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FISHERIES RESEARCH &  
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# **Professionalising Industry – NSW Pilot**

**OceanWatch Australia**

Michael Wooden, Brad Warren and Lowri Pryce

February, 2015

FRDC Project No 2013/024

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ISBN 978-0-9750797

Professionalising Industry NSW Pilot

2013/024

2015

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#### Principal Investigator Contact Details

Name: Lowri Pryce  
OceanWatch Australia  
Address: Locked Bag 247  
Pyrmont NSW 2009.  
Phone: 02 9660 2262  
Fax: 02 9660 2786  
Email: [lowri@oceanwatch.org.au](mailto:lowri@oceanwatch.org.au)

#### FRDC Contact Details

Address: 25 Geils Court  
Deakin ACT 2600  
Phone: 02 6285 0400  
Fax: 02 6285 0499  
Email: [frdc@frdc.com.au](mailto:frdc@frdc.com.au)  
Web: [www.frdc.com.au](http://www.frdc.com.au)

## **Acknowledgements**

OceanWatch Australia gratefully acknowledges the support and contribution from the Fisheries Research and Development Corporation, Professional Fishermen's Association of NSW, NSW Department of Primary Industries Fisheries, Fishermen's Cooperatives Association of NSW, NSW Fishing Industry Training Council, Master Fish Merchants Association of Australia and the Sydney Fish Market for this project. OceanWatch would like to thank the staff of the Wickham, Nelson Bay, Wallis Lake, Coffs Harbour and Maclean Fishermen's Cooperatives for assistance in extending invitations for fishers to participate in OceanWatch Master Fisherman Training workshops.

OceanWatch thanks the Commercial Fishermen's Cooperative, Club Forster, Nelson Bay Golf Club, South West Rocks County Women's Association and Maclean Council for kind use of their facilities.

OceanWatch thanks the South East Trawl Fishing Industry Association, Southern Rock Lobster Clean Green Programme, and AgriFood Skills Australia for assistance with detailed consultation and feedback.

OceanWatch thanks the staff of the Sydney Fish Market and the Pop Agency for their helpful contribution during the project launch.

OceanWatch acknowledges the support of Parliamentary Secretary to the Minister for Agriculture, Senator Richard Colbeck, who launched the project on Friday 21<sup>st</sup> November, 2014 at the Sydney Fish Market.

This project occurred at a time of great uncertainty and turmoil for the fishing industry in NSW. It was with immense pride for OceanWatch to witness fishermen step forward to participate in this pilot, and set the bar high as OceanWatch Master Fishermen.

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# Abbreviations

AGM	Annual General Meeting
ASIC	Australian Seafood Industry Council (defunct)
BMP	Bio-toxin Management Plan
CRC	Cooperative Research Centre
Dept. Ag	Australian Government Department of Agriculture
EGF	NSW Estuary General Fishery
EC	NSW Estuary General Fishery Code of Practice
EIA	Environmental Impact Assessment
ENGO	Environmental Non Government Organisation
FAO	United Nations Food and Agriculture Organisation
FAO Code	United Nations Food and Agriculture Organisation Code of Conduct for Responsible Fisheries
FMS	Fisheries Management Strategy
FRAB	Fisheries Research Advisory Body
FRDC	Fisheries Research and Development Corporation
FSP	Food Safety Plan
MAC	Management Advisory Committee (defunct)
MARPOL	Marine Pollution
NRM	Natural Resource Management
NSW DPI	NSW Department of Primary Industries (Fisheries)
NSW FITC	NSW Fishing Industry Training Committee
NSW SIC	NSW Seafood Industry Council
OC	NSW Ocean Hauling Fishery Code of Practice
OHF	NSW Ocean Hauling Fishery
OW EC	OceanWatch Australia Executive Chair
OW EO	OceanWatch Australia Executive Officer
OW MF	OceanWatch Master Fisherman
OW PM	OceanWatch Australia Program Manager
PFA	Professional Fishermen's Association
PFA EO	Professional Fishermen's Association Executive Officer
QR	Quick Response
RD&E	Research, Development and Extension
RTO	Registered Training Organisation
SFM	Sydney Fish Market

SMP	Share Management Plan
TEP	Threatened, Endangered or Protected
URL	Universal Resource Locator
VET	Vocational Education and Training
WHS	Workplace Health and Safety

# Executive Summary

Addressing people development skills and improving the profile of the fishing industry amongst the community are currently key priorities for the NSW fishing industry. These key priorities were determined following a fishing industry wide call for RD&E ideas by the NSW Fisheries Research Advisory Body (FRAB) and an open invitation priority setting workshop held in 2012 at Sydney Fish Market (SFM).

As a direct response to these identified priorities, OceanWatch developed the *Professionalising Industry – NSW pilot* (project), to combine people development pathways for industry through formal best practice training and assessment with opportunities to engage with local communities and tell their story.

The initial pilot project was supported by funding from the Fisheries Research and Development Corporation (FRDC) on behalf of the Australian Government, along with a cash investment from OceanWatch Australia (OceanWatch).

OceanWatch is a national not-for-profit environmental company which works with the Australian seafood and salt water communities to advance environmental, economic and social sustainability. OceanWatch has 25 years experience in management and administration of projects to improve environmental practices, protect threatened marine species, reduce bycatch, introduce sustainable technologies, improve behaviours and restore important marine habitats. OceanWatch has recently been recognised by the Australian Government as Australia's marine natural resource management organisation.

The project was part of an overall FRDC strategy to improve sustainability reporting and public perception of the seafood industry. Other key components include improved management reporting mechanisms, development of a national harvest strategy and seafood industry and retailers environmental certification activities.

