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FISHERIES RESEARCH & DEVELOPMENT CORPORATION

Let's Talk Fish

Assisting industry to understand and inform conversations about the sustainability of wild-catch fishing

Dr. Nicki Mazur, Professor Allan Curtis, Mr. Andy Bodsworth

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Abbreviations

ABS – Australian Bureau of Statistics

AFMA – Australian Fisheries Management Authority

CAR – Comprehensiveness, Adequacy, and Representativeness

ENGO – Environmental non-government organisation

EPBC – Environmental Protection and Biodiversity Conservation

ESD – Ecologically Sustainable Development

FRDC – Fisheries Research & Development Corporation

HSP – Commonwealth Fisheries Harvest Strategy Policy

MAC – Management Advisory Committee

MPA – Marine Protected Area

NRM – natural resource management

NRSMPA – National Representative System of Marine Protected Areas

RAD – resource access decision(s)

RFH – Recreational fishing haven(s)

RIS – Regulatory Impact Statement

SOEI – Semi-structured open-ended interview (schedule)

SW MPA – South-west Marine Protect Area Reserve Network

VBN – Values, Beliefs, Norms theory

WINSC – Women's Industry Network Seafood Community

WHPFI – Wild Harvest Professional Fishing Industry

Executive Summary

The wild-catch commercial fishing industry's operating environment is very challenging, and industry participants have been particularly concerned about the negative effects of high profile fisheries management controversies. The Let's Talk Fish Project was implemented to assist the fishing industry and decision makers address these concerns. It is a study of the social acceptability of the wild-catch commercial fishing industry and how those societal judgements influence decisions about the sector's access to fish resources. The Project was funded by the Fisheries Research and Development Corporation and Charles Sturt University and implemented by a team of two senior social scientists and a fisheries management consultant. The Project consisted of a literature review, a mail survey investigating the public's views about the sustainability of the wild-catch sector, and a set of stakeholder interviews that examined people's views about factors influencing four decisions affecting the Australian fishing industry's resource access. The Let's Talk Fish Project demonstrates that understanding the basis for people's attitudes and actions towards the wild-catch commercial fishing industry's use of shared marine resources is required to more effectively identify common interests, foster positive relationships among stakeholders, and build on the present potential of the wild-catch sector.

Background

The wild-catch sector of Australia's commercial fishing industry operates in a difficult environment that is characterised by dynamic global economic forces, diverse environmental conditions, and complex and competing interests of diverse stakeholders. Like any primary industry, the wild-catch sector's sustainability ultimately depends on what is ecologically possible, how well that industry generates benefits in excess of costs, and how consistent the industry's practices are with prevailing social customs and norms – that is, its *social acceptability.*

Despite some important fisheries management improvements, recent public debates and research suggests that parts of society still believe that the wild-catch sector of the fishing industry falls short of being 'sustainable'. Public debates like these may have negative effects on an industry's viability – affecting product demand or prices, the regulatory environment, and levels of community support. Strong future performance of wild catch fisheries depends on productive three-way communications between the fishing industry, their stakeholders (including decision makers and interest groups), and the wider public. In order to achieve those conversations, however, we need greater understanding of what drives social acceptability and how it influences decision-making.

Aims & objectives

The Let's Talk Fish Project was designed to obtain comprehensive and reliable knowledge about why people believe what they do about the wild-catch commercial fishing industry sector. The Project has also sought to generate further insights about how and to what extent those views influence decisions about the industry's access to fish stocks. This knowledge will help the industry (and decision makers) identify ways to improve the wild-catch (and other sectors) fishing industry's capacity to engage in resource access decision making processes and eventually, the viability of the sector.

Methods

A Steering Committee for the Let's Talk Fish Project was formed to provide input on the appropriateness of the Project's approach, the relevance of the Project findings, and information on key points of contact in industry. Members of the Steering included people from wild-catch sector industry, government fisheries, the social research community and the FRDC.

The Let's Talk Fish Project was based on a multiple methods approach. The Project began with a literature review to examine current trends in public opinion on commercial fishing and relationships between public policy and public opinion; to clarify sustainability principles in fisheries management and notions of social acceptability and social license to operate. The Project's definition of social acceptability as it applies to the wild-catch sector is that:

Social acceptability is made up of dynamic (changeable) judgements, which are held by identifiable parts of society. People make judgements about how the Industry's activities compare to some desired alternatives/operations. These judgements exist at different degrees of approval and can influence the quality of relationships between relevant people with (direct and indirect) interest(s) in the Industry.

Following the literature review, the research team conducted a series of ten key informant interviews to identify key social acceptability issues for the Industry. This information was incorporated into a public mail survey distributed in Brisbane, Melbourne and Sydney to examine both the degree of and basis of social acceptability for the Industry. The survey was followed by a series of interviews examining the extent and nature of the influence of social acceptability on fisheries resource access decisions. The four case studies were the South-west MPA process, Commonwealth Harvest Strategy Policy, amendment to the Environmental Protection and Biodiversity Conservation Act (EPBC) listing of Mako Sharks, and the NSW buyback of commercial fishing areas. This investigation involved interviewing 36 key informants and examining various public documents.

Key findings

Firstly, the Let's Talk Fish Project generated new knowledge about the industry's current level of social acceptability, as well as some of the key psychological factors that influence those judgements. The mail survey data showed that there is a high level of social acceptability for the Industry amongst the general public. However, survey data suggests that approval is conditional upon respondents thinking that the sector was being effectively regulated and that it could clearly demonstrate positive environmental stewardship.

The nature and degree of social acceptability was informed by certain key values, beliefs, personal norms, attitudes, levels of trust, and risk perceptions. Mail survey respondents consistently prioritised environmental protection over fishing industry livelihoods. Not surprisingly, strongly negative judgements were linked to respondents with stronger environmental values and beliefs about the need to reduce the industry's environmental impacts and to do so in part through government regulations. More accepting attitudes towards the industry were linked to trust that the industry would work to sustain future fish stocks and protect marine animals from harm. However, most survey respondents had low trust in the industry and doubted its trustworthiness.

Secondly, the interview data confirmed that multiple interacting factors, not simply social acceptability judgements of the broader public, influence fisheries resource access decisions across time. Interest groups, decision makers and the fishing industry have all sought to understand how and to what extent 'public opinion' is aligned with their respective interests and then use that information to try and further their interests. In the case studies, influential people's *assessments* of the size (and sometimes to a lesser degree the substance) of public opinion had some effect on resource access decision processes and outcomes. The case studies illustrated how lower levels of social acceptability can contribute to instances where particular fishing businesses and/or fisheries will have their access to fish stocks reduced.

Implications

The outcomes of the Let's Talk Fish project will benefit members of the wild-catch commercial fishing industry. It provides positive news that the sector is widely accepted by society. However, some members of the wild-catch sector may be discouraged by the findings which suggest that approval is conditional and that there is still considerably low public trust in the sector. The Project's recommendations and Engagement Strategy Foundations provide information about how the sector can work to build trust and improve resource access decision outcomes, which might be negatively affected by low public and stakeholder social acceptability. The recommendations and the Strategy are likely to require additional expertise and financial resources to implement. However, costs may be contained if the wild-catch sector: remains focused on building more trusting relationships with influential individuals and groups involved in resource access decision making rather than less targeted public campaigns; partners with rural health initiatives to support stressed industry members; and actively discourages less sustainable

practices by sector members, including by establishing positive social norms about best-practice environmental stewardship.

In addition, the Let's Talk Fish Project results demonstrate strong public and stakeholder interest in ensuring government regulations reduce or prevent environmental impacts from commercial fishing. Government or industry proposals to reduce or streamline regulations risks further eroding public and stakeholder trust, because people may misconstrue the reforms as reducing the industry's environmental responsibilities. To reduce the likelihood of this outcome the industry should focus on implementing best-practice stewardship within the industry; targeted engagement with interest groups about the details of proposed regulation adjustments, and some targeted public communication that focus on demonstrating the industry's trustworthiness.

Recommendations

The Let's Talk Fish Project Team recommends that:

- The wild-catch commercial fishing industry consider developing an industry-wide engagement strategy that focuses on improving trust by influential decision makers and interest groups in the wild-catch sector. The Let's Talk Fish Engagement Strategy Foundations (see Appendix 11) provides a useful starting point for a more detailed strategy at a national scale. Moreover, members of the wild-catch sector need not wait for a fishing industry peak body to be formed, which would drive a national approach. Individual fishing businesses, regional coalitions of fishing businesses, and/or fisheries will benefits from using the ideas in the Strategy Foundations to building more trusting relationships with their respective stakeholders and regional communities.
- Members of the fisheries management policy community (decision makers, industry members, others) use 'social acceptability' instead of using less accurate and pejorative terms like 'community perceptions' or 'public perceptions'. Social acceptability is a more helpful term when talking about and planning for ways to improve relationships with people, groups, or organisations that have influence on resource access decisions and resource security more generally. The Common Language Project might be able to help facilitate this change.
- Since societal and stakeholder approval of the wild-catch commercial fishing industry can change over time, the key measures of social acceptability and trust created by this Project should be used as part of the FRDC's and other fishing industry initiatives to track public and stakeholder values and attitudes over time. Credible polling organisations should be employed to undertake those surveys. However, it is important that consistent measures be employed to ensure that comparable data is collected, including data comparable with the baselines established by the Let's Talk Fish Project.
- Since 2009, a number of the FRDC's social research and extension projects focusing on industry's social acceptability and capacity to communicate/engage more effectively have been completed. It would be fruitful to synthesise the learnings from these projects, in order to engage the fishing industry in a dialogue about the implications of those findings for its future.
- Decision makers and the wild-catch commercial fishing industry can better avoid the 'surprise' of public controversy by regularly scanning for potential social acceptability issues. This scanning should be based on systematic investigation of key stakeholders values and interests and assessment of the potential impacts, degree of controversy, and levels of concern of the issues. A suggested template for such scanning appears in the Let's Talk Fish Engagement Strategy Foundations.
- Further insights from the Let's Talk Fish Project can be gained by considering the implications of the findings for the wild-catch industry at more refined scales (e.g. fishery, regional, and/or local scales).

KEY WORDS: Social acceptability, wild-catch commercial fishing, sustainability, resource access decisions, community engagement, stakeholder engagement

Introduction

The commercial fishing industry must operate in a challenging environment that is characterised by diverse activities, species, locations, global economic trends, and the complex and competing interests of stakeholders interested in the management and/or conservation of common property aquatic natural resources (FRDC 2010:1; Ridge Partners 2010:10). Ultimately the industry's 'sustainability' depends on what is ecologically possible and the extent to which it generates benefits in excess of costs and is consistent with prevailing social customs and norms (Firey 1960 as cited in Shindler et al 2004).

Public debates can have positive and/or negative influences on an industry's viability – affecting product demand or prices, levels of community support, and the regulatory environment. Regulations affecting access to natural resources are in part based on an industry's social acceptability (or 'social license to operate'), but the extent that social acceptability influences decisions about resource access has been unclear. Recent FRDC-commissioned and other social research suggest there are problems with the fishing industry's social acceptability. These data indicate that sections of the Australian public and key decision-makers and interest groups believe the Australian commercial fishing industry falls short of being 'sustainable' (Aslin & Byron 2003; Mazur & Curtis 2006, 2008; Brooks 2009; Sparks 2011). These concerns focus on issues like ecosystem and species sustainability (e.g. reduced stocks, discarding, trophic impacts), biodiversity conservation, and broader bycatch and animal welfare issues (e.g. cruelty, marine mammal or seabird captures).

Controversy and concerns about the fishing industry's sustainability can be mistaken for disputes over facts, but they will mostly be about a clash of values. Important contemporary social theory suggests that different stakeholders will have different values, beliefs and norms and that these, and other factors, will influence their attitudes about the industry and subsequently, their actions. A failure to understand and acknowledge different stakeholders' values and beliefs and incorporate them into decisions often leads to further conflicts/tensions. Government or industry policies and practices lacking societal acceptance and approval will ultimately fail, even if they are profitable and supported by sound science (Shindler et al 2004). It is widely accepted that improved understanding of stakeholder attitudes can underpin more strategic and effective stakeholder engagement and efforts to improve social acceptability.

This Project was proposed to:

- Increase understanding of the drivers of positive and negative stakeholder (fishing industry, decision makers, interest groups, the public) attitudes towards the Industry;
- Increase understanding of the nature of and extent to which those attitudes affect the industry, including their influence on resource access decisions; and
- Identify ways to improve industry contributions to public debate, including ways to try and improve negative attitudes and/or further refinement of industry practices.

Project No. 2012/301 – Let's Talk Fish recognises the widespread need for the research, and identifies a key opportunity to work directly with the FRDC, representatives of the Industry and other key stakeholders (i.e. decision makers) to contribute to measurable improvements in the industry's social acceptability. The team reviewed recent trends in social research on the fishing and other primary industries to ensure the value and relevance of the proposal (see Related Projects). This project was also developed with reference to the research themes and priorities identified by the:

- National Fishing and Aquaculture RD&E Strategy 2010 (pp 28-30)
- FRDC RD&E Plan 2012-15 (pp 27, 28, 30; 32-33; 34-35; 37-38)
- Social Sciences Research Coordination Program Plan 2009-2012 (p 5)

The Strategy and Plans consistently identify the need for research that helps build mutual benefits and support between the fishing industry and its stakeholders/communities and that has explicit strategies for facilitating the adoption of research findings, thereby building industry capacity in the process.

Our research has met that need by:

- Generating knowledge for the wild-catch sector and decision makers about the drivers of the Industry's social acceptability and to what extent and how social acceptability influences resource access decision making processes;
- Identifying ways to enhance the effectiveness of current and future communications by identifying approaches that the wild-catch sector (and decision makers) can use to move beyond one-way provision of information to focus on building public trust in the wild-catch commercial fishing industry; and
- Generating survey items that can be used to improve existing social acceptability benchmarks for the Industry.

Objectives

The key objectives of the Let's Talk Fish Project have been to:

1. *Obtain comprehensive and reliable knowledge about the basis for people's (decision-makers, interest groups, general public) attitudes and behaviours towards the sustainability of wild catch fishing (and other primary) industries and the extent to which social acceptability influences resource access decisions.*

2. *Use interactive processes to share that information with the project's primary audience (government decision makers (fisheries managers), fishing industry leaders, and the fisheries research/extension community) and help build industry capacity to: identify and understand the values, beliefs, attitudes and actions of the general public and other stakeholders; and select topics and identify strategies that will enable more effective engagement with those audiences.*

3. *Review current benchmarks of the social acceptance of wild-catch commercial fishing with a view to revising existing and/or identifying new indicators for widespread use in future time series comparisons.*

Methods

Introduction

The Let's Talk Fish Project was based on a multiple methods approach to meet its objectives and answer the key research questions (see Figure 1). The Project commenced with a literature review to examine data from recent FRDC-funded and other relevant surveys of stakeholder and community attitudes and responses to commercial fishing. Following the literature review, the research team employed a range of qualitative and quantitative approaches to data collection and analysis. Data collection commenced with a series of ten key informant interviews to identify key social acceptability issues for the Industry. Drawing upon the literature review and key informant interviews, the research team developed and implemented a survey of the public (1,500) in the major capital cities (Sydney, Melbourne, Brisbane) to examine both the degree of and basis of social acceptability for Industry. The survey was followed by four resource access decision case studies (the South-west MPA (Marine protected area) process, Commonwealth Harvest Strategy Policy, amendment to the Environmental Protection and Biodiversity Conservation Act (EPBC) listing of Mako Sharks, and the NSW buyback of commercial fishing areas) where the research team interviewed key informants and examined the public record to explore the extent social acceptability influenced those decisions.

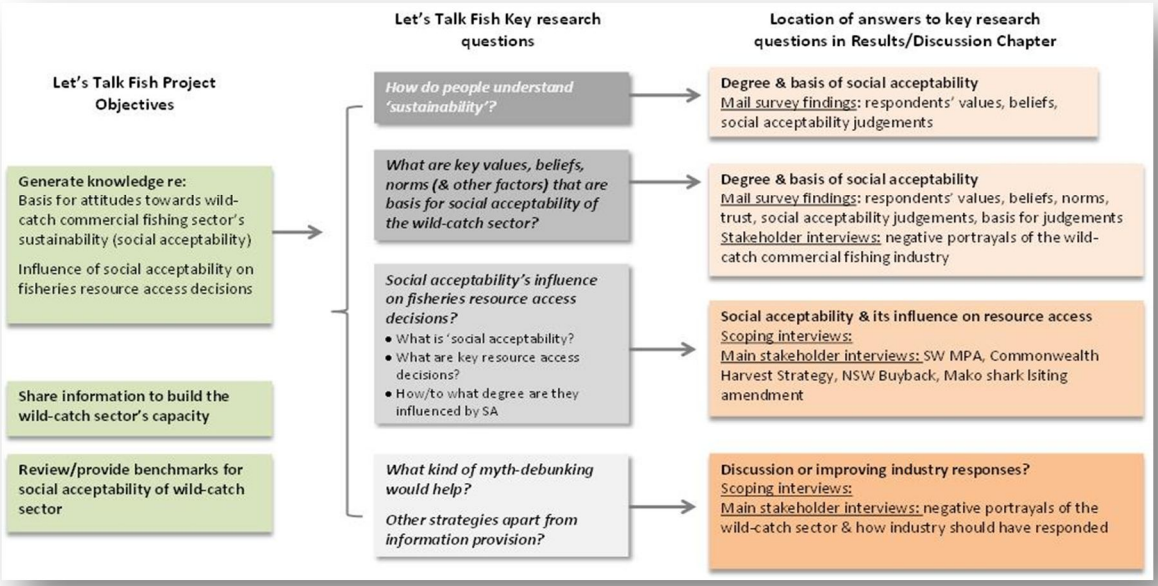


Figure 1. Let's Talk Fish Project research questions and data sources

Theoretical foundations

Sustainability

The notion of 'sustainability' has been an integral part of environmental policy since the late 1960s. Today's familiar sustainable development policies grew from debates at that time in which people argued about 'limits to growth' – whether the natural environment could continue providing unlimited resources for humans to use to grow and develop their communities and could assimilate ever-increasing amounts of waste and pollution being generated from those economic activities. Eventually, the tide of sentiment shifted to reflect a dominant view that development needed to proceed in a way where people tried to live more within the means of the planet's natural systems and available resources.

'Sustainable development' and the principles underlying it seem clear – but they are not universally accepted. Since its emergence, 'sustainable development' has been interpreted in many different ways and therefore used in a variety of ways. The numerous conversations about it reflect as many as 100 different definitions (Holmberg and

Sandbrook 1992 as cited in Banjeree 2007). Redclift (2005) suggested that while most people agree that the general idea of sustainable development is desirable, they are very mistaken thinking the approach is simple. Some of the key areas of complexity in sustainable development that are often overlooked is deciding *which* activities can be sustained for how long, under *what conditions*, with what (negative and/or positive) *consequences*, and decided by whom? Another significant challenge comes from trying to integrate and then prioritise the social, economic and environmental components of sustainable natural resource management (Harding 1998; Whitmarsh & Palmieri 2011).

These complexities are no less relevant for fisheries policy and management because many countries have made formal commitments to manage their fisheries according to international principles of ecologically sustainable development. It is important to understand how sustainability is understood and applied in modern fisheries management, and to make explicit the key points of contention and disagreement. A common approach is to build a hierarchy whereby management objectives are grouped into higher order social, economic and environmental categories that include more specific sub-groupings of objectives at lower levels of the hierarchy. Nonetheless, disagreement and conflict arises within and between stakeholder groups about what degree of importance should be placed on the different objectives (Pascoe et al 2009). Hilborn (2007) claims that fisheries crises are largely a function of three major categories of *conflicting* objectives[1], including:

1. Preserving marine ecosystem objectives means less of the resource is available for 'use' (yield, economic rents, and jobs). For example, establishing marine protected areas MPAs is a management action widely supported by conservationists and frequently opposed by consumptive users;
2. Prioritising economic efficiency over jobs, social equity, and community impacts. For example, fisheries management tools such as individual transferable quotas effectively increase economic rents and provide incentives for better biological management, but may be seen to inequitably distribute wealth (e.g. economic rationalization of fleet size and generation of profits versus employment and societal equity); and
3. Appropriate representation in decision making. For example, frequent debates over who should sit on fishery management committees or councils embody the bigger question how much weight should be given to the objectives of different stakeholders.

It is not uncommon to have sustainability defined as something that achieves an ideal balance among objectives. In a public survey of attitudes towards wild-catch commercial fishing in Australia, 'sustainability' was defined by the researchers as:

> *The industry having the necessary practices and policies in place that ensure the future of fish species and the marine environment while at the same time providing sufficient supply of fish for commercial and recreational fishing needs (Sparks 2011).*

Others, as noted by Hilborn above, assert that more consideration of social dimensions need to be addressed, such as infusing the concept of Maximum Sustainable Yield (MSY) with the notion of Optimum Social Yield (OSY) (Arlinghaus 2005). Hillborn (2007) does note there are shared views about the importance of having high fish biomasses, stable catches and low fishing effort. He also asserts that consensus is growing among those advocating for greater ecosystem protection and those using fish resources who are seeking greater profitability and stability.

Similarly, Pascoe et al (2009) identified stakeholders' different conflicting preferences for general and specific fisheries management objectives. The key objectives of Section 3 of the Australian Fisheries Management Act (1991) were organised into a hierarchy that covers some of the essential elements of the principle of sustainable development (social, economic, environmental) and group according to degrees of specificity. They found that stakeholders all agreed that sustainability was a key principle for fisheries management, but their preferences could be grouped into several different categories:

[1] Hillborn also notes that other primary causes of continuing sustainability problems include a lack of good governance, inappropriate incentives, high demand for limited resources, poverty and lack of alternatives, complexity and lack of knowledge, and the interactions of the fisheries sector with other sectors and the environment (Hilborn 2007).

- Minimising externalities;
- Minimising environmental impacts of fisheries;
- Maximising industry profitability; or
- Ensuring resource sustainability

The devil may be in the detail. Pascoe et al (2009) also found that some inter and intra-group coherence of views was higher when considering the importance of broader issues as opposed to achieving agreement on the sub-categories (e.g. bycatch reduction versus habitat protection under the broader conservation objective). Australian fisheries policy instruments vary in the way ecologically sustainable development (ESD) principles are defined and emphasised (McPhee 2008). There are several aspects of ESD principles that are given less attention in fisheries-specific legislative instruments, including:

- Encouraging participation in fisheries management;
- Maximising net economic returns;
- Conserving threatened species (typically covered by other legislation); and
- Increasing community understanding of aquatic ecosystems (McPhee 2008).

Allocation of natural resources

Allocating natural resources among different users are the most complicated and critically important decisions that governments have to make. These decisions often involve balancing a vast array of economic, environmental, social, legal, and technical considerations. Fundamental to this task is appreciating the range and interaction of the different values and interests and then having to reach agreement on socially-acceptable trade-offs.

A key concept in the sustainable management of fisheries is the idea that the natural environment cannot provide unlimited fish stocks for people to harvest as they see fit. Therefore there are a range of contemporary fisheries management tools that seek to control the size and efficiency of fishing activities (input controls), as well as the size of the total catch (of a fishery, for individual fishers, of certain species) (output controls) to ensure the continuity of fish stocks and the health of their associated habitats and ecosystems. McPhee (2008) claims that one of the more significant and challenging aspects of regulating finite natural resources, like fish stocks, is deciding how much of the total share of the "fish pie" will be allocated to different (and sometime competing) fish sectors. He cites numerous factors that drive changing allocation, including environmental (e.g. decline of a particular fish species), economic (e.g. poor viability of a particular fishery), and/or social (e.g. public controversy generated from inter-sectoral competition and conflict).

Social drivers of fisheries resource allocations are particularly relevant to the Let's Talk Fish Project. We have noted that public debates about how resources should be distributed may have positive and/or negative influences on an industry's viability by affecting levels of community support and the regulatory environment. Regulations affecting access to fish and marine resources are in part based on an industry's social acceptability (or 'social license to operate'), although the extent that social acceptability influences decisions about resource access has been somewhat unclear.

Public policy and public opinion

It is not uncommon to assume that there is some relationship between how natural resource-based industries gain and maintain access to those resources and their degree of social acceptability. The evolving nature of Australia's regulatory system for fisheries management is considered to be driven by and drives community attitudes (McPhee 2008). What warrants closer consideration are questions, such as: How and to what extent is resource access decisions shaped by stakeholders' *assessments* of social acceptability and/or by other factors such as industry consultation, other stakeholder actions, etc.

Assessments of the acceptability of the industry are a key point of interest in this research. It is common for people to cite that the public thinks that fisheries have been and will continue to be in crisis for some time (e.g. Beddington et al 2007). If authorities and others feel that 'public opinion' is in favour of or opposed to certain fishing industry issues, how might that affect their decision to proceed in a particular way? How accurate are stakeholders' estimates

of the strength and focus of public opinion about the fishing industry? What evidence base are they using to determine where public opinion sits on a particular issue? How do their own values and beliefs inform their perceptions of public opinion on fisheries management? How do they define 'public opinion'?

It has been shown that there is a close relationship between people's opinions and their *perceptions of* public opinion – which has been labelled the "false consensus effect" (see Wojc & Price 2009). This happens when people project their personal views onto the general public. Wojc & Price (2009) found that people who strongly favour various controversial policies perceive greater public support for those views than those people opposed to those policies. But why are decision makers inclined to be so focused on public opinion? How does what the public think influence public policy?

There are various opinions on the nature and direction of the relationship between decision makers' actions and public opinion. Kingdon (2003) notes that public opinion is something that does not exist until policy makers put an issue on 'the agenda' for people to respond to. Others assert that politicians and public servants are both influenced by and act independently of social forces when shaping the public policy agenda (Papadakis 1996; Kay 2010). Hobolt & Klemmsen (2005) suggest that the relationship can be reciprocal, but that public opinion tends to have more influence on public policy than the reverse. They also claim that public opinion has a stronger influence on the policy making process in democracies that use proportional representation in their voting systems compared to single winner systems[2], because large majorities can better insulate governments from public pressure. Others assert that public opinion will influence public policy more when the issue at hand has more salience for more people (Kay 2010; Burstein 2003).

What are the actual mechanics of that influence? How is an abstract notion like 'public opinion' brought to bear on decision making processes? For many people, the basic concept of democracy is founded on the premise that politicians and public servants should be responsive to the mass preferences of the general public (Hobolt & Klemmsen 2005). Since citizens will support, reject, or even ignore public policies (Kay 2010), it is not surprising then that decision makers have a significant interest in measuring 'public opinion' in order to determine the direction and strength of public preferences and how – if at all – it ought to respond. 'Public opinion' might be thought of as a form of currency used by people and groups to help them achieve their goals. People and groups need to measure public opinion and then advocate for its importance and therefore the need for those views to be incorporated into whatever is being decided.

The people interested in public opinion on wild-catch fisheries management are not simply decision makers. There are a range of people interested in fisheries management, and it is possible to think of them as being part of a policy network. Compston (2009) sees people in policy networks as being interdependent on one another. They want something from one another, and that something is typically some kind of 'resource(s)' (e.g. policy amendments, access, veto power, information, cooperation, political support, patronage, investment, funds). The people in policy networks are also variously prepared to give up something to gain what they want. The more influential people in the policy networks are those who have more control over desired 'resources' (Compston 2009).

Burstein (2003) asserts that interest groups' influence in public policy networks is stronger when those policy issues have low salience for the general public. In these instances governments may look to interest groups as representing 'public's' views. Interest groups will also have more influence on public policy when they promote their shared goals, work in coalitions to define the issue and present decision-makers with potential solutions, and use the media well (Wright 2000). Interest groups who represent those with substantial wealth and access to resources with something to gain can be highly influential as well (Kay 2010). In the fisheries and marine conservation context, environmental

[2] Proportional representation means that the number of seats won by a party or group of candidates is proportionate to the number of votes received (e.g. 30% of voters support a particular party then about 30% of the seats won will be won by that party. Single winner voting systems in democracies tend to promote strongest two party competition, such as in the United States, which tends to eliminate smaller parties from parliament (see Colomer 2004).

NGOs (ENGOs) have become increasingly effective in engaging governments by drawing on a range of strategies (e.g. use of the media, scientific research, political lobbying, and legal challenges) (Richards & Heard 2005).

Social acceptability and trust

The terms *social license (to operate)* and *social acceptability* can be used to describe predominant trends in public and interest group community opinion. *Social license to operate* tends to be used in the mining and forestry contexts. It is used by company representatives who are concerned about maintaining, establishing, and/or improving the support of people living and working in close proximity to their particular operations (Thomson & Boutilier 2011). There have been notable instances where the environmental practices of private corporations such as Brent Spar, Monsanto, and Nike has generated considerable public and community outrage and subsequent reputational damage to these companies (Gunningham et al 2002). Public controversy most often arises when companies are unable and/or unwilling to invest in an appropriate response, fail to understand the different degrees of social approval, see gaining approval as a static task versus an ongoing process of developing relationships, and/or does not address the norms which underpin the community concerns (Thomson & Boutilier 2011). The degree to which a corporation and its activities are accepted, will depend largely on how and to what extent public and interest groups can see that the corporation has met and/or exceeded minimum requirements of formal environmental regulations (Gunningham et al 2002: 6).

The term *social acceptability* tends to be used in natural resource management contexts. Firey (1960) was a rural sociologist who was interested in why certain government policies persisted while others faltered and failed. *Social acceptability* refers to aggregate forms of public consent whereby judgments – often about the policies, programs, and projects of government agencies - are shared and articulated by an identifiable and politically relevant segment of the citizenry (Brunson 1996 as cited in Shindler et al 2004: 3). The judgements are focused on the extent to which the practices in question are appropriate, preferred, desirable, supported, or tolerated (Shindler et al 2004).

*Social licens*e or *social acceptability* can change over time in response to different factors that are themselves subject to change. Regulations, economic factors, and social interactions between 'licensers' (governments, communities) and 'licensees' (corporations) can pressure corporations to improve their *social license to operate* (Gunningham et al 2002). Some of the psychological and social-psychological factors shown to influence *social acceptability* judgements include individuals' personal values, beliefs about the fairness of outcomes or decisions, social norms they adhere to, knowledge about the problem, perceived risks from the problem, quality of information they receive, and trust in decision makers (Shindler et al 2004).

Trust is an important component of social license or social acceptability. Black & Hartel (2002) defines trust as the willingness to be vulnerable to the actions of another. They see trust as the ultimate indicator that an entity has achieved a social license, because it has built strong relationships with its community(ies)of interest. In natural resource management contexts, trust is also defined as 'the willingness to be vulnerable to another' and is central to social acceptability (Shindler et al 2012). However, recent research has shown the additional value of improving the definition of 'social acceptability' by distinguishing between 'trust' and 'trustworthiness' (Sharp et al 2012; Sharp & Curtis 2012).

Trust is more than a willingness of someone (the trustor) to be vulnerable to the actions of another (the one being trusted). Sharp et al (2012) note that trust is also about one's intentions to trust another, which are based on positive beliefs or expectations about another entity's qualities. That is, to what extent are they *trustworthy*? The three main characteristics of trustworthiness will be:

1. Ability: the 'trustors' perceptions of the 'trustee's' knowledge, skills, and competencies;
2. Benevolence: the extent that a 'trustor' believes that the 'trustee' will act in the best interests of the 'trustor'; and
3. Integrity: the extent to which the trustor perceives that the trustee is acting in accord with a set of values and norms shared by, or acceptable to, the trustor (Sharp & Curtis 2012:70).

Public views on wild-catch commercial fishing

The Let's Talk Fish Project has built on some qualitative and quantitative social research conducted in Australia and a study in the North-west United States that have focused on understanding the community and stakeholder beliefs and attitudes towards the commercial fishing sector. In Australia, two major public surveys (both commissioned by the FRDC) found that a considerable percentage of people believe that the wild catch commercial fishing industry is less sustainable than other fishing sectors (Aslin & Byron 2003; Sparks 2011), and that overfishing by the wild-catch sector is a serious global problem (Aslin & Byron 2003), but that government and industry were working to improve the situation (Sparks 2011).

Consistent with that finding of Sparks (2011), Brooks (2009) found in her qualitative study that many government and ENGO stakeholders believe that the south-east trawl fisheries are less than sustainable, but they are more sustainable than some overseas trawl fisheries and have started to shift to more sustainable practices, albeit somewhat reluctantly. These stakeholders were concerned that by-catch levels remain too high, in part because industry is not cooperating fully with government monitoring and reporting schemes.

Public concern about the sustainability of wild-catch commercial fishing has been examined in the United States as well. Steel et al (1999) found respondents believed in a range of reasons for the decline of wild Pacific salmon stocks, including water pollution, foreign trawlers and drift nets, dams, as well as land-based causes of aquatic habitat destruction. Many respondents believed there were obstacles to recovering salmon. They believed that federal agencies more directly involved in the species recovery (e.g. fish and wildlife agencies) were more deserving of their confidence than the fishing industry (19%), the federal courts (14%), and federal legislators (Congress)(9%).

Attitudes

There are also important findings about what people think should happen in relation to fisheries management. Aslin and Byron (2003) found that people support the idea of protecting Australia's marine environment. A strong majority (75%, 83%, 88% respectively) supported more marine protected areas (with checks on impacts on industry), fewer foreign fishing vessels in Australian waters, and strong controls on commercial fishing. Sparks' (2011) data suggested that most adult Australians felt that the fishing industry, governments and the general public all share a responsibility for making fisheries more sustainable, although industry is the primary custodian for that task. Sparks (2011) also found that sustainability is something that is about finding an "equal balance" between supply of fresh fish for consumption and the delicate environmental needs of the marine environment.

Brooks' (2009) study found general agreement among ENGOs and government representatives that the South-east trawl fisheries (and to some extent governments) needed to make a greater effort to promote Australia's achievements in fisheries management, particularly given the view that fisheries management overseas is of a lower quality and that there were things industry has been doing that are seen as worthy of recognition. There was a sense that greater industry initiative in this regard would build trust and credibility, as would continued effort by industry to more fully engage with problems like by-catch. Other qualitative studies found some similar preferences among fisheries management stakeholders. Pascoe et al's (2009) work found that stakeholders were variously focused on minimising social externalities, minimising environment impacts of fisheries, maximising industry profitability and ensuring continuity of fish stocks.

In their American survey of households in Oregon (Steele et al 1999) found that 40% of respondents felt that salmon recovery and socio-economic factors should be given equal priority. Over 43% of respondents indicated higher priority should be given to salmon recovery, despite any negative socio-economic consequences. The remaining 17% felt that socio-economic considerations deserved the highest priority, irrespective of any negative consequences for wild salmon.

Factors influencing beliefs and attitudes

A number of Australian and overseas studies look at a range of factors that might be linked to people's beliefs and attitudes towards the fishing industry and fisheries management, such as certain socio-demographic characteristics (e.g. gender, age, education), knowledge, interests (like recreational fishing), and some food preferences.

Sparks' (2011) found that regular eaters of seafood were more likely to believe the fishing industry was sustainable. Aslin and Byron (2003) study of public perceptions looked in more detail at factors influencing respondent views and found that being female, having high involvement in recreational fishing, and having knowledge of overseas fisheries collapses were all linked to having less positive attitudes towards the Industry. Pascoe et al's (2009) work suggested that basic ideologies of particular stakeholder groups informed their preferences for certain fisheries management objectives, including:

- Social scientists were primarily concerned about minimising externalities from fishing activities;
- Conservation groups were primarily concerned with minimising environmental impacts of fisheries;
- Economists and fishing industry members were mostly focused on maximising profitability; and
- Fisheries managers and scientists were most concerned about ensuring sustainable fish resources.

