

Fishing for change

A social marketing approach to reduce the recreational harvest of Snapper and Pearl Perch in Queensland

Currie Communications: Sophie Clayton, Mark Paterson and Mietta Adams

Social Marketing @ Griffith: Sharyn Rundle-Thiele and Carina Roemer

Queensland Fisheries: Samuel Williams, Chad Lunow and Danielle Jones

Centre for Marine Socioecology: Mary Mackay

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Researcher Contact Details

Name: Sophie Clayton
Address: Level 7, 84 William St, Melbourne, VIC 3000
Phone: 0478 029 040
Website: www.curriecommunications.com.au
Email: sophie@curriecommunications.com.au

FRDC Contact Details

Address: 25 Geils Court
Deakin ACT 2600
Phone: 02 6122 2100
Email: frdc@frdc.com.au
Web: www.frdc.com.au

In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

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Executive Summary

The 'Fishing for Change' project used a social marketing approach that engaged stakeholders to co-design, implement and evaluate solutions to voluntarily change people's recreational fishing behaviour. The approach aimed to determine if co-design methods could be applied to reduce recreational fishing pressure on Snapper and Pearl Perch in Queensland. This led to 'Switch Your Fish' – a pilot social marketing campaign that aimed to switch recreational fishers' behaviour to target an alternative mix of fish species (Mahi Mahi, Amberjack and Cobia) to reduce the fishing pressure on Snapper and Pearl Perch. The novel approach aimed to complement regulation-focused fisheries management to encompass a people-centred approach supported by recreational fishers.

Currie Communications led the project in partnership with Social Marketing @ Griffith, Fisheries Queensland and the Centre for Marine Socioecology. The project also received support from local government, businesses, organisations and individuals on the Sunshine Coast whose contribution was invaluable.

Background

The stocks of two popular iconic fish species – Snapper (*Chrysophrys auratus*) and Pearl Perch (*Glaucosoma scapulare*) – are classified as depleted in Queensland waters (Fisheries Research and Development Corporation, 2020a; Fisheries Research and Development Corporation, 2020b). Reducing fishing mortality through regulation is the conventional approach that fisheries managers use to rebuild stock. The Queensland Government has introduced measures to regulate the take of Snapper and Pearl Perch – such as limiting size and number of fish that can be taken during a trip or season, and fisheries closures. Despite a range of management changes occurring over the past 30 years, none have been successful in reversing the decline of either species.

Social marketing is an approach to solving problems that centres around changing people's behaviour in a way that delivers improved social good – including benefits to people and the environment. It draws on behavioural science and a psychology-based understanding of how and why people behave, what motivates them to change and what prevents behaviour change.

Applying social marketing to changing fisher behaviour is an emerging area. The 'Fishing for Change' project set out to develop, implement and evaluate a social marketing approach to help solve the problem of declining Snapper and Pearl Perch stocks in Queensland.

Objectives

- 1) Engage with stakeholders to develop a shared sense of responsibility, capture knowledge and identify potential solutions.
- 2) Develop and test a behaviour change program targeted at recreational fishers that aims to reduce the recreational harvest of Snapper and Pearl Perch in Queensland.
- 3) Identify the most effective behaviour change interventions that could be further rolled out in Queensland or in other states or to target other fish.
- 4) Share knowledge and ownership of a behaviour change approach with key stakeholders.

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Method

A two-phase approach to tackle the problem was used. 'Phase 1: Foundation setting' was a deep learning phase that used a combination of research approaches centred around the Creating Collective Solutions (CCS) and co-design methods. During this phase the research team engaged with stakeholders and sought different viewpoints to capture their insights and input to identify what actions they would support and engage with. 'Phase 2: Behaviour Change' built on the knowledge gained during Phase 1 to build a more specific understanding of the behavioural challenge and players, select a target behaviour to change, identify barriers and drivers to that behaviour, and develop a campaign (interventions) that would support the behaviour change. Phase 2 used the Community Based Social Marketing approach and insights from the Behaviour Works Method. This phase resulted in delivery of the pilot behaviour change campaign 'Switch Your Fish'.

The pilot social marketing campaign 'Switch Your Fish' was developed, implemented and evaluated as part of the project. The pilot campaign aimed to encourage recreational fishers to target an alternative mix of fish species including Mahi Mahi (*Coryphaena hippurus*), Cobia (*Rachycentron canadum*) and Amberjack (*Seriola dumerili*) to reduce the fishing pressure on Snapper and Pearl Perch. The campaign was piloted on Queensland's Sunshine Coast between April and September 2021. 'Switch Your Fish' used a mix of relevant social marketing communication activities and nudges to best support recreational fishers doing the behaviour.

Results

The campaign reached more than 20,000 individuals of the target audience on Facebook (of the estimated 38,600 to 45,400 males aged 25-55 years old, located on the Sunshine Coast with an interest in 'fishing'). It likely reached more than that, with a total reach of 120,000 people (which includes people reached more than once). Campaign messages were also adopted and shared by influential fishers, providing a source of motivation to change behaviour. The most popular information shared on social media was on how to catch the alternative species which would help to build fisher capability, skills and knowledge to support the behaviour change.

Data from the Recreational Boat Ramp Survey and Charter Fishing Logbook collected by Fisheries Queensland were analysed using a Before-After-Control-Impact approach to evaluate the applied success of the campaign. In comparison with a control region and control years, the campaign appeared to change the behaviour of some recreational fishers on the Sunshine Coast such that an increase in targeting of the campaign species (Mahi Mahi, Cobia and Amberjack) was detected. The campaign did not appear to change the behaviour of fishers on charter boats, which is not surprising given the campaign was not targeted at charter boat operators. No noticeable reductions in the recreational catch of Snapper and/or Pearl Perch was observed during the campaign period.

Implications

The shift in behaviour achieved and the effective reach of the campaign demonstrates the potential of using social marketing to contribute to overcoming fisheries management challenges. This work also represents the first behaviour change campaign in the marine recreational fisheries space backed by a quantitative evaluation for assessing the effectiveness of non-regulatory approaches. The short duration of the pilot, and the limitations under which it operated (COVID-19 lockdowns and social distancing regulations), would have influenced the results and more time would be required to demonstrate broader community level behaviour change, and to test if more widespread behaviour change could reduce the recreational harvest of Snapper and Pearl Perch.

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While engagement with the broader Queensland recreational fishing sector did take place and was critical in the project's delivery – there was opportunity to engage with more focus and depth with the recreational fishing sector and community within the pilot area of the Sunshine Coast. The project showed that engaging with stakeholders to co-design solutions that are more desirable to those stakeholders has potential to effect positive change. The early positive results, combined with identified opportunities to improve stakeholder engagement and campaign delivery, indicate that further testing of the approach is warranted.

Recommendations

Based on the preliminary indicators of success, the project working group recommends the campaign pilot is developed into a two-year campaign to be delivered on the Sunshine Coast. This would help to generate empirical evidence and test the value and impact of social marketing in helping to support fisheries management. It will also allow a longer time to assess the impact of the campaign on reducing the recreational fishing pressure on Snapper and Pearl Perch.

Keywords

Snapper; Pearl Perch; behaviour change; social marketing; stakeholder engagement; co-design; recreational fishing; Queensland; fisheries management; rocky reef fishery

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Introduction

The stocks of two popular iconic fish species – Snapper (*Chrysophrys auratus*) and Pearl Perch (*Glaucosoma scapulare*) – are classified as depleted in Queensland under the Status of Australian Fish Stocks Reports (SAFS) stock status reporting framework (Pidcocke, et al., 2021). Modelling by (Wortmann, et al., 2018) showed that reducing the harvest of Snapper and Pearl Perch was essential for rebuilding the biomass of both species in Queensland waters.

The Queensland Government introduced additional management measures in 2020 to reduce fishing pressure on both species. The measures included adjustments to the maximum size limit and in-possession limit, and implementation of new boat and total allowable commercial catch (TACC) limits for both Snapper and Pearl Perch. In addition, the Queensland Government introduced a one-month closure period in 2020 for both species during winter for recreational and commercial fishers and charter boat operators. However, as a standalone measure the tightening of regulations on fish-take is yet to prove successful in increasing stock levels for these species during previous periods of management change (Wortmann, et al., 2018). To offset the impact of Snapper and Pearl Perch regulation on fishers, additional measures were introduced to provide greater opportunities for targeting alternative species, notably, in late 2019, the Queensland Government introduced fish aggregations devices (FADs).

Recreational fishing is not solely responsible for the decline in Snapper and Peach Perch stock levels, but it is the largest harvest sector in the fishery. Recreational fishing is an important part of people’s lives. A Queensland Government survey in 2019-20 showed 660,000 Queenslanders fished for recreation (Queensland Government Department of Agriculture and Fisheries, 2021). It provides people with a social and physical activity, connects them with nature, provides them with food and supports good mental health (Arlinghaus, et al., 2007). Recreational anglers are also recognised as being strong marine stewards, with a long history of involvement in habitat rehabilitation, citizen science research projects, voluntary restocking programs and many other grass roots activities (Stenekes & Sahlqvist, 2011). Given the value that fisheries resources have to recreational fishers, it is likely that voluntary measures for rebuilding stock biomass represent a strategy that may prove more effective than regulation alone.

Social marketing is an approach to solving problems that centres around changing people’s behaviour in a way that delivers improved social good – including benefits to people and the environment. It draws on behavioural science and a psychology-based understanding of how and why people behave, what motivates them to change and what prevents behaviour change.

Social marketing has been applied to help solve other environmental problems effectively, including in Queensland. Work in Australia has documented the use of behavioural incentives to encourage voluntary compliance of recreational fishers as well as testing social norms as a tool to encourage compliance within an experimental recreational fishery setting. A people-centred approach – such as social marketing – can bypass the challenges of regulation and education, focussing on the delivery of solutions that people value so the approach holds significant potential for fisheries management. However, despite its broader uptake, applying social marketing to changing recreational fisher behaviour remains a largely unexplored area, and many of the programs that do exist have been unable to quantify the efficacy of their approach.

The ‘Fishing for Change’ project developed, implemented and evaluated a social marketing approach to help reduce recreational fishing pressure on Snapper and Pearl Perch in Queensland. This report describes the social marketing methodology used in the project. The report also details the pilot social marketing campaign ‘Switch Your Fish’ that was co-designed and delivered with recreational fishers and other expert stakeholders, as part of the method. ‘Switch Your Fish’ aimed to motivate recreational fishers to fish for alternative species. The report assesses how effective the campaign was at encouraging this behaviour, and whether this behaviour reduced recreational fishing of Snapper and Pearl Perch.

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Objectives

1. **Objective 1:** Engage with stakeholders to develop a shared sense of responsibility, capture knowledge and identify potential solutions.
2. **Objective 2:** Develop and test a behaviour change program targeted at recreational fishers that aims to reduce the recreational harvest of Snapper and Pearl Perch in Queensland.
3. **Objective 3:** Identify the most effective behaviour change interventions that could be further rolled out in Queensland or in other states or to target other fish.
4. **Objective 4:** Share knowledge and ownership of a behaviour change approach with key stakeholders.

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Method

The project 'Fishing for Change' used a two-phase approach to tackle the problem (Figure 1). The methods outlined here are an overall summary of the key steps. The following brief method descriptions address each of the project objectives. More detailed descriptions of the methods can be found in the papers: Rundle-Thiele, S.R. et al (2022), Rundle-Thiele, S.R. et al (2022a), Rundle-Thiele, S.R. et al (2022b) and Roemer, C. (2022).

'Phase 1: Foundation setting' was a deep learning phase that used a combination of research approaches centred around the Creating Collective Solutions (CCS) and co-design methods. During this phase the research team engaged with stakeholders and sought different viewpoints to capture their insights and input to identify what actions they would support. 'Phase 2: Behaviour Change' built on the knowledge gained during Phase 1 to build a more specific understanding of the challenge and players, select a target behaviour to change, identify barriers and drivers to that behaviour and develop a campaign (interventions) that would support the behaviour change. It used the Community Based Social Marketing approach and insights from the Behaviour Works Method. This phase resulted in delivery of the pilot behaviour change campaign 'Switch Your Fish'.

Phases 1 and 2 were followed by an evaluation phase.

Phase 1: Foundation setting

Step 1.1: Creating Collective Solutions (CCS) approach

Community consultation and diverse stakeholder involvement are important forces in dealing with complex issues such as reducing recreational fishing pressure. Diverse viewpoints reflect an understanding of the environment and players. CCS is a process that can draw various stakeholders together to identify the factors and intervention approaches to change behaviour. Through active participation, CCS brings stakeholders together to gain consensus on strategies and solutions for a path forward. CCS demonstrates the commitment of all stakeholder types and ensures no single stakeholder group (e.g. recreational fishers) feels unfairly targeted.

1 – Working group formation: A working group was formed with 8-10 diverse stakeholders across the recreational fishing sector. In a guided process the working group was challenged to identify diverse stakeholders who were subsequently invited to participate in the CCS process. The working group developed the trigger question that underpinned the rest of the process.

2 – Trigger question: The CCS process is underpinned by one question. This trigger question can be worded to capture priorities that will facilitate change; or to identify barriers that prevent change. The trigger question developed for this project used a consensus process. The working group must unanimously support the trigger question wording to proceed with the CCS process. The trigger question endorsed by the working group was "What can fishers and interested parties do to help increase Pearl Perch and Snapper stocks?".

The stakeholders identified by the working group were asked to identify priorities in response to the trigger question. Additional work was performed by the project team to publicise the CCS process ensuring stakeholders across the sector were provided with an opportunity to contribute their priorities.

3 – Priorities/barriers: Priorities were collected and analysed by a team of researchers. Priorities were reduced across two voting rounds to identify top priorities for consideration with the latter stage organising priorities according to an analytical framework.

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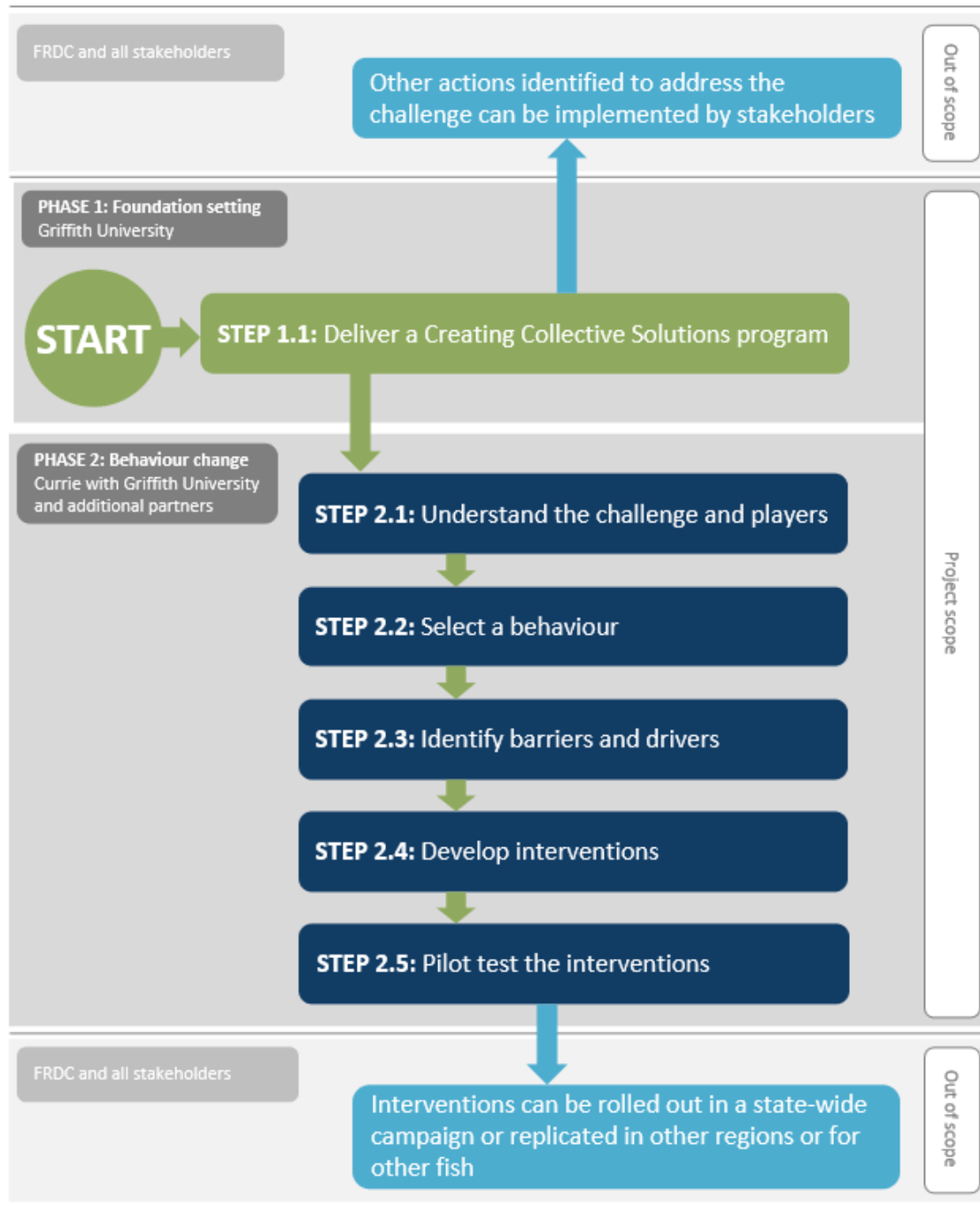
4 – Workshop: A workshop was hosted with diverse stakeholders included. The workshop involved two parts. Prior to the online workshop, workshop participants cast their votes to identify the top priorities. In the first half of the online workshop, participants voted to examine the interplay between key priorities identified.

The second phase of the CCS workshop involved co-designing a solution to address key modifiable priorities. During this phase workshop participants generated solutions in small groups.

