
of recreational fisheries
bycatch of marine
protected species

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Conservation, Conservation
Services Programme

Stakeholder engagement in assessment of recreational fisheries bycatch of marine protected species. Cover image photo credit: Dr Paul Barter, Cawthron Institute.

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Contents

1. EXECUTIVE SUMMARY	5
2. BACKGROUND	7
2.1 Project background and supporting documents	7
2.2 Project objectives	8
2.3 Project approach	9
2.4 A note on customary fishing	10
2.5 Stakeholder identification and mapping	10
3. RESEARCH APPROACH	11
3.1 Research methodology	11
4. SUMMARY OF RESEARCH FINDINGS	14
4.1 Summary of stage one findings	14
4.2 Summary of findings from one-on-one interviews	15
4.3 Summary of findings and recommendations from the online survey	16
5. EVIDENCE BASED ENGAGEMENT FRAMEWORK AND PLANNING PROCESS	19
5.1 Working towards saving protected marine species	20
5.2 Behaviour change and social marketing principles	21
5.3 SenateSHJ's SUDA model	22
5.4 The SenateSHJ 5C's social movement model	24
5.5 Key research findings that informed the engagement approach	25
5.6 Recommended engagement approach	26
5.7 Further social research required to confirm targeted approach	27
5.8 Two-stage engagement framework	28

6. STAKEHOLDER ENGAGEMENT GUIDELINES	31
6.1 Why stakeholders are critical and why they should care	31
6.2 Engaging with stakeholders	31
6.3 Productive stakeholder conversation	31
6.4 Decentralised messaging for stakeholders	32
6.5 Stakeholder engagement pathway	33
7. DATA COLLECTION METHODS	35
7.1 Smartphone applications	35
7.2 Alternative options to smartphone applications	36
7.3 Recommendations for data collection	36
8. FINAL RECOMMENDATIONS/NEXT STEPS	36
9. ACKNOWLEDGEMENTS	37
10. REFERENCES	37
11. APPENDICES	38

1. EXECUTIVE SUMMARY

This piece of work was undertaken for the Department of Conservation (DOC) by SenateSHJ, The Navigators and supported by Jeremy Gardiner in the role of Iwi Advisor. Its purpose is to support DOCs overarching strategic goal to reduce the recreational bycatch of marine protected species. To achieve this, DOC first needs to gain a better understanding of the nature and extent of this conservation issue via in-depth research and quantification of recreational fishing bycatch of marine protected species in New Zealand.

The primary objective of this project was to understand how DOC can engage effectively, in future data-collection studies with Treaty of Waitangi | Te Tiriti o Waitangi partner (Te Ohu Kaimoana), key stakeholders, and recreational fishers. The key output was to develop a robust, evidence-based engagement framework for DOC to lead, facilitate, and bind all communications and engagement on this conservation issue.

This report provides base information and recommended actions for DOC to discuss and refine with its Treaty Partner, and with other stakeholders.

Evidence for this framework was gained by understanding the views of Te Ohu Kaimoana, key stakeholder groups, and recreational fishers in relation to bycatch of marine protected species and their perceived roles and responsibilities. Having a clear understanding of stakeholder issues, their motivations for engagement and participation in the measurement of bycatch is important, both early in the engagement process, and ongoing, in order to gain social licence for the measurement of bycatch.

Underpinning the primary objective were more specific informational objectives. These included gaining understanding of:

- The motivators and barriers to social licence
- The needs of stakeholders
- The barriers and motivators to self-reporting bycatch data.

The methodology adopted for the stage one analysis included reviewing existing literature on social licence as well as bycatch methods and stakeholder mapping. We also conversed with Te Ohu Kaimoana, representing the perspective of the Treaty Partner.

Te Ohu Kaimoana stated that it has an expectation that DOC will consult with them prior to the development of any future recreational fishing project and in the context of a wider discussion about marine protected / taonga species. This report recommends DOC undertake further engagement with Te Ohu Kaimoana on behalf of iwi to clarify Treaty Partner expectations.

The stage one analysis also formed the priority list of stakeholders, which we then undertook in-depth individual interviews with. These stakeholders represented recreational fisher interests. In addition to these interviews, we also undertook an online survey with recreational marine fishers.

The recommended engagement framework and planning approach builds on the key research findings and our experience in stakeholder management. While the research findings were positive in many areas, there were also some clear warning signs that needed to be mitigated.

At a top-line level, the research found very high levels of agreement with respondents regarding the value of protecting marine protected species as well as a disproportionate impact from a small number of recreational fishers saying they have, or regularly have, accidentally caught marine protected species.

It also highlighted the disproportionate impact of 5% of respondents who said they would not report bycatch (who were also more likely to have caught marine protected species on most of their fishing trips).

Additionally, it was found that fishing club leaders (self-reported) were less open to reporting bycatch (they answered maybe or no). This is important given their influence on other recreational fishers.

The recommended Engagement Framework is based on the understanding that DOC and its Treaty Partner (through Te Ohu Kaimoana) would be involved in a wider discussion about marine protected species that would take place prior to, or in parallel, to this process.

As a result of these findings, we recommend two approaches for engagement:

- The first approach takes a mass (recreational fisher) population approach, designed to engage the 75% of recreational fishers who say they are open to confidentially reporting bycatch information; as well as to build partnerships and join leadership arrangements with fishing club leaders.
- The second takes a targeted approach, focusing on the 1% who say they catch bycatch almost every fishing trip and the 10% who say they have accidentally caught marine protected species on some or fishing trips.

The research findings clearly showed the need for active stakeholder involvement, education and further clarification on the actions of those most likely to catch marine protected species on fishing trips, and who are least likely to report their bycatch. The findings also provide good insights into what reporting tools would have the biggest levels of support. Importantly, a combination of approaches is required. No one approach will suffice.

To improve recreational fisher community understanding of marine protected species, the proof of their endangerment, and to encourage support of active and consistent reporting, we need recreational fishers to provide a social licence.

The recommended Two Stage Engagement Framework brings together the research findings and creates a new ecology for change. It draws on SenateSHJ's SUDA (Side stream, Upstream, Downstream and Action) model and the Social Movement behaviour change theory to create and evolve a 'productive conversation', and then spark action.

Fundamentally, the recommended engagement framework requires DOC to:

- Establish new partnerships with key stakeholders
- Co-design communication and education strategies with stakeholders and influencer groups
- Use national, regional and local working groups to facilitate and drive communication and education initiatives
- Utilise ongoing research to further investigate recreation fisher groups
- Develop a pilot project to test the engagement framework
- Openly share the acquired learnings.

As a crucial element in the pathway to stakeholder engagement, it is recommended that DOC develop both a National Stakeholder Working Group (NSWG) as the governing body of this project, and a Regional/Local Stakeholder Working Group (RSWG) to run a pilot trial of the communication programme.

To further support the engagement framework, it is recommended that additional research be conducted to support the rationale for the targeted programme and that supplementary stakeholder analysis to be conducted into key information needs of each stakeholder group based on the initial research findings.

If this additional analysis is followed by the development of strategic, decentralised messaging, a detailed stakeholder engagement plan, and a robust communications plan, DOC will have strong foundations in place to commence the journey to gaining social licence with recreation fishers for the self-reporting of bycatch of marine protected species.

2. BACKGROUND

2.1 Project background

New Zealand is a nation with a rich diversity of marine animals and a long history of recreational fishing activities, with around 575,000 people annually fishing in New Zealand waters¹. Many protected marine species, including seabirds, mammals, rays, fish, corals, turtles and sharks, are under threat from environmental and anthropogenic pressures.

Fisheries bycatch of protected species is currently recognised as one of the greatest threats to marine biodiversity. Investigations of bycatch in commercial fisheries has historically received extensive research effort, however, the same cannot be said of the effects of recreational fishing pressures on marine protected species.

Recreational catch effort in New Zealand represents a significant total annual harvest of around 7 million individual finfish and 3.9 million other marine species². With nearly 11 million fish and other species harvested annually by recreational fishers, there is a high likelihood of unintended bycatch of protected marine species. Considering seabird species alone, previous annual recreational bycatch rates have been estimated at around 40,000³. However, very little research effort has been given to an accurate assessment of the nature and extent of marine protected species bycatch in this fishery. Reasons for this include difficulty in obtaining reliable data and difficulty in earning the support of recreational fishers.

The strategic overarching goal is to reduce the recreational bycatch of marine protected species. To better understand and address the nature and extent of this conservation issue, in-depth research and quantification of recreational fishing bycatch of marine protected species in New Zealand is essential.

In order to undertake bycatch research, DOC ultimately needs the support of Treaty of Waitangi partners and the recreational fishing community. This support, or 'social licence', is required to get the community on board and mobilised to participate in and advocate for the collection of bycatch data as opposed to being unaware, hesitant, passively against, or even aggressively against it.

We note this project did not seek to address bycatch arising from customary fishing rights.

Supporting documents

This document is supported by a stage one report titled 'Stakeholder engagement in assessment of recreational fisheries bycatch of marine protected species'.

This background document, which informed stages two and three of this project, includes an in-depth review of social engagement planning, lessons learnt from other social engagement projects, and current recreational fishing data-collection tools. This can be found in Appendix 1.

This document also includes an early assessment of the motivators and barriers to gaining social licence for bycatch measurement and use of data collection tools, as well as the categorisation of marine protected species.

The stage two reports are also appended in Appendix 2 and 3. This includes the findings from individual interviews with key stakeholders and an online survey of recreational fishers.

¹ National Panel Survey of Marine. Recreational Fishers 2017–18. New Zealand Fisheries Assessment Report 2019/24

² MPI (August 2019), <https://www.mpi.govt.nz/travel-and-recreation/fishing/national-survey-of-recreational-fishers/>

³ DOC & NZ Fisheries, "National Plan of Action – Seabirds 2020", P17 <https://www.mpi.govt.nz/dmsdocument/38054/direct>

2.2 Project objectives

DOCs key long-term objectives associated with this project are to address the knowledge gap associated with data deficiencies on the recreational marine protected species bycatch conservation issue. To do this, DOC will need to engage with and garner widespread participation and support from Treaty Partner and recreational fishers for future data-collection projects, via a platform that lays the foundations for a well thought out engagement pathway.

The output of this project is an evidence-based engagement framework and planning process that DOC can use to create an engagement platform – a framework and process that are robust, accessible and easy to use.

Evidence for the proposed framework was gained by understanding the views of recreational fishers in relation to bycatch of marine protected species and fishers' perceived roles and responsibilities. This clear and deep understanding of stakeholder issues, their motivations for engagement and participation in the measurement of bycatch both early in the engagement process, and ongoing, is important.

The primary objective of this project was to understand how DOC can engage recreational fishers effectively in future data-collection studies, based on results from research that elucidates:

1. The level of knowledge-based stakeholder understanding and agreement with the need for the project, including a willingness to participate, and their motivations for involvement
2. The alignment of stakeholder interests with the proposed strategy
3. An open, inclusive and transparent process that considers privacy issues
4. Participation in a simple and time-appropriate manner

To achieve the primary objective, the more specific informational objectives were:

Social licence: Understand motivators and barriers

- a. Do recreational fishers consider their impacts on protected species bycatch numbers?
- b. Do recreational fishers perceive protected species bycatch to be a big problem?
- c. Do recreational fishers compare recreational bycatch to commercial-sector bycatch – do they think that commercial fishing is the problem, not recreational?
- d. Do recreational fishers see the need for DOC to understand the nature of interactions between marine protected species and fishers (i.e. mortality vs survival, catch method etc.) in order to support zero-bycatch goals?
- e. Do recreational fishers agree that it is the responsibility of all fishers to reduce bycatch? Are there generational issues?
- f. How important is it for recreational fishers to understand:
 - i. future bycatch research programmes are designed to determine the nature and extent of the issue jointly, as opposed to through DOC self-determination?
 - ii. the bycatch project objective is about the conservation of marine protected species and not about punitive actions against fishers?
 - iii. engagement of the wider fishing community is a long-term solution?
- g. What terminologies and key messaging are less ambiguous? (e.g. is 'bycatch' understood?)

Stakeholders: Identify and understand needs

- h. Who are the key stakeholders?
- i. What are the key stakeholder networks and the preferred communication channels (and feedback loops)?
- j. What is the best approach to establishing a working group to ensure continued stakeholder engagement?

Recording bycatch data: Understand motivators and barriers

- k. What are the preferred information-gathering tools for bycatch data? Including consideration of the following:
 - i. The use of existing infrastructure (e.g. DOC website for reporting bycatch)
 - ii. iNew technology development by DOC for data collection (e.g. smartphone bycatch app)
 - iii. Privacy concerns over the use of a smartphone app and possible solutions
 - iv. The use of representative groups/clubs to promote the use of reporting tools
 - v. The use of previous/current recreational fishing apps (e.g. the Fish4all app)

Note: The scope of the current project does not include an investigation or implementation of mitigation measures to reduce bycatch, it seeks only to understand how to engage with fishers' to best the size of the problem.

2.3 Project approach

To achieve the objectives, the project was undertaken in three stages.

Stage one (Design and build)

Foundations for the project were laid by:

- Reviewing current knowledge with regards to:
 - Social engagement planning
 - Lessons learnt from social engagement projects
 - Existing recreational fishing data-collection tools
 - Motivators for and barriers to gaining social licence for bycatch measurement
 - Motivators for and barriers to the use of data-collection tools
 - Categorisation of marine protected species
 - Stakeholder identification and mapping
- Designing the approach and interview guides for the primary research
- Identifying and mitigating potential project risks
- Establishing contact with stakeholders, including Treaty Partner and keyrecreational fisheries representatives.

Stage two (Consult and engage)

Building on the knowledge gained in stage one, direct feedback was collected from stakeholders on the motivations for and barriers to engagement and participation. This was undertaken by conducting:

- Interviews with a cross-section of key individuals representing stakeholder interests
- An online survey with recreational marine fishers.

Stage three (Analysis and development of evidence-based engagement framework)

Recommendations for an evidence-based framework for stakeholder engagement were developed using information collected from stages one and two. These project findings were presented to DOC and provided to key research and regulatory stakeholders i.e. Fisheries NZ (FNZ), NIWA and National Research Bureau (NRB) and others as agreed with DOC.

2.4 A note on customary fishing

While the information gathered for this project includes responses from Māori recreational fishers, the scope of this report excludes any engagement with customary fishers on cultural perspectives of bycatch.

Customary fishing relates to traditional and customary fishing practices including customary non-commercial food gathering. Customary fishing is regulated under specific fisheries regulations.

Engagement with Te Ohu Kaimoana will be necessary as future projects progress.

As noted earlier, this engagement should also incorporate wider discussions about marine protected species.

2.5 Stakeholder identification and mapping

In addition to Te Ohu Kaimoana, DOC also tasked SenateSHJ with gathering insights from key stakeholders in the recreational fishing community for the purpose of developing an engagement framework. It should be noted that whilst the Treaty Partner is shown inside the stakeholder matrix for the purposes of this mapping exercise (Figure 1), in effect they sit outside and alongside DOC. DOC will use the framework to guide a more direct engagement approach with recreational fishers during subsequent phases of its wider programme to better understand the nature and extent of marine protected species bycatch. The success of DOCs recreational bycatch programme will be determined by the level of social licence granted, and the breadth and reliability of information DOC is able to capture using survey techniques.

The stakeholders for the collection of recreational bycatch data were defined as individuals, organisations and/or communities that have an interest in research processes and outcomes.

The stakeholder mapping exercise (Figure 1) identified the top five high-value organisational stakeholders. These stakeholders had shown support and have influence, gravitas, and existing networks that DOC can access and use as messaging conduits in the latter stages of the project (as shown in the top-right quadrant in the matrix below), namely:

1. Fish Mainland
2. Tindale Marine Research Charitable Trust
3. New Zealand Sport Fishing Council
4. Southern Seabirds Solutions Trust
5. Terra Moana

Interviews were conducted 'in person' or over Zoom due to their locations and/or COVID-19 restrictions. Recreational fishers (top left in the quadrant) were canvassed using an online survey.

Stakeholder analysis – current state (now)

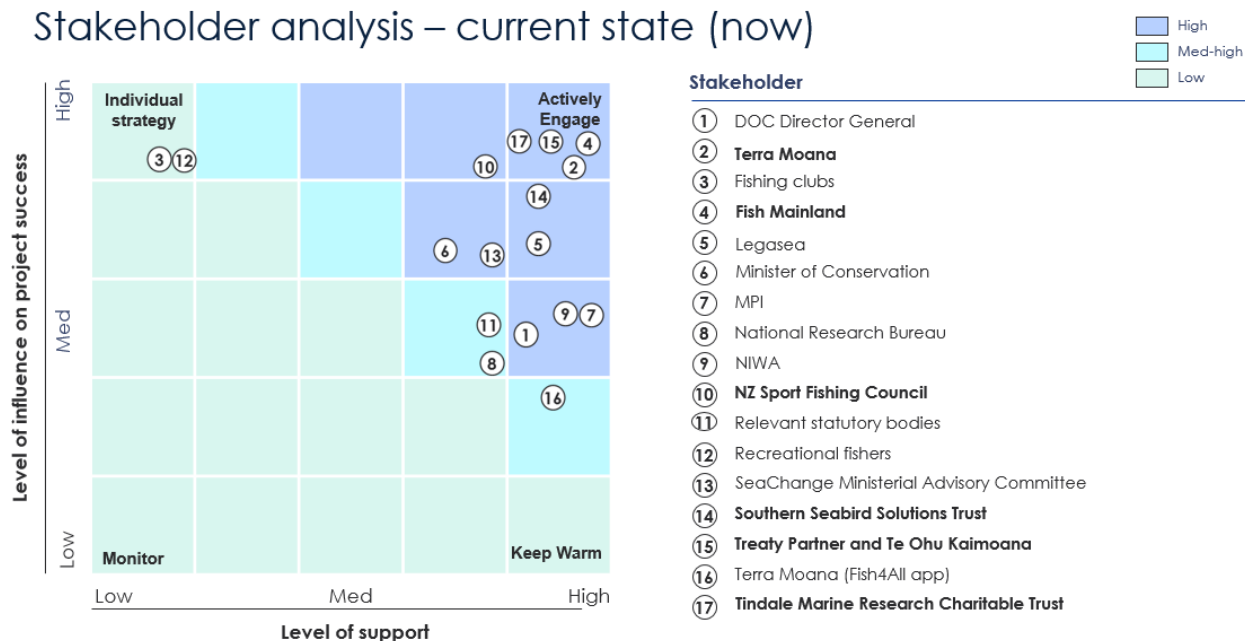


Figure 1: Stakeholder analysis – current state

It will be important to re-run this exercise and map the journey with stakeholders over time. This would allow DOC to gauge the effectiveness of investment, actions and interventions and any changes in perceptions within the group.

3. RESEARCH APPROACH

3.1 Research methodology

To build on stage one of the project (design and build), stage two (consult and engage) was designed to collect direct feedback from stakeholders on the motivations for and barriers to engagement and participation. This was undertaken by conducting:

- interviews with a cross-section of key individuals representing stakeholder interests
- an online survey with recreational marine fishers

Interviews with a cross-section of key individuals representing Treaty Partner perspectives and stakeholder interests

Interviews were conducted with representatives from Te Ohu Kaimoana and the five nominated stakeholder organisations. The organisations were selected from a wider stakeholder group during the stakeholder mapping exercise in stage one to obtain a range of stakeholders representing different sections of the recreational marine fishing community.

Each interview followed an interview guide co-designed for this project and approved for use by DOC. Please refer to Appendix 2 for a detailed overview of the stakeholder interview guidelines, process, questions and interview summary.

The Treaty Partner and five stakeholders that were interviewed, and the rationale for their inclusion in this stage of the project, were as follows. Online survey with recreational marine fishers

Organisation	Rationale for inclusion
1. Te Ohu Kaimoana	Representative of the Treaty Partner interests on behalf of 58 iwi for fishing and fisheries-related activities
2. Fish Mainland	Newly formed group that represents South Island recreational fishers
3. Tindale Marine Research Charitable Trust	Initiated a New Zealand-wide inshore tagging programme that is citizen science based along with the support of the scientific fraternity, and is an expert in juvenile great white shark captures in the North Island
4. Terra Moana	New Zealand-based sustainability consultancy specialising in primary industries, especially fisheries and marine environments
5. New Zealand Sport Fishing	Recreational fishing in the highly migratory fish species arena (big sport fish charter trips)
6. Southern Seabird Solutions Trust	Heavily involved with seabird bycatch mitigation measures

To collect feedback directly from recreational marine fishers, an online survey was designed and managed by The Navigators.

Recreational marine fishers were defined as people (aged 14+ years) who had undertaken any of the following recreational marine activities in New Zealand in the last 12 months:

- Fished from a private boat or kayak (in saltwater)
- Fished from a charter boat (in saltwater)
- Fished from a saltwater beach/shore/wharf (including surf casting, kontiki, longline, electronic longlines, drop lines, hand lines)
- Fished for seafood using set or gill nets
- Dived for seafood
- Fished for seafood using pots (or similar bottom gear).

The survey received responses from **858** recreational marine fishers.

The survey was open for 17 days between Friday 17th July and Sunday 2nd August 2020. To increase response rates, fishers who completed the survey were asked if they would like to go into the draw for one of five \$50 Hunting & Fishing vouchers.

To collect responses to the survey, the survey link was shared using two approaches:

1. Firstly, via email to a **list of recreational fishers** managed by FNZ. People are recruited to the FNZ email list via self-sign-up; fishers provide their email addresses to FNZ to receive fishing-related updates. This email subscriber list is promoted at boat shows, in FNZ pamphlets and recreational fishing media, and via links on boating/fishing apps. There is an assumption that those who have signed up to the list are more likely to be engaged with the fishing community, e.g. more likely to be club/body members, and also more likely to support government department endeavours. In terms of process:
 - An email with the survey link was sent to the list of 2,321 contacts by FNZ. The email stated that the survey was being conducted by The Navigators (an independent research agency), on behalf of DOC. The first batch of emails was sent on Friday 17 July (as the survey pilot) and the second/final batch was sent on Tuesday 21 July.
 - The survey email sent by FNZ was further shared by organisation/club administrators to their own members/subscribers. This helped boost the response rate but also as a result, it is unknown how many people received the survey link in total and therefore we are unable to calculate the survey response rate.

2. Secondly, the **survey link was shared via Facebook**. This second approach was implemented to gain feedback from fishers who may not be on the FNZ email distribution list. For this recruitment approach, we gained permission to post the survey link on the page of one of the largest fishing-related private groups, 'NZ Fishing Community', as well as the 'New Zealand Fishing World' page.
 - a. 'NZ Fishing Community' has approximately 65,000 members. The initial post was placed by The Navigators and it received less than 10 responses. To help gain traction a post was also placed by the group's administrator – this post stated that the survey was for DOC. The post was live for approximately two hours and then withdrawn due to negative commentary being posted about DOC. While the posting was done with good intentions, it became clear that the nature and tone of the comments being made would not be useful to the research project. Much of the sentiment related to a sense of distrust and anger in response to some of DOC's recent and past conservation actions (e.g. Tahr). The initial post that didn't mention DOC remained live on the community page for the survey period.
 - b. The 'New Zealand Fishing World' page is hosted by a fishing retailer who posts fishing articles, instructional videos, gear reviews and fishing information on it. The page has approximately 80,570 likes. The survey post was published by the administrator.

Note on sample representativeness:

Given the methodology used for data collection, the online survey is unlikely to be a truly representative sample of recreational marine fishers, and it is not possible to ascertain where any sample skews may exist. Any quantitative findings should be interpreted as 'of the survey population' rather than 'of the recreational marine fishers' population'. However, given the large response to the survey, the sample does provide valuable insights that meet the survey objectives.

4. SUMMARY OF RESEARCH FINDINGS

4.1 Summary of stage one findings

In stage one, an in-depth knowledge review of social engagement planning, lessons learnt from other social engagement projects and current recreational fishing data-collection tools was conducted.

An early assessment was also made of the motivators for and barriers to gaining social licence for bycatch measurement and motivators and barriers to using data collection tools, as well as the categorisation of protected marine species.

A full summary of stage one findings is available in Appendix 1.

Key findings from stage one:

Analysis of current recreational fishing data collection tools

- Self-reporting tools are limited both in New Zealand and globally
- There is currently no accessible methods to report recreational bycatch of marine protected species in New Zealand
- Key observations of current data collection methods:
- Non-standardised – low utility of data collected
- Data may not represent the whole recreation fishing community
- No feature of bycatch reporting
- Value in contributing to data collection must be clear for recreational fishers.

Bycatch reporting via a smartphone app could roll out in one of three ways

1. Purpose built DOC bycatch reporting app

- a. Focussed – bycatch is priority
- b. Simple to develop
- c. DOC owns data

2. Purpose built DOC recreational fishing app

- a. One stop shop
- b. Reduces app fatigue
- c. Easy to tie personal motivations to
- d. Diluted focus on bycatch
- e. DOC owns data

3. Bycatch reporting built into pre-existing tool i.e. NZ Fishing Rules

- a. Pre-existing audience
- b. Lower set-up costs and resourcing needs
- c. DOC does not own data.

Barriers to gaining social licence for bycatch measurement

- Not involving stakeholders early
- Only engaging with selected stakeholders, not all stakeholders
- Taking a one-size-fits all approach
- Lack of understanding of bycatch
- Lack of alignment with customary fishing rights
- Lack of resources to ignite significant behavioural change.

Motivators to gaining social licence for bycatch measurement

- Regular feedback to demonstrate value
- Clear communications and tools
- Social connection and community cohesion - united over issues
- Leadership and ongoing education
- Stakeholders feeling valued.

Barriers to use of data collection tools

- Logistical issues such as lack of access to devices and/or internet to report
- Lack of understanding of how the data will be used
- Lack of trust in how reported information will be used
- Lack of funding to develop and resource a central self-reporting tool
- Lack of buy-in or differing opinions from other stakeholders.

Motivators for use of data collection tools

- Seeing others use data collection tools. Wanting to be part of the status quo
- Ease of use
- Contributing to a wider cause, while also making personal records
- Sharing data with peers to foster social and/or competition
- Effective reporting and demonstration of value.

4.2 Summary of findings from one-on-one interviews

A detailed interview guide and breakdown of information gathered from one-on-one and stakeholder interviews is located in Appendices 2 and 4.

The high-level findings from the stakeholder interviews included:

- Bycatch is a known issue by all participants, size of issue is unknown, no single reporting method.
- Awareness of issues with recreational fishers (RFs) can be location specific and is variable as is their understanding of what is protected.
- The term bycatch can be used to describe incidental catch or associated with dumping by commercial fishers (CFs).
- Most interviewees thought there is a degree of othering with RFs who think CFs are the culprit - lack of awareness of the overall cumulative catch.

- All participants agreed with the list of motivators and barriers we tested with them and suggested adding citizen science as a motivator.
- All agreed that punitive measures will lead to lower reporting.
- There were mixed views on fishing apps, and which one is best and general support for an 0800 number and the effectiveness of boat ramp surveys.
- Boat Ramp surveys were popular and two comments that RF survey data is flawed due to over and under reporting.
- Participants generally supported DOCs objectives and were willing to collaborate or partner with DOC and other relevant government agencies, however, there were strong reservations about DOCs reputation, especially with RFs who are also hunters, and this was due to 1080 concerns and the recently proposed Thar cull.

The table in Appendix 4 shows a detailed summary of information gathered about the interview participants background and their views about DOC collecting data on recreational fisheries bycatch of marine protected species.

All participants were happy to be referenced stating that their views were already known and, in some cases, discussed with DOC or had already been made publicly available in other forums.

Further recommendations regarding stakeholder interviews

Throughout the stakeholder interview process, the following additional organisations were highlighted as beneficial subjects for an additional round of stakeholder interviews.

- Environmental Research and Evaluation | Research and Evaluation Unit (RIMU)
- Ministry of Primary Industries
- NRB
- NIWA
- Legasea
- Bay Fish Magazine
- Skipper Magazine.

4.3 Summary of findings and recommendations from the online survey

A detailed report of the findings from the online survey with marine recreational fishers is available in Appendix 4. The below summarises the key highlights from the survey.

Engagement/social licence

- Based on marine recreational fishers' attitudes, most (91%) agree that bycatch of marine protected species is an issue because it could contribute to the extinction of some species. Fishers generally want to actively avoid catching marine protected species.
- Only one fifth (22%) 'definitely' believe that recreational fishers have an impact on the number of marine protected species that are caught. This is in part based on their own experience, with most fishers (89%) stating they have not accidentally caught a marine protected species in the last 12 months.

- Fishers' claim they are not catching marine protected species, with some (35%) also taking some action to avoid catching these species. Furthermore, fishers also state that any bycatch that does occur is mostly released unharmed.
- Another sentiment shared by recreational fishers is that commercial fishing should be the focus of bycatch monitoring, including enforcing cameras on boats. As a result, only 65% of fishers agree that it is very or extremely important to monitor the number of protected marine species caught from recreational fishing. This is in contrast to the 91% who agree bycatch is an issue.
- The provision of social licence is polarised. There are those who do support monitoring in order to do what is possible to protect species, gain greater understanding on the issue, learn how to avoid bycatch, and to generally preserve biodiversity and have a balanced marine ecosystem. Then there are others who do not see the value in monitoring
- Recreational bycatch because they do not believe recreational fishers are having an impact (primarily based on their own experiences).
- Potentially, one of the reasons some fishers may not be seeing the impact of recreational bycatch could be their lack of knowledge of which marine species are protected in New Zealand. Only half of the fishers' (49%) felt they 'definitely' had a good understanding of the marine protected species in New Zealand. Fishers were most likely to name dolphins, whales and seabirds, but less likely to name groupers, rays, basking or nurse sharks, or coral species. This suggests fishers may be catching these latter species unaware that they are protected.
- In thinking about communications with fishers', it is important to note that they do not use the term 'bycatch' in the same way DOC does. For many fishers, 'bycatch' includes anything that is caught other than the targeted fish species. As a result, communications should always also refer to 'marine protected = species', not just 'bycatch'.
- Another point to keep in mind when communicating with fishers is that most primarily value their fishing activities as a source of food and an opportunity to get away from everyday life – these motivators can be used to gain fishers' attention and/or provide a sense of connection.

Recommendations for gaining greater engagement/social licence based on the research with marine fishers:

- If DOC has evidence that recreational fishing is having an impact on the bycatch of marine protected species, this information should be disseminated within the fishing community. If little is known at present, DOC could communicate any early knowledge and state that more information needs to be collected from the recreational fishing community to understand the nature and extent of marine protected species bycatch more fully. Targets for this information should be those over 55 years, males, members of fishing clubs, and fishers who also hunt.
- Increase fishers' knowledge of New Zealand's marine protected species, particularly of lesser-known species such as black-spotted grouper, giant grouper, white pointer sharks, spinetail devil rays, manta rays, basking sharks and nurse sharks. Targets for this information should be those who have been fishing for fewer than 20 years and those who fish less frequently.
- Always reference the term 'bycatch' in conjunction with marine protected species.

- Try to connect with fishers by relating to values that are important to them e.g. fishing as a source of food, fishing as a getaway from everyday life.
- To help fishers with what they want to avoid anyway, provide information on techniques they can use to limit catch of protected marine species.

Participation in data collection and data collection options

- Encouragingly, 75% of fishers surveyed were open to reporting bycatch information confidentially. However, this group was also less likely to have caught a marine protected species in the last 12 months. The small proportion (5%) who said they would not report bycatch were also more likely to have caught protected species on most of their fishing trips. The issue of this for the self-reported data collection is that the sample may not include those who are more likely to be catching the marine protected bycatch.
- Interestingly, fishing club leaders were less open to reporting bycatch information – they were more likely to answer 'maybe' or 'no' to this question. Given their potential influence, these leaders ideally need to be engaged with to increase the success of data collection.
- Fishers' who are willing to report bycatch are most likely to be motivated by the desire to be a responsible fisher, with almost half stating this as their main reason to report. Other key motivators were to contribute to scientific learning, for future generations, and for biodiversity and marine protection reasons.
- The greatest concerns for fishers' around reporting are the risk of being fined, details not being kept confidential, potential restrictions on recreational fishing and whether the information would be used. These concerns are high amongst fishers and are likely to limit reporting: for example, two-fifths (42%) of fishers are moderately or extremely concerned about the risk of fines. Fishers' are less concerned about their fishing location being identifiable or that friends or family might disagree.
- Knowledge of all the types of information suggested in the survey would increase the likelihood of reporting for most fishers', including knowing:
 - That everyone would be working together to understand bycatch impacts (forexample, DOC, iwi, MPI, fishing clubs, and fishers)
 - The key learnings from the bycatch data collected
 - How bycatch data would be used
 - That monitoring bycatch numbers is about preventing the decline of marine species and protecting marine biodiversity
 - More about what marine protected species are in specific fishing area/s
 - More about the number, type and injury/survival of marine protected species caught in various fishing area/s
 - That the monitoring of bycatch is a long-term project
 - More about New Zealand's marine protected species.
- In terms of reporting options, fishers' were most favourable towards using the NZ Fishing Rules app, boat ramp surveys or a marine species identifier app. At least half of the fishers said they would be likely or extremely likely to use one of these options. An 0800 number or a fishing catch app were the least popular reporting methods. Of those surveyed, 48% said they currently had the NZ Fishing Rules app on their phones (note: this figure may be inflated due to use of the FNZ list as a sample source). One fifth (19%) of fishers said they are unlikely to use apps on their phone – suggesting that a phone app may be a barrier for some.

- 25% of fishers said they would be less likely to provide information if DOC led the project. This was primarily due to an underlying organisational distrust.
- The majority (69%) of fishers are willing to report catch of marine protected species even if they were released unharmed, leaving 31% who may/would not.

Recommendations/considerations for data collection and methods

1. Decide on how to proceed given that those who are more likely to catch marine protected species may be less likely to self-report these incidents.
2. Engage with fishing club leaders to understand their concerns and reservations regarding participation.
3. Encourage participation through messages that inspire fishers to 'do the right thing' and 'be a responsible fisher', as well as the other key motivators of contributing to scientific learning and looking after marine biodiversity and species now and for future generations.
4. Reassure/convince fishers that the details they report will be kept confidential.
5. Allay fishers' fears that reporting may result in recreational fishing restrictions – if possible.
6. Create a social norm whereby possession of marine protected species is accidental, an honest mistake (heart-breaking for anyone) and being reported.
7. Provide evidence that the reported information is being used (for scientific reasons) – as part of this evidence, techniques to avoid bycatch and other learnings could be shared.
8. Explain why it is important to monitor unharmed, as well as harmed, bycatch.
9. Share information to increase the likelihood of fishers reporting.
10. Consider the utility of collecting data via the NZ Fishing Rules app, boat ramp surveys or a marine identifier app – or a combination of these.
11. Consider whether DOC should lead the project or another entity.
12. Acknowledge recreational fishers' for their reported information on receipt.

5. EVIDENCE BASED ENGAGEMENT FRAMEWORK AND PLANNING PROCESS

In developing the engagement framework and planning process, we referenced key models on behaviour change, social marketing, and social movements, referenced insights from the research with recreational fishers and key stakeholders and then recommend a programme that involves two approaches, a mass approach and a targeted approach. We strongly recommend that before proceeding with the framework that our hypotheses, which are based on a non-representative sample of marine fishers (FNZ database), are confirmed via a more representative sample source, i.e. that is more representative of the recreational marine fisher population.

5.1 Working towards the ultimate goal of saving protected marine species

Note: A summary presentation of the recommended engagement framework is available in Appendix 6.

The recommended strategic engagement framework is focussed on creating recreational fisher engagement, and ultimately active reporting of bycatch. It is designed to create and evolve a 'productive conversation', and then spark action.

We understand the engagement framework needs to create an umbrella platform to lead, facilitate and bind all communications and engagement. This is essential if it is to generate required community-based discussions and desired reporting behaviours with recreational fishers.

The research findings clearly show the need for active stakeholder involvement, education and further clarification on the actions of those most likely to catch protected marine species on fishing trips, and who are least likely to report their bycatch.

To improve the recreational fisher communities involvement, understanding of marine protected species through evidence based education of species threat status, and encouragement and support of active and consistent reporting is needed, and therefore, we need recreational fishers to provide a social licence.

Acquiring a social licence means a community that might otherwise be against a project (or who are inactive/ineffectual in support) can be turned around and even mobilised to advocate for it. It is not one licence granted by all of society, but many licences granted at different times by different groups at different scales, which ultimately leads to social legitimacy.

The approach needs to think differently and innovatively, to be evidence driven and trial new propositions to investigate the most efficient and effective strategies. Developing a social licence requires getting communities to engage further on the need for protecting marine species.

To create long-term engagement and to create new reporting behaviours, traditional downstream methods are no longer enough. Telling recreational fishers, they must begin reporting will not work. Building on the existing grassroot sustainability programmes, any future activities need to be part of a complete ecosystem that works together, grows and evolves.

The engagement framework recognises the need for a systematic approach to behaviour change if we are to get recreational fishers to begin and continue to report bycatch.

This framework brings together the research findings and creates a new ecology for change. We have based it on SenateSHJ's SUDA (Side stream, Upstream, Downstream and Action) model and Social Movement behaviour change theory.

We have incorporated these social change principles in the engagement framework to create momentum at an individual, community, stakeholder and ultimately, national level.

The framework also recognises engagement for some stakeholders (and fisher groups), will not happen quickly. Therefore, there is a need to be disciplined, focussed and have a clear plan to engage priority stakeholders and communities. DOC needs to undertake three core strategies:

1. Educating recreational fishers about:
 - a. What are marine protected species (using the language recreational fishers use)
 - b. The threat of recreational fishing to marine protected species (and ways to mitigate these)
2. Creating trust in the purpose and use of the reported information
3. Illustrating it wants to work with the recreation fishing community and that it understands they are motivated to 'do the right thing'. It needs to be clearly understood that the reporting process is not designed to be punitive.

The framework must also acknowledge, and accommodate the fact, that not all stakeholders will have the same level of willingness to engage.