Steele et al's (1999) study of public preferences for recovery of US wild salmon stocks also found the influences of age, gender, education, interests/occupation on awareness and attitudes:

- Younger respondents, women and those with greater education were significantly more likely to identify a range of threats to recovery efforts;
- Respondents economically dependent on natural resource extraction industries were significantly less likely to perceive threats, while respondents with post-materialist values were much more likely to identify various threats;
- Respondents with greater education or post-materialist values were more likely to give top priority to salmon recovery than those dependent on natural resource industries or those with lower education levels who prioritised economic matters – although those dependent on the fishing industry designated salmon recovery as a high policy priority.

Verweij et al (2010) found that perceptions of changes in fish stocks (increases or decreases) and of current status of fish stocks are not only influenced by people's interests. They found that how information is taken in and processed has an important influence on the positions that people eventually take.

Knowledge and information

What people know about the commercial fishing industry is likely to play a role in their attitudes and eventual behaviour – with most of the studies reviewed suggesting that the general public and oftentimes stakeholders do not have in-depth knowledge of the fishing industry. In Australia, the public was found to be generally aware that the fishing industry has different sectors: commercial, aquaculture, and recreational (Aslin & Byron 2003). However, Sparks (2011) found a very low awareness (16%) of industry and government actions relating to improving fishing sustainability. Fisheries management stakeholder knowledge can be low as well. Brooks' (2009) research showed that most of the key stakeholders of a particular fishery interviewed had limited or no knowledge of the restrictions that fishery was subject to, the areas it fished in, nor the equipment or code of conduct it used to catch fish.

Some work in Australia has looked at where people get their information about the fishing industry from, and how reliable they rate it to be. Aslin & Byron (2003) found that for most respondents:

- Direct experience was a factor, and more respondents had experience of recreational, rather than commercial fishing;
- Information was sourced from incidental exposure to coverage of fishing issues in the general media, and very few obtained their information from the industry itself or from government agencies;
- More credible but less used sources of information were universities and research centres, environmental organisations, and recreational fishing groups and clubs; and
- The media was seen as moderately reliable, while the fishing industry was considered to be the least reliable.

Consumer research and the purchase of sustainable seafood

In seeking to understand how and to what extent public debates effect industry viability, one area of interest to the Australian commercial fishing industry has been consumer decision making. That is, how might public concerns about the Industry's sustainability inform their actual seafood purchases? The concern is that if people believe the industry is 'unsustainable' they might reduce or stop buying (Australian) seafood. Certainly consumers can be seen as the 'raison d'etre' of the supply chain – without them to purchase fish products and seafood the seafood industry would not exist.

While not the main focus of the Let's Talk Fish Project, we examined a selection of social research that explores the effects of the various internal and external factors that influence consumers' choices. A summary of those findings are shown in Box 1. It is generally agreed that a complex web of factors influences people when they are making decisions about which foods to purchase (Ross et al 2010; Seafish 2005, 2007) although some hold that fewer variables influence purchases of seafood compared to other high protein foods (Seafish 2005, 2007). Those influences can be thought of as falling into one of two broad categories: internal and external factors. A range of personal characteristics, such as values and belief systems, attitudes and perceptions, motivations, goals, and knowledge may affect the choices people make about purchasing food products. Likewise, external factors, such as a product's particular features (attributes), economic conditions and pressures, social settings, and environmental conditions are macro-level factors in society that – while outside their direct control – influence people's choices.

Box 1. Key findings of brief literature review on consumer choices and seafood

- In Australia, seafood does compete with other sources of protein; however, people generally have positive attitudes towards eating fish (it is healthy), and it is common for Australians to consume fresh seafood 1-2 times per week (Ridge Partners 2010; FRDC 2006). Some research suggests there is no such thing as an 'average' seafood consumer. There are probably market segments. Possible shared features are women, people over 40 years old, people who live on the coast.
- 'Sustainability' is one of a suite of attributes (appearance, use-by-date, production methods, product origin) that might influence consumers' purchase decisions of high protein foods (Olynk et al 2010, Seafish 2009)
- Possible obstacles to purchasing seafood include price (Verbeke et al 2007; Seafish 2005; Verbeke & Vackier 2005), appearance and quality (Market Strategy 2009; Seafish 2005, 2007), use-by-date, production methods, product origin (Seafish 2005, 2007), as well as taste, bones, smell, limited availability/inconvenience, and variable quality (Seafish 2005; Verbeke & Vackier 2005; Verbeke et al 2007)
- The influence of labels (country-of-origin, certification) on consumers' decisions whether or not to purchase certain food products, including seafood, is unclear
- Some socio-demographic features thought to influence people who consume sustainably-harvested fish include older people, self-efficacy in preparing food, intention, certain social norms (Verbeke & Vackier 2005)
- Contradictory claims of greater public interest in sustainably-source seafood (Olynk et al 2010; Tonsor & Wolf 2011; Seafish 2007; Jaffry et al 2005) versus consumers having little knowledge or interest in food production processes and sustainability (Verbeke et al 2007; FRDC 2006; Aslin & Byron 2003; Whitmarsh & Palmieri 2011; Roheim et al 2004; Ross et al 2010)
- People choosing sustainably-sourced seafood more likely to have particular interests in sustainability or other ethical food production matters (Mazar & Zong 2009; Finisterra do Paco & Raposa 2008; Aslin & Byron's (2003) findings, Verbeke et al (2007))
- Some European studies (Seafish 2005, 2007) categorised consumers according to the intensity of their environmental attitudes, but those issues were not overtly associated with food issues.
- Some research cites that consumers' claims about the importance of sustainability do not necessarily equate with a factor influencing their purchase of farmed fish (Whitmarsh & Palmieri 2011), and quality was a more important factor (Olynk et al 2010)

Values-Beliefs-Norm Theory

Environmental and natural resource management (NRM) processes are full of uncertainty and complexities, which arise in decision making due to extended time scales, information gaps, and competing values and information (Dovers et al 2008). Competing environmental values are especially relevant in a fisheries management context.

There are many ways to understand the different principles underpinning people's environmental values and how those values can be contradictory[3]. Ultimately, even when provided with the same information some people will disagree about how much ethical and moral consideration we need to give to non-human nature. The outcome of such complex social processes is that people, groups, and organizations perceive and approach environmental problems, such as how to manage our fisheries in similar and different ways. The way problems are perceived and framed influences how these problems are understood, who participates in problem-solving and how, and what values will be favoured by actions and results (Harding 1998; Swaffield 1998). Eventually, different standpoints are reconciled in some way when contradictions or opposing sets of beliefs and action clash in fisheries management decision-making settings or systems.

Fisheries management decision making requires the collective action of many different people. Our ability to realise more sustainable fisheries depends in large part on improving our understanding of how people's identities (their basic values, beliefs, attitudes and corresponding behaviours) differ, how such differences influence our relationships with nonhuman nature, and what kind of relations tend to dominate society today.

Stern's (2000) value-belief-norm (VBN) theory is a useful way of understanding the key influences on individual's decision making about the environment generally, and about fisheries management and resource allocations in particular (see Figure 2). VBN asserts that there is a complex set of factors influencing people's intentions to act and eventually how they behave. At the start of this causal 'chain' of factors are personal values. Values are specific modes of conduct or guiding principles that influence our choices and actions, are relatively enduring, and are not readily influenced by others – at least in the short term (Seymour et al. 2010).

VBN Theory has drawn on Schwartz's (1992; 1994) three broad value orientations (biospheric – concerns about the biosphere, altruistic – concern for others, and egoistic – concern for self). The hypothesis is that individuals who hold strong biospheric and altruistic values are more likely to engage in pro-environmental values than those people with strongly egoistic values. However, since values tend to drive people's beliefs, pro-environmental behaviours also depend on an individual believing there may be adverse consequences for something that is very important to them (Stern et al 1993).

Beliefs are also what people think is true about something (Bengston & Fan 1999), and in the case of the Let's Talk Fish Project, this would be people's beliefs about:

- How we use the marine environment and the animals living in it (e.g. marine mammals, fish species);
- What might happen to those habitats and animals that people care about as a result of that use; and
- What people believe they can do to avoid some negative consequences from using those habitats and animals/fish.

Those beliefs then inform the extent to which a person feels obliged to take certain actions (personal norms). Norms are an important component of the VBN framework. They are different from a person's values (personal ideals) and beliefs (what one thinks is true), because they embody a person's sense of what is 'right' or 'wrong'. Social norms are typically established and enforced by others, while personal norms are driven by someone's internal principles (Minato et al 2012). Finally, these values, beliefs and norms are thought to generate certain attitudes, which are essentially people's views about what they think should happen. Attitudes often inform people's intended and actual behaviours (Stern 2000).

[3] Cotgrove (1982) identified two opposing paradigms in Western society: one where sustainability can only be achieved when people reject notions of indefinite economic growth and live more simply and the other (dominant) view that non-human nature is here to be used and continued economic growth will provide the technological and financial resources needed to address environmental problems. Other similar classifications are of ecocentrism and technocentrism (see O'Riordan 1981, 1991; Pearce et al 1993).

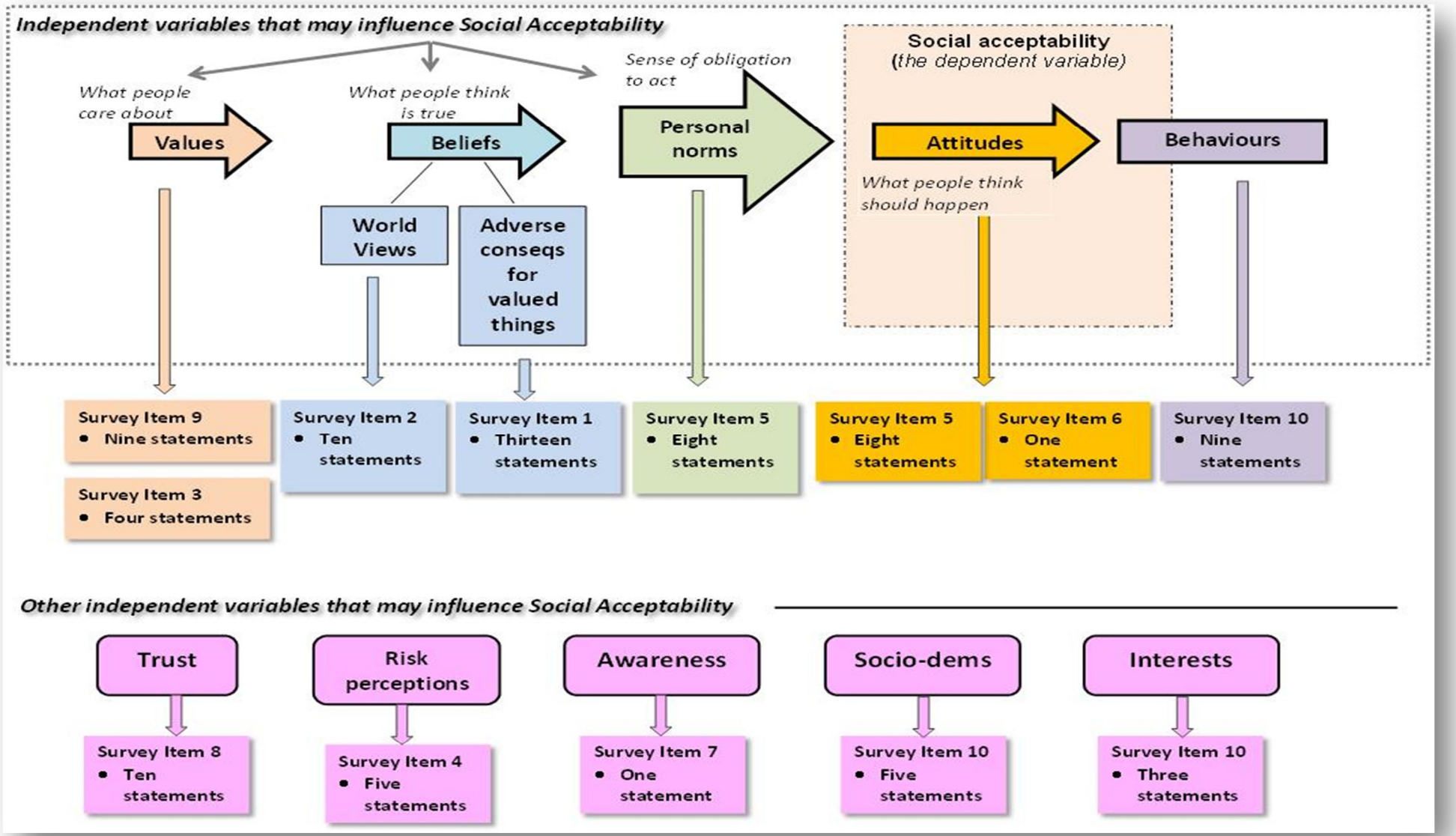


Figure 2. Values-belief-norms theory in the Let's Talk Fish mail survey

VBN Theory also asserts that there are other factors influencing behaviour, such as people's risk perceptions. 'Risk' is a concept invented by human beings to help us understand and cope with the dangers, opportunities and uncertainties of life. All people, irrespective of their backgrounds and position in society use speculative frameworks to make sense of the world and use selective judgements in their responses to risk (Slovic 1999). Since 'risk' is socially constructed, it is possible to identify patterns of similarity and difference in the way people perceive and respond to risk generally, and to the specific risks of and from fisheries industry. For example, contemporary definitions of 'risk' typically position it as something more negative than positive – e.g. the frequency or probability of occurrence of *potentially harmful* events plus the magnitude of the consequences (Taylor-Gooby and Zinn 2006; Palfreman 2006).

Our experience researching rural landholder practices (e.g. Pannell et al. 2011; Mazur et al 2013; Seymour et al. 2010, 2011; Ticehurst et al. 2011) and fishing industry (Mazur and Curtis 2006, 2008) suggests that a range of factors will influence public and stakeholder attitudes and behaviours. Industry and policy makers can benefit from better understanding these factors, particularly when seeking to engage stakeholders about natural resource protection, management and allocation decisions.

Data collection and analysis

Social acceptability is often equated with public opinion. But as noted earlier, this Project defines social acceptability as the judgements of approval of the wild-catch commercial fishing industry that are made by *identifiable parts* of society (see Figure 3). One part of society whose judgements have been assessed by this Project has been 'the public' – using the Let's Talk Fish mail survey. The public can be seen as a stakeholder in wild-catch fisheries management: people who may have an interest *other than* a proponent or responsible authority, and who may or may not be represented by organised groups or have declared their 'stake', but who still have a 'right to know' if their interests may be affected. Members of the public may express their level of approval for the Industry more generally as citizens by engaging in the political process and/or as consumers of seafood (i.e. choosing to purchase seafood).

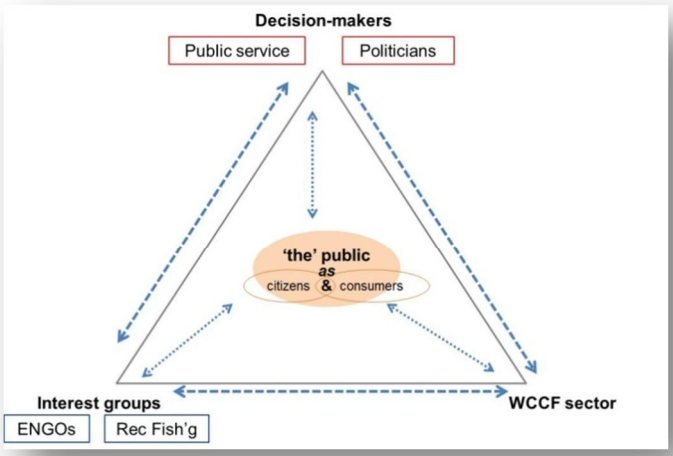


Figure 3. Social acceptability judgements expressed by identifiable parts of society

A range of other stakeholders can be considered parts of society that make judgements about and more directly influence fisheries policy/management. For the Let's Talk Fish Project, these stakeholders were defined as decision makers and interest groups (i.e. ENGOs, recreational fishing groups, and different parts of the Industry – including the post-harvest part of the supply chain) (See Figure 4). These stakeholders' interests tend to be represented through formal organisations or groups. Our scoping and main interview process was used to identify these stakeholders' views about the range of issues challenging the wild-catch fishing industry and factors that might influence resource access decisions, including interest groups, public opinion and the (social and traditional media).

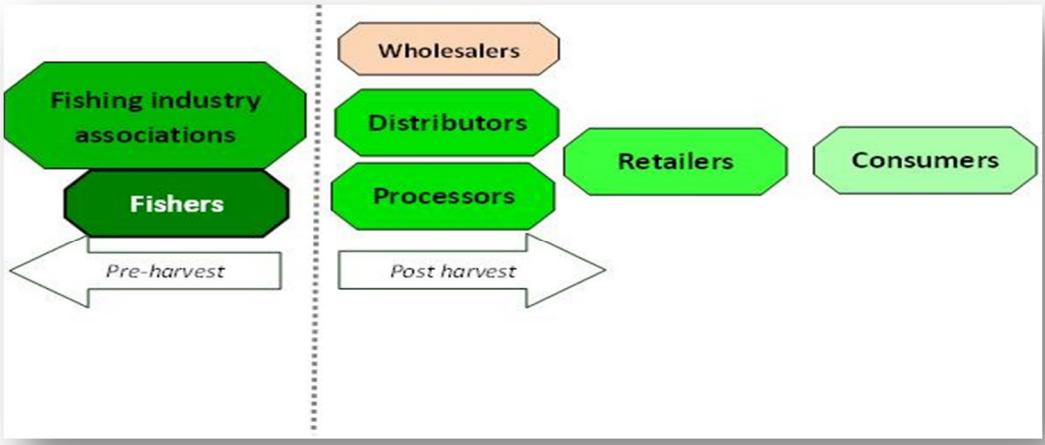


Figure 4. The wild-catch commercial fishing supply chain

Scoping interviews

Ten interviews were undertaken with key informants representing the key stakeholders from government, the Australian wild-catch commercial fishing industry, and the research and ENGO communities. The purpose of the interviews was to:

- Obtain information about social acceptability issues for possible investigation in the mail survey;
- Identify where in the supply chain were key perceived influences on social acceptability; and
- Identify the perceived factors affecting resource access decisions.

Eight informants were interviewed by telephone and two were interviewed in person. The interviews took an average of 45-60 minutes. Interviewees were asked to discuss:

- What they understand the terms social acceptability and/or social license to operate mean;
- Key issues they felt affect the social acceptability of the Industry; and
- Key influences on fisheries resource access decisions.

Mail survey

As noted earlier, the Let's Talk Fish Project has assumed that there are some problems with the wild-catch sector's social acceptability, which has been borne out by previous studies and this one. The Let's Talk Fish Project's working definition of social acceptability is:

Changeable judgements about how the Industry's activities compare to some desired alternatives, which are held by (identifiable parts of) society. These judgements are based on different degrees of approval and influence relationships between people with (direct and indirect) interest(s) in the Industry.

The mail survey was designed to explore both the degree of and the psycho-social basis for social acceptability of the Industry amongst the general public (see Figure 2). A full version of the mail survey instrument is listed in Appendix 3.

We drew on recent research demonstrating sustained negative judgements about the Industry, particularly in comparison to other fishing industry sectors. We equated those negative judgements with attitudes – people's views about what they think should happen in relation to the Industry. Hence, we used attitudinal measurements as our proxy for social acceptability. The survey was designed to explore the relationships between social acceptability (the dependent variable) and a wide range of personal and contextual factors, which we expected might influence social acceptability (the independent variables) (see Figure 2 and Appendix 3). Those variables included elements of VBN Theory (values, beliefs, personal norms), but also included other factors that might influence social acceptability (e.g. socio-demographic features and interests of the respondent sample, awareness, risk perceptions, and trust.

Another key design feature of the mail survey was the Let's Talk Fish Project assumption that negative judgements about the Industry are based on perceived problems with the wild-catch sector's '*sustainability'*. To date, the bulk of Australian quantitative research on public attitudes to the fishing industry's sustainability has not explored how people understand the *different elements of* sustainability. To address this gap, we drew on current theory (e.g. Hilborn 2007; Pascoe et al 2009) and recent fishing industry initiatives (Brooks et al 2010; Fletcher 2012) to specify the three pillars of fisheries sustainability: social, economic, and environmental. Key characteristics of those pillars were then used in conjunction with VBN Theory to design the bulk of the mail survey items [refer Table 1].

For the Let's Talk Fish Project, social aspects of sustainability included human well-being and equity factors and governance (Brooks et al 2010; Hilborn 2007; Pascoe et al 2009). The fishing industry provides jobs to people, but is more than a source of employment. It is a way of life for individuals and other people in local, resource-dependent communities. These communities can be adversely affected when restrictions are placed on allowable catches and/or on areas where fishing can occur. Governance was defined as how well governments and the fishing industry 'do their jobs' – how effective their decision making frameworks and processes are for conserving fish stocks, marine ecosystems, and allocating resources among different users. Resource allocation issues between wild-catch commercial fishing and recreational fishing were included in the governance category. While community involvement is an important component in the ecologically-sustainable development of fisheries resources, it was not directly examined in the mail survey.

Economic dimensions of fisheries sustainability were framed as ways to ensure monetary efficiencies and profitable businesses, while still conserving fish stocks and ecosystems (DAFF 2007; Pascoe et al 2009). Several survey items addressed the dilemmas whereby when fish stocks decline to a certain level then fisheries management and catching costs increase, and industry profits will be reduced.

We also sought to capture competition between sectors (e.g. commercial versus recreational fishing).

Finally, the environmental dimension was framed as protecting biodiversity and integrity, function, and structure of ecosystems (DAFF 2007; Pascoe et al 2009). Survey items included issues relating to conserving target fish and ecosystems, preventing overfishing and rehabilitating fisheries, protecting critical habitats from human impacts, using appropriate fishing practices to protect ecosystems and species and minimise waste, and preventing harm to marine animals. This last element was used to address animal welfare related concerns.

Table 1. Sustainability concepts underpinning the Let's Talk Fish Project mail survey

Mail survey items	Sustainability components in mail survey items		
	Social	**Economic**	**Environmental**
Beliefs – Survey Item 1 Respondents degree of concern about fisheries management issues	• Loss of commercial fishing as a way of life if allowable catch or fishing areas are restricted • Possible loss of Australian seafood/fish species available to future generations due to overfishing • Fishing industry failure to comply with existing rules and regulations • Effectiveness of existing government regulations to manage long term health of fish populations • Commercial fishing reducing opportunities for recreational fishing • Expansion of recreational fishing areas thereby limiting where commercial fishing can occur	• Potential job losses in the commercial fishing industry resulting from reductions in allowable catch or restrictions in fishing areas • Possible loss of income for commercial fishers in the future due to overfishing • Commercial fishing leading to reduced populations of fish species	• Commercial fishing methods that injure fish and marine animals not intended to be caught, including protected species • Commercial fishing methods that damage aquatic habitats (place where fish and marine animals live) • The extent that commercial fishing changes the marine environment • The extent that recreational fishing changes the marine environment
Beliefs – Survey Item 2 Extent to which respondents believe certain issues are true	• Allocating more areas for recreational fishing is unfair to commercial fishers • Regulations to reduce the levels of allowed commercial fishing will help ensure I have a healthy marine environment to enjoy • Regulations to control current levels of commercial fishing will help sustain fishing livelihoods into the future • If current levels of commercial fishing continue – less choice for individuals of what seafood to buy in the future • Commercial fishing restricts ability to enjoy recreational fishing • Better for people's personal health to purchase Australian seafood than seafood sourced from other countries.	• Overfishing leads to reduced populations of fish species targeted for harvesting	• Fishing gear used by commercial fishers harm species not intended to be caught, including protected species • Commercial fishing damages marine environments • There is no difference between Australia and overseas when it comes to commercial fishing industries harming species (fish, marine animals) not intended to be caught
Norms – Survey Item 5 Extent to which respondents felt obligated to undertake certain actions	• Support commercial fishing communities • Support the government's fisheries rules/regulations	• Buy seafood that is marked as sustainable • Buy seafood caught in Australia	• Avoid buying seafood when those species are reported as overfished • Avoid buying seafood that is reported as caught by methods that harm marine animals or birds • Do whatever one can to protect marine environments and marine animals • Act as part of a group to protect marine environments and animals
Risk perceptions – Survey Item 4 Respondents' views on the likelihood of certain risks occurring	• Australian fishing communities will suffer if current levels of commercial fishing are reduced further • Availability of seafood for human consumption in Australia to be reduced if current levels of commercial fishing in Australia continue	• Increased areas for recreational fishing will harm the livelihoods of commercial fishers	• Irreversible damage to marine environments because of overfishing • Irreversible damage to fish populations from non-fishing activities (e.g. climate change, pollution, coastal development, etc.)

The survey items measuring beliefs, norms, and risk perceptions covered social, economic and environmental aspects of fisheries' sustainability [refer Table 1]. Respondents were queried on two aspects of their belief systems. One set of questions asked respondents how concerned they were about things of potential value to them and a second set of questions asked them which fisheries management issues they felt were true. Survey respondents' personal norms were investigated by asking them how obligated they felt to undertake certain actions (Sharp & Curtis 2012; Rogers et al 2012) in relation to fisheries industries and management. Our measurements of risk perceptions of fisheries management drew on recent similar research (Mazur & Curtis 2006, 2008), where respondents were asked about the likelihood that commercial fishing would negatively affect the environment and that commercial fishing would be negatively affected by regulatory reform [Refer Table 1 - Survey Item 4]. The limited space in the mail survey brochure prevented us from including items measuring what people think might be the magnitude of any (positive or negative) consequences.

As noted earlier, attitudes served as our proxy for social acceptability. The mail survey included a series of questions about the social dimensions of fisheries sustainability, and the majority of those items were focused on fisheries governance [Refer Table 2]. These survey items were designed from similar proven survey instruments used to assess the social acceptability of forestry management (Shindler et al 2004).

Table 2. Attitudinal and social acceptability measurements in the Let's Talk Fish Project mail survey

Measurements of	Mail Survey Items
General attitudes to Australian fisheries management by governments and the Industry	
Extent of public agreement that:	• Australian governments should invest more money to develop fishing methods that avoid harm to marine animals and birds • Stronger enforcement by Australian governments is needed to ensure commercial fishers comply with existing rules that limit overfishing • The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits • The Australian government should restrict seafood imports from countries without comparable rules to prevent overfishing/harm to marine animals/ birds • Strict limits should be placed on areas that recreational fishers can access to ensure commercial fishing remains viable • Australian governments should increase support for fish farming (aquaculture) to reduce the reliance of commercial fishing on wild-catch populations • Australian governments should restrict seafood imports from countries that do not have comparable health safety standards for seafood • More scientific studies are needed to assess how much fish can be caught by recreational and commercial fishers without damaging the marine environment
Key social acceptability	
Extent of public agreement that:	• The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits
Public preferences for how the Industry should be managed (*selecting 1 of 4 options)*	• The commercial fishing industry in Australia should be able to operate under existing rules with full discretion given to fishers to fish as they see fit • The commercial fishing industry in Australia should be able to continue to operate under existing rules, but with increased monitoring to ensure compliance with rules to minimise the environmental costs of fishing • Existing rules governing the commercial fishing industry in Australia are inadequate and need to be changed to further minimise the environmental costs of fishing • The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits

As noted earlier, higher trust is linked to strong social acceptability. The survey items measuring respondents' trust and trustworthiness judgements drew on recent research assessing landholders' trust in groundwater management agencies (Sharp & Curtis 2012) and primarily addressed the social dimensions of fisheries sustainability [Refer Table 3].

Table 3. Trust and trustworthiness measurements in the Let's Talk Fish Project mail survey

Mail survey items	**Social dimensions of sustainability** (Well being, equity, governance) **in measurements of trust/trustworthiness**
Trust Respondents' views on how much they could rely on governments to ...	• Manage commercial fisheries so that fish populations are sustained for future generations • manage commercial fisheries so that fishing communities remain viable
Respondents' views on how much they could rely on the Industry to ...	• Adopt best practice methods that will reduce harm to marine animals and birds • act in ways that will sustain fish populations for future generations
Trustworthiness Respondents' views on government & industry ***benevolence***	• Australian governments keep my interests in mind when making decisions about commercial fishing • The commercial fishing industry keep my interests in mind when catching fish
Respondents' views on government & industry ***abilities***	• Australian governments have a good track record of establishing rules and regulations that prevent overfishing • The commercial fishing industry has a good track record of taking up fishing gear that reduce harm to marine animals and birds
Respondents' views on government & industry ***integrity***	• Australian government decisions to change commercial fishers' access to fishing grounds have been adequately explained to the public • The commercial fishing industry is open and honest about the extent that marine animals and birds are harmed by existing fishing gear

The two survey items measuring respondents' values were an integration of the social, economic and environmental aspects of fisheries sustainability [Refer Table 4]. Survey Item 3 was designed to test how respondents might prioritise those dimensions of sustainability. Survey Item 9 measure respondents' held values (Seymour et al 2011) and the instrument design drew on a modified version of Schwartz's (1992; 1994) three broad value orientations which measured peoples degree of concern for the natural environment, for others, and for themselves and which was tested by Stern et al (1993) and used recently in several NRM contexts (e.g. Seymour et al 2011).

Table 4. Values measurements in the Let's Talk Fish Project mail survey

Mail survey items	**All three dimensions of sustainability**
Values – Survey Item 3 How respondents would prioritise potentially conflicting values	Maximise commercial fishing jobs/income **---** Minimise impact on continuity of fish populations Maximise commercial fishing jobs/income **---** Minimise harm to marine animals & birds Maximise commercial fishing jobs/income **---** Minimise harm to the marine environment Maximise commercial fishing jobs/income --- Maximise recreational fishing opportunities
Values – Survey Item 9 How important certain principles were to respondents	Protecting the environment and preserving nature (biospheric) Preventing pollution and protecting natural resources (biospheric) Respecting the earth and living in harmony with other species (biospheric) Having power and being able to lead others (egoistic) Being influential and having an impact on other people and events (egoistic) Creating wealth and striving for financial prosperity (egoistic) Caring for the weak and correcting social injustice (altruistic) Working for the welfare of others (altruistic) Fostering equal opportunities for all community members (altruistic)

Survey testing

The survey was pre-tested with eight members of the general public [Refer Table 5]. Each pre-test participant was asked to read the cover letter and complete the mail survey. Participants were then invited to a workshop where they provided their feedback on their experience completing the

survey. The respondents had a generally positive reaction to the survey, found the overall topic interesting, and did not have any major problems answering the questions. Some minor revisions to the survey resulting from the testing process included slight changes to the formatting, wording and cover letter.

Table 5. Mail survey pre-test participants

	Gender	Age	Education	Interests
Participant 1	Male	> 70 yrs	Secondary	Non-rec fisher
Participant 2	Male	21 – 30 yrs	Tertiary	Rec fisher*
Participant 3	Male	21 – 30 yrs	Tertiary	Rec fisher*
Participant 4	Male	21 – 30 yrs	Secondary	Non-rec fisher
Participant 5	Female	51 – 60 yrs	Tertiary	Non-rec fisher
Participant 6	Female	21 – 30 yrs	Tertiary	Rec fisher*
Participant 7	Female	21 – 30 yrs	Secondary	Non-rec fisher
Participant 8	Male	41 – 50 yrs	Tertiary	Rec fisher*

*These participants went recreational fishing occasionally – most typically when on holidays.

Sampling procedures, survey dissemination, response rates

The survey design and mail out procedures were those developed for use by Professor Allan Curtis over the past 20 years (e.g. Curtis and Byron 2002) who has adapted the Dillman (1978) Total Design Method. The survey was presented as a distinctive booklet and was mailed with an appealing cover letter (see Appendix 3). The first mail out package (cover letter, survey and stamped return envelope) was followed by 3 reminder/ thank you cards at weekly intervals. We also provided an 1800 number for survey recipients to call in on. After a short break, we mailed the complete package to all non-respondents and followed that up with 3 reminder notices at weekly intervals.

The population from which the survey sample was selected was adults living in Brisbane, Melbourne and Sydney. We identified a random sample of 2250 people (750 from each city). The final response rate achieved was 32% (a total of 461 completed surveys returned) [Refer Table 6].

Table 6. Final response rate for the mail survey and details of its calculation

Response Rate	Quantity	Surveys	Further details
32%	***461***	***Complete***	***NSW 145, Vic 150, Qld 165, unknown 1***
	17	*Surveys returned blank*	
	18	*Deceased*	
	107	*Varied reasons for non-completion*	*90 declined, 7 ill, 3 language problems, 3 too old, 4 miscellaneous*
	208	*Return to sender*	*56 had moved, 46 undelivered – no unit #, 106 return to senders*
	350	*Total non-completions*	

** Response rate calculated as per: 1800 surveys mailed out, minus 350 known non completions = 1450; then divide - 461 is divided by 1450 = 32%.*

The overall response rate was below our target of 50%. This lower than expected response rate is consistent with the recent experience of other social researchers and may indicate public survey fatigue. Our view is that the lower than expected response rate can also be attributed to issues with the data base of names and addresses we purchased from a commercial provider. Firstly, the proportion of posted surveys that were "returned to sender" (i.e. not delivered) was higher than usual, suggesting that the absence of unit numbers hindered our response rate. Secondly, we were

assured the data base was current and updated in January 2013. However, surveys returned to us had notes on them indicating that people had not lived at the nominated address for some years.

The lower than expected response rate may reflect the reality that in the 21st Century people are less likely to respond to surveys (evidence of this overseas where 30% is now considered a normal response rate for surveys of the general public); and that the issues surrounding fishing are not of sufficient importance for most people to be motivated to complete this survey.

There were, however, sufficient numbers of completed surveys to make meaningful comparisons across the cities by different cohorts of respondents according to their age or occupation or exposure to the fishing industry. There were also no significant differences among the respondents from the different cities, enabling us to combine them into a single group.

To address the possibility that survey results might be unrepresentative because the values/ attitudes of non-respondents may be different to respondents, survey respondents were compared with the general population using a selection of Australian Bureau of Statistics' (ABS) Household and Population Census data: age and education levels included in both the survey and the census. Table 7 shows that when compared against the ABS 2011 Census, the respondent sample was biased towards older Australians and those with higher levels of education. However, neither age nor education was correlated with the survey's key measure of social acceptability [refer Table 7]. This finding suggests that findings relating to the social acceptability of the Industry would not be skewed by the sample being older and more educated than the general population. Nevertheless, those interpreting survey findings should be aware that the sample is different to the general population.

Table 7. Comparison of mail survey respondents to ABS Census data

Measure	Brisbane	Melbourne	Sydney
Age (median age of adults)	58 years (42*)	57 (43*)	52 (43*)
Education (% with tertiary qualifications)	56% (22%*)	39% (26%*)	40% (27%*)

** Data from 2011 ABS Census*

Statistical analysis

Standard summary statistics were used to establish baseline measures of respondents' values, beliefs, norms, risk perceptions, trust in government and industry, and social acceptability judgements (attitudes). Those data were also analysed (Chi Squared and Kruksal Wallis tests) to detect differences in respondents across the different metropolitan centres (i.e. Brisbane, Melbourne, Sydney) and on the basis of the survey respondents' background personal and social data (e.g. stage of life, education, interest group affiliation, personal contact with industry). Some differences were detected.

Further analysis was conducted to explore expected relationships between our key measure of social acceptability (the dependent variable) and the independent variables included in the survey, such as respondents' values, beliefs, norms, attitudes, risk perceptions, and trust that were expected to influence social acceptability. This analysis was completed on a pairwise basis to begin with (dependent with each independent using Linear Models, Chi Squared and Kruskal Wallis tests where appropriate). Numerous significant relationships between these data were detected.

Interviews for the case studies

The purpose of the interview process was to examine stakeholders' views regarding significant issues affecting the Industry, how social acceptability influences resource access decisions, and how the Industry can be better supported to respond to negative portrayals of it in the public arena.