The pilot project was initially developed in 2012, with the creation of training materials and rollout of training workshops through 2013 and 2014. Significant delays in the delivery of training workshops occurred as a result of on-going fisheries management restructuring in NSW.

Overall project objectives were; to broaden the scope of formal training in the seafood industry, to improve environmental awareness and performance of individual fishers, and to communicate a professional face to the community; in order to reclaim the title of the professional fisher.

A broader objective of the training was to improve individual fishers' industry awareness of community's environmental expectations, and encourage industry ownership, adoption and voluntary implementation of an industry wide code of practice. The project also aimed to increase transparency of industry activities and demonstrate commitment to best practice.

Many of the project aims have private and wider seafood industry benefit inextricably linked to public benefit. The ability to quantify the extent of public benefit is limited by the lack of a market where ecosystem benefits can be valued. The OW MF recognition coupled with the QR code OW MF profiles have been used as a Market Based Instrument. Combining the focus on public benefit outcomes with industry and individual fisher's priorities was a key feature of the OW MF project. Many previous OceanWatch projects have used incentives to engage the seafood industry and landholders in public benefit environmental works. The OW MF project differs in that it has used non cash incentives to engage fishers and influence change.

The offer of free training was a key factor in workshop attendances as the participating fishers see themselves as contributing in kind to a public benefit through attending the workshop when they



could be going fishing and generating income. In the case of the OW MF project, however, the principle incentive used to influence change is something less tangible.

The ability to display the sustainability credentials of local seafood in the public space has been a significant driver for many fishers who feel under pressure from conservation and recreational fishing groups for continued access to fishing grounds.

Through the project, the first tailored training package for professional fishers endorsed to work in the NSW Estuary General Fishery (EGF) was developed by OceanWatch and the NSW Fishing Industry Training Council (NSW FITC), and delivered to fishers via formal workshops.

The training materials and workshop methodology were developed by experienced professional fishers, OceanWatch staff and the NSW EGF Manager. Formal training and assessment was linked to the Seafood Industry Training Package competency unit SFIEMS201b *Participate in environmentally sustainable work practices*. Training content incorporated a diverse set of topics, aligned with the Estuary General Code of Practice (EC) and the principles and objectives of the UN Food and Agriculture Organisation Code of Conduct for Responsible Fisheries (FAO Code). Training delivery was designed to have maximum relevance to fishers' actual work environment and work practices.

To be recognised as an OceanWatch Master Fisherman (OW MF), a professional fisher must satisfactorily participate in a formal training workshop and complete all practical and written assessment item requirements. The training package ensures fishers improve awareness, ownership and implementation of the EC. In addition, fishers must have relevant food safety and maritime competency accreditation, for e.g. NSW Food Safety Certification, Seafood Handling and Distribution, Master 5, Coxswain, etc, to be recognised.

A total of 6 training workshops were held in Newcastle, Nelson Bay, Forster (2), Maclean and South West Rocks during the period July-November 2014. In total, 54 participating fishers successfully completed all requirements of the Professionalising Industry - NSW Pilot training and subsequently were recognised as OW MF.

Communication tools developed as part of the pilot project enable consumers and other interested parties to access supportive information about choosing and eating New South Wales wild caught seafood. Quick Response (QR) code technology was utilised to connect consumers with individualised OW MF web based profiles. The QR code is linked to fisher's products and displayed at point of sale to provide buyers and consumers access to:

- Profile videos of OW MF
- Profile videos of fishing methods used by the OW MF
- FRDC and NSW DPI Fisheries stock assessments, species profiles and science based sustainability information
- SFM recipes and consumer seafood information

***Using new technology to provide increased information access for consumers is a tool to balance the debate on sustainable seafood. The project was officially launched with the by line "everything you need to know about choosing and eating Australian seafood".***

The OW MF, as a collective, have been promoted as:

- Having professional knowledge and skills backed by formal training and assessment
- Operating under International, National, State & Regional regulations to ensure sustainable and responsible fishing
- Providing quality, locally produced seafood to the community

A database of individual fisher profiles and fishing practices has been created to provide easy access for consumers and interested parties to web based information relating to local seafood harvest and supply. Providing consumers with access to the database aimed to build awareness and support for responsible and sustainable practices of recognised fishers.

An example of an OW MF profile can be accessed through scanning the QR code below. QR code readers are readily available for free download through the App store.



*Figure 1: OW MF No.4 QR Code*

# 1. Introduction

Australia's commercial fisheries access community owned resources from community owned waterways. This is often in direct competition with other resource users, including recreational and Indigenous fishers and the conservation sector.

Despite indicators of good fisheries management, the positive message about the sustainability of fisheries stocks in Australia and the responsible practices of Australian fishers is not getting through to the Australian community. This is of particular concern to the fishing industry when the low environmental footprint of seafood production and high regulatory management compares well against other methods of food production.

FRDC funded research highlighted limited community awareness of fisheries sustainability in Australia, with a need to continue focus and investment in engagement with the community, and telling the story of the journey to sustainability (Sparks 2013). The general lack of community knowledge and understanding of Australia's fisheries coupled with negative media publicity has contributed to an overall poor public perception.

Addressing people development skills and improving the profile of the NSW fishing industry amongst the community are currently key priorities for the fishing industry. These key priorities were determined following a fishing industry wide call for RD&E ideas by the NSW FRAB and an open invitation priority setting workshop held in 2012 at Sydney Fish Market (SFM).