The approach must also be agile and have the flexibility to evolve over time. Fundamentally it should:

1. Establish new partnerships with stakeholders (at national, regional and local levels).
2. Co-design the final Communications Strategy and Education Programmes with key stakeholders and influencers.
3. Use ongoing research and openly share the acquired learnings.
4. Continually identify the 'initiators' and 'sustainers' (of the narrative and education programme) to ensure the 'social movement' creates conversations that are led by the recreation fishing community, and its influencers. For example, fishing club leaders will be crucial influencers and communicators.
5. Consider the current understanding, attitudes and actions of those we are trying to reach.
6. Be founded in behaviour change/social movement thinking and evidence.
7. Utilise local community feedback and 'evidence'.
8. Pilot the programme (to test what works best, and to learn).
9. Adapt the established communication programme (once finalised) for different local recreational fisher communities.
10. Consistently demonstrate the system is open, transparent, and focussed on protection and learning.

5.2 Behaviour change and social marketing principles

Our recommendation approach can be applied at an individual, local & national level. It is embedded in behaviour change and social marketing principles as illustrated in Figure 2 and Figure 3.

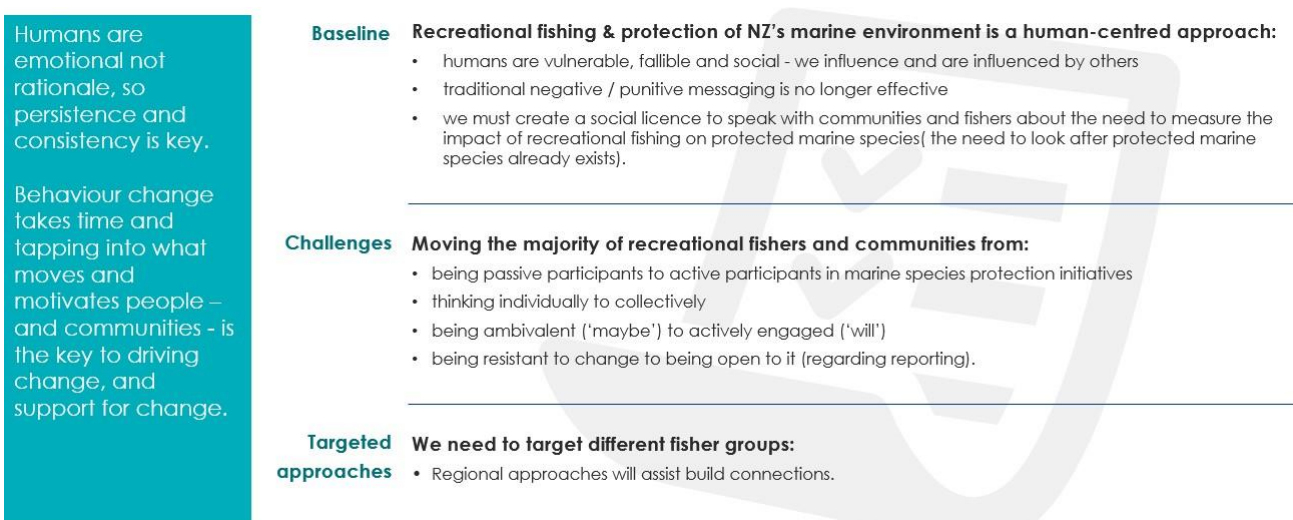


Figure 2: Summary of behaviour change insights.

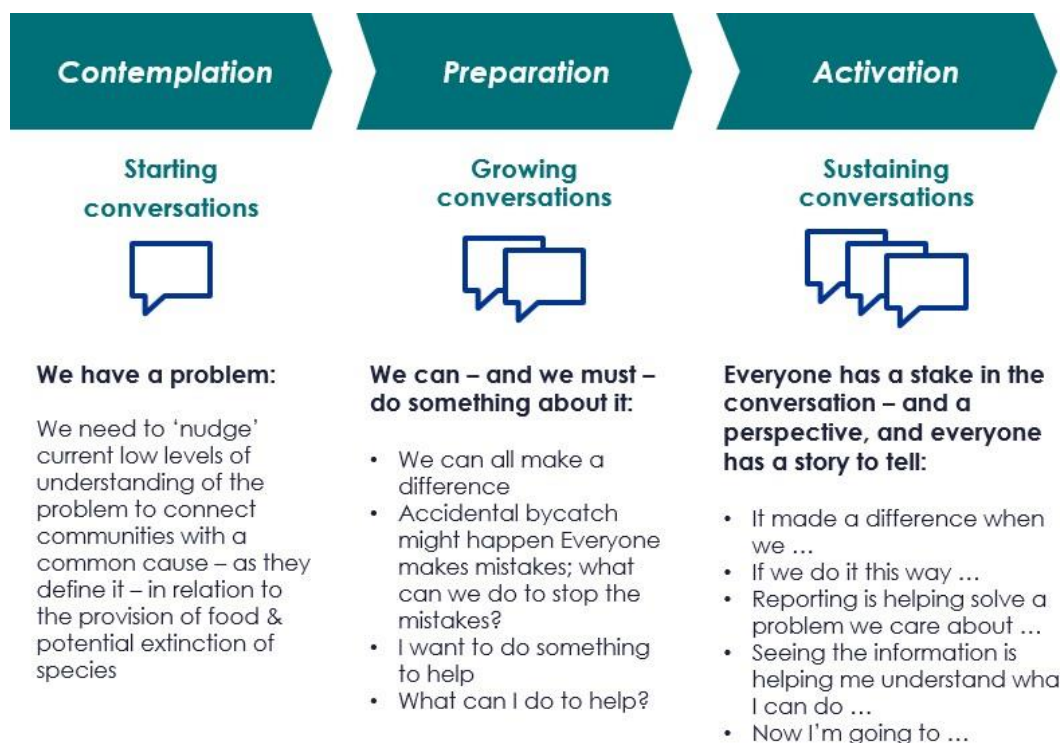


Figure 3: Three elements of the Transformational Model (stages of change).

5.3 SenateSHJ’s SUDA model

Critically the framework is founded on what drives behaviour change – at a community and individual level.

As noted, the engagement framework was informed by the ‘SUDA’ (Side-stream, Up-stream, Down-stream and Action & Change) behaviour change model, displayed in Figure 4. This model recognises that no one approach to communication and behaviour change is enough to create the fundamental shift DOC requires.

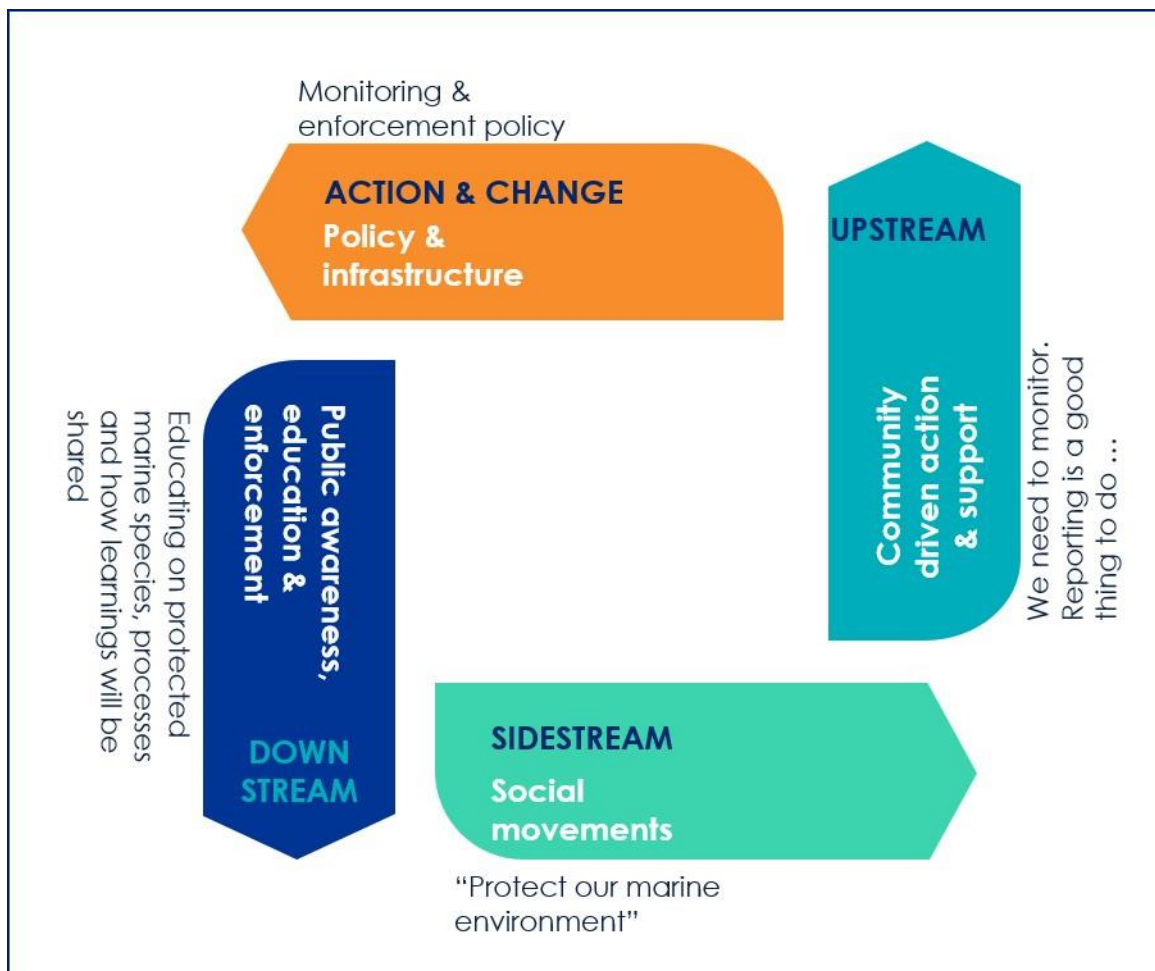


Figure 4: SenateSHJ's SUDA model.

The SUDA model informs the engagement framework in four critical areas that will act as part of a communication ecosystem that will need to be delivered if we are to elicit behaviour change within the different fisher groups (i.e. at the micro level). The four areas are:

1. Policy & infrastructure (monitoring tools and reporting methods)
2. Public awareness, education & enforcement
3. Social movements
4. Recreational fisher community-driven action and support – that drives reporting behaviours.

Understanding that the communications strategy needs to operate at all 'four levels' is crucial to how the engagement framework operates.

While in some cases traditional downstream communications will be required, it will be important the social movement theory is utilised as it will play a fundamental role in creating and expanding the education-focussed conversation, and its ability to build a social licence in the community.

Vital to creating the social movement that will be needed, will be using the right people and organisations to initiate, and then sustain, recreational fisher community engagement and support for reporting bycatch.

5.4 The SenateSHJ 5C's social movement model

The second foundation element influencing the engagement framework is SenateSHJ's 5 C's social movement model displayed in Figure 5. It is based on five key factors:

1. **A Common Cause:** The "glue" that holds program partners together; the cause that everyone has in common, regardless of their organisational aims or other agendas
2. **A Coordinated Campaign:** Someone or a group at the centre deliberately working to tie all the disparate elements together, and keep everyone focussed on the cause, or goal
3. **A Connection:** Personal, emotional or social affiliation between the people who make up the movement. These connections need to be nurtured, and continually fed and watered so they work on behalf of the cause
4. **A Conversation:** The massive power of personal conversations to create connections and recruit movement members
5. **A Catalyst:** An event – or events – to spark the movement, nudge it along or cause it to tip.

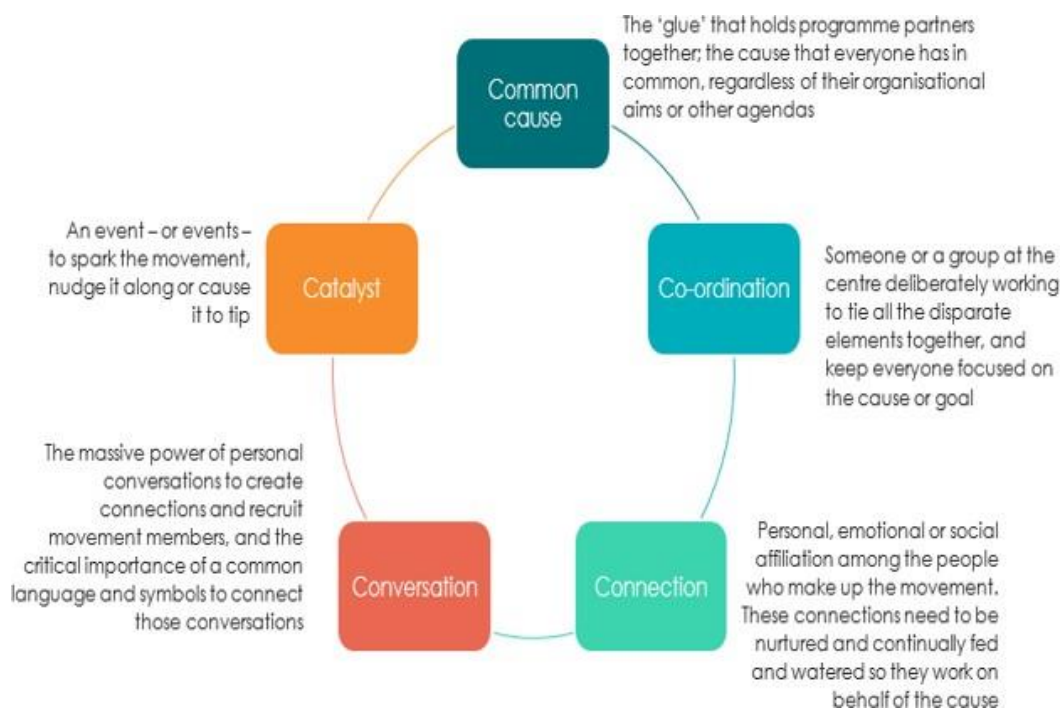


Figure 5: SenateSHJ's 5 C's social movement model.

Our model is a powerful tool that uses conversation (i.e. communication) to activate care for an issue and to encourage groups and communities to join together in support of a common cause. The social movement model offers real opportunities for DOC. First, to amplify its efforts, by identifying and tapping into the high level of concern about the endangerment of protected species that already exist; and second, to build powerful partnerships and collaborations with key stakeholders, to allow education and communications to spread more quickly and ultimately help create the social licence that is required.

Any narrative needs to make people care about bycatch reporting and subscribe to a common cause for the greater good.

The combination of the ‘Conversations’, ‘Coordination’ and ‘Connection’ elements will ensure conversations (communications) continue and build, therefore influencing ongoing behaviour.

5.5 Key research findings that informed the engagement approach

The recommended engagement framework and planning approach builds on the extensive knowledge gained in stage one and stage two of this project. The key research findings of relevance to the recommended approach are summarised below.

Research findings & themes

The key findings (and themes) are listed below. The identified motivating ‘hot buttons’ and ‘barriers’ are also detailed below.

1. What respondents' value most about fishing
 - Provides source of food (36% - indicatively higher for Māori)
 - Break from everyday life / routine (15% - esp. Aucklanders)
 - Fun / excitement
2. Issue for bycatch data reliability
 - Those who are more open to reporting are less likely to have caught a marine protected species in the last 12 months
 - One-third would/may not report catch if they released it unharmed
3. Low number of recreational fishers admit to accidentally catching bycatch
 - 89% say they never have
 - 1% say it happens most fishing trips
 - 10% has happened in some/few fishing trips
4. Important issue and recreational fishers contribute to bycatch issues
 - 91% agree bycatch of marine protected species is an issue as it could contribute to the extinction of some species
 - 22% definitely believe recreational fishers have an impact
 - Fishers believe any bycatch is released unharmed
 - 82% believe it is moderately or extremely important to monitor

Motivators

The key motivators identified were:

- To do the right thing / look after the ocean
- If I knew about species
- If I knew about species being caught in my area
- Belief that 'we're all working together'
- Knowing how information was going to be used
- Knowing how the key learnings would be shared
- Learn how to avoid bycatch
- Current high level of engagement with and by stakeholders

Barriers

The key motivators identified were:

- Bycatch problem not being believed
- Problem not being the responsibility of recreational fishers (vs commercial fishers)
- Concerns about information details not being kept confidential. risk of being fined + risk of restrictions on recreational fishing
- Almost half of fishers feel they definitely have a good understanding of the protected species
- Lack of confidence that information would be used (20% - 36% Māori / 20% - 40% Pacific peoples)
- DOC not trusted to lead project (24%)
- Fishing club leaders not inclined to report
- Stakeholders have to be engaged throughout programme
- Top down communications alone will not drive required behaviours & broader change

5.6 Recommended engagement approach

The first step is engagement with Te Ohu Kaimoana. As noted earlier, there is an expectation from Te Ohu Kaimoana that discussions about future recreational fishing projects should take place within a wider discussion with other organisations about marine protected species, including MPI.

This engagement will be crucial to gaining Te Ohu Kaimoana's support to play a significant partnership role for the project and engagement.

While the research findings are very positive in many areas, there are also some clear warning signs. As a result, subsequent to the above, we recommend two approaches for engagement:

1. **Mass population approach, encompassing:**

- Engaging the 75% of recreational fishers who say they are open to confidentially reporting bycatch information
- Targeting fishing club leaders to build partnerships, understanding and joint leadership.

2. Targeted approach, with different policy settings:

- Focusing on the 1% who say they catch bycatch almost every fishing trip
- Focusing on the 10% who say they have accidentally caught bycatch on some/few fishing trips
- The above, plus targeting fishing club leaders to build partnerships, understanding and joint leadership.

The two approaches recognise:

- The very high levels of agreement regarding the value of protecting marine protected = species.
- The disproportionate impact of a small number of recreational fishers saying they have, or regularly have, accidentally caught bycatch.
- The disproportionate impact of the 5% who said they would not report bycatch (who were also more likely to have caught marine protected species on most of their fishing trips).
- The finding that fishing club leaders (self-reported) were less open to reporting bycatch (they answered maybe or no), and their influence on other fishers.

5.7 Further social research required to confirm targeted approach

While both approaches are required, this recommendation is subject to undertaking further social research to support the rationale for the targeted programme.

The further analysis should be focussed on testing the groups that will have the most impact on the reliability of the bycatch data collection: the 1% of fishers who say they catch bycatch almost every fishing trip, the 10% who say they have accidentally caught bycatch on some/a few fishing trips and the 5% who say they wouldn't report bycatch.

If this analysis shows behaviour change in these groups is not possible, a wider societal approach will need to be taken to ignite long-term co-operation, knowing there will be some problems and that it will take a longer period of time to see real change.

The purpose of further analysis will be to use a representative sample of recreational fishers to:

- Confirm the key percentages that we are basing the framework strategy on. That is, the 1% of fishers who say they catch bycatch almost every fishing trip, the 10% who say they have accidentally caught bycatch on some/a few fishing trips and the 5% who say they wouldn't report bycatch.
- Understand whether the people who will have the most impact on the reliability of the self-reported bycatch data are open to reporting their catch of protected species.
- Determine whether there are specific things that could change the willingness of the 1% who catch bycatch on most fishing trips and the 5% who would not report.
- Understand possible language barriers for different cultural groups.
- Determine the impact on the reliability of bycatch data using self-reported methods.
- Examine other unrepresented recreational fishing groups (e.g. Māori population, younger fishers, fishers that don't belong to clubs, etc).
- Gain detailed data on where those who are more likely to catch bycatch are fishing, are some geographical areas more prone to bycatch issues? What fishing methods are being used? Are certain fishing practices more likely to attract bycatch species?

5.8 Two-stage engagement framework

The recommended two-stage engagement framework is detailed in Figure 6. It incorporates two clear stages of intent, that are broken down into five stages of engagement

Stage 1: Building a willingness to participate

Engagement phase 1: Establish trust and cause

In this phase, DOC needs to establish shared trust and cause with stakeholders to build and leverage motivators via the following key communication drivers:

- Demonstrate the extent of the known problem in a believable manner – “We know you want to do the right thing”
- Education of what are marine protected species (regionalise) and what the term bycatch means
- Drive through partnerships and consistent ongoing stakeholder engagement - take everyone along with you
- Be helpful and encouraging - it is never about blame
- Drive all communications through what is important to recreational fishers.

Engagement phase 2: Education

The focus in phase 2 is education around which marine species are protected, how to identify them, grounded in the following underlying principles:

- Demonstrate a ‘no-blame’ approach & be open at all times.
- “Knowing what our protected marine species are and what can be done to reduce the chance of catching them will help all of us make a difference”.
 - Understanding and using the differing definitions that stakeholders have for bycatch
 - Understanding that while care levels are high, there is lack of knowledge about threat to protected species.
- Create and profile partnerships.
 - Involve recreational fishers (and representative groups) from the beginning
 - Create regional partnerships
 - Allow fishers to be advocates and messengers
 - All content to be developed
- Ensure ongoing investigation of under-represented groups and use a variety of reporting systems to ensure accuracy.
- Build engagement through two stages:
 - Building a willingness to participate
 - Participation (& building a behaviour)
- Balance “human” communications with increased digital content.

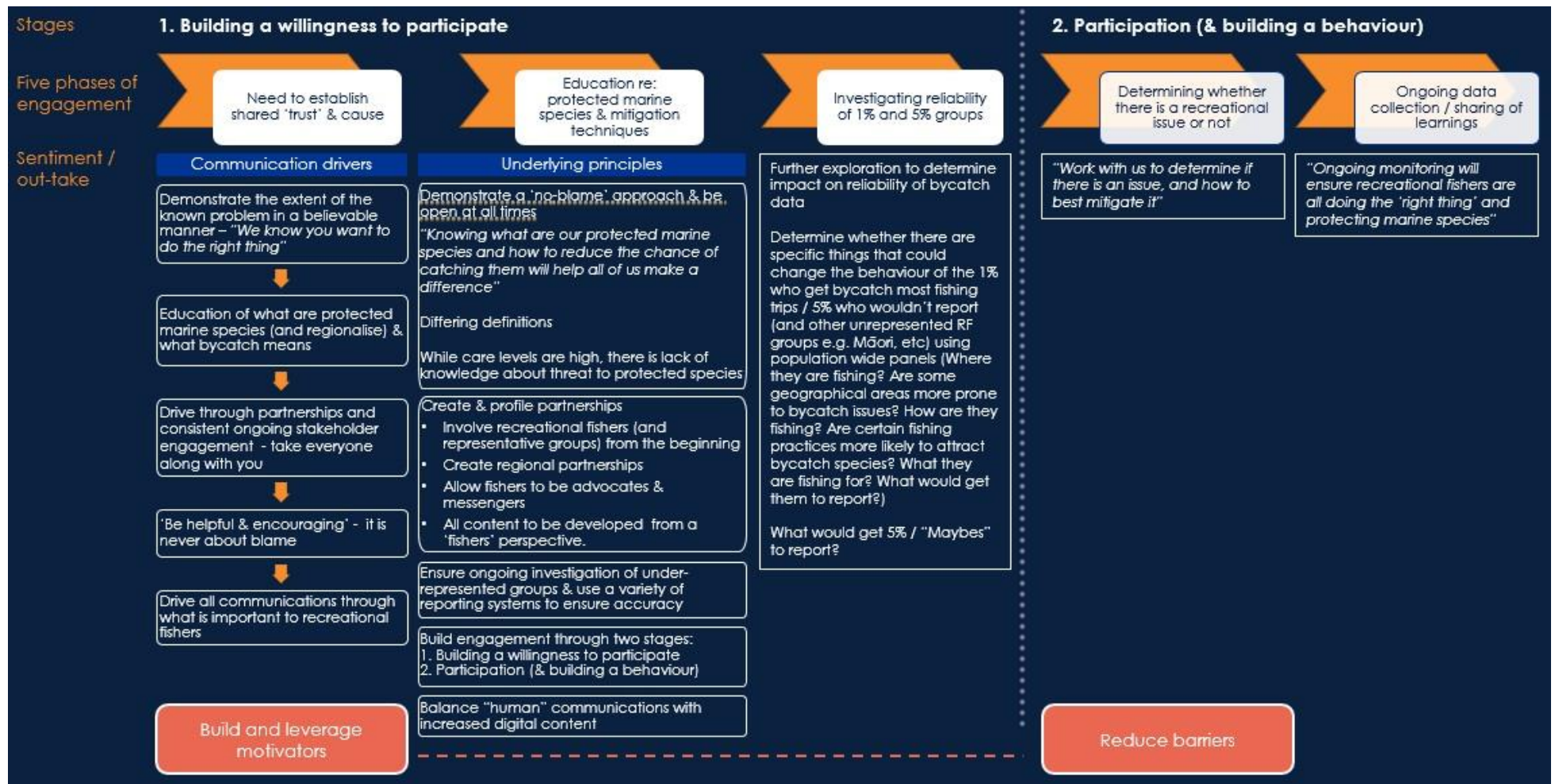


Figure 6: Two stage engagement framework.

Engagement phase 3: Further exploration

It is recommended that additional investigation is conducted regarding the reliability of 1% and 5% groups to determine impact on reliability of bycatch data to:

- Determine whether there are specific things that could change the behaviour of the 1% who get bycatch most fishing trips and/or the 5% who would not report bycatch groups
- Collect more data on unrepresented recreational fishing groups such as Maori and Asian
- Using population wide panels, determine:
 - Fishing locations?
 - Are some geographical areas more prone to bycatch issues?
 - Fishing methods used?
 - Are certain fishing practices more likely to attract bycatch species?
 - What is the target fish species?
 - What would get 5% / "Maybes" to report?

Stage 2: Participation (building a behaviour)

Engagement phase 4: Defining the issue

In this phase, DOC will be able to clarify the need (and extent of need) to educate recreational fishers on the issue and the range of marine protected species being caught. To reduce barriers DOC should invite stakeholders to collaborate, and work with DOC to determine the nature of the issue, and how to best mitigate it to get the best outcome for all parties. Ensuring understanding and trust of existing bycatch data will be important.

Engagement phase 5: Ongoing data collection and sharing of learnings

Ongoing monitoring is essential to identify issues early, measure progress and ensure recreational fishers' continued involvement in reporting bycatch of marine protected species.

6. STAKEHOLDER ENGAGEMENT GUIDELINES

6.1 Why stakeholders are critical and why they should care

As we noted earlier, for some stakeholders there may be initial suspicion, or reluctance to engage with DOC (or MPI) in the manner required. They may believe it is a low priority for them (in relation to more pressing issues), they may feel compromised, and there are likely to be resource constraints.

As noted in the social movement model presented above, it is crucial that all stakeholders understand, and agree with the central cause (marine protected species are under threat from recreational fishing pressures).

DOC needs all key national and regional/local stakeholders to share its understanding of the issue i.e. danger of species decline, the bycatch evidence that have been collected to date, and that the reporting system is for open sharing and learning, not punitive purposes. There needs to be a shared vision if the stakeholder engagement is to be effective and believed. Importantly, the messages will also need to be conveyed by other organisations to engage some 24% recreational fishers who have said programmes led by DOC would be significantly problematic.

6.2 Engaging with stakeholders

The Treaty Partner and stakeholder mapping exercise undertaken in stage one, and then the resulting individual interviews, provide a very clear overview of the priority national partnerships and stakeholders that will need to be involved.

Ongoing care will need to be taken to ensure there is a clear distinction between stakeholders who fall into the **high influence and likely to engage** category, and those stakeholders who fall into the **low influence and likely to engage category**.

The **high influence and unlikely to engage** category are those which need a more considered approach, and, as we have recommended, will need further research to determine what strategies and actions are likely to have the best impact on them.

Finally, the stakeholders who have a **lower influence and are unlikely to engage** will need to be communicated with but will not require as much resource and attention.

6.3 Productive stakeholder conversation

The narrative needs to be stakeholder-led and be based on points of agreement. The draft Productive Conversation model in Figure 7, was informed by the research conducted in the current project, however, it will need to be tested with stakeholders and with recreational fishers. This should happen in the time leading up to, and including, the pilot programme.

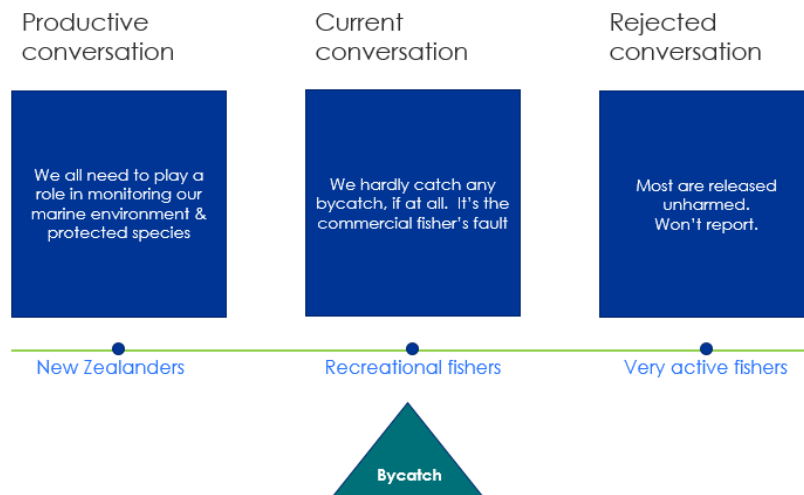


Figure 7: Productive Conversation model.

6.4 Decentralised messaging for stakeholders

The diagram in Figure 8 details a decentralised messaging strategy designed to engage stakeholders and ignite change on a national, regional, and local level.

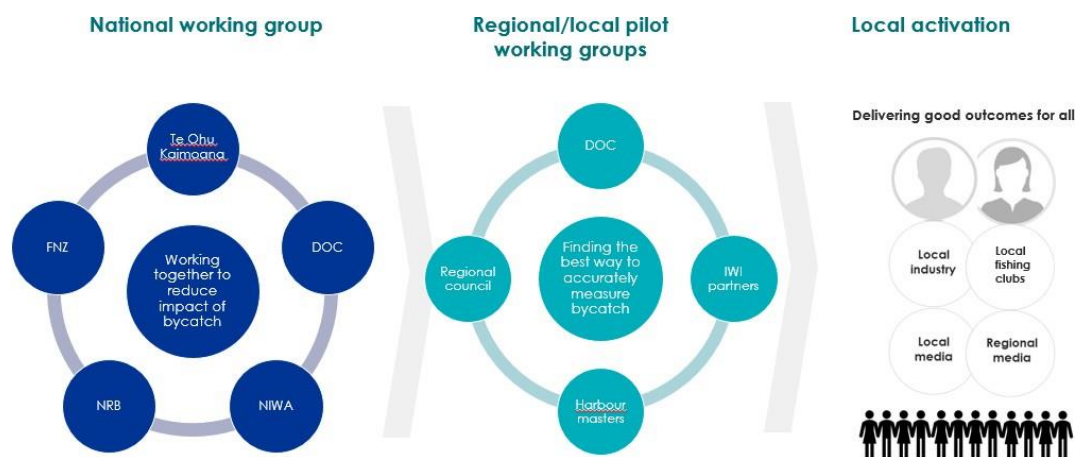


Figure 8: Decentralised messaging for stakeholders.

6.5 Stakeholder engagement pathway

The recommended engagement pathway takes into consideration the possibilities of different levels of willingness to engage and differing levels of engagement. It maximises the behaviour of those stakeholders with high levels of interest and engagement, while addressing those that are reluctant to change, with the intention to shifting them from recipients to participants over time.

It is recommended that the Innovation adoption cycle (Figure 9) is used to guide the stakeholder engagement approach to ensure a bow-wave of support is built over time to ignite the long-term behaviour change that will be required to deliver tangible results.

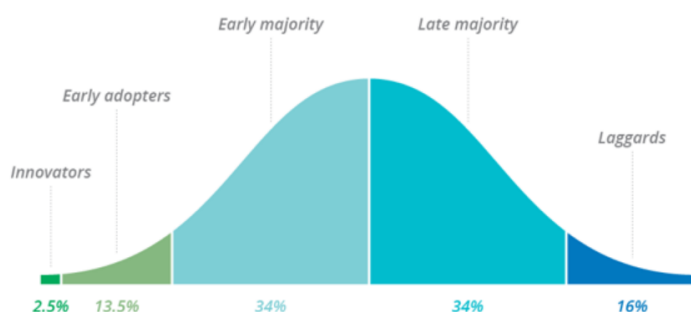


Figure 9: Innovation adoption cycle.

The Innovation adoption cycle is a sociological model that states how an idea diffuses/spreads from the earliest adopters (innovators) to the laggards. It describes the adoption of innovation according to the demographic and psychological characteristics of the target audience. In this instance, it is recognised that different recreation fishers will ‘buy into’ the need and adopt reporting practices at different stages.

The recommended stakeholder engagement pathway to achieve social licence for bycatch measurement is detailed in the flow chart in Figure 10.

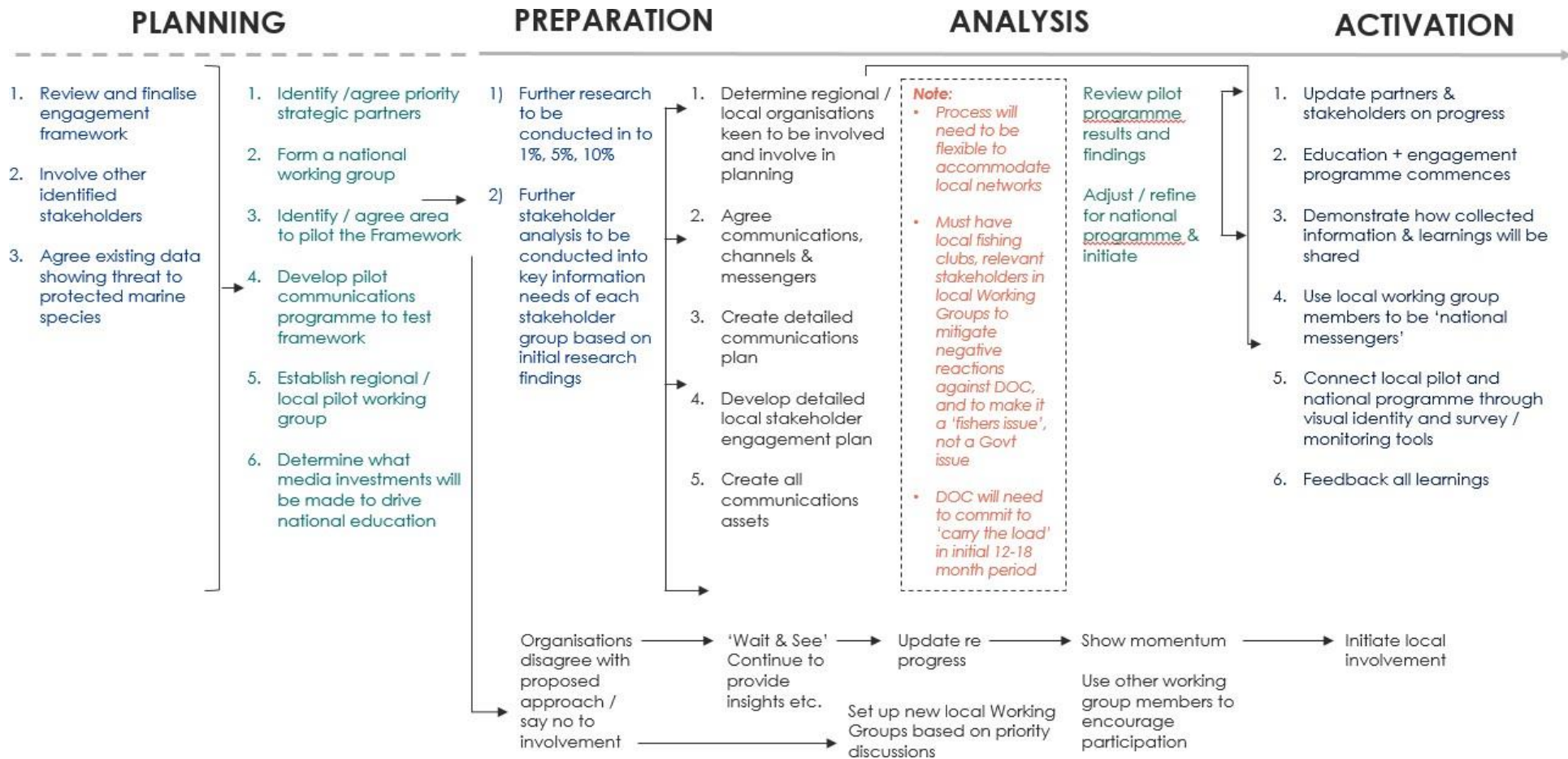


Figure 10: Flow-chart of stakeholder engagement pathway.

7. DATA COLLECTION METHODS

7.1 Smartphone applications

As illustrated in Figure 11, stage two research showed that most fishers prefer to use the NZ Fishing Rules app – an app which is hosted by NZ Fisheries. The advantage of this collection method is that many fishers have already subscribed to this app (48% of the fishers in the survey currently had the app on their phones) - although this figure may be slightly inflated due to use of the Fisheries NZ list as a sample source - the proportion could be confirmed with a more representative fisher sample.

Other types of apps are also favourable – including:

- A marine species identifier app. This type of app would have the further advantage of being able to educate the fishing community on the protected species
- A targeted bycatch app – not currently available in New Zealand
- A general fishing catch app – similar to the Fish4all app that is currently available in New Zealand.

Considerations for developing an app for data collection are:

- A considerable proportion of fishers do not use apps (19%)
- It can be difficult to build a user base (for example, in the survey only 5% of fishers currently have the Fish4All app on their phone).

How likely would you be to use/do the following to record a protected species catch?