A modified *semi-structured open-ended interview* schedule (SOEI) (Patton 2002) was used to interview stakeholders. This technique involves interviewers asking informants a similar set of questions, worded similarly, and asked in the same or similar sequence. Unlike closed questions, asking open questions enables informants to seek clarification on the meaning of questions if needed and to answer more expansively. This form of interviewing also allows the interviewer to explore unexpected or previously unidentified issues should they arise. Using SOEI's tends to minimise the variation in the questions asked by interviewers, which reduces interviewer bias and elicits more standardised and comparable interview data. In addition, as the interview is highly focused, interviewees' time is used efficiently.

As noted earlier, resource allocation among competing users is one of the more challenging tasks facing fisheries managers, which we sought to examine in the stakeholder interviews. Four major categories of decisions representing major fisheries management tasks were selected by the Project Team as a means to help structure and investigate how and to what extent social acceptability influences resource access decisions [refer Table 8]. The Project Team determined that the specific examples used would need to:

- Represent a variety of different jurisdictions;
- Be relatively contemporary (i.e. occur in the last 5-7 years);
- Be completed or relatively advanced in the policy process; and
- Include examples where public opinion was thought to influence(s) the process and outcome.

The Project Team then consulted with Steering Committee members on the selection of these case studies, as well as with key stakeholders during the scoping interviews.

Table 8. Fisheries resource access decisions

Type of decision	Case example
Development of marine protected areas (MPAs)	Establishment of the South-west Commonwealth Marine Reserves Network
Resource sharing between recreational and commercial fishing sectors - determining what proportion of the overall fish stocks will be allocated to which users under what conditions	NSW Government buyback of commercial fishing licenses & establishment of recreational fishing havens
Management of threatened species through restricted or prohibitions on catching/harming listed species	Removal of offense provision for the migratory listing of Mako Sharks under the EPBC Act
Management of target species	Development & implementation of the Commonwealth Harvest Strategy Policy

The interview questions used to obtain this information are listed in Appendix 4. The interview questions were grouped into three main topics: background, resource access decisions, and social acceptability. The interviews commenced with questions about the interviewees' involvement in fisheries management, their views about the importance of wild fisheries management, and what they felt was the most significant issue facing the wild-catch commercial fishing industry in recent

times. For the topic of resource access decision, interviewees were asked about their involvement or interest in one of the four decision cases (see Table 8). They were then asked a series of questions about what factors they felt influenced the process and outcome of that decision. First they were asked to discuss any (general) factors they felt informed the decision. They were then asked a more directed question about the influence of interest groups and the wider public – which as mentioned earlier, this Project has defined as identifiable parts of society whose judgements comprise social acceptability. Interviewees were then asked to talk about what they felt was the most significant, recent negative portrayal of the wild-catch commercial fishing industry.

The interview schedule was pre-tested with a selection of fisheries stakeholders. This process resulted in some minor modifications being made to the wording of the questions.

Interview sampling

A non-probabilistic – purposeful sampling process (Patton 2002) was used to select interviewees from three broad groups of stakeholders who interact with each other and the general public in relation to four cases of fisheries resource access decision making (see Figure 3). Those resource access decisions had been selected during the initial Project Steering Committee meeting. Names of individuals were collected in consultation with the Project Steering Committee members and the FRDC. A variety of stakeholders across the major groupings and decisions were interviewed [Refer Table 9]. The majority of interviews were conducted in-person, and took between 60-90 minutes to complete. Five interviews were conducted over the telephone.

Table 9. Stakeholders participating in the main interview process

	Fishing Industry	Decision makers	Interest Groups	*Totals*
Harvest Strategy Policy	7	5	1	***13***
SW MPA	5	5	3	***13***
NSW Buyback	3	2	1	***6***
Mako shark delisting	0	2	2	***4***
Totals	***15***	***14***	***7***	**36**

Results

The following section provides findings from the Let's Talk Fish Project's scoping interviews, mail survey, and main stakeholder interviews (see Figure 1). The material presented addresses one of the main objectives of the Project, namely to obtain sound knowledge about the basis for social acceptability judgements and how those judgements influence resource access decisions. The data answering the Let's Talk Fish Project's key research questions have been grouped under findings relating to the degree of, and basis for, social acceptability, and the influence of social acceptability

Degree of and basis for social acceptability – scoping interview findings

What is 'social acceptability'?

The scoping interviews focused on how stakeholders understood and used the term 'social acceptability' in relation to the Industry. The interviewees tended to use the term 'social license to operate'[4] more frequently than 'social acceptability'. They also felt that an industry had social license to operate when there was little or no controversy over its activities. This was not something that could be achieved without responsible harvesting practices. Some interviewees distinguished between 'the public' and 'interest groups' – the latter were deemed to be more influential in determining social acceptability or social license.

What issues contribute to a lack of social acceptability

Interviewees were also asked about key issues that affected the Industry's societal approval. There were four main categories of interrelated issues identified, including the 'mistaken' views people held about the industry, poor or inappropriate behaviour by some members of the Industry, having practices that fall short of sustainability, and conflicts with other users of wild fisheries.

Misperceptions

Public and stakeholder 'perceptions' were cited by most of the ten respondents as a major issue affecting the wild-catch fishing industry's social acceptability. While the formal definition of the term 'perception' does not necessarily have any negative connotations, respondents often used it to infer that other individual or group's perspectives were flawed and therefore incorrect in some way. In several cases, respondents were more direct and used terms like 'misperception', 'misinformed views', or 'preconceptions'. Most of these respondents were concerned that these "misperceptions" or "misinformed views" assert that commercial fisheries harm the environment and that those negative practices should be ceased. The interview respondents felt that such a conclusion is flawed because, it:

- Assumes that commercial fishing "catches everything in its path":
- Is based on *a lack of* awareness and understanding of what constitutes sustainability and sustainable fishing practices or the economic benefits for local and broader communities; and/or
- Is based primarily on problems with overseas fisheries management, while not acknowledging or understanding how environmental conditions and/or management practices in Australia might differ.

[4] 'Social license to operate' is the level of acceptance or approval continually granted to an organisation's operations or project by the local community and other stakeholders. It exists at different levels of approval and can change over time.

The matter of projecting problems in overseas fisheries onto the Australian situation was seen by one respondent as a major ***driver*** of the public (mis) perception issue. Other drivers identified by respondents included:

- Growth of coastal development on Australia's east coast increasing rates of tourism and recreational fishing, which in turns raises incidences of conflict between these users and commercial fishing:
- Community and interest group campaigns (based on particular views and mis-information) against commercial fishing which contribute to politicised decision-making processes:
- The voice of ENGOs having greater volume and currency with the public than other voices (e.g. industry):
- Consumer confusion about 'sustainability', which is driven by disagreement among the fishing industry, major retailers, and NGOs regarding sustainability parameters:
- Lack of (favourable) contact between fishing industry and the general public and the general public not questioning the credibility of the negative information about the industry: and
- A lack of an appropriate and well-delivered "retort" by the fishing industry, due in large part to its lack of resources (e.g. time, financial, social capital).

When asked to identify which parts of the Industry was affected by this issue, most of the respondents replying to this part of the question felt that the whole sector suffered from negative public views. All of these respondents also believed that there were some sectors that were suffering more than others, including the gill net and trawl fisheries or the local community-based, inshore/estuary-based fisheries. One respondent had observed personal effects on people working in the trawl fisheries, such as low morale. Another respondent felt that public perception issues resulted in the gill net and trawl fisheries operating under greater fishing restrictions than other wild-catch fisheries.

Inappropriate actions by industry

The second most commonly cited social acceptability issue was matters related to the fishing industry's behaviour. Respondents felt that parts of Australia's wild-catch fishing industry were:

- Failing to take on more sustainable practices;
- Not finding effective ways to demonstrate to stakeholders and the general public where/how it *has* taken up sustainable practices; and/or
- Demonstrating incidences of a lack of "professionalism" (e.g. exaggerating impacts of regulations/management, being unpleasant to authorities and/or the public).

The drivers of these issues were seen to be the following:

- Not practicing sustainability: some fishers' belief that there is a 'right to fish' more than a responsibility to be stewards for a shared resource, and that making changes to practices is seen as an erosion of their rights; a failure to acknowledge 'problems';
- Variable quality of fishing industry public relations: variable professional capacity among fisheries (e.g. representative body),
- Lack of "professionalism": due in part to personal stress experienced from reduced income, changed work conditions, and/or public controversy.

An example of unprofessional behaviours included non-compliance with fishing regulations. It was felt that such actions could result in higher overall management costs for those fisheries. Other

examples of undesirable behaviours and practices were seen to contribute to building and sustaining a bad image for the Industry overall and for particular fisheries (e.g. negative publicity about inshore/estuary fisheries "tainting" offshore fisheries).

Sustainability issues

Some respondents felt that there were fishing industry practices that negatively affected attitudes towards the Industry's environmental sustainability, and therefore the Industry's social acceptability. These practices included an overly high incidence of discards and by-products, certain fishing gear damaging marine habitats, and the incidence of over-fishing. When asked to identify what was driving those actions, one respondent felt that interest groups with opposing values to the fishing industry made sustainability an 'issue'. This respondent cited how ENGOs identify fishing practices they feel are 'problems'. In turn the media choose to publicise matters that will generate some controversy. Another respondent felt that conflicting perspectives on what constitutes a 'sustainable' take (ecological sustainability versus productive sustainability) was a key driver of the conflict.

These respondents believed that sustainability problems will generate negative images, which will impact on the entire wild-catch industry. However, those fisheries that are more in the public eye will experience greater problems, such as coastal, inshore fisheries and those operating in areas of high aesthetic and recreational value (e.g. the Great Barrier Reef) where resources must be shared.

Resource allocation conflicts

Two respondents identified allocation of resources between the commercial and recreational sectors as a key issue negatively affecting the Industry's social acceptability. One respondent felt that protracted conflicts between these fishers was driven to some extent by the incompatible, opposing nature of their interests – but primarily by the recreational fishing interest groups who see the resource as 'theirs'. The other respondent thought that many people – especially the active recreational fishing clubs, associations, and peak bodies – believed recreational fishing had less of an impact than commercial fishing. This view underpinned the resource allocation conflict, which was compounded by a lack of quantitative data on recreational fishing impacts.

Degree of and basis for social acceptability of the Industry – mail survey findings

As noted in the previous chapter, the Let's Talk Fish Project has used attitudes as a proxy for social acceptability (see Figure 2). We also used the VBN Theory to explore the basis for those attitudes. The following material lists Project findings on the degree of social acceptability of the Industry. We highlight respondents' social acceptability judgements, as well as their general values, beliefs, norms and other relevant perspectives. Also discussed are the factors that revealed statistically significant relationships with our social acceptability measures.

Mail survey respondents' profile

The key characteristics and interests of the mail survey respondents are listed in Tables 10 and 11. More respondents were male than female (64% male), older rather than younger (median age of 58, 52, and 57 years) and were more likely to be born in Australia than overseas (58% born in Australia). Nearly half of respondents had completed a tertiary degree, although this statistic varied across the three cities. Approximately a quarter of respondents were employed as professionals and over a

third were retired. A majority of respondents had not grown up on the coast. Nearly all the respondents (97%) reported eating seafood. Only 6% and 1% of respondents were members of an environment group or recreational fishing group respectively; 91% of respondents had visited a fishing town/port, and 37% had watched fishers unloading their catches.

Table 10. Key characteristics of the mail survey respondents

Characteristic	n =	Responses/Data
Gender	452	Male: 64% Female: 36%
Age – life stage	437	Young adult: 7% Mid-career/family: 25% Middle age: 36% Retired: 32%
Median age		Brisbane: 58 yrs Melbourne: 52 yrs Sydney: 57 yrs old
Born overseas (you or your parents)	453	Yes: 42% No: 58%
Place of birth (you or your parents)	159	Britain & Ireland: 45% Southern, Eastern & South-eastern Europe: 25% New Zealand: 6% Southeast & Northeast Asia: 12% Western Europe: 4% Middle East, Africa: 4% South America: 2% North America: 2%
Highest education	450	Primary: 3% Secondary: 26% Technical/further: 25% Tertiary: 45%
% w/ tertiary education		Brisbane – 56% Melbourne – 39% Sydney – 57%
Occupation	412	Professionals: 22% Associate professionals: 9% Clerical, sales, service workers: 11% Tradespersons: 9% Managers, administrators: 10% Retired: 35% Student: 3% Unemployed: 1%
Location	461	146 (NSW) 165 (Qld) 150 (Vic) 1 (unknown)
Proximity to coast	453	Live w/in sight/walking distance: 9% Less than 5km: 12% More than 5km, less than 20km: 36% More than 20km: 44%
Grow up on coast	452	Yes: 23% No: 77%

Table 11. Mail survey respondents interests and activities

Survey Item	n =	Responses					
Own coastal home?	452	***Yes:*** 10% ***No:*** 90%					
Coastal activities?	351	***Activity type***			***No***	***Yes***	
		Boating			67%	33%	
		Surfing			86%	14%	
		Beach walking, picnics			18%	82%	
		Diving, snorkelling			86%	14%	
		Recreational fishing			63%	37%	
Member: environment group?	455	**Yes:** 6% **No:** 94%					
Member: recreational fishing group?	456	**Yes:** 1% **No:** 99%					
Respond to a fisheries management issues?	455	**Yes:** 5% **No:** 95% **How?** (n = 20): 85% sign petition, 5% Facebook comment, 5% wrote to a politician, 5% joined a group					
Exposure to commercial fishing in the last 12 months?	451	***Activity type***			***No***	***Yes***	
		Visited a fishing town/port			9%	91%	
		Watch fishers unload their catch			63%	37%	
		Ride on a commercial fishing vessel			96%	4%	
		Visit a fish processing factory			97%	3%	
Eat seafood?	455	**Yes:** 97% **No:** 5%					
Frequency?	434	> 1X per week	1X per week	1X fortnight	1x month	6x per year	4x per year
		19%	36%	24%	15%	2%	4%
Purchase imported seafood?	448	**Yes:** 29% **No:** 39% **Unsure:** 32%					

Mail survey respondents' values

Respondents' values were explored using a scale of items from three broad value orientations: environmental (concerns about the environment), altruistic (concern for others) and egoistic (concern for self) (de Groot & Steg 2007; Schwartz 1992, 1994). Three items were used to measure each value orientation and respondents were asked to rate the importance of each value to them on a 1-5 scale ranging from *Not important* to *Very important* (to simplify the presentation of data, these options have been collapsed into three categories of importance). A *Not applicable* option was offered as a separate response.

The results showed that environmental values had very high mean scores (4.5, 4.5, & 4.4) and relatively higher scores than the other values types – altruistic and egoistic [Refer Table 12]. There were also high mean ratings for altruistic values (4.2, 3.9, 3.9), but lower ratings for egoistic values (3.2, 3.2, 2.9).

Table 12. Mail survey respondents' values

Environmental values	n	Mean	Less Important	Important	Very Important	n/a
Protecting the environment and preserving nature	440	4.5	1	7	92	0
Preventing pollution and protecting natural resources	440	4.5	0	7	92	1
Respecting the earth and living in harmony with other species	440	4.4	2	11	86	1
Altruistic values	**n**	**Mean**	**Less Important**	**Important**	**Very Important**	**n/a**
Caring for the weak and correcting social injustice	439	4.2	4	16	79	1
Working for the welfare of others	440	3.9	8	22	69	1
Fostering equal opportunities for all community members	439	3.9	6	22	71	1

Egoistic values	n	Mean	Less Important	Important	Very Important	n/a
Being influential and having an impact on other people and events	440	3.2	26	30	41	3
Creating wealth and striving for financial prosperity	440	3.2	21	36	41	2
Having power and being able to lead others	440	2.9	32	31	32	5

Respondents were also asked to identify how they would prioritise the three sustainability imperatives (social, economic, environmental) of fisheries management and environmental management [Refer Table 13]. They were given four items and asked to circle a point on a 17 point scale for each comparison that best represented their views. Again, the response options have been collapsed to simplify data presentation.

Table 13. Mail survey respondents priorities for different values

Statement			%					Statement
	n	Mean	Least priority	Low priority	Equal	More priority	Highest priority	
Maximise commercial fishing jobs/income	424	11.7	2	8	22	25	42	Minimise impact on continuity of fish populations
Maximise commercial fishing jobs/income	422	12.4	0	8	15	25	**50**	Minimise harm to marine animals & birds
Maximise commercial fishing jobs/income	421	12.6	1	8	14	24	**53**	Minimise harm to marine environment
Maximise commercial fishing jobs/income	421	9.4	4	24	36	21	15	Maximise recreational fishing opportunities
Maximise commercial fishing jobs/income	425	12.2	1	8	14	32	44	***Combined measure – concern for environment***

The data shows that most respondents consistently placed a higher priority on protecting fish stocks (67%), marine habitats (77%), and marine animals and habitats (75%) than on sustaining fisheries employment and communities (10%, 8%, 9% respectively). Just over a third of respondents felt recreational fishing should be prioritised over commercial fishing, while the same percentage (just over a third) felt that each sector should be given equal priority.

Mail survey respondent's beliefs

Thirteen survey items were used to explore what respondents thought was true about potential environmental and social consequences for things of value by the activity of the Industry [Refer Table 14]. Respondents were asked to rate their degree of concern about thirteen possible situations on a scale of 1-5 scale ranging from *Not concerned* to *Very concerned* (to simplify the presentation of data, these options have been collapsed into three categories). A *Not applicable* option was offered as a separate response.

Table 14. Mail survey respondents' beliefs about consequences of fishing activities & management

Degree of concern for consequences for valued things	n	Mean	Low concern	Neutral	High concern	n/a
1. Commercial fishing methods that damage aquatic habitats (place where fish and marine animals live)	456	**4.6**	4	3	92	1
2. Possible loss of Australian seafood/fish species available to future generations due to overfishing	456	**4.5**	7	4	88	1
3. Commercial fishing methods that injure fish and marine animals not intended to be caught, including protected species	457	**4.5**	5	5	89	1

4. Commercial fishing leading to reduced populations of fish species	454	**4.5**	5	4	90	1
5. Fishing industry failure to comply with existing rules and regulations	454	4.1	9	11	79	0
6. The extent that commercial fishing changes the marine environment	456	4.1	10	9	81	0
7. Effectiveness of existing government regulations to manage long term health of fish populations	454	4.0	9	18	72	1
8. Commercial fishing reducing opportunities for recreational fishing	452	3.2	29	27	43	1
9. Possible loss of income for commercial fishers in the future due to overfishing	456	3.2	33	18	49	0
10. Potential job losses in the commercial fishing industry resulting from reductions in allowable catch or restrictions in fishing areas	456	3.1	35	20	44	1
11. Loss of commercial fishing as a way of life if allowable catch or fishing areas are restricted	454	3.1	35	19	45	1
12. The extent that recreational fishing changes the marine environment	454	3.1	36	15	48	1
13. Expansion of recreational fishing areas thereby limiting where commercial fishing can occur	454	2.7	41	34	24	1

Respondents showed most concern about possible harm to aquatic habitats (92% highly concerned) and fish/marine animals (89% highly concerned), as well as loss of fish species as a result of commercial fishing (88% highly concerned). The next most commonly identified areas of concern were about the extent government regulations could minimise such negative effects (72% highly concerned) and if industry would comply (79% highly concerned). While fewer respondents were concerned that commercial fishing lifestyles could be negatively affected by further restrictions in fishing, there was still close to half of them who were concerned. The least amount of concern by respondents was for whether recreational fishing limited commercial fishing (24% high concern, 34% unsure).

Fisheries issues – are they true?

Respondents were also asked what they thought was true regarding Industry issues [Refer Table 15]. Respondents were asked to rate their level of agreement with ten statements about fishing issues on a scale of 1-5 scale ranging from *Strongly disagree* to *Strongly agree* (to simplify the presentation of data, these options have been collapsed into three categories). A *Not applicable* option was offered as a separate response.

Table 15. Mail survey respondents' beliefs about commercial fishing

Are these issues true?	n	Mean	Disagree	Unsure	Agree	n/a
1. Overfishing leads to reduced populations of fish species targeted for harvesting	444	**4.3**	2	9	89	0
2. It is better for my health to purchase Australian seafood than seafood sourced from other countries.	444	**4.3**	9	12	77	2
3. Regulations to control current levels of commercial fishing will help sustain fishing livelihoods into the future	444	**4.1**	4	15	81	0
4. Fishing gear used by commercial fishers harm species not intended to be caught, including protected species	445	**4.0**	3	25	71	0
5. Regulations to reduce the levels of allowed commercial fishing will help ensure I have a healthy marine environment to enjoy	443	3.8	8	23	68	1
6. Commercial fishing damages marine environments	442	3.7	8	31	61	0
7. If current levels of commercial fishing continue I will have less choice of what seafood to buy in the future	443	3.6	10	39	51	1

8. There is no difference between Australia and overseas when it comes to commercial fishing industries harming species (fish, marine animals) not intended to be caught	444	2.9	37	35	27	1
9. Commercial fishing restricts my ability to enjoy recreational fishing	442	2.8	33	24	21	22
10. Allocating more areas for recreational fishing is unfair to commercial fishers	443	2.6	49	27	23	1

The data show that nearly all the respondents agreed that overfishing can be a problem and a large majority agreed that fishing gear can harm marine species. Just under two-thirds of respondents agreed that commercial fishing damages marine habitats, and an additional 31% were unsure. This suggests that most respondents are concerned about this impact. A large majority of respondents (81%) agreed with the claim that regulations can increase the industry's viability and that Australian seafood is healthier than overseas imports.

Most respondents were able to indicate whether they believed the listed statements, but about a third of respondents were unable to do that for three topics: whether commercial fishing damages marine habitats, the extent the choice of seafood will be reduced if commercial fishing continues at current levels, and whether the gear used by Australian commercial fishers does less harm to non-target species than do overseas fisheries.

Respondents were divided over whether commercial fishing restricts their ability to fish recreationally, although close to half of respondents disagreed that giving over more fishing areas to recreational fishers was unfair to commercial fishers.

Mail survey respondents' norms

The survey explored respondents' norms (their sense of what is 'right' and 'wrong') by asking people to respond to a series of statements about whether they felt a particular sense of duty/responsibility in relation to fisheries management and consuming seafood [Refer Table 16]. Respondents were asked to rate their level of agreement with ten statements using a scale of 1-5 scale ranging from *Strongly disagree* to *Strongly agree* (to simplify the presentation of data, these options have been collapsed into three categories). A *Not applicable* option was offered as a separate response.

Table 16. Mail survey respondents' norms

Personal norms	n	Mean	Disagree	Unsure	Agree	n/a
I feel a personal obligation to avoid buying seafood that is reported as caught by methods that harm marine animals or birds	453	**4.2**	4.9	11.5	82.6	1.1
I feel a personal obligation to buy seafood caught in Australia	451	**4.1**	11.1	7.1	80.0	1.8
I feel a personal obligation to avoid buying seafood when those species are reported as overfished	453	**4.1**	5.7	16.3	75.9	2.0
I feel a personal obligation to do whatever I can to protect marine environments and marine animals	452	**4.1**	3.8	13.1	81.4	1.8
I feel a personal obligation to buy seafood that is marked as sustainable	446	3.9	11.2	12.8	73.1	2.9
I feel a personal obligation to 'support' the government's fisheries rules/regulations	453	3.8	9.3	26.3	60.3	4.2
I feel a personal obligation to act as part of a group to protect marine environments and animals	451	3.3	26.8	28.6	39.9	4.7
I feel a personal obligation to support commercial fishing communities	449	3.1	33.6	26.5	37.9	2.0

A large majority of respondents agreed that they felt obligated to purchase seafood that does not harm marine animals (82.6%), is Australian-sourced (80%), and is not from an overfished fishery (76%). A similar result was found for feeling obligated to purchase sustainable seafood (73%) and support governments' fisheries regulations (60%). Respondents were divided regarding how obligated they felt to take up group membership (40% agreed, 29% unsure, 27% disagreed) or support commercial fishing communities (38% agreed, 27% unsure, 34% disagreed).

Mail survey respondents' trust in industry and government

Trust is a key factor in the social acceptability of natural resource policy and management. The survey was designed to test respondents' view about how much they can rely on industry and government to do certain things (trust) and how trustworthy (competency, integrity, benevolence or expectation that another will act in your best interests) the public thinks the government and the fishing industry are.

Overall the levels of trust were low for both government and industry [Refer Table 17]. Twenty-seven percent of respondents did not agree they could rely on government to manage fisheries for either sustainable fish stocks or viable fishing communities. Nearly half of respondents (46%) were unsure. Thirty-seven percent of respondents did not agree that the Industry could be relied on to reduce harm to marine animals or sustain fish stocks for future generations. Close to half of respondents (45%) were unsure about trusting the fishing industry.

Table 17. Mail survey respondents' trust in government and the fishing industry

Trust in government	n	Mean	Disagree	Unsure	Agree	n/a
I can rely on Australian governments to manage commercial fisheries so that fish populations are sustained for future generations	440	2.8	32	46	22	0
I can rely on Australian governments to manage commercial fisheries so that fishing communities remain viable	440	2.8	31	47	22	0
Combined measure	*440*	*2.8*	*27*	*46*	*27*	*0*
Trust in Industry	**n**	**Mean**	**Disagree**	**Unsure**	**Agree**	**n/a**
I can rely on the commercial fishing industry to adopt best practice methods that will reduce harm to marine animals and birds	440	2.7	40	44	16	0
I can rely on the commercial fishing industry to act in ways that will sustain fish populations for future generations	440	2.6	47	39	14	0
Combined measure	*440*	*2.6*	*37*	*45*	*18*	*0*

A substantial percentage of respondents did not agree that Australian governments and the Industry were trustworthy [Refer Table 18]. Just over a third of respondents disagreed that Australian governments were benevolent (31%) or competent (34%), while a majority (57%) disagreed that governments had integrity (transparency). Industry's trustworthiness ratings were even lower. A third of respondents disagreed that the Industry was competent in reducing harm to marine animals, 49% disagreed that the industry was benevolent, and 55% disagreed that the industry had integrity (being transparent about bycatch). There were also anywhere from a third to 60% of respondents who were unsure about the trustworthiness of Australian governments and industry.

Table 18. Mail survey respondents' trustworthiness ratings for government and the fishing industry

Trustworthiness of governments and the fishing industry	N	Mean	Disagree	Unsure	Agree	n/a
I think Australian governments keep my interests in mind when making decisions about commercial fishing	440	2.9	31	38	29	1
Australian governments have a good track record of establishing rules and regulations that prevent overfishing	440	2.8	34	48	17	1
The commercial fishing industry has a good track record of taking up fishing gear that reduce harm to marine animals and birds	440	2.7	30	**60**	10	0
I think the commercial fishing industry keep my interests in mind when catching fish	440	2.6	49	33	17	1
Australian government decisions to change commercial fishers' access to fishing grounds have been adequately explained to the public.	440	2.4	**57**	30	13	0
The commercial fishing industry is open and honest about the extent that marine animals and birds are harmed by existing fishing gear	440	2.4	**55**	36	8	0

Mail survey respondents' attitudes to fisheries management

Respondents were asked to rate their level of agreement with ten statements about what should be done in relation to fisheries science, Australian government fisheries policy and management, and the Industry [Refer Table 19]. The survey gave them options on a scale of 1-5 scale ranging from *Strongly disagree* to *Strongly agree* (to simplify the presentation of data, these options have been collapsed into three categories). A *Not applicable* option was offered as a separate response.

Table 19. Mail survey respondents' attitudes towards fisheries policy and management

What should be done	n	Mean	Disagree	Neutral	Agree	n/a
1. Australian governments should restrict seafood imports from countries that do not have comparable health safety standards for seafood	451	**4.6**	2	5	**93**	0
2. The Australian government should restrict seafood imports from countries without comparable rules to prevent overfishing/harm to marine animals/ birds	452	**4.3**	7	9	83	0
3. Australian governments should invest more money to develop fishing methods that avoid harm to marine animals and birds	452	**4.2**	6	13	81	0
4. Stronger enforcement by Australian governments is needed to ensure commercial fishers comply with existing rules that limit overfishing	453	**4.2**	4	15	81	0
5. Australian governments should increase support for fish farming (aquaculture) to reduce the reliance of commercial fishing on wild-catch populations	454	4.1	5	17	77	1
6. More scientific studies are needed to assess how much fish can be caught by recreational and commercial fishers without damaging the marine environment	453	4.0	4	23	72	1
7. Strict limits should be placed on areas that recreational fishers can access to ensure commercial fishing remains viable	452	3.2	28	**27**	44	1

Almost all respondents agreed that seafood imports should be restricted where food safety (93%) and environmental standards (83%) were not comparable to similar rules in Australia. A large majority of respondents agreed that Australian governments needed to make a greater investment in developing by-catch reduction devices (81%), greater effort to enforce regulatory compliance (81%), and to increase support for fish-farming (77%). There was considerably less support for limiting recreational fishing in favour of commercial fishing (44%), although a majority (77%) agreed that more science was needed on assessing the impacts of recreational and commercial fishing.

Key measures of social acceptability

One of the attitudinal items discussed above was used as a key measure of the Industry's social acceptability [Refer Table 20]. Only ten percent of respondents agreed that the fishing industry's sustainability costs were too great to allow it to continue, although a third remained unsure.

Table 20. Mail survey respondents' ratings for key measure of social acceptability

Key social acceptability measure	n	Mean	Disagree	Neutral	Agree	n/a
The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits	453	2.3	60	**30**	**10**	1

Respondents were also asked about what they believed should happen in relation to commercial fisheries and regulations [Refer Table 21]. They were given a set of four statements about Australia's management of wild-catch commercial fisheries and asked to select one statement that best matched their views.

Table 21. Mail survey respondents' selection of additional social acceptability measure

Additional measure of social acceptability	n = 445
The commercial fishing industry in Australia should be able to operate under existing rules with full discretion given to fishers to fish as they see fit.	**5%**
The commercial fishing industry in Australia should be able to continue to operate under existing rules, but with increased monitoring to ensure compliance with rules to minimise the environmental costs of fishing.	**59%**
Existing rules governing the commercial fishing industry in Australia are inadequate and need to be changed to further minimise the environmental costs of fishing	**33%**
The Australian commercial fishing should not be allowed to continue, because its environmental costs outweigh its social and economic benefits.	**3%**

Nearly 60% of respondents selected options suggesting they think the Australian Industry is socially acceptable under existing rules, although greater investment in monitoring was needed to ensure fishers were complying with the rules. Another 33% of respondents found the industry socially acceptable if new rules were adopted to minimise the environmental costs of fishing. Only 3% of respondents appeared committed to ending the industry's access to fish resources.

Some of the bases for social acceptability judgements

As noted earlier, statistical tests were run to explore some expected relationships between our key measure of social acceptability (the dependent variable) and the factors expected to influence social acceptability (the independent variables), which included respondents' values, beliefs, norms, attitudes, risk perceptions, and trust. A full list of those results appears in Appendix 5. The following material summarises the key findings from those analyses.

Basis for negative social acceptability judgements

As expected, respondents who saw the Industry as ***NOT*** socially acceptable were more likely to:

- Score higher on all three items on the environmental **values** scale, (and two of the three altruistic values and one of the egoistic values).
- **Prioritise** protecting fish stocks, marine animals and birds, and marine habitats over sustaining fishing industry jobs/income. They were also more likely to prioritise recreational fishing over protecting fishing industry jobs/income.

- Be **concerned** about the possibility that overfishing might reduce available seafood species, the ability of government to regulate against overfishing and to ensure that industry complies with its laws.
- **Believe** that regulations *do* help reduce environmental harm and sustain the industry; commercial fishing does have negative effects on marine habitats and animals, recreational fishing, and future availability of seafood; and that there is little difference between Australian and overseas commercial fishing industries harming marine species.
- (**Personal norms**) Feel personally obliged to purchase sustainable seafood and avoid those seafood products they believe are having harmful environmental effects; and feel some obligation to act on behalf of the marine environment.
- Give low ratings for the Australian government's **trustworthiness** (integrity – being transparent about why and how decisions about access to fisheries resources are made). And these ratings were lower than the ratings for governments' benevolence and ability.
- Think that losing seafood species and environmental damage was a more probable **risk** of commercial fishing activities. They were also more likely to think that damage to fish populations from non-fishing activities was a likely future risk.

Basis for positive social acceptability judgements

As expected, respondents who saw the Industry as socially acceptable were more likely to:

- be **concerned** about how restricting allowable catches might reduce fishing jobs and fishing as a way of life;
- (**personal norms**) feel a personal obligation to support fishing communities;
- **trust** that the industry acts responsibly to sustain fish stocks and adopt best practice methods that will reduce harm to marine animals and birds; and
- think that the **risk** of harm to fishing communities from restricting access to fish resource access was very likely.

Degree of and basis for social acceptability – stakeholder interviews

Interviewees (25) were asked to select and discuss what they believed was the most significant issue affecting the Industry in Australia. By far the most commonly cited significant issue were matters relating to the sector's social acceptability. Most interviewees referred to social acceptability as 'social license to operate', which is now part of the lexicon of the fisheries management community of interest. The discussions with interviewees typically included some or all of the following main points:

- There is a lack of social acceptability or social license to operate;
- That gap has been around for some time, and seems to be getting worse in recent times;
- It is upsetting to members of the sector and government agency staff to be on the receiving end of this, although one interviewee believed the gap is not as bad as has been portrayed;
- The lack of social acceptability is based on negative judgements about the fishing industry that are often mistaken, unfair, and simplistic. Those judgements are held by the collective 'public' who do not trust the fishing industry or government;
- Those often flawed judgements are strengthened/supported/sustained by powerful symbolism and the absence of important positive (albeit complex) information about fishing industry and management practices;

- These judgements have important negative effects on the sector generally and some fisheries in particular, the most significant being reduced access to resources. The "super trawler" being the most recent example;
- The lack of social acceptability and the trend for social acceptability to decline further over time is partly industry's fault (e.g. lack of leadership, not keeping an eye on the 'big picture', and cases of poor fishing practices); and
- The solution lies primarily in ensuring that people know (and/or know more) about the positive trends in fisheries management (e.g. the use of quality science, improved bycatch reduction, etc.), although to some it does not seem to matter what they do.

Recent negative public portrayals of wild-catch commercial fishing

Interviewees (33) were asked what they felt was the most significant recent negative portrayal in the public arena of the wild-catch commercial fishing industry. Some (ten) interviewees felt that bycatch of marine mammals (e.g. sea lions), waste (e.g. disposal of non-target species), overfishing (e.g. Orange roughy), and damaged marine habitats help secure a public image of an industry that is irresponsible and far from environmental stewards. Most interviewees felt these portrayals have been somewhat unfair, because they do not represent the majority of businesses in the industry.

Not surprisingly the remaining interviewees felt the 'super trawler' issue has been the most significant negative portrayal of the Industry in recent times (see Appendix 6). The 'super trawler' has been used to refer to the Abel Tasman (previously named the FV Margiris), which is a very large fishing trawler that Seafish Tasmania brought to Australia in 2012 to catch an approved quota of jack mackerel and redbait along the southern coastline. A series of public campaigns were sparked by fears that the vessel would decimate fish stocks in Australia as it allegedly had done overseas. In response to these concerns, the Australian Government introduced legislation that prevented the ship from operating in Australian waters.

Social acceptability and its influence on resource access decisions – scoping interviews

Interviewees were also asked to comment on one of the four resource access decisions, including what they thought were key influencing factors. The key influencing factors identified by interviewees across the four decisions were:

- A previous long-standing commitment by government to a certain policy:
- Strong interest group campaigns (e.g. NGOs, recreational fishers):
- Use of (social, economic, ecological) scientific information;
- A lack of political will: and
- Selective use of scientific information.

Most of the interviewees felt that public opinion had *not* had a significant influence; rather it was primarily interest groups who had a substantive role in shaping decision outcomes.