This step builds shared responsibility among stakeholders, sets the foundation for ‘Phase 2: Behaviour change’, and identifies other actions from a systems thinking perspective that may help to address the challenge.

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Figure 1: 'Fishing for Change' project method map



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Phase 2: Behaviour change

Step 2.1: Understand the problem and the players

Engaging with stakeholders and better understanding them can help to identify areas of common interest, generate solutions that are broadly supported, and deliver social marketing campaigns that are most likely to be effective.

As part of the first CCS workshop, participants identified the stakeholder groups with an interest in and/or influence in rebuilding stocks of Snapper and Pearl Perch in Queensland with a focus on the recreational fishing sector. Following the workshop, a **desktop review** of existing material on the stakeholders was conducted to prioritise the stakeholders and identify any known demographic, psychographic, behavioural, geographic and temporal traits of Queensland's recreational fishers.

Step 2.2: Select a target behaviour

As a result of the CCS process, a selection of candidate behaviours were identified by participating stakeholders. Candidate behaviours are potential behaviours (the actions people can take) that could be the target of the social marketing campaign.

This step involved capturing the expertise of the project team to assess the general candidate behaviours and to select a subset of top candidate behaviours for further research. An interactive process was used whereby the project team quantified their opinion on the following for each eligible candidate behaviour:

- A) likelihood of adoption on 1-5 sliding scale: 1 (highly unlikely) to 5 (highly likely)
- B) impact of adoption on 1-5 sliding scale: 1 (very low impact) to 5 (very high impact)
- C) percentage of recreational fishers currently not doing the behaviour (i.e. the potential audience): 0-100%

The average response to each question is calculated and an indicator metric is generated ($A*B*C/100$). This indicator metric can be used as a way to compare the potential effectiveness of behaviours, where data, other than expert opinion, is not available.

Following this process, the top candidate behaviours were then further tested in the same way through stakeholder interviews to confirm the target behaviour.

Step 2.3: Identify barriers and drivers

With the target behaviour proposed, the next step entailed identifying barriers and drivers to its uptake through a stakeholder survey. Understanding what motivates or prevents people taking up a new behaviour is essential in designing a campaign to promote it.

An online survey was conducted with the aim to better understand recreational fisher knowledge, attitudes and beliefs about Mahi Mahi, Cobia, Amberjack, squid, Winter Whiting and School Mackerel (Rundle-Thiele, S.R. et al, 2022b). (Please note that the FishNames standard name for Winter Whiting (*Sillago maculata*) is Trumpeter Whiting. However, reflecting usage among recreational fishers, and for consistency throughout this report, the locally common name 'Winter Whiting' has been used.)

Step 2.4: Develop interventions

After the barriers and drivers to the target behaviour were identified, the next step was to test the behaviour selected and to define the behaviour in terms of the activity (or specific behaviour), location where the behaviour was to happen, who was to do the behaviour and when. This ensures a focus for the

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campaign and helps to measure change in behaviour. At this point a 'no intervention' comparison site was also selected to compare the effects of the campaign.

To further test the proposed target behaviour, explore in detail recreational fisher insights into the proposed species, and to gather input to the pilot campaign, a stakeholder co-design workshop was conducted. It involved a word association test, discussion of ideas in small groups, participant design of new ideas, and presentation to the group of ideas.

Co-design seeks to gain insights to inform the design of intervention strategies or a program that can encourage recreational fishers to reduce pressure on Snapper and Pearl Perch. The co-design session aimed to identify preferred and valued solutions that could be implemented in Queensland targeting recreational fishers to increase stocks of Snapper and Pearl Perch.

A co-design session was conducted with recreational fishers and other stakeholders in Queensland. A co-design session is a carefully planned series of activities and discussions designed to obtain insights on solutions valued by the target audience in a positive and non-threatening environment. The method underpinning co-design encourages participants to share their thoughts and opinions without fear of judgement. Conducting co-design with target audience members allow for unique insights and a better understanding of how to deliver a program that meets their needs and wants.

Data from the previous project steps including the online survey and co-design workshop were then used to form the campaign plan around supported the target behaviour. The EAST (Easy-Attractive-Social-Timely) framework was also used to help identify suitable interventions to deploy and test as part of the pilot.

We also scoped out what interventions would be affordable and could be delivered in the context of the pilot program. Our priority was interventions that could realistically – in terms of investment and logistics – be implemented in the timeframe. Selected interventions would also need to be suitable for state-wide scale-up.

Step 2.5: Pilot program to test interventions

With the campaign plan in place, work commenced to implement the pilot. It was decided that the campaign would run for 6 months (later extended to 7 months due to a delayed start and delays to the launch event due to COVID-19 restrictions).

Evaluation phase

Evaluation of the pilot campaign was a key element of the work as it allowed success to be measured in terms of community engagement and shifts in the target behaviour. Detailed analyses were undertaken to evaluate the community engagement through social media statistics and applied behaviour change analysis was undertaken through examination of recreational boat ramp survey data and charter fishing logbook data. The detailed methods related to the evaluation of these performance measures are outlined in Rundle-Thiele, S.R. (2022a).

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Results

The results listed here are an overall summary of key findings. The following brief result descriptions match each of the project steps. More detailed descriptions of the results can be found in Rundle-Thiele, S.R. et al (2022a) and Rundle-Thiele, S.R. et al (2022b).

Step 1.1: Creating Collective Solutions (CCS) approach

Rundle-Thiele, S.R. et al (2022b) details the results and evaluation Step 1.1 and the CCS approach. A summary of those results is reported here and in Step 2.3.

1 – Working group formation: A project working group (PWG) was formed in February 2020 with 8 representatives across government, charter boat operators, social scientists, marine/fisheries scientist, tackle retailers, recreational fishers, fishing club representatives and a fishing industry body. The PWG identified more than 70 stakeholders.

2 – Trigger question: Through consensus, the PWG decided on a priority-driven trigger question, namely:

“What can fishers and interested parties do to help increase Pearl Perch and Snapper stocks?”

3 – Priorities: A survey was developed with the trigger question and was sent out to recreational fishers and other expert stakeholders resulting in a total of 239 stakeholders who each provided up to 5 responses each resulting in 923 priorities to achieve change. Through 3 levels of analysis by a team of 5 researchers, 481 unique priorities remained and were categorised across 10 main themes (Table 1).

Table 1: Overview of CCS themes and definition (see Rundle-Thiele, S.R. et al (2022b))

Priority category	Definition
Charter boat behaviour (n=27)	Actions that focus on approaches of specific groups of fishers (beyond the scope of the funded project)
Commercial fishing (n=41)	
Recreational fisher behaviour – what to catch (n=29)	Actions that focus on the perceptions and approaches of fishers (within the scope of the funded project)
Education, communication and awareness (n=46)	Actions that focus on the education/ information / awareness of practices, handling, research
Monitoring, research and data (n=47)	Actions around improving compliance, monitoring, enforcement of already established regulations
Compliance (n=48)	
Conservation/artificial fish habitat (n=33)	Actions that focus on protecting areas and habitats of species
Input controls – closures (n=47)	Actions around where and when fishing is done e.g. zoning, seasons and by whom
Output controls – bag size and limit (n=83)	Actions around what and how much fishing is done e.g. bag limits, size limits, boat limits
Stock/fish management (n=82)	Actions that offset pressure on Pearl Perch and Snapper

4 – Workshop: A 3-hour workshop, with five facilitators, was hosted online in June 2020 with 14 stakeholders representing nine diverse stakeholder groups. In response to the action map, CCS participants were split into three groups tasked with designing solutions that were presented to the other groups.

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Step 2.1: Understand the problem and the players

The output of the **desktop review** was a report that documented the stakeholders ([Appendix 1: 'Fishing for Change' stakeholder report](#)).

The report identified two primary stakeholder groups – recreational Snapper and Pearl Perch fishers, and charter boat operators. These groups were the most likely to be targeted and involved in the behaviour change component of the project. The demographic, psychographic, behavioural, geographic and temporal traits of these recreational fishers were outlined. Summary information about charter boat operators was also included.

An outline of how the stakeholder insights gathered might be used to help guide the next steps of the project in both defining a target behaviour and conducting a social marketing campaign are summarised as follows:

Demographic

Males aged 30-44 years are the people most likely to be recreational fishing in Queensland so may be the best target for the social marketing campaign.

Motivation and attitudes

Attitudes vary so any campaign needs to connect to a broad range of attitudes towards fishing and rebuilding Snapper and Pearl Perch stocks.

Enjoyment of the outdoors and the social experience appears central to most fishers so communication of this benefit could be a foundation for any social marketing campaign, such as providing alternative outdoor/on water experiences with friends.

While Snapper and Pearl Perch are popular species – promoting alternative species and/or locations to fish that may result in catching alternatives species could be a viable option for messaging. Or, possibly, catching a single (or much fewer) large fish.

Communication tools

Other fishers – including influential fishers could be tapped to help communicate or socialise key messages. This could include through social media, namely Facebook which 90% of people born between 1976 and 1990 use.

Fishing clubs may have limited reach into the broader fishing community but may nonetheless be important if highly influential fishers or highly skilled fishers who regularly fish and catch a lot of fish are members.

Other channels of communication not explored in this report such as TV fishing shows, fishing media (e.g. Bush N Beach and Fishing World) would also be key tools in a campaign.

Boat/equipment needs

Considering access to a boat is the dominant way to fish Snapper and Pearl Perch – some fishers of these species could be targeted through their boat ownership (registration) or usage (licences). Boat owners may be connected with boat retailers and mechanics, and both boat owners and users would access fuel points – all of which could provide points of contact to reach people who may be fishing Snapper and Pearl Perch.

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Fishers catching Snapper and Pearl Perch would also rely on retail tackle shops and may also use other equipment on-board such as sounding equipment. Another access point is therefore fishing and tackle shops. These outlets could be key because all fishers need tackle and bait, whereas only one boat is required for several fishers.

Location

Public boat ramps that access Snapper and Pearl Perch fishers.

Timing

The timing of any social marketing campaign would be pegged immediately before or during the fishing season and likely would avoid seasonal closures for Snapper and Pearl Perch (although this period could be perfect timing to promote fishing of alternative species).

While not explored in this report, the implications of any shutdowns that may occur as a result of COVID-19 will also impact the timing of the campaign.

Step 2.2: Select a target behaviour

The general candidate behaviours identified in Step 2.1 were:

1. Fishers abide by size and catch limits for Snapper.
2. Fishers abide by size and catch limits for Pearl Perch.
3. Fishers catch only one, large Snapper per fishing activity.
4. Fishers catch only one, large Pearl Perch per fishing activity.
5. Fishers release fish effectively using <appropriate equipment>.
6. Fishers catch <another fish species>.
7. Fishers record their catch using a logbook.

The project team assessed the general candidate behaviours during a team meeting. Behaviours #1 and #2 were deemed unsuitable because there was likely a small pool of fishers not currently abiding by the regulations, and it would be difficult to shift their behaviour. Moreover, the impact of these behaviours may not have a significant impact on the recreational harvest of Snapper and Pearl Perch given the current high compliance. Behaviour #7 was also deemed unsuitable because it might be difficult and unrealistic to achieve, and it has less potential to have a direct impact on reducing the recreational catch of Snapper and Pearl Perch.

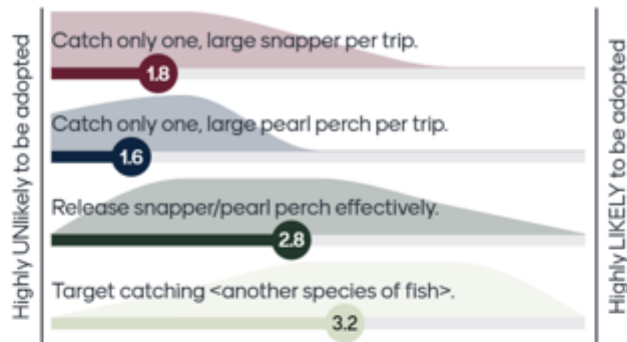
The project team then supplied their opinion on behaviours #3, #4, #5 and #6 using a metric of likelihood of adoption, impact of adoption, and proportion of recreational fishers currently not doing the behaviour (Figure 2). The average of the input was entered into a spreadsheet to generate an indicator metric to help compare the candidate behaviours (Table 2).

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Figure 2: Project team input on candidate behaviours.

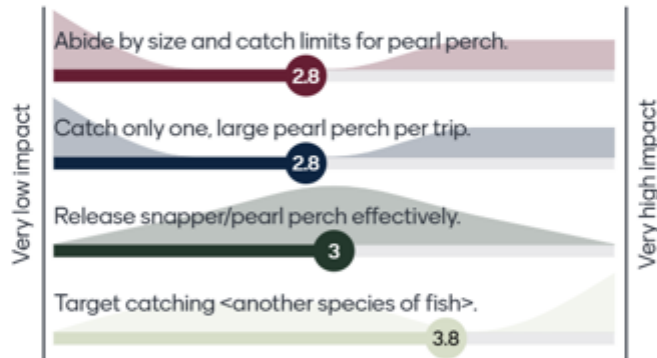
How likely is it that fishers will adopt the following behaviours?

Likelihood of adoption on 1-5 sliding scale: 1 (highly unlikely) to 5 (highly likely)



What is the potential impact of adopting these behaviors on increasing snapper/pearl perch stocks?

Impact of adoption on 1-5 sliding scale: 1 (very low impact) to 5 (very high impact)



What percentage of fishers are currently NOT doing this behaviour who could be doing it?

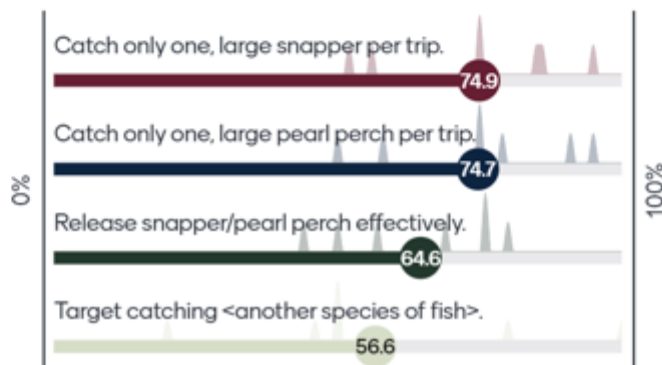


Table 2: Indicator metric assessment of candidate behaviours – project team input

	A: Likelihood of adoption (1-5)	B: Impact of adoption (1-5)	C: Size of target audience (0-100)	Metric (AxBxC)/100 (0-25)
3. Fishers catch only one, large snapper per fishing activity.	1.8	2.8	75	3.8
4. Fishers catch only one, large pearl perch per fishing activity.	1.6	2.8	75	3.3
5. Fishers release fish effectively using appropriate equipment.	2.8	3	65	5.4
6. Fishers catch <another fish species>.	3.2	3.8	57	6.9

Behaviours #3 and #4 were further discussed and eventually discarded because they could have been perceived as being a guise to further limiting size and bag restrictions. While this could have been helpful in preparing fishers for reduced limitations it also would have maintained attention on Snapper and Pearl Perch – therefore inadvertently promoting them – which was considered unhelpful in reducing their harvest.

Behaviours #5 and #6 were retained as the top candidate behaviours. It was noted that there is already activity underway to promote catch and release techniques that might support behaviour #5.

Behaviour #6 was considered most promising, but more information was required to consider the alternative species, timing and location of the behaviour. Consideration of timing and discussion of a calendar promoting one species at a time was discussed.

The following alternative species were proposed for association with behaviour #6 based on their likely stock status being able to support some additional pressure and potential appeal to fishers:

- Inshore alternative species: Whiting, Flathead, Squid and School Mackerel.
- Offshore alternative species: King Fish, Mulloway, Mahi Mahi and Amberjack.

Stakeholder interviews with nine people to gather their input on behaviours #5 and #6 were then conducted ([Appendix 2: Behaviour selection – stakeholder input](#)). The interviews asked stakeholders about the likelihood of adoption, impact of adoption, size of potential target audience or each behaviour. They were also asked to give feedback on the potential alternative species. The stakeholder feedback indicated a slight advantage to focus on catch and release as the target behaviour (#5), but it was not significant, and it did not preclude alternative species (#6) (Table 3).

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Table 3: Indicator metric assessment of candidate behaviours- stakeholder input

	A. Likelihood of adoption 1-very unlikely 2-unlikely 3-maybe 4-likely 5-very likely	B. Impact of adoption 1-very low impact 2-low impact 3-medium impact 4-high impact 5-very high impact	C. Size of target audience (0-100%) Percentage of fishers not doing the behaviour who could be	D. Metric (AxBxC/100) (0-25)	E. Metric (AxB) (0-25)
Fishers release fish effectively using appropriate equipment.	3.6	2.6 (many said they didn't know)	50 (highly variable responses from 25-80%)	4.6	9.2
Fishers catch alternative species.	2.9	2.8	20 (all but one said they didn't know)	1.6	8.1

The project team assessed the stakeholder input and acknowledged the data required to make a full informed choice between behaviour #5 and #6 was missing. Moreover, there would be some risks and downsides with both options, but these could be managed to different extents. The project team agreed that the target behaviour of the social marketing/behaviour change campaign would be catching alternative species because of the additional compelling reasons:

- One way to reduce risk of putting too much pressure on one other species was to select a few species over which to spread the load.
- A campaign to target alternative fish species was the more novel option, as it has not previously been done in Queensland (catch and release campaigns have been done before).
- Fishing TV shows essentially are always looking at different species of fish so a campaign on new species would align with their efforts.
- The opportunity to promote alternative species was more compelling from a social marketing perspective.
- The potential perception of 'giving' something to fishers (through the proposition of promoting alternative species) rather than 'taking' something (asking fishers to release a fish they have caught) was also considered an advantage.