Base: n=819 (those who were not closed to recording bycatch information)

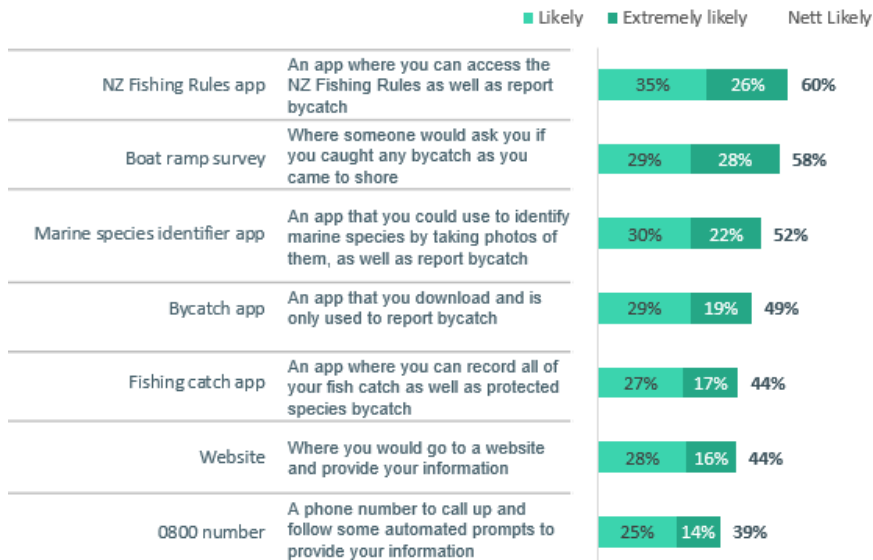


Figure 11: Preferred reporting method.

7.2 Alternative options to smartphone applications

Boat ramp surveys were a popular choice for providing bycatch information. Boat ramp surveys have the advantage of gaining data from those who do not use apps or have the designated app. But the disadvantage of only collecting data from fishers who use boat ramps.

A website or 0800 number were the least popular reporting methods overall. However, those who do not use apps (19%), were most likely to report via a boat ramp survey, followed by an 0800 number and then a website.

7.3 Recommendations for data collection

These findings suggest that DOC would ideally provide a range of reporting options to collect bycatch information from fishers, for example utilising:

- The NZ Fishing Rules app: which already has a good subscription base – and would collect information from a range of fishing types not just using boat ramps
- Boat ramp survey: for those that do not have the reporting app and/or do not like using apps
- 0800 number: for those who do not like using apps and to collect information from a range of fishing types, not just those using boat ramps.

8. FINAL RECOMMENDATIONS/NEXT STEPS

From the above, we specifically note the following critical next steps to gaining social licence for bycatch measurement.

1. Engage in discussions with Treaty Partner
2. Form national stakeholder working group as governing body for project
3. Form regional stakeholder working group
4. Regional stakeholder group to commence planning for pilot trial in Hauraki Gulf, where there is high numbers of recreational fishers.
5. Further research to be conducted to support the rationale for the targeted programme
6. Further stakeholder analysis to be conducted into key information needs of each stakeholder group based on initial research findings
7. Development of strategic, decentralised messaging for national, regional and local use
8. Development of detailed stakeholder engagement plan
9. Development of detailed communications plan.

8. ACKNOWLEDGEMENTS

We would like to thank Treaty Partner representative Te Ohu Kaimoana, and representatives from the following recreational fishing organisations; Fish Mainland, NZ Sport Fishing Council, Terra Moana, Southern Seabird Solutions Trust, and the Tindale Marine Research Charitable Trust, for their participation in one-on-one interviews, and members of MPIs recreational fishing database for their valuable participation in the on-line survey. We also thank Drs. Marty Bowers and Martin Cryer (MPI), Andy Heineman (NRB), and Dr. Bruce Hartill (NIWA) for their contribution to the wider discussion on surveying recreational fishers. We also thank DOC Marine Science Advisor Dr. Karen Middlemiss for project management and guidance, and for review of earlier versions of this report.

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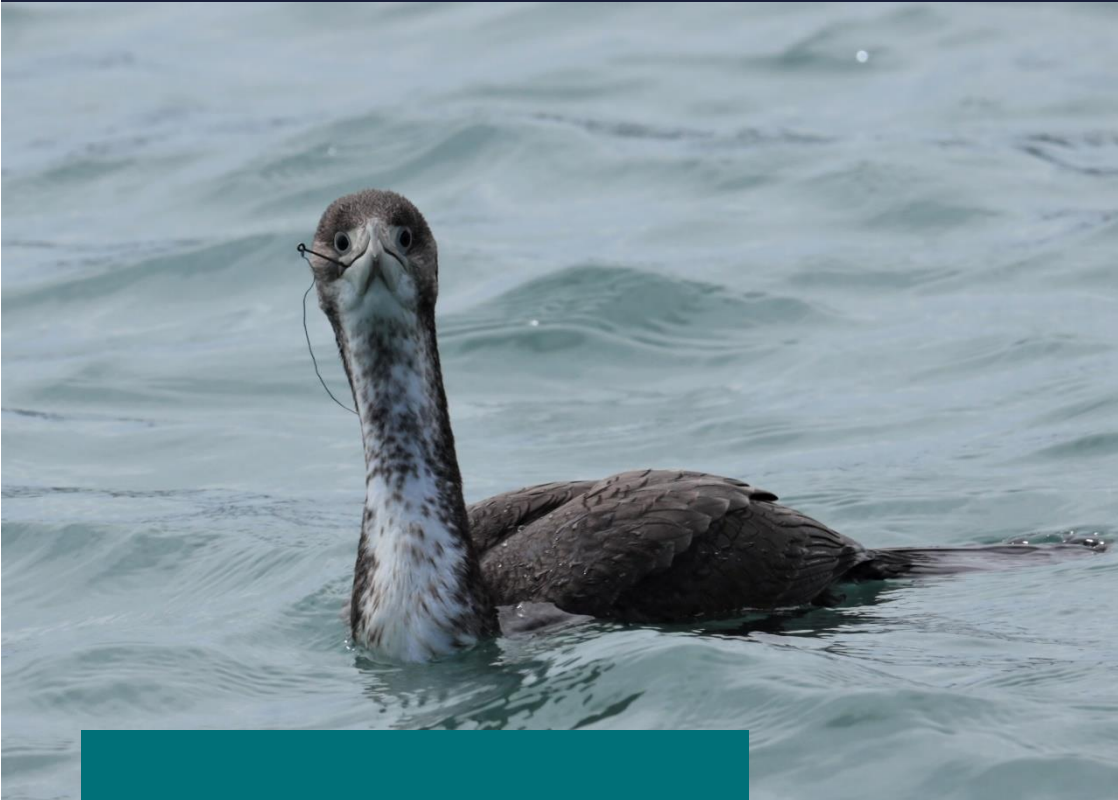
10. APPENDICES

Appendix 1: BCBC2019-07c stage one report - Stakeholder Engagement in Assessment of Recreational Fisheries bycatch of marine protected species.

Appendix 2: In-depth interview - summary of findings and recommendations

Appendix 3: Online survey - summary of findings and recommendations

APPENDIX 1 - Stage one report



Stakeholder
engagement in
assessment of
recreational fisheries
bycatch of marine
protected species

Planning for stakeholder engagement in assessment of recreational fisheries bycatch of marine protected species. Cover image photo credit: Dr Paul Barter, Cawthron Institute.

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Table of Contents

1. BACKGROUND	43
2. KNOWLEDGE REVIEW	45
3. RESEARCH APPROACH	66
4. PROJECT RISKS	74
5. APPENDIX ONE	75

1. BACKGROUND

1.1. Project background

New Zealand is a nation with a rich diversity of marine animals and a long history of recreational fishing activities, with around 575,000 people annually fishing in New Zealand waters.¹ Many marine protected species, including seabirds, mammals, rays, fish, corals, turtles and sharks, are under threat from environmental and anthropogenic pressures. Fisheries bycatch of protected species is currently recognised as one of the greatest threats to marine biodiversity. Investigations of bycatch in commercial fisheries have received extensive research effort; however, the same cannot be said of the effects of recreational fishing pressures on marine protected species.

Recreational catch effort in New Zealand represents a significant total annual harvest of around seven million individual finfish and 3.9 million other marine species.² With nearly 11 million fish and other species harvested annually by recreational fishers, there is a high likelihood of unintended bycatch of protected marine species. Considering seabird species alone, previous annual recreational bycatch rates have been estimated at around 40,000.³ However, very little research effort has been given to an accurate assessment of the nature and extent of protected marine species bycatch in this fishery. Reasons for this include difficulty in obtaining reliable data and difficulty in earning the support of recreational fishers.

The strategic overarching goal is to reduce the recreational bycatch of marine protected species. To better understand and address the nature and extent of this conservation issue, in-depth research and a quantification of the New Zealand recreational fishing bycatch of marine protected species is essential.

In order to undertake bycatch research, the Department of Conservation (DOC) ultimately needs the support of Treaty of Waitangi partners and the recreational fishing community. This support, or 'social licence', is required to get a community on board and even mobilised to participate in and advocate for the collection of bycatch data that might otherwise be unaware, hesitant, passively against, or even aggressively against it.

1.2. Project objectives

DOC needs to address the knowledge gap associated with data deficiencies on the recreational marine protected species bycatch conservation issue. To do this, DOC needs to engage with and garner widespread participation and support from recreational fishers for future data-collection projects, via a platform that lays the foundations for a well-thought-out pathway.

The output from this project will be an evidence-based engagement framework and planning process that DOC will use to create its engagement platform – a framework and process that are robust, accessible and easy to use.

Evidence for the framework will be gained by understanding the views of recreational fishers in relation to protected marine species bycatch and their perceived roles and responsibilities. Gaining a clear and deep understanding of stakeholder issues, and the motivations for

¹ National Panel Survey of Marine. Recreational Fishers 2017–18. New Zealand Fisheries Assessment Report 2019/24

² MPI (August 2019), <https://www.mpi.govt.nz/travel-and-recreation/fishing/national-survey-of-recreational-fishers/> ³ DOC & NZ Fisheries, "National Plan of Action – Seabirds 2020", P17 <https://www.mpi.govt.nz/dmsdocument/38054/direct>

engagement and participation in the measurement of bycatch both early in the engagement process, and ongoing, is important.

The primary objective of the project is to understand how DOC can engage recreational fishers effectively in future data-collection studies, based on results from research that elucidates:

1. The level of knowledge-based stakeholder understanding and agreement with the need for the project, including a willingness to participate, and their motivations for involvement
2. The alignment of stakeholder interests with the proposed strategy
3. An open, inclusive and transparent process that considers privacy issues
4. Participation in a simple and time-appropriate manner

To achieve the primary objective, the more specific informational objectives are:

Social licence: Understand motivators and barriers

- a. Do recreational fishers consider their impacts on protected species bycatch numbers?
- b. Do recreational fishers perceive protected species bycatch to be a big problem?
- c. Do recreational fishers compare recreational bycatch to commercial-sector bycatch – do they think that commercial fishing is the problem, not recreational?
- d. Do recreational fishers see the need for DOC to understand the nature of interactions between protected marine species and fishers (i.e. mortality vs survival, catch method etc.) in order to support zero-bycatch goals?
- e. Do recreational fishers agree that it is the responsibility of all fishers to reduce bycatch? Are there generational issues?
- f. How important is it for recreational fishers to understand:
 - i. future bycatch research programmes are designed to determine the nature and extent of the issue jointly, as opposed to through DOC self-determination?
 - ii. the bycatch project objective is about the conservation of protected marine species and not about punitive actions against fishers?
 - iii. engagement of the wider fishing community is a long-term solution?
- g. What terminologies and key messaging are less ambiguous? (example e.g. is 'bycatch' understood?)

Stakeholders: Identify and understand needs

- h. Who are the key stakeholders?
- i. What are the key stakeholder networks and the preferred communication channels (and feedback loops)?
- j. What is the best approach to establishing a working group to ensure continued stakeholder engagement?

Recording bycatch data: Understand motivators and barriers

- k. What are the preferred information-gathering tools for bycatch data? Including consideration of the following:
 - i. The use of existing infrastructure (e.g. DOC website for reporting bycatch)
 - ii. New technology development by DOC for data collection (i.e. smartphone bycatch app)
 - iii. Privacy concerns over the use of a smartphone app and possible solutions
 - iv. The use of representative groups/clubs to promote the use of reporting tools
 - v. The use of previous/current recreational fishing apps (e.g. the Fish4all app)

Note: This project does not include an investigation of bycatch mitigation measures.

1.3. Project approach

To achieve the objectives, the project will be undertaken in three stages.

Stage one (Design and build) will lay the foundations for the project by:

- Reviewing current knowledge with regards to:
 - social engagement planning
 - lessons learnt from social engagement projects
 - existing recreational fishing data-collection tools
 - motivators for and barriers to gaining social licence for bycatch measurement
 - motivators for and barriers to the use of data-collection tools
 - categorisation of marine protected species
 - stakeholder identification and mapping
- Designing the approach and interview guides for the primary research
- Identifying and mitigating potential project risks
- Establishing contact with Treaty Partner (Te Ohu Kaimoana) and key recreational fisheries representatives

Stage two (Consult and engage) will build on the knowledge gained in stage one by collecting direct feedback from Treaty Partner and stakeholders on the motivations for and barriers to engagement and participation. This will be undertaken by conducting:

- Interviews with a cross-section of key individuals representing stakeholder interests
- An online survey with recreational marine fishers

Stage three (Analysis and development of engagement framework) will establish an evidence-based framework for stakeholder engagement using information collected from stages one and two. Project findings will be presented to DOC and provided to a pre-selected group of research and regulatory organisations for their information i.e. FNZ, NIWA and NRB and others as agreed with DOC.

2. KNOWLEDGE REVIEW

2.1. Social engagement planning – theory and examples

What is social engagement planning?

Social engagement planning is a way to address social issues by involving the community throughout the engagement process and building a foundation of effective, long-term relationships. It is about creating and maintaining a genuine, two-way conversation, and there is not a one-size-fits-all approach.

To create long-term engagement and change, traditional downstream methods are no longer enough. Addressing community issues is complex and cannot be addressed effectively without engaging all stakeholders. Engaging a community to address any issue is a long-term process – not a one-time event, especially when new behaviours need to be embedded.

It is important to begin by identifying all stakeholders. Importantly, stakeholders are more than those who are directly affected by a project; they include any party that may have an interest in, or influence on, the project (whether statutory or otherwise). Selecting some, but not all, stakeholders to engage with can threaten the success of the process.

The organisation should use proven methods to identify all key stakeholders, then plan how it will engage with each level of influencer (Boutilier, undated)⁴. Not all stakeholders need to be engaged in the same way. For example, a New Zealand organisation may have a memorandum of understanding with the local iwi and provide access to community funding independently via a locally run trust board.

When engaging on a community level it is important to go beyond the project and understand the wider culture, customs, language, and history of the community and stakeholders, as well as wider legacy issues.

Organisations should also be aware that contemporary consultation methods may not feedback the necessary information from a community, and locally appropriate methods of engagement, such as 'informal consultation', may be required to facilitate an organisation and community to get to grips with issues quickly (Nelsen, 2007).⁵

An organisation must also understand what a community wants and needs to maintain a positive engagement experience. This includes, for example: up-to-date information on the progress of the project; honest answers to questions; discussions on and input into development alternatives; true concern for the environment; sensitivity to local culture; opportunities for citizens to earn a better living; better lives for children; and most of all, to be treated with respect (Nelsen, 2007).

According to a Ministry for Primary Industries (MPI) paper, 'How to Improve Your Social Licence to Operate, A New Zealand Industry Perspective' (2014), the process of achieving social licence to operate is best conceptualised as a two-way relationship between the organisation and the community/stakeholders.⁶

A long-lasting, constructive, two-way relationship based on trust must be established, and doing this early in a highly considered manner is crucial. Comprehensive planning for the early phases of engagement is integral to long-term success, as mistakes made in early phases can have long-term ramifications.

The features of a successful, two-way relationship that fosters a social licence to operate include:

- Starting early, and being aware that first impressions are long lasting
- Having a planning process in place that enables an early, integrated and comprehensive analysis of factors that will affect a project
- Open sharing of information and communication between all stakeholders
- Active networking and engagement
- Respect and procedural fairness
- Shared understanding developed over time
- Shared language developed over time
- Mutual goals written and agreed
- Shared experiences
- Problem-solving together
- Delivering on commitments

⁴ Boutilier (undated). More than a buzzword: Answers to frequently asked questions about the social licence to operate. Unpublished.

⁵ Nelsen J (2007). Social licence to operate: Integration into mine planning and development. Master of Applied Science Thesis: The University of British Columbia.

⁶ Quigley and Baines (2014). How to Improve Your Social Licence to Operate, A New Zealand Industry Perspective. Prepared for Aquaculture Unit, Ministry for Primary Industries.

- Reciprocity of actions (responding to a kind action with a kind action; reciprocity is centred more on trading favours than negotiating/making a contract)
- Mutual recognition of beliefs, goals and values
- A mutual move from a “do no harm” concept (from a risk-based perception) to “demonstrate positive development benefit” (Warhurst, 2001) (from a long-term development agenda)
- Two-way transparency of information

It should be noted that not all these features are experienced in two-way relationships, as each works to its own priorities and strengths – all features do not need to be present to achieve a social licence to operate.

A social licence to operate is broadly defined as an “ongoing acceptance or approval of an operation by those community stakeholders who are affected by it” (Moffat et al, 2016, p.4).⁷ Acquiring a social licence means a community that might otherwise be against a project (or ineffectual in support) can be turned around and even mobilised to advocate for it.

How do you create social engagement and obtain a social licence?

While there are many features that contribute to building effective two-way relationships for the social licence process, the key criteria can be divided into five key, interrelating categories (Stronge et al, 2019).⁸

These five categories all lead to the establishment of trust and ultimately a social licence to operate. Each category must be monitored and evaluated on an ongoing basis to ensure a successful long-term outcome.

- **Relationships**

- Mercer-Mapstone et al (2018, p. 3)⁹ note that “trust and relationships [are] important for stable social licence” and that this is only achieved when agencies show “genuine respect and concern for local stakeholders’ values and well-being” (ibid.)
- Building trust with local communities is crucial to obtaining and maintaining a social licence to operate
- Relationships must be built early with all stakeholders (not just some) and nurtured on an ongoing basis

- **Awareness and shared purpose**

- All stakeholders understand the issue
- All stakeholders understand the barriers to and motivators for the solution
- All stakeholders understand and agree on the desired outcome of the process
- All stakeholders understand the steps required to achieve the desired outcome

- **Response to community concerns**

- Stakeholders are actively listened to
- Genuine attempts to address issues and concerns are made
- The organisation actively seeks collaborative solutions to problems

⁷ Moffat K, Lacey J, Zhang A and Leipold S (2016). The social licence to operate: A critical review.

⁸ Stronge, Allen, Wegner and Grant (2019). [Building engagement and social licence: Research overview and recommendations](#).

⁹ Mercer-Mapstone et al (2018, p. 3). Company-Community Dialogue Builds Relationships, Fairness, and Trust Leading to Social Acceptance of Australian Mining Developments.

- **Competency**
 - The leading organisation demonstrates that it has the expertise and knowledge to manage the task with which it has been entrusted effectively, while protecting community interests
 - The organisation works in a professional, efficient and collaborative way
- **Communications**
 - Communications to all stakeholders are early, ongoing, open, transparent, consistent and considerate
- **Respect and fairness**
 - All stakeholders have an adequate understanding of the process and protocols and access to the right information
 - Maintain a high degree of transparency and openness at all times
 - A mechanism for including citizen voices in negotiation and agreement-making is key to establishing the legitimacy and gaining social acceptance, or the social licence, of these arrangements
 - All procedures are fair to and considerate of all stakeholders

Creating social engagement with iwi

Creating social engagement with iwi will follow the same process for engagement as with the wider community.

Engagement is driven by three important factors:

Right channels: Working alongside our Treaty Partner (Te Ohu Kaimoana/mandated iwi organisations/kaitiaki) and key stakeholders

Right messages: Ensuring communications with iwi reflect the cultural basis of fishing

Right approach: Incorporate face-to-face consultation through the engagement process

However, the existence of various rights, responsibilities, and obligations arising out of the Treaty of Waitangi must also inform and shape any engagement process. This is particularly relevant when seeking to engage with iwi on customary fisheries.

Iwi customary interests in fishing are recognised in the Treaty of Waitangi (Fisheries Claims) Settlement Act 1998 and subsequent regulations. These provide for (among other things) the establishment of customary fisheries management practices and traditional gathering.

Regulations allow for the appointment of tangata tiaki/kaitiaki, who are responsible for issuing customary fishing permits and can in certain circumstances recommend amendments to local customary and recreational fishing bylaws and commercial activities.

These regulations are currently overseen by MPI. Any engagement processes must also take account of MPI's own responsibilities under the Treaty.

Te Ohu Kaimoana has a mandate to represent iwi fishing interests on behalf of iwi. As such, engagement with Te Ohu Kaimoana in the early stages of a project is the appropriate step to help shape the engagement process, build awareness, understand barriers and establish effective communication with customary fisheries stakeholders.

Helpfully, Te Ohu Kaimoana has recently provided responses on behalf of iwi to a number of sustainability reports, the National Plan of Action for Seabirds and Threat Management Plans for Hector's and Maui dolphins.

In their response to the proposed National Plan of Action for Seabirds (January 2020), Te Ohu Kaimoana noted that the estimated levels of seabird bycatch in the recreational fishing sector were high compared to the commercial fishing sector, and recommended engaging with kaitiaki, through iwi, to understand the scale of the issue.

What do other engagement plans look like?

Example 1: Ecosystem-based management plan

A hypothetical example developed by Ward et al (2002) to indicate how a coastal fishery might implement ecosystem-based management. This plan has social engagement principles within it. (Please see Appendix One).

Example 2: Targeted engagement and advocacy with priority audiences

The Better Conversations on Road Risk engagement plan template is an example that can be used to start planning activities with stakeholders, the community and the media. The precursor is that you have identified the principles of engagement, the priority intervention areas and audience segments. (Please see Appendix One).

Example 3: Circle of engagement

This circle, (please see below) was developed to support the NZ Transport Agency's Road Controlling Authorities' staff in coordinating engagement with communities, stakeholders and the media on speed-management options, and provides a starting point for designing an engagement approach for stakeholders.

Working through the five phases of the circle, each segment is built out, incorporating specific principles and actions.

Following this engagement model will allow DOC to create an engagement process that will resonate with the network of fishers and assist with defining a consistent vocabulary for use with partners across the programme.

Our research will help form an understanding of what the community conversation should look like and what is involved in encouraging and changing perceptions.

Effective advocacy is a key tool for influencing and changing behaviour together with a narrative that resonates with key stakeholders and fishers. Influencing is also about becoming a thought leader in the sector and leading conversations about the future of endangered species. This will require suitably qualified and credible people with a compelling narrative crafted specifically for their audiences and delivered through appropriate channels.



Figure 1: Circle of engagement.

2.2. Lessons learnt from other social engagement projects

Good social engagement involves connecting with communities to share information and ideas, to build understanding and relationships, and to work towards better outcomes. Some of the outcomes of good social engagement include ideas being shared and improved; stakeholders feeling listened to; all key stakeholders contributing to the design process; and these contribute to successful implementation of developed plans/strategies. Figure 2 shows some lessons learnt from other social engagement projects that will be considered in developing an engagement framework for the recreational bycatch data-collection process.

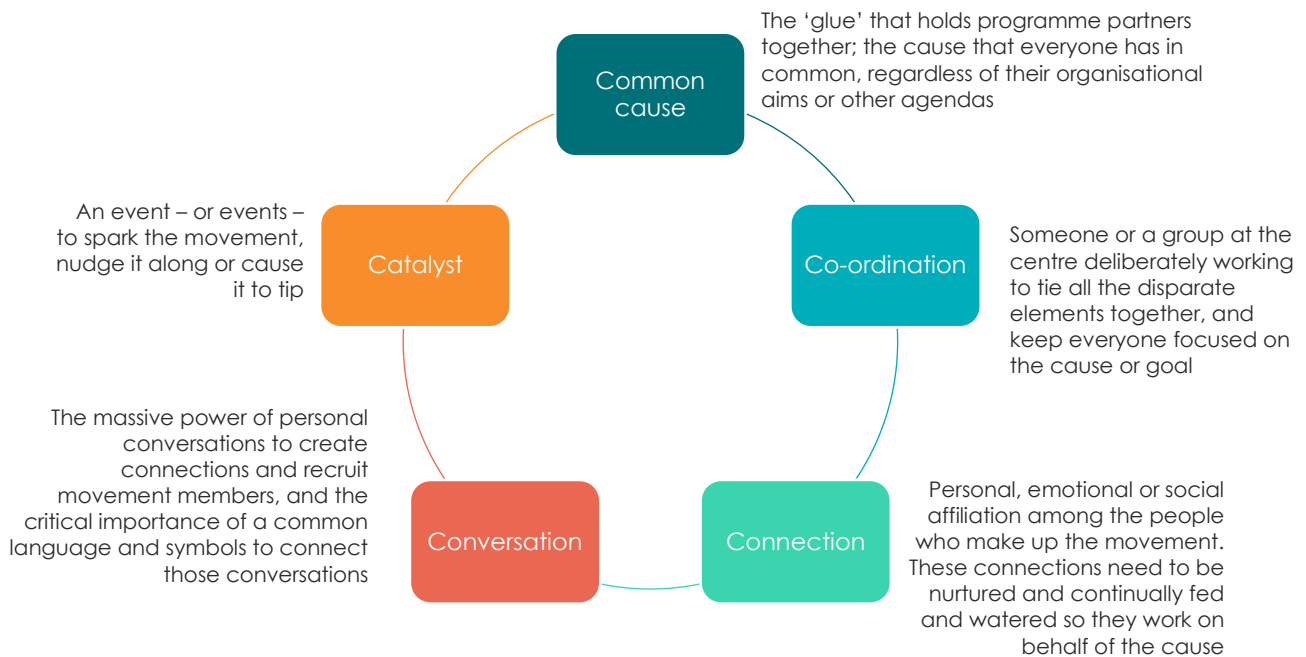


Figure 2: Social movements are driven by the 5 'Cs'.

Social engagement is an ongoing process – engagement is needed upfront and then continued throughout the life of the programme

The Check, Clean, Dry campaign is a great example of a social engagement programme that has high social licence within the freshwater community, due to a very successful launch that engaged stakeholders.

The Check, Clean, Dry social marketing campaign was established in 2005. The campaign's focus was to encourage freshwater users, through waterside advocates and marketing initiatives, to take personal responsibility for stopping the spread of didymo. Specifically, Check, Clean, Dry was the brand name for the set of specific behaviours that the programme partners wanted freshwater users to undertake on all their gear when moving between different water bodies. The campaign work was carried out in a partnership led by MPI that included DOC, Land Information New Zealand, Fish & Game New Zealand, regional councils, iwi and industry.

The initial Check, Clean, Dry campaign was successful in raising awareness of freshwater pests and the importance of undertaking Check, Clean, Dry behaviours. The programme was extended to other freshwater pests in 2011.

Over time the programme saw a reduction in resourcing, so the initial response was not able to be maintained. The result was a core group of freshwater users undertaking the Check, Clean,

Dry actions and advocating its importance, and a group who had not heard of the programme and/or were not undertaking the actions to their full capabilities.

The core group consisted of stakeholders who had been engaged with the programme in the early stages, with the use of solutions that worked (e.g. spray bottles for application, stickers for reminders), knowledge on the issue and a sense of everyone working together (i.e. all the programme partners and the fishing communities).

Those who were less likely to be aware of the programme and/or undertake the Check, Clean, Dry actions were less likely to have been part of the programme launch (e.g. they were young or not engaged in freshwater activities at that time). The reduction in resourcing that occurred after the programme launch resulted in a slow-down in momentum for the programme.

The Freshwater Biosecurity Partnership Programme steering group is currently reviewing its approach to engaging the broader freshwater community – to achieve greater impact.

Social engagement requires motivation, capability and opportunity

For the successful collection of recreational fishing protected marine species bycatch data, there are two levels of engagement required. Firstly, Treaty Partner and other key programme partners (e.g. MPI) need to be engaged, and secondly, recreational marine fishers need to be engaged. To engage, both sets of stakeholders need to be motivated, capable and have the opportunity to participate.¹⁰

There are many examples of programme partnerships that were not as productive as they could have been because some partners/stakeholders did not see the benefits of being involved (lacked motivation), felt they would not be listened to or have proper input (opportunity) and/or felt they did not have the resources to engage properly e.g. time, people and resources (capability). It is important to be aware of these potential barriers to programme engagement and address them upfront.

With regards to how to engage stakeholders in ideal behaviours to support conservation aims, the ongoing work of the Kauri Dieback Programme¹¹ provides an example of the importance of motivation, capability and opportunity.¹² To date, this programme has successfully gained a high level of compliance and has built awareness of ideal behaviours necessary to prevent the spread of kauri dieback among most forest users, especially on-track users and trappers. However, it is difficult to gain full compliance and this is primarily due to lack of motivation, as well as other factors such as the cost of implementing mitigation methods.¹³ This can stem from a lack of trust in governing bodies and in the scientific reasons given for the spread of the disease. This highlights the importance of gaining social licence and support for conservation initiatives for them to be successful. Further, the experience of 1080 for predator control by DOC is often referred to as an example of government agencies not listening to the concerns of recreational users of public conservation land and of being closed to alternative perspectives on risks and solutions. This sector of the recreational community also discounted proposed solutions as unrealistic at best, and silly and misguided at worst. Likewise, some people do not accept the cause of kauri dieback spread and believe the costs imposed on them to comply are unrealistic and unnecessary.

¹⁰ Adapted from the B-COM model. Source: Michie S, Atkins L and West R. (2014). *The Behaviour Change Wheel: A Guide to Designing Interventions*. London: Silverback Publishing. www.behaviourchangewheel.com

¹¹ The Kauri Dieback Programme partners include Biosecurity New Zealand (part of MPI), DOC, Auckland Council, Waikato Regional Council, Northland Regional Council, Bay of Plenty Regional Council, Te Roroa (tangata whenua for Waipoua Forest) and Tangata Whenua Roopu (the representative body for iwi and hapū with an interest in kauri lands).

¹² Source: Kauri Dieback Forest User Research – Phase 2 Report – May 2019, The Navigators, Available at www.fyi.org.nz

¹³ Refer NZ Herald / Northern Advocate article, "Kauri dieback now in Northland's Puketi Forest", 12 March 2020

With the Kauri Dieback Programme, the poor relationships between hunters/Māori/farmers (at an individual level) and government agencies highlight the importance of building positive engagement and productive relationships. During the development of the kauri dieback pest management plan there was significant engagement with iwi/hapū in the development of proposals. However, for some individuals in these communities it appears that this sense of relationship has yet to filter down from their representative groups. Without deeper engagement at the grassroots, these forest users are likely to continue to be disengaged and unlikely to change behaviours, even in the face of the threat of enforcement.

Moving on to lessons learnt about capability and opportunity, even those who are highly motivated to undertake the desired behaviours (or engage) may not due to capability and opportunity barriers. Some of the capability barriers in the kauri dieback example are low knowledge of some of the specific cleaning requirements, it not being easy to carry cleaning packs, the difficulty of cleaning some items (vehicles, stock, equipment) and, for farmers, a lack of resources to fence, and a loss of productive land. Examples of opportunity barriers included not being able to clean boots properly in the bush, avoiding kauri could result in safety issues, and fencing was not possible on some terrains. To allow motivated people to engage, capability and opportunity barriers need to be fully understood and realistic solutions found – enabled through engagement with programme partners and recreationists themselves.

Social engagement levels will vary across the community – understand the differences and tailor strategies

Recreational marine fishers will vary in their openness to share bycatch information. Some will be very willing, and others will not; some will be motivated by one set of reasons and others by different reasons. It is important to understand how the range of high-level mindsets/needs differ across the community in order to create a well-rounded engagement programme design (which may include messaging, channel delivery, etc.).

The Check, Clean, Dry programme work provides an example of this.

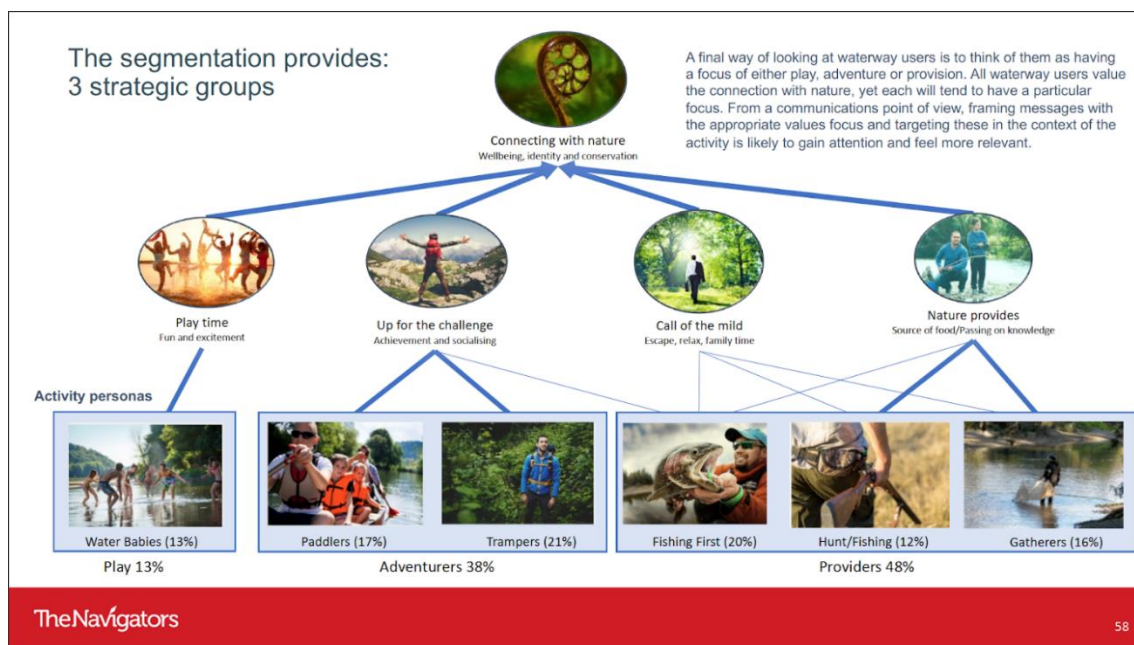


Figure 3: Audience segmentation.

The Freshwater Biosecurity Partnership Programme steering group is using a segmentation of high-risk freshwater users to inform its revised national and regional strategy. Figures 3 and 4 provide an overview of the segments, and insights into how to target a segment.

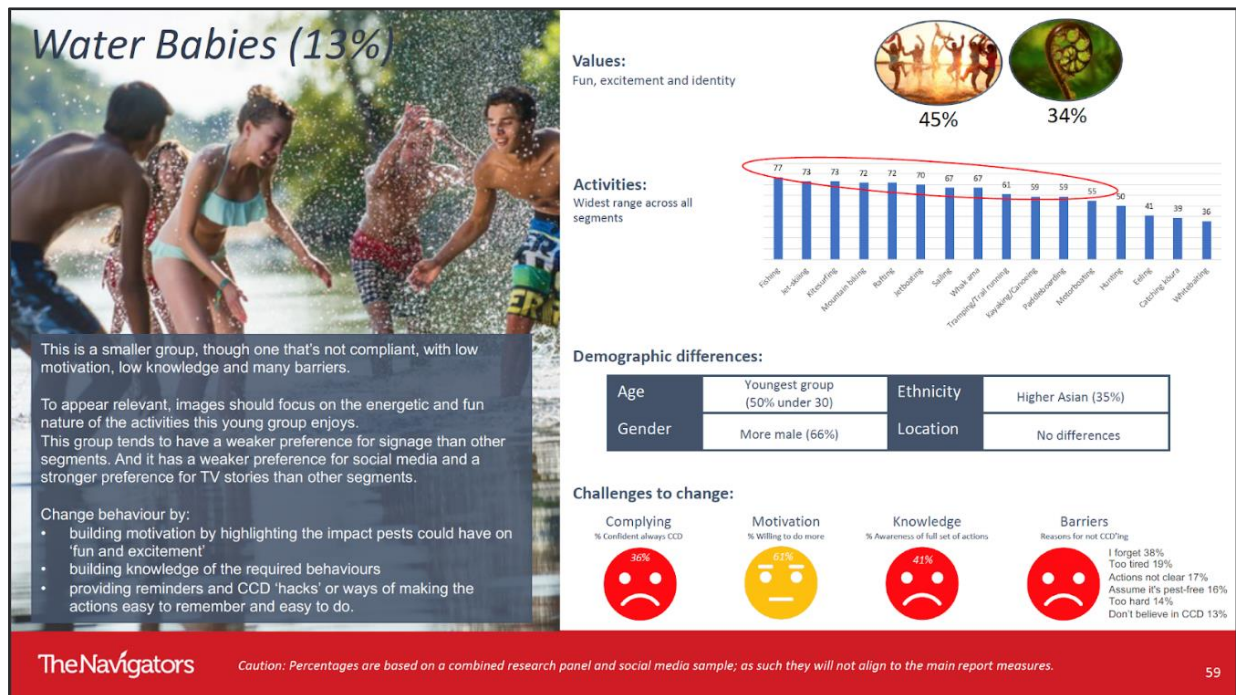


Figure 4: Audience sub-set segmentation

To engage recreational marine fishers in protected species bycatch data collection, DOC should seek to understand the segments within the population and decide who to include and how to communicate/engage with them.

Be prepared to pivot

In 2015 the NZ Transport Agency engaged our team (SenateSHJ and The Navigators) to undertake a challenging task. This was to change deep-seated and polarised stakeholder, community and public conversations about vehicle speed and create an environment where speed-management measures – including changes to speed limits – were understood and accepted by communities.

While analysing the research findings on the perceptions of speed, we found conversations on speed were highly polarising and unproductive. The key insight was that the productive space for public conversation focused on roads and road risk rather than leading with speed (diagram one). This resulted in a programme review and strategy revision, including a name change from 'Changing the Conversation on Speed' to 'Better Conversations on Road Risk'.

Other findings included a discounting of risk involved with speed, a treatment of speed limits as optional, a rejection of facts and evidence that slowing down is beneficial, and a lack of trust – among stakeholders and community members – in the motives and agendas of agencies attempting to reduce speed limits.

The marine recreational fishing engagement framework will be grounded in the evidence presented during our stakeholder interviews and survey, and our analyses will enable us to ascertain how best to influence 'the conversation' and gain insights into recreational fishers' perceptions of protected species bycatch.