As a direct response to these identified priorities, OceanWatch developed the Professionalising Industry – NSW pilot ('project'), to combine people development pathways for industry through formal best practice training and assessment with opportunities to engage local communities and tell their story.

The project addressed the FRDC Programs and Themes in the FRDC RD&E Plan 2010-2015 in the following ways:

FRDC Program 1: Environment, Theme 4 Ecologically sustainable development.

FRDC Program 3: Communities, Theme 12 Workforce development.

FRDC Program 3: Communities, Theme 13 Innovative skills, resilient and supportive communities.

FRDC Program 4: People development, Theme 12 Workforce development.

FRDC Program 5: Extension and adoption.

The NSW EGF is a diverse multi-species multi-method fishery that may operate in 76 estuarine systems throughout NSW. It is the most diverse commercial fishery in NSW, comprising approximately 600 fishing businesses authorised to utilise 17 types of fishing gear. NSW professional fisheries are divided into 7 separate regions between the Queensland and Victorian borders. There are 63 classes of shares available in the NSW EGF, i.e. 9 share classes available in each of the 7 regions.

The EGF is a significant contributor to regional and state economies providing high quality seafood and bait to the community. The NSW EGF is recognised for harvesting 11 primary species, 9 key secondary species and 55 secondary species.

## 2. Objectives

Objectives of the Professionalising Industry project, as agreed in the FRDC contract:

1. Gain industry support for uptake of Codes of Practice in NSW, and industry training and accreditation
2. After feedback from industry, review and align current NSW EC to FAO Code (international) and ASIC (national) codes
3. Develop training materials for fishers focusing on fishing practices fishery regulations and environmental best practice aligned with the Seafood Training Package
4. Train NSW SeaNet Officer in Certificate IV Workplace Training and Assessment
5. Deliver training workshops to fishers as a pilot, assess and accredit against training package competencies
6. Acknowledge successful participants as an "OceanWatch Master Fishermen"
7. Create interactive database of supporting information
8. Extend results of the project to stakeholders and consumers

While addressing the above objectives, the project additionally aimed to:

- improve fishers' environmental performance
- underpin fisher's knowledge and experience with formal training and accreditation
- give recognition to NSW fishers for having extensive experience and skills, and responsibly harvesting a local sustainable resource
- improve NSW fishers' understanding of factors that may influence the community perception of the fishing industry
- build provenance of local seafood
- create a point of difference for OW MF products in the market place
- provide information to the community
- contribute to industry social licence (see comments in discussion)

The project also aimed to assist allied project (CRC Project 2012/746, FAO Based Responsible Fishery Management project, Sevaly Sen) and by benchmarking the industry components of the FAO Code within the NSW context. The *Professionalising Industry – NSW pilot* project has also been designed and implemented to keep the national context as a future capability.

The project was part of an overarching FRDC fishing industry strategy of multiple stand-alone projects which were inter-linked, researching topics to improve the public perception and consequently support for the Australian fishing industry. Other key projects include harmonisation of stock assessment reporting, improved bycatch reporting, development of a national harvest strategy, analysis of management systems and seafood industry and retail environmental certification activities.

### 3. Methodology

#### Objective 1- Gain industry support for uptake of CoPs in NSW and industry training and accreditation

A number of presentations were developed for delivery to NSW Fishermen's Cooperatives, PFA, NSW Seafood Industry Council (NSW SIC), NSW DPI Fisheries and the SFM. Presentations were designed to ensure appropriate consultation with stakeholders, allow feedback on key objectives, methodology and expected outcomes of the project. This method was utilised as there are no other formal mechanisms available for industry meetings/forums in NSW.

Another key aim of these meetings was to garner support for the uptake of CoPs in NSW. In addition, one-on-one meetings and phone discussions were designed to discuss project objectives individually and/or in groups with EGF fishers, and the NSW EGF manager prior to the EC review.

#### Objective 2- After feedback from industry, review and align current NSW Estuary Fishery Code of Practice to FAO (international) and ASIC (national) codes

Feedback from presentations, and further discussion between OceanWatch, EGF professional fishers, former EGF Management Advisory Committee (MAC) members, PFA, NSW DPI and SFM determined a need for an EC review. These meetings were also designed to ensure adequate consultation in:

- the review of the EC
- reporting alignment of the EC with the FAO Code principles and objectives
- maximising industry uptake of the updated EC

One-on-one meetings were held to provide input into the EC review process between OceanWatch and NSW DPI Fisheries Management. Suggested amendments were passed on to former EGF MAC members prior to drafting the updated EC (Appendix C).

As the project was directly related to SFM/CRC project MB079 – pilot management standard for 2 NSW fisheries, meetings were held between OceanWatch and the SFM/CRC project PI to ensure consultation in methods used to assess conformance and alignment with the FAO Code.

It was agreed that a conformance report should be developed to describe alignment of the actions listed in the EC with the principles and objectives of the FAO Code, i.e. how fishing practices described in the EC compare with the principles and objectives of the FAO Code.

The purpose of the FAO Code was to provide a framework to ensure sustainable use of aquatic resources, operating in harmony with the environment. As described in Article 6, Principle 1,

***“the right to fish carries with it an obligation to do so in a responsible manner, to ensure effective conservation and management of the living aquatic resources.”***

As Australia was a signatory to the FAO Code, the project methodology linked the on-ground actions of the EGF fishers to the principles and objectives of the FAO Code, as this would demonstrate the adoption of responsible practices by the EGF fishers. Although the FAO Code is voluntary and not prescriptive in terms of practical implementation, some principles were interpreted as being based on compliance with national, state and international regulations, rules and standards.