The project team then reviewed the species of fish that could be the alternative species to target. The following criteria were used to determine the final selection:

- **Sustainability:** Each alternative species must have stock levels with the capacity to tolerate increased fishing pressure (to be based on advice from Fisheries Queensland).
- **Eatability:** How tasty, desirable and easy to cook the fish were.
- **Catchability:** How much fun the fish were to catch, or that they were not too difficult to catch.
- **Mix of inshore and offshore species.**

All species under consideration were then reviewed against these criteria and the following short list of alternative species were confirmed:

- Inshore
 - Whiting (*Sillago maculata*)
 - Squid/cuttlefish
 - School Mackerel (*Scomberomorus queenslandicus*)

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- Offshore
 - Mahi Mahi (*Coryphaena hippurus*)
 - Cobia (*Rachycentron canadum*)
 - Amberjack (*Seriola dumerili*)

Step 2.3: Identify barriers and drivers







The **online survey** ran from 23 October to 8 November 2020 and was promoted on Facebook and via email to people who had subscribed to project news and updates. Completed surveys were received from 125 people including from people who identified as ‘harvest fisher’ (54%), ‘sport fisher’ (31%), ‘charter boat operator’ (2%) and ‘other’ (13%). Survey responses were grouped into two broad categories – ‘positive attributes’ and ‘factors affecting fishing’ – for each fish species (Figure 3).

Key insights from the survey included ([Appendix 3: Fisher insight survey results](#)):

- Most responses were for Mahi Mahi and School Mackerel – potentially an indicator that these are better known species, whereas few responses were provided for Cobia and Amberjack potentially showing more information needed to be shared on these species to build knowledge and interest.
- Family was identified as key enablers of fishing for all species, and friends were important too – so promoting family and friend participation/involvement in the fishing experience could be part of the campaign.
- The weather/tides were seen as the major factor affecting whether fishers would be able to catch all species. Showing what could be done during down time to prepare to go fishing might be helpful in the campaign.
- Concerns were raised about overcrowding, low fish numbers and commercial fishing.

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Figure 3: Stakeholder feedback on alternative fish species.

<p>Winter whiting</p> 	<p>Positive attributes</p> <ul style="list-style-type: none"> • Tastes good • Good numbers • Fun to catch • Fun for kids • Easy to catch • Affordable/simple equipment 	<p>Factors affecting fishing</p> <ul style="list-style-type: none"> • Weather/season/tides • Over-crowding and over-fishing • Numbers of fish
<p>Squid</p> 	<p>Positive attributes</p> <ul style="list-style-type: none"> • Tastes good • Fun to catch 	<p>Factors affecting fishing</p> <ul style="list-style-type: none"> • Knowledge • Messy! • 'Dirty' water or water with sediment • Weather/season/tides • Lack of access to fishing spots
<p>School mackerel</p> 	<p>Positive attributes</p> <ul style="list-style-type: none"> • Tastes good • Fun to catch • Good numbers • Easy to catch 	<p>Factors affecting fishing</p> <ul style="list-style-type: none"> • Weather season tides • Low numbers/unsustainable/over-fishing • Can damage equipment • Boring • Other fishers/competition • Don't freeze well • Hard to find
<p>Mahi mahi</p> 	<p>Positive attributes</p> <ul style="list-style-type: none"> • Fun to catch • Tastes good • Grows fast • Looks good • Work well with FADs • Good numbers 	<p>Factors affecting fishing</p> <ul style="list-style-type: none"> • Weather/season/tides • Distance from shore • Need a suitable boat • Not enough FADs • Too many boats • Hard to find
<p>Cobia</p> 	<p>Positive attributes</p> <ul style="list-style-type: none"> • Fun to catch • Tastes good • Large fish 	<p>Factors affecting fishing</p> <ul style="list-style-type: none"> • Difficult to find/target/catch • Not easily accessed/distance from shore • Low numbers/over-fishing • FADs
<p>Amberjack</p> 	<p>Positive attributes</p> <ul style="list-style-type: none"> • Fun to catch • Good size • Tastes good 	<p>Factors affecting fishing</p> <ul style="list-style-type: none"> • Weather/season/tides • Distance from shore • Difficult to find/catch

Step 2.4: Develop interventions



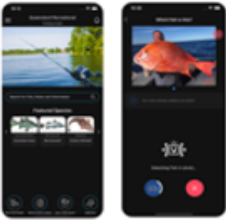

Following the 7-step co-design process (Trischler, Dietrich, & Rundle-Thiele, 2019), a co-design session was held in person, during December 2020 with 18 recreational fishers and other recreational fishing stakeholders (e.g. fishing media, tackle retailer, fishing social media influencer).

Resourcing and planning: The resourcing stage empowers users to own the innovation activities (Dietrich, Rundle-Thiele, Schuster, & Connor, 2016). The CCS outcomes directed some ideas for inclusion in the co-design session.

Recruiting: Recreational fishers were recruited through an email newsletter. These contacts were established through engagement with the CCS process, via a fishing magazine advertisement and through the host venue’s Facebook page.

Sensitising: A brief introduction was provided with an overview of the behavioural issue; depleting stocks of Snapper and Pearl Perch. First, participants were tasked with filling out an individual word association test, followed by group discussion of ideation cards. The ideation cards (Figure 4) were sourced from the CCS process and other initiatives/strategies identified by the project team that could be applied with the aim of increasing fishing stocks.

Figure 4: Example of the ideation cards

<u>Alternative species</u>	<u>Species Ambassadors</u>
<p>Promotion of alternative species that can be promoted in QLD</p>  <p>Mahi Mahi Squid Cobia</p> <p>Amberjack Winter whiting School mackerel</p>	<p>Ambassadors promoting particular species</p> 
<u>QLD Fishing 2.0 App</u>	<u>Same Fish, New Dish</u>
 <p>App providing fishing regulations including possession limits, size limits and closures. Report unlawful fishing. Purchase a fishing permit to one of 63 dams/weirs. Submit a photo and identify catch. Works offline when in remote areas.</p>	 <p>A campaign that promotes the catch and consumption of different fish species. Recipe cards are provided to show you how to turn your catch into a dinner that everyone will love.</p>

Facilitating: The 90-minute co-design workshop was hosted at a local bar near popular boat ramps in Wynnum, Queensland. A beverage of their own choice and fish finger food were provided. In addition, participants received an \$25 gift voucher to be used at the host venue together with a \$20 gift voucher to the outdoor and fishing retailer BCF. Participants were seated in 5 groups of 3-4 participants with 5 facilitators to ensure the teams remained focussed on the task. Each group received a work package of butcher paper, pens, coloured markers and post-it notes to illustrate/aid their social marketing initiative/program. The groups pitched their ideas to the other participants and the research team.

Reflecting and building for change: The findings from both the CCS process and co-design session is presented in Table 2.

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Table 4: Outcomes from CCS process and co-design session

Co-creation of valued solutions ¹	
CCS outcomes	Co-design outcomes
Marketing and communication	
<p>Communication effectiveness: Consistent and simple messaging tailored for the target audience(s).</p> <p>A communication campaign: Promote responsible fishing (e.g. take what you need, bagging out is uncool).</p> <p>Any initiatives to be ideally communicated across a range of channels: Including “Burt’s What’s Biting Weekly News” announcements, forums, fishing websites and asking other people.</p> <p>Calendar to promote alternative species: Promoting alternative species of fish to encourage recreational fishing change.</p>	<p>Social media and influencers: Engage with highly influential anglers and tap into their established networks.</p> <p>Utilise various platforms for promotion: Fishing magazines, Bruce Alvey pages, social media.</p> <p>Fishing competitions: no prizes for Snapper and Pearl Perch catches.</p> <p>Catch & Release Month: encourage catch and release in home waters, release catches to ensure there are fish to catch tomorrow.</p>
Education	
<p>Early exposure: Offer education in schools in a fun and engaging way for long term benefits.</p> <p>Education and other initiatives: Improve species identification and fish handling for recreational fishers.</p> <p>Safe handling – safe release. Educational focus on how to adequately release specific fish species.</p> <p>Improved fishing technique: Helping fishers select better gear to target different or bigger fish (e.g. use of a circle hook), ways to prevent barotrauma and ways to release fish safely back to the water.</p>	<p>Protection by education: Deliver sustainable fishing programs in school to achieve generational change.</p>
Alternative species	
<p>Alternative species: Focus on alternative species and market them as or more appealing to catch i.e. Mahi Mahi around FADs.</p> <p>Alternative fishing experience: Support attitude change that may result in catching fewer and larger fish, with the idea of not 'bagging out' every time</p>	<p>Alternative species: Focus on one or two and promote them utilising all parameters e.g. media, social media, fishing competitions.</p> <p>Alternative fishing experience: Fish the Brisbane river, new fishing hubs (pontoons/jetties).</p>

¹ Regulatory and policy solutions have not been included as these were out of project scope.

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<p>you go fishing and focusing on the other elements of the experience of fishing.</p>	<p>Promote eating qualities of alternatives species: including recipes; changing the taste buds, retail; food shops, tackle shops.</p> <p>Influencers to encourage alternative species: Use angler influencers: <i>Eat the mackerel</i>.</p> <p>Form partnerships: Fishing shows to promote alternative species.</p>
<p>Tailored approaches</p>	
<p>Geographical segments: The reef species and reef habitat are different along the coast. Tailored strategies depending on location.</p> <p>One size does not fit all: Strategies clearly adapted to fish species and the fishers catching the species. Snapper and Pearl Perch occupy different habitats.</p>	<p>Catch & Release Month: encourage catch and release in home waters, release catches to ensure there are fish to catch tomorrow.</p>
<p>Technology</p>	
<p>Voluntary e-logbook: Encourage anglers to keep logbook of catches and releases to ignite fishing activity thinking. Data to be kept confidential.</p>	<p>Improve (existing) app: Promote and expand State Government Fisheries app.</p>

Following the completion of the creative/co-design workshop and the accompanying report ([Appendix 4: Co-design workshop report](#)), the different ideas generated by the workshop were assessed by the project working group and a campaign plan was developed. The target behaviour for the social marketing campaign was proposed as:

Fishers catch an alternative species:

- Inshore: Whiting, squid, School Mackerel
- Offshore: Mahi Mahi, Amberjack, Cobia.

The identification of ‘promoting alternative species’—central to our target behaviour—was most supported. This ratified the internal project working group’s position to proceed with our target behaviour and build the campaign around the core idea of promoting alternative species using the other ideas generated in the workshop as tactics to support the behaviour change/social marketing approach.

To further define the target behaviour, the internal project working group assessed potential locations for the campaign.

The Sunshine Coast was selected as the pilot location because: 1) there are two deep water boat ramps from which recreational fishers regularly depart to catch Snapper and Pearl Perch (both ranked in the state’s top 10 for catches of Pearl Perch and Snapper based on boat ramp survey data); and 2) it is a relatively small region (as compared to Brisbane/Moreton Bay), and 3) it allowed for a geographic break to occur between the location of the pilot and the control region (Gold Coast).

Once the Sunshine Coast was selected, the target alternative species were reviewed again for relevance and suitability. Originally a pilot location in Moreton Bay had been considered and fish found in the bay were selected as the suitable alternatives.

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Considering most fishers departing from the Sunshine Coast boat ramps head offshore to catch Snapper and Pearl Perch, the inshore species originally identified were no longer deemed as suitable alternatives to include as part of the campaign. The project working group therefore decided to primarily focus on the offshore species (Mahi Mahi, Amberjack and Cobia) – which were otherwise still highly relevant. Moreover, the co-design workshop had captured additional information on these species to help with the campaign’s development.

To align the campaign with the Snapper and Pearl Perch closure (15 July to 15 August 2021) and with the winter period when both species are typically targeted, a campaign period of April to September 2021 was confirmed by the project working group.

The target behaviour was further refined as:

Between April and September 2021, recreational fishers departing from Sunshine Coast boat ramps (Kawana and Mooloolaba boat ramps) catch more of the target species (Mahi Mahi, Amberjack and Cobia) than they usually would.

To encourage a change towards the target behaviour the next step was to build a pilot campaign to support recreational fishers making the change. The campaign involved foundational elements, core content and campaign activities as follows:

Foundational elements of the campaign ([Appendix 5: Campaign creative messaging and graphics](#)) were identified as:

- Messaging (what the campaign will say)
- Campaign creative (what the campaign will look like)
- Campaign calendar (what fish to catch when, and how the campaign will roll-out).

The interventions or tactics used to implement the campaign comprised those identified in the creative/co-design workshop and others identified by the project working group. It included the development of core content for use across the campaign and campaign activities.

Develop core content

- Campaign launch video
- Catch videos
- Recipes and video tutorials
- Fisher interviews

Campaign activities

- Social media (Facebook and Instagram)
- Influencer engagement
- Website
- Stakeholder communication (including communication with bait and tackle shops/restaurants, use of the Queensland Fishing 2.0 App, publication of the stakeholder newsletter)
- Develop real-life touch points or on-ground awareness raising (including boat ramp signage and launch event)

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Step 2.5: Pilot program to test interventions

The effectiveness of the campaign (pilot) was measured in two ways:

- 1) Process evaluation
 - a. How effective was the campaign in reaching and affecting the target audience?
- 2) Outcome evaluation
 - a. Did the campaign change the target behaviour?
 - b. If the target behaviour was changed, did it reduce recreational fishing pressure on Snapper and Pearl Perch?

The process evaluation centred around the effectiveness of the campaign reach and engagement across social media. Fisheries Queensland conducted the outcome evaluation using data from Recreational Boat Ramp Surveys and Charter Fishing Logbooks.

Rundle-Thiele, S.R. et al (2022a) details the results and evaluation of the campaign. A summary of the results is reported here.

Process evaluation

A variety of tactics were used in the campaign to encourage fishers to undertake the target behaviour. One of the primary tactics employed was social media. The effectiveness of social media to reach and influence the target audience was measured and reported in Rundle-Thiele, S.R. et al (2022a).

Social media activities included the establishment of 'Switch Your Fish' Facebook and Instagram pages (Figure 7), and the development and delivery of a social media content calendar and engagement plan. Influential Sunshine Coast recreational fishers with a presence on mainstream media and significant followings on social media were also recruited to develop content for the campaign and show support.

On Facebook, the average reach per post was 1,156, with the best-performing post reaching more than 20,000 people. A total reach over the campaign period (1 April – 5 November 2021) of 120,173 was achieved. There were 292 followers on Facebook, of whom 81.3% were men and 66.7% were in Queensland (including 34.9% on the Sunshine Coast and 20.5% in neighbouring Brisbane).

Original content developed for the campaign featuring influencers was the most popular having the largest reach and total engagement on Facebook. Instagram content featuring original catch and campaign messaging shared through graphics/photos had the highest reach.

The campaign was also successful in securing influencer support for the campaign. Key fishing influencers from the Sunshine Coast with profiles on Facebook and Instagram were actively recruited. They included SCF Australia (Dean Jackson and Ben Glass), Sammy Hitzke, Rob Paxevanos, Scott Hillier, Mati Batsinilas (Bats Fishing), Sally Jenyns (Creek to Coast) and Robert Smith (Smithys Fishing Charters). Other influencers also willing to help included Ellie Heisner and Mick Guthrie. Many of these talked about the campaign via their own accounts, ensuring the campaign reached a much broader audience than the campaign statistics.

On-ground awareness-raising activities including the launch event, boat ramp signage and media coverage were achieved. Stakeholder communication was also undertaken via the campaign website and newsletter.

Overall, the process evaluation suggested that the campaign was effective at reaching a proportion of the target audience (recreational fishers on the Sunshine Coast), and that the messages were adopted and shared by influential fishers. This means that the messages were seen by the target audience and that they


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were delivered by people whose behaviour might be modelled by other recreational fishers. Both factors contribute to providing motivation to help change behaviour. Also, the most popular information shared on social media was on how to catch the alternative species which would help to build fisher capability, skills and knowledge to support the behaviour change.

Figure 5: Examples of 'Switch Your Fish' social media activity on Facebook and Instagram

Switch Your Fish
Published by Sophie Clayton · 10 October 2021 · 🌐

Thanks [Sunshine Coast Council](#) for the support!




Sunshine Coast Council
8 October 2021 · 🌐

🎣🐟 FISHING TRIP PLANNED FOR THIS WEEKEND? 🐟🎣
Before you go, check out [Switch Your Fish](#) and try catching something different like this Mahi Mahi Ben caught off our coastline lately.

Or a [#Amberjack](#) or [#Cobia](#) - all available locally and fun to catch and great to eat.

You may have seen the signs at our local boat ramps for [Switch Your Fish](#) - the goal is to spread the load around and reduce pressure on any one species.

So there are plenty of fish around for our future selves to enjoy 🐟



switchyourfish

switchyourfish Today's #TopTip on #Cobia comes from the one and only @bikini.angler. she says:

"Cobia are one of my favourite fish to catch, once hooked they go like a freight train and put up a hell of a fight. I have come to learn that Cobia are definitely not fussy eaters. I've caught Cobia on soft plastics in 30m of water 30NM offshore, fast jiggling in 60m and live baiting on a wreck."

"At first glance they are often mistaken for a shark due to their similar colourings and broad flattened head."

"Flesh is white to pale pink in colour and has a medium fishy taste. You can't beat a good old BBQ cobia steak with some garlic butter, seasoned with salt and pepper 🍷"

What are you waiting for (aside from some good weather!) - get out there and give them a go.