With this in mind, and based on evidence gathered, we may advise DOC to pivot and reframe the bycatch engagement programme based on the findings. This will include reviewing the strategic direction and any terminology that is not resonating with fishers.



Figure 5: Pivot and reframe.

2.3. Current recreational fishing data-collection tools

Recreational fishing data is collected in New Zealand through various survey methods, including [Fisheries New Zealand National Panel Survey of Marine Recreational Fishers 2017–18](#), record-keeping by individual sports fishing clubs, aerial surveys (counting the number of boats on the water multiplied by an estimated catch per boat), boat ramp surveys, and self-reporting smart phone apps.

The Fish4All app is currently the only self-reporting tool available in New Zealand, but it does not support reporting of marine protected species bycatch.

An analysis of recreational fishing self-reporting and data-collection tools in New Zealand identified four key issues:

Key issues

Non-standardised – low utility of data collected

- According to Hartill and Thompson (2016), many research providers are not aware of MPIs Research and Science Information Standard for New Zealand Fisheries, a standard established to ensure that high quality information continues to be used as the basis for New Zealand's fisheries management decisions. Equally, members of the public outside the research community are also unaware of this document, despite the fundamentally important principles it codifies.
- There is no universal set of basic bycatch data, both in New Zealand and globally, that is collected from recreational fishers on marine protected species bycatch across the multiple reporting methods.
- Consideration needs to be given to development of a study design that can be supported by self-reporting data collection methods to ensure a robust data set for analyses of recreational fishing bycatch.

- Priorities and motivations vary in self-reporting methods in terms of the data collected. For example, in the data currently collected by fishing clubs, weight is prioritised because the motivation is to set records and for regulatory requirements species and biomass caught and released are the focus of data collection.

Data may not represent the whole recreational fishing community

- It is estimated that 14% of the New Zealand population go fishing more than once a year.¹⁴
- Outside the Fisheries New Zealand National Panel Survey much of the data currently being collected in New Zealand is from sports fishing clubs and competitions, so it is unlikely to be representative of recreational fishers in New Zealand and does not currently include bycatch data of marine protected species.
- Many recreational fishers and fishing clubs keep catch records for their own purposes (excluding bycatch), but there has been no ability or requirement for them to record bycatch in a national database. Also, use of this type of ad hoc voluntary reporting process would not be representative of the whole recreational fishing community.

Bycatch reporting via a smartphone app could roll out in one of three ways:

Purpose-built DOC bycatch reporting app

- Focused – bycatch is a priority
- Simple to develop
- DOC owns data

Purpose-built DOC recreational fishing app

- One-stop shop
- Would include target catch
- Reduces app fatigue
- Easy to tie personal motivations to
- Diluted focus on bycatch
- DOC owns data

Bycatch reporting built into a pre-existing tool

- Pre-existing audience
- Lower set-up costs and resourcing needs
- DOC does not own data

Analyses of existing self-reporting tools – New Zealand

Smartphone apps

The only two apps currently in the New Zealand market targeted at recreational fishers are MPI's [NZ Fishing Rules](#) and [Fish4All](#).

¹⁴ MPI (2018). [Fisheries New Zealand National Panel Survey for Recreational Fishers](#)

Fish4All app

Launched in 2014, the Fish4All app (Figure 6) is run by a social enterprise funded by a charitable trust. It was last updated two years ago. The app is functional and easy to use – you simply select the date, location, time spent fishing, species and quantity caught; however, adoption appears to be very low and recreational bycatch of marine protected species does not feature.

It does not appear to have been widely advertised in recent years, which may account for a lack of awareness. It has potential, should adequate development and promotional funding be available, to be more widely used and to be used to report recreational marine bycatch incidents.

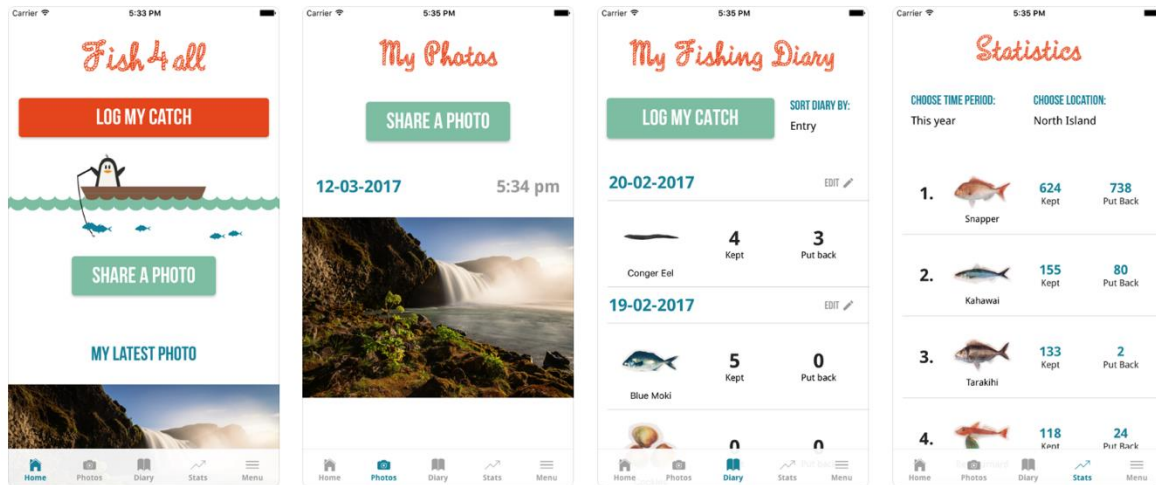


Figure 6: Fish4All app.

NZ Fishing Rules app

The NZ Fishing Rules app (Figure 7) helps users to identify recreational fish species common to specific areas, provides information on minimum legal sizes, maximum daily limits and area bag limits, gives updates on any temporary closures in an area and has short videos showing how to release undersized fish correctly and how to hand measure and determine the sex of crayfish.

There is a lot of potential for this app to be further developed into a data-collection tool, as well as to include educational tools and resources to improve awareness of bycatch.

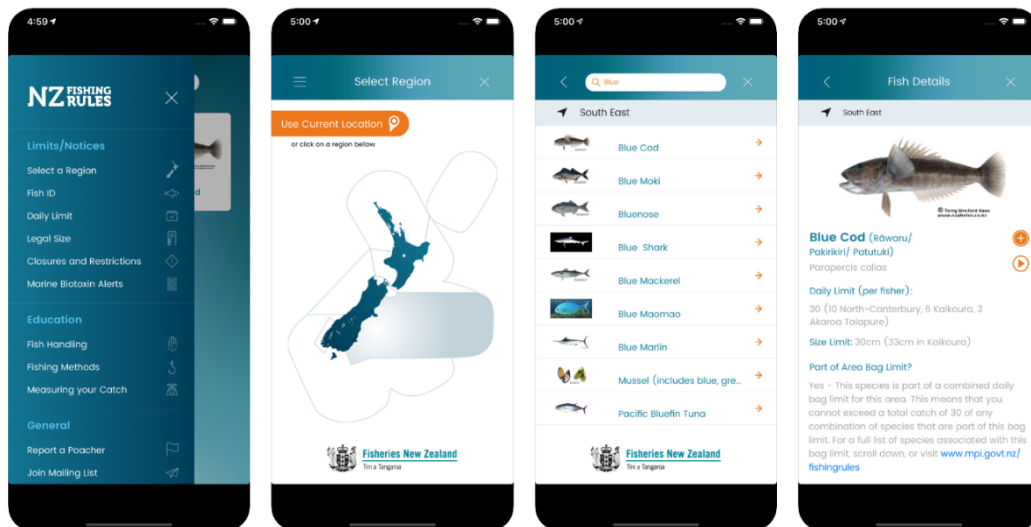


Figure 7: NZ Fishing Rules app

NZ Fish Data app – not currently available for public download

In November 2019 panel members from the Fisheries New Zealand National Panel Survey were invited to take part in a [trial](#) of a data-collection app called NZ Fish Data, with the intention of adding the information that was being collected in the survey to the app, to replace its text-message function.

This app is currently not available to the public for download. There are currently no updates available on how the trial is going, but this should be further explored.

The following summaries of self-reporting tools for recreational fishers in New Zealand were all sourced from the Hartill and Thompson (2016) publication, Review of Self-Reporting Tools for Recreational Fishers: New Zealand Fisheries Assessment Report.

Fisheries New Zealand National Panel Survey

The Fisheries New Zealand National Panel Survey is conducted (by the National Research bureau (NRB)) every five or six years to provide a snapshot of recreational fishing activity around the country. The most recent survey, conducted in a one-year period between October 2017 and October 2018, surveyed more than 30,000 people, and about 7,000 recreational fishers had their fishing outings recorded in a 12-month period.

The survey is part of a wider piece of research run with the NRB and the National Institute for Water and Atmospheric Research (NIWA).

Each person on the panel was regularly sent a text to ask if they had gone fishing. Frequent fishers were asked more often than occasional fishers. If a panellist replied to the text saying they had been fishing, an interviewer from the NRB called them at a suitable time to get more details, including species and quantity caught. Interviewers recorded the catch of each species by geographical area. That information was scaled up to a national catch by all fishers using standard statistical methods. However, protected species bycatch data is not collected.

The panel survey used best-practice methods, and results were confirmed by other surveys conducted by NIWA. To support the panel survey, NIWA staff were at popular boat ramps between North Cape and East Cape for approximately 60 days in 2017. Interviewers asked fishers if they would like to participate. If so, they asked what they had caught that day and measured the size of fish caught. NIWA also used low-flying aircraft on these days to count the number of boats on the water. This information was combined to estimate the total day's catch in that area. Researchers calculated the catch of each species in each area using a combination of the panel survey results, information from the boat ramps and boat count data. These surveys could potentially be modified to collect data on the nature and extent of marine protected species bycatch.

The survey results can be found [here](#).

Gamefish weigh-station records

Gamefish clubs in New Zealand have routinely kept records of fish passing through their weigh stations for almost 100 years, as well as kept records of tagged and released gamefish since 1975. Weigh-in records usually include information on the species of fish caught, their weights and the names of the anglers and vessels used (Holdsworth et al, 2014). But again, it does not include data on marine protected species bycatch.

This data source would be of further utility if fish-specific data were recorded on bycatch, species targeted when a fish was caught, time spent fishing, and location fished. No associated information is available on fishing effort.

Most of this data is currently held as paper records, although clubs are increasingly keeping electronic records.

New Zealand Cooperative Gamefish Tagging Programme

New Zealand also has a gamefish tagging programme, established in 1975, that relies heavily on fishers' self-reported catch/tag release data and club reporting requirements (Holdsworth and Saul, 2014). Focusing primarily on striped marlin, mako shark, blue shark, yellowfin tuna and kingfish, the programme's data has been used to infer the migratory behaviours of large gamefish and shark species, and kingfish growth rates. This programme collects data on dates and locations fished, and size information for 2,000-3,000 released fish per year and 50-60 recaptures from around the southwest Pacific Ocean, but does not include bycatch data

Data provided by all three of these sources of information on New Zealand's gamefish fishery (the gamefish tagging and billfish logbook programmes and the club weigh-station data) is provided to the Western and Central Pacific Fisheries Commission (WCPFC) to assist with southwest Pacific stock assessments for striped marlin. These programmes provide good examples of how a targeted self-reporting programme can provide data to address a specific management need and how data collection methods could be modified to include information on marine protected species bycatch

This is in part possible because of the relatively structured and defined nature of this fishery, which is centred on sport fishing club organisations with a long history of recording and publishing individual fish weights. Most other recreational fisheries are much less structured and definable.

Billfish Logbook Programme

The Billfish Logbook Programme is a voluntary scheme that has collected daily catch and effort logbook data from vessels targeting billfish since 2006. The programme is funded by MPI, and logbooks are distributed to fishing vessels intended to be used for recreational gamefishing for at least 10 days per year. About 1,000 fishing days and catches of 300-400 billfish are reported each season. Although the logbooks are paper based, they are sent in on a regular basis for electronic data entry, and the forms are scanned before they are returned to the skippers for their personal records. They do not record data on protected marine species bycatch, but again this is another potential vector for a longer-term view to ongoing data collection

Sport fishing clubs survey methods

The Hawke's Bay Sports Fishing Club started to collect catch and effort data from its members in 2006, via interviews on competition days conducted by club members. NIWA collects creel survey (angler survey) data at the same club ramp.

Boat crews participating in fishing competitions were interviewed at the end of their fishing trips to provide information on the names of the competitions in which they had participated and the dates fished, boats' names, number of anglers fishing from the boats, fishing types (bottom fishing, trolling, bottom longlining etc.) and the number of each species caught and released. But not protected species bycatch. Interviews were conducted on competition days to maximise the number of interviews completed per hour on the ramp, but were not conducted at other times, so the results are therefore unlikely to be representative of all fishing conducted during any given year.

None of the data collected on paper forms to date has been entered into an electronic database, although annual catch totals have been manually collated for at least the five most commonly caught species.

The Pania Surfcasting Club (current membership of 60-70 anglers) has kept competition catch records since 1955. They have been recorded electronically since 2006, using a variety of software.

Additionally, data for specific species is collected via gamefish club weigh-station records and the New Zealand Cooperative Gamefish Tagging Programme; however, bycatch is not included in the data, and the data relates only to the weights of competitive catches.

Individual anglers/small angler groups

MPIs report on [self-reporting tools for recreational fishers in 2016](#) shows that individual anglers and groups of fishers often keep records of their catches for their own interest or for competition purposes, and that more often than not this data is not shared – unless it relates to record setting or recording competition participation.

Analysis of existing self-reporting tools – Australia

The Tackle Box

Launched in late 2019 by the Australian Recreational Fishing Foundation, The Tackle Box app (Figure 8) provides fishers with a range of tools with which to plan offshore fishing trips, including: an interactive national mapping system that provides information on the locations of marine parks and real-time alerts to fishers when they are entering areas that they cannot fish; real-time ocean temperature feeds; and, most notably and the key focus of the app, a comprehensive recreational fishing reporting tool.¹⁵ However, it does not allow for recording of recreational bycatch of marine protected species.

This reporting tool utilises logging technology developed by Infish (Australia's flagship fishery data-collection system) to both collect data and collate it against key performance indicators to provide accurate information to governing bodies. It is designed to accept catch data from volunteers and any kind of recreational fishing tournament via its comprehensive fishing tournament app platform and management software.



Figure 8: The Tackle Box app – Australia

Range Extension Database & Mapping project (Redmap)

Redmap is an Australian science project, started in 2009, that encourages members of the public to report sightings of marine species that are uncommon in a particular area (Figure 9). The goal is to use the data, once enough is available, to track changes in the distribution of marine taxa in response to climate change.¹⁶

Although this project is not specifically dedicated to recreational fishers, it is aimed primarily at fishers and divers. The [Redmap website](#) provides an easy-to-use portal that participants can use to both upload their sightings and view sightings provided by other participants. A free smartphone app is also available for download, enabling data to be recorded and images of sightings uploaded.

¹⁵ Information compiled from the [Australian Recreational Fishing Federation](#) website (May 2020).

¹⁶ Information compiled from the Redmap website (May 2020) www.redmap.org.au.

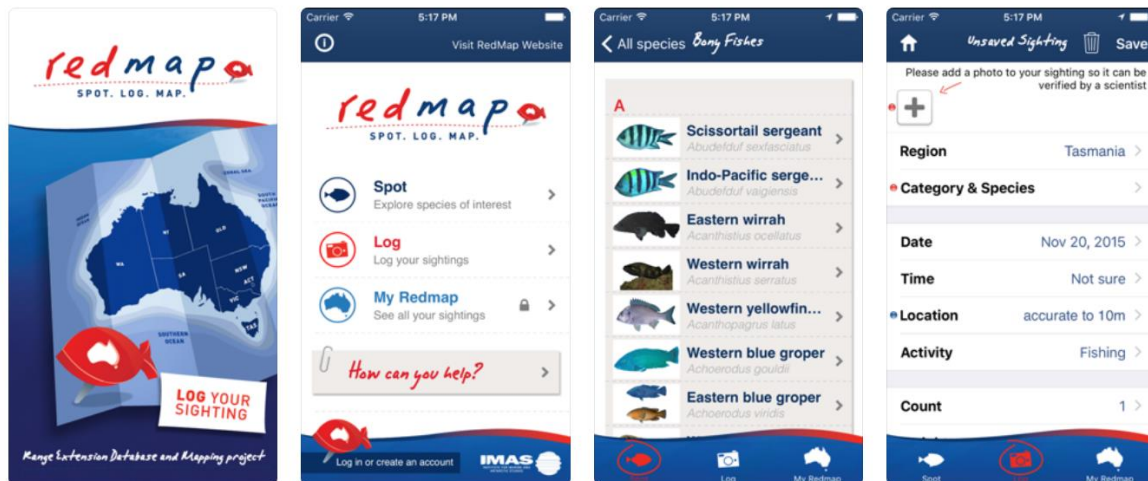


Figure 9: The Redmap app – Australia

There is widespread support for this programme within the science community, with funding provided by five federal/state agencies and scientific and logistical support provided by at least another 11 institutions. These institutions include science and resource management agencies, universities and museums. To date, 58 scientists are associated with the programme, of whom many will provide taxonomic expertise.

Members of the science community can also upload information to inform the public. Redmap reports that this reciprocal information-sharing approach creates a common portal for understanding the issue of climate change and its effects on the distribution of marine species.

Redmap also says that the resources that have gone into setting up and maintaining this programme have been considerable, but an initiative such as this is more likely to produce useful results and to endure if it is properly maintained and supported. The app does not collect data on protected species bycatch.

Redmap has an active [Facebook page](#), with almost 10,000 followers and approximately 3,000 members subscribed to a quarterly newsletter.

In America, an app called [Fishbrain](#) has good uptake with New Zealand recreational fishers, who can report catch numbers, location and bycatch. The Fishbrain global data set is one of the largest in the world, and it is shared with scientific research partners in both North America and Europe to better understand fisheries for management purposes.

2.4. Motivators for and barriers to gaining social licence for bycatch measurement

While these will need to be confirmed and explored during the stakeholder engagement process, the following potential barriers to gaining social licence for bycatch measurements have been identified:

Barriers for all groups

- Not involving stakeholders early in the process
- Engaging with selected stakeholders, not all stakeholders
- Taking a one-size-fits all approach; not tailoring engagement to each stakeholder group

- A lack of one single, easy-to-find, easy-to-use reporting method that is accessible to all
- A lack of understanding of bycatch, including what bycatch is, why it is an issue, what species constitute bycatch and why reporting is important
- A lack of leadership, ongoing education and clear communication about initiatives
- Low social/community acceptance of rationale
- A lack of alignment and/or consideration of customary fishing rights
- A lack of trust in governing organisation

Barriers specific to recreational fishers

- Issues relating to past data collection that never eventuated to anything of value
- Fishers not being able to attach any personal benefits to reporting bycatch
- A lack of convenience to self-report outweighs the benefits

Barriers specific to project stakeholders

- A lack of resources to ignite significant behavioural change
- Reluctance of recreational fishers to engage

Motivators for all groups

- Collective attitude that everyone needs to play a role in the greater good for New Zealand marine environment and give back to the ocean we fish in
- Regular feedback to demonstrate the value of the data collected
- Understanding what bycatch is and why reporting is important – this will require early and ongoing education
- Understanding of long-term benefits of reporting bycatch
- Social connection and community cohesion – united on issue
- Leadership and ongoing education from respected influencers
- Stakeholders feeling valued through early inclusion in the process, tailored engagement, and transparency
- Development of a robust, two-way relationship
- High degree of trust in governing organisation

2.5. Motivators and barriers to using data collection tools

While these will need to be confirmed and explored during the stakeholder engagement process, the following potential barriers to using data-collection tools have been identified:

Barriers for recreational fishers

- Logistical issues such as a lack of access to devices and/or internet/GPS
- A lack of understanding of how the data will be used
- A lack of trust in how reported information will be used
- Concerns about privacy
- Fear that self-reporting marine protected species bycatch data will result in increased restrictions on recreational fishing

Barriers for stakeholders

- Maintaining the interest of participating recreational fishers, as the use of the data they provide may be less evident than it would be for a programme maintained by their own fishing clubs or associations
- A lack of buy-in from recreational fishers
- A lack of buy-in or differing opinions from other stakeholders

While these will need to be confirmed and explored during the stakeholder engagement process, the following potential motivators for using data-collection tools have been identified:

Motivators for all groups

- Understanding of the value of data collection and how it will be used
- Contributing to the greater good of the recreational fishing sector, as well as to the New Zealand marine environment in general

Motivators for recreational fishers

- Easy-to-use tool
- Seeing others (i.e. peers and/or influencers) use data-collection tools and wanting to be part of the status quo
- Ability to report and contribute to wider cause, while also making personal records of catch data
- Sharing data with peers to foster social and/or competitive interactions

Motivators for stakeholders

- Acquisition of accurate, real-time data to inform more effective reporting
- Alignment of data collection across recreational fishing sector
- Sense of duty to drive responsible fishing through ongoing education on issues, long-term risks and mitigating solutions.

2.6. Categorisation of marine protected species

Marine protected species in New Zealand include:

- All marine mammals (including dolphins, seals and whales)
- All seabirds (except black-backed gulls) ([A Fisher's Guide to New Zealand Seabirds](#))
- All sea turtles
- Some coral species (black corals, gorgonian corals, stony corals, hydrocorals)
- Some fish species (black-spotted grouper, white pointer sharks, spinetail devil rays, manta rays, basking sharks, nurse sharks, giant grouper).

2.7. Stakeholder identification and mapping

DOC has tasked SenateSHJ with gathering insights from Treaty Partner and key stakeholders in the recreational fishing community for the purposes of developing an engagement framework. DOC will use the framework to guide a more direct engagement approach with recreational fishers during subsequent phases of its wider programme to better understand the nature and extent of marine protected species bycatch.

As previously discussed, the success of DOCs recreational bycatch programme will be determined by the level of social licence granted, and the breadth of information we are able to capture using interview and survey techniques.

The feedback we receive from Treaty Partner, key stakeholder representatives, and survey participants will be confidential and not attributed to, nor personally identify any individuals, groups, or organisations.

DOC stakeholders are separate to the Treaty Partner and defined as individuals, organisations and/or communities that have an interest in research processes and outcomes. A number of stakeholders have shown interest in this project, and we are contracted to conduct six one-on-one interviews.

Our stakeholder mapping exercise (Figure 10) has identified the top five high-value stakeholders who have shown support and have influence, gravitas, and existing networks that DOC can access and use as messaging conduits in the latter stages of the project. We have included the Treaty Partner in this mapping matrix exercise for the purpose of encapsulating all key parties, but acknowledge that they sit outside of the key stakeholders alongside DOC.

1. Fish Mainland
2. Tindale Marine Research Charitable Trust
3. New Zealand Sport Fishing Council
4. Southern Seabirds Solutions Trust
5. Terra Moana

Those in the top-right quadrants (and bolded in the figure legend) of the matrix below will be interviewed 'in person' or over Zoom due to their locations and the current COVID-19 restrictions. The remaining 11 stakeholders will be canvassed using the online survey.

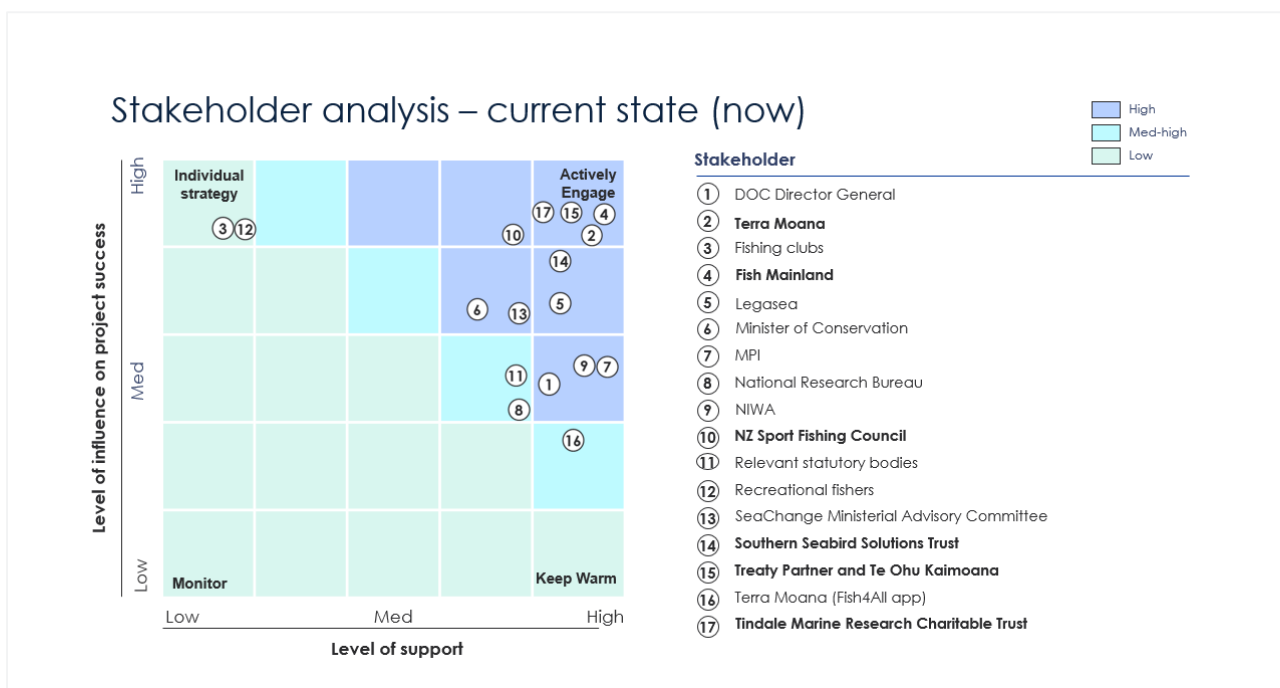


Figure 10: Stakeholder analysis – current state

It can be useful to re-run this exercise and map the journey with stakeholders over time. This would allow DOC to gauge the effectiveness of investment, actions and interventions and any changes in perceptions within the group.

Effective engagement involves personalisation and co-creation – don't go in with a solution

In Stage 2 the output from stakeholder interviews and the data collected from the survey will allow us to segment the target groups and develop appropriate messaging.

It has been shown that while community narratives and movements are important, the evidence highlights that developing highly relevant personal communication on specific issues for each target group will also be required (Vaa and Phillips, 2009; Tideman, et al; Simons-Morton et al, 2005; Australian Government Department of the Environment and Heritage, 2005; City of Chicago, 2012).

To ensure DOCs messaging resonates with stakeholders and recreational fishers, we recommend developing a message house for each segment (Figure 11).

The message house tool is an invaluable part of a communication toolkit. It will simplify and clarify messaging for DOC, making it easy to communicate consistently and effectively.

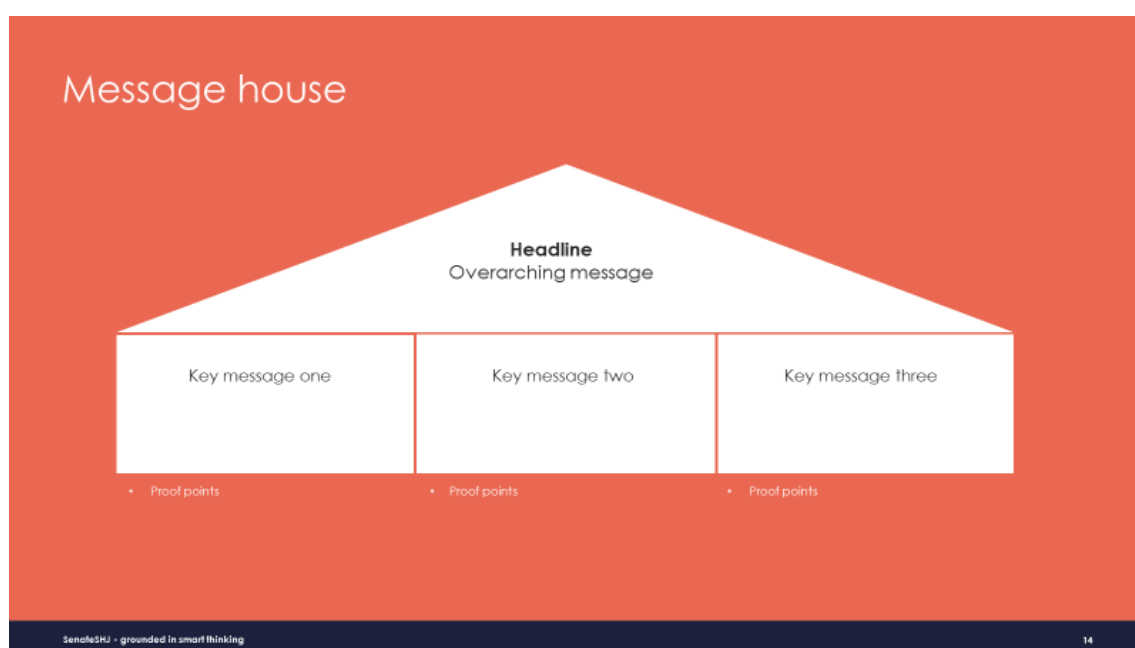


Figure 11: Message house template

Our engagement framework will be based on the best-practice principles for community-based social marketing:

- Changing behaviours, not just attitudes or knowledge
- Looking out over a long-term horizon
- Engaging with the intended audience
- Coordinating multiple messages, including for media
- Understanding barriers and behaviours
- Seeking feedback and evolving as required
- Integrating in relevant communities
- Considering the 4Ps of marketing where appropriate: Product, Place, Price, Promotion
- Changing social norms (where appropriate)
- Partnering with other organisations
- Tailoring strategies to address different barriers

3. RESEARCH APPROACH

3.1. Research methodology

To build on stage one of the project (design and build), stage two (consult and engage) will collect direct feedback from stakeholders on the motivations for and barriers to engagement and participation. This will be undertaken by conducting:

- Interviews with a cross-section of key individuals representing stakeholder interests
- An online survey with recreational marine fishers

We propose undertaking the interviews with Treaty Partner and key stakeholder representatives first, followed by the online survey with the recreational marine fishers. We expect that stakeholders will be able to provide further knowledge, experiences and/or an understanding of their own communities, to feed into and assist in the development of the online survey questionnaire – i.e. to ensure it is as relevant and fine-tuned as possible.

Below is an outline of the proposed approach for the interviews and the online survey.

Interviews with a cross-section of key individuals representing Treaty Partner and stakeholder interests

To collect feedback from Treaty Partners and stakeholders, SenateSHJ will conduct six interviews with key individuals who are representatives of the Treaty Partner, and recreational fishing community. In addition to Treaty Partners, the five participants have been selected to obtain a range of stakeholders representing different sections of the recreational marine fishing community.

The proposed six interview groups, and the rationale for their inclusion in this stage of the project, are as follows.

Organisation	Rationale for inclusion
1. Fish Mainland	Newly formed group that represents South Island recreational fishers
2. Te Ohu Kaimoana	Treaty partner that is a charitable trust representing the interests of 58 iwi for fishing and fisheries-related activities
3. Tindale Marine Research Charitable Trust	Initiated a New Zealand-wide inshore tagging programme that is citizen science based along with the support of the scientific fraternity, and is an expert in juvenile great white shark captures in the North Island
4. Terra Moana	New Zealand-based sustainability consultancy specialising in primary industries, especially fisheries and marine environments
5. New Zealand Sport Fishing	Recreational fishing in the highly migratory fish species arena (big sport fish charter trips)
6. Southern Seabird Solutions Trust	Heavily involved with seabird bycatch mitigation measures

Initial contact has already been made with the Treaty Partner and stakeholder representatives and they have stated that they are willing to take part in interviews (requests were emailed on 23 March 2020).

The process for undertaking the interviews will be as follows:

- We will recontact each representative and book a time for an interview. During this contact we will confirm:
 - if they would like to include other colleagues in the interview and, if so, confirm who
 - how they would like to take part in the interview, with the options being face-to-face (if they are based in Auckland, Wellington or Bay of Plenty), via a Zoom meeting or by providing written responses to the questions
- We will send out a summary of the knowledge we have to date on the questions that we are going to ask them, e.g. so that they have time to consider the potential motivators for, and barriers to, marine protected species recreational bycatch data collection
- We will conduct the interview, thank them for their time and convey the next steps
- We will analyse and report on the responses

Online survey with recreational marine fishers

To collect feedback from recreational marine fishers, we will conduct an online survey. The objective of the online survey will be to collect feedback from grassroots recreational marine fishers and to understand their points of view, after gaining our understanding from current literature and stakeholder representatives. In this survey we expect to gain feedback from a range of recreational marine fishers, including:

- Māori and non-Māori
- Younger versus older fishers
- Those who fish from boats versus from the beach (including surf casting, longline, electronic longlines, drop lines, hand lines, potting and netting)
- Those who fish regularly (e.g. weekly) versus less regularly
- Those who are new to marine fishing versus those who have been fishing for many years
- Those who run recreational/charter fishing boats/trips
- Those who are members/leaders of clubs versus those who are not members of clubs
- Those who may fish near marine reserves versus those who do not
- Those who may fish near coastal bird colonies versus those who do not

To collect the interviews, we will share the online survey via a list of recreational fishers (a list of approximately 2,500 subscribers collated by MPI), as well as via some select Facebook groups to gain fishers who may not be on the MPI list.

The MPI list of recreational fishers has been recruited via self-sign-up. These people have provided their email addresses to MPI to receive fishing-related updates. The email list is promoted at boat shows, in FNZ pamphlets and recreational fishing media, and via links on boating/fishing apps.

We are aware that those who have signed up to the MPI list are more likely to be club/body members i.e. more engaged fishers than others. Also, some of the contacts on the list will be club administrators who will forward the link to their subscribers – so the survey has the potential to reach more than 2,500 people.

We propose placing the survey link on Facebook pages that may be more likely to capture non-club members, such as the following Facebook groups:

- NZ Fishing Community (private group, 65,047 members)
- NZ Surfcasting and Rockfishing (public group, 28,942 members)
- Cheap boats and fishing gear for sale. NZ (public group, 45,462 members)
- Kontiki Fishing NZ (private group, 5,379 members)
- NZ Big Game Fishing (public group, 26,676 members)
- New Zealand Fishing World (80,570 likes)

The survey will contain screening questions to ensure we speak to those who are involved in recreational marine fishing and to what capacity. Those who are not involved in recreational marine fishing will be screened out of the survey e.g. we will screen out those who are only involved in commercial fishing and/or inland fishing.

The process for undertaking the online survey will be as follows:

- Develop the questionnaire with input from DOC and incorporating learnings from the desk research and stakeholder interviews
- Script the online survey, test it and run it past the project team as a final check
- Set up the social media post that will be used to deliver the online survey link to the Facebook groups. When working with MPI in the past using this approach, MPI has designed the post, with us providing the suggested text and feedback on the draft design. We suggest a similar approach, with DOC designing the post for this project
- Confirm the list of Facebook groups to contact. Post the survey on the public group pages and make contact with the administrator for the private groups
- Provide the email text and survey link to MPI to send to its list of recreational fishers. A test email will be sent from MPI to check everything is working as expected via its systems, before the full mailout. Note: we have been in contact with MPI to confirm the process for this
- After about a week from the first survey post/mailling, we will repost the survey and resend the link for those who have missed it or wanted to do it but did not at the time
- We will monitor the types of fisher who are responding (via the profiling and screening questions) and look for new avenues to post the survey if we feel the need to boost any sub-groups. MPI will also provide us with mailout statistics to monitor (i.e. from Mailchimp), such as how many email recipients have opened the survey email
- The survey will remain open for two or three weeks, depending on how many times we are able to repost the survey link
- Once the survey is closed, we will analyse and report on the findings with the use of charts and commentary

Note: Given the nature of data collection, the online survey will not be a complete representative sample of recreational marine fishers, and we will not be able to ascertain where the sample skews may occur. But we will gain valuable insights to address the survey objectives, based on a sample/mix of recreational fisher groups. We will interpret the survey data in more of a qualitative sense, rather than quantitative. Any quantitative findings will be described as "of the survey population" rather than "of the recreational marine fishers population".

3.2. Interview guides

In stage two (consult and engage) we will use a discussion guide for the Treaty Partners and stakeholder interviews, and a questionnaire for the survey of recreational marine fishers. Below are the proposed outlines for the discussion guide and the questionnaire. The full guide and the questionnaire will be developed from these outlines in stage two of the project, for discussion with, feedback on and approval for use from DOC.

Treaty Partner and stakeholder discussion guide – a draft outline

We propose that the discussion guide for the interviews includes the following sections/topics. We have included some example questions. These will be refined and expanded for the draft discussion guide, which will be provided to DOC for feedback and approval.

Proposed sections:

1. Introduction and overview of the project and interview
2. Stakeholder overview:
 - a. What is your role in your organisation?
 - b. How long have you been involved in the recreational marine fishing sector? And in what capacity/s?
 - c. What types of marine fisher can you provide insights into or knowledge of? And what is this knowledge based on?
 - d. What is your organisation's interest in marine protected species bycatch? If anything? And why?
 - e. Is your organisation happy to support DOC in its engagement with recreational fishers to collect data on marine protected species bycatch?
 - i. If yes: How do you see this could work?
 - ii. If not: Why?
3. Bycatch knowledge
 - a. Do you know much about marine protected species recreational bycatch issues?
 - i. If yes: What do you see as the issues in your words?
 - ii. If not: Explain
 - b. Do you think recreational marine fishers are very aware of the issue? Does it vary among fisher groups? In what way?
 - c. Do you think fishers use the term 'bycatch'? Do they use other terms?
 - d. How knowledgeable do you think fishers are about the different protected marine species? What species are they more/less aware of? Why do you think they are mostly knowledgeable/unknowledgeable?
4. Bycatch attitudes and experiences

To what extent do you think recreational fishers (probe why for each topic):

 - a. Believe that marine protected species bycatch is an issue?
 - b. Understand the issue/information?
 - c. Care about this topic?
 - d. Consider their impacts on protected species numbers?
 - e. Need more information?
 - f. Would seek more information on the bycatch issue?