Social acceptability and its influence on resource access decisions – main stakeholder interviews

The following material reviews data from interviews with the main stakeholder groups as per the four resource access decisions studied [Refer Table 9]. Each case study is presented separately so

that the influence of context can be considered. A similar analysis of the 'supertrawler' issue is listed in Appendix 6.

The Commonwealth South West marine Protected Area Process

Many governments have used marine protected areas as part of a suite of policy instruments designed to protect the natural, cultural or historical values of marine ecosystems. MPA usually include spatial management zones designed to offer varying levels of protection and typically range from no-take areas (Sanctuary Zones) through to multiple use areas where commercial and/or recreational fishing and other uses are allowed.

The decision to design and implement a network of marine-protected areas in the South-west Marine Region of Australia is outlined in more detail in Appendix 7. This process was part of an ongoing commitment by successive Australian Governments to create a national and representative system of Marine Protected Areas. The South-west Commonwealth Marine Reserve Network (SW MPA) process commenced in full in July 2006, and the Network was finalised in 2012. The proposed reserves network did overlap with some high value fishing areas. The Australian Government's Regulatory Impact Statement (RIS) found that the wild-catch commercial fishing industry was the industry sector most affected by the identified options. The final option chosen reduced the amount of displaced fishing from a possible gross value of production per year of $13.7 to $11.1million (DSEWPAC 2012). Specific arrangements for the Network's management plans continue to be developed.

Interviewees' views on the influence of interest groups, public opinion and the media

Interviewees were asked "how important were interest groups in influencing the decision"; "how important was public opinion in influencing the decision"; and "what role did the (traditional, social) media play in influencing the decision?". There were four similar narratives evident in their collective responses – in that most of them talked about ENGOs' power (see Appendix 7).

Interviewees often talked about ENGOs heavily influencing the SW MPA process to favour conservation values, because of their ability to wage large public campaigns using contemporary techniques (e.g. social media), backed by their substantial funds. Interviewees believed these campaigns succeeded in: raising public awareness of marine protected areas as a conservation measure, including the threats to the ecological values of the South-west region; and convincing the public that poor commercial fishing practices were a key threat to the ecological values of marine areas. Interviewees also thought the campaigns were successful in activating thousands of people to contact their state and federal politicians to express their support for the MPAs.

Interviewees also talked about how the 'real' power of these campaigns lay in politicians being concerned about electoral implications of *not* making decisions that support weighty public opinion favouring MPAs. Interviewees talked about 'public opinion' being something that is more diffuse and less targeted than the influence of interest groups.

Public opinion was also seen as something that interest groups influence, rather than represent. There was a strong theme that 'public opinion' is something that exists when – in the eyes of interviewees and their judgements about what influences politicians and other decisions makers – it reaches a certain volume (e.g. 40,000 submissions arguing for protecting marine environments against threats like commercial fishing). The assumption was that at higher levels public opinion will

be more powerful than any particular merits of a given policy. Anything below some arbitrary number of submissions or letters, and public opinion will not be an important influence on policy.

A number of interviewees disapproved of the ENGO's campaign techniques. Their comments suggested they thought it was unfair for the ENGOs to use emotive images of charismatic species, frame the issues too simply, or provide information to the public and/or stakeholders that was 'inaccurate' and/or misleading in some ways (e.g. omitting details about how fisheries management has improved in Australia, etc.).

Interviewees' views on other influencing factors

Interviewees were asked, "what factors do you believe influenced the SW MPA decision being made?". A full list of the individual factors identified by the interviewees is shown in Appendix 7. It was most common for informants to discuss different structural elements of government, including prior policy commitments to a national system of marine reserves, specific legislation to assess fisheries impacts, to specific policy principles (avoiding/minimising social impacts of MPAs on users of marine resources, Comprehensiveness Adequacy & Representativeness (CAR) principles). Interviewees often talked about key ideas and data that helped make the decisions and which were often a point of debate (e.g. the effectiveness of marine protected areas as a conservation tool). Interviewees also focused on the perspectives and actions of individuals and groups who were seeking to advance their particular interests (e.g. the Environment Minister).

The following is an analysis of the major story lines underpinning interviewees' recollection of the key factors that influenced the SW MPA process (see Appendix 7 for specific narratives).

A snowball rolling down the hill gaining momentum

In this narrative the SW MPA is seen as the end point of a process that commenced more than a decade ago with Australia's international and national commitments to a national representative system of marine protected areas (NRSMPA). Once that was established, the initiative steadily gained momentum, with bipartisan support for the concept of an NRSMPA. The initiative was also underpinned by principles, information and tools that would enable a revised approach to establishing such reserve systems (e.g. CAR Principles, Marxan software). There were people who were highly motivated and able to 'clear a path' for the oncoming NRSMPA, despite the efforts of others who wanted to slow the initiative to enable a more thorough examination of its implications, particularly for users of marine resources like fish stocks.

Power and (party) politics

In this narrative interviewees expressed concern that some actors (primarily those who felt that commercial fishing should be minimal or not exist in marine reserves) were able to shape the process and outcomes to advance their respective interests. The fishing industry was consistently seen as being poorly organised and unable to deliver a salient message about how their interests might be negatively affected by the networks of protected areas. Interviewees saw the fishing industry as having less power than the government and ENGOs over the process of setting up the network boundaries and conditions.

The decision as a contest of values

Some of our informants thought that the SW MPA processes pitted the worth of marine industries and marine conservation against each other and that the decision makers, stakeholders, and the wider public were being asked to choose between them.

Principles, frameworks and tools for decision making

Some informants believed that while the Environment Minister's ambition to leave a conservation legacy was instrumental in the SW MPA process, certain scientific principles and frameworks were also critically important in shaping the specific details for the reserves network. Interviewees felt that the CAR principles strongly underpinned the Government's marine protected area policy and management planning. They talked about the importance of impact assessments helping identify the reserve network's configuration and boundaries – which were adjusted to minimise impacts on commercial fishing. Some interviewees mentioned how the wild-catch commercial fishing industry provided the Federal Government with details on its practices and about the possible impacts of the SW MPA, but these informants were unsure how influential that information was in the end.

Summary

Marine protected areas can exclude some or all commercial fishing activities. The original network of reserves proposed for the South-west marine region would (and has) displace some commercial fishing activities. By the time the reserves were formally declared, however, the initial estimated dollar value of lost fishing opportunity had been reduced.

Many interviewees felt that ENGOs were very influential in the MPA process [Refer Table 22]. These informants had concluded that these ENGOs were able to rally members of the public to express to elected officials their concerns about different threats to biodiversity, including overfishing, and their support for marine protected areas as a way to manage those threats. A number of interviewees framed decision makers as being highly responsive to these representations, and in turn "pushing hard" to establish the SW MPA by a 2012 deadline.

Table 22. Interviewees' judgement about social acceptability and its influence on the SW MPA process

Interviewees' views on ...	**SW MPA**	**Cwth HSP**	**NSW Buyback**	**Mako shark**
Extent that social acceptability (***general public's judgements***) influenced the resource access decision (RAD)	Some influence	Little consequence to some influence	Some influence	Little consequence
Extent that social acceptability (***interest group judgements***) influenced the RAD	High influence	High influence	Critical to decision	Critical to decision
Extent that social acceptability (***decision makers***) influenced the RAD	Critical to decision	Critical to decision	Critical to decision	High influence

Interviewees identified a range of other factors that influenced the SW MPA decision process and outcomes. Most frequently discussed were government arrangements (separation of fisheries management and biodiversity conservation, international and national policy commitments to having marine reserves, legislation mandating ecologically sustainable fishing, governance) and the

data and information used to justify MPAs generally and to determine reserve network boundaries and operating conditions.

Some interviewees critical of the SW MPA process and outcomes spoke about some or all of the following issues:

- The Federal Government not maintaining what began as a relatively strong consultation process for affected stakeholders, and being overly responsive to stakeholders more influential than the wild-catch sector;
- The formal assessment of impacts on commercial fishing in the region being untimely and/or insufficient, resulting in (some) exclusion of fishing inside the reserve boundaries;
- The evidence (and therefore the argument) for MPAs as an effective conservation tool being weak and not justified in excluding commercial fishing; and/or
- The apparent lack of robust monitoring and evaluation process for the ongoing management of the SW MPA, which could demonstrate whether they are in fact effective conservation tools.

Some stakeholders felt that these issues were causing undue negative outcomes for the wild-catch commercial fishing industry (i.e. reducing fishing areas within the boundaries of the MPA). Overall the case of the SW MPA decision illustrates how historical and more recent societal support for marine conservation resulted in the regional dislocation of some commercial fishing activities.

The Commonwealth Harvest Strategy Policy (HSP)

Harvest strategies outline management actions for achieving selected biological and economic objectives for a given fishery and typically include processes for monitoring and assessing fishery conditions and rules for controlling the intensity of fishing activities (DAFF 2007). While they are used extensively across Australia, the design and application of fisheries harvest strategies have been somewhat inconsistent (Rayns 2007). The Australian Government introduced the *Commonwealth Fisheries Harvest Strategy: Policy and Guidelines* (HSP) to provide a best practice guide to harvest strategy development, and address earlier inconsistencies in its fisheries management (Rayns 2007). A more detailed chronology of the HSP's introduction is listed in Appendix 8.

Interviewees' views on the influence of interest groups, public opinion, and the media

Interviewees were asked, "how important were interest groups in influencing the decision"; "how important was public opinion in influencing the decision"; and "what role did the (traditional, social) media play in influencing the decision?". The key narratives underpinning their responses were relatively short and straightforward. The ENGOs were most often seen in these stories as the most important 'interest group' that had a role in shaping the HSP decision to favour ecological values. The general public did not figure heavily in their recollections of the decision process.

Interest group (ENGO) influence is constructive

ENGOs were typically seen as strongly influencing the HSP through their formal advisory roles, such as serving as members of the Commonwealth Fisheries' Management Advisory Committees (MACs). The MACs inclusion of diverse stakeholder perspectives, such as ENGOs, and a positive interpersonal climate was seen as an important way to ensure well-rounded policies. The ENGOs were also seen to play an important role in raising more general awareness of environmental challenges in fisheries

management and maintaining pressure for policy and management reform to achieve stronger ecological outcomes.

Interest group (ENGO) influence is not always constructive

A second narrative was more qualified about the appropriateness of ENGOs' influence on the HSP in particular and on fisheries policy and management more generally. ENGOs were seen to have considerable influence on fisheries management, although that influence could be negative (e.g. making strident demands that the industry radically change its practices) or positive (e.g. working to find compromises in how and to what extent industry could reduce its environmental impacts). Some ENGOs were seen as more skilled in "engaging [with government and industry] more constructively" and tended to have positions on government advisory committees. Other ENGOs using more adversarial tactics tended to seek to influence fisheries policy and management outside of formal processes. In this narrative, interviewees felt that these more adversarial groups did not seem to be very interested in the HSP.

No real public opinion or media interest - so these actors had little influence.

There was a view among some interviewees that public opinion was not particularly relevant to the HSP. Public opinion was equated with the 'general public' or 'mums and dads' who were unlikely to be interested in and/or able to understand the complex technicalities underpinning the HSP. For these reasons not much effort was put into polling of, or consulting with, the general public. In this narrative, the traditional and social media were not seen to have a significant role in the HSP decision.

Public opinion as setting the broader context for decisions

Another discernible narrative was that 'public opinion' was (and remains) relevant to the design and implementation of the HSP – albeit for slightly different reasons. Public opinion was seen as something that has been "moving to the left", and favoured the basic idea (more careful use of fish stocks and the marine environment) underpinning the HSP – particularly during the last federal election. In these instances, public opinion is something that the Fisheries Minister would have taken note of, and the issuing of a Ministerial Directive was seen as an indication that he was concerned about public views. One interviewee believed that public opinion is something reflected in governments' decision (in this case the HSP). Other interviewees felt that interest groups shape public opinion using the media.

Interviewees' views on other influencing factors

The following is an analysis of the interviewees' responses to the interview question, "what factors do you believe influenced that decision being made?" Interviewees identified a wide range of factors influencing the formation and implementation of the Commonwealth Harvest Strategy Policy (see Appendix 8). A single, consistent narrative about the HSP was evident: the ongoing deterioration in the ecological health and economic viability of Commonwealth fisheries in South-east of Australia set the stage for the HSP. Almost all interviewees identified that there was a momentum for change underpinned by legislation setting precedents for assessments of fish stocks. In turn, those assessments provided evidence of declining fish stocks, poor economic performance of some Commonwealth fisheries and the failure of fisheries policy and management to adequately address those problems, and led to increased resolve by key actors to use more contemporary scientific frameworks as decision support systems for setting total allowable catches.

Summary

The HSP was created to help improve the performance and management of Commonwealth Fisheries by instituting a more consistent regime for making decisions about monitoring and assessing fisheries conditions and rules for fishing activities. Interviewees consistently identified ENGOs as having a high degree of influence on what was decided (e.g. seeking to maximise ecological protection generally, tightening bycatch reduction specifications) [Refer Table 23]. Not all interviewees felt the extent of ENGO influence was appropriate, but there was support for engaging the ENGOs in formal processes which might avoid public campaign style approaches.

Table 23. Interviewees' views on social acceptability's influence on the Commonwealth Harvest Strategy Policy

Interviewees' views on ...	SW MPA	Cwth HSP	NSW Buyback	Mako shark
Extent that social acceptability (***general public's judgements***) influenced the RAD	Some influence	Little consequence to some influence	Some influence	Little consequence
Extent that social acceptability (***interest group judgements***) influenced the RAD	High influence	High influence	Critical to decision	Critical to decision
Extent that social acceptability (***decision makers***) influenced the RAD	Critical to decision	Critical to decision	Critical to decision	High influence

General public opinion was not seen to be directly very influential, but some interviewees thought that assessments of public opinion set the wider context for decisions - primarily by the Environment Minister. In this case it was believed the Minister held the view that the public had become more committed to the values of marine ecosystems and more concerned about the threats of overfishing to those values. Consistent with the perceived Minister's judgement of the tide of public opinion, many interviewees thought that the momentum for change had been building for some time. Now there were a sufficient number of people in the fisheries management policy network who agreed there was a problem (economic and environmental weaknesses in parts of the wild-catch sector) that needed addressing and the presence of appropriate scientific frameworks enabling them to develop a strategy to do that.

The HSP appears to be different to the other three resource access decisions examined, in that there were few interviewees who were highly critical of the decision. Some interviewees felt there were problematic factors shaping the decision that included:

- People's conflicting values and beliefs about the importance of conservation slowing progress towards fisheries reform;
- An historic lack of inter-agency cooperation between fisheries and conservation porfolios;
- The challenges of implementing the HSP across varied fishery situations; and
- Some fishing industry resistance to aspects of the HSP - and other similar attempts at policy reform – mandating reduced fishing effort/restricted fishing conditions.

Overall, however, there were strongly positive judgements about the quality of the evidence base for the HSP, its procedural fairness, its consistency with fisheries management and marine conservation goals, and its projected social, economic, and environmental outcomes. The HSP case

pointed to strong consensus built up over time among decision makers, interest groups, fishing industry leaders that improved fishing industry viability required some reduction in/conditions on its access to fisheries resources.

The NSW Buyback

Fisheries resource allocation is a complex and challenging task for governments. Since the early 1990s, the NSW Government has sought to define and implement a resource sharing regime that would provide a secure property right across all fisheries (Stevens et al. 2012). The NSW Government has also been under increasing pressure to review the balance of resource access between the commercial and recreational fishing sectors. By the early 2000s, a recreational fishing license had been introduced, several Recreational Fishing Havens (RFH) declared where commercial fishing is prohibited, and a selective buyout of commercial fishing licenses implemented. A more detailed description of this process is provided in Appendix 9.

Interviewees views on the influence of interest groups, public opinion, and the media

There tended to be a single narrative among the interviewees when responding to the interview questions: "how important were interest groups in influencing the decision"; "how important was public opinion in influencing the decision"; and "what role did the (traditional, social) media play in influencing the decision?".

Most interviewees thought the recreational fishers had far more influence in the Buyback process in NSW than the wild-catch Industry. Most interviewees talked about the effectiveness of recreational fishing lobby campaigns for increased recreational fishing areas and reduced commercial fishing areas – using high profile local politicians, television personalities (e.g. Rex Hunt) to bring attention to their cause. Fishing clubs also rallied their members to send in submissions to government in favour of having more places to fish recreationally and less commercial fishing. A key factor in the success of the recreational fishers has been their ability to access and influence decision makers. For example, an informant believed the recreational fishing lobby had direct access to the Fisheries Minister(s) and the Fisheries Department, enabling them to negotiate how the license fees would be used to fund the RFHs and recreational fishing management and research activities prior to the final decision becoming 'public'.

Interviewees' beliefs about how public opinion influenced the Buyback decision were more varied. One informant thought that 'public opinion' had little influence on the decision, as most people were not interested in or concerned by competition for fish stocks between the recreational and commercial fishing sectors. Others noted that public opinion is something that is largely shaped by interest groups like recreational fishers. As explained above, the recreational fishers lobbied the Minister and the Department to increase areas for recreational fishing and reduce commercial fishing places. Our informants also indicated that the Minister was concerned by all the letters coming into his office suggesting there was widespread public support for recreational fishing. Another interviewee thought that 'public opinion' about commercial fishing in NSW was shaped in part by people seeing local fishers behaving badly and then thinking that commercial fishing should be reduced. There was general consensus among interviewees that during the period this issue was framed and settled that more traditional media tools were employed by the recreational fishers and that social media had not yet emerged and was therefore, not relevant.

Interviewees views on the influence of other factors

The following is an analysis of the two major story lines underpinning interviewees' responses to the interview question, "what factors do you believe influenced that decision being made?". These narratives were relatively similar but there were subtle differences in the emphasis on some factors. A full list of the individual factors identified by the interviewees is shown in Appendix 9.

Seeking policy and management reform

In this narrative, interviewees tended to talk about a 'rational' process that evolved from gradual (if not a bit too slow) recognition by successive NSW Governments of complex and parallel problems that needed resolution. Commercial fishing in many inshore fisheries was thought to be increasingly unviable (economically, environmentally, and socially). There were reports of historic resistance to the idea of introducing a recreational fishing license (freshwater and saltwater). The policy solution eventually selected (through a strong push from "the Government", "the Department", "recreational fishing associations", and/or "the Minister") of inshore recreational fishing licences seemed to solve the key issues. For example, there would be additional areas for recreational fishers to offset the licence fee; license fees would generate funds for the selective buyout of low productivity commercial fishing (particularly in areas where there had been intense competition for resources); and there was to be more active management of recreational fishing.

'P' is for politics and power

These interviewees largely framed the NSW Buyout in terms of people and organisations using their influence to achieve their (often political) goals. The mid-1990s change of government brought in a new force that would eventually favour recreational fishing interests ahead of commercial fishing and remove commercial fishing in estuarine fisheries. This regime, headed by the then Fisheries Minister, wanted to use market-based fisheries management instruments and establish recreational fishing licensing system. The Government and the Minister were seen to be overly responsive to recreational fishing groups who stood to benefit the most from the decision (receive funds to support recreational fishing management and have more areas in which to fish), and dismissed information that countered their preferences in any way.

Summary

Deciding how to allocate fisheries resources between different users – especially the wild-catch commercial and recreational fishing sectors – is an extremely important and challenging issue. In NSW, fisheries policy-makers, managers, and stakeholders have recently renewed their efforts to formulate and implement an appropriate resource sharing regime.

Most of the interviewees focused on what they saw as the considerable influence recreational fishing groups and the NSW State Government had in this process [Refer Table 24]. They perceived these people had shared strong judgements about the unsustainability of the NSW wild-catch sector, which helped them negotiate a mutually-agreed outcome. Some interviewees felt that decision unduly favoured recreational fishing over wild-catch commercial fishing. Interviewees tended to think that 'public opinion' (in support of recreational fishing) had some influence on the process through representations by recreational fishing groups in the media.

Table 24. Interviewees views on social acceptability's influence on the NSW Buyback

Interviewees' views on ...	SW MPA	Cwth HSP	NSW Buyback	Mako shark
Extent that social acceptability (***general public's judgements***) influenced the RAD	Some influence	Little consequence to some influence	Some influence	Little consequence
Extent that social acceptability (***interest group judgements***) influenced the RAD	High influence	High influence	Critical to decision	Critical to decision
Extent that social acceptability (***decision makers***) influenced the RAD	Critical to decision	Critical to decision	Critical to decision	High influence

There were concerns among some of the interviewees about the quality of the decision process (see Appendix 9), which included:

- A lack of adequate evidence that the wild-catch sector was economically weak or environmentally damaging but decisions were made anyway to reduce their resource access; and
- Insincere and tardy consultation with the wild-catch sector to better assess their practices and effects from reducing their resource access.

There were also perceptions that while the decision had some negative impacts on the wild-catch sector and unintended environmental consequences (i.e. relocation of fishing effort), it was a rational decision that had evolved in response to a longstanding problem.

The NSW Buyback case illustrates how successive NSW government regimes' ambitions for (albeit different approaches to) fisheries management reform were amplified by recreational fishing interest group campaigns. In addition to a host of other factors, the judgements by both these stakeholder groups contributed significantly to the eventual decision to restrict the wild-catch sector's resource access.

Amendment to the Mako Shark EPBC Act Listing

As signatory to the Bonn Convention, the listing of the Mako (longfin and shortfin, and the porbeagle) sharks in 2010 triggered Australia's EPBC Act provision, which correspondingly listed the species as migratory and made it illegal to harm or trade them. That listing was amended in 2010 by removing the EPBC Act's offence provision. This meant that recreational fishing of the species was allowed. A more detailed chronology of this decision process is listed in Appendix 10.

Interviewees' views on the influence of interest groups, public opinion, and the media

There was a single and consistent narrative among the interviewees when responding to the interview questions: "how important were interest groups in influencing the decision"; "how important was public opinion in influencing the decision"; and "what role did the (traditional, social) media play in influencing the decision?".

Interviewees saw recreational fishing associations and the peak body as the most relevant interest groups in this decision case. These organisations wanted to be able to fish for Mako sharks and for the Government to explain why the Mako shark was listed as migratory. Not satisfied with the

reasons given, the recreational fishing associations (particularly game fishers) waged campaigns in three states to reverse the decision to list the species as migratory. Key activists in these campaigns used high profile politicians to represent their cause to the (federal and state) governments. The activists also targeted 'the public' (especially the fishing public) inviting people to attend public protests, and write letters to their local media and local and federal officials expressing their unhappiness with the migratory listing. The social media was not thought to be an important tool used in these campaigns; rather the traditional media was more important. The campaign relied on coverage in local newspapers, television and radio to disseminate stories and images of mass resistance to the Mako shark's listing.

There were two main narratives about how public opinion influences decisions generally and the Mako shark listing decision in particular. The first focused on how 'public opinion' is not something that interest groups totally represent. At the most they may represent parts of 'the public' – in this case the recreational and game fishers who did not want to lose access to fishing these sharks . A number of interviewees felt that most of the public were not concerned about the Mako shark listing in particular and are apathetic about fisheries management generally. They believed that interest groups are generally able to influence decisions by claiming how large their support base is. The second narrative is that in this case fisheries officials (public servants, politicians) were typically very reactive. Interviewees said that politicians and agency staff were sufficiently worried enough about how many people were supporting the recreational fishing groups' campaign, particularly in marginal electorates, to amend the listing to allow recreational fishers to catch Mako sharks.

Interviewees' views on other influencing factors

The following is an analysis of the major story lines underpinning interviewees' responses to the interview question, "what factors do you believe influenced that decision being made?". The narratives were similar in terms of their complexity, but there were subtle differences in the emphasis on certain influencing factors. A full list of the individual factors identified by the interviewees is shown in Appendix 10.

Need for greater attention to the likelihood that resource access decisions will lead to 'pushback'

This narrative was largely about the Federal and Victorian governments failing to appreciate the type and degree of 'pushback' there would be once the Mako shark was listed as migratory under the EPBC Act and could no longer be fished. This failure reflected insufficient attention to stakeholders' values, at least partly due to inadequate consultation between the different jurisdictions and government portfolios. Indeed, the vigorous and sustained resistance to the listing by the recreational fishing lobby caught numerous government officials off guard.

International precedents & science trumped by public concern

While the scientific evidence of Mako shark declines in places overseas was strong, that did not necessarily translate well to the Australian context. Interviewees talked about how in the absence of definitive data on the status of Mako Sharks in Australian waters, decision makers adopted a precautionary approach and listed Makos as migratory, which afforded them protected status. In the end, this precautionary approach did not appear to stand up to the pressure recreational fishing groups were putting on Federal and State agencies and politicians to allow them to fish the species. These groups criticised the precautionary approach. Interviewees believed that in an election year,

the pressure from interest groups in marginal seats to allow the Makos to be recreationally fished was seen by decision makers to be too great to *not* amend the listing by removing the offence provision.

There was intra and intergovernmental cooperation

In contrast to the narratives above, there was a theme about a kind of 'silver lining' to the fraught cloud of stakeholder opposition to the Mako shark listing. Some informants thought that the Government (federal, states) was working hard to balance the competing interests of recreational and conservation groups. Examples were given of good governance (use of a Working Group to manage the initial listing and eventual amendment) and improved relationships between agencies, which were able to establish more constructive patterns of communicating.

Summary

The Australian Government's decision to list the Mako shark as migratory was eventually amended to allow recreational fishers to take the species. Interviewees thought this decision was very strongly influenced by the recreational fishing associations and peak bodies who waged high profile public campaigns against the listing, which would enable them to fish this species [Refer Table 25]. Those campaigns included extensive coverage by the traditional media (rather than social media) and persuaded elected officials that there were a lot of people (i.e. the public) who thought that recreational fishing of this species should be allowed. Part of their argument was predicated on the view that recreational fishing had minimal impacts on Mako shark populations, and that it was unfair that the wild-catch sector could continue to take the species – given that it had a higher impact. Interviewees tended to think that public opinion did not have much influence on the decision, because they thought that the public was apathetic about the issue or that interest groups only represented parts of the wider community. Other key factors influencing the decision included international policy commitments to conserving migratory species, national conservation legislation features such as automatic species listing provisions, and disputed evidence that the Mako shark's conservation status in Southern Hemisphere/Australian waters warranted its protection (and protection via a mechanism like being listed as migratory).

Table 25. Interviewees' views on social acceptability's influence on the Mako Shark EPBC listing amendment

Interviewees' views on ...	SW MPA	Cwth HSP	NSW Buyback	**Mako shark**
Extent that social acceptability (***general public's judgements***) influenced the RAD	Some influence	Little consequence to some influence	Some influence	Little consequence
Extent that social acceptability (***interest group judgements***) influenced the RAD	High influence	High influence	Critical to decision	Critical to decision
Extent that social acceptability (***decision makers***) influenced the RAD	Critical to decision	Critical to decision	Critical to decision	High influence

There were concerns about the quality of the decision to remove the offense provision of the Mako shark's migratory listing (see Appendix 10). Some interviewees felt that decision makers failed to:

- Recognise how much controversy could be generated by listing the species as migratory – and thereby prohibiting recreational fishers taking the sharks;

- Realise how the automatic listing mechanism contributed to stakeholder conflict – given the assumption that its mandate meant that widespread consultation could be foregone.

In contrast, other interviewees felt that the Federal and State governments had worked hard to balance competing interests (conservation groups in favour of the migratory listing, recreational fishing groups not in favour of the listing) and improved their inter-governmental relations during the process.

The Mako shark decision case illustrates that while the wild-catch sector's access to this species remained largely unchanged (prohibited unless caught as bycatch), other interest groups were able to improve their access to the species – in part by arguing that they had less of an impact on this species than that of the wild-catch commercial sector.

Improving industry responses to social acceptability issues

As discussed earlier, interviewees were asked to discuss recent negative public portrayals of the wild-catch commercial fishing industry. The 'super trawler' was most commonly discussed issue. Interviewees were also asked, "how do you think the sector/fishery responded to that issue" and "could they have done anything differently?". The following material is an analysis of the key narratives emerging from the interviewees' recollections of the wild-catch industry's response to the 'super trawler issue'.

We didn't go well and need to be better campaigners

There was a discernible recognition that the fishing industry needed to take responsibility for some of its inappropriate responses to the trawler issue. These included how some in the fishing industry tried to "... keep our heads down..." and not get involved and wait for it all to go away; how Seafish Tasmania (and the industry overall) failed to use available information to win public support for the trawler; and generally presenting a divided front to the community on the matter. These interviewees believed that the solutions lay primarily in conducting a campaign - "... educating the public" about a range of historic and scientific reasons for the trawler initially being approved; using more media savvy industry representatives; and that 'the government' and the fishing industry share the responsibility for using these techniques.

We/the proponent went well but do need to be better campaigners/marketers

Several interviewees talked about Seafish Tasmania having followed all the formal protocols and legal requirements to be able to operate the Abel Tasman in Australian waters. These steps included trying to engage interested parties, which one interviewee believed was what "... set off the public campaign ..." against the vessel. The company – and to some extent the industry as a whole – were "overwhelmed" or "outplayed" by those opposing the trawler. Interviewees believed the solution to this kind of problem was to invest in better lobbying of government and more cohesive industry campaigns to change mistaken public perceptions; government choosing to stick with its original decision to allow the trawler; and industry and the Government needing to tell people earlier that the trawler was coming.

We didn't go well and need to be more reflective & proactive

This narrative also contains criticisms of fishing industry responses to the trawler controversy, but the proposed solutions were about deeper change than in the two earlier narratives. Interviewees expressed concern that too many in the Industry acted out of self-interest (opposing the trawler, not

saying anything in public) rather than publicly supporting the trawler and/or industry as a whole. There was also the view that the controversy should never have reached the crescendo that it did. Some interviewees felt that it might not have had people recognised much earlier that having a host of technical and legal reasons to allow that vessel to operate in Australia's waters did not equate with having widespread stakeholder and public support. Public controversies in other primary industries were cited as examples of not paying attention to an industry's social license to operate. There was a perceived need for the authorities and the trawler owner to have engaged with a range of stakeholders and community well before the trawler applied to come to Australia.

Interviewees also noted that more people in the Industry should be proactive in driving sustainable regulations rather than waiting for government to push them into compliance. One example was embracing the scientific principles underpinning tools like the HSP. There was also the view that the Industry needs to seek out more (and more constructive) dialogues with ENGOs and other interest groups, as well as use decisive leadership and peer pressure to continue changing industry norms to ones that favour greater environmental stewardship. It was believed that neither governments nor industry could afford to "rest on the laurels" of positive carrots like the Marine Stewardship Council certification program, as these were not seen as sufficient to guarantee long-term public support or changed industry practices. Finally, the narrative also suggested government needed to be more transparent with stakeholders and the wider community about how its fisheries assessment processes work.

Summary

These three narratives illustrate how our key informants thought the wild-catch commercial fishing industry (and government) could improve its responses to high profile controversies like the "super trawler". Firstly, some interviewees were more or less willing to see how their actions may have contributed to what went wrong in cases like the 'super trawler'. Where interviewees felt that they (or the fishing industry) did the best they could in the 'super trawler' issue, their preferred strategy for the sector or for government was to do more of what has been done before (i.e. increase our efforts to correct 'mistaken' views of people and groups that criticise the wild-catch sector/government). While some interviewees felt that the Industry could have done better, they were thinking about the Industry's capacity to market itself more effectively. So, this logic still led them down the path of trying to find more, but also better ways to "campaign" against 'mis-perceptions' of the wild-catch sector (and to a lesser degree the Government). However, some interviewees who felt that the Industry (and/or government) could have done better were focused on markedly different behaviours. These interviewees wanted to see the wild-catch sector and governments be more proactive and implement more substantive change. They were essentially calling for people to ask not just "are we doing the right things", but "why are we doing them and on what basis are we deciding what is 'right'".

Discussion

Let's Talk Fish Objective 1

Obtain comprehensive and reliable knowledge about the basis for people's (decision-makers, interest groups, general public) attitudes and behaviours towards the sustainability of wild catch fishing (and other primary) industries and the extent to which social acceptability influences resource access decisions.

The Let's Talk Fish Project mail survey generated valuable information for the wild-catch commercial fishing industry (and for decision makers) about some of the individual psychological factors influencing the general public's negative and positive judgements about the Industry. The survey was constructed using the VBN Theory (Stern et al 1999; Stern 2000), which holds that peoples' attitudes (and eventual behaviour) are based on their deeply held values (what is most important to them), which informs their beliefs (what they think is true) about the Industry and their personal norms (what they feel obligated to do). Their attitudes (and eventual) behaviours will also be shaped by other factors, including their risk perceptions and how much trust they have in individuals, organisations and institutions. The Let's Talk Fish mail survey data showed that low social acceptability ratings were linked to respondents who:

- Held stronger environmental values;
- Had more concern about overfishing and government's ability to regulate against overfishing;
- Believed that the Industry does have negative impacts on marine habitats, marine animals, recreational fishing, and future availability of seafood species;
- Believed that government regulations do help reduce the environmental effects of overfishing and improve industry viability
- Expressed their sense of obligation to support marine habitat protection;
- Expressed low levels of trust in the Industry; and
- Mistrusted governments' willingness to be transparent about resource access decisions.

Our research audit and stakeholder interviews generated knowledge about how resource access decisions are influenced by a range of environmental, economic, political, and social factors – not simply social acceptability. Public acceptance is important, however, influential individuals and groups *interpreting* the magnitude and significance of those views and then recommending a particular course of action have a more direct role in shaping decisions about resource access. The case studies illustrated how lower levels of social acceptability can contribute to instances where particular fishing businesses and/or fisheries will have their access to fish stocks reduced. These results indicate that industry or government investment in communication strategies that are limited to providing people with information claiming the industry is 'OK', or telling stakeholders that the industry is sustainable, is unlikely to be effective on their own. The fishing industry (and to a lesser degree decision makers) need approaches that demonstrate their trustworthiness. This requires more targeted, interactive, and reciprocal dialogues with influential people and groups.

Let's Talk Fish Objective 2

Use interactive processes to share that information with the project's primary audience (government decision makers (fisheries managers), fishing industry leaders, and the fisheries research/extension community) and help build industry capacity to: identify and understand the values, beliefs, attitudes and

actions of the general public and other stakeholders; and select topics and identify strategies that will enable more effective engagement with those audiences.

The Let's Talk Fish Project's participative approach has helped ensure that the research approach addressed industry and government stakeholder needs and that the results and key findings were disseminated to the primary audience – both of which should increase the likelihood that the information will be used.

The Project Steering Committee included members of the Industry, government agency staff, ENGO, and the FRDC. Engagement with the Committee included:

- One face-to-face meeting in Canberra at the beginning of the Project (18 October, 2012) to provide the Committee with an introduction to the Project and a summary of findings from the Scoping Interviews, and to consult with them on the Project's design and implementation;
- Consultation via email on the format and content of the mail survey drafts;
- Teleconference and in-person meeting on 23 September, 2013 to consult on the Project's preliminary findings and the Workshop to be held at the Seafood Directions 2013 Conference;
- Consultation via email on draft versions of the Engagement Strategy Foundations document; and
- Opportunities to comment on the Draft Final Report.

Committee feedback included valuable insights on project design and implementation, and dissemination of outcomes.

We have received substantive input on social acceptability issues and its influences from a range of stakeholders. That input occurred through our data collection phase (scoping and stakeholder interview processes), regular communications with our Steering Committee, numerous informal conversations with attendees of the Seafood Directions 2013 Conference and the 2013 Annual General Meeting of the Women's Industry Network Seafood Community (WINSC), and during and after our Let's Talk Fish workshop at the Seafood Directions Conference.