Thanks Ellie 🐟

[#SunshineCoastFishing](#) [#CatchACobia](#)

22w

luckytukesfishin Nice one mate yewwww 🐟🐟🐟

20w Reply

sallyjenyms True words @bikini.angler 🐟

22w 2 likes Reply

View Insights

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Outcome evaluation – boat ramp survey data

Boat ramp survey data collected from 2019 through 2021 by the Queensland Department of Agriculture and Fisheries (QDAF) was used to evaluate changes in the targeting and catch of ‘campaign’ species (Mahi Mahi, Cobia and Amberjack) and ‘switch’ species (Snapper and Pearl Perch) during the campaign. Interviews with fishers were conducted at boat ramps in the campaign location (Sunshine Coast) and the control location (Gold Coast). Data was compared across the campaign months (April to September) in 2019, 2020 and 2021 (the campaign year). On average a total of 750 boat ramp survey interviews were conducted each year at the target boat ramps during the campaign months. Of these 45% were from the Sunshine Coast and 55% were from the Gold Coast. In more than 20% of interviews, fishers said they wanted to target a switch species (Snapper or Pearl Perch) or a campaign species (Mahi Mahi or Cobia) as their primary target species during their fishing trip Rundle-Thiele, S.R. et al (2022a).

Which species did fishers target?

An increase in reports of recreational fishers targeting a campaign species during the campaign months of the campaign year on the Sunshine Coast was observed. This shift was driven by Cobia or Mahi Mahi being reported as a target species by Sunshine Coast fishers during April, May and September 2021, which was in contrast to control years (2019 and 2020) where there were no reports of their targeting. Evaluation of the Gold Coast (control region) showed no temporal difference in targeting of Mahi Mahi and Cobia through both the control years and campaign year indicating that the switch may be campaign driven (rather than extraneous factors such as local abundance (Rundle-Thiele, S.R. et al, 2022a).

Overall, fewer interviews reported switch species as the primary target in 2021 compared to 2019 and 2020 on the Sunshine Coast. This appears to be mostly driven by reductions in targeting of Pearl Perch, as Snapper remained dominant as the primary target. However, targeting of Pearl Perch in the Gold Coast region was characterised by low levels of intermittent reporting throughout both control and campaign year. The data showed that the introduction of the closure of the Snapper and Pearl Perch fisheries in 2020 and again in 2021 was likely to have contributed to this decline (Rundle-Thiele, S.R. et al, 2022a).

Which species did fishers catch?

Catch rates for the switch species increased in the Sunshine Coast during the campaign year (2021), when compared to the control years (2019 and 2020). When exploring the species catch rates in the Gold Coast area, there was a slight decline over the campaign year, compared to the control years.

There was also an increase in the average catch of Cobia off the Sunshine Coast during the campaign year. Increased catches of Cobia in the Sunshine Coast region during July, August and September were similar to that during the control year (2020), there was also an increase in Cobia catches during the months of April, May and June in the campaign year (2021). This increase was not observed in the Gold Coast region, and occurred during the same period, where catches of Cobia remained low (Rundle-Thiele, S.R. et al, 2022a).

Outcome evaluation – charter boat data

Charter fishing data was used to determine what recreational fishers going out with charter boat operators were catching. On average around 2,500 charter fishing records were received from the Sunshine Coast and Gold Coast region each year during the campaign months (April to September). Fewer were recorded in 2020 because COVID-19 lockdowns in April and May 2020 prevented charter boats operating. Of the records approximately 55% were from the Sunshine Coast and 45% were from the Gold Coast. Approximately 20% of trips reported catches of Snapper, just under 10% reported Pearl Perch, and 7.5% or less of trips reported catches of at least one of the campaign species (Mahi Mahi, Amberjack or Cobia).

What proportion of fishing days did charters catch campaign or switch species?

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The proportion of fishing days where campaign and switch species were caught remained relatively stable in both regions and across the different years. The only exception to this was a steady decline in the number of days when Pearl Perch were caught.

What fish did charters catch?

Charter fishing catch rates for campaign species peaked on the Sunshine Coast during control years (2019 and 2020), with reduced catch rates throughout the campaign year (2021). In contrast, the Gold Coast region saw consistent increases in the catch rate of campaign species across the entire time series, peaking during the campaign period. Charter catch rates of switch species on both the Sunshine Coast and Gold Coast were stable and similar, apart from a decline during 2019 on the Sunshine Coast.

Overall, the catch of the campaign species was low and no changes in the proportion of the campaign species caught were detected in the charter boat data on the Sunshine Coast. On the Gold Coast, catches of the campaign species were marked by spikes within and outside of the campaign period, indicating other factors - such as changes in local abundance - were influencing the amount of these fish caught by charter boat operators.

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Discussion

Objective 1

Engage with stakeholders to develop a shared sense of responsibility, capture knowledge and identify potential solutions.

Engagement with stakeholders began before the project proposal to FRDC was submitted. This involved multiple conversations with potential project partners to identify the right mix of stakeholders to be involved in the project based on their technical expertise, networks and knowledge of the recreational fishing sector. The approach built an effective and collaborative project working team comprising people from Currie, Social Marketing @ Griffith University, Fisheries Queensland and the Centre for Marine Socioecology. The partnership and project were then managed based around the principles of partnership brokering. This ensured all project partners were actively engaged and involved in delivery of the project – ensuring everyone learned about and contributed to the approach taken.

This continuous engagement with partners proved successful. All members of the project working group were involved in the project activities and communication from commencement. The team remained with the project throughout and continued to provide input, assistance and expert guidance. The resulting co-authored scientific papers and this report are testament to this.

Deeper engagement with the recreational fishing sector commenced within the first week of the project. The working group met after the project was approved for funding. This took the form of the first stakeholder workshop. The methodology continued to ensure ongoing engagement with stakeholders through additional workshops (online and in-person), direct communications (via email, phone and in-person meetings), interviews (via phone/video conference), and regular newsletter updates.

Once the project pilot site had been determined a more intensive approach to stakeholder engagement began focusing on recreational fishing stakeholders on the Sunshine Coast. Central to our success was the engagement of SCF Australia as our local partner. SCF Australia provided a range of services including the production of videos, developing content and hosting and managing the launch event. They also played a key role at the start of the pilot to introduce the campaign to local fishers via their social media accounts and networks and helped the project to secure involvement from other local fishers in content development. By the end of the pilot we had engaged very high level and popular local fishers – notably Sally Jenyns, Scott Hillier, Robert Smith and Sammy Hitzke – to be involved in the campaign helping us to reach more fishers and to do so with local credibility.

One key element of successful engagement with these influencers was to firstly ensure our values around the campaign aligned and they were supportive and agreed with the principle it was important to try and rebuild stocks of Snapper and Pearl Perch, that Snapper and Pearl Perch needed a break, that recreational fishers had a role to play, and that fishing for alternative species was a good way to reduce pressure on any on species. The other key to success was empowering the stakeholders to say and share what they wanted and in the way they wanted and not to dictate what they said provided it was in alignment with the values of the campaign. This ensured their credibility and voice on the topic was authentic and hopefully had more weight with people listening to them.

A limiting factor for engaging with stakeholders on the Sunshine Coast was the late switch to the Sunshine Coast as the pilot. Stakeholder engagement earlier in the project had more broadly focused on Southeast Queensland with marginal involvement from Sunshine Coast anglers. Had all the stakeholder engagement from the beginning been focused on the Sunshine Coast even stronger relationships and ownership of the pilot could have been developed. However, the stakeholder relationships formed by the project could now be used to shift the pilot into a full campaign – giving it a significant head start.

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Engagement with commercial stakeholders – namely bait and tackle retailers and charter boat operators – was not as successful in getting their involvement and public support for the campaign. Anecdotal feedback received from these stakeholders indicated the following factors played a role in determining their lack of support for the pilot campaign:

- their understanding of Snapper and Pearl Perch stocks was inconsistent with the data
- the commercial benefits of promoting Snapper and Pearl Perch were embedded and of value and hence they were reluctant to suggest alternatives
- they had a level of mistrust in the project proponents, which was not helped by the fact project partners had limited capacity to visit in-person with these stakeholders due to COVID-19 restrictions and the stakeholder engagement work to design the campaign had not directly involved Sunshine Coast retailers/charter boat operators (representative people from these companies had come from other parts of Queensland)
- the limited involvement of bait and tackle retailers and charter boat operators in the pilot program was a result of the sole focus on recreational fishers in pilot program co-design in accordance with project scope and budget. Had the same approach been applied for each stakeholder group similar levels of engagement throughout the life of the pilot could have been achieved.

Objective 2

Develop and test a behaviour change program targeted at recreational fishers that aims to reduce the recreational harvest of Snapper and Pearl Perch in Queensland.

This objective was successfully delivered as detailed in ‘Step 2.5: Pilot program to test interventions’ of the Results section.

The method used successfully engaged with stakeholders to co-design the solution to reduce the recreational harvest of Snapper and Pearl Perch in Queensland through a social marketing campaign that promoted a mix of alternative species. The solution had wide stakeholder support.

Importantly, the solution did not rely on stakeholders having to agree with the premise that Snapper and Pearl Perch were in decline, nor did it aim to take away from the benefits provided by recreational fishing activities. Such a people-centred approach has potential to be more effective and more widely adopted and to complement other fisheries management practices such as regulations or the roll-out of FADs. The campaign was pilot tested on the Sunshine Coast for a period of six months from April to September 2021, with an additional month of activities also undertaken.

Delivery of the campaign was limited by COVID-19 restrictions, yet the results show it was successful in changing some fishers’ behaviour. With deeper local stakeholder engagement, a longer, multi-year campaign period and less restrictions on social and recreational activities, the campaign may have been even more effective. The pilot nature of the campaign nevertheless did its job in demonstrating the potential to change fisher behaviour through social marketing.

It is less clear whether the change in behaviour – getting fishers to target and catch the alternative campaign species – reduced the recreational harvest of Snapper and Pearl Perch. Further testing and a longer campaign period is required to gather data to answer this question more conclusively.

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Objective 3

Identify the most effective behaviour change interventions that could be further rolled out in Queensland or in other states or to target other fish.

The campaign employed a number of interventions to support the target behaviour change. However, what was key to the success of the campaign was engaging recreational fishers to determine the target behaviour to ensure it was a behaviour they would be willing and interested to adopt. Reviewing the campaign species, optimising the selection for the Sunshine Coast and undertaking co-design sessions with other stakeholder groups (e.g. tackle retailers and charter boat operators) would further assist a future successful campaign roll-out.

Of the specific interventions used, the engagement of high-profile, local and credible recreational fishers was central to the campaign's success. Giving these people free reign to promote the target species in ways they thought appropriate was also crucial. This approach was of central importance because it was the most effective way to reach people due to COVID-19 restricting in-person activities that might otherwise have been successful. This use of 'social norms' targeted motivation.

The popularity of 'how to catch' content also demonstrated a pull to increase the capability of fishers to participate in the behaviour. More work could be done in real life situations such as how to fish events, or other in-person demonstrations such as at retail outlets would further assist behaviour uptake. Engaging retailers to prepare tackle packs for the target species would also be helpful, as would the distribution of promotional material at the point of sale of tackle and bait.

This would also serve as a trigger to remind people to fish for the campaign species. In a similar vein creating reminders and other triggers to draw people's attention to the opportunity to fish for the campaign species would also have been beneficial beyond the boat ramp signage. The launch event was successful in raising awareness and getting people talking about the campaign and experiencing the fish. Engaging with a wider diversity of local partners such as the Sunshine Coast Council or more seafood retailers and restaurants to expose people to the campaign species and otherwise experience them (e.g. to eat them at restaurants) would help to bolster motivation.

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Objective 4

Share knowledge and ownership of a behaviour change approach with key stakeholders.

All project partners have shared their knowledge and contributed to the project's activities across the two years of the project.

QDAF is a major player in the recreational fishing sector in Queensland. They have been a key project partner with representatives participating in the project working group. Moreover, three presentations have been given to different groups at QDAF and senior staff attended the 'Switch Your Fish' launch event in Mooloolaba.

Other key stakeholders have been involved through the campaign engagement and co-design approach as outlined in the Method and Results sections of this report. Broader communication with the recreational fishing sector has taken place through newsletter updates, media coverage and partner communications. We aim to pitch another story to fishing media about the project and the campaign after this milestone report is published to link to all final material.

Four papers have been prepared and their status at the time of this report is as follows:

- Rundle-Thiele, S.R., Roemer, C., Mackay, M. and Williams, S. 'Swimming against the stream: A systems approach to rebuilding fishing stocks'. Journal of Environmental Management [revised and resubmitted February 2022]
- Rundle-Thiele, S.R., Clayton, S., Williams, S., Mackay, M. and Roemer, C. (2022) 'Switch Your Fish: process and outcome evaluation of a pilot campaign.' Presented at the International Social Marketing Conference 2022, February 2022
- Rundle-Thiele, S.R., Clayton, S., Williams, S., Mackay, M. and Roemer, C. 'Switch Your Fish: A process and outcome evaluation' [submitted in March 2022 to the Australasian Journal of Environmental Management]
- Roemer, C., Rundle-Thiele, S., Clayton, S., Mackay, M. and Williams, S. 'Fishing for change: Co-creating value to increase stocks of Snapper and Pearl Perch' [to be submitted in April 2022 to Australasian Journal of Environmental Management]

A teaching case study has also been confirmed for a leading international social marketing textbook. Also, a [webinar](#) was conducted on 21 March 2022 with 35 people attending. It has since also been published on YouTube.

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Conclusion

The 'Fishing for Change' project used a social marketing approach that actively engaged with stakeholders to co-design, implement and evaluate solutions to voluntarily change people's behaviour to try and reduce pressure on Snapper and Pearl Perch in Queensland. The approach was taken because regulatory only approaches in the past have proven ineffective at reversing the decline of both species. People-centred approaches using social marketing have proven effective at changing people's behaviour and helping to solve natural resource management, environmental and social problems in other sectors.

The solution developed led to the co-design of the 'Switch Your Fish' social marketing campaign that aimed to encourage recreational fishers to target an alternative mix of sustainable fish species (Mahi Mahi, Amberjack and Cobia) to reduce the fishing pressure on Snapper and Pearl Perch. The campaign was piloted on Queensland's Sunshine Coast between April and September 2021 with some activities extended through to October 2021. 'Switch Your Fish' used a mix of relevant social marketing communication activities and nudges to best support recreational fishers doing the behaviour.

Results of the campaign showed that in comparison with a control site and control years, some fishers did increase their catch of the target (or campaign) species on the Sunshine Coast during the campaign period. Positive engagement across social media also indicated that the campaign reached its target audience and influenced them through the support of local, influential recreational fishers.

No noticeable reductions in the recreational catch of Snapper and/or Pearl Perch was observed during the campaign period. This may have been because of the short time duration of the pilot campaign. Further testing and a longer campaign period is required to gather data to answer this question more conclusively.

The project demonstrates that engaging with stakeholders to co-design solutions has greater stakeholder support and has the potential to effect positive change. Early results, combined with identified opportunities to improve stakeholder engagement and campaign delivery, indicate that further testing of the approach is warranted. A full campaign roll-out in the Sunshine Coast or testing of the approach in other locations, or of specific species, would help to generate empirical evidence and test the value and impact of social marketing in helping to support fisheries management.

For detailed information on the key outcomes of this work see Rundle-Thiele, S.R. et al (2022a) and Rundle-Thiele, S.R. et al (2022b).

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Implications

The primary implication of the project is that it provides preliminary evidence that a social marketing approach that engages with recreational fishers and related stakeholders can influence fisher behaviour. Moreover, involving recreational fishers in decision making can generate solutions and identify suitable target behaviours that are widely supported by the sector and retain the benefits recreational fishing provides. The campaign received mostly positive support from the recreational fishers and all fishing influencers invited to support the campaign.

More research, or an extension of the campaign, would be required to determine if more fishers could be motivated to do the target behaviour and if this in turn would help to reduce pressure on Snapper and Pearl Perch stocks. The approach taken to measure the performance of the campaign and its impact was effective. The analysis of the boat ramp survey data identified a change in fisher behaviour and, with more data, may be able to show the effect or otherwise of the campaign on the recreational harvest of Snapper and Pearl Perch. This capacity to measure both the campaign's effectiveness on changing behaviour and whether a change in the behaviour achieves the underlying objective was central to the approach.

While engagement with the broader recreational fishing sector did take place and was critical in the project's delivery – there were limitations to the depth and extent of stakeholder engagement that occurred within the pilot region of the Sunshine Coast. One highly supportive charter boat operator and a supportive restaurant indicate the potential to engage constructively more broadly for a wider campaign that could reach further into the community to provide other triggers for behaviour change. Noting however, that there was also a level of caution expressed by bait and tackle retailers and other charter boat operators. Deeper engagement with these stakeholders could help to build trust and identify areas of common interest. Certainly, their participation would be of great value if the campaign could be expanded to incorporate their input, expertise, networks and influence.

While the focus of the campaign was on a specific area to ensure a control site could be used as a comparison site, there is potential to roll the campaign out state-wide. The foundational elements are in place to achieve this. Similar campaigns could also be rolled out in other areas of Australia. However, results show that engaging local fishers to co-design a campaign helps ensure the campaign has broader support and is relevant. Therefore, replicating the campaign may be less successful elsewhere if key stakeholder engagement steps that led to the co-design of the campaign are not repeated. If the project methodology was duplicated in another area a different solution (campaign) and target behaviour may be determined by stakeholders in that region.

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Recommendations

Based on the preliminary indicators of success, the project working group recommends the campaign pilot is developed into a two-year campaign to be delivered on the Sunshine Coast. The short duration of the campaign shows the potential of the approach except more time may be needed to build awareness and achieve campaign message penetration. It will also allow a longer time to assess the impact of the campaign on reducing the recreational fishing pressure on Snapper and Pearl Perch.