- g. Believe recreational fishers contribute to the issue?
 - h. believe they have a role to play in reducing the amount of bycatch?
5. Motivators for and barriers to participating in bycatch data collection
- a. Does your organisation/do you think it is important for DOC to monitor the nature and extent of recreational bycatch of marine protected species?
 - b. Do you think fishers would be prepared to provide information (e.g. via a phone app or website) if they accidentally caught, killed or injured protected marine species?
 - i. What types of fisher would be more likely to do this? Or less likely?
 - ii. Why would they? [Show list of motivators as talking points and to see if we have missed anything]
 - iii. Why wouldn't they? [Show list of barriers as talking points and to see if we have missed anything]
 - c. What do you think would be the best way/messages to encourage fishers to provide bycatch information to DOC?
 - d. Do you think these types of statement would encourage fishers:
 - i. To ensure sustainable recreational fishing? [Note: simplify wording]
 - ii. [Full list to be developed]
 - e. How important would it be for fishers to know each of the following?
 - i. More about protected marine species
 - ii. More about which protected marine species are in their fishing areas
 - iii. More about the number, type and outcomes of protected marine species in their areas
 - iv. That DOC is working with a range of partners on this issue e.g. iwi, MPI, NIWA
 - v. Monitoring bycatch numbers is about the conservation of protected marine species, not about punitive actions against fishers
 - vi. DOCs engagement with the wider fishing community on the recreational bycatch issue is a long-term solution
6. Data-collection methods
- a. One of the ways that fishers could provide information on any recreational bycatch would be via a phone app. Below are some examples of how this could be done. [Develop examples based on a standalone bycatch app, bycatch reporting within the current Fish4All app, bycatch reporting within the NZ Fishing Rules app, bycatch reporting on the DOC website, etc.]
 - i. What do you think of each of these options?
 - ii. What do you see as the pros and cons of each?
 - b. What do you think would be the best option?
7. Stakeholder engagement
- a. We currently see the following as the key stakeholders for engaging fishers on the bycatch issue. Do you think anyone is missing?
 - b. How would you prefer DOC to engage with your organisation on the bycatch issue?
 - c. Are there any key stakeholder networks, communication channels and feedback loops that DOC should use?
 - d. What do you think is the best approach to establishing a working group to ensure continued stakeholder engagement? Do they think it valuable to establish a working group?

There will also be other topics/questions that will be specific to each stakeholder. We will develop a list of these for the discussion guide.

Online survey questionnaire – a draft outline

We propose that the online survey with recreational marine fishers include the following sections. Note that when we write a survey for the general public, we use simple language that is easy to understand.

• Section 1: Screening

- This section will ensure that only people who are recreational marine fishers or involved in the sector (e.g. charter boat crew) go through to the survey questions.
- The main screening question will be along the lines of:
 - *In the past 12 months, have you taken part in any of the following activities in New Zealand marine environment?* [Applicable activities will be listed in rows] [This question will also be used as a profiling variable when we analyse the data]
- We will also ask profiling questions associated with the question above, such as:
 - *How often are you out fishing in the New Zealand marine environment? Please think about and include all the activities you chose in the previous question.* [We may split the answer columns by warmer/cooler seasons]
 - *How long have you been fishing?* [Scale: Last 5 years, 5-10 years, 10-20 years, more than 20 years, most of my life]
- Note: Other profiling questions will be asked at the end of the questionnaire

• Section 2: High-level values and motivations

- Before introducing the topic of recreational bycatch of marine protected species, this section will seek to understand some of the high-level motivations for undertaking recreational marine activities. This will assist in understanding broader motivations among fishers and how they vary versus other variables
- Below is an example question.
 - *Which of the following statements best describes what you value about your fishing activities overall? (Please select up to three)*
 - *Providing a source of food*
 - *Getting away from everyday life/routine*
 - *Passing on my knowledge or teaching others*
 - *Socialising with friends and family*
 - *For the physical exercise*
 - *For fun or excitement*
 - *For the challenge and sense of achievement*
 - *Being outdoors*
 - *Something to look forward to*
- We will also include another question to understand environmental/ecology/biodiversity attitudes

- **Section 3: Bycatch knowledge**

- This section will be used to gain an understanding of fishers' knowledge of bycatch. The first question will be an open response question to see if the term 'bycatch' or related words emerge, as well as where bycatch sits relative to other concerns. This will be followed by more direct questions such as the following:
 - *For you personally, what are some of the biggest issues in the marine areas where you fish? They could be things that affect you or things that you are concerned about [Open response]*
 - *What comes to mind when you hear the term 'bycatch' in relation to fishing?*
 - *To what extent do you understand what is meant by the term 'bycatch'?*
 - *To what extent would you know if you'd caught a protected marine species?*
 - *Please name the protected marine species that come to mind:*

- **Section 4: Bycatch attitudes and experience**

- This section will be used to gain an understanding of fishers' experiences of and attitudes towards bycatch. Examples of the types of questions to include in this section are the following:
 - *'Bycatch occurs when protected marine species (i.e. xxxx) are caught in nets, pots, or on lines.' To what extent do you think this is an issue in New Zealand?*
 - *How often would you say you accidentally catch protected marine species? [Scale: Most fishing trips, some fishing trips, a few fishing trips, very few or no fishing trips]*
 - *'Bycatch is an issue because... [Add simple/concise explanation].' To what extent do you... [List: believe this information – that bycatch is an issue, understand this information, care about this topic, consider your impacts on protected species numbers, need more information on the bycatch issue, believe recreational fishers contribute to the issue, believe you have a role to play in reducing the amount of bycatch, etc.]*
 - *For those who do not understand, believe, care, consider impacts, etc: Why do you not understand, believe or care? [Open response]*
- *To what extent do you think it would be possible to reduce the amount of marine protected species bycatch caught by recreational fishers?*

- **Section 5: Willingness to participate (including motivators and barriers)**

- This section will be used to understand fishers' willingness to participate in reducing bycatch numbers via questions such as the following examples.
 - *Do you think it is important for DOC to monitor the nature and extent of protected marine species bycatch in recreational fishing?*
 - *If yes: Would you be prepared to provide information if you accidentally caught a protected marine species (e.g. via a phone app or website)? [Scale: Yes, maybe, no]*
 - *If no: Why not? Please list all your main reasons [Open response]*
 - *To what extent would you worry about the following if you did provide information to DOC when you caught a protected marine species? To what extent would you be worried that... [List:*

- you may be fined
 - your fishing rights may be taken away
 - your location might be identifiable
 - your privacy may be violated
 - [full list to be developed]]
- To what extent would the following be good reasons for you to provide information to DOC, if you accidentally caught a protected marine species?
 - To contribute to a reduction in catch of protected marine species (simplify wording for questionnaire)
 - [Full list to be developed for questionnaire]
- How important would it be for you to know each of the following? To know... [List of statements to refine/develop]:
 - more about the marine protected species
 - more about what marine protected species are in your fishing area
 - more about the number, type and outcomes of marine protected species in your area
 - that everyone is working together, i.e. fishers, DOC, iwi, MPI [Complete list]
 - that monitoring bycatch numbers is about the conservation of protected marine species, not about punitive actions against fishers
 - that DOCs engagement with the wider fishing community on the recreational bycatch of protected marine species is a long-term solution
 - the long-term benefits of reporting bycatch
 - how the data will be used
 - how the data will help recreational fishers
 - how the data will help New Zealand biodiversity goals
 - regular feedback on the bycatch data, including what DOC is learning from the data
- **Section 6: Preferred communication method**
 - One of the ways that you could provide information on any bycatch would be via a phone app. Below are some examples of how this could be done. Please read each option and let us know how likely you would be to use each. Please weigh up everything in terms of your motivation, ability to do so, opportunity to do so, etc. [Develop examples based on standalone recreational bycatch app, recreational bycatch reporting within current Fish4All app, recreational bycatch reporting within NZ Fishing Rules app, bycatch reporting on DOC website, etc]
 - If one/some options chosen: What do you like about this/these option/s?
 - If none chosen: What are your key reasons for not using these options? We are really interested in your honest responses
- **Section 7: Final respondent profiling questions**
 - This section will be used to collect other profiling information for each survey respondent, such as:
 - current fishing apps used e.g. Fish4all, NZ Fishing Rules
 - ethnicity
 - age group
 - gender

- club membership
- those who fish near marine reserves
- do you have a mobile phone that is connected to the internet?
- do you regularly use apps on your mobile phone?
- etc

4. PROJECT RISKS

4.1. Identification and mitigation of potential project risks

SenateSHJ's sole focus is on consulting the Treaty Partner and stakeholders to develop and recommend an engagement framework for DOC. Sequencing is important and there is a dependency on the success of each phase, particularly stage two when we will use the insights and data we collect to start building the foundation for the engagement framework.

In stage one (design and build), the project draws on a combination of insights from existing research (desktop), and in stage two (consult and engage) on interviews with Treaty Partner and five stakeholders, and a survey of recreational fishers.

The final deliverable in stage three (analyse and construct), an engagement framework, is heavily dependent on the success of stages one and two.

We have identified and documented a set of risks and associated mitigations in Figure 12. We acknowledge that it is difficult to eliminate all risks and some risks may change status and become issues. We are committed to working closely with DOC and flagging any new emerging risks or issues as they arise.

Risk	Mitigation
Timeline slips leading to project milestones not being met	Regular communication with and open access to DOC project lead if project slippage is occurring
Scope creep leading to budget deficit	SenateSHJ team closely adheres to the defined deliverables and milestones defined in the contract
Low uptake of survey by fishers resulting in lack of data	Survey is well designed and promoted through appropriate channels used by fishers
Failure to recruit appropriate individual interviewees leading to low quality knowledge gathering	Collaboration with DOC project lead and sign off on top 6 interviewees
Insights are not identified leading to poor quality reporting	Interview guide will be prepared in line with the objectives of the research and ensure the DOC project lead has the opportunity to provide input and sign off. Best practice interviewing techniques will be applied.
Capability and capacity of SenateSHJ project team to deliver	The Navigators have over 25 years experience and have worked closely with SenateSHJ on numerous projects. Jeremy Gardiner is an experienced consultant who regularly works alongside SenateSHJ on issues specific to Māori.

Figure 12: Risks and mitigations table

5. APPENDIX ONE

Table 6. Guidelines for implementing Ecosystem-Based Management in a hypothetical coastal fishery

COMPONENT	INVOLVING	INTENDED OUTCOMES
1. Identify stakeholder community.	<ul style="list-style-type: none"> Fishery management agencies, conservation agencies, conservation NGOs, local community groups, scientific/academic research community, fisher associations or cooperatives, higher and lower levels of government, fish processing / distribution groups, indigenous representatives. 	<ul style="list-style-type: none"> A formal network of interested parties with whom the fishery representatives will participate to prepare and review the management of the fishery. A transparent and fully accountable process enabling the participation of all interested parties in the process of managing the fishery.
2. Prepare a map of ecoregions and habitats.	<ul style="list-style-type: none"> Conducted by the fishers, research community, fishery managers, stakeholders and partners. Covers the full area of fishery operations. The focus is on areas where the fish are, where they are fished, and any specific spawning, nursery or similar obligate habitats or locations. High resolution is needed in benthic primary producer habitats (such as algal beds, seagrasses, mangroves, coral reefs). 	<ul style="list-style-type: none"> Maps of the ecosystems throughout the fishery at scales of resolution consistent with the scale of the fishery. Resolved habitats at a scale consistent with the potential impacts of the fishery. Coherent with other ecosystem classification initiatives (at both larger and smaller scales). Major features and exceptions documented (e.g. highly migratory species, oceanographic currents or features, boundary mismatches between taxa). Major uncertainties identified and documented as guidance for research and investigation programs.
3. Identify partners and their interests / responsibilities.	<ul style="list-style-type: none"> Conservation, environment protection, and coastal planning agencies from all levels of government. Major users and managers of other, possibly co-located, resources (e.g. tourism, mining, oil/gas, transport, and communications). Directly affected local communities. 	<ul style="list-style-type: none"> Clarify specific roles and responsibilities for management in the marine environment. Engage with other supportive interests. Promote the opportunity for coordination and integration, improved efficiency across government and better outcomes for marine management, better agency outcomes for lower cost, more accountability in government, more effective long-term solutions to marine ecological problems, and shared approaches to problems held in common.
4. Establish ecosystem values.	<ul style="list-style-type: none"> Fishers, research community, fishery managers, stakeholders, partners and the public; designed to identify all major uses and all major natural and ecosystem values throughout the area where the fishery operates. 	<ul style="list-style-type: none"> A detailed distributional analysis of the main attributes of the ecosystem where the fishery operates. A clear and agreed expression of the natural and use values, which could include: <ul style="list-style-type: none"> highly valued habitats; representative areas dedicated as reserves; protected species feeding, breeding, or resting grounds; fishing, spawning grounds, recruitment areas and migration paths for commercial species; highly productive areas such as upwellings; areas popular for recreational fishing or diving; areas used for ports and harbours; areas of high scenic and wilderness amenity; high cultural and historic value; traditional hunting grounds for Indigenous peoples; areas of high tourism value; areas used for dumping of dredge wastes, defence training etc.
5. Determine major factors influencing ecosystem values.	<ul style="list-style-type: none"> Establishing cause-effect relationships; consider factors both internal and external to the fishery management system. Conducted by the fishers, research community, fishery managers, stakeholders and partners. 	<ul style="list-style-type: none"> Identified hazards to marine ecosystems and their values from the full range of actual and potential human impacts that occur in the fishery region. These could include: <ul style="list-style-type: none"> extent of loss/damage of marine habitats; effects of specific fishing gear on benthic habitats; effects of pollution from coastal rivers on inshore

COMPONENT	INVOLVING	INTENDED OUTCOMES
		habitats; - risk of marine pest invasion and disruption to critical habitat or fishing operations; - effects of the removal of the biomass of harvested species (in all fisheries) on trophically dependent species.
6. Conduct Ecological Risk Assessment (ERA).	<ul style="list-style-type: none"> • ERA conducted with participation of all stakeholders and partners, fishers, research community and the fishery manager: • uses broad multi-disciplinary knowledge base; • identifies key areas of uncertainty; • open for public scrutiny and review; • fully peer reviewed by independent authorities. 	<ul style="list-style-type: none"> • Agreed estimates of high, medium and low risks of the fishery to the ecosystem values identified in step 5, such as the risk of the fishery to protected species, and to the ecosystem, habitats, species and genetic diversity.
7. Establish objectives and targets.	<ul style="list-style-type: none"> • Fishers, research community, fishery managers, stakeholders and partners. • Performance objectives and targets established for: <ul style="list-style-type: none"> - high and medium priority risks from the ERA; - important aspects of the ecosystems (including protected species, critical habitat); - stocks. 	<ul style="list-style-type: none"> • Agreed and shared goals for specific elements of ecosystems. • Specific performance objectives and targets for important elements of the ecosystem. • Objectives and targets that are comprehensive and precautionary in terms of valued aspects of the ecosystems. • Could include: <ul style="list-style-type: none"> - maintaining or recovering population sizes of protected species; - maintaining the distribution, area, species diversity and trophic structure of important habitats; - reducing fishing effort in specific areas to help protect populations of benthic fauna; - increasing the distribution and diversity of benthic fauna considered to be affected by fishing; - rehabilitating marine ecosystems to a past (healthier) condition.
8. Establish strategies for achieving targets.	<ul style="list-style-type: none"> • Fishers, research community, fishery managers, stakeholders and partners. • Focus is on identifying appropriate and workable strategies to achieve objectives and targets, and on specific capacity matched to responsibilities for implementing strategies. • Strategies designed based on best understanding of the cause-effect relationships developed in Step 5, and matched to highest priority needs for corrective actions identified in Step 6 (ERA). • Use of incremental strategies where necessary and unavoidable. 	<ul style="list-style-type: none"> • Series of prioritised strategies that define workable activities and responses to achieve specific objectives and targets identified in Step 7. Includes who is responsible, what funds and time frames are involved, what controls are needed and where data/outcomes are reported and assessed. • Strategies could include: <ul style="list-style-type: none"> - declaring a network of sanctuary protected zones; - establishing buffer zones where only specific uses, or types of fishing, are permitted - research on improving gear design to reduce impacts on a sensitive habitat, or reduce the bycatch of an important species; - improved fishery-independent monitoring of catch, or bycatch; - reducing pollution from coastal rivers; - constructing fish escapement panels in trawl nets to avoid catch of a certain type and size of fish, or to reduce overall fish bycatch; - implementing an industry code of practice to reduce risks of bait discards to bird populations.
9. Design information system, including monitoring.	<ul style="list-style-type: none"> • Fishers, research community, fishery managers, stakeholders and partners. • Focus is on capture of appropriate data/information 	<ul style="list-style-type: none"> • Efficient and effective fishery information system that provides data and information on stock and ecosystem performance (additional to information

COMPONENT	INVOLVING	INTENDED OUTCOMES
	<p>to determine if :</p> <ul style="list-style-type: none"> strategies are working as expected; objectives and targets are being achieved; cause-effect models are correct; fishery impacts are being reduced. <ul style="list-style-type: none"> • Collaboration and contributions from partners identified. 	<p>needed for stock management); identifies specific effects of fishery strategies on ecosystem values. Could include:</p> <ul style="list-style-type: none"> - Periodic mapping of important habitat distributions; - Population census of important protected species; - Species diversity in fished habitats; - Distribution of fishing effort by gear types and fine spatial scale; - Size/age classes in harvested species; - Species diversity in closed areas.
<p>10. Establish research and information needs and priorities.</p>	<ul style="list-style-type: none"> • Fishers, research community, fishery managers, stakeholders and partners. • Focus is on identifying specific high priority areas of uncertainty, and on quality science outcomes, for both stock and ecosystem issues. • Collaboration and contributions from partners identified. • Research strategies are fully peer reviewed or independently audited. 	<ul style="list-style-type: none"> • Comprehensive research programs targeted at resolving key ecosystem and stock issues in the fishery. Could include: <ul style="list-style-type: none"> - habitat mapping; - impact of fishing on specific habitat types; - effects of coastal development on recruitment of harvested species; - design of monitoring programs to resolve important changes in habitats; - biological data of key species (both utilised and non-utilised); - determining the dietary preferences of harvested species and their major predators; - species composition of bycatch with different gear types used in the fishery.
<p>11. Design performance assessment and review processes.</p>	<ul style="list-style-type: none"> • Fishers, research community, fishery managers, stakeholders and partners. • Focus is on a process that is participatory and inclusive. • The locations, timing and resourcing enables partner and stakeholder participation in reviews of performance of the fishery in relation to stock and ecosystem values. • Performance outcomes peer reviewed by independent authorities. 	<ul style="list-style-type: none"> • Periodic (but regular) forum for discussion, review and assessment of fishery performance by partners, stakeholders and the public. • Periodic (but regular) forum for review, assessment and revision of monitoring data, objectives and targets by stakeholders and partners.
<p>12. Prepare education and training package for fishers.</p>	<ul style="list-style-type: none"> • Fishers, fishery managers, extension experts and stakeholders and partners. 	<ul style="list-style-type: none"> • Outreach program to provide training and support for fishers about new fishery management, ecosystem or other EBM initiatives, and provide local technical support for assessment and resolution of ecosystem issues; to commence at the time of Step 1.

Source: Ward T, Tarte D, Hegerl E and Short K. (2002). Policy Proposals and Operational Guidance for Ecosystem-Based Management of Marine Capture Fisheries. Published by: WWF Australia.

Better Conversations on Road Risk

Template engagement plan

Once you have used the [Speed Management Guide](#) and your [Speed Management Map](#) to identify priority intervention areas, it's time to engage with stakeholders, the community and media.

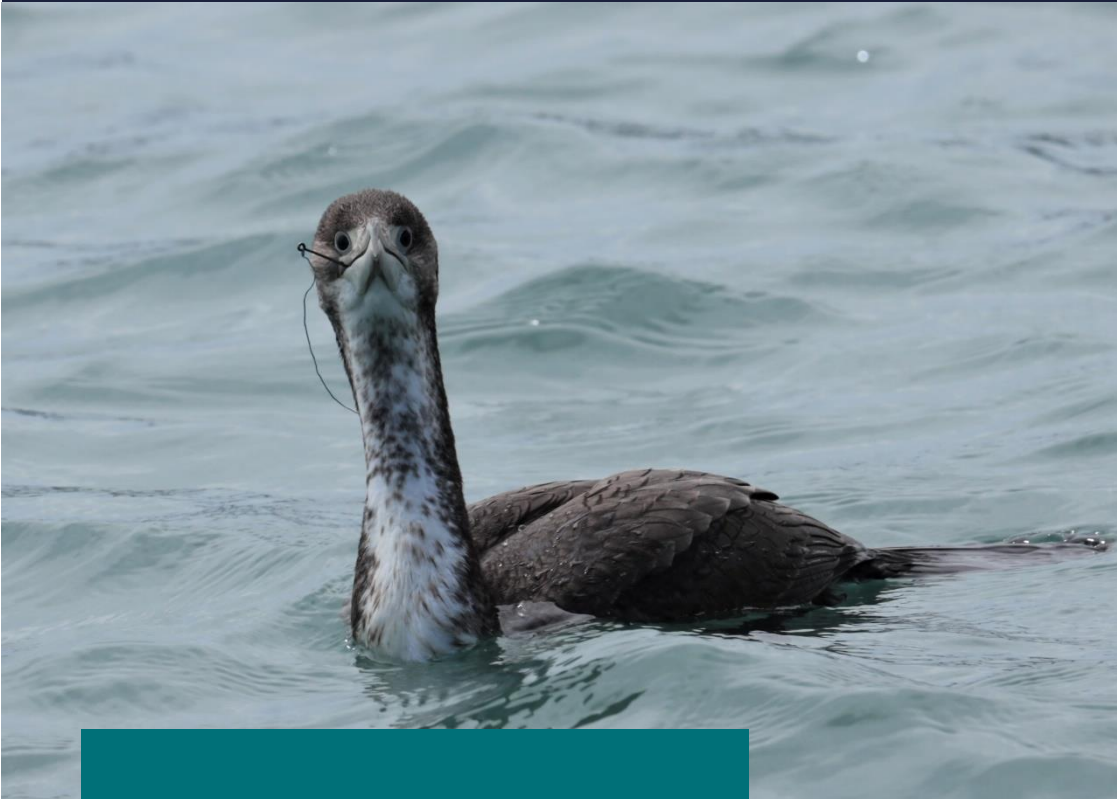
Road Controlling Authorities should ensure their activities are aligned with the [five principles of engagement](#), which have been developed based on a review of successful engagements in communities around New Zealand. These are:

- Lay the groundwork, and take your time
- Listen, really listen
- Engage many voices
- Get out there, tell the story
- Keep it up

Stage	Suggested activities	Desired outcome
1	Set aside your preconceptions about the solution for your proposed intervention area	You are prepared and ready to engage with communities before final decisions are made
2	Identify which communities you want to engage with, as part of your community engagement These may include those who live alongside the road and/or those who use the road. You could consider whether these communities are rural or urban and how they normally use the road	Have a list of communities and stakeholders so you can begin to engage with them early
3	Identify your key stakeholders and form a working group of key stakeholders, as part of your stakeholder engagement	Know who your key stakeholders are so you can begin to engage with them early
4	Conduct a media audit as the first stage in your media engagement, with a particular focus on local media	Know which journalists are talking about road risk, who their sources are and what they're talking about Have a better understanding of public perceptions of road risk
5	Find out more about communities' perspectives on speed, roads and speed management. This may involve conducting research or meeting with key community stakeholders	Understand what the community thinks about road risk to inform your development of any proposed interventions
6	Articulate what you want to engage about and why Use statistics from your area and region, facts about speed and research on perceptions of road risk to demonstrate why this intervention area is important	A clear rationale for engagement and some key messages that you'll be using to engage

	<p>The programme's core story could also inform your messaging</p> <p>There are guidelines to help you engage positively with your community</p>	
7	Choose your engagement tactics	An agreed set of tactics that you will use to reach your audience
8	<p>Plan where, when and how you will carry out the engagement</p> <p>Make sure this is informed by your engagement with communities, stakeholders and media</p>	A detailed strategy for your engagement activities, which can be adapted over time in response to more information
9	<p>Prepare your engagement materials. These may include posters like the one used for the Waikato Demonstration Project.</p> <p>The following resources have also been prepared:</p> <ul style="list-style-type: none"> • Generic poster about speed and road risk • SH33 poster – localised information about specific consultation [link] • Talking points booklet [link] • Q&A bank [link] • Draft questionnaire [link] • Case studies [link] • Waikato Demonstration Project • Arguments you might hear (and responses to them) <p>If you would like to get other resources developed, please contact us</p>	A set of resources to facilitate strong engagement with your communities and stakeholders
10	Promote your engagement activities. This may involve sending a press release, using marketing tactics like letter drops or advertising through social media	Communities and stakeholders are aware of your engagement activities and the types of issue that will be discussed
11	Review how your engagement went, and reflect your conclusions back to the community in the form of a report or presentation to tell them what you found out	Learn lessons from your engagement and show the community and your stakeholders that their perspectives are being reflected in your findings
12	Once you have been informed by your engagement, it is time to begin formal consultation	Effective engagement has created the right environment for consultation
13	<p>Keep stakeholders, the community and the media informed as the consultation and decision-making process continues</p> <p>Long-term goals of engagement include:</p> <ul style="list-style-type: none"> • deeper ties to the community • building long-term relationships <p>identifying and fostering advocates for change within the community</p>	Communities and stakeholders remain informed about the intervention process, and supportive of the eventual decision

Appendix 2 - One-on-one interviews with Treaty Partner and key stakeholder groups



Stakeholder
engagement in
assessment of
recreational fisheries
bycatch of marine
protected species

IDI Summary July 2020

Summary of stakeholder interviews

This document contains information gathered by SenateSHJ during stage two (consult and engage) of the project; Planning for stakeholder engagement in assessment of recreational fisheries bycatch of marine protected species.

Six in-depth interviews were conducted with representatives from nominated stakeholder organisations. The organisations were selected from a wider stakeholder group during the stakeholder mapping exercise in stage one.

Each interview followed an interview guide co-designed specifically for this project and signed off by DOC. (Please refer to page 13, Appendix One - In-depth interviews: Discussion guide)

SenateSHJ reported some high-level preliminary findings from the in-depth interviews to DOC on 13 July which included:

- Bycatch is a known issue by all participants, size of issue is unknown, no single reporting method.
- Awareness of issue with recreation fishers (RFs) can be location specific, is variable as is their understanding of what is protected.
- The term bycatch can be used to describe incidental catch or associated with dumping by commercial fishers (CFs).
- Most interviewees thought there is a degree of othering with RFs who think CFs are the culprit - lack of awareness of the overall cumulative catch.
- All participants agreed with the list of motivators and barriers we tested with them and suggested adding citizen science as motivator.
- All agreed that punitive measures will lead to lower reporting.
- There were mixed views on fishing apps, and which one is best and general support for an 0800 number and the effectiveness of boat ramp surveys
- Boat Ramp surveys were popular and two comments that RF survey data is flawed due to over and under reporting.
- All participants supported DOC's objectives and were willing to collaborate or partner with DOC and other relevant government agencies however, there were strong reservations about DOC's reputation, especially with RFs who are also hunters due to 1080 and the recent Thar cull.

The table below on page 3 shows a summary of information gathered from questions in section one about the participants background and their views about DOC collecting data on recreational fisheries bycatch of marine protected species (RFBMPS).

Information gathered from participants in sections two to six has been summarised and themed to notionally represent overall themes.

All participants were happy to be referenced stating that their views were already known and, in some cases, discussed with Karen Middlemiss or have already been made publicly in other forums.

Question	Response
<p>Six participants Selected based on their depth of knowledge and level of influence within the sector</p>	
<p>1. High level stakeholder overview</p>	
<p>Randall Bess Fish Mainland (Via Zoom)</p>	<ul style="list-style-type: none"> • Dr Bess has deep experience in the fisheries sector, working for several decades in NZ and overseas on fishing policy and is currently an advisor for Fish Mainland – a not-for-profit organisation that aims to provide a unified voice for the marine recreational fishing community in the South Island and Stewart Island. • A recreational fisher (RF) himself he can provide insights and knowledge about boat based, shore and charter fishing. • Dr Bess <i>doesn't see why DOC shouldn't monitor recreational fisheries bycatch of marine protected species (RFBMPS) – 'Sure why not! It happens'</i> and is happy to support DOC in its efforts but cautions about the biases that may exist in the MPI database of self-selected and non-random RFs. • He feels RFs are hard to engage with on this topic, is concerned about data collection of RBMPS by DOC and questions <i>'why RFs would give their data to DOC'</i>. • DR Bess thinks customary fishing rights are central to NZ culture and a number will think it is their birth right to fish for a decent catch.
<p>Jill Gower Southern Seabird Solutions</p>	<ul style="list-style-type: none"> • Southern Seabird Solutions (SSS) is an innovative alliance (conservation partnership) between NGOs, environmental, government and seafood industry organisations and is an important part of WWF's campaign to protect New Zealand's endangered seabirds. • SSS are heavily involved with Commercial Fishing Sector (CFS) to protect New Zealand seabirds. <i>'There is a perception that we are only plugging one hole when there is another – tensions were high and intense belief that working together is the way forward'</i>. • There is no 'one org' for engaging with rec fishers and 90% of the initiatives have been for CF. Southern Seabirds see RBMPS as an important issue and split their \$600K funding 3 ways – CF, RF and internal initiatives. • Marty Bowers is supportive, Scott Tindale is supportive and lots of volunteer hours worked, days and weekends but <i>'some fishers don't give a toss – birds are very inconvenient and get in the way of catching fish'</i>. • Jill does not fish herself but does deal with many segments of RFs; boats, game/sport, catch and release, dinner fishers, wharf and set net fishers and does get intel from those on boats – birds follow the boats in Hauraki Gulf and can be identified as deep water and water sitters and those going for baited hooks. • SSS supports DOC efforts with monitoring RFBPMS and thinks their research bent would be useful on the ground mapping out the puzzle but there is some concern about DOC's reputation with specific groups. <i>'There are some problematic characters e.g. the 1080 haters, the crusty old white people so it would be good for DOC to think about who would be least problematic to deal with. Need good representation; too easy to get a bunch of over 50s, Pale Male and Stales in a room'</i>. • Jill considers customary rights and important topic and has had great engagement with the Great Barrier Iwi where there is a good charter fishing project running with local Māori – <i>'more story telling would motivate Māori and charter fishers but was shot down by the steering group'</i>.

<p>John Holdsworth NZ Sport Fishing</p>	<ul style="list-style-type: none"> • John is a contractor, based near Tutukaka in Northern New Zealand and is representing NZ Sport Fishing whose membership of 30,000 includes several deep sea/deep water fishers who troll for marlin and tuna. Used to have more charter boat members who used to pull into wharves and record catch but has seen a drop off and a change to a fleet of larger trailer boats. • Since he was young, John has been a keen RF and member of a number of Ministry of Fisheries groups. He established Bluewater Marine Research Ltd in 1997 (23 years) with Peter Saul and prior to that John was with MAF for 11 years. • John is can speak about most fishing types from diving to onshore and is well connected – sits on a number of working groups including Marine Amateur Fishing Survey Group, the working group that reviews MPI and Fisheries NZ harvest estimates and seabird bycatch and is involved with South Blue fin Tuna Survey which has bycatch questions included. • NZ Sport Fishing is happy to support DOC and acknowledges RBMPS is an important issue and thinks DOC should monitor the issue <i>'Data collection is a good thing and the research could be used in clubs to inform fishers.'</i> • He does have some concerns with the cut through based on his experience with MPI and Fisheries who he says, <i>'struggle to get cut through with core RFs, who are often hunters, so there's some carry over there.'</i> • John attends a lot of MPI meetings and notes <i>'that although they are useful for getting a cross section of opinions; MPI's reach is low and attendance can be variable unless it's a very topical meeting.'</i> • John has engaged with several Iwi – 15 or so meetings on the Marae with Ngāpuhi and Ngāti Whātua – Not necessarily engaging about bycatch but more generally about the politics of fishing.
<p>Karen Short & Tony Craig Terra Moana (Karen & Tony were interviewed together via Zoom)</p>	<ul style="list-style-type: none"> • Karen and Tony hold a dual role; both have worked at Terra Moana, a New Zealand-based sustainability consultancy specialising in primary industries, fisheries and marine environments since 2013 and they're strong advocates for Fish4All – Tony is the founder. • Tony has been involved for 35 years in various policy and industry roles and Karen has spent the last 17 years in the industry and is a trustee in training for the WWF. • Tony is a RF and gets put about 10 days a year up the East Coast by Ngawi, North of Wellington and can provide insights on long line fishing and trawlers. • Terra Moana sees RFBMPS as an important issue but <i>'because there is no reporting mechanism the scope of the issue is unknown.'</i> • Set netting is a problem for penguins and dolphins and in the last 3 years Tony has encountered birds diving for bait. • Tony also noted the Total Allowable Commercial Catch (TACC) – RF take is as high in snapper as it is for CF meaning from a RF perspective, volume is not well measured i.e. the bag limit is not controlled so localised depletion can be high <i>'If 60, 000 rec fishers caught their limits fish stocks would be gone.'</i> • Terra Moana think it is important for DOC to monitor the nature and extent of RFBMPS, are happy to support DOC and would also like to discuss the use of their Fish4All app. • In Principle Terra Moana don't have any concerns with DOC engaging directly with RFs but suggest there needs to be a 5-10 year behaviour change programme and meaningful data gathered. • Terra Moana suggest <i>'that it shouldn't all be driven by scientists and there should be consideration given for public access to the data, taking a citizen science approach so the data would be open marine data/open source and could be used for educating and not penalising RFs.'</i> • Karen also raised the issue of engaging the right segments – <i>'Beware the old crusties.'</i>
<p>Scott Tindale Tindale Marine Research Trust</p>	<ul style="list-style-type: none"> • Scott has a long and deep association with fishing and is knowledgeable about most types of fishing. He is experienced with nets, master scuba diver, was a dive guide for national geographic, has worked tagging for NIWA, DOC and MPI, has been a seabird ambassador for Sothern Seabirds, and is on MPI

	<p>working groups. He is also experienced with various types of tackle from ultra-light to heavy weight.</p> <ul style="list-style-type: none"> • He wears many hats; he is a world-renowned game fisher and a member of the International Committee of representatives for the INTERNATIONAL GAME FISH ASSOCIATION (IGFA) which promotes ethical angling through science and education whilst encouraging sport fishing. • He is a co-founder and trustee of the Tindale Marine Research Charitable Trust - established 2 years ago to support marine fishers through the in-shore fish tagging program and promote ethical angling, environmental education, conservation and research. • Scott supports DOC's efforts and thinks it is important for them to monitor RBMPS. He says <i>'it's not just about what the bycatch is but what state it is released in – often with its gut sliced open so it won't come back e.g. barracuda is unwanted but it is an important species for stirring up the sea floor/food for other species like snapper – it's important for fishers to understand that each species has a place in the environment.'</i> • Although Scott doesn't have any concerns with DOC engaging with RF's, noting there is a DOC employee working with the Trust, he says that DOC is unpopular at the moment due to the Tahr cull and the stigma about DOC from those who hunt and fish and the way the land is administered e.g. fishing grounds vs marine protected species. • Scott's decision making is not influenced by customary rights and he is very frank about that fact that it is up to each individual about how they want to help the environment.
Te Ohu Kaimoana	<ul style="list-style-type: none"> • The information gathered excludes any engagement with customary fishers on Maori cultural perspectives of by-catch. DOC has engaged with Te Ohu Kaimoana as a key stakeholder to provide further cultural perspectives on recreational and other non-commercial by-catch. Further engagement with Te Ohu will be necessary as the project progresses.