The purpose of the Let's Talk Fish workshop at Seafood Directions was to consult with members of the Industry and other stakeholders about the implications of our research findings, including how the sector could improve engagement with the wider public and its stakeholders. The workshop was held on 29 Oct from 9:00 – 11:00am, the day after the Let's Talk Fish Project Team presented the overall findings to conference participants. The workshop was attended by 15 people with a good representation of people from the fishing industry, government, and the research/extension sectors. The compact size of the group enabled in-depth conversations, with everyone having the opportunity to express their views. Mean ratings from the workshop evaluations suggested that participants were satisfied with having the opportunity to express their views and learn more about the Let's Talk Fish project findings, although there was some initial confusion about what the Project Team expected from them.

Dr. Mazur was also invited to attend the WINSC meeting held the day before the Seafood Directions Conference. Dr. Mazur presented the Let's Talk Fish findings to the WINSC at their meeting dinner on 26th October and then met informally with the group the next morning (27th Oct) to discuss the

findings. During these sessions it was readily apparent that some fishers have been experiencing considerable anger and grief over what they see as unfair judgements and decisions being made about their industry. This is of concern, because if these states of mind are being experienced widely across the Industry, they are likely to inhibit achievement of individual and industry goals.

Dr. Mazur was invited to attend and presented the Project's findings at the Trans-Tasman Salmon Industry Workshop on Community Perceptions and Engagement (held in Hobart at the University of Tasmania, 3-7 February, 2014). Dr. Mazur and Mr. Bodsworth were also invited to attend and presented the Project's findings at the FRDC's Strategic Projects Workshop in Canberra on 17-18 February.

At all these meetings, there has been considerable interest in the Project's findings. In addition, the Let's Talk Fish Project's Executive Summary and Engagement Strategy Foundations will be important tools for disseminating the learnings from this research and how best to engage diverse audiences.

Let's Talk Fish Objective 3

Review current benchmarks of the social acceptance of wild-catch commercial fishing with a view to revising existing and/or identifying new indicators for widespread use in future time series comparisons.

We developed (and pre-tested) a set of survey items to measure social acceptability of the Industry amongst the Australian public. The development process drew on a review of literature on social acceptability in natural resource management, attitudes to commercial fishing, and recent surveys undertaken by FRDC-funded projects. The key measures of social acceptability used in the mail survey were as follows:

- A statement in which respondents were asked to rate their level of agreement (from 1 (totally disagree) – 5 (totally agree): *The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits*
- A set of four statements (including the statement above) from which respondents were asked to select one that best matched their views:
    1. The commercial fishing industry in Australia should be able to operate under existing rules with full discretion given to fishers to fish as they see fit.
    2. The commercial fishing industry in Australia should be able to continue to operate under existing rules, but with increased monitoring to ensure compliance with rules to minimise the environmental costs of fishing.
    3. Existing rules governing the commercial fishing industry in Australia are inadequate and need to be changed to further minimise the environmental costs of fishing.
    4. The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits.

The use of both of these measures was identified as an effective way to measure social acceptability, because they generated consistent responses, high response rates (98% and 97%, respectively) and were correlated with other topics as expected (e.g. environmental values).

Conclusion

The Let's Talk Fish project was implemented in order to generate greater knowledge for the wild-catch commercial fishing industry and decision makers about the degree and drivers of the Industry's social acceptability and to what extent those judgements influence resource access decisions, enhance the value of current and future industry and government communications approaches, and possibly improve existing social acceptability benchmarks for the Industry.

Key values, beliefs, norms and other factors influencing social acceptability of the wild-catch commercial fishing industry

The Let's Talk Fish Project generated valuable knowledge about both the current degree of social acceptability, as well as some key psychological components driving those judgements. The mail survey data showed that there are high levels of social acceptability for the Industry amongst the general public. However, that approval was conditional upon respondents thinking that the sector was being effectively regulated and that it could clearly demonstrate its environmental stewardship.

The nature and degree of social acceptability was informed by certain key values, beliefs, personal norms, attitudes, levels of trust, and risk perceptions. Mail survey respondents consistently prioritised environmental protection over fishing industry livelihoods. Not surprisingly, strongly negative judgements were linked to stronger environmental values and beliefs about the need to reduce the industry's environmental impacts and to do so in part through government regulations. More accepting attitudes towards the industry were linked to trust that the industry would work to sustain future fish stocks and protect marine animals from harm. However, most survey respondents had low trust in the industry and doubted its trustworthiness.

Social acceptability's influence on fisheries resource access decisions

Social acceptability is something that is:

> *... made up of dynamic (changeable) judgements, which are held by identifiable parts of society. People make judgements about how the Industry's activities compare to some desired alternatives/operations. These judgements exist at different degrees of approval and can influence the quality of relationships between relevant people with (direct and indirect) interest(s) in the Industry.*

While the mail survey data provided some insights on judgements of approval from the wider public, the interview data confirmed that social acceptability is one of multiple, interacting factors that will influence specific resource access decision outcomes, as well as more general resource access security for wild-catch fisheries. In the cases examined, interest groups, decision makers and the fishing industry all sought to understand how and to what extent 'public opinion' was aligned with their respective interests and then use that information to try to further their interests. The Let's Talk Fish Project found that it was influential to people's *assessments* of the popularity (and sometimes to a lesser degree the substance) of that public opinion that has shaped resource access decisions. In most of the cases examined, negative social acceptability judgements of different degrees of intensity (i.e. the wild-catch commercial fishing industry is less than sustainable) seemed to contribute to decision outcomes that resulted in some level of reduced access for different parts of the sector.

Myth de-bunking and other strategies to help improve the wild-catch commercial fishing industry's social acceptability

Social acceptability is one of several important factors for the wild-catch commercial fishing industry's long-term viability. Currently, there seems to be widespread public approval of having the Industry – as long as it operates according to (or even exceeding) best environmental practice and regulations. The opinions of well-organised interest groups are similar, but have been far more influential in directly shaping resource access decisions and therefore warrant far more of the sector's attention. The Let's Talk Fish Project has produced Engagement Strategy Foundations for the Wild-Harvest Professional Fishing Industry (Mazur et al. 2013), which includes eight major recommendations for how the sector's social acceptability can be improved [Refer Table 26].

Table 26. Eight foundations for a wild-catch commercial fishing industry engagement strategy

8 Foundations	Summary
Move beyond communication to engagement	Improving social acceptability of the Industry will require more than simply providing people with information about the industry. Engagement should be about building more trust with key stakeholders.
Formulate positive vision(s) for the future	Addressing problems is important for the Industry, but not at the cost of envisioning long term and positive goals that are aligned with public aspirations for a sustainable fishing industry.
Prioritise building relationships with stakeholders over expensive public information wars	Increased trust in the Industry will come more from improving relationships with influential stakeholders than with broad communications strategies seeking to assert a 'correct' view about the Industry
Selectively communicate with the public	Where finite resources permit and there is demonstrable public interest, key communications messages should focus on the trustworthiness of the Industry
Improve understanding and manage expectations of the policy process	Improved industry awareness and understanding of policy processes is required to improve industry's ability to influence decision making.
Engage internally to help people move on.	Industry members feeling aggrieved by regulatory reform need support to find ways to move beyond anger, in order to achieve personal and industry-wide goals.
Continue to build capacity for engagement and seek professional assistance	Continue funding initiatives to build the capacity of Industrymembers to engage with their respective stakeholders and communities. Commission professional assistance to further develop a sector-wide and/or smaller scale Engagement Strategy(ies)
Identify roles and responsibilities for industry engagement	Any engagement strategy (at national, regional, or local scales) needs to be fishing industry driven with clear roles and responsibilities identified.

Where finite resources permit and there is strong evidence of public interest, there are some key messages that can be used in various industry public and community communications materials to counteract some of the more commonly held 'myths' about the Industry's practices (see the Box below). These messages target improving public (and stakeholder, interest group) assessments of the trustworthiness of the wild catch industry – that is, that the Industry has the ability and motivation to act in the public (not just private) interest, provides society with demonstrable benefits, and shares (at least some of) its environmental values and beliefs. For example, the mail survey data suggests that the general public will prefer imports from places where food safety and

environmental standards were not as well demonstrated, expect compliance with fisheries regulations to be enforced more effectively, and agreed that more science is needed to better understand the environmental impacts of both commercial and recreational fishing. Since trust is a key component of social acceptability, over time improved public trust will provide a better 'buffer' for the industry when unexpected controversy arises.

Key messages for communications with the public about the WHPF Industry

- The Industry has a long term commitment to the sustainability of fish stocks
- The Industry is motivated to 'move beyond compliance' with environmental regulations
- The Industry readily adopts and helps continue to refine and develop methods to reduce by-catch
- The Industry readily adopts best-practice to ensure fresh, healthy seafood for Australian consumers
- The Industry is taking steps to correct inappropriate behaviour by some fishers

It is clear that some resource access decisions have had detrimental effects on fishing industry members. Those effects need to be genuinely acknowledged by people outside the fishing community and appropriate support put in place to help people overcome negative impacts of those decision. In addition, the Industry needs to find ways to move beyond those painful outcomes to be able to build more trusting relationships with interest groups and decision makers alike. Such an engagement approach will take time and patience, but without it the sector cannot hope to achieve many of its goals, such as economic prosperity and a durable social license to operate.

Implications

The Let's Talk Fish Project has a wide target audience. The Project's Extension Plan (see the Extension and Adoption Chapter below) was designed to engage directly with a selection of key stakeholders (fishing industry representatives, government decision-makers, and interest group leaders), as well as indirectly with the remaining key stakeholders and a wider audience of people and groups with an interest in wild-catch commercial fishing. The following outlines the impacts of the Let's Talk Fish Project outcomes [refer Table 27] on key end-users: the wild-catch commercial fishing industry (pre-harvest), government fisheries policy makers and managers, and fisheries (social, biological) researchers and extension providers.

Table 27. Let's Talk Fish Project outcomes

Let's Talk Fish project objectives	Outcomes achieved	Stakeholders impacted
Objective 1. Obtain comprehensive & reliable knowledge re: social acceptability basis & how social acceptability influences resource access	Sound evidence for the (conditional) social acceptability of the wild-catch commercial fishing industry (the Industry)	Wild-catch sector - Knowledge should motivate the industry to take action to increase public trust Decision makers - Additional knowledge that informs their decisions about how to support the industry
	Sound evidence for key psycho-sociological factors (certain values, beliefs, norms, trust, risk perceptions) influencing social acceptability of the Industry	Wild-catch sector - Knowledge should provide insights that enable the industry to take action to increase public trust Research/extension community - Valid and reliable measures of key concepts that can be applied to ensure comparability across research projects
	A coherent and plausible evidence-based narrative about the factors influencing resource access decisions	Wild-catch sector - Increased awareness of policy process, that can inform proactive engagement as well as their response to crises Decision makers - Increased awareness of stakeholder environment, which could lead to improved stakeholder engagement and risk management
	Foundations for an Industry-wide engagement strategy that can guide the Industry and government decision-makers seeking to improve the Sector's social acceptability Key messages about the Industry that can be used for public communications	Wild-catch sector & decision makers - Increased likelihood of implementing strategies that will improve public & stakeholder trust and enable the industry to maintain access to resources in the future. Decision makers - Increased industry capacity to articulate and represent their interests; a more viable industry less likely to be dependent on government.
Objective 2. Interactive processes to share knowledge and offer new strategies	Increased awareness among the Project's key industry target audience of the drivers and influences of social acceptability in government resource access decisions.	Wild-catch sector - Potentially greater motivation to identify specific and strategic mechanisms to take up Project recommendations
	Partial commitment among Industry members and decision makers to act on the knowledge generated by the Let's Talk Fish Project	Wild-catch sector & decision makers - As above Researchers/extension community - As above

Objective 3 Potential new benchmarks	Several key benchmark measures of social acceptability and public trust that can be used in further assessments of the industry's status in regard to its social acceptability and opinion polling in relation to the Industry	Wild-catch sector & decision makers - Use of valid and reliable measures lead to greater confidence in evidence base for management and policy decisions. - Valid and reliable measures of key concepts that can be applied to ensure comparability across research projects

Wild-catch commercial fishing industry (pre-harvest)

Impacts on industry morale

The Let's Talk Fish Project has generated critically important knowledge and awareness that the wild-catch sector enjoys a relatively high degree of social acceptability among members of the general public. However, that approval is conditional upon people feeling reassured that the industry is trustworthy: it has the ability and motivation to protect ecological values in the marine environment. The Project findings suggest that many members of the public do not entirely trust the industry, and that interest groups will draw on these concerns to further their respective causes.

These findings are not entirely pleasant for members of the fishing industry to hear. Particularly because they come at a time when there is already considerable anger and grief among industry members over negative impacts that resulted from some fisheries reform and public controversies about the wild-catch sector. The Let's Talk Fish findings may trigger a renewed sense among the fishing community that the industry is being marginalised, which could manifest in further grief or anger.

As noted in the Let's Talk Fish Project Engagement Strategy Foundations (see Appendix 11), where these states of mind are being experienced, they are likely to inhibit achievement of individual, association, and industry-scale goals. It remains important to find ways to meaningfully acknowledge people's feelings in order to then support them to 'move on'. In the case of the Let's Talk Fish Project results – 'moving on' may partly be about helping people to see the good news findings in the Project (i.e. high degree of social acceptability, preference for Australian seafood, etc.) and the value of the Engagement Strategy for helping the sector to forge improved relations with decision makers, interest groups, and their respective regional/local communities.

This is not to suggest that doing so is not without its difficulties and costs. The wild-catch commercial sector is a relatively small industry, and has had difficulties in influencing decision outcomes in their favour. Additionally, The Let's Talk Fish Project does recommend in the Engagement Strategy that the wild-catch sector may need to consult with rural health experts to address low morale in different fisheries, as well as with community engagement professionals in designing and implementing strategies for improving relationships with stakeholders. Both of these strategies will have some financial costs associated with them. Nonetheless, the Project's recommendations should contribute to better outcomes in the future: improved health and industry viability (incomes, jobs) and access for Australian consumers to healthy products.

Staying focused

The Let's Talk Fish Project has primarily focused on the relationships between social acceptability and outcomes of resource access decisions for the wild-catch commercial fishing industry. Consequently, our conclusions, recommendations, and Engagement Strategy place priority on the

wild-catch sector finding ways to more effectively engage with relevant interest groups and decision makers who have the most direct influence on resource access decision processes and outcomes. This emphasis differs in important ways from improving social acceptability for the wild-catch sector more generally. As noted in our Recommendations and the Engagement Strategy, thinking about improving the sector's social acceptability for its own sake is not a sufficiently specific goal. If taken up by the sector – it could encourage investment in costly and ineffective information wars aimed at a highly diffuse target ('the' general public), and which in other contexts has been shown to lower a proponent's credibility.

Fishing industry norms

Social norms are (obvious to subtle) rules of a group, community or culture that people follow, because they see them as acceptable ways to behave. Research has shown that encouraging compliance with (formal and informal) rules can be discouraged when people perceive that the rules are not being enforced and non-compliance is not appropriately punished (Ostrom 2000).

There are risks to the wild-catch commercial fishing industry's social acceptability where inappropriate behaviour by some fishers or fishing businesses is allowed to continue. A few instances of these acts can tarnish the standing of the wider industry, particularly when those behaviours are/can be made so visible through the social media. Members of the fishing industry should move beyond a focus on compliance to a focus on establishing and reinforcing positive social norms that lead to best-practice stewardship (or 'beyond compliance'). This approach will have benefits, including the probability of avoiding time consuming and costly public confrontations with ENGOs.

Industry and decision makers

The Let's Talk Fish Project data shows that the general public and interest groups have strong concerns about the environmental impacts of commercial fishing, believe that government regulations are an important tool to help the industry be sustainable, and have low trust in the industry. Recent discussions at the Seafood Directions 2013 conference about the Federal Government looking to reduce the regulatory burdens on the wild-catch sector bring certain social acceptability risks. The narrative of "streamlining regulations" or "reducing red tape" can easily be misconstrued as government and/or industry looking to weaken the laws that require commercial fishing to be environmentally sustainable. Where governments and the fishing industry are seeking to increase the efficiency of fishing regulations, they will need to take great care to proactively engage with interest groups about their intentions and work within their industries to ensure that positive social norms are reinforced.

Fisheries policy-makers and managers

The Let's Talk Fish Project's outcomes have provided decision makers with insights into the different and sometimes conflicting roles and views of fisheries management stakeholders who are seeking input into resource access decisions. The resource access decision case studies demonstrate how stakeholder conflict and public controversy can be exacerbated when governments wait too long to adequately understand and sincerely acknowledge stakeholders' values and beliefs. While the Engagement Strategy Foundations document has been written primarily for the wild-catch commercial fishing industry, it can also be useful to fisheries policy makers and managers in helping them avoid having their decisions overtaken by highly controversial issues.

The Let's Talk Fish Project has generated knowledge about current levels and drivers of the wild-catch commercial fishing industry's societal acceptance and its indirect effects on resource access decisions. This knowledge will benefit social and biological scientists interested in fisheries and other primary industries that produce high protein foods. The mail survey can be used (as a whole or parts of it) to measure how environmentally, economically, and socially sustainable people find fisheries or other primary industries to be. The interview process can be replicated and/or refined to examine different factors that influence resource management decision contexts.

Recommendations

The Let's Talk Fish Project Team recommends that in order to fully capitalise on the research findings the wild-catch commercial fishing industry and the FRDC undertake to:

1. Move from engagement foundations to detailed strategies

The most appropriate and effective engagement strategies 'walk the talk'. That is, they are developed in close collaboration with the people who are meant to use and benefit from them. The Let's Talk Fish Project has provided an important starting point for such an initiative (Mazur et al 2013). Subsequent iterations of a sector-wide Engagement Strategy would require:

- **Industry-wide collaboration** to help identify 'leaders' to drive an engagement strategy, clarify the key issues of concern (by stakeholder group), identify goals and objectives for the engagement, and undertake planning, implementation and evaluation of any engagement initiatives. This is not to suggest that some or all of the ideas in the Let's Talk Fish Project Engagement Strategy Foundations are only relevant if applied at the industry-wide scale. Individual fishing businesses, regional coalitions of fishing businesses, and/or fisheries could benefit from applying the ideas in the Strategy to their particular situations.
- **Appropriate expertise:** undertaking stakeholder and community engagement is a complex task that necessarily comes with some risks. The Industry would benefit from the support of engagement professionals – as distinct from marketing and communications specialists. Engagement professionals have particular expertise in how to *involve* people in decision making processes and to facilitate reciprocal relationships, while marketing and communications specialists have expertise in crafting and delivering key information messages.

2. Discourage use of the term 'community perceptions'

It is common for members of the fisheries management policy community (decision makers, industry members, others) to refer to 'community perceptions' or 'public perceptions' when talking about the cause of some of the industry's resource access and security challenges. The assumption is that the presence of negative 'perceptions' reduces fisheries access and security.

While the formal definition of the term 'perception' does not necessarily have any negative connotations, people have used it to infer that:

a. Some other individual or group's perspectives are flawed and therefore incorrect in some way; while
b. They themselves do not necessarily have any 'perceptions'.

This way of framing problems for the fishing industry is not helpful, because it increases the 'distance' between people who may in fact need to be more closely engaged in reciprocal relationships. All people, irrespective of their backgrounds and positions in society, will make selective judgements according to their values, beliefs, personal norms, attitudes and a host of situational factors. Most importantly, focusing on trying to prove someone else is 'wrong' rather than on how mutual interests might be identified and met, results in exacerbating conflict and controversy.

We recommend that term 'social acceptability' be employed for all communications (verbal and written), which is something that is:

> *... made up of dynamic (changeable) judgements, which are held by identifiable parts of society. People make judgements about how the Industry's activities compare to some desired alternatives/operations. These judgements exist at different degrees of approval and can influence the quality of relationships between relevant people with (direct and indirect) interest(s) in the Industry.*

This term is more appropriate, because it emphasises that social acceptability is not a static, 'black or white' view, held by some abstract notion of 'the' public. Ultimately, these views can and do inform how people interact with one another. And it is those interactions (relationships) that the wild-catch sector should focus on improving.

3. Regularly track the wild-catch commercial fishing industry's social acceptability

Social acceptability is comprised of changeable judgements made by identifiable parts of society. Therefore, any single survey can only ever measure those views at a given point in time. This information is important, but in order to determine how – if at all – public sentiments are shifting, there is a need to regularly track those views. Longitudinal research is a valuable way to monitor public opinion. Where the focus is on relatively stable constructs, such as values, surveys of the public at intervals of 5 years would be sufficient. The industry (and partners) will also be interested in tracking attitudes to existing and emerging issues and these attitudes are likely to change over shorter time frames and should therefore be addressed using a yearly or biannual survey. The use of reputable polling companies would enable this work to be accomplished at reasonable cost and give credibility to the survey results.

The Let's Talk Fish Project has generated numerous valuable measures that could be used to supplement both regular opinion polls, as well as the more substantive and explanatory social research projects funded by the FRDC. Some of the measures that should be priorities for future data collection are measurements of the social acceptability of the Industry and how much public trust there is in the Industry and in governments managing commercial fisheries [Refer Table 28]. To date, there has been no Australian research measuring the extent of public trust in the Industry or fisheries management agencies.

Table 28. Recommended future measurements of social acceptability and public trust

Topic	Measurement of	Specific survey statement
Social acceptability	Public preferences for having a wild-catch commercial fishing industry	• The Australian wild-catch commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits
	Public preferences for how the wild-catch commercial fishing industry should be managed (*selecting 1 of 4 options)*	• The commercial fishing industry in Australia should be able to operate under existing rules with full discretion given to fishers to fish as they see fit • The commercial fishing industry in Australia should be able to continue to operate under existing rules, but with increased monitoring to ensure compliance with rules to minimise the environmental costs of fishing • Existing rules governing the commercial fishing industry in Australia are inadequate and need to be changed to further minimise the environmental costs of fishing

		• The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits
Trust	Public agreement on how much governments can be relied on to do certain things	• I can rely on Australian governments to manage commercial fisheries so that fish populations are sustained for future generations • I can rely on Australian governments to manage commercial fisheries so that fishing communities remain viable
	Public agreement on how much the wild-catch commercial fishing industry can be relied on to do certain things	• I can rely on the commercial fishing industry to adopt best practice methods that will reduce harm to marine animals and birds • I can rely on the commercial fishing industry to act in ways that will sustain fish populations for future generations
Trustworthiness	Public views about governments' benevolence, abilities, and integrity	• Australian governments keep my interests in mind when making decisions about commercial fishing • Australian governments have a good track record of establishing rules and regulations that prevent overfishing • Australian government decisions to change commercial fishers' access to fishing grounds have been adequately explained to the public
	Public views about the wild-catch commercial fishing industry's benevolence, abilities, and integrity	• The commercial fishing industry keep my interests in mind when catching fish • The commercial fishing industry has a good track record of taking up fishing gear that reduce harm to marine animals and birds • The commercial fishing industry is open and honest about the extent that marine animals and birds are harmed by existing fishing gear

4. Capitalise on investments and wealth of knowledge

Over the last several years the FRDC has commissioned important research and extension projects that have significant implications for the social acceptability (or social license to operate) of the wild-catch commercial industry in particular and for Australia's fishing industry more generally (see Figure 5). These projects have been focused on building the fishing industry's capacity for effective stakeholder and community engagement, long term industry leadership, and adaptation and well-being - all of which are necessary for the industry to improve and maintain public and stakeholder trust and approval. Other projects have developed important tools for and collected data on the fishing industry's social sustainability. This information enables us to measure and track the fishing industry's performance and societal contributions over time.

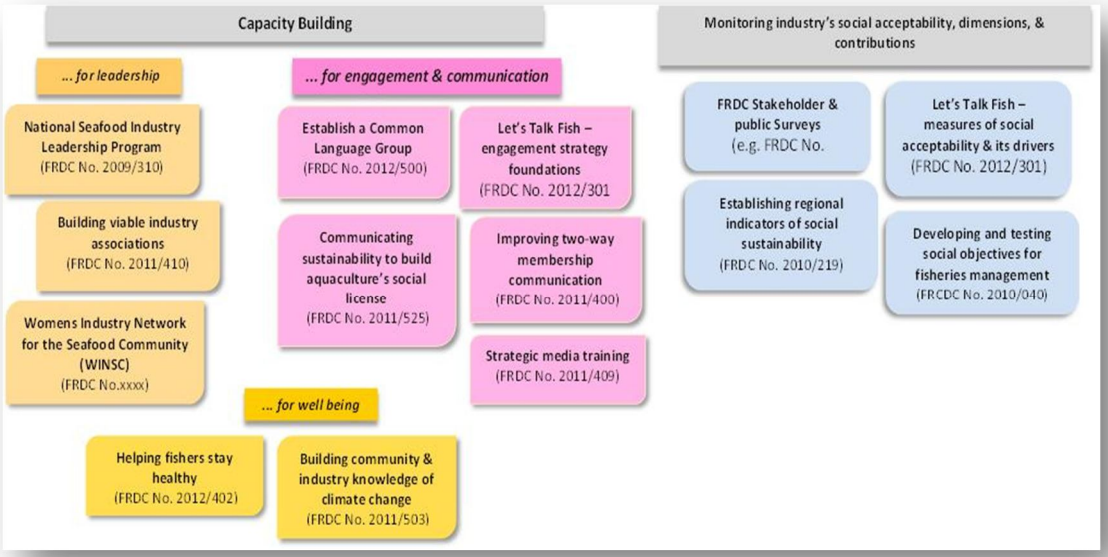


Figure 5. Opportunities to synthesise related FRDC social research projects

There are many synergies among these projects. It would be fruitful to formally synthesise the learnings from these projects and identify ways to disseminate those learnings to the commercial fishing industry and key stakeholders in a range of formats.

Further development

The Let's Talk Fish Project has generated considerable knowledge about the current degree of and basis for the wild-catch industry's social acceptability and how lower social acceptability can have an indirect influence on reducing the Industry's resource security. Some ideas/issues arising during the course of this research that would benefit from further investigation, include:

Regular tracking of public opinion

One of the Let's Talk Fish Project survey items has already been used in a FRDC Omnibus Survey conducted in September/October 2013 by Intuitive Solutions. In its original form, this item measured how respondents might prioritise different (and often conflicting) sustainability values: social (fishing livelihoods, recreational fishing), economic (commercial fishing jobs income), and environmental (protection of marine animals, habitats, and fish stocks) [Refer Table 2]. Natural resource management of any kind always involves some kind of trade-offs among competing values. A truly 'equal' balance among competing values is not something that reflects the reality of public policy decisions (i.e. the middle of the scale). Therefore, we designed the survey item specifically to avoid respondents selecting the 'equal' balance option in the middle of the scale.

When this survey item was used in the Omnibus Survey, however, we believe the modifications made to the wording and structure of the scale encouraged the majority of respondents to select the easiest option – the middle of the scale (an equal balance). We believe that these modifications changed the nature and therefore utility of the survey items to measure which values the public would prioritise and will limit the ability to compare results with the Let's Talk Fish survey data. We recommend that FRDC take action to ensure that, future FRDC funded projects that employ items from the Let's Talk Fish survey employ those items in ways that ensure comparability of those data.

Regular proactive scanning of potential social acceptability issues

The Let's Talk Fish Project revealed that some people involved in the fisheries policy network were "surprised" or "caught off guard" by the public controversy which arose during the 'super-trawler' issue, the SW MPA process, and the NSW Buyback. When controversy surrounding natural resource management process like these are unexpected, the result is often that people respond in a highly reactive manner – which in turn can intensify the existing controversy.

Members of the wild-catch sector and decision makers need to adopt more proactive strategies to gathering "intelligence". Such strategies would need to be based on the understanding that conflict often arises in natural resource settings because people's value and belief difference are mistaken for disputes about 'the truth' and not considered early enough in the decision making process. A key part of a more proactive strategy (see Mazur et al 2014) would be regular scanning of *potential issues.* This scanning would complement, but extend well beyond the regular polling of public opinion mentioned above. Scanning would comprise a systematic investigation of key stakeholder values and interests and the assessment of the potential impacts of those interests for the wild-catch commercial sector as well as the degree of controversy around likely to be generated. The Let's Talk Fish Engagement Strategy Foundations has suggested a template for scanning for potential risks to social acceptability (see Appendix 11). That template can be developed further, in consultation with the wild-catch commercial fishing industry and government fisheries managers.

Consider issues of scale and capacity

The Let's Talk Fish Project has generated a wealth of knowledge and information about the wild-catch sector largely at a broad, national and/or State scale. Further insights might be gained from considering the implications of the results for the wild-catch commercial fishing industry at a more refined scale – such as at the fishery, regional, and/or local scales.

Facilitating uptake of the term 'social acceptability'

The FRDC Common Language Group was initiated to develop consensus on fisheries management and industry terminology. The Common Language Group could consider contributing to implementing the Let's Talk Fish Project recommendation that people replace the terms 'community perceptions' and 'public perceptions' with 'social acceptability'.

Extension and adoption

The Let's Talk Fish Project's Extension Plan was designed to engage directly with key stakeholders and indirectly with a wider audience. The following material provides details about how the main extension plan objectives have been met.

Extension Plan Objective 1

The first objective of the Let's Talk Fish Project's extension plan was to:

> *Directly engage and communicate with key fishing industry representatives, government decision-makers, and interest group leaders in a way that ensures we are provided with high quality input, which in turn ensures that our findings are both relevant and credible and therefore have an impact with the fishing industry, government decision makers, interest group, and the wider public.*

The Let's Talk Fish Project Team conducted regular and direct communications with its Steering Committee, which included representatives from the wild-catch sector, government fisheries management, the social research community, and the FRDC. There were two face-to-face meetings of the Steering Committee. The Steering Committee was also engaged through a number of telephone meetings and individual calls to members of the committee. Steering Committee feedback included valuable insights regarding ways to improve the Project's design and implementation. One illustration of effective extension as a result of engagement through the Steering Committee has been that Project findings have informed the Australian Fisheries Management Authority (AFMA) Communications and Engagement Strategy.

In addition, the Let's Talk Fish Project Team have made formal presentations to and had numerous informal conversations with attendees of the Seafood Directions 2013 Conference (27-31 October, 2013), the 2013 Annual General Meeting of the WINSC (26 October, 2013), the Trans-Tasman Salmon Industry Workshop (3-7 February, 2014), and the FRDC's Strategic Research Project's meeting (17-18 October, 2014). During all these meetings, stakeholders expressed considerable interest in and support for the Project's findings and requested to be notified when the report is formally released. Key details from these conversations have been incorporated into the Let's Talk Fish Final Report and the Let's Talk Fish Engagement Strategy Foundations, such as the need to consider the negative impacts of low social acceptability ratings on fishing industry morale, risks to the industry's social acceptability from governments' and its own efforts to streamline fisheries regulation, re-naming the sector, etc.

The Let's Talk Fish Project has produced Engagement Strategy Foundations for the Wild-Harvest Professional Fishing Industry (Mazur et al. 2013).

The Let's Talk Fish Project findings are also being incorporated into the FRDC Project on sustainability values in aquaculture policy and management which is being undertaken by aquaculture researchers at the University of Tasmania's Institute of Marine and Antarctic Studies (IMAS). IMAS researchers are drawing on aspects of environmental values and VBN theories, which were used to design the Let's Talk Fish mail survey and other aspects of the Project, to consider how these data and information can be used help map the values represented in aquaculture policy processes.

In addition, the Project Team has been invited to present its results to the World Aquaculture Society Meeting in Adelaide in June, 2014.

Extension Plan Objective 2

The second objective of the Let's Talk Fish Project's extension plan is to:

> Communicate with stakeholders not directly involved in the research by disseminating information in a way that is readily accessible to a diverse audience, so that the information provided is more likely to be understood and therefore increase people's awareness of the fishing industry context.

The Let's Talk Fish Project has a wide target audience, which includes stakeholders with whom we have already had direct contact with (see Extension Plan Objective 1 discussed above) [Refer Table 29]. The Project Team has a list of stakeholders who have not been directly involved in the research and/or who have requested notification and a link to the Final Report and Engagement Strategy once they are finalised. The Project Team will notify those parties when the final report is available and direct them to web sites where the report can be downloaded.

In addition to this approach, the list of the Project's target audience [refer Table 29] will be shared with the FRDC, who will also be disseminating notification of the completion of the Final Report and web links to that material.

Table 29. Let's Talk Fish Project target audience

Wild-catch commercial fishing industry	FRDC	
	Pre-harvest	Peak industry bodies & associations (e.g. National Seafood Industry Alliance, Queensland Seafood Industry Association, Wildcatch Fisheries South Australia, Western Australian Fishing Industry Council, Tasmanian Seafood Industry Council, Seafood Industry Victoria, NSW Seafood Industry Council, Northern Territory Seafood Council, Commonwealth Fisheries Association)
		Interested individual fishers
	Post harvest	Processors & transport, wholesale & retail sector (e.g. Master Fish Merchants' Association of Australia; large retailers such as Coles, Woolworths, Sydney Fish Markets)
Government	Commonwealth, States, Territories	Fisheries management, Primary industry development/ regulatory agencies (e.g. Australian Fisheries Management Forum, Australian Fisheries Management Authority, Australian Government Department of Agriculture, Department of Primary Industries (NSW), Department of Primary Industries (QLD), Department of Fisheries (WA), Department of Primary Industries and Regions (SA), Department of Resources (NT), Department of Primary Industries, Parks, Water & Environment (TAS), etc.)
		Conservation management agencies (e.g. Australian Government Department of Environment, Great Barrier Reef Marine Park Authority, Department of Sustainability & Environment, VIC; etc.)
Interest Groups	ENGOs	• Domestic/National (e.g. World Wildlife Fund - Australia, Australian Marine Conservation Society, Greenpeace Australia) • International (e.g. World Wildlife Fund, Humane Society International, Marine Stewardship Council, TRAFFIC) • Regional/local groups
	Recreational fishing	RecFish Australia, VR Fish, Tasmanian Association for Recreational Fishing, Australian Anglers Association, etc.
Fisheries research/ extension	Priviate sector	Ocean Watch Australia, individual training/extension consultants
	Public sector	1.Government research agencies (ABARES/BRS Fisheries & Marine Science Program, SARDI, CSIRO) 2.University-based fisheries (social and biophysical) researchers (Seafood CRC, Marine Research Network, individual researchers

Project coverage

The Project has received some media coverage to date.

- On 2 October, 2013 Dr Mazur co-hosted a two hour show on ABC 666 radio. A major segment of that show was devoted to discussing the Let's Talk Fish project, as well as featuring key women in the fishing industry (Trixie Madon, Jenny Shaw). http://www.abc.net.au/local/stories/2013/10/02/3860659.htm
- FRDC's FISH Magazine will feature a story on the Let's Talk Fish Project in its March 2014 issue.
- The Institute of Land, Water & Society at Charles Sturt University will be featuring a story on the Let's Talk Fish Project in an upcoming monthly newsletter, which is also distributed to media outlets.

Further media coverage will be discussed with the FRDC's Communications Manager upon submission and release of this Final Report.

Project materials developed

The Let's Talk Fish Project has produced Engagement Strategy Foundations for the Wild-Harvest Professional Fishing Industry (Mazur et al. 2013). This document outlines some foundation principles and ideas that should/could underpin a more comprehensive and detailed Engagement Strategy for the Industry. This information was produced from the findings from the Let's Talk Fish public mail survey, stakeholder interviews, and consultation with a selection of Industry stakeholders, which includes eight major recommendations for how the sector's social acceptability can be improved. The document is attached at Appendix 11.

The Let's Talk Fish Project also developed a mail survey, which is attached at Appendix 3. As noted earlier, the survey contains key items which can be used as benchmarks for future time series comparisons of the industry's social acceptability.