Switch Your Fish full campaign on the Sunshine Coast

For a full campaign roll-out to be successful on the Sunshine Coast the following additional steps are recommended:

- 1) **Deepen engagement:** The process used to engage with Sunshine Coast stakeholders throughout the pilot campaign should be enriched and broadened. The primary focus of the pilot was to engage with local recreational fishers through local fishing influencers. This was successful, but other key stakeholders were not the focus of engagement although their involvement and support would be beneficial to build co-ownership of, and support for, the campaign locally. Without reducing engagement with fishers themselves, stakeholder engagement should extend to bait and tackle retailers and charter boat operators, and potentially then to seafood retailers and seafood restaurants. More direct engagement with local recreational fishers could also take place.
- 2) **Review species:** The alternative six species originally selected were chosen in the broader context of South-East Queensland. This was reduced to the three most relevant to the Sunshine Coast pilot region. It would be appropriate to get feedback on these species from stakeholders from the Sunshine Coast to review their suitability from the perspective of local fishers/stakeholders. This review process may also find additional barriers and drivers to Sunshine Coast recreational fishers targeting and catching these species that could be addressed in a full campaign.
- 3) **Recruit new partners:** The internal project working group of the partnership delivering the project was limited to the team directly involved in the original project proposal and who managed delivery of it. However, to further build local ownership and shared responsibility it would be ideal to include Sunshine Coast recreational fishers and other stakeholders on the internal project working group and as part of the official partnership. It would be particularly valuable to include those who were active in delivering the pilot and those who were supportive of it.
- 4) **Maintain partnership:** The project was delivered through a partnership between FRDC, Currie Communications, QDAF, Social Marketing @ Griffith and the Centre for Marine Socioecology. A 'partnership approach' was adopted to deliver the project as defined by our partnering agreement. This agreement stated we would work together on the common goal to reduce the recreational harvest of Snapper and Pearl Perch in Queensland using social marketing. It also outlined the principles to guide how we would together: diversity, equity, openness, mutual benefit, courage and accountability. It also outlined how we would communicate, resolve disputes, brand and acknowledge each other, and address risks and concerns. The approach ensured the partners contributed different and complementary resources to successfully deliver the project, e.g. financial support; knowledge about local recreational fishing and relevant networks; and fisheries, social marketing, communications and behavioural science expertise and experience. Maintaining a partnership approach to delivering a full campaign would build on this success.
- 5) **Continue monitoring:** Given the results are still inconclusive as to how effective the campaign was at reducing the recreational harvest of Snapper and Pearl Perch, it is critical a full campaign roll-out includes ongoing monitoring and assessment of targeting and catch data to check to see what effect, if any, the campaign has on this underlying objective.

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Other opportunities for further development

There are two other options for further development.

Implement the co-design approach to address other fisheries challenges

The approach taken to develop and co-design the 'Switch Your Fish' campaign and engage with stakeholders could be used in other regions of Queensland or Australia to address either Snapper and Pearl Perch declines, or to address other fisheries challenges where a behaviour change approach may be helpful. This may result in targeting a completely different behaviour and a completely different social marketing campaign.

Customise and roll out the Switch Your Fish campaign in other areas

The 'Switch Your Fish' campaign concept could be customised to address the decline of Snapper and Pearl Perch or other species in other areas of Queensland or Australia. Some customisation would be recommended to capture knowledge from local recreational fishers and stakeholders to guide both the alternative species choices and to tailor the campaign to address any local barriers and drivers towards targeting and catching the alternative species identified.

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Extension and Adoption

Extension and adoption related to this project spans project communication, Queensland recreational fishing sector stakeholder engagement and campaign social marketing.

Project communication

Overarching project communication relates to how the project overall was communicated, including the method, project updates and results. The primary tool for communication about the overall project was the newsletter. The newsletter had multiple purposes. Initially it focused on project updates and then it transformed to provide campaign updates. Ten editions of the newsletter were sent plus additional updates inviting participation in the campaign launch activity.

Subscription to the newsletter was open to anyone, and a link to subscribe is available on the 'Switch Your Fish' website. Other stakeholders were invited to subscribe via email. The October 2021 edition of the newsletter, the last reporting on the campaign, was sent to 165 people. A final edition of the newsletter will be published once the final report on the project is published by FRDC.

In addition, the following activities have taken place or are planned to communicate the project to other fisheries management stakeholders in Queensland and around Australia:

- Stakeholder presentations
 - QDAF fisheries monitoring staff, 7 Apr 2021
 - QDAF fisheries managers, 14 Apr 2021
 - Rocky Reef Fishery Working Group, 14 Jul 2021
- Paper presentation at International Social Marketing Conference, 8-9 Feb 2022
- Webinar targeting Australian fisheries managers, 21 Mar 2022 ([Published on YouTube](#), 30 Mar 2022).

Queensland recreational fishing stakeholder engagement

Stakeholder engagement with Queensland's recreational fishing sector was central to the project and commenced in the lead-up to the project being approved for funding. Once the project officially started a workshop was held in the first week with stakeholders and deeper engagement continued as part of the project's methodology to co-design the campaign (for more detail on stakeholder engagement with see the Discussion section on 'Objective 1').

Coverage about the project and/or the campaign on the Sunshine Coast was reported in the following:

- FRDC e-Fish
 - Message in a bottle: newsletter article about project
 - FISH magazine – article about project is planned
- Currie
 - Social media posts about project and survey promotion
- Social Marketing @ Griffith
 - Media release and social media posts about project and survey promotion
- Fisheries Queensland:
 - QLD Fishing 2.0 app: cross promotion and featuring of campaign fish and campaign promotion
 - Catch News (newsletter): campaign update articles
- Fishing media
 - Fishing Monthly Magazine: social media post about project and survey promotion

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- Fishing World: social media post about project and survey promotion
- Bush 'N Beach Fishing: social media post, newsletter and web article about project and survey promotion
- Sunshine Coast Daily/Courier Mail
 - News article about the launch event and campaign.

Campaign social marketing

Campaign social marketing activities were a significant component of the project focused on social marketing to encourage Sunshine Coast recreational fishers to undertake the target behaviour.

The 'Switch Your Fish' website was published in May 2021 and houses material and information to support the campaign. 'Switch Your Fish' Facebook and Instagram pages were published in April 2021, with 104 and 51 posts published on each respectively during the campaign period. 'Switch Your Fish' also interacted with other people and pages on both platforms – this took the form of replying to messages, starting conversations, engaging with others' content and posting on local fishing pages such as the Sunshine Coast Fishing group on Facebook. Twelve original videos were developed with Sunshine Coast fishers and published on the 'Switch Your Fish' website and YouTube channel and shared across the campaign social media sites.

All campaign material remains publicly available via the Switch Your Fish [website](#), [Facebook page](#), [Instagram page](#) and [YouTube account](#). These will be retained in archival mode for a period of 2 years or updated should the campaign be rolled out beyond the pilot.

A presentation was also given to Sunshine Coast Council on 18 Aug 2021 to inform them about the campaign and invite their engagement. Other engagement with Sunshine Coast restaurants, seafood retailers, charter boat operators, and bait and tackle retailers also took place.

For more information on the campaign activities that supported communication, extension and adoption see 'Step 2.4: Develop interventions' of the Results section, and Objective 1 in the Discussion section.

Project materials developed

Scientific papers

- Rundle-Thiele, S. R., Clayton, S., Williams, S., Mackay, M., & Roemer, C. (2022). Switch Your Fish: process and outcome evaluation of a pilot campaign. *Presented at the International Social Marketing Conference*. Gold Coast: Australian Association of Social Marketing.
- Rundle-Thiele, S. R., Clayton, S., Williams, S., Mackay, M., & Roemer, C. (2022a). Switch Your Fish: A process and outcome evaluation. *[submitted for publication]*.
- Rundle-Thiele, S. R., Roemer, C., Mackay, M., & Williams, S. (2022b). Swimming against the stream: A systems approach to rebuilding fishing stocks. *[submitted for publication]*.
- Roemer, C., Rundle-Thiele, S. R., Clayton, S., Mackay, M., & Williams, S. (2022). Fishing for change: Co-creating value to increase stocks of Snapper and Pearl Perch. *[submitted for publication]*.

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Online resources

- Fishing for Change webinar, <https://youtu.be/REbdUvgR2pU>
- YouTube account and published videos:
<https://www.youtube.com/channel/UCezszxjbGRW1NJfxCl6jgzg>
- Website: www.switchyourfish.com.au
- Facebook account: <https://www.facebook.com/SwitchYourFish>
- Instagram account: <https://www.instagram.com/switchyourfish/>

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Appendices

Appendix 1: 'Fishing for Change' stakeholder report

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Fishing for Change: stakeholder report

The Fishing for Change project aims to help address the underlying challenge of rebuilding stocks of Snapper and Pearl Perch in Queensland by reducing or displacing recreational fishing pressure through a social marketing/behaviour change approach.

A key challenge in addressing the issue is the numerous and diverse stakeholders with an interest in recreational fishing – many with conflicting agendas. This makes change challenging, however working with stakeholders to generate solutions can identify priorities for action and achieve desired outcomes.

This report identifies the **stakeholders** who have an interest in and/or influence over rebuilding Snapper and Pearl Perch stocks in Queensland – with a focus on the recreational fishing sector, including charter fishing. The project has engaged with these stakeholders through Phase 1, which aimed to capture a broad range of stakeholder perspectives.

Key stakeholders are prioritised in the **stakeholder prioritisation** section to further clarify which groups will be most important to the project and where effort will be targeted.

A detailed **primary stakeholder segmentation** is also reported for the two primary stakeholder groups – recreational Snapper and Pearl Perch fishers, and charter boat operators – to ensure a deeper understanding of these groups is captured and because they are the two groups most likely to be targeted and involved in the behaviour change component of the project.

Finally, the report outlines ideas for the **application of stakeholder insights** that might help to guide the next steps of the project in both defining a target behaviour and conducting a social marketing campaign.

The Fishing for Change project is monitoring its engagement with stakeholders. Stakeholder data is being maintained on an online relational database (HubSpot).

Stakeholders

The stakeholders identified are those who have an interest in or influence over rebuilding stocks of Snapper and Pearl Perch in Queensland. Taking this broad approach to defining stakeholders ensures that, in the first instance, all stakeholders are considered. This was important to the first phase of the project to ensure all perspectives and ideas on addressing the issue were captured, and that possible actions raised by stakeholders to address the challenge were acknowledged.

Queensland-based stakeholders were identified via a combination of a brief literature review, internal stakeholder analysis, discussions between project working group members and staff from the Queensland Department of Agriculture and Fisheries (QDAF), and direct consultation with fishers and charter boat operators who attended the first CCS advisory workshop held in February 2020. These stakeholder groups (except commercial fishers) were tested during the first survey by asking respondents to self-identify as one of the categories – or to propose an alternative category. The survey was advertised to target the recreational fishing sector, and 239 survey responses were received, but no new categories were proposed, indicating that the categories were representative. Queensland stakeholders:

- Animal welfare groups
- Boat/boating equipment retailers
- Charter boat owner/operators
- Conservation advocates
- Commercial fishers*
- Fishing club representative

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- Fishing industry body representative (e.g. Sunfish Queensland, Australian Recreational Fishing Foundation)
- Fishing personality/influencer
- Government – compliance
- Government – policy
- Hospitality/nutrition
- Media/communications (fishing)
- Recreational fishers (of Snapper and Pearl Perch)
- Scientist (marine/fisheries)
- Tackle/fishing equipment retailer
- Tourism (including scuba diving)
- Traditional Owners

** Commercial fishers are clearly both influential and interested in the issue. However, the focus of the project is on the recreational fishing sector and the mandate of the project is to support change in the recreational sector. Given the recreational sector is already wide and diverse, it was decided to not actively engage with the commercial sector although they are noted as a key stakeholder.*

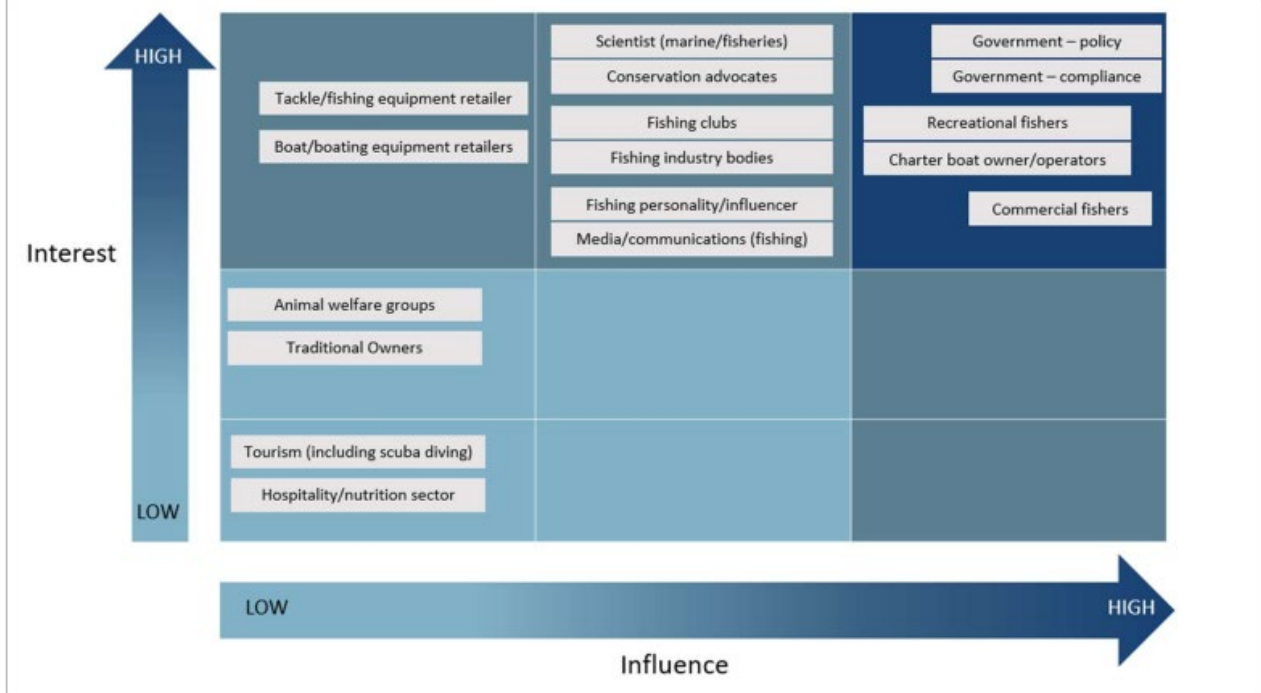
In the stakeholder map (Figure 1), these stakeholders are mapped according to their perceived influence over and interest in rebuilding stocks of Snapper and Pearl Perch – noting that this is a top level categorisation and individuals within any group may be different in their ability to influence and their interests.

Stakeholders outside of Queensland may also have both an interest in and influence over the issue and they may fall into the above categories (just located in other states). Notably the following additional stakeholders have an interest in the project outcomes and include:

- FRDC
- Staff of other state and federal agencies responsible for fisheries management and policy development
- Australian research institutions with an interest in fisheries management including universities and CSIRO

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Figure 1, Stakeholder map: Stakeholders with an interest in and/or influence over rebuilding stocks of snapper and pearl perch in Queensland - with a focus on the recreational fishing sector.



The Fishing for Change project is monitoring its engagement with stakeholders. Stakeholder data is being maintained in an online relational database (HubSpot).

Stakeholder prioritisation

The key stakeholders were prioritised to help target our effort into three groups for the purposes of the project: primary stakeholders, influencer stakeholders and interested stakeholders.

Primary stakeholders

Primary stakeholders are those who are most likely to be affected by and involved in this project and the resultant behaviour change work/social marketing campaign:

- Recreational fishers (of Snapper and Pearl Perch)
- Charter boat owner/operators (targeting Snapper and Pearl Perch)

Influencer stakeholders

Influencer stakeholders are those who can influence the primary stakeholders and may be engaged and involved in the project at various points. They include ‘hard’ influencers (those responsible for regulations and enforcement) and ‘soft’ influencers (those that inspire or encourage behaviour change or are sources of trusted information to inform behaviour change) (Nye, 2005):

- Hard
 - Government – compliance
 - Government – policy
- Soft
 - Fishing personality/influencers
 - Boat/boating equipment retailers
 - Conservation advocates
 - Commercial fishers

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- Fishing club representatives
- Fishing industry body representatives
- Media/communications (fishing)
- Scientists (marine/fisheries)
- Tackle/fishing equipment retailers

Interested stakeholders

Interested stakeholders are those who have a broader interest in the outcomes of the project and who we will keep informed about project development:

- Animal welfare groups
- Hospitality/nutrition
- Tourism
- Traditional Owners
- FRDC
- Staff of other state and federal agencies responsible for fisheries management and policy development
- Australian research institutions with an interest in fisheries management including universities and CSIRO

Primary stakeholder segmentation

The two stakeholder groups at the heart of this project are Queensland recreational fishers of Snapper and Pearl Perch and Queensland charter boat operators because they are catching or directly facilitating the recreational catch of Snapper and Pearl Perch.

Existing literature was reviewed to identify factors that can assist in reaching and connecting with Snapper and Pearl Perch recreational fishers, and charter boat operators. In addition, QDAF and other stakeholders were consulted to identify additional groups and persons with a vested interest in Snapper and Pearl Perch recreational fishing. It is outside the scope of this project to do original research into these stakeholders.

Recreational Snapper and Pearl Perch fishers

For this project we sought to review available literature on the demographic, psychographic, behavioural and geographic (and temporal) characteristics of recreational fishers who target Snapper and Pearl Perch in Queensland. This information will provide a better understanding of recreational fishers and help us decide how we could target them during the social marketing campaign.

Demographic

Demographic data covered here includes the age, gender and socio-economic status of recreational fishers.

From a national perspective, the report 'Recreational Fishers in Australia: A social snapshot 2017' (Baker, 2017) notes that recreational fishers are diverse and span different socio-economic, age, levels of education and occupation groups. The majority of recreational fishers were found to be male, living in both urban and rural areas and across all family groups statuses.