To ensure the principles of the FAO Code were practically implemented, the FAO Code was summarised into its various sections, highlighting the key principles and objectives that guide and encourage international responsibility and best practice. A conformance report was prepared to evaluate the performance of the fisher's practices as detailed in the EC against the principles of the FAO Code (Appendix D). This was completed by cross referencing against the criteria of the FAO Code, and conformance reported through interpretation of alignment between fishing practices and actions described in the EC.

### Objective 3- Develop training materials for fishers focusing on fishing practices, fishery regulations and environmental best practice aligned with the Seafood Training Package

Incorporating the revised and adopted EC within the training materials aimed to improve fishers' understanding and implementation of the EC. The training manual was developed to ensure workshop information was relevant to the project objectives and assessment topics.

The development of training materials was overseen by the NSW FITC as the Recognised Training Organisation (RTO). Development of a project training manual (Appendix E) required collaboration between OceanWatch, key industry participants, NSW FITC, PFA, Indigenous representatives and NSW DPI (management and aquatic biosecurity). Utilising the combined skills and experience of all engaged, ensured that training materials focused on best practice in fishing operations, regulations and environmental concerns specific to the EGF. To ensure relevance to legislated fisheries practices, fisheries management training materials were developed by NSW DPI EPF manager.

Topics developed within the training program include:

- Social Licence
- Professionalising Industry project
- Code of Practice
- Habitat and Water Quality
- Commercial Fisheries Management in NSW
- Bycatch
- Threatened Endangered and Protected (TEP) Species
- Valuing the Catch
- Animal Welfare
- Marine Pests
- Waste and Pollution
- Workplace Health and Safety
- Indigenous Fishing
- Industry Organisations

A summary of relevant points within the EC were discussed at the completion of each training topic. The summary actions highlighted best practice in the operation of the fisher's EGF business.

A meeting was held between OceanWatch and NSW FITC on the 2<sup>nd</sup> August, 2013, to further progress alignment of training material topics and to ensure participating fishers' competency could be assessed and accredited against the unit of competency SFIEMS201B – *Participate in environmentally sustainable work practices*.

Written assessment tasks were designed to encourage participants to discuss the value of complying with the EC, as well as test knowledge of best practice.

Participants were also required to complete practical assessment items (Appendix G) to:

- demonstrate awareness of TEP species potentially encountered during fishing operations
- explain the importance of reporting interactions with TEP species
- demonstrate awareness of potential social and environmental benefits of using bycatch mitigation devices
- demonstrate awareness of techniques that maximise survival of non retained catches

Practical assessments aimed to improve individual fishers' knowledge of fishery catch data and TEP species interaction reporting requirements, and included practical assessments to assess competence in accurate reporting.

A trainer's manual was additionally developed for OW MF trainers (Appendix F), to ensure all key messages were delivered during the training workshops, and to maintain focus on required content delivery for assessment requirements.

#### Objective 4-Train NSW SeaNet Officer in Certificate IV Workplace Training and Assessment

OceanWatch Program Manager – Wild Capture Fisheries (OW PM) enrolled in a Certificate IV Training and Assessment course on the 9<sup>th</sup> September, 2014 through recognised training provider, Fortress Learning. The qualification reflects the roles of individuals delivering training and assessment services in the Vocational Education and Training (VET) sector. Training included an online external study program over a period of 6 months consisting of written and practical assessments (Appendix H – Certification). A total of 10 units, consisting of 7 core units and 3 elective units was a requirement of the qualification.

#### Objective 5- Deliver training workshops to fishers as a pilot, assess and accredit against training package competencies

Considerations were made regarding workshop delivery methodology. Concern from the fishing industry was raised about the timing of the project, considering the current industry restructure. Nonetheless, progression was necessary to act on key priorities identified by industry to improve people development skills, and improve community awareness and perception of the seafood industry.

Locations of training workshops were selected in consultation with NSW fishermen's co-operatives, PFA and individual fishers. Training and assessment workshops were designed for delivery on Fridays, due to the SFM auction not operating on weekends. Workshop locations and dates were determined approximately three weeks prior to the workshop to allow hire of venues and organisation of catering, etc. Information regarding the workshops was disseminated through fishermen's co-operative noticeboards to ensure fishers were aware of training dates and venues. OceanWatch utilised long held relationships with key industry stakeholders, to promote the value of industry participation in the training program.

Training workshops were designed to be delivered during three sessions of work, over a total period of approximately six hours. Formal training workshops focused on EGF specific information, and provided a platform to formally assess and accredit participating EGF fishers in the OW MF pilot project.

Workshops were designed to allow the presenters to guide the participants through a 161 page slide show presentation. The slide show was designed to run in parallel with the workshop training manuals supplied to participating fishers, as well as further web based stimulus.

All workshops began with a personal fishing life story by a professional fisherman/trainer. This method aimed to engage and connect with participants, initially and specifically through a fisher's lens. The introduction stimulated discussion on the limited dialogue between industry and the community. The opening discussion highlighted limited awareness and hence limited community support for professional fishing, despite an increasing demand for seafood products in Australia.

Participants were encouraged to think about the value of engaging in a conversation with the community and telling the fishing industry's story, in ensuring the responsible and sustainable harvest of seafood in Australia.

Workshop methodology included recent research on the community perception of fishing in Australia, (Sparks 2013). This aimed to bring focus to the issue of community perception, and encourage participants to discuss positive and negative influences on those perceptions.