2. Bycatch awareness & knowledge

Collated responses

a.)	<p>All the participants were aware of the issue, the potential location-based hotspots mentioning specifically the Marlborough Sounds, Akaroa, FMA1 noting the 30,000 aerial boat survey.</p> <p>Some species are in a more vulnerable state e.g. sharks from torpedo fishing 11,000 seabirds are killed each year (anecdotally).</p> <p>Birds are problematic for RFs when returning fish to the sea and cleaning fish on deck.</p>
b.)	<p>Among RFs there will be a range of levels of understanding of MPSRB, possibly related to age, awareness will be location specific i.e. to their local fishing area but some will not be aware of the sheer scale of the problem.</p> <p>One participant mentioned that there is low awareness in the RF group who are new to New Zealand.</p> <p><i>'If New Zealanders knew that we are the Seabird capital, they might understand the devastation.'</i></p>

	<p>With most RFs, if they surrounded by birds on a boat, they will know there is a risk for the birds so they do what they can to mitigate the issue and on the other hand they will also be thinking about the impact the birds will have on their fish. Some RFs will lack knowledge about safely releasing fish.</p> <p><i>'Some fish are dragged up onto the beach and not released in time.'</i></p>
c.)	<p>There was general agreement that the term bycatch is known, however the term can be easily confused with catching a species of fish you don't want i.e. non-target or incidental catch and is often associated with dumping by CFs where unwanted catch is perceived as rubbish and discarded.</p> <p>If DOC wishes to use the term 'protected' people will have to know what that means, and which species are protected.</p> <p><i>'If you loiter on Facebook groups like Legasea, the rec fishers talk a lot about commercial fishing bycatch.'</i></p>
d.)	<p>Knowledge amongst RFs about the different types of marine protected species will vary across the spectrum and RFs will be most aware of birds e.g. gulls, albatrosses with some tagged birds of these travelling from colonies.</p> <p>They will be less familiar with different types of sharks and rod and reel fishers won't normally interact with seals or dolphins.</p> <p>Different fishing methods are more problematic e.g. netting can be, but small nets in estuaries are low risk.</p>
<p>3. Bycatch attitudes & experiences To what extent do you think recreational fishers (probe 'why' for each topic)</p>	
a.)	<p>The degree to which RFs believe there is a problem will vary enormously depending on how much exposure they have had to the issue through clubs and personal experience.</p> <p>Generally, RFs will perceive this to be a small problem because they believe RF is not as much of a problem in comparison to CF – asking this question can often elicit a negative response from RFs if they consider bycatch a pest.</p>
b.)	<p>The degree to which they understand the issue is variable and proportionate to their belief that there is a problem. There is a better understanding of it at an organisational level than within some fishing circles.</p> <p>RFs perception of the problem is improving with the good knowledge transfer happening with school children – similar to sustainability and plastic recycling habits which are introduced at home from exposure and experiences at school.</p>
c.)	<p>With regard to caring, views were mixed – some RFs will care and do care about conservation and are keen to do the right thing, others will care but only if it is someone else's problem to deal with and some will be less aware of what they can do.</p>
d.)	<p>Some RFs do care about bycatch of protected marine species, however, may not see themselves as part of the wider problem meaning there will be challenges for DOC – who will have to acknowledge the complexity around behaviour change.</p> <p><i>'RFs perceive it to be a CF problem but there were 14 Sharks caught recreationally and 15 caught commercially last year'.</i></p>
e.)	<p>The degree to which they consider their impact may be location dependant.</p>

	<p><i>e.g. 'In the Hoki grounds on the West Coast there are millions of seabirds present but in the Hauraki Gulf where 70% of the rec fishing takes place seabirds are not as prevalent so the encounter rate would be less.</i></p> <p>Some captains will stop a charter if the birds are problematic while others will say <i>'nobody who comes on my boat gives a toss about the birds'</i>.</p> <p>This isn't a big issue 'publicly' so they may only consider their impacts on protected species numbers if they have had an encounter or incident</p>
f.)	<p>RFs will need more information about all protected species and one participant thought there is an opportunity to turn games fishers into champions – currently they point to non-charter RF's as the problem (it's not them othering).</p> <p>New Zealanders are perceived to be behind in 'gear waste' practices so there is an opportunity to provide more information about the impact of this e.g. line filament, rubbish, entanglement of marine mammals and also an opportunity to educate RFs about marine reserves which are not seen as a benefit but more of a threat to their fishing spots.</p>
g.)	<p>Although they may need more information not all participants thought RFs would seek out information.</p> <p>One participant relayed how hooking a bird is not a pleasant experience and you need to know how to get a line out so there needs to be some education about treatment of fish species and the protected nature of specific fish.</p> <p>At boat shows some are keen to know how to keep birds away so some may be more likely to seek out information on the topic if it was accessible.</p> <p>RFs might also be more inclined after an incident which may stimulate action – depending on their level of engagement/ or interaction.</p> <p><i>'One on ones at fishing clubs could work and using fisheries officers might be a good channel'</i>.</p>
h.)	<p>The participants thought not all RFs think they are not part of the problem or believe they contribute to the issue so there is a need for RFs to understand how their Snapper catch contributes to the total 60,000 Snapper caught.</p> <p>There is no single RF organisation – one participant thinks Legasea and NZ Sport Fishing are overstated as the RFs voice.</p> <p>Scott Tindale set up his trust because he thinks RFs believe they do contribute to the issue and relayed that MPI helps out with education at the boat shows.</p>
i.)	<p>Many RFs will understate their role. If they think they are not part of the problem, then they will not believe they have a role to play in reducing the amount of bycatch therefore, RFs are unlikely to engage with the issue until they understand they are part of the problem.</p> <p><i>'They have a major role to play but may not believe that'</i></p>
j.)	<p>The participants thought RFs would believe it is the responsibility of all fishers to reduce bycatch including commercial fishers.</p> <p>One participant mentioned that at present the catch rate is a 50/50 split between RF and CF.</p> <p>Mentioned as an aside:</p> <ul style="list-style-type: none"> • RFs are less likely to catch bycatch when using lures as opposed to bait and whales, seabirds and dolphins are struck with propellers.

k.)	<p>There was general agreement from the participants that RFs might say they do not want DOC involved and <i>'pass the buck and use the information to blame others'</i></p> <p>However, there was also agreement from the participants that collaboration was needed, and because DOC has legal responsibility they should <i>'lead the way'</i>. Others like NGOs could then be bought on the journey.</p> <p>A Roadmap was is needed to reduce fragmentation and clarify roles and there was a desire for funding to be sought for research via government departments.</p> <p>Resource is a problem with only 2 people at MPI including Marty Bowers, so policy development is slow.</p>
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4. Motivators for and barriers to agreeing with issue and participating in bycatch data collection

a.)	<p>All participants agreed with the list of motivators with <i>'doing the right thing'</i> being the most popular driver.</p> <p>One participant suggested using the ADCAR model for change and adding that if RFs <i>'want to do the right thing they will need to know what to do'</i></p> <p>An additional motivator about citizen science was suggested.</p> <p><i>'because it may be of interest and could be used as an educational tool for my kids and whanau/family who would be interested to see who their data was contributing to the overall dataset/ programme'.</i></p>
b.)	<p>There was general agreement that the top 4 barriers listed would inhibit engagement of RFs with the issue:</p> <ul style="list-style-type: none"> • Fishers don't care enough about the conservation of marine projected species or marine biodiversity • Fishers are more focused on their own self-interest than being a responsible fisher • May result in a fine • May result in increased restrictions on recreational fishing <p>RFs would be less likely to engage on the issue of bycatch if they perceive it to be a CF issue.</p> <p>A comment was made that there is sense of misdirection happening with CF and the use of cameras to fix issues with discarded catch/species.</p> <p>There could also be a perception that DOC could take things too far.</p> <p><i>'DOC is seen as an org that takes a zealous view and there is an expectation that DOC will curtail fishing where possible e.g. ban on netting and an increase in marine reserves.'</i></p> <p>Punitive actions and fines would limit compliance if you didn't do the right thing.</p> <p><i>'Difficult as people have to self-police, there are not enough DOC officers around and it must come through your own behaviour change by that I mean change their attitudes on their own.'</i></p>
c.)	<p>There were mixed views about what RFs preferences might be for providing information if they accidentally caught, killed or injured protected marine species with one participant strongly voicing their views that reporting will be the least effective way to reach the goal.</p> <p>(JR- strong theme from one participant that we are misguided in our attempt to discuss Apps, 0800 number etc)</p> <p>Another challenge is that RFs do not understand the big picture and so do not make the connecting and think <i>'all DOC is on about is getting us to report.'</i></p>

Using a phone app received mixed views. There was a perception that a RFs would have to stop and find the App and even if they are keen in the moment they may not remember to log into an App.

'Probably not a standalone app – need to go/be where the fishers are and incentivise or offer prizes' in contrast with this a participant commented that a *'Standalone DOC one might work'*

Unsurprisingly Terra Moana favoured their Fish4All app for those on boats and beach fishing, people have their phones on them, and big boats have WiFi

- The NIWA App – has auto location (?) used for a mortality study, tried a pilot with 50 people, didn't get a lot of uptake due to COVID. Only 1 response and NIWA is finding there is some over reporting rates on App. Self-selected fishers, catch report is higher i.e. keen ones. Could consider a side by side approach with an APP and follow up with phone interviews
- An 0800 phone number would work with some groups but generally the 0800 Doc number is not well used because RFs don't want to call – they will be embarrassed about what they've caught and will not want to talk about it
- 0800Poacher is well used
- 0800Coastguard is well used and well marketed
- Website may work for those that are digitally proficient and for those with the internet, but some may be excluded. Often there is no service in some fishing zones
- Boat ramp surveys were favoured and can give scalable numbers
- John Holdsworth runs some self-reporting, but the reporting rate is low *'It is hard to scale reporting; people wouldn't engage unless they are already taking precautions and already thinking about it'*

d.)

Participants mentioned that there would be some challenges with RFs and cautioned that we would have to listen carefully to RFs – reporting will be way down their list, and they may become suspicious of DOC.

Behaviour change was bought up again in this section and the difficulty with getting RFs to self-motivate. Those that are more aware are already probably taking precautions.

There were various suggestions about what the best way to messages and encourage fishers to provide bycatch information to DOC?

- Messaging will have to be targeted to location and/or specific types of fishing and bycatch issues that occur
- Every little bit counts
- Provide wildlife training i.e. de-hooking birds, Easy measurement, quicker handling and releasing
- DOC Presence at fish festivals
- 'Flybuys' concept at fishing club – points system for logging data
- Bait buckets at fish festivals and boat shows
- RFs would have to feel they were doing something helpful
- How can they follow through once on shore or at home
- Using Legasea as a channel – they have good engagement with RF's
- Could package up information e.g. squashing down barbs on hooks to make releasing easier, use of bigger hooks that are barbless
- Possibly start with enforcement (there were mixed views about this)
- Help those who want to know how to release so catch is alive, what is the best way of dealing with it
- Telling the story so RFs can understand the big picture and that this is a long game
- Explaining how the data will be collected, stored, used and what the privacy and security settings will be
- Would need to turn around the emphasis more towards RFs knowing that species are protected, and harm reduction is needed – to do this we need their support – needs to be free relevant and educational
- Suggest reporting within 48 hours of returning to shore – like CFs

	<ul style="list-style-type: none"> RFs should know that there are scientists who would like to perform necropsies, immediately, and not 12 months down the track (12 months is too long and can lead to inaccuracies in reporting) <p><i>'When providing data, interestingly, we get better engagement if we ask, 'when do birds interfere with fishing' rather than 'how often do you catch a bird.'</i></p> <p><i>'Possibly a sense of fishers not getting the big picture and all DOC is on about is getting us to report.'</i></p> <p><i>'How will the data be used? - People may not believe it and think DOC will curtail their fishing.'</i></p>
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e.)	<p>The participants thought fishers would be more likely to provide bycatch information to DOC if they knew more about protected marine species in their location and the outcomes in their location – mortality vs survival, numbers caught and catch methods and also if they were contributing to research.</p> <p>Could use Geo fencing, push reminders if you were in the zone for particular species.</p> <p>On participant suggested that grandchildren out with parents or grandparents could send in pics of birds - use a button on an app (JR: similar to the plant finder App or Shazam used for music)</p> <p>There was also agreement that RFs would be more engaged and willing to provide data to DOC if they knew monitoring bycatch numbers is about the conservation of protected marine species and not about punitive actions against them or restrictions on their fishing areas.</p> <p>It would also be helpful for RF to know that this is a long-term solution and that collection was open source/open data collection used for the wider good.</p> <p>Overall agreement that punitive actions would not engender the behaviour change DOC is looking for.</p> <p><i>'They (RFs) would need to know that their actions can reduce the risk. Will be all about who we tell and what we tell them.'</i></p>
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	<p>The following contacts were mentioned as possible points of contact</p> <ul style="list-style-type: none"> Bay Fish magazine, Jodie Gallop Skipper magazine, Keith Ingram Karen Low's work on the Seabird pages Karen Beard's work at Forest and Bird Marty Bowers and MPI database Matt Watson (ITM fishing show) and the need for a video of how to (good practice) release a bird
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5. Data collection methods

Phone App	<p>One participant thought that the range of Apps available wasn't huge and that most RFs would be unaware of them so <i>'can't see a problem with people calling in on a phone'</i>.</p> <p>Sustainable Coastlines do a good job and there was one suggestion that DOC could crowd source using Sustainable Coastlines but did mention that it is a much bigger job using face to face methods.</p> <p>There were strong views from one of the subjects who thought a lot of the 'why' gets lost with MPI and DOC which is where Fish Mainland is useful as a coherent voice. They felt there would be a lack of engagement with an APP and accuracy would be a problem with people making things up and under and over reporting. For a self-reporting system to work it would require DOC to gain RFs trust first.</p> <p>Suggestion that DOC needs to think like a fisherman with wet and fishy hands and that the Government could further develop NZ Fishing rules to incorporate Health and Safety information e.g. text notifications when flares are out of date</p>
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	<p>Terra Moana were in favour of an app and naturally had a bias towards their own app saying that Fish4All could run it on behalf of the fishing sector, generate revenue and be self-sustaining for all due to their status as a charitable trust. However, they need one of their partners to come across the line and apply some funding so they can generate income from App, put the money back into the trust and collaborate and partner with others.</p> <p><i>'The beauty of our Fish4All app is that there is potential to scale it up in terms of data collection (huge number of people out there collecting data and functionality e.g. snapper have a scale pattern that is unique like a fingerprint).'</i></p> <p>In contrast to Terra Moana's view one participant thought the Fish 4 all App was clunky and doesn't have very good cut through (and has a weird back story?)</p>
	<p>One of the participants <i>is called on a daily basis by people who have no idea what they have caught and some don't even know about the most common species – they will take to SM to find out, the fish will already be dead at that point and then dumped.'</i></p>
Surveys	<p>The reaction towards past surveys was positive with Boat Ramp Surveys and fisheries officers being mentioned as preferred method for data collection by most.</p> <ul style="list-style-type: none"> • The NRB survey ran in 2017 -2018 was mentioned favourably (Ran a self-reporting system for 12 months then followed on from the next year) • Also noted in the National Panel Survey of Marine Recreational Fishers 2011–12, Rationale and Methods document – text is a known mechanism, not intrusive, would work over the summer, weekly, but then less frequently over winter (?) • In 2010, a comprehensive marine fishing survey was conducted using SMS texting by cell phones to report catch details. This study showed that there was great potential in utilising this personal and accessible method of communication for fishing surveys (Wynne-Jones & Heinemann 2010). • Boat ramp surveys combined with biological data collection might more effective than 'fish cops' (size and weight) so need to be pitched as a survey rather than a compliance exercise • Aerial surveys were deemed to be effective
<h2 style="background-color: #00c893; color: white; padding: 5px;">6. Stakeholder engagement</h2>	
	<p>To optimise engagement, DOC should consider:</p> <ul style="list-style-type: none"> • Setting up a meeting with Terra Moana and key people from DOC so they can understand the Fish4AllApp • Engage with NIWA to discuss their App in detail • Karen Beard's work about seabirds (noted as a good reference) • <i>'Fish Mainland could play an educational role for the South Island'</i> • Using MPI channels and Fisheries officers • Engaging fishing clubs to get to individual RFs • Check out the FishCare website and brochures which could be expanded • Hewi the Kiwi – all about keeping the Seabirds away from bait etc. <p><i>'Think carefully about the low trust in DOC otherwise we will not bring people with us.'</i></p>

The best channels for engagement with the participants and their organisations they represent:

- Email
- John Holdsworth suggested emailing their secretary Helen at NZ Sport Fishing.
- Phone
- Terra Moana Head Office is in Wellington
- Online (Zoom style) meetings – can often be a struggle to get people along in person to meetings

Add the following stakeholder, networks, events and feedback loops

- Retailers, there are a few big chains
 - Hunting and Fishing
 - Burns Co
- Recreational fishing festivals (MPI and Fisheries NZ are often there)
 - Use them as distribution points – e.g. messages on paper bags
 - Bait buckets
- Katie Clemens Sealy is the team rep from DOC
- Cam Speedy – ecologist and hunter & fisher also trains CF and writes columns in magazines
- NIWA
- Forest and Bird
- Legasea – Stan Woolford
- Fishing shows
- YouTube channels
- Social media channels and pages
- NZ Fishing Facebook page (strict rules about posting, invite only, good engagement)
- Clubs and magazines for fishers
- Bruce Hartill – responsible for onsite data collection and he has attended meetings in USA and Europe on survey methods & seabirds
- Martin Pryor – MPI and Marine Amateur Fisheries working group
- Fish Mainland – already working with other groups
- Sea Change Tasman Bay Guardians

Working group

'Yes, I had looked at one for rec fishers, good idea.'

'Yes, I have tried to get bycatch issue raised – from high migratory species up to Rec Fishers bycatch'

There is support for establishing a working group, which might be more plausible for the implementation phase, but there are a few caveats around the structure and shape of the group.

It will need to be:

- well resourced,
- have meaningful objectives,
- an annual plan
- have a robust review plan
- *'not just another talk fest'*

DOC would also need to be cautious about frequency to ensure good attendance.

'Central government agencies generally don't have this type of experience and there is a low probability of success.'

Appendix One

In-depth interviews: Discussion guide

Project: Planning for stakeholder engagement in assessment of recreational fisheries bycatch of marine protected species

Interview duration: 45-60 minutes for an in-depth interview with each stakeholder

Interview method: In person if possible or via online meeting

Objective: To discover recreational fishers opinions and attitudes toward bycatch and engage with the key stakeholders who represent stakeholder interests.

Background

SenateSHJ has been engaged by the Department of Conservation (DOC) to develop an evidence-based stakeholder engagement framework for the assessment of recreational fisheries bycatch of marine protected species (bycatch).

In addition to online survey methods designed to reach the wider population of fishers, a series of 6 interviews will also be conducted with key individuals representing stakeholder interests, will be conducted by the team to gain a better understanding of their views and their perceived roles in relation to bycatch. The information collected, although not comprehensive, will highlight any information and knowledge gaps to help DOC understand the motivations and barriers (hot and cold buttons) to engaging with stakeholders and recreational marine fishers.

The responses from these interviews will be themed and used to guide the development of questions for an online survey with marine recreational fishers. The fishers will be sourced from MPI's and NRB's recreational fishers list (if available and if the list contains email addresses) and social media outreach via Facebook pages and groups.

Process for undertaking interviews

Initial contact has been made with the stakeholders and they have stated that they are willing to take part in interviews (requests were emailed on 23 March 2020).

The process for undertaking the interviews will be as follows:

1. We re-contact each stakeholder and book a time for an interview. During this contact we will confirm:
 - a. if they would like to include other colleagues in the interview and, if so, confirm who
1. how they would like to take part in the interview, with the options being face-to-face (if they are based in Auckland or Wellington), via an online meeting or by providing written responses to the questions
2. We send out a summary of the knowledge we have to date on the questions that we are going to ask them, e.g. so that they have time to consider the potential motivators for and barriers to, bycatch data collection
3. We conduct the interview, thank them for their time and convey the next steps

Objectives

In determining the views of recreational fishers in relation to bycatch and their perceived roles and responsibilities the project team will address the following:

Social licence: Understand motivators and barriers

2. Do recreational fishers consider their impacts on protected species bycatch numbers?
3. Do recreational fishers perceive protected species bycatch to be a big problem?
4. Do recreational fishers compare recreational bycatch to commercial-sector bycatch – do they think that commercial fishing is the problem, not recreational?
5. Do recreational fishers see the need for DOC to understand the nature of interactions between protected marine species and fishers (i.e. mortality vs survival, catch method etc.) in order to support zero-bycatch goals?
6. Do recreational fishers agree that it is the responsibility of all fishers to reduce bycatch? Are there generational issues?
7. How important is it for recreational fishers to understand:
 - i. future bycatch research programmes are designed to determine the nature and extent of the issue jointly, as opposed to through DOC self-determination?
 - ii. the bycatch project objective is about the conservation of protected marine species and not about punitive actions against fishers?
 - iii. engagement of the wider fishing community is a long-term solution?
8. What terminologies and key messaging are less ambiguous? (example e.g. is 'bycatch' understood?)

Stakeholders: Identify and understand needs

9. Who are the key stakeholders?
10. What are the key stakeholder networks and the preferred communication channels (and feedback loops)?
11. What is the best approach to establishing a working group to ensure continued stakeholder engagement?

Recording bycatch data: Understand motivators and barriers

12. What are the preferred information-gathering tools for bycatch data? Including consideration of the following:
 - iv. The use of existing infrastructure (e.g. DOC website for reporting bycatch)
 - v. Phone surveys similar to NRB panel survey
 - vi. New technology development by DOC for data collection (i.e. smartphone bycatch app)
 - vii. Privacy concerns over the use of a smartphone app and possible solutions
 - viii. The use of representative groups/clubs to promote the use of reporting tools
 - ix. The use of previous/current recreational fishing apps (e.g. the Fish4all app)

Notes for client & moderator

1. This guide allows for considerable freedom within the topic. Questions are indicative only of the subject matter to be covered. They are not word for word descriptions of the moderator's questions. Timings are indicative only, actual timings can vary considerably.

This research is about gaining a better understanding of the views and perceptions that recreational fishers hold in relation to their role in bycatch of marine protected species.

Introductions and overview of the project and interview

- Welcome, and thank you for meeting with me today. [Hand business card]
- My name is [NAME] and I work for [NAME]. Our organisation is a [XXX] and we do [XXX]
- We are here today to talk to you about a project we are working on for DOC in relation to recreational bycatch of marine protected species.

DOC has appointed SenateSHJ to develop a stakeholder engagement framework that will be used by DOC in future projects to engage with recreational fishers about the nature and extent of unintentional captures (bycatch) of marine protected species.

Today we'd like to gain your knowledge and insights and use them to develop an effective engagement framework for DOC to engage with recreational fishers on the bycatch issue.

I/we would like to hear your views including any challenges, key opportunities and ways which will optimise DOCs future engagement with recreational fishers.

It is important to state that this is a social science project and we are not tasked with gathering bycatch data from recreational fishers, and we won't be discussing mitigation measures. Our sole focus is to consult with stakeholders, then develop and recommend a framework to DOC. This will detail who and how DOC engage in future research with the recreational fishing community (e.g. communication channels), to better understand the protected marine species bycatch problem. Effectively, through this project, we will be asking the recreational fishing community up front for a social licence and their support for future projects, and we need to understand how to make that work, before we begin work.

- As we go through the questions, we would like you to speak on behalf of your organisation, but we are also interested in any anecdotal information you may have from personal experience. Please just let us know when you are providing thoughts from your personal perspective.
- At the end we will ask if you are happy for your comments to be identifiable to you or your organisation. If you would prefer that we keep your comments anonymous, we will absolutely ensure that this happens. We want you to feel comfortable to be as honest and open as you can, in order to help the project.
- I would like to record our discussion to ensure I accurately capture what we discuss – this is only for research purposes and will not be released to DOC without your permission. Would you be happy for me to do this?
- Do you have any questions?
- Are you ok with everything we have discussed so far?

Great, so I'm firstly keen to understand your organisation's role in the fishing sector. We'll then talk about what kind of insights you can provide into recreational fishers, bycatch, and then finish up talking about data collection and stakeholder engagement.

SWITCH RECORDER ON (if using)

Question guide

1. Stakeholder overview:

- a. So, I understand that your organisation is [explain what you understand about their organisation]? Is that correct?
- b. And your role/s is/are [xxxxx]? What does that entail?
- c. How long have you been at [xxxx]?
- d. And thinking more broadly how long have you been involved in the recreational marine fishing sector? And in what capacity/s?
- e. Are you also a marine fisher in your everyday life? How long have you been doing this for?
- f. What types of marine fisher can you provide insights into or knowledge of? And what is this knowledge based on?

- g. Does your organisation see the bycatch of marine protected species as an important issue? Why or why not?
- h. Does your organisation think it is important for DOC to monitor the nature and extent of recreational bycatch of marine protected species? Why or why not?
- i. Is your organisation happy to support DOC in its engagement with recreational fishers to collect data on protected marine species bycatch?
 - i. If yes: How do you see this could work?
 - ii. If not: Why?
- iii. Do you or your organisation have any concerns with DOC engaging with recreational fishers to collect data on protected marine species bycatch?
- iv. Do customary fishing/cultural rights influence your decision making on discussion around bycatch of taonga species and if so, how?

2. Bycatch awareness & knowledge

- a. Do you know much about why protected marine species recreational bycatch is an issue?
 - i. If yes: What do you see as the issues in your words?
 - ii. If not: Explain: "In a nutshell it is about the conservation of protected marine species as well as the protection of marine biodiversity."
- b. Do you think recreational marine fishers are very aware that marine species recreational bycatch is an issue? Does it vary by different types of fishers? In what way? How do they differ? Does it vary by age?
- c. Do you think fishers use the term 'bycatch'? Do they use other terms? What terms?
- d. How knowledgeable do you think fishers are about the different protected marine species? What species are they more/less aware of? Why do you think they are mostly knowledgeable/unknowledgeable? [interviewer needs to be able to talk about species if interviewee is not clear.]

3. Bycatch attitudes and experiences

To what extent do you think recreational fishers (probe 'why' for each topic):

- a. Believe that marine protected species bycatch is an issue? i.e. a big problem?
- b. Understand the issue/information?
- c. Care about the conservation of protected marine species?
- d. Care about the bycatch of protected marine species?
- e. Consider their impacts on protected species numbers?
- f. Need more information?
- g. Would seek more information on the topic?

- h. Believe recreational fishers contribute to the issue?
- i. Believe they have a role to play in reducing the amount of bycatch?
- j. Believe it is the responsibility of all fishers to reduce bycatch?
- k. Believe it is the responsibility of all fishers and stakeholders to jointly determine the nature and extent of the issue? Or do you think fishers would think that it is up to DOC to work alone to determine this?

4. Motivators for and barriers to agreeing with issue and participating in bycatch data collection

- a. For what reasons would fishers most likely engage on the issue of bycatch? [Discuss then show list in appendix]
- b. For what reasons would fishers be less likely to engage on the issue of bycatch? [Discuss then show list in appendix]
- c. Do you think fishers would be prepared to provide information (e.g. via a phone app, 0800 phone number, or website) if they accidentally caught, killed or injured protected marine species?
 - i. What types of fisher would be more likely to do this? And less likely?
 - ii. Why would they?
 - iii. Why wouldn't they?
- d. What do you think would be the best way/messages to encourage fishers to provide bycatch information to DOC?
- e. Do you think fishers would be more likely to provide bycatch information to DOC if they knew?
 - i. More about protected marine species
 - ii. More about which protected marine species are in their fishing areas
 - iii. More about the number and outcomes of protected marine species in their areas
 - iv. More about the findings from the collected bycatch data e.g. mortality vs survival, numbers caught, catch methods
 - v. That DOC is working with a range of partners on this issue
 - ask who they would recommend is part of the list but do not disclose who we are interviewing:
[i.e. Te Ohu Kaimoana (Treaty partner), MPI, NIWA, NRB, FLOW, Fish Mainland, Legasea, NZ Sport Fishing, SeaChange Ministerial Committee, Southern Seabird Solutions Trust, Terra Moana, Tindale Marine Research Charitable Trust].
 - vi. Monitoring bycatch numbers is about the conservation of protected marine species, not about punitive actions against fishers
 - vii. DOCs engagement with the wider fishing community on the recreational bycatch issue is a long-term solution

5. Data-collection methods

- a. One of the ways that fishers could provide information on any recreational bycatch would be via a phone app. Below are some examples of how this could be done. [Develop examples based on a standalone bycatch app, bycatch reporting within the current Fish4All app, bycatch reporting within the NZ Fishing Rules app, bycatch reporting on the DOC website, etc.]
 - i. What do you think of each of these options?
 - ii. What do you see as the pros and cons of each?
- b. What do you think would be the best option? Why?
- c. Can you think of a better idea than these?

6. Stakeholder engagement

- a. We currently see the following as the key stakeholders that could influence the project's success, have shown their support and/or have existing networks that DOC could access for engaging fishers on the bycatch issue. Do you think any stakeholders are missing?
- b. How would DOC be best to engage with your organisation on this bycatch project? [e.g., working groups, via social media channels, emails, media or phone surveys]
- c. What are the best communication channels?
- d. Are you aware or involved with any key stakeholder networks, and/or feedback loops that DOC could also access or should be aware of for their project?
- e. Do you think it's valuable to establish a working group? Why/ why not?
 - a. What do you think is the best approach to establishing a working group to ensure continued stakeholder engagement?

Tailored close

That's all my questions for today!

Thank you for your time and input and making yourself available for this interview.

The next step for the project is to conduct an online survey with recreational marine fishers. Then all of the findings we have collected will be documented and an evidence-based engagement framework will be provided to DOC and presented at a technical working group for discussion with stakeholders

So, after being through the interview, are you happy for your comments to be identifiable to you and/or your organisation? It is fine if you prefer to stay anonymous.

Do you have any questions?

Thank you once again.

Appendix

List of motivators and barriers

Note: These lists are to understand the high level reasons for engagement, and do not cover motivations for the use of data collection methods/tools (the latter is the next step after gaining high-level motivation and also covered in a different section of the guide).

Motivators

For what reasons would fishers most likely engage on the issue of bycatch, with the ultimate goal being to report their bycatch?

(note: different key motivators might work for different groups of fishers)

Emotional motivators

- **Conservation reasons:** To protect marine protected species i.e. species that are under threat
- **Biodiversity reasons:** To more broadly look after the ocean and marine life and the connections within. Noting that bycatch is one of the greatest threats to marine biodiversity.
- **To do the right thing:** To give back to the ocean that we fish in. To be a responsible fisher. As kaitiaki of our oceans.
- **To know what I can do:** To understanding how to increase the survival of unintended bycatch i.e. to reduce the amount or severity of unintended bycatch.
- **Personal contribution to DOCs scientific learning:** Experienced through regular updates from DOC on key findings, value of the data collected, what DOC is learning
- **Social reasons:** If DOC or their local fishing club/community encouraged them to do so
- **As part of personal fishing records/knowledge:** e.g. if there was an ideal fishing app where they could record all their catches including bycatch or as part of a species identifier app
- **As a fun thing to do:** e.g. If it was associated with an app developed using gamification and utilising automatic identification of bycatch e.g. Pokemon Go was popular with youth and could be used as an educational device for the next generation of young fishers.
- **As a routine thing to do:** e.g. What time of year do you go fishing and when are you likely to participate in a study on bycatch (e.g. Dec-Feb only, all year round etc.)?
- **Other?**

Barriers

For what reasons would fishers be less likely to engage on the issue of bycatch?

- Fishers don't care enough about the conservation of marine protected species or marine biodiversity
- Fishers are more focused on their own self-interest than being a responsible fisher
- May result in a fine
- May result in increased restrictions on recreational fishing
- Their location might be identifiable e.g. secret fishing spots
- General privacy concerns
- Unsure how the data will be used
- Unsure if the data will be used
- Perception that bycatch is predominantly due to commercial fishing, not recreational fishing

- If it is hard and/or time consuming to do
- Lack of awareness of issue and/or reporting process
- Being told what to do
- May be socially undesirable to agree that bycatch is an issue

Appendix 3 - Online survey

Questionnaire

Client	DOC
Project	Recreational marine fishers – Bycatch engagement framework
Version	Final
Project No.	1183
Methodology	Online Survey
Survey Duration	10-20 mins
Sample source	<ol style="list-style-type: none"> 1. MPI list of recreational fishers (n=~2,500) 2. Facebook groups - to gain other fishers who may not be on the MPI list.
Sample Specifications	Respondents to be recreational marine fishers, including charter boat owners crew – 14 years or over.
Research objectives	<p>The primary objective of the project is to understand how DOC can engage recreational fishers effectively in future data-collection studies.</p> <p>To build on stage one of the project (design and build), this survey will collect direct feedback from marine recreational fishers on the motivations for and barriers to engagement and participation.</p>

Survey introduction

Hi there,

Thanks for clicking through to the survey.

All you need to do in answering the questions is draw on your own personal views and experiences. There are no right or wrong answers.

At the end of the survey, you will be entered into the prize draw.

Thank you very much for your time.

If you have any questions you can contact me at penny.turner@thenavigators.co.nz

Kind regards,
Penny Turner
Director
The Navigators



[ADD PRIZE DRAW OFFICIAL DOCUMENTATION]

Screening/profiling questions

Q1. To start with some easy questions... Please tell me which of the following age groups you belong to: [SR]

Under 14 years	1 - Cancel
14-17 years	2
18-24 years	3
25-29 years	4
30-34 years	5
35-39 years	6
40-44 years	7
45-49 years	8
50-54 years	9
55-59 years	10
60-64 years	11
65-74 years	12
75-84 years	13
85+ years	14

Q2. Are you: [SR]

Male	1
Female	2
Gender diverse	3

Q3. Which region in New Zealand do you live in? [SR]

Northland	1
Central Auckland	2
North Auckland	3
East Auckland	4
West Auckland	5
South Auckland	6
Waikato	7
Bay of Plenty	8
Gisborne	9
Hawke's Bay	10
Taranaki	11
Manawatu-Wanganui	12
Wellington	13
Tasman	14
Nelson	15
Marlborough	16
West Coast	17
Canterbury	18
Otago	19
Southland	20
Mostly outside of New Zealand	21 - Cancel
Off-shore NZ island (e.g. Stewart Island, Chatham Island, Great Barrier Island, etc.)	22

Q4. Which ethnic group/s do you belong to? Please select all that apply to you. [MR]

European or New Zealand European	1
Māori	2
Pacific peoples	3
Asian	4
Other	5

Q5. In the past 12 months, have you taken part in any of the following recreational marine activities, in New Zealand? Please select all that apply to you. [MR]

Fished from a private boat or kayak (in saltwater)	1
Fished from a charter boat (in saltwater)	2
Fished from a saltwater beach/shore/wharf (including surf casting, kontiki, longline, electronic longlines, drop lines, hand lines)	3
Fished for seafood using set or gill nets	4
Dived for seafood	5
Fished for seafood using pots (or similar bottom gear)	6
None of the above	7 - Cancel

TEXT FOR THOSE WHO CANCEL:

Sorry you did not qualify for this survey. If you feel like we missed a marine fishing option in the previous question, please contact me: penny.turner@thenavigators.co.nz

Lastly, if you know any active marine fishers, we would be very grateful if you would **share the survey** with them. Please copy this link now to share it: [LINK]. Thank you for your time.

Thanks for that.

Now for the rest of the questions, when we ask you about ‘fishing’, please include all of the methods you selected in the previous question.

And only those activities in seawater, not freshwater.

Q6. On average, how often would you go fishing in New Zealand seawater?
Remember: Please allow for all the activities you chose in the previous question.

	Most days	Weekly	Every 2 weeks	About once a month	Once every 3 months	About every 3-6 months or rarely/never
During cooler months (e.g. June to September)	1	2	3	4	5	6
During warmer months (e.g. October to May)	1	2	3	4	5	6

Q7. Approximately, how many years have you been fishing, excluding any breaks you may have had? [SR]

Less than 5 years	1
5-10 years	2
10-20 years	3
More than 20 years	4

High level values and motivations

Q8. Which of the following statements best describes what you **value the most** about your fishing activities? (Please select one only).

Randomise. [SR]

Providing a source of food for yourself, whanau, or community	1
Getting away from everyday life/routine	2
Passing on my knowledge or teaching others	3
Socialising with friends and family	4
For the physical exercise	5
For fun or excitement	6
For the challenge and sense of achievement	7
Being outdoors	8
Something to look forward to	9
Understanding and being part of the environment	10
Something else (please specify): _____	11

Bycatch knowledge

Q9. What do you think some of the biggest issues are for New Zealand's marine environment at present?

They could be things that affect you or things that concern you.

Please list **up to** four - with one issue per row.

If nothing comes to mind, please go to the next question. *Not compulsory.*

1.
2.
3.
4.

Q10. Do you have a good understanding of the marine species that are protected in New Zealand? [SR]

No - Not really	1
Somewhat	2
Yes - Definitely	3
Don't know	4

Ask if Q10 = code 1 or 2 or 3 (i.e. excluding Don't knows) Not compulsory.

Q11. Please name the marine species that are protected in New Zealand – the ones that you easily recall:

If you can't recall any, please go to the next question.

Q12. Have you heard of the term 'bycatch' (with regards to fishing)? [SR]

No - Not really	1
Yes - I think so	2
Yes - Definitely	3
Don't know	4

ASK if Q12 = 2 or 3 (heard of 'bycatch')

Q13. If we said 'bycatch' occurs when **protected marine species** are caught on lines, nets, pots, hooks, or other fishing equipment... is this what you think bycatch means?

No - Not really (Please type here what you were thinking instead or as well):	1
Yes – I think so	2
Yes - Definitely	3
Don't know	4

Bycatch attitudes and experience

Q14. Just to give you some information now...

Protected marine species include:

- all marine mammals (including dolphins, seals and whales)
- all seabirds (except black-backed gulls)
- all sea turtles
- some coral species (black corals, gorgonian corals, stony corals, hydrocorals)
- some fish species (black-spotted grouper, white pointer sharks, spinetail devil rays, manta rays, basking sharks, nurse sharks, giant grouper).

Over the last 12 months, how often have you accidentally caught a protected marine species?

Please be honest. Your responses will be kept totally confidential. [SR]

Never - Not that I am aware of	1
A few fishing trips	2
Some fishing trips	3
Most fishing trips	4
Don't know – because I don't think about it	5
Don't know – because I'm not sure what species are protected	6

Thanks for your responses so far! We really appreciate them.

Note: You don't need to complete any questions that require a typed response from now on - in case you are running short of time or don't have a quick reply.

Q15. Ask if Q14 = code 4 (most fishing trips). Not compulsory.

Why do you think you catch protected marine species **most** of the time? e.g. lots of seabirds around chasing bait/offal, get caught in the net, use lots of hooks, etc. We understand that it happens, we are just wondering what the different scenarios are. Your response will be kept anonymous.

Q16. To what extent do you think it is important to monitor the number of protected marine species caught from recreational fishing? [SR]

Not at all important	1
Slightly important	2
Moderately important	3
Very important	4
Extremely important	5
No opinion – I don't know much about it	6
No opinion – I don't really think about this type of thing	7
No opinion – I don't really care about this type of thing	8
No opinion – I don't understand what you are asking me	9

Q17. Ask if Q16 = code 1 (Not at all important) Question not compulsory.

Why do you think it is **not important** to monitor the number of protected species caught from recreational fishing?

Q18. Ask if Q16 = code 4 or 5 (Very or extremely important) Question not compulsory.

Why do you think **it is important** to monitor the number of protected species caught from recreational fishing?

Q19. "Bycatch of protected marine species is an issue because it could contribute to the extinction of some species."

After reading this statement, to what extent do you agree or disagree with the following...

<i>Do not randomise</i>	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree	Don't know
a. I believe this statement	1	2	3	4	5	6	9
b. I understand this statement	1	2	3	4	5	6	9
c. I care about this topic	1	2	3	4	5	6	9

Q20. Ask if Q19a = code 1-3 Disagree. Question not compulsory.

Why do you feel that you might **not believe** the statement? It's fine if you don't, we just are interested as to why.

Q21. Ask if Q19b = code 1-3 Disagree. Question not compulsory.

What was it about the statement that you **don't really understand**?

Q22. Ask if Q19c = code 1-3 Disagree. Question not compulsory.