Appendix 1. Staff engaged on the Project

Professor Allan Curtis – Principal Investigator

Dr. Nicki Mazur – Co-Investigator

Mr. Andy Bodsworth – Co-Investigator

Mr. Simon MacDonald – Statistician

Mr. Royce Sample – Mail survey Coordinator

Appendix 2. Intellectual property

There are no intellectual property issues arising from this research. The FRDC's IP Category applicable was "Technology Transfer", whereby the research undertaken can be Published, widely disseminated and promoted, and/or training and extension provided. Related products and/or services may be developed. This category relates mainly to outputs that will largely be available in the public domain, but components may be commercialised or intellectual property protected.

Upon finalisation of the Let's Talk Fish Report, the Project Team will prepare one – two manuscripts about the findings for publication in a scholarly journal (i.e. Marine Policy, Fisheries Management).

Appendix 3. The Let's Talk Fish Project Mail Survey

Public views about wild catch commercial fishing & seafood supplies in Australia

Public Survey

2013

FRDC
FISHERIES RESEARCH & DEVELOPMENT CORPORATION

Institute for Land, Water and Society
Charles Sturt University

Understanding wild-catch commercial fishing

Australia's fishing industry includes:

- **Wild-catch commercial fishing**
- Aquaculture (fish farming)
- Recreational fishing, and
- Indigenous customary fishing.

This survey is seeking your opinions **about the wild-catch sector.** This sector harvests different species of fish and seafood and some non-edible products in marine, estuarine and inland fresh and salt waters. These catches are sold in Australian and overseas markets for profit. The wild-catch sector's activities are mostly managed by state and territory governments or the Australian Government (in open ocean waters).

The wild-catch commercial fishing sector operates in a difficult environment, and we are seeking your opinions about some specific issues. The information you provide us will help the wild-catch commercial fishing industry and the Australian Government to address/respond to some important challenges

Surveys have been sent to randomly selected households in Australia. **You do not need to know about commercial fishing to fill out this survey,** because it is important to get the views of a range of people, not just experts. It is important that you complete your survey so that we have reliable information and to ensure your views about commercial fishing are heard.

This research is being funded through the Australian Government's Fisheries Research and Development Corporation (FRDC) and Charles Sturt University. **If you have any questions about the survey, please phone Professor Allan Curtis at the University on 1800 605 187.**

You are assured of complete confidentiality. Your name will never be placed on the survey or used in any of the reports. No group outside Charles Sturt University will have access to the survey data. Information is published at the national scale and individual information is never published.

Thank you for your assistance

Professor Allan Curtis

Dr. Nicole Mazur

1. Commercial fishing issues

We would like to know **how concerned** you are about the following issues in commercial fishing. *[Examine each statement in the table then place the number for your response in <u>each</u> space provided].*

RESPONSE OPTIONS:

Not at all concerned	A little concerned	Neutral	Concerned	Very concerned	Not applicable
1	2	3	4	5	6

Your views about commercial fishing	Your view
Potential job losses in the commercial fishing industry resulting from reductions in allowable catch or restrictions in fishing areas	
Loss of commercial fishing as a way of life if allowable catch or fishing areas are restricted	
Possible loss of Australian seafood/fish species available to future generations due to overfishing	
Fishing industry failure to comply with existing rules and regulations	
Effectiveness of existing government regulations to manage long term health of fish populations	
Commercial fishing reducing opportunities for recreational fishing	
Expansion of recreational fishing areas thereby limiting where commercial fishing can occur	
Commercial fishing methods that injure fish and marine animals not intended to be caught, including protected species	
Commercial fishing methods that damage aquatic habitats (place where fish and marine animals live)	
Commercial fishing leading to reduced populations of fish species	
Possible loss of income for commercial fishers in the future due to overfishing	
The extent that commercial fishing changes the marine environment	
The extent that recreational fishing changes the marine environment	

2. Your beliefs about commercial fishing

In this section we would like to know **what you currently believe to be true** about wild-catch commercial fishing. *[Examine each statement in the table, then place the number for your response in <u>each</u> space provided for '**Your view**'].*

RESPONSE OPTIONS:

Strongly disagree	Disagree	Unsure	Agree	Strongly agree	Not applicable
1	2	3	4	5	6

Your views on current issues	Your view
Allocating more areas for recreational fishing is unfair to commercial fishers	
Regulations to reduce the levels of allowed commercial fishing will help ensure I have a healthy marine environment to enjoy	
Commercial fishing restricts my ability to enjoy recreational fishing	
It is better for my health to purchase Australian seafood than seafood sourced from other countries.	
Regulations to control current levels of commercial fishing will help sustain fishing livelihoods into the future	
If current levels of commercial fishing continue I will have less choice of what seafood to buy in the future	
Overfishing leads to reduced populations of fish species targeted for harvesting	
Fishing gear used by commercial fishers harm species not intended to be caught, including protected species	
Commercial fishing damages marine environments	
There is no difference between Australia and overseas when it comes to commercial fishing industries harming species (fish, marine animals) not intended to be caught	

3. Balancing benefits and costs of commercial fishing

Managing fisheries often involves difficult trade-offs between environmental conditions and social and economic considerations. **Where do you think the balance** between these potentially conflicting values **should be in the future**? *[For **each of** the scales below - please circle **one** number that best matches your position]*.

Maximise commercial fishing jobs/income									Minimise impact on continuity of fish populations							
9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9
Extreme Importance								Equal	Extreme importance							

Maximise commercial fishing jobs/income									Minimise harm to marine animals & birds							
9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9
Extreme Importance								Equal	Extreme importance							

Maximise commercial fishing jobs/income									Minimise harm to the marine environment							
9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9
Extreme Importance								Equal	Extreme importance							

Maximise commercial fishing jobs/income									Maximise recreational fishing opportunities							
9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9
Extreme Importance								Equal	Extreme importance							

4. Commercial fishing activity & risk

In this section we are trying to understand the way you **perceive possible risks** from commercial fishing. *[Examine each statement below and then place the **number** for your response in <u>each</u> space provided]**.***

RESPONSE OPTIONS:

Highly unlikely	Unlikely	Unsure	Likely	Highly likely	Not applicable
1	2	3	4	5	6

Potential impacts of commercial fishing	Your view
The availability of seafood for human consumption in Australia will be reduced if current levels of commercial fishing in Australia continue	
Australian fishing communities will suffer if current levels of commercial fishing are reduced further	
Irreversible damage to marine environments because of overfishing	
Increased areas for recreational fishing will harm the livelihoods of commercial fishers	
Irreversible damage to fish populations from non-fishing activities (e.g. climate change, pollution, coastal development, etc)	

5. Government and public actions

In this section we would like to know **what you think about certain actions** relating to wild-catch commercial fishing. *[Examine each statement in the table, then place the number for your response in each space provided for '**Your view**'].*

RESPONSE OPTIONS:

Strongly disagree	Disagree	Unsure	Agree	Strongly agree	Not applicable
1	2	3	4	5	6

Statements about issues	Your view
I feel a personal obligation to buy seafood that is marked as sustainable	
Australian governments should invest more money to develop fishing methods that avoid harm to marine animals and birds	
I feel a personal obligation to support commercial fishing communities	
I feel a personal obligation to buy seafood caught in Australia	
Stronger enforcement by Australian governments is needed to ensure commercial fishers comply with existing rules that limit overfishing	
I feel a personal obligation to avoid buying seafood when those species are reported as overfished	
The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits	
The Australian government should restrict seafood imports from countries without comparable rules to prevent overfishing/harm to marine animals/ birds	
I feel a personal obligation to 'support' the government's fisheries rules/regulations	
Strict limits should be placed on areas that recreational fishers can access to ensure commercial fishing remains viable	
I feel a personal obligation to avoid buying seafood that is reported as caught by methods that harm marine animals or birds	
Australian governments should increase support for fish farming (aquaculture) to reduce the reliance of commercial fishing on wild-catch populations	
I feel a personal obligation to do whatever I can to protect marine environments and marine animals	
Australian governments should restrict seafood imports from countries that do not have comparable health safety standards for seafood	
I feel a personal obligation to act as part of a group to protect marine environments and animals	
More scientific studies are needed to assess how much fish can be caught by recreational and commercial fishers without damaging the marine environment	

6. Managing wild-catch commercial fisheries

Wild-catch fisheries are managed by the Australian Commonwealth and state/territory governments, who control the number of fishers and the type of gear allowed, set limits on the quantity of fish species that can be taken, and limit the areas where and times when fishing can occur.

Below is a set of statements about Australia's management of wild-catch commercial fisheries. [*Examine each statement in the table and **select ONE** statement that best matches your view **by placing an X in the right hand column**]*.

Statements (Select one of these)	**Your view**
The commercial fishing industry in Australia should be able to operate under existing rules with full discretion given to fishers to fish as they see fit	
The commercial fishing industry in Australia should be able to continue to operate under existing rules, but with increased monitoring to ensure compliance with rules to minimise the environmental costs of fishing	
Existing rules governing the commercial fishing industry in Australia are inadequate and need to be changed to further minimise the environmental costs of fishing.	
The Australian commercial fishing industry should not be allowed to continue, because its environmental costs outweigh its social and economic benefits	

7. Fisheries management controversy

In 2012, there was some controversy about a super trawler that was going to catch small pelagic fish species in Australian waters. We are interested to know if you were aware of that issue. *[Please circle the number that best reflects your level of awareness]*.

1----------2----------3----------4----------5				
No awareness *Not heard of it or read anything about it*	***Little awareness*** *Recall hearing or reading something about it*	***Some awareness*** *Recall hearing/ reading about it on several occasions*	***Fairly aware*** *Recall hearing/ reading about it **AND** remember what the issue is about*	***Very aware*** *Closely followed the issue in the media and other sources*

8. Commercial fishing, governments & society

In this section we would like to know **what you expect from** Australian governments and the commercial fishing industry in the management of wild-fish populations. *[Examine each statement in the table below, then place the number for your response in <u>each</u> space provided for '**Your view**'].*

RESPONSE OPTIONS:

Strongly disagree	Disagree	Unsure	Agree	Strongly agree	Not applicable
1	2	3	4	5	6

Statements about your interactions	Your view
I think Australian governments keep my interests in mind when making decisions about commercial fishing	
I think the commercial fishing industry keep my interests in mind when catching fish	
Australian government decisions to change commercial fishers' access to fishing grounds have been adequately explained to the public.	
The commercial fishing industry is open and honest about the extent that marine animals and birds are harmed by existing fishing gear	
Australian governments have a good track record of establishing rules and regulations that prevent overfishing	
The commercial fishing industry has a good track record of taking up fishing gear that reduce harm to marine animals and birds	
I can rely on Australian governments to manage commercial fisheries so that fish populations are sustained for future generations	
I can rely on the commercial fishing industry to act in ways that will sustain fish populations for future generations	
I can rely on Australian governments to manage commercial fisheries so that fishing communities remain viable	
I can rely on the commercial fishing industry to adopt best practice methods that will reduce harm to marine animals and birds	

9. Things of importance to you

The next set of statements seeks information about **your personal values**. There are no right or wrong answers and there is no need to think at great length about your response. *[Examine each value in the table, then place the number for your response in <u>each</u> space provided].*

RESPONSE OPTIONS:

Not Important	Minimal Importance	Some Importance	Important	Very Important	Don't Know/ Not Applicable
1	2	3	4	5	6

Things of value	Your view
Protecting the environment and preserving nature	
Having power and being able to lead others	
Preventing pollution and protecting natural resources	
Caring for the weak and correcting social injustice	
Respecting the earth and living in harmony with other species	
Working for the welfare of others	
Being influential and having an impact on other people and events	
Creating wealth and striving for financial prosperity	
Fostering equal opportunities for all community members	

10. Background information

Questions		Please circle or fill in your response.
1.	Are you male or female? *[Circle one]*	**MALE** **FEMALE**
2.	What is your age?	years
3.	Were you or your parents born overseas? If yes, which country or countries _____	**YES** **NO**
4.	What is your main occupation? [*e.g. farmer, teacher, investor, retiree, student*] Please fill in the blank space.	
5.	What is the highest level of education you have completed? *[Please circle one of the options listed below]*	
	Primary / Secondary / Technical/ further education institution / University/ tertiary	
6.	How far is it from your home to the coast? *[Circle one of the options listed below]*	
	Live w/in sight of or walking distance / Less than 5km / More than 5km but less than 20km / More than 20km	
7.	Do you own a second home on the coast?	**YES** **NO**
8.	Did you grow up on the coast?	**YES** **NO**
9.	**Since January 2012** have you undertaken any of the following activities? *[Circle one or more of the activities listed below]*	
	Boating/ sailing/ jetski / Surfing/ kite surfing / Beachwalking/ picnics / Diving/ snorkelling / Recreational fishing	
10.	Are you a member or involved with an environmental group (e.g. WWF, Greenpeace)?	**YES** **NO**
11.	Are you a member of a recreational fishing group?	**YES** **NO**
12.	**Since January 2012** have you provided any input into fisheries management issues or decisions? **If yes**, please tell us how [*e.g. signed petition, Facebook, blog sites, etc.*] _____	**YES** **NO**
13.	**Since January 2012** did you do any of the following in relation to commercial fishing? (please circle 'yes' or 'no')	**YES** **NO**
	If yes, Please circle one of the options listed below	
	Visit a fishing town/port / Watched fishers unload their catch / Ridden on a commercial fishing boat / Visited a fish processing factory	

Questions		Please circle or fill in your response.
14.	Over the past 12 months have you eaten fish or seafood for a main meal? [*Circle 'yes' or 'no'*] If yes, please tell us how often? *[Circle one of the options listed below]*	**YES** **NO**
	More than once a week / Once a week / Once a fortnight / Once a month / 6 times per year / 4 times per year	
15.	In 2012/13, did you purchase seafood that was imported from overseas? *[Circle 'yes' or 'no' or 'unsure']*	**YES** **NO**

<table>
<tr><td></td><td colspan="6"></td><td>UNSURE</td></tr>
<tr><td rowspan="2">16a.</td><td colspan="6">Have you ever used any packaging information about environmental sustainability (e.g. an ‘eco-label) to help you decide what seafood to purchase? [Circle ‘yes’ or ‘no’ or ‘unsure’]
If yes, how frequently? [Circle one of the options listed below]</td><td>YES NO UNSURE</td></tr>
<tr><td>More than once a week</td><td>Once a week</td><td>Once a fortnight</td><td>Once a month</td><td>6 times per year</td><td>4 times per year</td></tr>
<tr><td rowspan="2">16b.</td><td colspan="6">Have you ever used a Seafood Recommendation List from a non-government organisation to help you decide what seafood to purchase? (e.g. Sustainable Seafood Guide or Seafood Watch Program) [Circle ‘yes’ or ‘no’ or ‘unsure’]
If yes, how frequently? [Circle one of the options listed below]</td><td>YES NO UNSURE</td></tr>
<tr><td>More than once a week</td><td>Once a week</td><td>Once a fortnight</td><td>Once a month</td><td>6 times per year</td><td>4 times per year</td></tr>
</table>

Other comments and thank you for your time

Do you have any other comments about any of the topics covered in the survey, or other aspects of wild-catch commercial fishing in Australia? Please use the space provided at the back of the survey or attach additional sheets.

We appreciate the time you have spent answering the questions. **Please return the completed survey in the stamped envelope provided no later than 31 May.**

A summary of survey findings will be available in December 2013 and will be mailed to all survey respondents.

Remember, if you need assistance with the survey or wish to make specific comments about it, please use the toll free number **1800 605 187** to contact a member of the research team at Charles Sturt University.

Appendix 4. Let's Talk Fish stakeholder interview questions

SECTION ONE - Your involvement

What is your current role/responsibilities re: fisheries management matters?

Why is the management of wild-catch fisheries important?

What do you see as the single most important or significant issue facing the wild-catch commercial fishing industry sector today?

Why do you believe that issue is most important/significant?

SECTION TWO – Resource access decisions

4. I would like to talk to you about a particular decisions that involved allocating and/or placing some kind of conditions on the access to resources by the wild-catch sector of the commercial fishing industry.

- How were you involved?
- What kind of input did you have into that/those decision(s)?
- How would you describe the decision that was eventually reached?
- What factors do you believe influenced that decision being made?
- What do you think about the quality of that decision?

Role of others

How important was public opinion in influencing the resource access decision?
How important were interest groups in influencing the resource access decision?

Role of the media

What role do you think the social media played in the decision?
What role do you think the traditional media played in the decision?

SECTION THREE – Social acceptability

Could you identify one example of a significant/important negative portrayal in the public arena of/some public opposition to the Industry in recent times? Please describe it.

- *Which fishery or fisheries*
- *How do you think the sector (or fishery) has responded to that issue? What did they do, or what have they done?*
- *Do you think the sector/fishery could have done anything differently?*

Do you have any other comments about any of the issues we have been discussing?

Appendix 5. Let's Talk Fish mail survey – statistically significant correlations between social acceptability and influencing factors

Social acceptability and respondent profiles

Primary social acceptability measure *"The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits"*	**Significantly correlated social & demographic factors**	**P_2 Value**
More likely to agree	Gender - female	P<0.01
More likely to agree	Respondent or parents born overseas	P<0.01
More likely to agree	Ownership of second home on the coast	P<0.05
More likely to ***dis***agree	Undertaken selection of activities relating to/near fishing port/town since 01/2012	P<0.01
More likely to ***dis***agree	Do eat fish	P<0.01

Social acceptability and respondent values

Respondents who AGREED with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* ***... were more likely to score higher on the following values:***	**n =**	**Statistical significance**	**Correlation direction**
Environmental values			
Protecting the environment and preserving nature	434	P<0.01	pos
Preventing pollution and protecting natural resources	433	P<0.05	pos
Respecting the earth and living in harmony with other species	433	P<0.001	pos
Altruistic values			
Working for the welfare of others	431	P<0.01	pos
Fostering equal opportunities for all community members	432	P<0.01	pos
Egoistic values			
Being influential and having an impact on other people and events	426	P<0.01	pos

Respondents who AGREED with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* ***... were more likely to agree that:***	**n =**	**Statistical significance**	**Correlation direction**
Higher priority should be given to minimising impact on continuity of fish populations than to maximising commercial fishing jobs/income	419	P<0.001	pos
Higher priority should be given to minimising harm to marine animals & birds than to maximising commercial fishing jobs/income	417	P<0.001	pos
Higher priority should be given to minimising harm to the marine environment than to maximising commercial fishing jobs/income	417	P<0.001	pos
Higher priority should be given to maximising recreational fishing opportunities than to maximising commercial fishing jobs/income	417	P<0.001	pos

Social acceptability and respondent beliefs

Respondents who <u>AGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... w**ere more likely to be concerned about:***	**n =**	**Statistical significance**	**Correlation direction**
Possible loss of Australian seafood/fish species available to future generations due to overfishing	443	P<0.01	pos
Fishing industry failure to comply with existing rules and regulations	445	P<0.001	pos
Effectiveness of existing government regulations to manage long term health of fish populations	443	P<0.01	pos
Commercial fishing methods that injure fish and marine animals not intended to be caught, including protected species	447	P<0.05	pos
Commercial fishing methods that damage aquatic habitats (place where fish and marine animals live)	446	P<0.05	pos
Commercial fishing leading to reduced populations of fish species	444	P<0.001	pos
The extent that commercial fishing changes the marine environment	448	P<0.001	pos
The extent that recreational fishing changes the marine environment	444	P<0.05	pos

Respondents who <u>DISAGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... **were more likely to be concerned about:***	**n =**	**Statistical significance**	**Correlation direction**
Potential job losses in the commercial fishing industry resulting from reductions in allowable catch or restrictions in fishing areas	444	P<0.001	neg
Loss of commercial fishing as a way of life if allowable catch or fishing areas are restricted	443	P<0.001	neg
Possible loss of income for commercial fishers in the future due to overfishing	447	P<0.05	neg

Respondents who <u>AGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... **were more likely to believe the following was true:***	**n =**	**Statistical significance**	**Correlation direction**
Regulations to reduce the levels of allowed commercial fishing will help ensure I have a healthy marine environment to enjoy	436	P<0.001	pos
Commercial fishing restricts my ability to enjoy recreational fishing	339	P<0.001	pos
Regulations to control current levels of commercial fishing will help sustain fishing livelihoods into the future	437	P<0.001	pos
If current levels of commercial fishing continue I will have less choice of what seafood to buy in the future	434	P<0.001	pos
Overfishing leads to reduced populations of fish species targeted for harvesting	438	P<0.05	pos
Fishing gear used by commercial fishers harm species not intended to be caught, including protected species	439	P<0.001	pos
Commercial fishing damages marine environments	436	P<0.001	pos
There is no difference between Australia and overseas when it comes to commercial fishing industries harming species (fish, marine animals) not intended to be caught	434	P<0.001	pos

Social acceptability and respondent norms

Respondents who <u>AGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... **were more likely to agree that:***	**n =**	**Statistical significance**	**Correlation direction**
I feel a personal obligation to buy seafood that is marked as sustainable	431	P<0.05	pos
I feel a personal obligation to avoid buying seafood when those species are reported as overfished	442	P<0.05	pos
I feel a personal obligation to avoid buying seafood that is reported as caught by methods that harm marine animals or birds	445	P<0.001	pos
I feel a personal obligation to do whatever I can to protect marine environments and marine animals	443	P<0.001	pos
I feel a personal obligation to act as part of a group to protect marine environments and animals	429	P<0.001	pos

Respondents who <u>DISAGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... w**ere more likely to agree that:***	**n =**	**Statistical significance**	**Correlation direction**
I feel a personal obligation to support commercial fishing communities	439	P<0.001	neg

Social acceptability and respondent trust and trustworthiness judgements

Respondents who <u>AGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... **Were more likely to agree that:***	**n =**	**Statistical significance**	**Correlation direction**
Australian government decisions to change commercial fishers' access to fishing grounds have been adequately explained to the public.	433	P<0.05	pos

Respondents who <u>DISAGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... **Were more likely to agree that:***	**n =**	**Statistical significance**	**Correlation direction**
I can rely on the commercial fishing industry to act in ways that will sustain fish populations for future generations	435	P<0.05	neg
I can rely on the commercial fishing industry to adopt best practice methods that will reduce harm to marine animals and birds	435	P<0.001	neg

Social acceptability and respondents' risk perceptions

Respondents who <u>AGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... **Were more likely to think that the following scenarios were highly probable:***	**n =**	**Statistical significance**	**Correlation direction**
The availability of seafood for human consumption in Australia will be reduced if current levels of commercial fishing in Australia continue	439	P<0.001	pos
Irreversible damage to marine environments because of overfishing	435	P<0.001	pos
Irreversible damage to fish populations from non-fishing activities (e.g. climate change, pollution, coastal development, etc.)	436	P<0.05	pos

Respondents who <u>DISAGREED</u> with the statement that ... *The Australian commercial fishing industry should not be allowed to continue because its environmental costs outweigh its social and economic benefits.* *... **Were more likely to think that the following scenario was highly probable:***	**n =**	**Statistical significance**	**Correlation direction**
Australian fishing communities will suffer if current levels of commercial fishing are reduced further	437	P<0.05	neg

Appendix 6. The case of the 'super trawler'

When discussing the trawler issue, most of the interviewees felt that prohibiting the trawler from fishing in Australia's waters was not a good quality decision. Interviewees' analyses were more focused more on decision-making processes versus the outcome, although those who were not happy about the process generally were not pleased with the outcome(s). Interviewees often used 'political' as a pejorative term to describe the decision to prohibit the Abel Tasman from operating in Australia's waters.

Process – lacks evidence & science, it was a political football

Science was seen as not being used sufficiently or ignored altogether by decision makers who relied too much on other (much less credible) information. Interviewees felt that the information used by interest group campaigns was illegitimate, because it used emotive language and images, exaggerated and/or misplaced comparisons with a European context, and neglected or ignored important technical details about the conditions under which the vessel would operate. Some interviewees felt that neither the Government nor the fishing industry adequately explained those conditions.

> *Despite the fact that it was allowed for a level of hysteria based upon, again, overseas jumping up and down about the vessel because what it has done somewhere else then implying that if it came here it was going to be able to operate like it did off where ever it happened before. Irrespective of the extremely high levels of management, to the controls and supervision that were going to be undertaken when it was here.What that then did is not only denigrate that particular vessel on the fishery but it then indicated that all fisheries management must be bad.*

In some cases, interviewees felt that some science was being used inappropriately to advocate for *disallowing* the vessel. It was not clear whether these interviewees' felt that the science was bad because it was being used for advocacy purposes and/or because it was not sufficiently rigorous. However, the science underpinning authorities' original decision to *allow* the vessel in Australian waters was also criticised by one interviewee, because the model being used was deemed to be flawed.

Process – inconsistent, costly, unfair

Some interviewees talked about inconsistencies in the process used to disallow the trawler. This criticism typically framed the decision as a reversal (or an 'about face') of a carefully planned, detailed and legitimate technical process for determining which vessels can operate in what ways in Australian waters.

Some interviewees thought the process was also unfair, because a legitimate process was followed for approval – by public servants and the owner of the fishing vessel – and the basis on which the decision was reversed (by decision makers) was not credible. Interviewees felt that the consultation process was unbalanced. The process was also judged to be unfair, because decision makers were unduly criticising public servants for giving them the advice to allow the vessel to operate.

Outcomes – unequal distribution of benefits

The perceived negative outcomes of the decision to disallow the vessel were mostly focused on the damage it did to the Industry's and fisheries management's reputational capital. Interviewees felt that the controversy has decreased the public's understanding for and confidence in the fishing industry and in fisheries management mechanisms.

> ... 2012 classically displayed the public narrative around marine parks and super trawlers. And people should know better ... notably our [decision makers] ... I think in the rhetoric ... pretty much trashed the institutions of science and management that support [the fishing industry]...

One interviewee believed that the outcome was inevitable, because:

> I'm not sure that there's anything that anyone could've ever shown that would've actually allowed that vessel to operate. The decision to stop it had been made by certain people and that's it, I doubt whether any scientific information could've been provided that would've generated a different outcome.

Factors influencing the prohibition of the 'super' trawler

Interviewees discussed a range of factors that they felt had influenced the decision to disallow the Abel Tasman from fishing in Australian waters. Most of the interviewees talked about a range of social factors they believed shaped the decision, with much of the focus on the particular actions of individuals and groups/organisations. A number of interviewees saw Minister Burke as the key person to decide that the EPBC Act needed to be amended to disallow the trawler. Some talked about how the Minister criticised the Australian Fisheries Management Authority's (AFMA) scientific decision making, while another believed the Minister had negotiated with particular members of Parliament for their vote against the trawler. Others felt that both Seafish Tasmania and "the government" (the Minister, AFMA) had seriously neglected and/or miscalculated public sentiment when applying to and approving the trawler's activities, and were caught quite unprepared for the controversy that erupted. Their responses to the controversy were seen as less than ideal.

Some interviewees talked about some common values and beliefs that generated much of the resistance to the super trawler's presence in Australian waters. These included the belief that wild-catch fishing is about the race to catch as many fish as possible, negative attitudes to the notion of 'industrial-scale' fishing found overseas, and perceptions of poor management of Australian fisheries. The lack of a more favourable culture towards wild-catch commercial fishing meant that these negative sentiments had taken hold of the national psyche. Some felt that people living in urban areas were more prone to such ideas; others believed that people would always fear what they do not understand and that Australians could be very xenophobic.

It was common for interviewees to discuss some informational factors. These were primarily focused on people questioning the scientific data underpinning the initial decision to allow the trawler to operate in Australia, in particular how sustainable their allocated quota would be. Interviewees talked about how people were alarmed by the 18,000 tonne allocation, were concerned about localised depletion of fish stocks, and did not understand the rules about where the trawler could go to collect its catch or how in some cases bigger vessels can operate more efficiently than smaller vessels. Science was seen to fail in the face of the significant public opposition to the proposal and the scientific information and knowledge appeared not to be highly valued or credible to stakeholders. Some interviewees felt that neither the trawl operators nor the government sufficiently explained to other fishing businesses, interest groups, or the wider community how the trawler would operate. Others talked about a range of misinformation about bias in the decision making process and "incorrect science" that was being generated during the controversy. One interviewee believed that too many people simply failed to question what they heard (e.g. documentaries like *End of the Line*, because that information was largely consistent with their held values.

Some interviewees identified select governmental features. One interviewee talked about how a number of people had (mistakenly) assumed that the various formal and informal procedures for assessing the feasibility of the trawler operating in Australia were sufficient for the decision to stick. Another talked about how a culture of ecosystem-based resource management has infiltrated fisheries policy and management settings and favours greener outcomes.

Several interviewees talked about political factors shaping the eventual decision. The pressure to disallow the trawler started to build quickly once there had been a change in Ministerial portfolio arrangements. The Greens Senator from Tasmania was pushing back against the trawler. And local and State politicians were growing increasingly concerned about what they saw as public opinion building against the trawler, so they began to lobby for a reversal of the decision.

The role of interest groups, public opinion, and the media

Interviewees saw recreational fishing groups and conservation NGOs as the most relevant interest groups to influence the trawler disallowance. Interviewees talked about the ENGOs making very strategic use of the social media to widely disseminate consistent, emotive messages about how much damage the trawler would inflict on the marine environment ("big vacuum cleaners of the sea") using vivid imagery (e.g. the Abel Tasman pictured next to the Sydney Opera House). These tactics were seen as unprecedented in fisheries management matters; they were highly effective in activating "the flash mob" that many politicians fear and believe they cannot ignore. Some interviewees were dismayed by these tactics, because they felt they generated more misinformation than 'truths' and led to further mistrust in the Industry and in government fishing management regimes. Recreational fishing groups also raised their voices in opposition to the trawler, pressuring the peak body to lobby Federal and State governments. Some chose to work in alliance with ENGOs.

Appendix 7. The South-west Commonwealth Marine Reserves Network (SW MPA)

Marine protected areas as used by governments as part of a suite of policy instruments for protecting particular marine environments, including any cultural or historical resources in those areas. These areas often include some kind of limitation set on development, fishing practices, fishing seasons and catch limits, moorings, and/or bans on the removal or disruption of marine life.

The eventual decision to design and implement the South-west Commonwealth Marine Reserves Network (SW MPA) has been part of a larger process, "… two decades of ongoing national and international commitments by successive Australian governments to create National and Representative System of Marine Protected Areas (NRSMPA)"(DSEWPAC 2012: 7). In the early 1990s, Australia was one of many participants in the international policy dialogue around establishing systems of protected areas in oceans.

The World Conservation Strategy was published by the International Union for Conservation of Nature and Natural Resources, United Nations Environment Programme and the World Wide Fund for Nature in 1980. Its main objectives have been to maintain ecological processes, genetic diversity and sustainable use of species and ecosystems. Since the Strategy was released, many countries prepared national conservation strategies. One of core goals of the International Union for Conservation of Nature and Natural Resources (Resolution 17.38) called for "the creation of a global representative network of marine protected areas" that would be linked to "management in accordance with the principles of the World Conservation Strategy of human activities that use or affect the marine environment" (Resolution 17.38 of the 17th General Assembly of the IUCN, 1988).

By 1998, Australia's Oceans Policy had been released. The Policy provided a framework for applying sustainable development in oceans management. At its core was developing plans for marine reserves which were to be binding on all Commonwealth agencies. The States and Territories were encouraged to take up similar initiatives. As signatories to the Convention on Biological Diversity, the Australian Government committed to establishing its NRSMPA by 2012. Not long after that the EPBC Act 1999 was enacted, which would have a direct influence on marine conservation and fisheries management in Commonwealth waters.

At the 2002 World Summit on Sustainable Development the commitment to NRSMPAs was reiterated. Australia's Marine Bioregional Planning Program began to take shape. After the Summit an inter-governmental Task Force on Marine Protected Areas was set up in Australia to produce guidelines for how the reserve system was to be established and a set of goals and principles for a framework that identified new marine reserves in Commonwealth waters. In addition, the programme of regional marine planning was brought directly under the EPBC Act in 2005 under Section 176. Commonwealth marine areas became "matters of national significance," and any proposed activities taking place in these areas that might have a significant impact would have to be referred to the Environment Minister who would assess whether those actions can take place. The Minister would have to refer to marine bioregional plans in coming to that decision.

Marine bioregional plans were designed to assist government decision-making relevant to the Commonwealth marine environment, as well as the wider community and industry sectors. They contain descriptions of the conservation values of each marine region, summarise the pressures

affecting conservation values in that region, identify priorities for the region, and outline strategies and actions to address those priorities. One of the strategies in these Plans has been the establishment of a Commonwealth marine reserve network.

This marine bioregional planning process would take place for each of the designated bioregions in Australia. For the South-west Region, the process started in July 2006 with the gathering of information for the first stage of the Bioregional Profile, which was publicly released in October 2007. The profile described the biophysical features of the region, its conservation values, explained how new marine protected areas would be identified, and listed the range of activities taking place there. A series of stakeholder forums on the South-west Marine Region Profile were held in Perth and Adelaide in April 2008, where participants were given some idea about what areas would be the key focus for the reserves network.

During that time and into 2009, the Government undertook further information gathering and targeted stakeholder consultation to revise the Bioregional profile and start formulating the Draft Plan. This assessment process was called "Areas for Further Assessment". It was about determining which areas had the key characteristics that collectively would constitute adequate representativeness and understanding how socio-economic values were distributed through the area. These data were required in order for the Environment Department to draft reserve boundaries and zones to be included in the Draft Bioregional Plan.

By May, 2011[5] the series of Draft Marine Bioregional Plans (including the Commonwealth Marine Reserves Networks) was released for public comment for a period of 90 days. Between May 2011 and February 2012, public feedback was invited[6] on the Draft Marine Reserve Networks proposals and the draft Coral Sea marine reserve[7]. The Government also undertook a range of meetings with stakeholder groups and public events across coastal areas of Australia. The meetings included multi-sector information sessions, "open house" public information sessions and targeted meetings for specific stakeholder groups. (DSEWPAC 2012).

The final South-west Marine Bioregional Plan was released in July 2012, when the Australian Government proclaimed its NRSMPAs and the Reserves therein. The Reserves in the various Networks are currently under transitional arrangements until management plans come into effect in July 2014 (i.e. the South-west Commonwealth Marine Reserves Network Management Plan 2014-24).

The South-west Marine Region and the wild-catch commercial fishing industry

The South-west Marine Region covers over of over 1.3 million square kilometres from Kangaroo Island, South Australia, to offshore from Shark Bay in Western Australia (ABARES 2012). The waters of this region are deemed to have significant biodiversity values and nearly all fish species, molluscs, and echinoderms are endemic (DSEWPAC 2012: 212). While there is still considerable uncertainty

[5] The Government also released its Fisheries Adjustment Policy in May 2011.
[6] The invitation to provide feedback was advertised in the media, through the department's website and through notices sent to stakeholder organisations, community groups and industry associations.
[7] The vast majority of submissions received related to the draft Coral Sea Marine Reserve, representing around 86 per cent of all submissions received with the next highest being for the South-west Marine Region draft reserves network (around 7 per cent). Submissions received for the South-west numbered 39,266 (campaign), and 224 (no campaign) (DSEWPAC 2012).

about the region's ecology, marine scientists believe that is large size and complexity is likely to support highly diverse species (DSEWPAC 2012: 212).

A range of commercial fisheries operate in the region. The ABARES (2012) found that the proposed networks overlapped with some high value fishing areas, but most of the reserves were zoned to avoid displacing some of those fisheries (i.e. rock lobster). However, some of the reserves would displace other fisheries such as the trawl fishery.

The Regulatory Impact Statement (RIS) undertaken in 2012 for the completion of the Marine Reserves Network found that among relevant industry sectors, the commercial fishing sector was the most affected by the identified options for the South-west reserves network, largely through "direct displacement of commercial fishing effort and resultant indirect impacts on upstream and downstream land based industries." The RIS outlined the available options for forming the marine reserve networks, and recommended the second option for the South-west Marine Region [Refer Table 30]. This option decreased the total areas covered by the network and reconfigured the zoning inside the reserves. Option Two was recommended and eventually proclaimed, because it was deemed to provide a marine reserve network for the South-west that best meets desired conservation goals while minimising negative impacts on marine industries and communities (DSEWPAC 2012).