Initial results from the 2019-20 survey of Queensland's recreational fishers estimate there are about 943,000 recreational fishers in Queensland (Queensland Department of Agriculture and Fisheries, 2019). A subset of these fish for Snapper and Pearl Perch.

An earlier survey from 2013-14 (Queensland Department of Agriculture and Fisheries, 2015) estimated about 15% of Queenslanders or 642,000 people went recreational fishing. This survey provided some demographic information about Queensland's recreational fishers:

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- Over one-third of all recreational fishers lived in the Brisbane region.
- More than twice as many males than females were recreational fishers, with the greatest number in the 30–44 years age group.

Demographic data on Queensland recreational fishers is reported in '[An assessment of the social characteristics of Queensland's recreational fishers](#)' (Sutton, 2006), which summarises data captured for recreational fishers fishing the Great Barrier Reef (GBR) and those fishing outside this area:

- Most fishers were male.
- Average age was 41 years.
- Median household income was \$30,000- \$39,999.
- Recreational fishers had approximately 27 years fishing experience.

Psychographic

Psychographic data covers how people think, their beliefs and attitudes. Included here is data sourced about recreational fisher motivations and preferences.

Recreational fishers in Australia have in common “the enjoyment of being outdoors and relaxing in a natural environment while hoping for a bite on the end of a line” (Baker, 2017). Other insights from Baker (2017) into recreational fishers at the national level include:

- There are some fishers for whom the trophy fish is the driving motivation, but these fishers represent the minority.
- Fishers listen to and learn from other fishers, usually those known to them and they are the preferred and most trusted source of information about fishing.
- Increasingly, fishers would prefer to be able to get their information from online sources, although the level of trust in such sources is not high. Preferred information sources vary depending on what information is being sought and negative messages are more likely to hinder communication when compared to positive messages.
- Australian recreational fishers value the environment. They understand the importance of healthy fish habitat, reducing pollution and the impacts of development to improving the health of fish populations.

Results of a report on the [motivations and attitudes of recreational fishers in NSW](#) (ANCORS, 2016) grouped recreational fishers into the following sub-groups based on a combination of their attitudes and motivations:

- **Social fishers:** prioritise the social and escapism aspects of the fishing experience. While consumptive orientation is relatively low, they may be motivated to catch and retain fish based on a desire to share seafood catches with friends and family. Mastery aspects of fishing are of low importance to this group.
- **Generalists:** have no clear motivational preferences. This groups reflects motivations of other identified groups and no clear, uniquely identifying information. While mastery aspects of the fishing experience are moderately important to this group there is some suggestion that this may focus primarily on experimentation with equipment or fishing gear.
- **Hunter gatherers:** high levels of consumptive orientation compared with the other profiles. This suggested a group of fishers who are motivated primarily by catching, retaining, and eating fish. They are much more inclined to try and catch whatever they can, rather than targeting specific species, and often believe their catches come down to luck rather than skill.

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- **Trophy fishers:** comparatively high levels of interest in ‘catching large/trophy fish’ and ‘mastery’. This suggested a group of fishers who were motivated by the challenge and skill involved in catching large trophy fish.
- **Outdoor enthusiasts:** low levels of consumptive orientation and high levels of all three categories of activity general motivations, especially motives related to being outdoors and with nature. The key difference between this profile and trophy hunters relates to their consumptive orientation, which is closely related to their specific motivations in relation to mastery. While trophy fishers are aiming primarily to catch the biggest fish they can, outdoor enthusiasts are more interested in challenging themselves.

Some broad categorisation of fishers who target Snapper and Pearl Perch suggested by QDAF are sports fishers and harvest fishers.

- **Sport fishers:** the primary reason for sports fishers to go fishing is for the experience. They are more inclined to catch and release. While they will catch some fish for food, that is not the primary driver. They will try to target certain species, develop their technical expertise, and target increasingly larger sizes.
- **Harvest fishers:** the primary reason for harvest fishers to go fishing is to catch fish to eat. They are more inclined to try and catch the bag limit to maximise their catch. Once they hit their bag limits for one species, they may then shift to target a different species. They may also weigh up the financial cost of going fishing with the value of the fish they catch. Regulations affect this group most heavily.

Snapper and Pearl Perch are often targeted because they are iconic species, regarded as good to eat, occur near to major population centres (south east Queensland), can be targeted effectively (i.e. using a GPS or sounder), and public and private networks share location and catching techniques. Moreover, Snapper:

- reaches a large size,
- was abundant,
- is easily accessible to boat fishers, and
- is relied upon by charter boats as a customer-pleaser and is often why people hire a charter.

Whereas Pearl Perch are targeted because it:

- is a highly desirable species that is becoming renowned as a good eating fish (and is only released when undersized),
- reaches a relatively large size,
- schools, meaning it can be targeted by boat-based fishers successfully, and
- is liked by charter boat customers.

Based on the responses to the Fishing for Change survey that asked respondents ‘What can fishers and interested parties do to help increase stocks of Snapper and Pearl Perch?’ there is significant diversity in the values and perceptions of recreational fishers regarding fishing Snapper and Pearl Perch. Views expressed ranged from those who do not recognise any problem with stock levels through to those who want the fisheries shut down for these species to help stock recover for periods as long as three years.

Sutton (2006) says that, in order of importance, the motivations for Queensland fishers fishing outside the Great Barrier Reef (GBR) were: relaxation, experiencing nature, socialisation, catching fish, and experiencing excitement. For the same group, 77% said “I usually eat the fish I catch”, 75% said “A fishing trip can be successful even if no fish are caught”, and 70% said “I’m happier if I release some of the fish I catch”. Moreover, for non-GBR area fishers, the catch-related aspect of fishing that received the highest score was “size of fish caught”, “catching something”, “keeping fish” and “number of fish caught”.

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This same report also demonstrates high support for conserving fisheries, with 92% of non-GBR fishers saying “Recreational fishing regulations are necessary to protect fish populations from over fishing”, and 96% of non-GBR fishers agreeing with “Even if I didn’t fish, it would still be important for me to know that healthy fish populations exist”.

Behavioural

Behavioural data focuses on what people do. Here we include some relevant activities of recreational fishers and what is known about fisher behaviour.

The report [Recreational Fishers in Australia: A social snapshot 2017](#) finds that:

- A low number of fishers belong to formal fishing clubs, usually less than 10 per cent of a survey sample.
- There are some fishers who fish almost every day, but others who fish only a few times a year.
- Most of them do not participate in activities to improve fish habitat due to lack of time and resources, but those that do, gain a great deal of satisfaction from putting something back into their sport.

The 2013-14 survey of Queensland recreational fishers (Queensland Department of Agriculture and Fisheries, 2015) found that:

- Most recreational fishers in Queensland were not affiliated with a recreational fishing or diving club.
- Residents living in the Brisbane, Sunshine Coast and Wide Bay-Burnett regions were responsible for nearly 57% of all fishing efforts. Fishers did travel away from their local area to fish, but most fished close to where they lived.
- Boat ownership among fishing households was high. Approximately 49% of fishing households owned a boat and most of these were 4–5m powerboats.
- Echo sounders and GPS were used on most boats greater than 5m, and electric motors were used on approximately 15% of boats less than 6 m long.
- During the 12 months between November 2013 and October 2014, Queensland residents fished for approximately 2.5 million days in Queensland. Fishing with a line was the most popular method and around half of all effort was shore based (the other half was boat based).
- Resident recreational fishers caught an estimated 203,000 Snapper (in a 12-month period).
- Many fish caught are later released; however, the proportion released varies considerably by species.
- High release rates were reported for both Pearl Perch and Snapper. Recreational fishers released fish for a variety of reasons, the most common of which related to the fish being too small or below a legal size limit.

Sutton (2006) summarises the following about Queensland recreational fishers:

- Coral trout and barramundi were the most preferred species for GBR area fishers, whereas whiting, flathead and silver bream were most preferred by non-GBR area fishers.
- Most GBR (90%) and non-GBR (85%) area fishers said that they usually fish with family and/or friends.
- A majority of GBR (64%) and non-GBR (51%) area fishers reported that someone in their household owns a boat that they use for fishing.
- Most (73% GBR; 77% non-GBR) reported single boat ownership with an average length of 4.9m.
- A minority of fishers (6% GBR; 8% non-GBR) reported being a member of a fishing club or conservation organisation.

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- A majority of fishers (75% GBR; 73% non-GBR) said that they were moderately or very satisfied with fishing in Queensland.
- Seventy two percent of GBR area fishers and 70% of non-GBR area fishers reported that there are factors that prevent them from fishing as often as they would like.
- Statements about why fishers do not fish more often that received the highest level of agreement/strong agreement were “I have too many work/family commitments” (75% GBR; 75% non-GBR), and “Other leisure activities take up too much of my time” (38% GBR; 47% non-GBR).

One initiative of the Queensland Government that is affecting the behaviour of offshore recreational fishers is the deployment of 25 Fish Aggregating Devices (FADs) since late 2019 (Queensland Department of Agriculture and Fisheries, 2020c). FADs are floating buoys that are tethered offshore to attract fish. FADs can attract pelagic species as they migrate along the coast increasing the diversity of fish species recreational fishers can target (e.g. mahi mahi, cobia and king fish) and therefore could shift fishing effort away from more vulnerable demersal species (e.g. Snapper and Pearl Perch).

One FAD – FAD 1: Gold Coast 24s – is located six nautical miles from the shoreline and is the most accessible FAD for smaller and less powerful boats. Fishers using more remote FADs need boats capable of handling bigger swells and winds, and better equipment (e.g. sounders) to find the fish. The journey will be longer and relies on good weather. More enthusiastic and capable fishers are more likely to access these areas (unless they are relying on charter boats to access those sites).

Discussions with QDAF also highlight the different skill level of fishers. Snapper, especially juvenile Snapper, are available in easily accessible areas including Moreton Bay and they are therefore more easily caught. Snapper are line caught in Queensland. Moreton Bay is one of the most frequently recreationally fished locations in Australia. Whereas Pearl Perch require a greater level of boating and equipment skill (to access the Pearl Perch fisheries by boat further offshore and in using sounding equipment to find them).

A common mantra is that 10% of fishers catch 90% of the fish – but this is only a rough profile and may be changing with easier access and affordability of better equipment.

Research demonstrates that Snapper and Pearl Perch have high survival rates when handled well. It is likely that reduced handling practices by less skilled or conscientious fishers may reduce the survival rate, but there is limited information on this. In addition, there is limited data on the survival rates of caught and released juvenile Snapper. Teaching people about best handling practices may help to promote stewardship as well as maintain high survival rates of released fish (Campbell, McLennan, & Sumpton, 2013) (Sumpton, et al., 2013). Providing alternative fishing locations and teaching new skills might be a way to encourage fishers to target alternative species.

Geographic and temporal

Geographical and temporal data helps to identify when and where recreational fishers go fishing for Snapper and Pearl Perch.

Snapper monitoring (Queensland Department of Agriculture and Fisheries, 2020a) shows recreational fishers in Queensland are responsible for about 75% of the Snapper catch in the state. Recreational fishers catch Snapper year-round, with the winter months being the peak fishing season on offshore grounds.

In Queensland waters, Snapper occur from Mackay down to the Queensland – New South Wales border. QDAF report that Snapper live in a broad range of saltwater habitats from estuaries to about 200m water. Snapper are mostly fished offshore. Inshore areas are considered more important for juvenile Snapper (<1 year old) which can be found in protected waters including Moreton Bay.

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Pearl Perch monitoring (Queensland Department of Agriculture and Fisheries, 2020b) shows that most Pearl Perch are caught by fishers offshore in waters deeper than 40m from Mackay to the Queensland – New South Wales border. Peak fishing season for Pearl Perch is spring through to autumn.

Public and private boat ramps in the Brisbane and Gold Coast region are key departure points to access Snapper and Pearl Perch fisheries. Boat ramps located further north to Mooloolaba and Kawana are also used. Boat ramp data from Southern Queensland (Queensland Department of Agriculture and Fisheries, 2018) indicates that the ramps that report the highest catches of Snapper and Pearl Perch are:

- Brisbane
 - Raby Bay Ramp (Snapper)
 - Spinnaker Sound Ramp (Snapper and Pearl Perch)
 - Victoria Point Ramp (Snapper)
 - Wellington Point Ramp (Snapper)
 - Whyte Island Ramp (Snapper)
- Southport
 - Broadwater Parklands Ramp (Snapper and Pearl Perch)
 - Grand Hotel Ramp (Snapper and Pearl Perch)
- Mooloolaba
 - Mooloolaba Coast Guard Ramp (Snapper and Pearl Perch)
- Kawana
 - Kawana Ramp (Snapper and Pearl Perch)

Queensland has instigated a seasonal closure for Snapper and Pearl Perch between 15 July and 15 August 2020 to reduce fishing effort during spawning season (Queensland Government, 2020).

Weather also affects when and where fishers can catch Snapper and Pearl Perch. Bad weather may limit how far people will go offshore.

Sutton (2006) summarises the following about Queensland recreational fisher:

- Significantly more GBR area fishers (27%) than non-GBR area fishers (17%) said they go fishing fortnightly or more often.
- Average number of days fished during the previous 12 months was significantly higher for GBR area fishers (23.5 days) than for non-GBR area fishers (20.5 days).
- Most fishing over the previous 12 months occurred in inshore and offshore marine waters.

Charter boat operators

Charter boats that charge a fee to take passengers to an offshore site to go fishing must be licensed in Queensland (Queensland Department of Agriculture and Fisheries, 2016). The number of charter boat licences in Queensland is not currently restricted and the number of charter boats licensed to operate in Queensland in 2016 was 355 as reported in the ‘Charter fishing action plan 2017-2020 discussion paper’ (Queensland Department of Agriculture and Fisheries, 2017). However, only a proportion of these reported catches between 1994 and 2014, and that proportion had been declining since 2004.

The action plan also shows that for the Subtropical region (including the region from Bundaberg to the Gold Coast), Snapper, Pearl Perch and teraglin comprised almost 40% of the reported charter catch. The number of days fished and the catch amount were both trending downwards at the time of publication.

Charter boat operators play a key role helping fishers access sites they would not otherwise have access to – including accessing further afield FADs and Pearl Perch fisheries that are further offshore. With high levels

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of skills, knowledge and experience, combined with more sophisticated equipment, charter boat operators can exert influence over where their clients go, what they catch and how much they catch.

Application of stakeholder insights

This section outlines some preliminary insights for how the information collected on stakeholders could be used to help in selecting the target behaviour and the design of a social marketing campaign.

Demographic

Males aged 30-44 years are the people most likely to be recreational fishing in Queensland so may be the best target for the social marketing campaign.

Motivation and attitudes

Attitudes vary so any campaign needs to connect to a broad range of attitudes towards fishing and rebuilding Snapper and Pearl Perch stocks.

Enjoyment of the outdoors and the social experience appears central to most fishers so communication of this benefit could be a foundation for any social marketing campaign, such as providing alternative outdoor/on water experiences with friends.

While Snapper is a popular species – promoting alternative species and/or locations to fish that may results in catching alternatives species could be a viable option for messaging. Or, possibly, catching a single (or much fewer) large fish.

Communication tools

Other fishers – including influential fishers could be tapped to help communicate or socialise key messages. This could include through social media, namely Facebook which 90% of people born between 1976 and 1990 use (Roy Morgan, 2020).

Fishing clubs may have limited reach into the broader fishing community but may nonetheless be important if highly influential fishers or highly skilled fishers who regularly fish and catch a lot of fish are members.

Other channels of communication not explored in this report such as TV fishing shows, fishing media (e.g. Bush N Beach and Fishing World) would also likely be key tools in a campaign.

Boat/equipment needs

Considering access to a boat is the dominant way to fish Snapper and Pearl Perch – some fishers of these species could be targeted through their boat ownership (registration) or usage (licences). Boat owners may be connected with boat retailers and mechanics, and both boat owners and users would access fuel points – all of which could provide points of contact to reach people who may be fishing Snapper and Pearl Perch.

Fishers catching Snapper and Pearl Perch would also rely on retail tackle shops and may also use other equipment on-board such as sounding equipment. Another access point is therefore fishing and tackle shops. These outlets could be key because all fishers need tackle and bait, whereas only one boat is required for several fishers.

Location

Fishers using public boat ramps that access Snapper and Pearl Perch fishers.

Timing

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The timing of any social marketing campaign would be pegged immediately before or during the fishing season and likely would avoid seasonal closures for Snapper and Pearl Perch (although this period could be a perfect timing to promote fishing of alternative species).

While not explored in this report, the implications of any shut-downs that may occur as a result of COVID-19 will also impact the timing of the campaign.

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Appendix 2: Behaviour selection – stakeholder input

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Fishing for Change

Behaviour selection – stakeholder input

Top candidate behaviours

1. Fishers release fish effectively.
2. Fishers catch an alternative species:
 - a. Inshore: whiting, flathead, squid/cuttlefish, school mackeral and bonito.
 - b. Offshore: yellow tail king fish, mullaway, dolphin fish, amberjack and cobia.

Stakeholders interviewed

1. Recreational fisher, tackle retailer
2. Scientist
3. Government
4. Recreational fisher, industry rep body
5. Scientist
6. Recreational fisher
7. Charter boat operator
8. Conservation advocate
9. Charter boat operator

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Interview process

Catch and release

One of the ideas generated to help rebuild Snapper and Pearl Perch stocks was helping fishers to successfully release Snapper and Pearl Perch. May I ask you three questions about this idea?