Assessments were required to be completed by participants through the course of the training delivery. Trainers facilitated industry discussion and completion of all formal assessment tasks as part of the training workshop. Completed assessments were marked by OceanWatch and the NSW FITC to ensure successful participants were recognised in the SFIEMS201b *Participate in Environmentally Sustainable Work Practices* unit of competency.

An evaluation form was developed to assess fishermen's perceptions of the training workshops, and allow participants to provide feedback regarding program content (Appendix I).

### Objective 6- Acknowledge successful participants as "OceanWatch Master Fisherman"

Participants were recognised by OceanWatch as an OW MF, if individuals:

- completed an OW MF training workshop, engaged in discussion and successfully completed written and practical assessments
- previously had completed food safety training and/or operate a current NSW Food Authority food safety plan
- had appropriate maritime competency requirements for the EGF

A teleconference to discuss the protocols around recognition as an OW MF was held by the OceanWatch Board of Directors. A framework was developed to underpin professional fisher's knowledge, experience and environmental performance, and consequently measure the success of the approach.

It was agreed that individual fishers may be recognised as OW MF, subsequent to successful participation in a formal training workshop and following satisfactory completion of all written and practical assessment tasks. Additional eligibility requirements included a current commercial fishing licence and relevant food safety and maritime competencies.

An application form was developed describing the expectations of recognised OW MF. The application form included a commitment to abide by the EC and to promote a positive public profile, signed as a component of the OW MF application process (Appendix J).



A certificate was developed by OceanWatch to acknowledge successful participation and formal recognition of individual participants as an OW MF (Appendix K).

A formal certificate was also developed by the NSW FITC to acknowledge satisfactory completion of the Seafood Industry Training Package unit of competency SFIEMS201b (Appendix L).

A workshop tool kit was developed for fishers who were acknowledged as an OW MF. The tool kit consisted of a USB card containing a digital copy of the training manual, a summary flipchart (Appendix M) and an individual QR code. A personalised QR coded stamp, OW MF branded stickers, key ring, stamp pads and industry related information pamphlets were additional items included.

### Objective 7- Create interactive database of supporting information

The interactive database was designed to provide public access to information about recognised OW MF through smart phone technology.

OceanWatch staff and fishers developed web based videos to introduce the fisher to the consumer as well as demonstrate fishing methods used to harvest seafood within the NSW EGF. These videos included messages to improve community awareness of how local seafood was harvested and handled, for e.g. reflecting animal welfare, food quality, food safety, bycatch reduction techniques and gear modifications.

Links providing consumers access to web-based science and sustainability information, external to the OceanWatch website, were also included to improve industry transparency.

The database provides the consumer access to information under the following headings:

- Fisher profile
- Fishing methods
- Sustainability
- Training
- Recipes
- Location

To populate each profile within the database, an information sheet (Appendix N) was developed to collect individual fisher data relating to:

#### Share classes

Data was collected to determine individual fisher's methods used from the following list of methods:

- Handline
- Meshing
- Prawning
- Trapping (Finfish species and Blue swimmer crab)
- Eel trapping
- Mud crab trapping
- Hand gathering (Beach worm and Pipi)
- Fish seine, share classes were referred as one method (i.e. Category 1, Category 2 and Hauling Crew)

### Primary target species

Data was collected to determine individual fisher's target species, against 24 common EGF species. This data was used to focus consumer's access to information related to species supplied by each individual OW MF.

Relevant hyperlinks were researched to improve consumer access to web-based information, for e.g. FRDC Fish Files and NSW DPI species profiles and stock assessments where available. Recipes from the SFM were also provided for specific locally caught EGF species.

### Locations fished

Data was collected on locations fished by individual fishers.

### Formal qualifications

Additional data was collected on individual fisher's formal qualifications, for e.g. food safety certification and maritime competency.

### Sustainability

The EC was electronically embedded within the sustainability tab. Hyperlinks were researched to improve consumer access to supporting information from NSW DPI, for e.g. the EGF Fishery Management Strategy (FMS), Environmental Impact Assessment (EIA) and Safety Management Planning. Short videos were included to demonstrate risk biotoxin management practices that ensure food safety, sustainable mud crab trapping practices and techniques that minimise seabird predation on non retained species.

## Objective 8 - Extend results of the project to stakeholders and consumers

An extension and adoption plan was developed, submitted and accepted by FRDC (Appendix O). A Public Relations (PR) communication plan was developed by Cox – Inall (Pop Agency) (Appendix P).

Quick response (QR) code technology was used to link the project to stakeholders and consumers at point of sale. QR codes are machine readable codes, consisting of an array of black and white squares. They are typically used for storing universal resource locator (URL) addresses of a webpage, or other information, that may be read by a camera on a smart phone.

## 4. Results

### Objective 1- Gain industry support for uptake of CoPs in NSW and industry training and accreditation

Support for the revision of the EC and formal fisher training, certification and recognition, was gained following five presentations to NSW Fishermen's Co-operatives. Additional presentations were made to PFA, NSW SIC, NSW DPI and SFM via board and annual general meetings during the period October 2012 and July 2013. During these forums, the OW EC highlighted the potential benefits of engaging the community in this manner.

OceanWatch presented directly to fishers at a number of NSW Fishermen's Co-operatives to ensure initial awareness of the project, prior to the commencement of the FRDC project agreement. An update was periodically created and pinned on fishermen's co-operative notice boards, and also mailed out to fishers. The update included key information regarding the project, including, what the *Professionalising Industry* project was about, how project aims were intended to be met, and what was required of fishermen to participate.