Why do you think that you **don't really care** about this topic? It's fine if you don't, we are just interested as to why.

Q23. Ask if Q19c = code 1-3 Disagree. Question not compulsory.

Is there anything that would make you care a little more about this topic? It's fine if there isn't.

Q24. To what extent do you agree or disagree with the following...

<i>Do not randomise</i>	No – not really	Somewhat	Yes – definitely	Don't know
a. In the last 12 months, I have altered my fishing behaviour to try and avoid catching protected marine species e.g. changed location, waited while fishing, used a different fishing technique, etc.	1	2	3	4
b. I believe recreational fishers have an impact on the amount of protected marine species that are caught (i.e. it's not just commercial fishing)	1	2	3	4

Willingness to participate (including motivators and barriers)

Q25. If you did accidentally catch a protected marine species, would you be open to reporting the information confidentially e.g. via a phone app, website, or 0800 number?
[SR]

No	1
Maybe	2
Yes	3
Don't know	4

Motivators

Ask if Q25 = 3, 2, or 4 (Open to recording bycatch information: Yes, Maybe or Don't know)

Q26. Which of the following **best describes why** you would be open to reporting the information if you did accidentally catch a protected marine species?

Please select **one or two**. [MR]

Randomise.

Conservation reason 1: To help protect and support thriving populations of protected marine species	1
Conservation reason 2: To avoid the potential extinction of some protected marine species.	2
For biodiversity & marine protection reasons: To more broadly look after the ocean, so it continues to support a wide range of marine life.	3
To do the right thing: To be a responsible fisher.	4
To learn how to reduce my impact: I.e. if I got to understand what I can do to increase the survival or reduce severity of my unintended bycatch.	5
To contribute to scientific learning: By providing information and then receiving updates on the key learnings from the data collected.	6
If I was asked to: by my fishing club, conservation group, cultural community or another group that is important to me.	7
For future generations: To have similar marine biodiversity and species that we have today.	8
Something else (please specify): _____	10

Barriers

Q27. To what extent would you be **concerned about** the following, in regards to providing information if you did catch a protected marine species?

<i>Randomise.</i>	Not at all concerned	Slightly concerned	Somewhat concerned	Moderately concerned	Extremely concerned	Don't know
a. You may be fined	1	2	3	4	5	9
b. It may result in increased restrictions on recreational/customary fishing	1	2	3	4	5	9
c. Your fishing location might be identifiable e.g. your special fishing spot	1	2	3	4	5	9
d. The details you provide may not be kept confidential	1	2	3	4	5	9
e. If the information would actually be used	1	2	3	4	5	9
f. That providing the information might be difficult or time consuming	1	2	3	4	5	9
g. That your friends/family disagree with you reporting the information	1	2	3	4	5	9

Question not compulsory.

Q28. Is there another reason why you might not want to provide information (if you did catch a protected marine species)? If so, please add it here:

Importance of information

Q29. Would you be **more likely** to provide information on your accidental catch of protected marine species, if you knew...

<i>Randomise</i>	No – knowing this would not make me more likely to provide bycatch information	No – I would provide the information anyway	Yes - maybe	Yes - definitely	Don't know
a. more about New Zealand's protected marine species	1	2	3	4	5
b. more about what protected marine species are in your fishing area/s	1	2	3	4	5
c. more about the number, type, and injury/survival of protected marine species caught in your fishing area/s	1	2	3	4	5
d. that everyone would be working together to understand bycatch impacts e.g. DOC, iwi, MPI, fishing clubs, fishers	1	2	3	4	5
e. that monitoring bycatch numbers is about helping to prevent the decline of marine species and protecting marine biodiversity	1	2	3	4	5
f. that the monitoring of bycatch is a long-term project	1	2	3	4	5
g. how bycatch data will be used	1	2	3	4	5
h. the key learnings from the bycatch data collected	1	2	3	4	5

Preferred method

Ask if Q25 = 3, 2, or 4 (Open to recording bycatch information: Yes, Maybe or Don't know)

Q30. Below are some of the ways that you could provide information if you did accidentally catch a protected marine species. How likely would you be to use/do each one?

Note: these are ideas and are not available at present.

<i>Randomise.</i>	Extremely unlikely	Unlikely	Somewhat unlikely	Somewhat likely	Likely	Extremely likely	Don't know
a. Bycatch app: An app that you download and is only used to report bycatch.	1	2	3	4	5	6	7
b. Fishing catch app: An app where you can record all of your fish catch as well as protected species bycatch.	1	2	3	4	5	6	7
c. NZ fishing rules app: An app where you can access the NZ Fishing Rules as well as report bycatch.	1	2	3	4	5	6	7
d. Website: Where you would go to a website and provide your information.	1	2	3	4	5	6	7
e. Marine species identifier app: An app that you could use to identify marine species by taking photos of them, as well as report bycatch.	1	2	3	4	5	6	7
f. 0800 number: A phone number to call up and follow some automated prompts to provide your information.	1	2	3	4	5	6	7
Only ask of boat fishers Q5 = 1 or 2: g. Boat ramp survey: Where someone would ask you if you caught any bycatch as you came to shore.	1	2	3	4	5	6	7

Q31. Ask if any option at Q30 is code 5-6 – Likely to use. Question not compulsory.
Looking at the options that you would be ‘likely’ or ‘extremely likely’ to use/do... **What do you like** about this/these options?

Q32. Ask if ALL options at Q30 =code 1-3 – Unlikely to use any. Question not compulsory.
What are your **key reasons for being unlikely to use/do** any of these options? We are really interested in your honest thoughts here.

Q33. Ask if ALL options at Q30 = code 1-3 – Unlikely to use any. Question not compulsory.
Is there an **alternative way** that you would like to provide the information?

Q34. If you caught a protected marine species, would you be more or less likely to provide information, if DOC (the Department of Conservation) was leading the project? [SR]

Less likely	1
No difference	2
More likely	3
Don't know	4

Q35. Ask if Q34 = code 1 – less likely. Question not compulsory.
Why would you be less likely to provide information if DOC was leading the project?

Q36. Ask if Q34 = code 2 or 3 or 4 (no difference or more likely or DK if DOC) AND Q25 not ‘no’ (might be open to reporting). Question not compulsory.

DOC would be interested in hearing about any catch of a protected marine species – even if it was released unharmed.



Do you think you would report any catch of a protected marine species - even if you released it unharmed? [SR]

Yes – I would report any catch – even if it was released unharmed	1
No – I would probably only report catch that died	2
No – I would probably only report catch that died or was harmed	3
Don't know	4

Final profiling

And now just 4-5 more short questions...

Q37. Do you currently have the following apps on your phone? [MR ex no and DK]

 Fish4all	1
 NZ Fishing Rules	2
No – I use apps but don't have those apps	3
No – I don't really use apps	4
No – I don't have a mobile phone	5
Don't know	6

Q38. Are you part of a fishing club? [SR]

Yes – I am part of the leadership of a club	1
Yes – I am a member of a club	2
No	3

Q39. Do you fish near marine reserves? [SR]

Yes – often	1
Yes – but not often	2
Never	3
Don't know	4

Q40. Do you fish near coastal seabird colonies? [SR]

Yes – often	1
Yes – but not often	2
Never	3
Don't know	4

Ask if Q3 = code 1-8 (Based in Auckland, Northland, Waikato, Bay of Plenty)

Q41. In the last 12 months, have you fished in the Hauraki Gulf? [SR]

Yes – often	1
Yes – but not often	2
No	3
Don't know	4

Q42. As well as fishing, do you also go hunting? [SR]

Yes – often	1
Yes – but not often	2
No – not at all or not really	3

Prize draw

Q43. Thanks that's all of the survey questions. Would you like to enter into the draw for one of five \$50 vouchers from Hunting & Fishing?

Yes - I'd like to enter the prize draw	1
No thanks	2

Notes on Prize draw: The Navigators Ltd will administer the prize draw. Respondents who complete all of the required questions in the survey will be eligible for the prize draw. The recipients of the five \$50 vouchers will be drawn randomly. The winners will be notified by 30 September 2020 via the email address or phone number that is provided below. If you would like to be notified of the prize draw results, please email: survey@thenavigators.co.nz. The vouchers cannot be substituted for cash.

IF YES:

Q44. Please type your name and preferred contact phone number below. This information will only be used to notify you if you are one of the lucky winners.

FIRST NAME:

LAST NAME:

EMAIL:

PHONE NUMBER:

Closing screen

Q1. Thank you very much for your feedback today.

This survey is being conducted on behalf of the Department of Conservation. The purpose of the research to help DOC understand how to engage with recreational fishers for the future collection of bycatch information.

We would be very grateful if you would **share the survey** with other active marine fishers.

Here is the survey link, to copy and share with them: [LINK].

If you have any feedback on the questionnaire itself, please enter it below. Otherwise, select "Submit" to complete the survey.

FINAL TEXT:

Please close this window at your convenience.

Thanks again!

Recreational fishers' perspectives on
protected marine species bycatch
Quantitative social research findings
August 2020

The Navigators senate shj



CONTENTS

Project background	116
Research objectives	116
Research approach	117
Summary of key findings	118
Detailed findings	120
• Engagement: Motivators and barriers to obtaining social licence	120
• Participation: Motivators and barriers to recording bycatch data	125
• Profile of the sample	133

The Navigators

Project background

New Zealand is a nation with a rich diversity of marine animals and a long history of recreational fishing activities, with around 575,000 people annually fishing in New Zealand waters.¹ Many protected marine species, including seabirds, mammals, rays, fish, corals, turtles and sharks, are under threat from environmental and anthropogenic pressures. Fisheries' bycatch of protected species is currently recognised as one of the greatest threats to marine biodiversity. Investigations of bycatch in commercial fisheries have received extensive research effort; however, the same cannot be said of the effects of recreational fishing on protected marine species.

Recreational catch effort in New Zealand represents a significant total annual harvest of around seven million individual finfish and 3.9 million other marine species.² With this total of nearly 11 million fish and other species harvested annually by recreational fishers, there is a high likelihood of unintended bycatch of protected marine species. Considering seabird species alone, previous annual recreational bycatch rates have been estimated at around 40,000.³ However, very little research effort has been given to accurately assessing the nature and extent of protected marine species bycatch in this fishery.

The strategic overarching goal is to reduce the recreational bycatch of protected marine species. To better understand and address the nature and extent of this conservation issue, in-depth research and a quantification of the New Zealand recreational fishing bycatch of protected marine species is essential.

In order to undertake bycatch research, the Department of Conservation (DOC) ultimately needs the support of Treaty of Waitangi partners and the recreational fishing community. This support, or 'social licence', is required to get the community on board – and even mobilised – to participate in and advocate for the collection of bycatch data.

To gain support, DOC requires an evidence-based engagement framework and planning process that is robust, accessible and easy to use. Evidence for the framework was gained by understanding recreational fishers' views on protected marine species bycatch and their perceived roles and responsibilities.

1. National Panel Survey of Marine Recreational Fishers 2017–18. New Zealand Fisheries Assessment Report 2019/24
2. MPI (August 2019), <https://www.mpi.govt.nz/travel-and-recreation/fishing/national-survey-of-recreational-fishers/>
3. DOC & NZ Fisheries, "National Plan of Action – Seabirds 2020", P17 <https://www.mpi.govt.nz/dmsdocument/38054/direct>

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Research objectives

The primary objective of the project was to understand how DOC can engage recreational fishers effectively in future data-collection studies.

As part of addressing the primary objective, an online survey was conducted with recreational marine fishers. The specific objectives for the online survey (framed as questions) were as follows.

- / **Engagement:** Understand motivators and barriers to social licence. For example:
 - / Do recreational fishers consider their impacts on protected species bycatch numbers?
 - / Do recreational fishers perceive protected species bycatch to be a big problem?
 - / Do recreational fishers believe commercial fishing is the problem, not recreational?
 - / Do recreational fishers accept the need for DOC to understand the nature of the interactions between protected marine species and fishers?
 - / Do recreational fishers agree that it's the responsibility of all fishers to reduce bycatch? Are there generational differences on this?
 - / How important is it for recreational fishers to understand that:
 - future bycatch research programmes are designed to determine the nature and extent of the issue jointly, as opposed to via DOC self-determination?
 - the bycatch project objective is about the conservation of protected marine species?
 - engagement of the wider fishing community is a long-term solution?
 - / Are there terminologies or key messages that are ambiguous? (e.g. is 'bycatch' understood?)
- / **Participation:** Understand motivators and barriers to recording bycatch data. For example:
 - / What are the preferred information gathering tools for bycatch data? Including consideration of:
 - the use of existing infrastructure (e.g. DOC website for reporting bycatch)
 - new technology development by DOC for data collection (i.e. smartphone bycatch app)
 - privacy concerns over the use of a smartphone app and possible solutions
 - the use of representative groups/clubs to promote the use of reporting tools
 - the use of previous/current recreational fishing apps.

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Research approach

To collect feedback directly from recreational marine fishers, an online survey was designed and managed by The Navigators. The survey was open for 17 days between Friday 17th July and Sunday 2nd August 2020. To increase response rates, fishers who completed the survey were asked if they would like to go into the draw for one of five \$50 Hunting & Fishing vouchers.

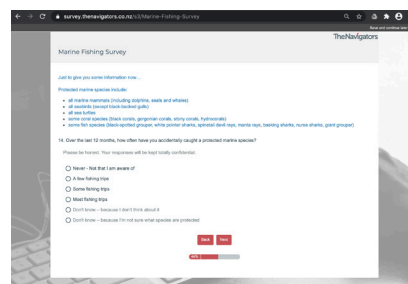
The survey received responses from **n=858** marine fishers.

Marine fishers were defined as people (aged 14+ years) who had undertaken any of the following recreational marine activities in New Zealand in the last 12 months:

- fished from a private boat or kayak (in saltwater)
- fished from a charter boat (in saltwater)
- fished from a saltwater beach/shore/wharf (including surf casting, kontiki, longline, electronic longlines, drop lines, hand lines)
- fished for seafood using set or gill nets
- dived for seafood
- fished for seafood using pots (or similar bottom gear).

To collect responses to the survey, the survey link was shared using two approaches:

1. Firstly, via email to a **list of recreational fishers** managed by Fisheries NZ.
 - An email with the survey link was sent to the list of 2,321 contacts by Fisheries NZ. The email was stated that the survey was being conducted by The Navigators (an independent research agency), on behalf of the Department of Conservation. The first batch of emails was sent on Friday 17 July (as the survey pilot) and the second/final batch was sent on Tuesday 21 July.
 - People are recruited to the Fisheries NZ email list via self sign-up; that is, fishers provide their email addresses to Fisheries NZ to receive fishing-related updates. The email subscriber list is promoted at boat shows, in Fisheries NZ pamphlets and recreational fishing media, and via links on boating/fishing apps. We assume that those who've signed up to the list are more likely to be engaged with the fishing community, e.g. more likely to be club/body members, and also more likely to support government endeavours.
 - The survey email sent by Fisheries NZ was further shared by organisation/club administrators to their own members/subscribers. As a result, we are not able to quantify how many people received the survey link in total and therefore unable to calculate the survey response rate.



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Research approach (continued)

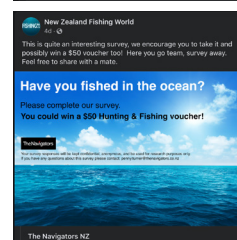
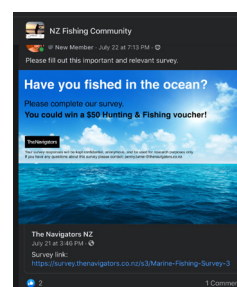
2. Secondly, the **survey link was shared via Facebook**. This second approach was implemented to gain feedback from fishers who may not be on the Fisheries NZ list. For this recruitment approach, we gained permission to post the survey link on the page of one of the largest fishing-related private groups, 'NZ Fishing Community', as well as the 'New Zealand Fishing World' page.

- 'NZ Fishing Community' has approximately 65,000 members. The initial post was placed by The Navigators and it received some responses. To help gain traction a post was also placed by the group's administrator — this post stated that the survey was for DOC. The post was live for approximately two hours and then withdrawn due to negative commentary being posted about DOC. Much of the sentiment related to a sense of distrust and anger in response to some of DOC's conservation actions. The initial post that didn't mention DOC remained live on the community page for the survey period.
- The 'New Zealand Fishing World' page is hosted by a fishing retailer who posts fishing articles, instructional videos, gear reviews and fishing information on it. The page has approximately 80,570 likes. The survey post was published by the administrator.

Note on sample representativeness: Given the methodology used for data collection, the online survey is unlikely to be a truly representative sample of recreational marine fishers, and we aren't able to ascertain where any sample skews may exist. Any quantitative findings should be interpreted as 'of the survey population' rather than 'of the recreational marine fishers population'. However, given the large response to the survey, the sample does provide valuable insights that meet the survey objectives.

Data presentation notes:

- Percentage totals in the charts shown in this report may not equal 100% due to rounding. Likewise, nett totals may not be an exact total of percentage figures in the charts due to rounding.
- Some percentages on the charts are not shown if they're very small e.g. if the percentage is 1% or 2%.



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Summary of key findings

DOC needs to understand how to engage with recreational fishers to collect bycatch data. Ideally the bycatch data collection process has **social licence** as well as **good participation** from marine recreational fishers.

Engagement/social licence

Based on marine recreational fishers' attitudes, most (91%) agree that bycatch of protected marine species is an issue because it could contribute to the extinction of some species. Fishers generally want to actively avoid catching protected marine species.

However, only one fifth (22%) 'definitely' believe that recreational fishers have an impact on the number of protected marine species that are caught. This is in part based on their own experience, with most fishers (89%) stating they have not accidentally caught a protected marine species in the last 12 months. Fishers claim they're not catching protected marine species, with some (35%) also taking some action to avoid catching these species. Furthermore, fishers also state that any bycatch that does occur is mostly released unharmed. Another sentiment shared by recreational fishers is that commercial fishing should be the focus of bycatch monitoring, including enforcing cameras on boats. As a result, only 65% of fishers agree that it is very or extremely important to monitor the number of protected marine species caught from recreational fishing. This is in contrast to the 91% who agree bycatch is an issue.

The provision of social licence is polarised. There are those who do support monitoring in order to do what's possible to protect species, gain greater understanding on the issue, learn how to avoid bycatch, and to generally preserve biodiversity and have a balanced marine ecosystem. Then there are others who don't see the value in monitoring recreational bycatch because they don't believe recreational fishers are having an impact (primarily based on their own experiences).

Potentially, one of the reasons some fishers may not be seeing the impact of recreational bycatch could be their lack of knowledge of which marine species are protected in New Zealand. Only half of the fishers (49%) felt they definitely had a good understanding of the protected marine species in New Zealand. Fishers were most likely to name dolphins, whales and seabirds as protected marine species, but less likely to name groupers, rays, basking or nurse sharks or coral species. This suggests fishers **may** be catching these latter species unaware that they're protected.

In thinking about communications with fishers, it's important to note that recreational fishers don't use the term 'bycatch' in the same way DOC does. For many fishers, 'bycatch' includes anything that's caught other than the targeted species. As a result, communications should always also refer to 'protected marine species', not just 'bycatch'. Another point to keep in mind when communicating with fishers is that most primarily value their fishing activities as a source of food and an opportunity to get away from everyday life – these motivators can be used to gain fishers' attention and/or provide a sense of connection.

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Summary of key findings

Recommendations for gaining greater engagement/social licence based on the research with marine fishers:

1. If DOC has evidence that recreational fishing is having an impact on the bycatch of protected marine species, this information should be disseminated within the fishing community. If little is known at present, DOC could communicate any early knowledge and state that more information needs to be collected from the recreational fishing community to understand the nature and extent of protected marine species bycatch more fully. Targets for this information should be those over 55 years, males, members of fishing clubs, and fishers who also hunt.
2. Increase fishers' knowledge of New Zealand's protected marine species, particularly of lesser-known species such as black-spotted grouper, giant grouper, white pointer sharks, spinetail devil rays, manta rays, basking sharks and nurse sharks. Targets for this information should be those who've been fishing for fewer than 20 years and those who fish less frequently.
3. Always reference the term 'bycatch' in conjunction with protected marine species.
4. Try to connect with fishers by relating to values that are important to them e.g. fishing as a source of food, fishing as a getaway from everyday life.
5. To help fishers with what they want to avoid anyway, provide information on techniques they can use to limit catch of protected marine species.

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Summary of key findings

Participation in data collection

Encouragingly, three quarters (75%) of fishers are open to reporting bycatch information confidentially. However, this group were also less likely to have caught a protected marine species in the last 12 months. The small proportion (5%) who said they would not report bycatch were also more likely to have caught protected species on most of their fishing trips. The issue of this for the self-reported data collection is that the sample may not include those who are more likely to be catching the marine protected bycatch.

Interestingly, fishing club leaders were less open to reporting bycatch information – they were more likely to answer 'maybe' or 'no' to this question. Given their potential influence, these leaders ideally need to be engaged with to increase the success of data collection.

Fishers who are willing to report bycatch are most likely to be motivated by the desire to be a responsible fisher, with almost half stating this as their main reason to report. Other key motivators were to contribute to scientific learning, for future generations, and for biodiversity and marine protection reasons.

The greatest concerns for fishers around reporting are the risk of being fined, details not being kept confidential, potential restrictions on recreational fishing and whether the information would be used. These concerns are high amongst fishers and are likely to limit reporting: for example, two-fifths (42%) of fishers are moderately or extremely concerned about the risk of fines. Fishers are less concerned about their fishing location being identifiable or that friends or family might disagree.

Knowledge of all the types of information suggested in the survey would increase the likelihood of reporting for most fishers, including knowing:

- that everyone would be working together to understand bycatch impacts (for example, DOC, iwi, MPI, fishing clubs, fishers)
- the key learnings from the bycatch data collected
- how bycatch data would be used
- that monitoring bycatch numbers is about preventing the decline of marine species and protecting marine biodiversity
- more about what protected marine species are in your fishing area/s
- more about the number, type and injury/survival of protected marine species caught in your fishing area/s
- that the monitoring of bycatch is a long-term project
- more about New Zealand's protected marine species.

Summary of key findings

In terms of reporting options, fishers were most favourable towards using the NZ Fishing Rules app, boat ramp surveys or a marine species identifier app. At least half of the fishers said they would be likely or extremely likely to use one of these options. An 0800 number or a fishing catch app were the least popular reporting methods. Half of the sample (48%) said they currently had the NZ Fishing Rules app on their phones (note: this figure may be inflated due to use of the Fisheries NZ list as a sample source). One fifth (19%) of fishers said they don't really use apps on their phone – suggesting that a phone app may be a barrier for some.

One quarter (25%) of fishers said they would be less likely to provide information if DOC led the project. This was primarily due to an underlying distrust of the organisation.

The majority (69%) of fishers are willing to report catch of protected marine species even if they were released unharmed, leaving one third (31%) who may not or would not.

Recommendations/considerations for data collection:

1. Decide on how to proceed given that those who are more likely to catch protected marine species may be less likely to self-report these incidents.
2. Engage with fishing club leaders to understand their concerns and reservations regarding participation.
3. Encourage participation through messages that inspire fishers to 'do the right thing' and 'be a responsible fisher', as well as the other key motivators of contributing to scientific learning, and looking after marine biodiversity and species now and for future generations.
4. Reassure/convince fishers that the details they report will be kept confidential.
5. Allay fishers' fears that reporting may result in recreational fishing restrictions – if possible.
6. Create a social norm whereby possession of protected marine species is accidental, an honest mistake (heartbreaking for anyone) and being reported.
7. Provide evidence that the reported information is being used (for scientific reasons) – as part of this evidence, techniques to avoid bycatch and other learnings could be shared.
8. Explain why it is important to monitor unharmed, as well as harmed, bycatch.
9. Share information to increase the likelihood of fishers reporting.
10. Consider the utility of collecting data via the NZ Fishing Rules app, boat ramp surveys or a marine identifier app – or a combination of these.
11. Consider whether DOC should lead the project or another entity.
12. Thank fishers for their reported information on receipt.



DETAILED FINDINGS

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Engagement: Motivators and barriers to obtaining social licence

- 🔥 **Are fishers knowledgeable?**
 - 🔥 Are they familiar with the protected marine species?
 - 🔥 What is their awareness and interpretation of the term 'bycatch'?
- 🔥 **Are fishers concerned?**
 - 🔥 Is the impact of recreational fishing on protected marine species an issue?
 - 🔥 Is bycatch a common occurrence?
 - 🔥 Do fishers believe or care that bycatch could contribute to the extinction of some species?
 - 🔥 Do fishers believe that recreational fishing impacts on protected marine species bycatch?
- 🔥 **Do fishers believe monitoring is important?**
- 🔥 **What do fishers value most about fishing?**

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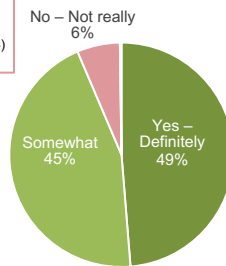
Are fishers knowledgeable?

– Are fishers familiar with the protected marine species?

Understanding of protected marine species

Q10: Do you have a good understanding of the marine species that are protected in New Zealand?
Base: n= 858

- More likely to:**
- Be aged 45 to 54 years 10% (i.e. 10% said 'no – not really')
 - Have been fishing for 20 years or less 11%
 - Not know if they fish near marine reserves 29% (small base n=14)
 - Not be a hunter 8%



- More likely to:**
- Be from Otago 57%
 - Have fished from a private boat or kayak (in saltwater) 45%
 - Fish less frequently in the warmer months 50%
 - Have been fishing for 20 years or less 57%
 - Have never fished near a marine reserve (52%) or coastal seabird colony 50%
 - Not be a hunter 51%

- More likely to:**
- Have fished from a saltwater beach/shore/wharf 55%
 - Have dived for seafood 61%
 - Fish at least weekly in the warmer months 56%
 - Have been fishing for more than 20 yrs 53%
 - Fish near marine reserves 56% and near coastal seabird colonies 54%
 - Also be a hunter 59%

Encouragingly, most fishers have some level of familiarity with the protected marine species, with half indicating they 'definitely' have a good understanding and a further 45% indicating they have 'somewhat' of an understanding. Those who have a good understanding of New Zealand's protected marine species are more likely to fish frequently, to have been fishing for longer and to fish via diving and shore fishing; they're also more likely to be hunters. Those with less of an understanding ('somewhat' or 'no - not really') are more likely to have been fishing for fewer years, fish less frequently and not go hunting.

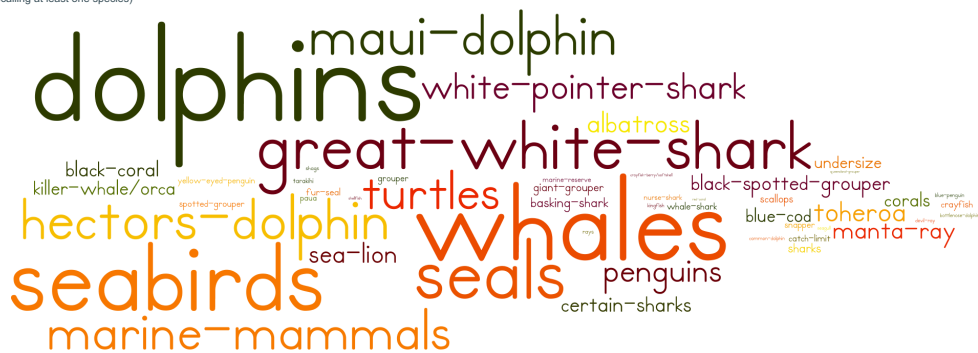
The Navigators

Are fishers knowledgeable?

– Are fishers familiar with the protected marine species?

Recall of protected marine species

Q11: Please name the marine species that are protected in New Zealand – the ones that you easily recall: If you can't recall any, please go to the next question.
Base: n= 858 (with 779 recalling at least one species)



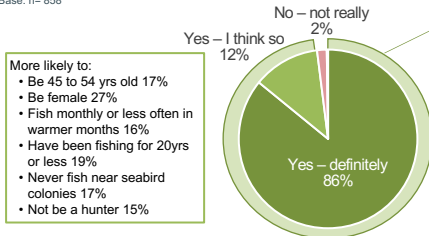
When asked to name the marine species that are protected in New Zealand, 91% could recall at least one species. Those who could recall any species were able to recall 4.8 species on average. The species most likely to be mentioned were dolphins (both generally and Hector's and Māui dolphins specifically), whales, seabirds, seals and great white sharks. This was followed by a smaller number of turtles and white pointer sharks. Not so many fishers mentioned coral species, groupers, rays, or basking or nurse sharks.

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Are fishers knowledgeable? – What is their awareness and interpretation of the term 'bycatch'?

Awareness of the term 'bycatch'

Q12: Have you heard the term 'bycatch' (with regards to fishing)?
Base: n= 858



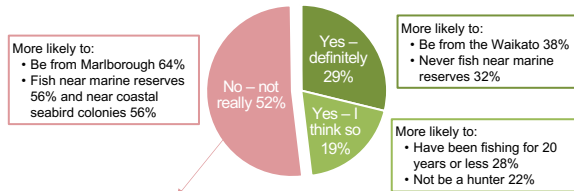
- More likely to:
- Be 45 to 54 yrs old 17%
 - Be female 27%
 - Fish monthly or less often in warmer months 16%
 - Have been fishing for 20yrs or less 19%
 - Never fish near seabird colonies 17%
 - Not be a hunter 15%

- More likely to:
- Be male 87%
 - Dive for seafood 90% and fished for seafood using pots 93%
 - Fish at least weekly in warmer months 91%
 - Have fished for more than 20 yrs 88%
 - Be a leader in a fishing club 93%
 - Fish near marine reserves 89% and near coastal seabird colonies 91%
 - Be a hunter 91%

Most fishers (86%) are aware of the term 'bycatch'. However, over half of those (52%) had a different understanding of the definition; most bycatch also referred to the catch of non-target species.

Agreement with DOC's definition of bycatch

Q13: If we said 'bycatch' occurs when protected marine species are caught on lines, nets, pots, hooks or other fishing equipment... is this what you think bycatch means?
Base: n= 841



- More likely to:
- Be from Marlborough 64%
 - Fish near marine reserves 56% and near coastal seabird colonies 56%

- More likely to:
- Be from the Waikato 38%
 - Never fish near marine reserves 32%

- More likely to:
- Have been fishing for 20 years or less 28%
 - Not be a hunter 22%

What they think it means

Q13. Please enter here what you were thinking instead.
Base: n= 434

Almost all mentioned that in their mind, 'bycatch' included anything that was caught other than their targeted species; this could include protected marine species but also included other non-protected species. Many fishers also thought it included catch not included in the quota (some specifically mentioned this in the context of commercial fishing). A few fishers also felt that 'bycatch' would include undersized target species.

"As well as protected marine species, bycatch would include any other species that are not the target species i.e. target snapper but have a bycatch of gurnard."

"Any catch that is outside of the allocated quota, including protected species."

"Any fish etc caught which was not part of targeted species... it usually refers to commercial fishing."

"Your definition plus undersize or not target species."

Are fishers concerned? – Is the impact of recreational fishing on protected marine species an issue?

Biggest issues for New Zealand's marine environment

Q9: What do you think are some of the biggest issues for New Zealand's marine environment at present? They could be things that affect you or things that concern you. Please list up to four – with one issue per row.
Base: n= 858

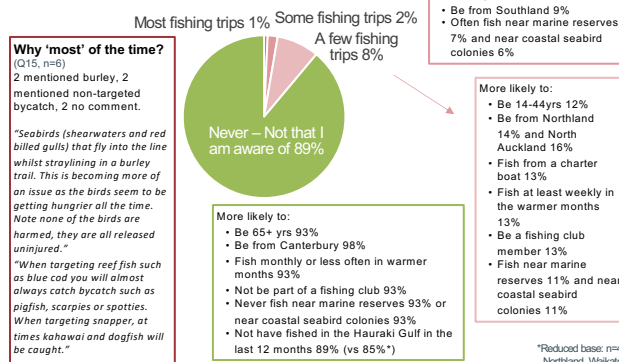


Primary concerns for fishers regarding New Zealand's marine environment mostly related to overfishing: both commercial and recreational. Other concerns around commercial fishing related to fishing methods (nets, trawling, dredging). Pollution was also a concern for many. Recreational bycatch or related topics such as the impact of recreational fishing on protected species were mentioned by fewer than 3% of fishers – suggesting that bycatch of protected marine species is not currently seen by fishers as one of the bigger issues for New Zealand's marine environment. Comments relating to commercial bycatch (including non-protected species) and wastage were made by around 6% of fishers.

Are fishers concerned? – Is bycatch a common occurrence?

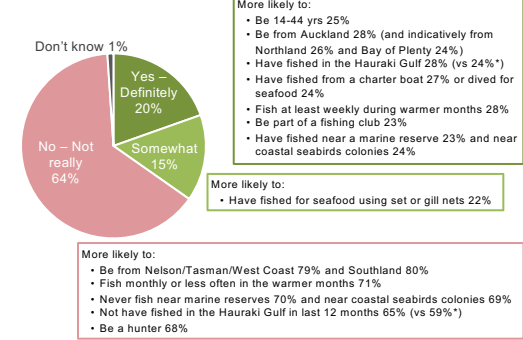
Frequency of bycatch

Q14: Over the last 12 months, how often have you accidentally caught a protected marine species? Please be honest. Your responses will be kept totally confidential.
Base: n= 858



Altered behaviour to avoid bycatch

Q24a: In the last 12 months, I have altered my fishing behaviour to try and avoid catching protected marine species e.g. changed location, waited while fishing, used a different fishing technique, etc.
Base: n= 858

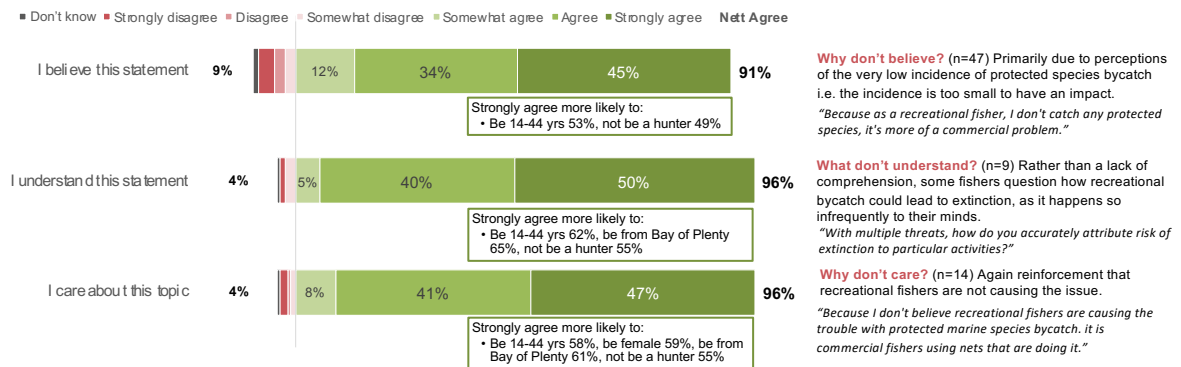


The majority of fishers (89%) claim they have never caught a protected marine species. Those who are experiencing bycatch more frequently live in Southland, Northland or North Auckland and/or are more likely to fish near marine reserves and coastal seabird colonies. One third of fishers (35%) have changed their fishing behaviour to avoid bycatch. Those who are altering their behaviour are more likely to be younger, from Auckland, Northland or Bay of Plenty, to fish in the Hauraki Gulf, and/or to fish from boats.

Are fishers concerned? – Do fishers believe or care that bycatch could contribute to the extinction of species?

Believability, understanding and care – that bycatch could contribute to the extinction of some species

Q19: "Bycatch of protected marine species is an issue because it could contribute to the extinction of some species." After reading this statement, to what extent do you agree or disagree with the following...
Base: n= 858



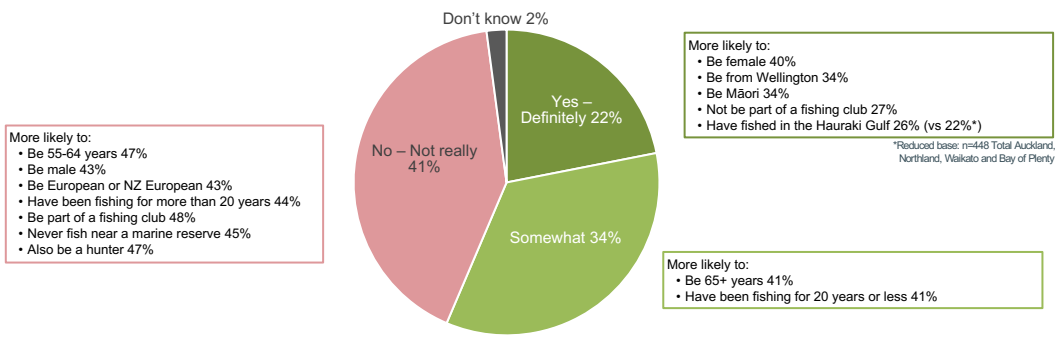
Encouragingly, the majority of fishers believe, understand and care that bycatch could contribute to the extinction of some protected marine species. Those who strongly agree are more likely to be younger (14 to 44 years), from the Bay of Plenty, and not hunters, with females also being more likely to care. Those who don't believe, understand or care primarily feel that the incidence of recreational bycatch is very low (i.e. it would not contribute to the extinction of protected species).

Are fishers concerned?

– Do fishers believe that recreational fishing impacts protected marine species bycatch?

Impact of recreational fishers

Q24b: I believe recreational fishers have an impact on the amount of protected marine species that are caught (i.e. it's not just commercial fishing)
Base: n= 858

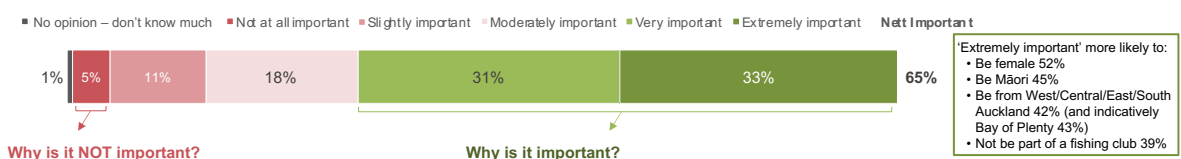


Just over half (56%) of fishers believe recreational fishers have an impact on the numbers of protected marine species that are caught. Many (41%) disagree. Those who disagree are more likely to be aged 55 to 64 years, be part of a fishing club and be hunters. Māori and those who fish in the Hauraki Gulf are more likely to definitely agree that recreational fishers have an impact on bycatch.