- How likely is it that fishers will successfully be able to catch and release Snapper and Pearl Perch? (of the ones they plan to release, and with a potential campaign to show them how and encourage them how etc)
(very unlikely, unlikely, maybe, likely, very likely)
- How big of an impact would fishers successfully releasing Snapper and Pearl Perch have on helping to rebuild Snapper and Pearl Perch stocks? (of the ones they plan to release)
(very low impact, low impact, medium impact, high impact, very high impact)
- What percentage of fishers are currently not successfully releasing (i.e. the fish survive) the Snapper and Pearl Perch they catch? (of the ones they plan to release)
(0-100%)

Alternative species

Another idea is to support, encourage or promote fishers to catch other fish species. I want to ask the same questions but related to this idea.

- For those fishers currently targeting and catching Snapper and Pearl Perch, how likely is it that they will fish an alternative species to Snapper and Pearl Perch?
(very unlikely, unlikely, maybe, likely, very likely)
- If those fishers switched to catching an alternative species of fish, how big of an impact would this have on helping to rebuild Snapper and Pearl Perch stocks?
(very low impact, low impact, neutral impact, high impact, very high impact)
- What percentage of fishers are currently targeting alternative species instead of Snapper/Pearl Perch?
(0-100%) (reverse %, need to note % that don't target)

I also want to seek your advice on a set of eight potential fish that could be caught as alternatives to Snapper and Pearl Perch and get your advice on them.

- Inshore: whiting, flathead, squid/cuttlefish, school mackerel and bonito.
- Offshore: yellow tail king fish, mullaway, dolphin fish, amberjack and cobia.

Are there any other alternative species that you think would be viable alternatives, and if so why?

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Stakeholder feedback on top candidate behaviours

STAKEHOLDER	A: Likelihood of adoption (1-5) 1 – very unlikely, 2 – unlikely, 3- maybe, 4 – likely, 5 – very likely	B: Impact of adoption (1-5) 1 – very low impact, 2 – low impact, 3 – medium impact, 4 – high impact, 5 – very high impact	C: Size of target audience (0-100)	D. Metric (AxBxC)/100 (0-25)	E. Metric (AxB) (0-25)
Fishers release fish effectively.	3.6	2.6	50	4.6	9.2
1.	4	unknown	30		
2.	3	unknown	unknown		
3.	3	3	40		
4.	3	3	75		
5.	4	3	unknown		
6.	3	unknown	25		
7.	5	1	80		
8.	3	3	unknown		
9.	4	unknown	unknown		
Fishers catch another fish species.	2.9	2.8	20	1.6	8.1
1.	3	unknown	unknown		
2.	2	too high risk option	too high risk option		
3.	5	3	unknown		
4.	4	2	unknown		
5.	3	4	20		
6.	2	1	unknown		
7.	1	unknown	unknown		
8.	3	4	unknown		
9.	3	unknown	unknown		

Notes:

- Where a direct answer was given the co-relating score was provided.
- Where a direct answer was not given but it was indicative of an option, that option was selected at the interviewer's discretion.
- Where the person's response was unclear or they clearly stated they didn't know 'unknown' was noted.

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Stakeholder feedback on proposed alternative species

STAKEHOLDER	whiting	flathead	squid/ cuttlefish	school mackeral	bonito	yellowtail kingfish	mullaway	dolphin fish	amberjack	cobia	other
1.	1	1	1	1	1	1	1	1	1	1	
2.	1	0	0	0	0	0	0	0	0	0	
3.	2	2	2	1	0	1	1	2	1	1	yellow fin tuna
4.	2	2		1	1	0	0	2	1	1	cod, parrotfish, sweetlip, bream
5.	2	2	2	2	1	1	2	1	1	2	Small yellow fin tuna, yellow fin bream
6.	1	0	1	1	0		1	1	1	1	bream
7.	2	2	2	2	2	2	1	2	2	1	
8.	2	2	2	2	2	0	0	2	1	1	spanish mackeral, longtail tuna, bream
9.		1				1	1	1	1	0	trag
Totals	13	12	10	10	7	6	7	12	9	8	

Notes:

- Where no indication of a response was given or an unknown answer was given, space left blank
- Ranked to best reflect interviewee's response at discretion of interviewer:
 - Yes = 2 (a suitable alternative)
 - Maybe = 1 (could be a suitable alternative, but some issues or concerns)
 - No = 0 (unsuitable alternative)

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Inshore	Total score	Collated comments
Whiting	13	<ul style="list-style-type: none"> No fun to catch Small Good eating
Flathead	12	<ul style="list-style-type: none"> Susceptible to over-fishing, under pressure Seasonal only Good eating
Squid/cuttlefish	10	<ul style="list-style-type: none"> Sustainable alternative Growing interest but people don't know how to catch it, need different equipment Good eating
School mackeral	10	
Bonito	7	<ul style="list-style-type: none"> Bait only Fights hard
Offshore		
Yellowtail kingfish	6	<ul style="list-style-type: none"> Gets a parasite (?) infection that makes flesh mushy and unpalatable Not so common Has some sustainability issues
Mullaway	7	<ul style="list-style-type: none"> Very popular, people like them Need more info on how to catch, not easy to target, easy to catch Susceptible to overfishing, has sustainability issues
Dolphin fish	12	<ul style="list-style-type: none"> Cluster around FADs, need education on FADs, only at FADs Fast growing, can handle pressure Good eating
Amberjack	9	<ul style="list-style-type: none"> Uncommon, but fun to catch. Can't handle large volumes of harvest. Associated with yellowtail kingfish/cobia
Cobia	8	<ul style="list-style-type: none"> Fight hard Can't reliably target them, well known areas overfished, not many this year Good eating but don't freeze well Can handle higher harvest

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Individual feedback

Stakeholder 5

- There has been a campaign 'Gently Does it' (Released Fish Survival) media campaign to promote better catch and release techniques among Queensland anglers. Apparently good penetration and used key influences on TV including Andrew Ettingshausen to support the campaign. Had simple messages like keep hands wet, use circle hooks, and don't put fish on hot metal surface. Use of needles to reduce barotrauma a "bit controversial" – option promoted now is use of release weights.
- The only reason people will release is if they have already caught their limits.
- Hard to switch people away from these species – need a good incentive. Need to also show the conservation benefit/imperative of moving away from Snapper and Pearl Perch, and that commercial sector is also acting (i.e. all sectors must be treated in same fair way).
- Noted the idea of rolling closures was a good one, during recent closures Snapper did not seem to be spawning, rolling closure would make more sense and could respond to fisher knowledge.
- Very popular idea to increase artificial reefs to enhance Snapper and Pearl Perch populations.
- Very popular to have extra policing on water.
- Rec fishing license – interesting idea but huge resistance, been a long term argument,
- Proposed fish species
 - Yellowtail king fish – they occur at FADS, but high rate of parasite infestation which makes flesh go mushy. (1)
 - Amberjack – uncommon, but great fighting fish and fun to catch, not as good to eat. (1)
 - Mullaway – very popular, if more info on how to catch is available would be good alternative (2)
 - Cobia – good attributes, fight hard, good to eat, at FADs (2)
 - Dolphin fish - Room for education on FADs and dolphin fish. (1)
 - Squid/cuttlefish – people don't know how to catch, but it is of growing interest, easy to catch, they are very productive, sustainable alternative (2)
 - Whiting/flathead – plenty of space to catch them, they live in open habitat (very competitive to catch Snapper and Pearl Perch because space is a premium) (2)
 - Bonito – catch around headlands (1)
 - School mackerel – definitely a good choice, 3 main mackerel – school, spotted and Spanish mackerel (2)
 - OTHER – small yellow fin tuna (offshore) and bream/yellow fin bream (inshore)

Stakeholder 6

- Acting responsibly around catch and release is the better option. Good anglers know what to do but others do not. Opportunity for education campaign in schools. Note that Bush N Beah have promoted release weights, in WA it is mandatory at depths over 50m. Snapper require it but not Pearl Perch.
- Key influencers include Andrew Ettingshausen, Lee Rayner, and Sammy Hitzke.
- Needs more policing.
- People not catching a lot of undersize fish, can't guarantee they will survive anyway with shark/dolphin predation or when they are gut hooked. Inshore areas there is higher potential for mortality.
- Habitat creation more effective and creation of net free zones. Whatever we do can't be done in isolation.

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- Excellent idea to have rolling seasonal closures – would be better to target hem and you would have a bigger impact.
- People really like to target Snapper and are passionate about it.
- FADs are a good option for offshore.
- Recommended we also be very transparent in what we are doing and who we are and our backgrounds and experiences.
- Proposed fish species
 - Amberjack – not so many low down (1)
 - Cobia – just a bycatch, used for burly, attract sharks, can't reliably target them, well known areas may be overfished, don't freeze well, harder to find, easy to release (1)
 - Mullaway – has possession limits, also suffers barotrauma, when schooled up easy to catch but susceptible to over-fishing. (1)
 - Dolphin fish – only if in closer, you'd need FADs to attract them, can easily have people take a lot, he would not target them – only an opportunistic catch (1)
 - Whiting – catch when weather dodgy, don't want to filet more than 50 of them. No fun to catch, not the same as Snapper, fishers use it as a bait, but lovely to eat.(1)
 - Bonito – bait only (0)
 - Flathead – under pressure already, also seasonal, highly susceptible to over-fishing if too many people target them. Competition on catch and release have helped. Risky approach (0)
 - Squid – are being caught more often but need different equipment, not a fun catch, good to each (1)

Stakeholder 9

- He uses needling (pop and squeeze) to address barotrauma in all the Snapper he will release, but not sure how effective it is because of predation (sharks and dolphins) and whether they survive anyway.
- During recent closures they targeted teraglin (trag) and venus tuskfish – but 'gave them a hiding'.
- Thinks all species should be in the mix to 'spread the load'
- Thinks lack of knowledge of breeding biology will limit effectiveness of measures.
- Proposed fish species
 - Yellow tail king fish/amberjack – not as common as they used to be, some days won't see any, may need to reduce limits to one per person. (1)
 - Cobia – worst season this year, only a couple per week as opposed to two a day, not interesting enough either. (0)
 - Mullaway – ok, caught a few and people love them, but not easy to target. Not always easy and very variable (1)
 - Dolphin fish – occur around FADs, some around depends on water temps (1)
 - Did not discuss inshore species as he focuses on offshore with charter but he mentioned flathead and trag as alternatives.

Stakeholder 3

- Definitely thinks there is room to improve people's catch and release techniques. Estimated 30-50% of fishers could manage this better. Noted three areas to focus on:
 - Handling techniques
 - Release techniques
 - Fishing behaviour (e.g. leave location if sharks are eating released fish)

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- Sees opportunity to transition fishers to fish to eat to fish for fun and release instead. Not just bagging out. Need to communicate the need for reducing pressure on Snapper and Pearl Perch.
- Noted challenge of NSW/QLD border and different regulations and limits.
- Very likely to get fishers targeting different species – for different reasons. With FADs charters are catching more dolphin fish. The time spent catching dolphin fish is time they cannot spend catching Snapper.
- Noted the expected installation of sub-surface FADs in the outer reef area. These could attract yellow fin tuna, blue marlin and bigger dolphin fish. They could create an alternative charter fishery. Will promote new FADS (previously did competition) may work with celebrity influencers this time around.
- Still room for improvement in helping people know how to use FADs and the different fishing techniques required.
- Noted increasing interest in deep water species and increasing numbers of people fishing further out using electric reels to 200-500m catching big fish. People willing to travel further but we wouldn't want to promote those species (blue eyed trevallier and bass grouper).
- More people are targeting other species due to closures (so they were forced to consider alternatives), increased awareness of stock situation (partly due to closures) and the FADs (providing an alternative)
- Proposed fish species
 - Dolphin fish – fast growing and can handle pressure – is number one alternative choice, attracted to FADs, taste pretty good and exciting to catch (2)
 - Yellow tail king fish/amberjack – good option, caught in the same location as Snapper, exciting to catch, can't handle large volumes of harvest (1)
 - Mullaway – stock uncertain, also found inshore, issue with predation (1)
 - Cobia – can handle higher harvest, but hard to locate (1)
 - Whiting, flathead, squid – yes if you want to catch something to eat
 - School mackerel – yes
 - Bonita – wouldn't want to eat but good for bait.
 - Alternative – yellow fin tuna

Stakeholder 2

- FADs have been successful.
- We are too soft on recreational fishers.
- How can we get fishers to give up fish without expecting anything in return. They only seem to shift if fishery is closed or if there are regulations.
- There is a real risk of collapsing another fishery if we shift focus to another species.
- The very heavy fishers are the problem, they catch a lot and are heading towards commercial.
- There is an international move against catch and release for fun and is even illegal in some jurisdictions due to animal cruelty. Ok if you intend to catch and keep then release the excess or unwanted.
- Proposed fish species (0)
 - Yellow tail king fish – has amoeba that makes flesh soft
 - Mullaway – unknown stock (NSW depleted, Qld unknown)
 - Whiting – has a lot of people targeting it, but could be good and is established but very different and small (1)

Stakeholder 1

- Use tackle shops and chain stores as a means to communicate with anglers.

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- Proposed fish species – they are all good common species but it would have to a whole program to show people how to catch the, where to go.

Stakeholder 4

- Deflate techniques have been around for a while, but people not broadly aware, if they know how they may try if it is simple. Education is always helpful.
- Using circle hooks is more difficult because they cost around \$1 each compared to normal hooks that are 2-3cents each.
- The average fisher is not that concerned.
- If there was a higher size limit there would be a greater need for releasing.
- Really not sure of the level of impact – ‘some’ impact. We really don’t know the numbers.
- 98% of people are not releasing using more technical practices, 70-80% just throwing back and not going to extra effort (75%)
- Not that effort just transfers to another species of fish
- Everyone hopes to catch Snapper and Pearl Perch but not many are catching their limit and at size
- Catch and release more effective but need to allow some permissible catch. Very frustrating when you can only keep a few. Better to keep more so people don’t keep trying to catch a bigger one and tossing the smaller ones, which may not survive. But you can target a bigger fish. Hard to be selective about what you are going to catch
- Need to use tackle shops (James’ tackle, BCF) and send videos to clubs etc, plus use fishing TV shows and high profile anglers to promote techniques
- Reminder to reach out to Australian National Sportsfishing Association – Stefan Sawynok
- Proposed fish species
 - Mullaway – waste of time, 75cm limit and only a few allowed (0)
 - Yellow tail king fish – mushy flesh (0)
 - Dolphin fish – good eating and occur at FADS (2)
 - Cobia (black king fish) – need to be good angler to get one, can take 30mins to bring one in and sharks predate them (1)
 - Amberjack – taste alright but not sure if you can target them (1)
 - School mackerel/bonito – only around at certain times (1)
 - Whiting/flathead/bream – very viable alternatives, breed and grow quickly but not as big (2)
 - Others include cod (can target and it grows quickly), parrot and sweet lip – but don’t know numbers, and bream

Stakeholder 7

- Deckhand manages release, if they are within limits fish will be kept but if not released – most swim back down ok.
- He thinks most people are probably doing release Ok and so it’s not a problem, and not an opportunity. (80? Most?)
- Felt we needed more FADs because there are so many boats that go out there and only the ones who get there first can successfully fish there
- Proposed the option of deep water fish off continental shelf - but you need to have electric reels and not everyone can have one so it is not as fun as when everyone has their own rod
- On the Gold Coast (as opposed to the Sunshine Coast) its very hard to find alternatives species (especially during closure when they couldn't guarantee any other species)
- Most of his clients prefer Snapper and Pearl Perch

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- Noted that during the closures he didn't catch any Snapper or Pearl Perch with roe/milt
- Proposed alternative species
 - Ok with all proposed but not massive amounts of any (2)
 - Trag jew, mullaway and cobia are variable (1)
 - Dolphin fish are good option during summer months at FADs

Stakeholder 8

- Hard to group all anglers together, there are highly skilled anglers and 'average' (mum and dad/family/holiday anglers). Skilled anglers already able to do catch and release.
- For catch and release people need the right equipment, know how to use it, have practice using it and actually do it.
- Limited data on impact of catch and release - may not see results on stocks for 5-10 years.
- FADs are important for the sport fishing community - but to attract the average fishers you need them to be easy to access.

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Appendix 3: Fisher insight survey results

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Fisher insight survey report

Aim

To better understand recreational fisher knowledge, attitudes and beliefs about mahi mahi, cobia, amberjack, squid, winter whiting and school mackerel.

Survey period and promotion

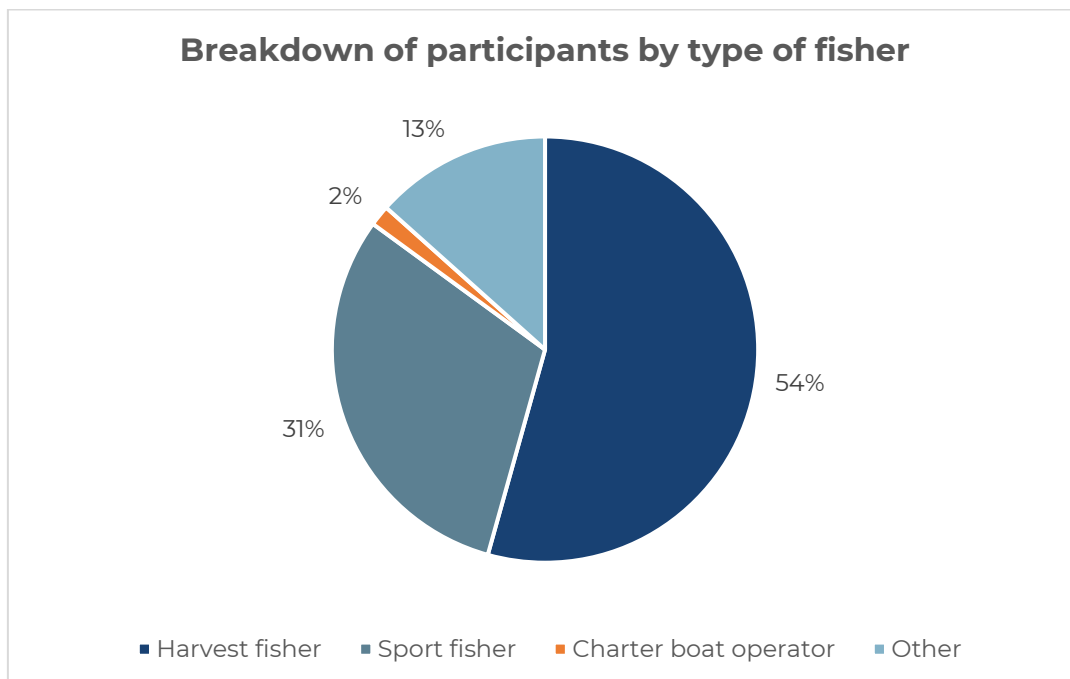
The fisher insight survey was live for a period of 16 days from Friday 23 October to Sunday 8 November.