Table 30. Regulatory Impact Statement recommendations for the SW MPA

Option 1: Draft South-west Marine Reserve Network	***Option 2: Final proposed South-west Marine Reserves Network***
• The draft network released on 5 May 2011, with a 90 day public consultation period • Proposal for 538 240 square kilometres (approximately 41% of the South-west Marine Region); and eight proposed individual Commonwealth reserves • Option 1 network incorporated three categories of internal zoning – Marine National Park Zone, Special Purpose Zone and Multiple Use Zone. • Displaces fish catch with a GVP of $13.7 million per annum	• Final proposed marine reserves network for the South-west Marine Region • Proposal for 465 037 square kilometres (approximately 36% of South-west Marine Region; includes thirteen proposed individual Commonwealth reserves • Option 2 network includes two additional internal zoning categories – Habitat Protection Zone and Special Purpose Zone (Oil and Gas Exclusion). • Displaces fish catch with a GVP of $11.1 million (19% reduction in impact from Option 1)

Interviewees' views on general factors influencing the SW MPA decision

Interviewees identified multiple factors they felt interacted to influence the SW MPA process and outcomes [Refer Table 31]. It was most common for people to discuss different structural elements of government, including prior policy commitments, specific legislation and certain policy principles. Informational factors were also frequently discussed – key ideas and data used to help make decisions and which were often the point of debate. Interviewees also focused on the perspectives and actions of individuals and groups who were seeking to advance their particular interests.

Table 31. Interviewees' views about factors influencing the SW MPA

Category	Interviewees' opinions
Particular events	The 'Super Trawler' • some interviewees believed this issue influenced decision makers to drive harder for better conservation outcomes from the MPA process, because they were allegedly concerned about the

	implications of the momentum of public support for marine conservation campaigns being run by ENGOs and in response they chose to push hard for better conservation outcomes.
Environmental, ecological conditions	Ecological characteristics of the South-west Marine Region provided a key reason for seeking protection for the Region
Actions of individuals	Numerous references to the Environment Minister (Tony Burke) as a key driving force in establishing a NRSMPA, due in part to: • His formal responsibilities; personal (green-tinged) values; personal desire to "leave a legacy"; concerns about the electoral implications of not supporting the NRSMPA.
Actions of groups, organisations or institutions	The **Industry** as a relevant influence: • Providing a cohesive information package to the Government, thereby helping to shape the compensation package • Having less power overall because of its relatively small size, image of being non-cooperative, use of technical information rather than charismatic images to inform people about its value, and its inability to run a cohesive and extensive campaign (e.g. the fishing industry seen as "low hanging fruit" that could be more easily excluded from MPAs than other industry sectors). '**Government'** as a relevant influence: • Sought to limit social impacts while still honouring conservation goals • Wanting to please conservation NGOs and to leave a conservation legacy, hence the push for the network of marine reserves.
Differences and/or similarities in values and beliefs	High values attributed to the ecological features in the SW Marine Region (and other regions) as basis for seeking protection The 'power' of an 'MPA paradigm', which promotes MPAs as valuable and worthwhile under all and any circumstances.
Informational factors	Use of certain scientific and technical input shaping MPA policy and selection of policy instruments to implement policy • Marxan System[8] seen as a valid and helpful model to help the Australian Government determine reserve network features • ABARES reports, Industry submissions enabling decision makers to better understand current and potential negative effects on the fishing industry. Varied opinions regarding how influential industry-sourced information was in shaping the reserve network boundaries and zones. Debates about validity of some information • Questioning of science underpinning notion of MPAs as an effective (and equitable) conservation tool • Questioning of utility and equity of the precautionary principle • Specific debates between the Industry and Australian Government regarding to what extent trawl fishing damages seafloor and validity of risk assessment models used to identify the industry's impacts • Arguments that conservation values of the MPAs were compromised by allegedly arbitrary (versus 'scientific') movement of reserve network boundaries to meet interests of some stakeholders Public and stakeholder confusion about different stages of establishing the SW MPA network, including how, when, why data and information was being collected. Inconsistencies seen between having fisheries that were assessed as sustainable (under the EPBC Act) and disallowing them to operate in MPA.
Intergovernmental arrangements	Conceptual and actual separation of fisheries management and biodiversity conservation in the public service leading to poor understanding of fisheries practices and therefore delayed recognition of possible impacts on the Industry and subsequent mitigating action.
International & national policy commitments	Australia's international obligations under the Bonn Convention & Australia's Ocean's Policy – evidence of long-standing commitment to establish network of marine protected areas.
Specific laws	Legislation was seen as a key influence - the EPBC Act had a role in shaping the MPA process overall, because it mandated conservation values into fisheries management through the requirement to have ecological assessments of fisheries exports.
Policy – principles, features, instruments	• CAR Principles[9] used to structure MPA network of marine protected areas – seen as major shift from conserving iconic sites • Equity Principles – used to try and avoid undue negative social impacts (on the fishing industry) from establishment of SW MPA network; also informed choice of policy instruments (i.e. compensate displaced

[8] Marxan is conservation planning software developed by University of Queensland researchers. It provides decision support to a range of conservation planning problems, including the design of new reserve systems, reporting on the performance of existing reserve systems, and developing multiple-use zoning plans for natural resource management

[9] Australia's National Representative System of Marine Protected Areas (NRSMPA) is founded on three key principles: a full range of ecosystems recognised at an appropriate scale within and across each bioregion (comprehensive); have the required level of reservation to ensure the ecological viability and integrity of populations, species and communities (adequacy); and marine areas that are selected for inclusion in MPAs should reasonably reflect the biotic diversity of the marine ecosystems from which they derive (representative).

	fishers and avoid displacement where possible.
Resources	• A shortage of monetary resources and expertise prevented more widespread public consultation on the SW Marine Region MPAs.
Governance.	• 2012 deadline for finalising the NRSMPAs added sense of urgency and rushed consultation, although the SW region's consultation period considered to be longer than for other regions – enabling more consultation with the Industry • Sense among some that Government's consultation with the Industry was mindful, genuine, and helped increase understanding of fishing activities and what mitigation plans should and/or could be taken • View by some that Government should have spent more time on wider community consultation (versus targeted stakeholder
Political climate	• Having a NRSMPA seen as shared commitment by successive Liberal and then Labor Governments • Having a NRSMPA a commitment made by the Liberal Government under the leadership of John Howard • Initial commitment strengthened/renewed by the Labour Party appointment of Tony Burke as Environment Minister • "Balance of power" in the Senate with the Greens and Independent parties informed strong push to meet 2012 deadline for establishing the NRSMPAs. • Competing interests pushing back against MPAs at a time when the Labour Government was "on the nose".

Below are the major story lines underpinning interviewees' recollections of how the key general factors [Refer Table 31) interacted to influence the SW MPA process. These narratives, which have been paraphrased, varied in their complexity and how acceptable interviewees deemed the situation to be.

The 'snowball' narratives

There has been a historic (and bilateral) commitment (over successive government regimes) to meeting international commitments to having a network of marine reserves and to do it by 2012. There were certain policy design and instruments (BRP); legislation: the EPBC Act and its precedents. There were key policy principles (carried out by the Environment Department) to avoid social impacts, which informed choice of consultation procedures – which were extensive but quite targeted. That consultation helped to shape the final option for marine park boundaries. Resource issues also influenced the Government's choice of compensation options. Particular actors were influential – namely the Environment Minister (after 2009) whose formal responsibilities and personal values (in favour of conservation) drove the push to have the networks in place on time. Informational factors shaping decision – included a state of the art framework and data to determine network boundaries, but risk assessments used were questioned initially by the Industry. Situational factors, such as there being the largest number of Industry members in that region, compared to other regions, were important. The super trawler issue happened in midst of the SW MPA process, which pushed the Government towards conservation values.

Key factors started with a long-standing international and national commitment by the Australian Government to the idea, as well as key actors who were working strategically to get their interests met either via lobbying and/or campaigns (oil & gas, ENGOs). Other important factors were the use of scientific-based decision support software (Marxan) to identify range of values, and the Government's (strongly held) policy principle to avoid social impacts. Some held the belief that fishing industry was less than cooperative in giving out information.

An important factor was the Australian Government wanting to meet its international agreements to establish national networks of marine reserves (by 2012) – this has informed its national policy goals and principles (Oceans Policy) since 1998 and subsequent to that. Political influences were that both the Liberal and Labor parties were committed to this goal. Selected governance models were evident in the emphasis on targeted stakeholder consultation process, but this was also due to resource shortages. It was effective in establishing a dialogue with impacted stakeholders. Perhaps it should have invested more in broad public consultation. There was also some misunderstanding over the different stages of the process to set up the SW reserve network. Important informational influences in policy and program design included the shift away from conserving iconic places to using principles of comprehensiveness, adequacy and representativeness to underpin a bioregional planning approach, which in turn was operationalized through the use of the Marxan modelling software. Some 'actors' were more influential than others. The Minister was a key influencing agent in support of the MPAs – his formal responsibility, personal values, and concerns about votes driving his actions. Less influential was the Industry – who relied more on formal consultation process than informal, failed to see the public support for MPAs, and were less effective.

Other relevant factors were the actual biophysical features of the SW region, and the strong and widely-held belief that those conservation values need to be protected.

Intra-governmental arrangements separate fisheries management and conservation, which created less and tardy consideration of implications of the MPA reserves for fisheries management. Consultation was viewed positively. It was driven by the Environment Department's honouring of policy principles to minimise social impacts, which was longer for the South-west Region than for the other regions and included direct contact for the fishing industry with the Environment Minister. Less positive were variations in the quality of consultation across the other marine bio-regions due to shortages in expertise, resources and time made available by the Government. Having a system of marine protected areas was seen as commitment that had been left by from the previous Liberal Government. There were differences between the type and quality of industry and Government data and information on the type and extent of impacts the MPAs would have on commercial fisheries. People focused on these differences when debating about what effects the SW reserve network would have on commercial fishing. This did lead to greater industry input in the further impact assessment work. A key factor was also the actual locations and movements of commercial fishing business in and nearby the proposed networks, and therefore how those businesses would be affected by the declared reserves. Key actors in the process were the Minister who was driven by his personal values and pushed his Department hard to meet the deadlines, and thereby be able to attend the Rio conference to report on the 'good news'.

Power and (party) politics

Politics was seen as an important influence – the Green party wanted MPAs and had the balance of power in the Senate. Government structural factors influencing the decision included MPAs being very embedded in policy principles, which shaped how policy instruments would be designed (i.e. an evenly spread, representative network, etc.). Limited resources informed how the Government would compensate affected industries (fisheries in particular) displaced by the MPAs. Actors with less power were seen to be the fishing industry overall, and therefore some of them would be unable to forward their respective informational matters – such as the idea that MPAs are not effective in achieving conservation, or that the Industry are not 'the bad guys'. This narrative focused on the decision to have a network of reserves as "a predetermined outcome".

This narrative focuses on how (an institutional) actor's (i.e. 'the government') aspirations to leave a legacy was very powerful. This power occurred despite informational factors – this interviewee believed that the quality of the Government's information base on MPAs and its resources (i.e. fisheries-based expertise) were inadequate. They did not prove the conservation value of having networks of MPAs. Social factors such as belief systems were seen as a driving force (a paradigm of MPAs being good under any circumstances).

Important governmental factors included fisheries legislation stating that maximising economic values is important, then policy principles that it's important to compensate displaced fishers. Actors were seen as important influences – namely the Minister's push to get something done, and in light of political factors (perception of strong public support), meant that informational factors were in play – the Minister disregarded science showing MPAs not necessarily effective, instead seeking to maximise areas for protection while disregarding fishing interests. As actors, the fishing industry were less powerful, because they were less cohesive and so unable to run campaigns.

The decision as a contest of values

Key factors were governance – Government consulting (extensively) with key interest to ensure no one was 'offended'. Quality scientific information was important, but perhaps not used all that well because conservation values were compromised in final outcome.

Key factors were Actors – in this case 'the government' grappling with very hard decisions on how to balance conservation versus fishing or limit social impacts on fishing while meeting goals. Information factors were the debate between initially Government seeing all trawling as bad and industry trying to show it's not. Political factors were that both political parties had made the commitment.

Interviewees views on the quality of the South-west MPA decision

The interviewees were asked to comment on how well they thought the SW MPA decision process was undertaken.

The evidence base

Interviewees commenting on the quality of evidence and information used during the SW MPA process had mixed opinions. Those criticisms often focused on the quality and use of the (social, economic, biological) science used to support MPAs generally and the selection SW MPA boundaries in particular. Some interviewees felt that the information lacked sound assessments of the environmental impacts of commercial fishing, sufficient insights on the Industry's varied practices and needs in area, lacked a proper impact assessment, and contained factual errors about the marine region. There were also concerns that the decision to support the MPA was politicised and based on "activist science" and "activist publicity", much of which originated from an overseas audience. One interviewee felt that the Federal Government could have done a better job at providing evidence that MPAs were valuable.

Conversely some interviewees felt that the information that was used was considerable, covered social and economic impacts on the industry, used a rigorous model to select representative areas (e.g. the Marxan model).

Consistency and cost of decision

While the establishment of the network of marine protected areas had long been part of the Government's policy agenda, some interviewees were concerned by what they saw as inconsistencies in the process. Those inconsistencies included duplicating effort of the States'/Territory's marine reserves, allowing the energy sector to operate within the reserves while trying to exclude commercial fishing. Some felt that the decision was overly influenced by the personal interests of elected officials (the Environment Minister), the campaign run by Get Up, and the Green Party holding considerable power in a minority government. These interviewees questioned the actual conservation value of marine parks generally.

> In many respects it's like dealing with a child, the more you actually give in and actually are dictated to by some of these more kneejerk responses the more they're going to do it. The class that GetUp! group is part of that, they should tell them to "Get stuffed, we're going to do it anyway," as long as it's good policy. If they really think its good policy, if they should stand by it.

There was also the perspective that while the original designation of the South-west reserve boundaries were changed and there could have been stricter limits placed on resource use; it is still valuable to have a system of protected areas in place.

Implementation issues

The interviewees commenting on decision implementation were primarily concerned that there was comprehensive monitoring and evaluation plan for the SW MPA. Interviewees queried how the Government would know the marine protected area was achieving its (conservation, compliance) outcomes if it had not specified what the key goals were, allocated resources to monitoring, and identified how improvements might be made. For example, one interviewee asked, "*what outcomes do they want to achieve, and how do they plan to measure that? That is going to be where the proof [that MPAs are valuable] is.*"

Fairness of the process

Interviewees who were largely positive about the Government's consultation process for the South-west Region felt that a good effort was made to include a wide range of stakeholders in the

discussions, have a sincere dialogue with those stakeholders, and minimise the negative effects on the fishing industry .

> With the south west, they did a very good job of providing sufficient network opportunities. Lots of industry meetings, sufficient time provided for the industry to understand the issues that were being considered, effective consultation between the department and the industry both with the industry liaison officer and the broader group; all of those were positive.

Some interviewees felt that the quality of engagement in the later stages of the process declined. There was a sense among these interviewees that feedback on how their submissions were being used (if at all) was not forthcoming, the consultation became more selective/siloed, and that there were insufficient resources and expertise to undertake more than targeted stakeholder engagement.

SW MPA outcomes

Interviewees' opinions ranged from being fairly positive to equivocal and sceptical when talking about what had resulted from the SW MPA process to date. The more positive views about the outcomes included there now being over a third of Commonwealth waters protected and that marine protected areas were no longer seen as optional. There was a sense for some of the interviewees that while the Industry did not get everything they were negotiating for (or against), "lines on the map were changed to protect fishing" and things "could have been worse" for them. There were concerns that significant non-fishing related environmental threats were not being addressed, nor had other important issues like displaced fishing effort been considered fully.

> *I think at the end of the day, the outcomes will have ... well, not a lot of traction, I [don't] think it will be that effective. I think we've got the threats to the marine environment, by and large, they're not fishing-related ... global warming, land-based activities, run off, marine pests, and no doubt we haven't addressed any of that.*

Appendix 8. The Commonwealth Harvest Strategy Policy (HSP)

The Australian Government introduced the *Commonwealth Fisheries Harvest Strategy: Policy and Guidelines* (HSP) to provide a best practice guide to harvest strategy development, and address earlier inconsistencies (Rayns 2007). The release of this Policy has its roots in international and other national policies. International initiatives, such as the United Nations Law of the Sea (1994), the Food and Agriculture Organisation's Code of Conduct (1995), and the United Nations Conference on Straddling Fish Stocks and Highly Migratory Stocks (1995), were encouraging nation states to help ensure more sustainable commercial fishing practices. By the late 1990s, Australia had released its Oceans Policy requiring that all marine jurisdictions be planned and managed according to ecosystem-based principles and enacted the EPBC Act requiring the assessment of commercial fisheries against defined sustainable fisheries guidelines.

In November 2005 the Australian government announced the *Securing Our Fishing Future Initiative.* In addition to funds for an industry license buyback scheme and complimentary assistance package and proposed marine parks for the South-east region, the Initiative included some changes to Commonwealth Fisheries Management. By December 2005, the [then] Australian Government Minister for Fisheries, Forestry and Conservation Senator Ian Macdonald issued a Ministerial Direction to the Australian Fisheries Management Authority (AFMA) under section 91 of the *Fisheries Administration Act 1991.*

The 2005 Directive included a requirement that a policy be developed for the harvesting of key commercial species taken in Australia's Commonwealth fisheries. AFMA would need to be in a position to take decisive action to halt overfishing and create conditions that would enable overfished stocks to recover to acceptable levels in the near future. The Policy was prepared by the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF), including the Bureau of Rural Sciences (BRS) and the Australian Bureau of Agricultural and Resource Economics (ABARE), with assistance from the AFMA, the Department of the Environment and Water Resources (DEWR) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Its main objective was "the sustainable and profitable utilisation of Australia's Commonwealth fisheries in perpetuity through the implementation of harvest strategies that maintain key commercial stocks at ecologically sustainable levels and within this context, maximise the economic returns to the Australian community" (DAFF 2007).

The Policy was approved in 2007 and came into effect in all Commonwealth fisheries in January 2008 – with AFMA being responsible for its implementation. It included a requirement of five yearly reviews. DAFF (including ABARES) have been responsible for monitoring the Policy's implementation and the first review was conducted in late 2012 and early 2013.

During that time the EPBC Act was reviewed (the Hawke Review 2009). Part of that Review's findings were that the Harvest Strategy Policy:

- be integrated with the Commonwealth's threatened species listing processes and ensure that the HSP biological reference points reflect species biology and role in ecosystem function – versus the more standard default settings of population levels; and
- have stock assessments and threatened species listing nominations be integrated.

Since that time, government fisheries managers (Commonwealth, States and Territories) have also been working towards more nationally coordinated and consistent fishery-specific harvest strategies. Under an FRDC project, a Working Group supported by a technical committee was formed to facilitate the development of this national approach, support related research, and coordinate industry consultation on key principles.

Interviewees views on factors that influenced the Commonwealth Harvest Strategy Policy

Interviewees identified a wide range of factors influencing the formation and implementation of the HSP. These are listed in Table 32.

Table 32. Factors influencing the Commonwealth Harvest Strategy policy process as identified by interviewees

Category	Interviewees' opinions
Commercial fishing practices	• Ongoing overfishing and some problems with fish stocks, as well as economic problems with Commonwealth fisheries in the South-east of Australia focused government and fisheries agencies on the importance of a more effective and efficient policy framework
Actions of individuals	• The then Fisheries Minister, Ministerial advisors, and senior public servants were very influential in framing the policy problem (too much overfishing, lack of clear way to resolve disputes about species catch levels), then selecting particular policy goals and instruments to ensure the Harvest Strategy Policy was created and implemented. • Key scientists very influential re: design of the basic framework and elements of implementation of the HSP • design and implementation of the HSP – being responsible for formulating the key framework underpinning the HSP
Actions of groups, organisations, &/or institutions	• 'Government' as a key 'actor' pushing hard for the HSP to enable marine resource protection and exploitation of fish stocks at same time. • Fishing industry seen as historically "pushing back" against more standardised harvest strategies and the concept of maximum economic yield • Industry & government concerned about possible economic impacts of a harvest strategy (e.g. restricting catch levels eroding income)
Differences and/or similarities in values and beliefs	• Wanting to be proud of Australian fisheries management and believing effectiveness of comprehensive harvest strategies recently driving parts of fishing industry along with AFMA in pushing hard for the HSP • Different and conflicting views about 'sustainable' fishing underpinning long standing debates (including among government agencies) about appropriate management responses to stock assessment reports showing declines in certain fish stocks • A core of influential people with shared beliefs about 'the' problem and how a comprehensive harvest strategy would help • Overall consensus about 'the' problem and how a comprehensive harvest strategy would make a difference
Informational factors	• Fisheries stock assessments and EPBC Act sustainability assessments showing a clear trend of declining fish stocks • Some data suggesting poor economic performance not being significantly aided by increasing use of ITQs[10] • Growing (international and national) awareness of governments' need for better decision support systems to address inevitable trade-offs of setting harvest limits and conservation goals. • Some debates re: efficacy of framework – could it apply to all fisheries. • Misunderstanding over key harvest strategy concepts (maximum sustainable yield, maximum economic yield (MEY)), disagreement re: how and how much governments should assist fishers to achieve MEY. • Need for specific policy settings for low value, non-target bycatch leading to adjustments to the HSP
Specific laws	• Enactment of the EPBC Act bringing stronger controls on fisheries management (.e.g. mandated regular sustainability assessments of export fisheries) • Issuing of a Ministerial Directive to AFMA that there be a HSP.
Policy – principles, features, instruments	• Particular framing of the problem(s): stop overfishing, too many license holders catching too many fish, low economic viability in these fisheries, and policy failure to better link stock assessment findings with definitive and appropriate management responses) • Problem framing leading to policy goals & instrument(s): fisheries management systems drawing consistently on

[10] Individual transferable quotas (ITQs) are one way that governments regulate fishing by setting a species-specific total allowable catch (TAC). These are typically set according to weight of the catch and for a particular period of time. A portion of the TAC is set as quota shares, which are then allocated to individual fishers. Those quotas can be 'transferred' – that is, bought, sold or leased to other parties.

	key scientific principles, holistic policy package including industry restructuring • Equity principles – support those people adversely affected by the Policy
Governance	• Clearly identified need to compromise when setting reference points and have strong input from the Industry • Historic use of participatory management mechanisms (e.g. Management Advisory Committees) in Commonwealth fisheries facilitating constructive dialogue amongst diverse stakeholders
Political climate	• Howard Government wanting to demonstrate its environmental credentials and could do that through mandating the creation of an HSP.

Interviewees' views about the quality of the decision

The interviewees were asked to speak about the quality of the decision to have a Harvest Strategy Policy. During the interviews, a few respondents commented on the Review process, while others talked about the earlier process of designing the Policy. Most interviewees felt that the decision was a positive one.

Quality of the evidence base

A number of interviewees felt that the evidence base for the HPS was strong. They believed the scientific stock assessments illustrating declining fish populations were credible and that reference points were supported by "sound science". There was a strong sentiment among these interviewees that the decision process was drawing on the best available scientific information. One interviewee felt that there were some weaknesses in the economic data used to formulate yield targets. Another interviewee strongly questioned the scientific basis of the Policy's tiered approach.

> *... the document was very well written and did a really good job of bringing together the perspective of a range of different areas ... not just different people, but from the science, through to the international policy, through to divisions of various groups and provided a real clear basis for the Minister to deliberate and make his own decision on it.*

Consistency of decision

A number of interviewees felt that the decision was very consistent with stated fisheries management and marine conservation policy goals. Some spoke about the Policy being "transformational", "pivotal", "ground breaking", and "world-leading". They felt that the Policy captured well the policy communities' interest in having clearer, more transparent, consistent, and more workable mechanisms for identifying sustainable harvest levels. It was seen to be the first of its kind globally.

> *... the time was right and the Harvest Strategy Policy was one of those kind of threshold points where it was kind of like the debates of the previous decade suddenly got moved into a different kind of debate, which once you have Harvest Strategy Policy, which says there are limits and you are going to act if you get to those limits, that's transformational in a way.*

Implementation issues

Interviewees again were largely supportive of how readily the Policy could be implemented. Some did mention some challenges associated with how well the Policy would fit all the fisheries, particularly the South-east Trawl Fishery, which has 30 quota species and various levels of information and knowledge about these species. They also noted some difficulties with using the Policy in fisheries where there is less available data on fish stock status. A few interviewees believed that the Policy does impose considerable costs (of compliance) on to the fishing industry. And some interviewees felt that the timelines for establishing the Policy and then for its review were tighter

than they should be, in effect putting undue pressure on government staff and participating stakeholders.

Fairness of the process

There was strong positive feedback regarding the procedural fairness of the Policy's formulation, implementation and review. Interviewees cited various strengths of the consultation process, including that the process was transparent and accountable, well lead and facilitated, included a wide range of interests, characterised by high levels of trust, one where people largely felt heard, and backed by sufficient political will.

> *... for the reporting afterwards, it's what you do with what you've caught ... the government really did seek strong input from industry, right down to the wording of all the forms, and the layout of the forms, because if you guys can't use this, or if it's not easily understood, it's not going to work. So they had the right attitude about that, because they could have – they had a brief there that we're just going to do this. Well it won't work. If you want it to work, because we want it to work, let's go through it. So that consultative process was terrific.*

> *I think the participatory management process we have in place whereby scientists, and Fisheries managers, and industry, and the NGOs, and the industry scientists all sit around a table provided a really good kind of basis to allow those sorts of things to happen, and I'm not sure they would have happened in the same way without that management of the process, and I think we sort of forget just how important that's been*

Several interviewees had some concerns that while industry input was sought, having the Policy had already been decided. There were also concerns about how difficult it was for some people to comprehend the technicalities of the Policy, and more effort was needed to explain these aspects.

Harvest Strategy Policy outcomes

Interviewees were also very positive about some social, environmental, and economic outcomes had resulted to date from having the Harvest Strategy Policy. These outcomes included signs of some fish stocks recovery (including improved catch rates), improved industry profitability, and a new, more effective fisheries management regime and culture. Interviewees buoyed by this new regime felt that having a clearer set of rules provided greater certainty for industry – and other stakeholders, and would therefore reduce controversy or political interference in future decisions.

> *Fishermen can operate with a bit more confidence that things are not going to change, the goalposts don't keep changing, fisheries managers can, I think, make decisions with a bit more confidence and ministers and politicians can stay a little bit out of it because the rules are defined and set. And the same goes for conservation groups and other interest groups that they have confidence that they know what the decision process is. So I think the harvest strategy policy when it came in was a bit of a game changer, it actually did set that down. It's going through a review process now to be improved, that's good, but it has definitely taken Commonwealth Fisheries forward and created a platform for fisheries around the other states to work from as well.*

Some stakeholders were equivocal about the Policy's outcomes. One interviewee thought the Policy achieved a good balance of upsetting everyone a little bit, while another felt that the Policy achieved more for the scientific than industry community. One interviewee felt that the Policy outcomes were not necessarily fair for everyone, but did think that the Government was moving in the 'right' direction.

Appendix 9. The NSW Buyback

Decisions about allocating access to fisheries resources among different fishing sectors or within fishing sectors is an extremely challenging and important fisheries management issue. A classic case is distribution of resource access between the commercial and recreational fishing sectors. McPhee (2008) noted that most norms and laws have been developed as a result of conflict over the distribution of those resources.

Since the early 1990s, the NSW Government has been seeking to define and implement an appropriate resource sharing regime that would provide a secure property right across all fisheries (Stevens et al. 2012). The commercial fishing industry in NSW had already been reduced in size and many businesses were struggling with small turnovers, fisheries management costs, and marginal profitability. In the early 1990s a separate Fisheries Department was created to review the Fisheries and Oyster Farms Act (1935), and by 1994 a new Fisheries Management Act had introduced a share management scheme to try and secure property rights across all fisheries. When there was a change in the NSW Government in 1995, the Act was reviewed again, which resulted in a shift away from share managed fisheries to restricted fisheries (where access rights could be revoked). This decision was met by considerable protests from commercial fishers. It was eventually determined that the industry needed further restructuring and by 1997 the NSW Government had implemented limited entry in commercial fisheries (McIlgorm 2006).

During the 1990s, the NSW Government was also under increasing pressure to review the balance of resource access between the commercial and recreational fishing sectors. Recreational fishers had challenged the sufficiency of assessment requirements for commercial fisheries under the Environmental Planning and Assessment At (1979). In 1997, the NSW Government established a state-wide advisory committee to provide information about recreational fishing issues.

The NSW Government had also been considering establishing a license fee for recreational fishing in the State. By the early 2000s, a Saltwater Recreational Fishing License had been introduced, generating approximately $6.5 million in revenue. Around the same time, 30 areas (24% of the State's estuarine waters) along the NSW coast became Recreational Fishing Havens (RFHs) where commercial fishing was to be prohibited (Review Report). Funds from the introduction of a Saltwater Recreational Fishing License were used to fund the buyout of commercial fishers that were displaced by the establishment of those RFHs.

Commercial fisheries are one of the oldest primary industries in NSW and they are valued at $80 million – fourth behind beef, sheep and horticulture (Stevens et al 2012). The fisheries use multiple types of gear to harvest numerous species (e.g. mullet, rock lobster, prawns, crabs, snapper, bream, flathead, kingfish and whiting). Activities are spread across 2100 kms of coastline, including numerous estuarine fisheries.

In 2001, 113 of the 690 water bodies in NSW were available to commercial fishing, and of those 24 supplied 95% of all commercially caught fish. In 2002, 7 of those 24 water bodies were turned into RFHs and eight had some exclusions due to the establishment of RFHs, marine parks, or other closures. The recent review of NSW's commercial fisheries found that in combination with other fisheries management controls, these closures increased pressure on many parts of the industry which are only marginally financially viable (Stevens et al 2012).

Interviewees' views about factors influencing the NSW Buyback

When asked to discuss what factors they felt had influenced the NSW Buyback decision, interviewees spoke about a range of different things [Refer Table 33]. The most commonly listed factors included the influence of the Fisheries Minister and particular policy imperatives for reform of fisheries resource allocation.

Table 33. Factors influencing the NSW buy-out of commercial fishing areas

Category	Interviewees' opinions
Environmental, ecological conditions	• Physical characteristics of many commercial fishing sites – coastal, estuarine-based fisheries typically low in biological productivity, that when considering pressures from coastal development creates competition for resource use. So these areas seen as less able to sustain commercial fishing.
Commercial fishing practices	• Concentration of commercial fishers in small, inshore fisheries with low economic viability creating pressure to remove/reduce the fleet
Actions of individuals	• Reports of some "bad behaviour" by commercial fishers, which was felt to be contributing to negative image of the sector • NSW Fisheries Minister seen as driving an agenda for recreational fishing licenses, recreational fishing havens, and selective buy-out of commercial fishing • NSW Fisheries Minister seen by some as being overly responsive to "anti-commercial fishing sentiments" in the wider NSW community; others felt he was responding to Cabinet pressure • NSW Fisheries Minister seen as open to negotiation, but commercial fishers described as being interested in pushing for a full reversal (as opposed to a compromise) of the selective buyout and establishment of recreational fishing havens
Informational factors	• A perceived lack of credibility of the commercial fishing industry submissions regarding recreational fishing havens and selective buy-out of commercial fishing licenses. This then led to those submissions being largely ignored by government officials • Perceived lack of credible scientific data that clearly demonstrated estuarine environments in NSW could not sustain commercial fishing
Policy – principles, features, instruments	• Lack of strong fisheries resource sharing framework providing incentives for people to work towards "a greater overall pie" versus "competing for a greater percentage of the total catch." • Historic resource sharing regimes not achieving better environmental outcomes driving reduction of commercial fishing effort via selective buyouts • Findings of the NSW Review of Commercial Fishing helping to re-define the policy problem, articulate policy principles, and select policy instruments
Resources	• Lack of government funds to conduct a more comprehensive restructure of commercial fishing, and greater selectivity in reducing fishing effort • Establishment of recreational fishing havens seen to smooth the path of establishing saltwater recreational fishing licenses, which would raise needed revenues
Governance	• A sense for some that an accumulation of many poor processes (including consultation) led to a decision that felt predetermined. Limited engagement with commercial fishers, did not favour commercial fishing interests
Political climate	• Longstanding debates (since 1990s) for both major political parties in NSW over appropriate recreational and commercial fisheries management arrangements • Perceived discernible shift away from allowing commercial fishers to have tradeable rights when the Labour Party won government

Interviewees' views on the quality of the decision

The interviewees were asked about to what extent they felt that the decision to 'buy out' the commercial fishing industry and establish recreational fishing havens was a 'good' decision.

The interviewees had mixed views about the quality of this decision process. Those who felt the decision was largely a good one were cognisant of some of the negative outcomes for some commercial fishers, particularly those who did not wish to be bought out (e.g. loss of livelihood). They believed that overall the decision to reallocate resources and compensate for loss of income was: based on thorough information collection; transparent consultation processes; as efficient as possible; and consistent with the NSW Government's policy goal of having an improved resource allocation regime between the commercial and recreational fishing sectors. One of these

interviewees felt that one undesirable outcome resulting from the implementation of the decision was that some fishers were relocating their efforts to other fishing areas.

> *There was no stipulation that they could not buy back in and, I mean, at that stage, there were a lot of latent licences out there and we didn't have share-manage fisheries or any of that sort of thing. So they could buy licences relatively cheap and then get back into business doing exactly what they were doing before, only in a different area.*

Another interviewee who was largely positive about the buyback talked about the fishers' concerns that they did not have sufficient input into the earliest stage of the decision. This interviewee felt that this was not a wholly unreasonable criticism, but also believed that the NSW Government had historic difficulties engaging the industry.

The other interviewees were largely critical of the decision-making process and outcomes. Most of their concerns focused on a lack of procedural and distributive fairness in relation to:

- Insincere consultation – the decision being made before calls for submissions, meetings w/ Minister, not consulting widely enough in the supply chain;
- A sense that people were being forced to do something they did not wish to do; and
- Outcomes that favoured elites (recreational fishers with the ear of government) at the cost of wider community (decline in supply of local seafood) and commercial fishers (loss of livelihood).

> *So look at the estuary. Is that estuary being managed in a sustainable way? If it is, then put a mechanism in place to share the resource. Don't lock one sector entirely out of that estuary. If it was not sustainable for fishing in that estuary then shut it down to everyone).*

> *There was enormous upheaval. People had worked places for all their lives and their fathers before them had worked. They basically had no job and I know a number of people - I can probably name three just off the top of my head - who basically just stopped work and died. They became extremely depressed; they either drank and/or smoked themselves to death in a very short period of time.*

Some interviewees felt that the decision was not based on quality evidence that could clearly demonstrate that commercial fishing activities were truly environmentally or economically unsustainable, and as a result the outcomes were unfair to the commercial fishing industry. For example, one interviewee noted that:

> *The process was not based on science. For example the entire Hastings River at Port Macquarie, with a sustainable local commercial fishing presence, was simply closed to all commercial fishing.*

Another interviewee had similar concerns, but for the subsequent monitoring of the decision's implementation process. They were concerned that "there's not been any follow up studies on whether or not the fishing in those recreational zones has improved as a result of [taking out commercial fishing]".