Mock fisher web based profiles were initially created to help fishers understand the concept and the value of engaging with the training component of the project. A copy of the newsletter – Professionalising Industry Update No.1 is attached to this report (Appendix Q).

### Objective 2- After feedback from industry, review and align current NSW EC to FAO Code (international) and ASIC (national) codes

The EC was subsequently reviewed by OceanWatch in consultation with industry representatives and NSW DPI. Minor amendments were made to text to more accurately reflect current work practices, and the EC reordered to ensure the document clearly distinguished regulatory and voluntary actions (Appendix C).

Amendments to the EC also included six additional voluntary actions and minor text modifications to ensure conformance with the objectives of the FAO Code. Actions were included that encourage a mechanism for ongoing reviews of the EC, encourage industry assistance in maritime rescue where appropriate, encourage fishers to maintain and develop records of training and education competencies, encourage industry involvement in community engagement, and ensure that individual actions do not bring the industry into disrepute.

The FAO Code objectives were reflected in the EC, with established principles and practices reflecting relevant legislative requirements and the standard of conduct expected for all persons involved in the EGF. A conformance report was compiled describing how the EC reflected key national and international guideline objectives regarding responsible fishing described in the FAO Code (Appendix D).

Feedback was subsequently sought following the finalisation of the conformance report, with copies forwarded to the EGF Manager, PFA EO, former EGF MAC members, SFM Responsible Fisheries Management Research Officer and the General Manager of the SFM. A request was made to the PFA to include the EC review as an agenda item for the PFA AGM, held on the 6<sup>th</sup> December, 2013. An amended EC was officially adopted by industry following acceptance of changes by NSW DPI and the PFA on behalf of EGF fishers at that meeting.

### Objective 3- Develop training materials for fishers focusing on fishing practices, fishery regulations and environmental best practice, aligned with the Seafood Training Package

Training materials were developed by OceanWatch in consultation with project partners, further described in the Methodology. A manual was developed, consisting 14 chapters linked to a power-point presentation. The training manual was embedded with the power point slide images, further web based supporting information was accessible in the training manual via hyperlinks, providing depth to the content.

The training material chapters focused on information directly relevant to EGF fishing businesses. The EC was incorporated into the training materials, aiming to increase fishers' awareness, adoption and implementation of the EC.

The training materials initially engage the participants with the concept of social licence, the role public trust plays in generating social licence for the seafood industry, and how this manifests as a fisher's continued access to the publically owned resource.

Detailed information was provided which was specific to:

- TEP species identification, handling and reporting
- bycatch reduction techniques,
- aquatic biosecurity and mitigation techniques
- importance of timely and accurate reporting of biosecurity issues
- marine debris and pollution impacts on the environment
- fisheries management objectives and management tools
- value of complying with the EC

Case studies within the materials were created which were directly relevant to an EGF fisher's daily work practice. For example *Caulerpa taxifolia* and the European Green Shore crab were used as case studies to illustrate the potential impacts of marine pests on marine ecosystems. Both of these introduced species were real life examples which fishers might encounter in their daily activities in the EGF.

Other topics (not assessed for SFIEMS201b) promoted discussion and awareness of:

- food safety and food quality research and handling guidelines
- Indigenous cultural fishing
- workplace health and safety
- importance of fish habitat and water quality
- animal welfare
- industry structures and the role of industry organisations

At the completion of each topic, a summary was presented and information highlighting the relevance of the topic to the EC.

A water resistant information flipchart was developed to highlight the NSW EC, summarise the key messages of the training manual content and provide a list of useful industry contacts.

Training and assessment workshops were designed to link with the SFIEMS201b *Participate in environmentally sustainable work practices* competency unit, a component of the Seafood Industry Training Package.

## Objective 4- Train NSW SeaNet Officer in Certificate IV Workplace Training and Assessment

The former NSW SeaNet Officer (OW PM) completed training through recognised training provider, Fortress Learning on the 30<sup>th</sup> March, 2014.

A total of 10 Units of competency were completed, consisting of 7 core units and 3 elective units.

### Core Units

TAEASS401B Plan assessment activities and processes

TAEASS402B Assess competence

TAEASS403B Participate in assessment validation

TAEDEL401A Plan, organise and deliver group-based learning

TAEDEL402A Plan, organise and facilitate learning in the workplace

TAEDES401A Design and develop learning programs

TAEDES402A Use training packages and accredited courses to meet client needs

### Elective Units

- TAEASS301B Contribute to assessment
- TAEASS502B Design and develop assessment tools
- TAEDEL301A Provide work skill instruction

The OW PM completed all units of competency requirements to be recognised for the qualification TAE40110 – Certificate IV in Training and Assessment (Appendix H).

## Objective 5- Deliver training workshops to fishers as a pilot, assess and accredit against training package competencies

One mock training workshop was held in Sydney to trial the training manual and fine tune the training delivery. Participants included the Principal Investigator and three OceanWatch directors (two holding endorsements in the NSW EGF and the third in the Tasmanian Scalefish Fishery).

Two participating OceanWatch directors were acknowledged for engaging in workshop training and satisfactorily completing assessment requirements by the NSW FITC, and recognised as OW MF.

A total of six formal training and assessment workshops were subsequently held in five locations; EGF Region 4, Newcastle, Nelson Bay and Forster; EGF Region 3, South West Rocks and EGF Region 2, Maclean (Figure 2). Although all workshops were originally planned for EGF Region 4, at the request of endorsed EGF fishers and following discussion with the PFA, the geographical area was expanded to additionally include EGF Regions 2 and 3.