It was promoted to people who have subscribed to Fishing for Change project updates (127) via the [October update](#). It was also shared on Currie's Twitter and Facebook accounts on 23 October. The Facebook post was promoted to people in Brisbane and the Gold Coast who have 'fishing' or 'recreational fishing' as an interest. This promotion (\$100 invested) ran from 24 October to 1 Nov and it reached 2,379 people.

Demographics

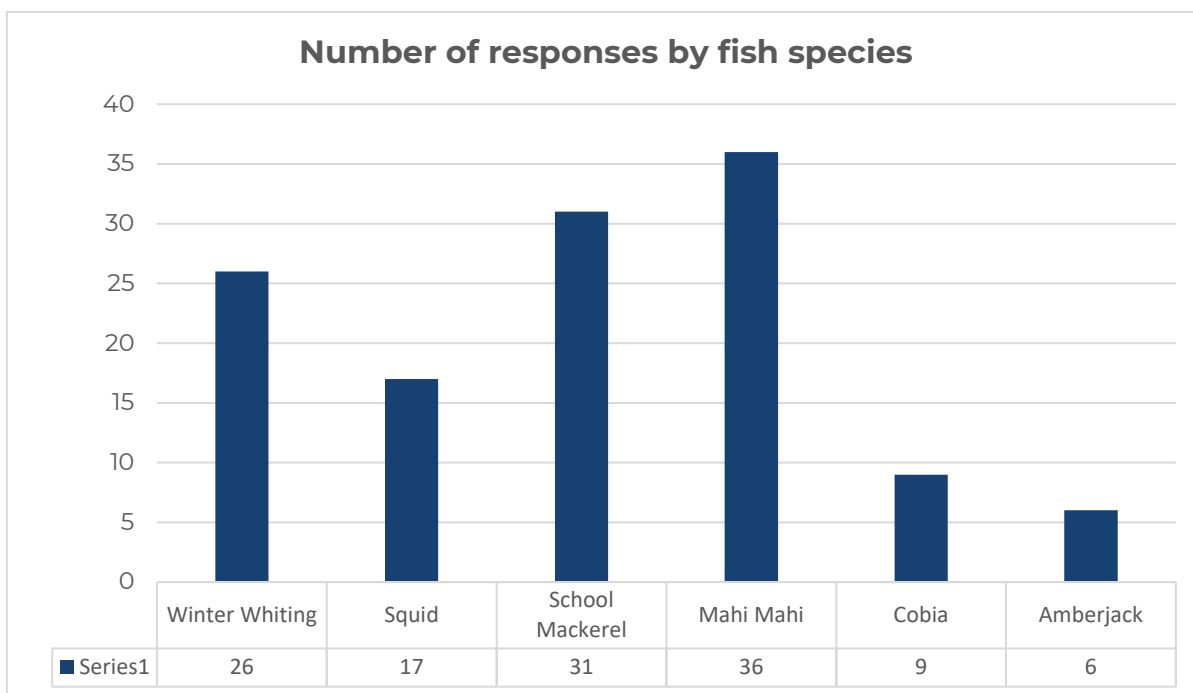
A total of 125 completed surveys were received. Of these, 69 identified as 'harvest fisher' (someone who mostly goes fishing to catch fish to eat), 39 identified as a 'sports fisher' (someone who mostly goes fishing for the experience, and to build their skills), two were 'charter boat operators' and 17 described themselves as 'other'.

Participants who identified in the 'other' category included people who fish for leisure, people who view themselves as both harvest and sports fishers, a fishing equipment manufacturer, an ex-pro fisherman, and a conservationist spear fisher.



Fish species feedback

The fish species that received the most survey responses was Mahi Mahi, with 36 participants providing information, while Amberjack received the least with just six responses. Fish species were presented in a random order, with participants giving feedback on one fish at a time. Once they completed the survey they were invited to provide input on another species and repeat the survey.



Categorisation of results

Responses to each question were reviewed and categorised. Then a count of all responses in each category was done. This report summarises the categories and the number of responses per category.

Any individual survey respondent may have provided multiple answers to a single question because they were open-ended. In this case an answer would be categorised in all categories to which the answer co-related.

The results provide insights into the factors that may motivate fishers to target the six species and also barriers that may prevent them being able or willing to target the six species.

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Winter Whiting (26 responses)

	POSITIVE		NEGATIVE
Tastes good	14	Small	4
Good numbers	9	Bag limit (50) too big	4
Fun to catch	8	Fiddley to clean/prepare	3
Fun for kids	7	Popular	3
Easy to catch	6	No size limit	2
Affordable/simple equipment	5	Boring	1
Accessibility	5		
Keep well in freezer	1		

	APPROVERS		DIS-APPROVERS
Family	9	Greenies	6
Everyone	4	People who don't fish	3
People who eat fish	2	No-one	3
Friends	2	Vegans	2
Neighbours	2	Pro-netters	2
Young fishers/people	2	Family	2
People who stock fish in freezer	1		
Me	1		

	ENABLERS		DISABLERS
Weather/season/tides	6	Weather/season/tides	9
More fish	2	Over-crowding	5
Bag limits (no detail)	2	Bag limits	3
Ban/reduce commercial netting/fishing	2	Over-fishing/low numbers	3
Bag limits (reduced)	2	Professional/commercial fishers/netters	3
Access to ramps/facilities/water	2	Closures	1
Skill development	2	Inshore netting	1
Boat ownership	1	Water quality	1
No government interference	1		
Cost of sand worms	1		
* Bag limits (reduced) - where people wanted the bag limits lowered to help boost numbers so there was more fish to fish for everyone		* Over-crowding includes at boat ramps, and in the water	

	Which fisher would it appeal to?
Sports fisher	2
Harvest fisher	24

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Squid (17 responses)

	POSITIVE		NEGATIVE
Tastes good	13	Messy	5
Fun to catch	9	Difficulty catching/finding	3
Good numbers	3	Boring	2
Good bait	3	Accessibility	2
Easy to catch	1	Over-crowding	1
		Seasonal	1
		Sustainability concerns	1

	APPROVERS		DIS-APPROVERS
Family	10	Vegans	3
Everyone	2	Other squid fishers/professional fishers	2
Friends	3	Anti-fishing groups	1
Me	1	Boat-owners	1
		Greenies	1

	ENABLERS		DISABLERS
Knowledge	4	Weather/season/tides	7
Weather/season/tides	4	Lack of access	4
Weedbeds	2	Dirty water	4
Greater numbers	2	Over-crowding	1
Access	1	Commercial netters	1
Boat ownership	1	Difficulty catching	1
More piers	1	Loss of weedbeds	1
		Over-fishing	1
		Lack of boat	1
		* Dirty water - silt/sand in water	

	Which fisher would it appeal to?
Sports fisher	3
Harvest fisher	16

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School Mackerel (31 responses)

	POSITIVE		NEGATIVE
Tastes good	23	Low numbers/unsustainable	4
Fun to catch	21	Damage equipment	4
Good numbers	6	Boring	3
Easy to catch	5	Netters	3
Good size	1	Don't freeze well	3
Easy to fillet	1	Hard to find	3
		Sharp teeth	2
		Poor eating quality	2
		Small size	1
		Bag limit too small	1
		Poor post-release survival	1
		People who keep undersized fish	1

	APPROVERS		DIS-APPROVERS
Family	18	No-one	13
Friends	6	Greenies/vegans/activists	8
No-one	2	Other fishers targetting it	3
Everyone	2	People who think they taste bad	2
People who'd like to reduce pressure on other species	1		
Commercial fishers	1		
		* Other fishers targetting it includes mention of netters	

	ENABLERS		DISABLERS
Weather/season/tides	10	Weather/season/tides	12
Ban/reduce commercial netting/fishing	5	Pro fishermen/Commercial netters	9
Suitable equipment/bait	3	Overfishing	5
More FADs/artificial reef	3	Other fishermen	2
Suitable boat	3	Lack of bait	2
No change to regulations	1	Hard to find	1
Less inspectors/regulations	1	Regulations	1
Less boats	1		

	Which fisher would it appeal to?
Sports fisher	11
Harvest fisher	22

Mahi Mahi (36 responses)

	POSITIVE		NEGATIVE
Fun to catch	24	Distance from shore	9
Tastes good	20	Not enough FADs	7
Fast growth rate	13	Too many boats	5
Look good	9	Harder to find	3
Work well with FADs	6	Weather/seasonal susceptibility	3
Good numbers	3	Very active in the boat	2
Easy to catch	2	Size limit too small	2
Sustainable	2	Bag limit too big	1
Good size	1	Boring	1
Good post-release recovery	1		

	APPROVERS		DIS-APPROVERS
Family	8	Greenies/vegans/activists	12
Everyone	4	No-one	8
Friends	6	Family	2
Other fishermen	5	Other fishers targetting it	1
Fisheries	2	Charter boat operators	1
Customers	1	Anyone without a boat	1
Government	1		
Me	1		

	ENABLERS		DISABLERS
More FADs	20	Weather/season/tides	12
Weather/season/tides	6	Not enough FADs	6
Access to a boat/bigger boat	4	Too many boats	4
Greater accessibility of FADs	4	Other fishers	3
Greater numbers	3	Access to boat/bigger boat	3
Banning/reduced netting	2	Distance from shore	2
Regulation of FADs	2	Small bag limits	2
Banning charter boats	1	Charter boats	1
More information/education on FADs	1	No/poor ramp/launch facilities	1
Knowledge - how to catch	1	Low numbers	1
		Commercial fishing	1
		Increased minimum catch size	1
		Overfishing	1
		Skill level	1

	Which fisher would it appeal to?
Sports fisher	24
Harvest fisher	15

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Cobia (9 responses)

	POSITIVE		NEGATIVE
Fun to catch	8	Difficult to find/target/catch	5
Tastes good	5	Not easily accessed	2
Large fish	3	Overfished/low numbers	2
Keep well in freezer	1	Predators	1
		Difficult to store (on boat)	1

	APPROVERS		DIS-APPROVERS
Family	2	People who perceive they are overfished	2
Everyone	2	No-one	2
No-one	1	Impatient fishers	1

	ENABLERS		DISABLERS
FADs/artificial habitat	5	Low numbers/overfishing	3
Easier access	3	Distance from shore	2
		Low quality boat ramp	1
		Weather	1
		Lack of knowledge	1

* FADs includes mention of having FADs closer to shore, use of shipwrecks and artificial reefs

	Which fisher would it appeal to?
Sports fisher	8
Harvest fisher	3

Amberjack (6 responses)

	POSITIVE		NEGATIVE
Fun to catch	4	Distance from shore	3
Good size	3	Difficult to find/catch	2
Tastes good	2	Weather	1
Easy to catch	1	Won't keep in the freezer	1
		Pest fish	1

	APPROVERS		DIS-APPROVERS
Family	3	Other fishermen	1
Friends	2	No one	1
Beginners	1	People who perceive they are overfished	1

	ENABLERS		DISABLERS
Artificial reefs	2	Weather/tide	3
Banning charter boats	1	Distance from shore	1
Knowledge	1	Charter boats	1
Season/tide/weather	1		

	Which fisher would it appeal to?
Sports fisher	5
Harvest fisher	1

Appendix 4: Co-design workshop report

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Fishing for Change Co-Design Solutions



Aim & Purpose



Design and develop a pilot social marketing campaign that promotes alternative species for recreational fishers to target.



This project is only one part of a larger puzzle to rebuild stocks of snapper and pearl perch in Queensland.



All ideas shared by participants are greatly appreciated. Only social marketing ideas/suggestions are considered for campaign development.



Ideas outside of scope of this project were excluded, e.g. regulation.

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When, where & who



Cedar & Pine Bar, Wynnum, Queensland



3rd December 2020



70 minutes



18 recreational fishers and other stakeholders



When, where & who



Cedar & Pine Bar, Wynnum, Queensland



3rd December 2020



70 minutes



18 recreational fishers and other stakeholders



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Overview of tasks



1

Word association test



2

Discussion of ideas in small groups



3

Design new ideas



4

Present ideas for the whole group

Word association test

N=18



Snapper

- Good eating fish/tasty
- Fun to catch/fighter fish



Squid

- Good eating
- Night fishing/seasonal
- Bait



Winter whiting

- Lots of them/plentiful
- Fun to catch
- Good eating
- Whole family can catch



Pearl Perch

- Good eating fish/tasty
- Fun to catch/fighter fish
- Scarce/hard to find

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Word association test

N=18



School mackerel

- Fun to catch
- Fighter fish
- Good eating fish
- Technique/skills



Mahi Mahi

- Fun to catch/fighter fish
- Scarce/never caught one
- Good eating fish



Cobia

- Great fighting fish
- Scarce/hard to find
- Love to catch one/never caught one
- Limited/no Knowledge



Amberjack

- Great fighting fish/sport fish
- Love to catch one/never caught one
- Scarce/hard to find



Designing ideas



FISH THE 'BROWN'

Threats to fishery ← Don't usually target in the Bay
 → New fishing hubs along the river
 ↳ Pontoons/jetties
 ↳ SOCIAL MEDIA
 ↳ FISHING MAGS → Weather less
 ↳ Sport fish → Safety measure

CATCH + RELEASE MONTH
 Close to homes - catch + release

• PROTECTION BY REGULATION (ALL SPECIES)
 ↳ EDUCATION
 • GENERATIONAL CHANGE
 ↳ SCHOOL PROGRAMS
 ↳ THEMES REACHING OUT TO NEW FISHING
 • PROMOTION OF EATING QUALITIES OF ADVERSE SPECIES
 ↳ MEDIA
 ↳ RESULTS
 ↳ FISHING TACKLE
 ↳ ECONOMIC THRUST.

... OF FISHING AND ...
 (CURRENT) IS ADDRESSING ONLY!
 SMALL NUMBER OF SPECIES (2)
 ↳ SITES TOO BROAD
 ↳ SEA + ESTUARINE.

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Group 1 ideas

Fish the 'Brown'

- Fish the Brisbane river, new fishing hubs (pontoons/jetties)
- Alternative species

Promotion:

- Fishing magazines
- Bruce Alvey pages
- Social Media

✕ Introduce fishing licenses

Catch & Release Month

- Encourage catch and release only in home waters
- Releasing catches to ensure there are fish to catch tomorrow
- Let's catch a fish– smile – and put them back



Group 2 ideas

Improving app (existing)

Additional features:

- Timing and location
- Expert opinions
- Fisheries data (*what* has been caught and *where*)
- Competition component (within scope of species): compare targeted species
- Connect to Social Media
- Engage local stakeholders

- Focus on specific targets
- Location (current) with targeted and available species
- Adapt/update to match season/months
- Uniting approach – promote in magazines



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Group 3 ideas

Sponsor influencers

- Spero Kartanos to encourage alternative species e.g. Eat the mackerel
- Social Media

- ✗ Fish Habitat
 - Fix habitat

Partnerships:

- Fishing shows to promote alternative species

Fishing competitions

- Sponsor big prizes e.g. boat
- No prizes for snapper and pearl perch catches



Group 4 ideas

Influencers

- e.g. Spero Kartanos

Take pearl perch and snapper off menus in restaurants

- What looks appealing and delicious on a plate?

- ✗ Fish habitat
- ✗ Regulation: policing undersized fish
- ✗ Reduce snapper catches for charter boats



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Group 5 ideas

Protection by education

- School programs (generational change)
- Influencers

Promote eating qualities of alternative species

- Recipes, changing the taste buds
- Media, Social Media, fishing competitions
- Retail: food shops, tackle shops
- Alternative species –focus on two

Promote and expand the Fisheries App

- Add competition component

✗ Protection by regulation

✗ Fish habitat
- Shell reef/oyster reef

Consensus Ideas



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Appendix 5: Campaign creative messaging and graphics

A creative brief was developed that identified the overarching messaging for the campaign.

- (One liner - overall) **Switch Your Fish.** Fish for Cobia, Amberjack and Mahi Mahi because they taste great and are fun to catch.
- (Alternatives) **Catch me!** Cobia, Amberjack and Mahi Mahi are often overlooked but are great to catch, keep, cook and eat. Why not try a new fish? We taste delish.
- (Conservation): **Give me a break!** Snapper and Pearl Perch need a break, so try out different fish for your fishing and eating enjoyment.

In addition, messaging for each fish was developed.



Fish	Tag line and attributes	When to catch
Mahi Mahi	<p>“Join me and my mates, it’s a perfect day at the FAD.”</p> <ul style="list-style-type: none"> • Fun to catch/fighter fish • Scarce/never caught one • Good eating fish 	Apr-May
Amberjack	<p>“Put me to the test and I’ll bring out your best.”</p> <ul style="list-style-type: none"> • Great fighting fish/sport fish • Love to catch one/never caught one • Scarce/hard to find 	Jun-Jul
Cobia	<p>“If you’re looking for a fight, I’ll test your might.”</p> <ul style="list-style-type: none"> • Great fighting fish • Scarce/hard to find • Love to catch one/never caught one • Limited/no knowledge 	Aug-Sep

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