Another concern was focused on inconsistencies in the decision process. One interviewee disputes

the extent to which the buyout was a true industry 'restructure', as opposed to being a highly costly "downsizing" exercise. While one interviewee was concerned that the decision had resulted in greater antagonism between the two sectors, another interviewee felt that relationships were slowly improving:

> *The antagonism between the recreational and commercial sectors took a long time to heal and there's still an element of it there but nowadays we're starting to see the sensible people within those sectors agree that we've got more in common than against one another and so you're tending to see a little bit more collaborative dialogue taking place nowadays but it wouldn't take long for that to tip the other way again.*

Appendix 10. Amendment to the EPBC listing of Mako sharks as migratory

In 1981, Australia became a signatory to the Bonn Convention, which aims to conserve migratory terrestrial, marine, and avian species throughout their home ranges. The establishment of the EPBC Act (1999) included provisions for protecting migratory species. Part 13, Division 2 of the Act prohibits the killing, injury, take, trade, moving of listed migratory species in Commonwealth waters.

Under the auspices of the Bonn Convention, a Memorandum of Understanding was formed as an instrument to further conservation of migratory species of sharks. The MoU is a global non-binding arrangement aimed at improving compliance and enforcement efforts for countries that have these sharks in their waters. Prior to the formation of the MoU, there were no international standards for managing migratory sharks. At the third MoU meeting in January 2010 the Mako shark was listed as migratory.

As signatory to the Bonn Convention, the listing of the Mako (longfin and shortfin, and the porbeagle) sharks triggered Australia's EPBC Act provision. These sharks were correspondingly listed as migratory under the EPBC Act. As noted above it now became illegal to kill, injure, take, trade or moving them in Commonwealth waters.

However, in July 2010 the Act was amended by removing the offence provision to allow recreational fishers, including charter boat operators and game fishers, to legally catch these sharks. Commercial fishing of them remains prohibited unless they are caught as bycatch. This amendment was made largely because the automatic EPBC listing in response to the CMS listing was seen as inappropriate. The amendment reflected information that these species were less threatened in Australia's marine region than in the North Atlantic where the CMS listing originated. The amendment also reflected the perceived need to reduce the impact of listing on recreational charter and commercial fisheries taking these shark species. By February 2011, Australia signed the Shark MoU, with the amendment to the migratory listing in place.

Interviewees' beliefs about factors influencing the decision

When asked to discuss what they felt had influenced the decision to amend the migratory listing of Mako sharks, interviewees identified a range of different factors [Refer Table 34]. Similar to the other resource access decisions, there was a strong focus on policy commitments, informational factors, and the politicised interactions of organisations, groups and individuals.

Table 34. Factors influencing the amended EPBC listing of the Mako Shark

Category	Interviewees' opinions
Particular events	• Relatively short timelines for finalising the original listing and eventual amendments
Actions of individuals	• Public servants and elected officials initially underestimating the salience of the issue (listing the species as migratory thereby disallowing recreational & commercial takes) • Individual Federal Ministers organising public meetings in protest of the migratory listing
Actions of groups, organisations, &/or institutions	• Active efforts by fisheries managers in several jurisdictions (who were being lobbied by recreational fishers) of actively lobbying Federal government to remove offense provisions • Federal government choosing not to take a strong stance against recreational fishing of the species
Interpersonal interactions	• Lack of communicative relationships between Fed/State officials and recreational fishers • Improved relationships between federal agencies responsible for fisheries management and marine conservation, enabling better information flow on the species

Differences and/or similarities in values and beliefs	• Deeply held environmental values of federal public servants creating resistance to compromise on listing of the species as migratory
Features of commercial fishing practices	• Less pressure on Mako sharks from commercial and recreational fishing in Australian waters; the process being an automatic response driven by overfishing in the Northern Hemisphere rather than Australia.
Informational factors	• International findings of substantial declines in Mako sharks in the Mediterranean • Questions re: whether there was sufficient, credible data on status of Mako sharks (in Australian waters) to warrant its listing as a migratory species or to safely allow recreational/commercial fishing • Criticism by some on use of precautionary principle as basis for decisions in face of uncertainty re: catch levels • Science not seen by some to play much of a role – more about governments backing down in face of lobbying by recreational fishers
International & national policy commitments	• Bonn Convention setting context (and resulting commitment by Australia) for the listing of migratory species
Specific laws	• Automatic provisions of listing of migratory species under the EPBC Act not allowing for more considered decision-making
Policy – principles, features, instruments	• Policy principles of needing to balance stakeholder interests and include social and economic factors into the decision about the amendment to the listing process
Governance	• Insufficient communications between Federal and State government officials regarding the controversy of the initial listing and proposed solutions, which exacerbated the conflict • Strong process of having a Working Group to identify issues and impacts from the listing process
Political climate	• Having elected official becoming aware of the listing and then responding, appeared to raisedthe pressure to amend the listing. • Lack of good scientific justification to restrict the remedy to the recreational sector, was seen to have a higher impact on the species than commercial fishing. Seen to be driven by elected officials in marginal seats in an election year.

Interviewees' views on the quality of the decision

As noted earlier, high quality policy decisions are typically evidence-based, consistent with stated policy goals, readily implemented, cost effective, fair, and achieve desirable outcomes. The interviewees were asked about to what extent they felt that the decision to remove the offence provision from the listing of Mako sharks as migratory was a 'good' decision. Concerns were directed at both the automatic listing mechanism of the EPBC Act as well as the decision to remove the Act's offense provisions relating to catching Mako sharks. Most of interviewees' responses were focused on the inconsistency of the decision making process.

Several interviewees were critical of the automatic listing mechanism, irrespective of whether they believed that Mako sharks should or should not be protected from recreational and/or commercial fishing. Interviewees were concerned that this automatic listing was not established with sufficient knowledge of marine ecosystems in Australia or the social environment. They felt that use of this kind of mechanism laid the groundwork for conflict among governments and stakeholders. Furthermore, some felt that removing offence provisions of the Act might function as the 'thin edge of the wedge' where future disputes over protected species could encourage similar amendments, which over time would jeopardise the EPBC Act's integrity. The quotes below illustrate these concerns.

> *The ban on the taking of Mako shark revolved around the species reduction in the Mediterranean ... so effectively what happened it was a global ban ... there had never been any in-depth scientific analysis undertaken [in Australia] on Mako sharks ... there was very little known about the species ... [so it was] an artefact of some global decision that was made to list on some appendix that automatically flowed through to Australian government legislation which resulted in a ban on a sector that was really having a minimal impact on a species that wasn't known to be threatened or endangered really in the first instance ... it [didn't] make logical sense.*

> *I don't believe that [the Government] paid enough attention to their overall authorising environment. And they looked at this decision [as something] they could make based on their*

professionalism and expertise that they held without any [consideration of] influence at a political or stakeholder level ... I think they thought that ... once they made this decision, they needed to say it full bore ... because to waver would look weak. But also it would compromise their own professionalism ... but then they changed their mind because they felt that they were getting too much pressure from the stakeholder, political level ... so ... they got boxed in a very hard corner ... and they couldn't then say 'well yeah, maybe we don't need to list it anymore'.

I think the decision to allow recreational fishing [of Mako sharks] was a good one. But I think the mechanism by which they did it was quite a bad precedent for them to see [being solved] by just removing an offence provision. You've still got a protected species, but you've removed the offence provisions that make it protected. So they've sort of got at the listing problem through a back door and it might well come back [to haunt them].

Another interviewee felt the decision to remove the offence provisions undermined protection of migratory species – which they saw as being a relevant issue for Australia. They were also concerned that the amendment furthered the idea that recreational/game fishing does not have significant environmental impacts on marine ecosystems or animals.

Some interviewees were concerned that the automatic listing was not founded on more/any certain scientific information that Mako sharks would be threatened by recreational fishing catch. These interviewees were supportive of the decision to remove the offense provision, because they felt that doing so was fairer to recreational fishers.

Appendix 11. The Let's Talk Fish Engagement Strategy Foundations

Engagement Strategy Foundations for Australia's Wild-Harvest Professional Fishing Industry

FRDC Project No. 2012/301

Let's Talk Fish

Preface

At the Seafood Directions 2013 Conference, a number of participants in the Let's Talk Fish Project workshop believed that one of the many things that the wild-catch commercial fishing industry could do to improve its social acceptability was to utilise more positive language to describe itself. For instance, the term 'wild-catch' could be replaced by 'wild harvest' to signal that fishing is undertaken in a controlled and managed setting. In addition, it was thought that 'commercial' conjured images of a profit imperative, and should be replaced by 'professional', which might point to the considerable skills involved in 'harvesting' fish sustainably. The participants coined the term Wild Harvest Professional Fishing Industry (WHPFI). This document uses this term instead of wild-catch commercial fishing industry, which has been used throughout the Let's Talk Fish Project Report.

Introduction

The wild-harvest professional fishing industry (the WHPFI) operates in a challenging environment that is characterized by diverse activities, species, locations, global economic trends, and the complex and competing interests of diverse stakeholders interested in the management and/or conservation of common property aquatic natural resources (FRDC 2010:1; Ridge Partners 2010:10). Ultimately the industry's 'sustainability' depends on what is ecologically possible and the extent to which it generates benefits in excess of costs and is consistent with prevailing social customs and norms – social acceptability (Firey 1960 as cited in Shindler et al 2004).

Recent FRDC-commissioned and other social research suggest there are problems with the fishing industry's social acceptability. These data indicate that sections of the Australian public and key decision-makers and interest groups believe the Australian commercial fishing industry falls short of being 'sustainable' (Aslin & Byron 2003; Mazur & Curtis 2006, 2008; Brooks 2009; Sparks 2011).

The results of the Let's Talk Fish (LTF) Project extend previous research findings. The Project has also revealed high levels of public approval of the WHPFI, which is conditional on the sector demonstrating its trustworthiness through environmental stewardship: moving beyond merely complying with regulations to applying best-practice environmental management and continually seeking improvements. The LTF Project also found that the WHPFI needs to recognise that – in addition to being shaped by a range of complex and interacting factors - resource access decisions are more directly shaped by the values, beliefs, and interests of key interest groups and decision makers than by the general public.

This document draws on contemporary social theory, best-practice community and stakeholder engagement, and the Let's Talk Fish Project findings to describe eight foundations for engagement, which the WHPFI (and fisheries decision makers) can draw on to improve its social acceptability. Before we identify those foundations, it is important to explain some key concepts of stakeholder/community engagement.

Effective stakeholder engagement

Why 'engage'?

Since the 1970s, it has been widely recognised that many natural resource challenges are complex, uncertain, occur at multiple scales and have multiple effects on people. Complicating these matters further are the situations involving common-pool resources, where numerous interests compete for development and use of those assets. Controversy is common in these settings, not least of all because people's different and conflicting values and beliefs are not well-recognised or incorporated into decisions. Instead, too much time is taken trying to prove who has the 'facts' and conflict often escalates[11]. Government or industry policies and practices lacking societal acceptance and approval will ultimately fail, even if they are profitable and supported by 'sound' science (Shindler et al 2004).

It is widely accepted that improved understanding of stakeholder attitudes can underpin more strategic and effective stakeholder engagement and efforts to improve social acceptability. Involving people in decisions about how natural resources will be used has had numerous practical and normative benefits (see Box 1).

Box 1. Major benefits of effective engagement

- Improving the relevance and practicality of fisheries policies
- Increasing the efficiency and effectiveness of service delivery
- Increasing the quality of relationships & trust among stakeholders
- Helping to identify policy or program areas in need of improved performance
- Being more proactive in identifying emerging issues
- Providing opportunities for diverse views to be heard
- Improving stakeholders' sense of ownership of/responsibility for problems as well as for identified solutions
- Building a stronger sense of empowerment and belonging among all stakeholders

Stakeholder or community engagement does require particular skills and various resources. It can also be complex and present varying levels of risk, which should be carefully managed. Some common risks include stakeholders:

- Having conflicting understanding of the purpose of engagement and different expectations regarding its outcomes;
- Feeling excluded from the process (e.g. not able to travel to participate, not feeling heard); and/or
- Having insufficient time to fully contribute or raise concerns due to short timeframes.

Principles of good engagement

Not all engagement or consultation is created equally. Simply having an engagement strategy does not guarantee it is appropriate or effective. Effective engagement practices are founded on established best practice principles (see Table 1). The WHPFI (and decision makers) should consider

[11] It is worth noting that not all conflict is necessarily bad. Constructive conflict increases involvement of participants, builds cohesiveness of a group, enables people to change and grow, and results in solutions that people can live with. Dysfunctional (destructive) conflict is when groups are polarised, morale is damaged, energy is diverted from more useful activities, and no decision is reached.

these principles if and when it seeks to develop a more detailed stakeholder engagement strategy and plans.

While the interpretations of these best practice principles can vary, there are some strong points of consensus. 'Good' engagement should reach out to more than the 'usual suspects' – to a wide range of stakeholders; information is shared openly and readily; people are involved in meaningful and reciprocal interactions; and considerable efforts are made to satisfy multiple interests. Differences of opinion remain about how strongly to prioritise science and information; how much leadership and direction the process needs; what is the proper behaviour of participants; and how to tackle issues of power and trust.

Table 1. Best practice engagement principles

Effective engagement processes are ...	What does that look like in practice?
... clearly scoped	• Internal and external stakeholders know what the engagement process is and what it is not. The issues are framed so that solutions are more readily found. • Internal stakeholders carefully plan what input is sought from others and how it will inform decision making, and how that input will be gathered & analysed.
... transparent	• Internal stakeholders ensure that others know what is happening and how their input is being used.
... connected to decision-making	• Input sought is gathered, analysed effectively, and used to inform decisions about processes and issues under consideration.
... inclusive	• All those with an interest or who might be affected have a genuine opportunity to participate.
... informative	• People have access to the information they need to participate meaningfully
... timely	• Opportunities are provided early in the decision making process for people to generate ideas and express their interests – not simply invite their feedback on predetermined solutions.
... involve deliberation	• There is time for internal and external stakeholders to think things through and weigh up alternatives.
... influential	• People feel it is worth the effort to participate because there is evidence that the process influences the outcomes.
... provide feedback	• People are told how their contribution has made a difference.
... builds trust	• Building trust is a goal in all interactions, which builds confidence in the way decisions are made.

Source: Adapted from IAP2 2001 www.iap2.org

Good engagement is planned

Any further development of wild-catch commercial fishing industry (or government) engagement strategies will require careful and collaborative planning. There are recommended steps for planning and implementing best practice engagement strategies (see Appendix 1), which are similar to the adaptive management cycle of 'plan, do, check, act'. Whilst initially this can be time consuming, it is fundamentally important to achieving success. One of the most important advantages of planning is that it encourages people to be clear about ***why they are engaging*** and ***what they are engaging about.*** Once this is done then appropriate decisions can be made about how to involve people and

be clear with them about level of involvement they can expect to have, why, and what that involvement entails[12] (see Appendix 2).

Eight Foundations to Help Build an Engagement Strategy for the WHPFI

As stated earlier, this document provides some foundations for how the WHPFI (and other stakeholders like fisheries decision makers) might better engage with society and thereby improve its level of social acceptability. It has eight key premises, which are listed below.

1. Move beyond communication to engagement

The LTF Project showed that while there is conditional public approval of the WHPFI, there are also low levels of trust and doubts about the industry's trustworthiness. Therefore, improving social acceptability will require something more than 'business as usual'. It is important for members of the WHPFI and others to increase their awareness and understanding of the difference between an engagement strategy and a communications strategy. Communication strategies are helpful ways for groups and organisations to plan how they will disseminate information ***to*** particular audiences. Such approaches are most effective when people are interested in and/or feel that they need the information[13]. They work less well in increasingly common complex situations where public trust is low and even the 'experts' disagree on what is 'the truth'.

Engagement strategies have slightly different (albeit complimentary) objectives and therefore use different methods and tools[14]. 'Engagement' is one of numerous terms[15] typically used to refer to the practice of ***involving interested parties in decision-making***. That decision making can be formal, informal, apply to a range of issues at different times and across different scales. For example, they might include a formal regulatory response to resource sharing conflict - such as declaring recreational fishing havens. Or a less formal collaborative approach such as a code of conduct to guide commercial access to baitfish species on shared bait grounds during game fishing tournaments.

Engagement is also about building reciprocal and trusting relationships with others. The WHPFI needs to build relationships with its stakeholders that are focused on:

- Two-way (or more) communication processes focused on mutual learning (not who is 'right' or who is 'wrong');
- Active listening and understanding people's values, interests, needs, and situations;
- Respect for people similarities and differences; and
- Valuing people's input.

[12] Ideally, where circumstances (time, resources) allow – those doing the 'engaging' would negotiate with participants to identify appropriate levels of involvement, based on their respective capacities.
[13] However, it is not simply a matter of interest. A person's interests will be determined by their personal values and beliefs, which then lead them to seek out and deem credible certain information. Provided with the same information ('facts' or 'evidence') people holding different values may reach very different conclusions about what should be done to resolve environmental (and fisheries management) issues (Harding 1998)
[14] An engagement strategy may include a communications strategy as a tool for how information might be framed and disseminated to stakeholders and/or the community.
[15] Other commonly used terms include 'public participation', 'community engagement', 'community consultation', 'stakeholder engagement', or 'stakeholder consultation'.

2. Formulate positive vision(s) for the future

There is no doubt that the wild-harvest professional fishing industry faces considerable challenges and works very hard to solve problems. However, if we expend the lion's share of our energy on problem-solving it can lead to excessive negativity, which in turn can lower morale. It may be time for the WHPFI to begin articulating and actively pursuing some positive visions for the long term future. Envisioning such goals and striving to reach them can help the sector to foster more positive (internal and external) relationships and build on the sector's strengths.

Those visions do need to match the general public's aspirations for a sustainable fishery that is based on best-practice environmental stewardship. Visions, goals, objectives, and practices that are seen to contradict environmental stewardship will create and sustain a 'disconnect' with predominant public and stakeholder values. For example, the Industry might consider the following visions for the industry overall and for improved social acceptability, respectively:

Healthy marine ecosystems, stable fish stocks, viable fishing communities

Widespread (stakeholder & public) trust in Australia's wild-harvest professional fishing industry

3. Prioritise building relationships with stakeholders over expensive public information wars

There are various ways to think about the people who might be interested and/or involved in fisheries management decisions and who ought to be 'engaged'[16]. The WHPFI could consider using a broad definition of 'stakeholder' to refer to:

> *any agency, organisation, group or individual who has a direct or indirect interest in fisheries management policies, programs, or projects, or who affects or is affected by the implementation and outcome of those initiatives.*

This is not to suggest that the WHPFI can or should engage with everyone at once and in the same way. The general public in particular is a large and diffuse target, which is difficult and expensive to reach. It is our recommendation that the WHPFI focus most on building more trusting relationships with those organisations, groups and individuals who have had and may continue to influence resource access decision-making processes and outcomes[17]. And special attention should be paid to include people from interest groups (conservation groups, recreational fishing groups) and decision makers who have different and sometimes conflicting opinions from members of the WHPFI (see Figure 1).

[16] Terms such as 'the public', 'the community', 'stakeholders' are commonly heard in NRM and other public policy areas. 'The public' or 'the community' are catch-all phrases used to describe those with an interest in a decision *other than* a proponent or responsible authority. The term 'stakeholder' can mean those with a (often financial or direct) stake or interest in an issue, such as government agencies, industry, Non-Government Organisations (NGOs) (Aslin & Brown 2002).
[17] Several FRDC funded research projects have been making similar recommendations (e.g. FRDC Report No. 2008/316).

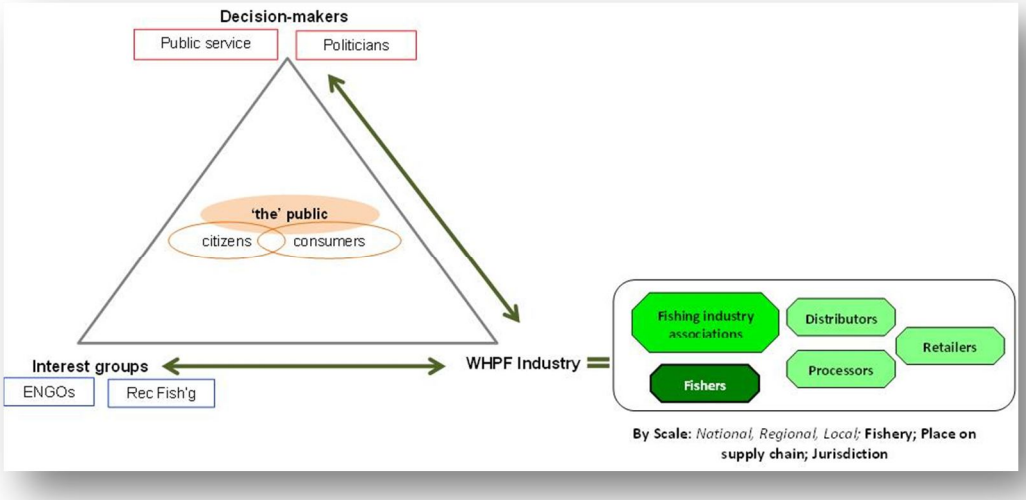


Figure 1. WHPFI relationship building – focus on those with influence

Building productive relationships requires time and consistency. The WHPFI could consider some kind of arrangements for regular engagement with decision makers and interest groups. These interactions would not necessarily always focus on contentious issues, but could also be designed to demonstrate the Industry's willingness to be transparent and continually improve its environmental performance by:

- Seeking feedback from stakeholders on how they see the WHPFI progressing and where improvements can be made;
- Proactively providing stakeholders information about industry initiatives and seeking feedback;
- Attending conferences and seminars and other networking opportunities run by ENGO's or other stakeholders on issues of mutual interest such as ocean health; and
- Actively collaborating - including initiating collaboration - with community groups, ENGOs and others on issues of shared interest.

The WHPFI could also make arrangements for when issues erupt into significant public controversy, such as the "supertrawler". There has been extensive conversation about what 'went wrong' during that time, not the least of which was a perceived lack of a cohesive industry response. Some kind of crisis management team that has representatives from a range of fisheries and other stakeholder groups might help to position the industry more favourably and ensure it is 'in the loop'.

4. Selectively communicate with the public

Communications with the public may be less about building direct relationships than about having a selection of key messages to deliver where finite resources permit and where there is likely to be public interest. These messages should be those that aim to improve public assessments of the trustworthiness of the WHPFI – that is, the Industry has the ability and motivation to act in the public (not just private) interest by being good environmental stewards and that it shares (at least some of) its environmental values and beliefs (see Appendix 3 for an explanation of environmental values). Improved trust and judgements of trustworthiness are strongly linked to higher levels of

social acceptability. Moreover, over time, improved trust will provide a better 'buffer' for the industry when unexpected controversy arises.

The LTF Project's findings from the public mail survey identified a range of public concerns about the WHPFI's environmental performance. A number of key messages are shown in Box 2, which draws on those data.

Box 2. Key messages for communications with the public about the WHPFI

- The Industry has a long term commitment to the sustainability of fish stocks
- The Industry is motivated to 'move beyond compliance' with environmental regulations
- The Industry readily adopts and helps continue to refine and develop methods to reduce by-catch
- The Industry readily adopts best-practice to ensure fresh, healthy seafood for Australian consumers
- The Industry is taking steps to correct inappropriate behavior by some fishers

The Industry does need to be prepared to use social media to communicate with the public; however that use should be more focused on:

- Regular scanning for issues of current and potential concern to members of the public. That scanning should be based on a systematic investigation of key stakeholder interests, assessment of potential impacts and degree of controversy, and levels of concern (see Appendix 1 (Step 1) and Appendix 4);
- Challenging misinformation[18]; but also – and perhaps more importantly
- Providing stories about their environmental stewardship, and where possible using credible figures to tell those stories[19].

Another way to improve public communication is to regularly assess the Industry's level of social acceptability. The FRDC already invests in substantive research and regular opinion polls. However, that investment may be slightly restructured and re-focused to do the following:

- In-depth investigation of industry acceptability on a 5 year cycle; and
- More frequent opinion polling that focuses on key issues generated by the in-depth research and investigates the strength of those opinions, the nature of the concern, and what people think ought to be done

5. Improve understanding and manage expectations of the policy process

The LTF Project demonstrated that a range of factors interact in complicated ways, including the WHPFI's level of acceptability, to influence how resource access decisions are made and what outcomes they will have. It is important to improve awareness and understanding among members of the WHPFI about governments' fisheries policy and management processes. There are potentially various points of (formal and informal) influence in the policy cycle where fishing industry leaders

[18] This will need to be done with considerable thought about 1) the goal of doing so, and 2) whatever response is chosen be predicated on principles of best-practice risk communication (e.g. Sandman 2012).
[19] E.g. FRDC Project No. 2011/503

could be better prepared to negotiate with decision makers and interest groups for desired outcomes.

6. Engage internally to help people move on.

There appears to be considerable anger, grief, and despair among some members of the WHPFI over some of the negative impacts from fisheries regulation reforms and public controversies over fishing industry access to wild fish stocks, including resource sharing decisions. This situation has serious implications for the well-being of those people, as well as for the WHPFI as a whole. If these states of mind are being experienced widely across the Industry, they are likely to inhibit achievement of individual, association, and industry-scale goals. It is important to sincerely acknowledge people's feelings in order to then support them to help find a way to 'move on'. The WHPFI may need to consult with rural health experts to implement an industry-wide system implemented at regional and local scales to help people to heal.

7. Continue to build capacity for engagement and seek professional assistance

There have been various initiatives, including recent FRDC research[20], to help build the capacity of the fishing industry to better communicate with its various stakeholders. The WHPFI should continue to invest in those and other initiatives. However, it is challenging for any organisation seeking to engage its stakeholders and the wider community to identify the necessary processes and tools that are appropriate for different purposes, parties and contexts. The WHPFI should seek professional expertise in stakeholder and community engagement to take an engagement strategy to the next level of development.

8. Identify roles and responsibilities for industry engagement

A comprehensive industry engagement strategy needs to be owned and driven by the WHPFI as a whole and should operate on a range of levels (i.e. regional, fishery, local scales). Consideration needs to be given to who will take responsibility for such a strategy and existing structures such as peak bodies and industry associations will have a key role. At a fishery level, and individual business level engagement is equally important with emphasis changing according to the business environment and respective priorities of those groups/entities.

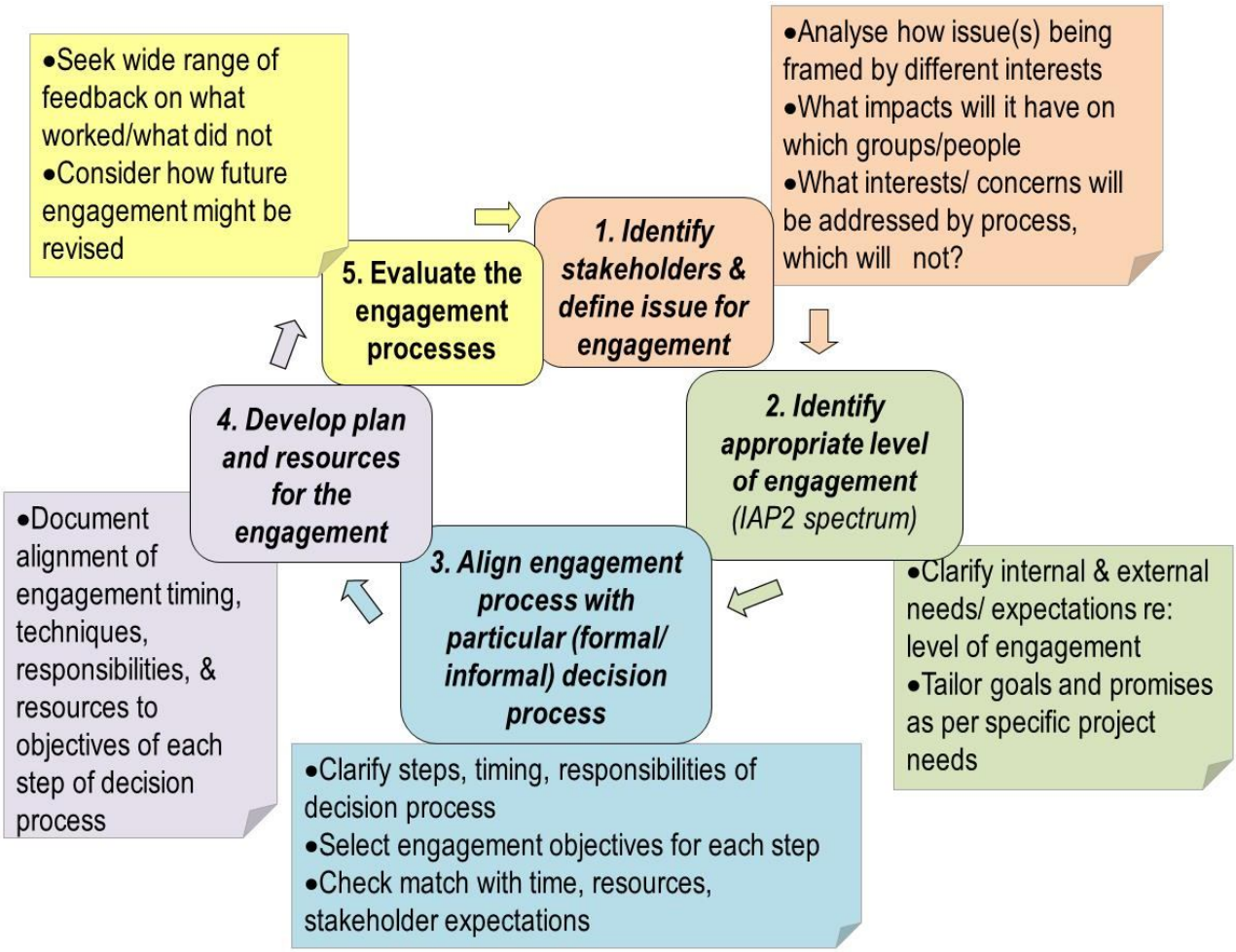
The LTF Project Team is aware of the extensive discussions about industry leadership and the need for a peak industry body to represent the diverse interests of the PWHFI. And such a body (with the assistance of community/stakeholder engagement professionals) would be the logical choice for driving the design and implementation of a sector-wide engagement strategy. However, fishing businesses, industry associations, individual fishers, and other groups along the supply chain should not necessarily wait for a peak body to be in place before take up many of the recommended approaches in this document. 'Leadership' takes many forms and does not have to be limited to authorising action from the 'top' of a hierarchy. There are already examples[21] where members of the WHPFI are seeking to build bridges of collaboration across the boundaries of stakeholder interests. These initiatives need to be widely showcased – demonstrating that it is possible to

[20] For example, FRDC Projects 2012/500, 2012/402, 2011/410, 2011/409, 2011/400, 2011/525, 1999/356 and the current Women's Industry Network Seafood Community

[21] Tassal Seafood's use of a community engagement program and officers.

improve peoples' understanding of one another's values and interests so that compromise can be reached.

Appendix 1. Good engagement is based on a reflective planning cycle



Appendix 2. The different purposes, promises and approaches of engagement

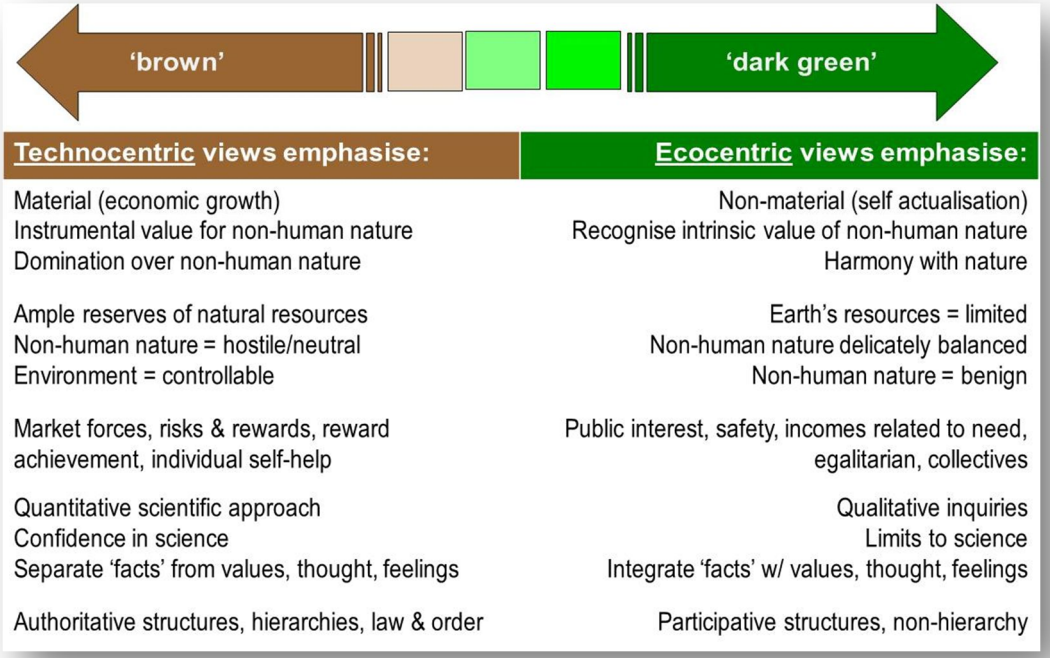
Inform	Consult	Involve	Collaborate	Empower
		Objectives		
To provide participants with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions.	To obtain feedback on analysis, alternatives and/or decisions.	To work directly with participants throughout the process to ensure that their issues and concerns are consistently understood and considered.	To partner with participants in each aspect of the decision including the development of alternatives and the identification of preferred solutions.	To place final decision-making in the hands of participants.
		Promise to participants *(stakeholders, communities, 'the' public)*		
We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and provide feedback on how your input influenced the decision.	We will work with you to ensure that your concerns and issues are directly reflected in the alternatives developed and provide feedback on how your input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
		Example approaches		
Fact sheets, web sites, displays.	Public & stakeholder comment, focus groups, surveys, public meetings, open houses.	Workshops, deliberative polling.	Advisory committees, consensus building.	Citizen juries, ballots, delegated decisions.

Source: International Association of Public Participation (IAP2) (2000-2006)

Appendix 3. How do environmental values differ?

Natural resource management, including fisheries, is full of uncertainty and complexities, which arise in decision making because of long time scales, information gaps, and competing values and information (Dovers et al 2008). Competing environmental values are especially relevant in a fisheries management context. Values are the guiding principles in people's lives – the things that are very important to them. There are many ways to understand people's environmental values and how those values can be contradictory. Some social scientists have talked about a spectrum of 'green' values in society that informs how people think about how society should be run, as well as how to address environmental and natural resource problems (see Figure 1). At the 'green' end of the spectrum, people are very concerned about how we treat non-human nature. They feel that non-human nature has worth distinct from what use we can put it to, so we are morally obliged to take care. At this end of the spectrum people tend to question economic growth and believe we should live more simply. At the 'brown' end of the spectrum, people tend to value non-human nature primarily on the basis of its usefulness to people. They also believe continued economic growth is critically important and will provide the technological and financial resources needed to address any environmental problems.

Figure 1. There is a spectrum of environmental values



However, it is important to note that these values and beliefs are not mutually exclusive. Not all programs, policies, or personal actions will further the environmental objectives or interests represented by either end of the spectrum. That is, there are many perspectives all along the spectrum, including the middle. For example, a fishing business seeking to maximise its profit margins, may recognise that marine mammals are worth saving and despite the cost will upgrade their by-catch reductions devices.

Appendix 4. Scanning check list for identifying potential social acceptability issues

What is the (current or potential) issue?

How might people be impacted by the issue?

Potential and/or perceived impacts	Degree of impact: none, low, medium, high	Degree of controversy: None, low, medium, high	For which stakeholders?
Livelihood, employment, lost productivity			
Property values			
Local economic vitality			
Personal health/safety			
Family health/safety			
Endangered environmental resources			
Nuisance factors			
Threats to cultural, racial identity			
Restricted freedom of choice			
Media coverage and/or interest			
Political controversy			
History of neglect or mistrust			
Equity concerns			
Others			

Meet with stakeholders, establish lines of communication; and seek to confirm issues

Refine impacts analysis by considering which are the most important

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