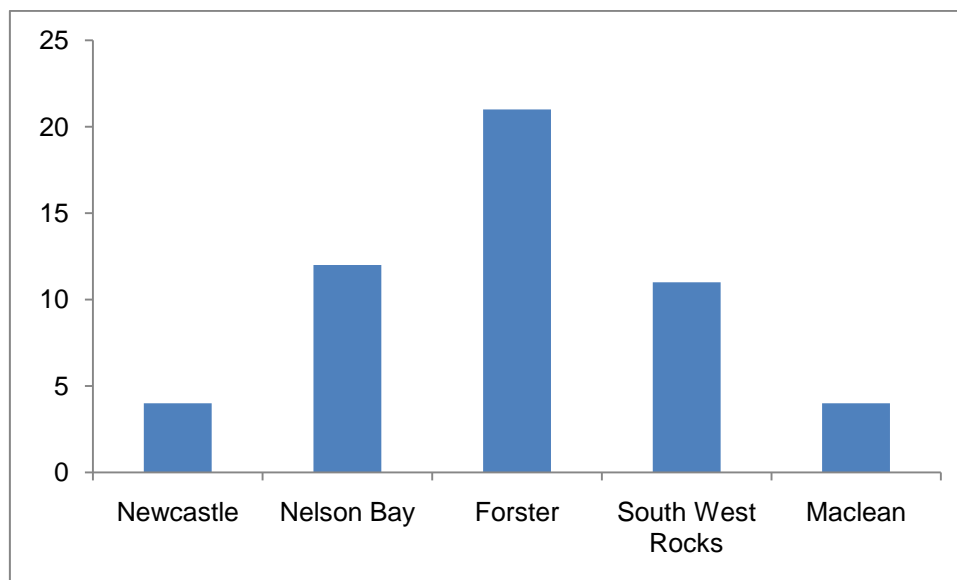


Figure 2. Total number of OceanWatch Master Fishermen trained and assessed at various locations

In total, 54 professional fishers endorsed to fish in the NSW EGF were recognised as OW MF following successful completion of formal training workshops and possessing current food safety and maritime competencies; four based in EGF Region 2, 12 in EGF Region 3 and 38 in EGF Region 4.

The first and sixth formal Master Fisherman training and assessment workshops were held at Club Foster. Following the first workshop, a request was made by endorsed EGF fishers in the region and the Wallis Lake Fishermen's Co-operative. OceanWatch agreed to offer a second workshop for those that could not attend the first. The sixth workshop was delivered on a Monday as directed through feedback, to ensure proposed training dates did not clash with an industry prawn draw and the start of the prawning season. All participants satisfactorily completed the written and practical assessments and had previously been recognised for training in food safety and maritime competency. In total, 21 fishers were recognised as OW MF following successful participation in training and assessment from the Forster area.

The second formal workshop was attended by four professional fishers endorsed in the EGF at the Wickham Commercial Fishermen's Cooperative meeting room. All of these participants based in the Tea Gardens region of NSW hold relevant endorsements in the NSW EGF and have relevant food safety training and maritime competencies. Participants satisfactorily engaged in discussion and successfully completed written and practical assessments. This workshop resulted in four additional fishers recognised as an OW MF and assessed as competent in the *SFIEMS201b* unit.

The third formal workshop was held at Nelson Bay RSL Club. A total of 12 fishers participated, all held endorsements in the EGF and had previously been recognised for formal food safety and maritime competency training. Participants satisfactorily completed written and practical assessments and engaged in discussion. Group discussions focused on demonstrating adoption of improved fishing practices and further activities that can positively promote the industry to the wider community. All 12 participants were individually recognised as OW MF.

The fourth and fifth formal workshops were held at South West Rocks and Maclean respectively. The workshops attracted a total of 15 endorsed EGF participants. In total, 11 fishers based in Region 3 attended the fourth workshop and only four fishers from Region 2 participated in the fifth workshop. The number of participating fishers at the Maclean workshop was potentially reduced due to the death of a local fishing identity with the funeral held on the day of the training workshop.

Table 1. Workshop number, location, training and assessment dates, and number of successful participating fishers

Workshop	Workshop Location	Training and Assessment Date	Number of successful participants
Training preparation	Sydney	04/07/2014	2
1	Forster/Tuncurry	08/08/2014	18
2	Newcastle	15/08/2014	4
3	Nelson Bay	05/09/2014	12
4	South West Rocks	03/10/2014	11
5	Maclean	24/10/2014	4
6	Forster/Tuncurry	10/11/2014	3

At the conclusion of training, fishers were supplied a waterproof summary flip chart with easily accessible information using hyperlinks and QR codes for issues including TEP and marine pest identification, handling and best practice guidelines and to reinforce key messages in OW MF program.

#### OceanWatch Master Fisherman training evaluation

In total, 52 fishers completed an evaluation form following completion of their training (Appendix S).

Questions 1 and 2 requested detail from participants on venue location, date and fishing entitlements.

Key evaluation questions 3, 4 and 5, were designed to determine the training content relevance to EGF fisher's businesses, the level of improved awareness of the EC, and the level of trainers' knowledge of topics delivered through the training content, respectively.

Question 3 queried the relevance of training materials to EGF fisher's businesses.

Fishers were asked to score on a scale of 1 -10 (1 = not at all, 10 = very) recording the relevance of the information delivered.

The average score of participants was 9.35.

Question 4 determined the level of improved understanding of the EC.

Fishers were asked to score on a scale of 1 -10 (1 = not at all; 10 = definitely) regarding their improved understanding of the EC.

The results indicate that fisher awareness of the EC was raised, with an average score of 9.42.