Do fishers believe monitoring is important?

Importance of monitoring bycatch

Q16: To what extent do you think it is important to monitor the number of protected marine species caught from recreational fishing?
Base: n= 858



Why is it NOT important?

Q17: Why do you think it is not important to monitor the number of protected species caught from recreational fishing?
Base: n= 29

All comments relate to recreational fishers catching very few protected species and commercial fishers being of greater concern. Some mention that the only protected species caught are seabirds which are mostly released unharmed.

"So few/rare. I fish A LOT and the only instances of protected species encounter are where the odd seabird snaffles a surface bait from an inexperienced angler. We carry a towel and not once have we been unable to release the bird that flies off unharmed."

"Commercial fishing is far worse."

Why is it important?

Q18: Why do you think it is important to monitor the number of protected species caught from recreational fishing?
Base: n= 328

The following were the most common reasons offered for the need to monitor protected species numbers:

- To protect endangered species
- To gather information allowing greater understanding of the issue
- To learn how bycatch can be avoided (e.g. by modifying fishing methods)
- To preserve biodiversity/a balanced ecosystem

"To allow effective protection/conservation of these species."

"Because there needs to be an overall understanding of the extent of the problem beyond commercial fishers."

"It's very important to collate data to provide solid evidence and facts, thereby launching a platform whereby methods, rules and regulations could be put in place to mitigate this and possibly deterrents and penalties applied if breached."

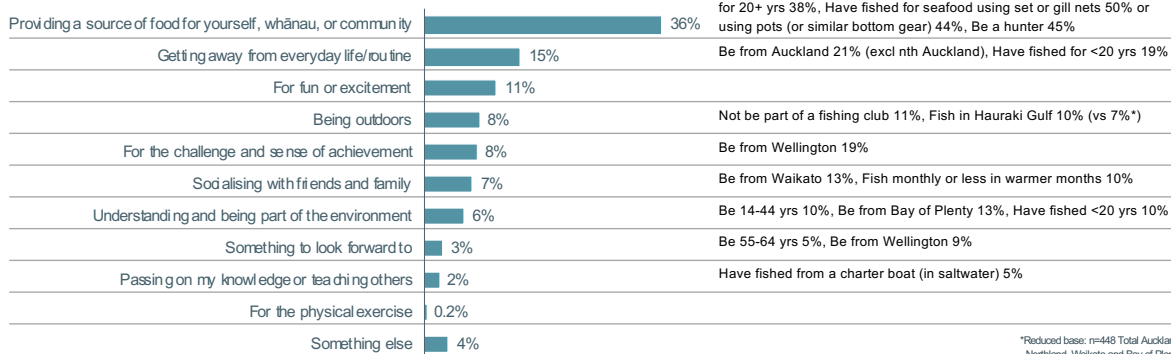
"To ensure the ecosystem remains healthy."

Two thirds of fishers (64%) believe monitoring is very or extremely important in order to protect endangered species and to gather information to better understand the issue. Māori, Aucklanders and those who aren't part of a fishing club are more likely to state monitoring is extremely important. Those who don't think monitoring is important believe the incidence of protected species bycatch is very small, too small to make an impact on protected species.

What do fishers value most about fishing?

Value most about fishing

Q8. Which of the following statements best describes what you value the most about your fishing activities?
Base: n= 858



*Reduced base: n=448 Total Auckland, Northland, Waikato and Bay of Plenty

For most fishers the primary benefit of fishing is as a source of food, with over a third indicating this is the biggest driver for them. Getting away from everyday life/routine and fun/excitement were the next-most identified primary benefits of fishing. Relating to these values may be helpful for DOC's engagement strategy.

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Participation: Motivators and barriers to recording bycatch data

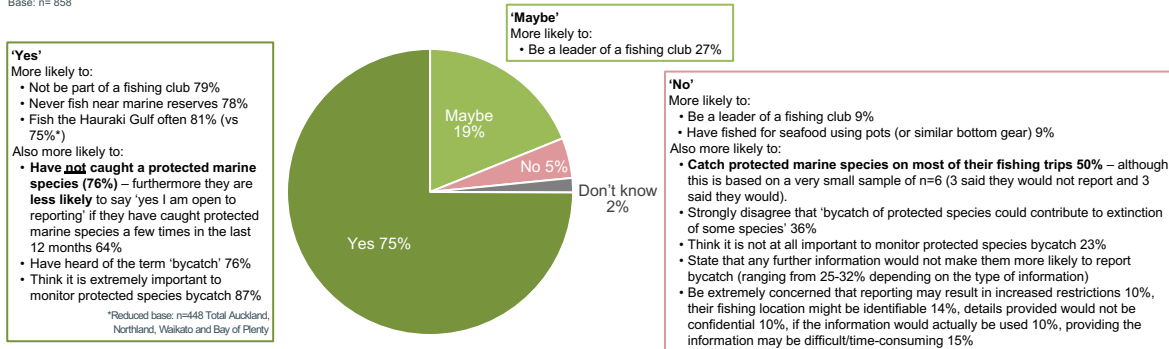
- / **Are fishers open to reporting bycatch?**
 - / Why would fishers report bycatch?
 - / Why wouldn't fishers report bycatch?
- / **How would fishers prefer to provide bycatch information?**
 - / Why do they prefer and not prefer the reporting options?
- / **Do fishers have the main fishing apps?**
- / **What information would increase reporting likelihood?**
- / **Does DOC's involvement increase reporting likelihood?**
 - / Why does it decrease likelihood for some?
- / **Would fishers report unharmed bycatch?**

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Are fishers open to reporting bycatch?

Openness to reporting bycatch

Q25: If you did accidentally catch a protected marine species, would you be open to reporting the information confidentially e.g. via a phone app, website or 0800 number?
Base: n= 858

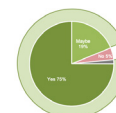


Encouragingly, most fishers (75%) were open to reporting bycatch of protected marine species, while a further 19% were possibly open to reporting. Interestingly, those who were more open to reporting were not part of a fishing club and had not caught a protected marine species in the last 12 months. Fishing club leaders were more likely to not be open to reporting protected species bycatch. Those who would not report bycatch were more likely to catch protected species on most of their fishing trips – this potentially has implications for the reliability of data collected from the marine fisher population.

Are fishers open to reporting bycatch? – Why would fishers report bycatch?

Reasons for being open to reporting (of the 95% who didn't say 'no' to reporting bycatch)

Q26: Which of the following best describes why you would be open to reporting the information if you did accidentally catch a protected marine species? Please select one or two.
Base: n= 819 (those who were not closed to recording bycatch information i.e. who said yes, maybe or don't know)



Reason	Description	Percentage	More likely to:
To do the right thing:	To be a responsible fisher.	49%	Fish monthly or less in warmer months 55%
To contribute to scientific learning:	By providing the information and then receiving updates on the key learnings from the data collected.	20%	Be from Bay of Plenty 35%, Fish from a saltwater beach/shore/wharf 24%, Dive for seafood 25%, Fish at least weekly during warmer months 26%, Fish infrequently in Hauraki Gulf 30% (vs 21%), Fish near coastal seabird colonies 23%
For future generations:	To have similar marine biodiversity and species that we have today.	19%	Fish for seafood using pots 26%
For biodiversity & marine protection:	To more broadly look after the ocean, so it continues to support a wide range of marine life.	19%	14-44 years 25%, Fish from a saltwater beach/shore/wharf 21%, Fish near coastal seabird colonies 22%
Conservation reason 1:	To help protect and support thriving populations of protected marine species.	17%	
To learn how to reduce my impact	i.e. if I got to understand what I can do to increase the survival or reduce severity of my unintended bycatch.	13%	
Conservation reason 2:	To avoid the potential extinction of some protected marine species.	13%	
If I was asked to:	by my fishing club, conservation group, cultural community or another group that is important to me.	3%	55-64 years 6%, West/Central/East/South Auckland 8%, Members of fishing clubs 5%
Something else:	Comments around: limited occurrence of bycatch, most released unharmed, questioning the need to report.	3%	

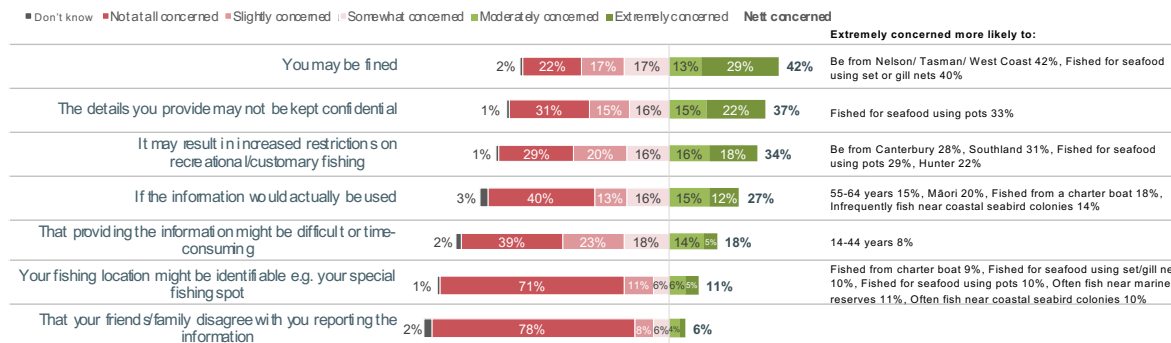
*Reduced base: n=448 Total Auckland, Northland, Waikato and Bay of Plenty

The main reason fishers are willing to report bycatch is to do the right thing by being a responsible fisher, with almost half stating this as their main reason for doing so. Other key motivators were to contribute to scientific learning, for future generations, and for biodiversity and marine protection reasons.

Are fishers open to reporting bycatch? – Why wouldn't fishers report bycatch?

Barriers to reporting

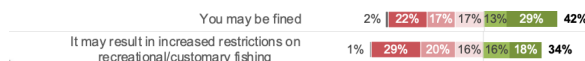
Q27. To what extent would you be concerned about the following, in regards to providing information if you did catch a protected marine species? To what extent would you be concerned...
Base: n= 858



The greatest concerns for fishers around reporting are the risk of being fined, details not being kept confidential, restrictions on recreational fishing and whether the information would be used. These concerns are high amongst fishers and are likely to limit reporting: for example, two fifths (42%) of fishers would be moderately or extremely concerned about the risk of fines. Fishers are less concerned about their fishing location being identifiable or that friends or family might disagree.

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Are fishers open to reporting bycatch? – Why wouldn't fishers report bycatch?



Barriers to reporting – further elaboration on 'you may be fined' and 'may result in increased restrictions'

Q28. Is there another reason why you might not want to provide information (if you did catch a protected marine species)? If so, please add it here:
Base: n= 157

- Further elaboration on the barrier of fines, prosecution.
 - "If caught accidentally (which definitely would be accidentally) the possibility of a conviction."
 - "The catching would be totally accidental in my case so I would be very concerned if I was penalised in ANY way for reporting the event."
 - "If people were to be fined they will not report it. If you teach them how to deal with it you will get respect from the general public."
- Further elaboration on the barrier of restrictions.
 - "I would be concerned that it would be used to just cut rec fishers out of more fishing spots, rather than educating them... and commending them for being honest."
 - "As could give unjust reasons for shutting down an area or type of fishing when commercial fishing methods in the same area are having even more major effects."
 - "I do not see a problem if the protected marine species is released unharmed as is the case with birds that get entangled in the line, it should only be about species that are harmed. I believe that DOC will use this information to try and push for greater restrictions and controls on recreational fishing as the policy makers, if they had their way, there would be no fishing at all."
 - "If one provided the information voluntarily then it was used in a negative way, I would be really pissed! The intent to supply information is for the purpose of assisting the protection process, not to penalise the contributor. I find the MAF surveys condescending and pointless as they are only doing due diligence to confirm what they have already decided, which is often not the best option."
 - "People jump to quick conclusions and close an area, restrict access to Kiwis being able to collect seafood, a major source of food for many of us."
 - "That it may be used by conservation groups as propaganda to close areas and ramp up regulations."
 - "That the information is used to disproportionately restrict non-commercial fishing."
 - "That the information would be blown out of proportion and the statistical outcome twisted to suit special interest groups."
 - "It would likely be used as reasoning to further unnecessarily penalise amateur fisher-people."
 - "Unfortunately the integrity of science in NZ has been undermined by the actions of the Department of Conservation, particularly when it comes to their predator control on land. Most fishermen I know are also hunters and do not trust DOC at all."
 - "Commercial operators won't comply and government will use the information to create poor policy in their favour, not for a family to get a feed."

Perceptions about possible fines and/or restrictions placed on their fishing are a real concern for fishers and will limit their willingness to report. With regard to restrictions, fishers are worried about increased regulations or recreational fishing areas being shut down, which would have the flow-on effect of limiting their food sources. The sentiment in the comments does suggest fishers actively want to avoid catching protected marine species and they want to know how they can avoid catching them, i.e. techniques. A possible means of improving social licence would be for DOC to provide/communicate this information.

The Navigators

Are fishers open to reporting bycatch? – Why wouldn't fishers report bycatch?

The details you provide may not be kept confidential 1% 31% 15% 16% 15% 22% 37%

Barriers to reporting – further elaboration on 'the details may not be kept confidential'

Q28. Is there another reason why you might not want to provide information (if you did catch a protected marine species)? If so, please add it here:
Base: n= 157

- Potential for embarrassment and/or shaming.
 - "DOC have a reputation of naming and shaming anyone who goes to help a marine species caught in a net."
 - "Bringing a dead protected species to shore for scientific purposes but being caught with the fish before declaring it?"
 - "Disappointment in myself and embarrassment in doing the wrong thing."
 - "Don't want to see a disproportionate reaction to a rare incident."
 - "Don't trust DOC not to release personal info under Official Information Act. Believe DOC would leak to Forest & Bird, etc."
 - "Embarrassment and being blamed when accidental."
 - "I have no confidence in DOC to protect my identity and circumstances. And slightly less in MPI to do the same. If I was unfortunate enough to be responsible for killing a protected species I would be very certain not to allow a repeat performance."
 - "If it was totally accidental, and it was injured or killed you would be victimised, and kneejerk panic reactions by media and government would just make the whole experience a nightmare."
 - "Info gets plastered on the front page of the papers."
 - "Perhaps the media would report an incident if alerted by authorities?"
 - "Radical activists harassing people for accidentally catching a protected species."
 - "Repercussions from community, I have seen this occur."
 - "Scared of getting in trouble."
 - "Social media haters – if I ever caught something and it died it would be purely accidental but social media greenies do not differentiate on this matter."
 - "DOC will maintain a name-and-shame register which will end up being hacked or published just because I accidentally hooked a seagull in my fishing line and let it go!"
 - "While fishing, your intent is to catch your intended species, not anything protected. If however you do, there is the potential for the loony left brigade to use social media to drag you through the mud."
 - "Worried about what might happen, people might think it was not an accident."

Many fishers are concerned that the details they provide would not be kept confidential. Some fishers have an underlying lack of trust in DOC. Fishers are familiar with previous incidents where others who've caught protected species have ended up in the papers. Fishers are also concerned about being seen with a protected marine species in their possession. This suggests that the engagement campaign needs to reassure/convince fishers that their details will be kept confidential, and it needs to create a social norm that possession is accidental, an honest mistake (heartbreaking for anyone) and being reported.

The Navigators

Are fishers open to reporting bycatch? – Why wouldn't fishers report bycatch?

If the information would actually be used 3% 40% 13% 16% 15% 12% 27%

Barriers to reporting – further elaboration on 'if the information would actually be used'

Q28. Is there another reason why you might not want to provide information (if you did catch a protected marine species)? If so, please add it here:
Base: n= 157

- Further elaboration on whether the information would be used or used appropriately.
 - "I have been fishing in NZ for 13 years on an average 50 days a year and have only ever caught one protected species by accident, a green turtle off Mana. I released it unharmed and reported it to DOC and Te Papa. Te Papa was the only interested party and got back to me with the identity and further information on that it was on the extreme limits of its range."
 - "That the information would be used for purposes other than research/science, the period of time the information would be held for, and if the information was secure."
 - "MPI have proven incompetence, DOC seriously under-resourced, don't respect or trust either of them."
 - "Wouldn't make a scrap of difference and would end up being a useless hassle."

Many fishers are concerned that the details they provide would not be used or would not make any difference for good. For one fisher, this is based on a previous experience of reporting bycatch to DOC and getting no response. Some are concerned the information might be used but not for science purposes only (i.e. it could be used to restrict access). The engagement plan needs to ensure that fishers' reports are acknowledged on receipt and evidence provided that the information contributed is being used for scientific purposes – as part of this evidence, techniques to avoid bycatch could be shared.

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Are fishers open to reporting bycatch? – Why wouldn't fishers report bycatch?

Other barriers to reporting

Q28. Is there another reason why you might not want to provide information (if you did catch a protected marine species)? If so, please add it here:
Base: n= 157

Beyond the barriers prompted in the survey, respondents were asked if there were other reasons why they might not want to provide information. Two other significant barriers raised were:

- Other barrier 1: Recreational fishers rarely catch protected marine species. Plus it is commercial not recreational fishing that is the issue.
 - *"For 52 years I have never caught an endangered species."*
 - *"Haven't caught a protected species that has died in 40 years so not concerned at all. The commercial are the ones who catch all protected species. I have seen mollyhawks and sooty shearwater birds caught on a hook on a rod but all released alive and well. Recreational fishers in my opinion would catch next to no protected species."*
 - *"I have never caught a protected species. Recreational fishers have taken the brunt of rule changes, however the ones doing this everyday commercially have not been impacted until recently. Knowing some commercial fishers I have been told they do not report killing protected species."*
 - *"In thousands of fishing trips I have caught one protected fish released, and 3 x a bird."*
 - *"Recreational fishers are used as a scapegoat for commercial. Put bloody cameras on their boats and leave recreational alone."*
 - *"Recreational fishing is responsible for less than 3% of total catch and therefore probably 3% of protected species as bycatch. It's important but it's the pimple on the arse which is Industrial fishing."*
 - *"The commercial fishing industry might use this information to move the spotlight away from them and carry on with the massacre. Even if all recreational anglers were trying to catch only bycatches they would still do less damage than the commercial fishing industry."*
 - *"The government only restricts/prosecutes recreational fishermen. Even the Sealord court case proves this, as they can still use the 'Forfeited' boat without issue, and will no doubt get it back without paying what it's worth."*

Beyond the barriers of being fined, details not being kept confidential, potential restrictions and whether the information would be used... some fishers would not engage simply because they don't think there's an issue. Based on their experience they either rarely or never catch protected species and if they do these are carefully released unharmed. They feel the commercial fishing sector should be the focus of bycatch monitoring (and penalties), including the enforcement of cameras on boats. As previously noted, any evidence of the impact recreational fishing has on bycatch may help with this barrier.

The Navigators

Are fishers open to reporting bycatch? – Why wouldn't fishers report bycatch?

Other barriers to reporting

Q28. Is there another reason why you might not want to provide information (if you did catch a protected marine species)? If so, please add it here:
Base: n= 157

- Other barrier 2: Any recreational bycatch is mostly released unharmed – so there's no point reporting.
 - *"Catching and releasing a protected species is more likely in recreational fishing due to methods used (mainly rod and reel and not nets)."*
 - *"I have caught sea birds in the past, either through them flying into the line or eating baits, however, I have always managed to release the birds in a healthy condition. As the birds have always survived capture/release, for right or wrong, I have never felt the need to report these catches..."*
 - *"I have never caused death to a protected marine species, although I have had a couple of sea birds tangled in my line after they dive for your bait, we have worked out a technique to throw bait so they chase it and you can drop your line safely unlike a dolphin turtle shark etc getting caught in a net!!!"*
 - *"I would have no problem providing information if the protected species died but I don't see the need to waste taxpayers' money if the protected species was released unharmed."*
 - *"If I did catch a protected species and I could release it alive I would not report it."*
 - *"Most people would not be interested in reporting catching a bird which they consequently release. Would be seen as a complete waste of time with no useful results for people or birds."*
 - *"Only interested in reporting if there was a death, if the animal was safely released there would be no point."*

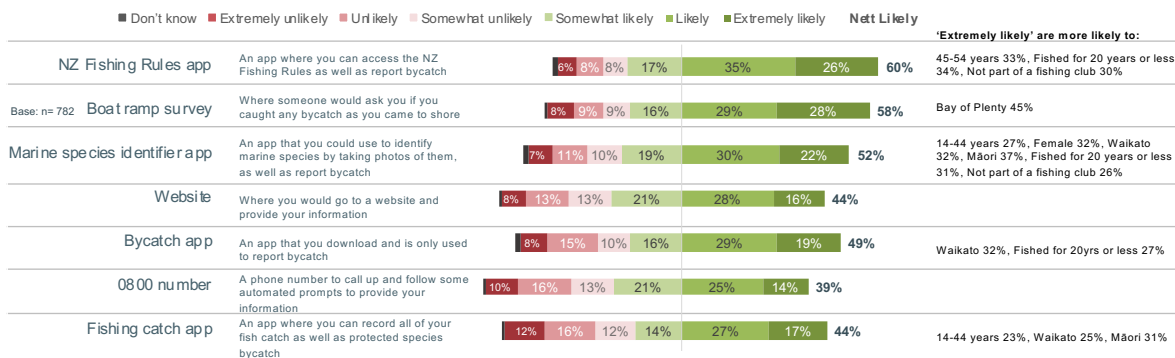
Beyond the barriers of being fined, details not being kept confidential, restrictions and whether the information would be used... some fishers would not engage simply because they feel that any bycatch that does occur is mostly released unharmed. This is based on their experience. To overcome this barrier, fishers need to understand (and believe) why it is important for DOC to monitor unharmed bycatch.

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How would fishers prefer to provide bycatch information? – Which are the preferred methods?

Preferred reporting methods

Q30. Below are some of the ways that you could provide information if you did accidentally catch a protected marine species. How likely would you be to use/do each one?
Base: n= 819 (those who were not closed to recording bycatch information i.e. who said 'yes', 'maybe' or 'don't know')



Of those who were potentially open to reporting bycatch (95% of fishers), they were most favourable towards using the NZ Fishing Rules app, boat ramp surveys or a marine species identifier app. At least half the fishers stated they would be likely or extremely likely to use each of these options. An 0800 number or a fishing catch app were the least popular reporting methods.

How would fishers prefer to provide bycatch information? – Why do they prefer and not prefer the reporting options?

Reasons for liking chosen reporting options

Q31. Looking at the options that you would be 'likely' or 'extremely likely' to use/do... What do you like about this/these options?
Base: n= 422

- 'Easy/simple' was by far the most widely mentioned reason for being likely to use their preferred methods.
- The following motivations were also all relatively equally mentioned:
 - Quick – often went hand in hand with 'easy'.
 - Integrated with other functions/an existing app – fishing rules, species identification, recording other catch information.
 - Ability to record immediately – no need to wait until back on shore.
 - Ability to be anonymous – this was important to some.
 - A few mentioned not being app users, so preferred non-app options (e.g. boat ramp surveys).

"Easy to use onboard, instant access, help me learn species too, and could also give tips on how to avoid catching in future."

"Easy and can be anonymous."

"I would like a quick and easy interface that works, either at the time (if in range), or will store data and send once you are back in range."

"Fishing catch app - it would be interesting to see what the actual catch is in my area and also other areas that I would like to travel to."

"I'm 68 and find phone apps a challenge."

Reasons for NOT liking any reporting options

Q32. What are your key reasons for being unlikely to use/do any of these options? We are really interested in your honest thoughts here.
Base: n= 11 (Unlikely to use any option at Q30)

Most of those who are unlikely to use any reporting method say it's because it happens so infrequently. Some also felt the reporting will not change the outcome. There were also single mentions of other issues such as confidentiality and being too complicated.

"In my more than 30 years private fishing, 1 or 2 birds have been caught, safely released, and undersize snapper, cod, cray also released mostly to live another day."

"Don't see the outcome changing."

Alternative options

Q33. Is there an alternative way that you would like to provide the information?
Base: n= 6 (Unlikely to use any option at Q30)

No one presented any alternatives for reporting, but rather repeated their view that it was not required or expressed distrust in fisheries management.

"I do not think the problem big enough to justify more regulation."

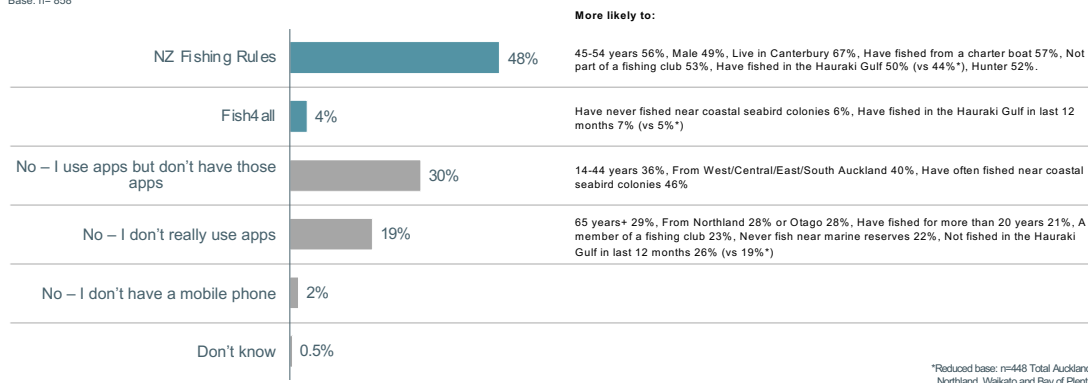
"No, I do not trust any government department involved in fisheries management, and some well known politicians have serious involvement with some major fishing companies and their commercial interests."

Ease of use was the main reason fishers selected their preferred reporting method. Other important factors were how quickly reporting could be completed, the integration of reporting with other useful functions within an app, and being able to report immediately rather than waiting to get back to shore; some also felt anonymity was important when reporting. Those who were unlikely to use any reporting method disagree that there's a need to capture recreational bycatch data.

Do fishers have the main fishing apps?

Apps on phone

Q37. Do you currently have the following apps on your phone?
Base: n= 858

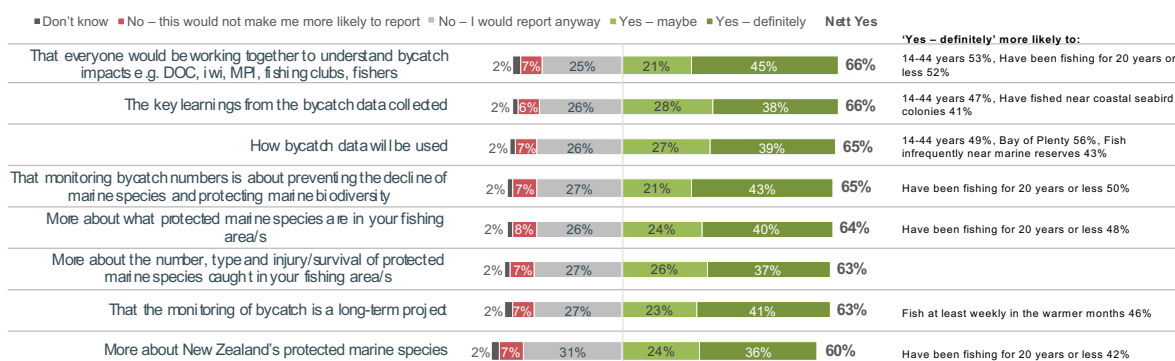


Of the fishers surveyed, 19% stated they don't really use apps – this may be a barrier for the uptake of the mobile app options. The NZ Fishing Rules app was on the phones of almost half the fishers (48%), while just 4% of fishers surveyed had the Fish4all app on their phones.

What information would increase reporting likelihood?

Information that would make fishers more likely to report

Q29. Would you be more likely to provide information on your accidental catch of protected marine species, if you knew...
Base: n= 858

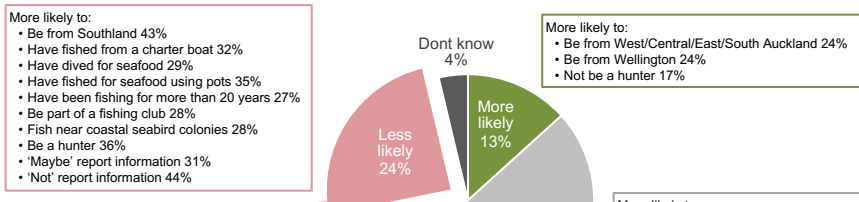


For around two thirds of fishers, each of the messages would increase the likelihood of reporting. Around a quarter of fishers would report anyway, regardless of any additional information. Generally, younger fishers (14-44 years) and those who've been fishing 20 years or less were more likely to report if they received any of the types of information.

Does DOC's involvement increase likelihood of reporting?

Impact of DOC involvement

Q34. If you caught a protected marine species, would you be more or less likely to provide information, if DOC (the Department of Conservation) was leading the project?
Base: n= 858



- More likely to:
- Be from Southland 43%
 - Have fished from a charter boat 32%
 - Have dived for seafood 29%
 - Have fished for seafood using pots 35%
 - Have been fishing for more than 20 years 27%
 - Be part of a fishing club 28%
 - Fish near coastal seabird colonies 28%
 - Be a hunter 36%
 - 'Maybe' report information 31%
 - 'Not' report information 44%

- More likely to:
- Be from West/Central/East/South Auckland 24%
 - Be from Wellington 24%
 - Not be a hunter 17%

- More likely to:
- Have fished from a private boat or kayak 60%
 - Often fish near marine reserves 71%
 - Not be a hunter 62%

Why less likely to report if DOC collecting

Q35. Why would you be less likely to provide information if DOC was leading the project?
Base: n= 146

A singular and very consistent theme around a lack of trust. They don't trust the right decisions will be made with the information and believe DOC has 'an agenda'.

"I don't trust DOC to do the right thing e.g. last lot of dolphin closures will achieve nothing."

"DOC have their own agenda and don't exactly tell the truth."

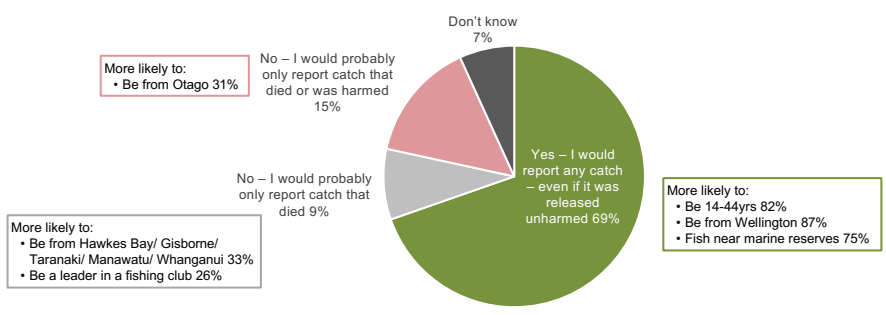
"Because of DOC's past history in resource management. Tahr are a great example and very timely."

Nearly a quarter of fishers (24%) said they would be less likely to provide information if DOC led the project. This is primarily due to an underlying distrust of the organisation.

Would fishers report unharmed bycatch?

Willingness to report unharmed bycatch

Q36. DOC would be interested in hearing about any catch of a protected marine species – even if it was released unharmed. Do you think you would report any catch of a protected marine species - even if you released it unharmed?
Base: n= 413



- More likely to:
- Be from Otago 31%

- More likely to:
- Be from Hawkes Bay/ Gisborne/ Taranaki/ Manawatu/ Whanganui 33%
 - Be a leader in a fishing club 26%

- More likely to:
- Be 14-44yrs 82%
 - Be from Wellington 87%
 - Fish near marine reserves 75%

The majority (69%) of fishers are willing to report catch of protected marine species even if they were released unharmed, leaving one third (31%) who may not.



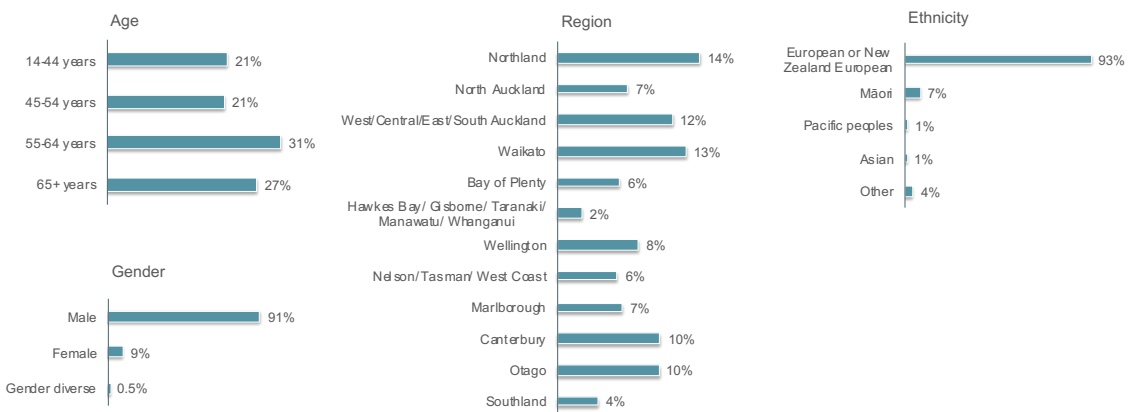
Profile of sample

- ▬ Demographics
- ▬ Fishing behaviours: methods, frequency, experience
- ▬ Fishing proximities
- ▬ Fishing connections: to clubs, to hunting

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Demographics

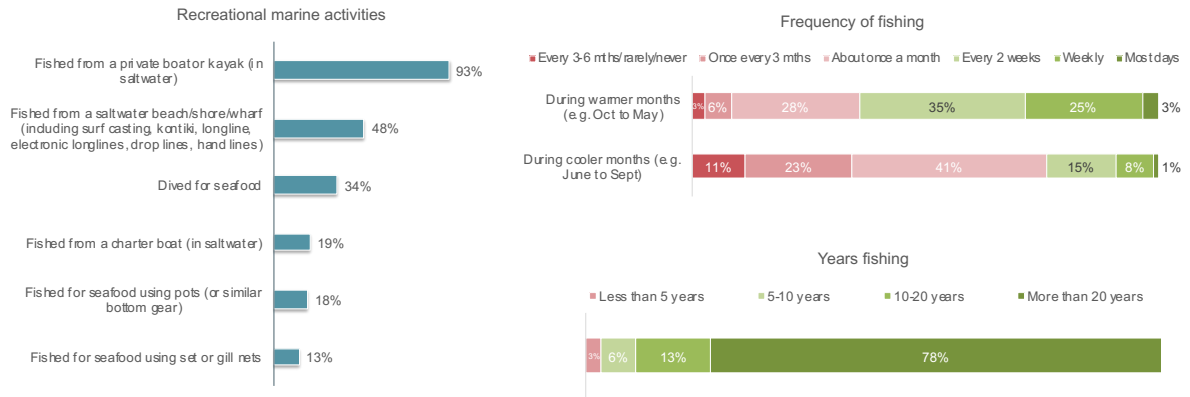
Q1: Please tell me which of the following age groups you belong to;. Q2: Are you Q3: Which region of New Zealand do you live in?. Q4. Which ethnic group/s to you belong to?
Base: n=858



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Fishing behaviours

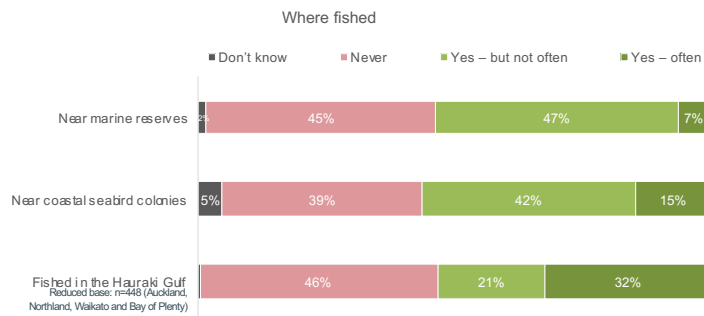
Q5: In the past 12 months, have you taken part in any of the following recreational marine activities, in NZ? Q6: On average, how often would you go fishing in New Zealand seawater? Remember: Please allow for all the activities you chose in the previous question, Q7: Approximately, how many years have you been fishing, excluding any breaks you may have had?
Base: n=858



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Fishing proximities

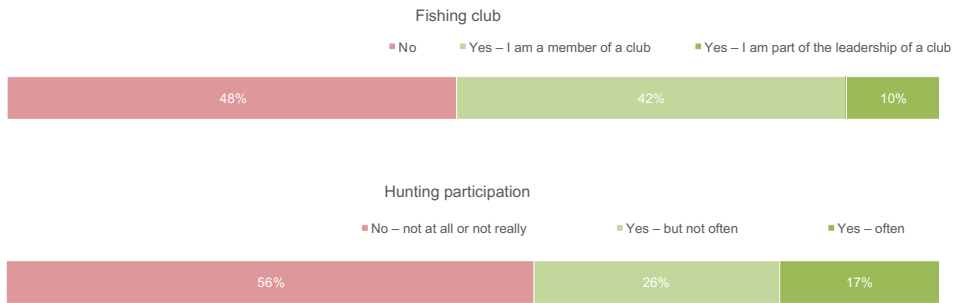
Q39: Do you fish near marine reserves?, Q40: Do you fish near coastal seabird colonies?, Q41: In the last 12 months, have you fished in the Hauraki Gulf?
Base: n=858



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Fishing connections

Q38: Are you part of a fishing club?, Q42: As well as fishing, do you also go hunting?
Base: n=858



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We look forward to discussing these findings with you.

If you have any questions in the meantime or anytime, please contact us.

Penny Turner
www.thenavigators.co.nz

The Navigators senate shj