Question 5 evaluated participants perception of the trainers' knowledge of topics covered.

Fishers were asked to score on a scale of 1 -10 (1 = not at all; 10 = very) regarding trainers knowledge of topics covered.

Evaluation results indicate that fishers believe trainers were very knowledgeable of the topics covered, with an average score of 9.67.

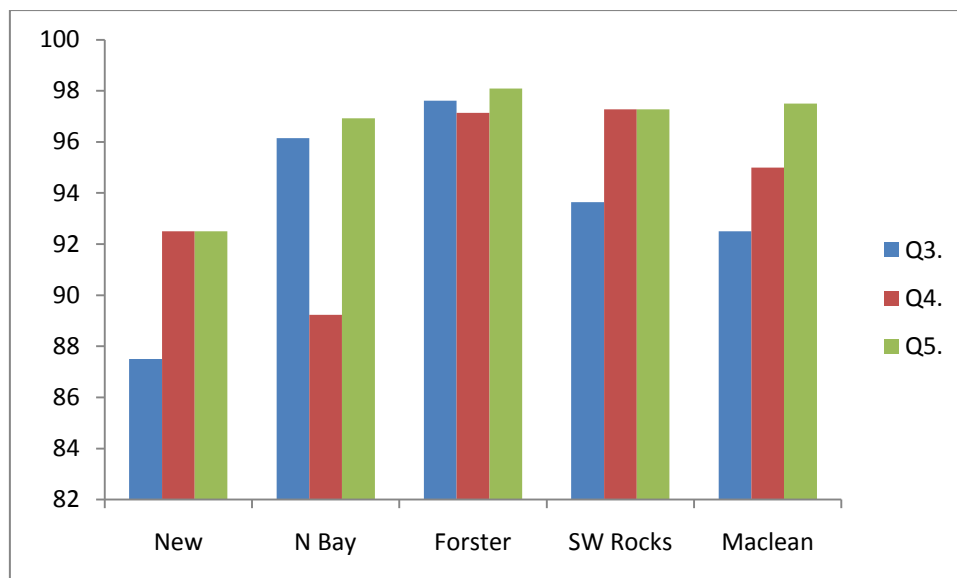


Figure 3. Master Fisherman training evaluation results

#### Objective 6- Acknowledge successful participants as OceanWatch Master Fishermen

An OW MF application form was completed by all 54 acknowledged OW MF (Appendix R).

A total of 54 participants were formally recognised by NSW FITC for successful completion of training through the Seafood Training Package competency unit *SFIEMS201b Participate in Environmentally Sustainable Work Practices*, and acknowledged as OW MF according to the guidelines set out by the OceanWatch Board of Directors.

Successful completion of the OW MF training was acknowledged through an OceanWatch certificate of achievement, to certify successful completion and recognition as an OW MF.

#### Objective 7- Create interactive database of supporting information

An interactive database was developed to improve information sharing regarding seafood provenance and increase transparency with seafood consumers and the community.

OW MF have been linked to their individualised web based profile within the database through QR codes, which can be displayed with their products. Those within the supply chain can scan the QR codes with a smart phone to access the information contained within the database.

The database aims to build community awareness and improve perception of local fishing operations into the future.

The database remains accessible after completion of the project for ongoing legacy.



Further to accessing the database through the QR code, information to promote the project has also been published online at the OceanWatch website:

<http://masterfishermen.oceanwatch.org.au/>

From this parent web page, users can navigate to either the:

‘For Industry’ webpage

‘For Consumers’ webpage

### For Industry

The webpage provides information specifically for fishermen who are participating, or are interested in participating, in the program. These pages have been updated throughout the duration of the project. The use of buttons or tabs as links simplifies the website and encourages fishermen to browse the site.

The user-friendly tabs assist fishermen to easily select information regarding:

#### Project background

Providing information on industry identified priorities and improving industry understanding on the purpose of the project.

#### OW MF profiles

Linking industry to OW MF profiles to demonstrate the QR code concept.

#### Training dates

Information was made available during the course of the project, to ensure fishers were aware of training dates, locations and starting times.

#### Updates

Providing up to date information as required during the course of the project.

#### Contact us & feedback

Ensuring an industry feedback mechanism and contact details for industry to discuss the project with the project staff.

### For Consumers

The page has been designed as another option for access to project information for stakeholders. The user has been provided with an option to select from six tabs.

The first tab, titled ‘meet your fishers’ links the user to a page that provides photos of recognised OW MF. By selecting a photo, users are directed to the individual fisher’s personalised OW MF page.

This provides the user with access to individual fisher information, including:

#### Individual fisher profiles

Short videos and individual profile images were created for recognised OW MF. The videos were designed to introduce the fisher to the consumer; to put a face to their local seafood supplier.

#### Fishing methods

Short videos were developed and embedded within the Fishing Methods tab. The Fishing Method tab included video of all EGF methods.

## Fish supplied

Information provided on local seafood included fish species profiles and stock assessment reports where available, and accessible via hyperlinks.

Information was provided on the following species: Yellowfin bream *Acanthopagrus australis*, Mud crab *Scylla serrata*, Longfin eel *Anguilla reinhardtii*, Dusky flathead *Platycephalus fuscus*, Luderick *Girella tricuspidata*, Sea mullet *Mugil cephalus*, Pipi *Donax deltoides*, Prawns spp., Sand whiting *Sillago ciliate*, Beachworm spp. various (Class: *Polychaeta*), Cockle spp. various (Family: *Arcidae/Veneridae*), Blue swimmer crab *Portunis pelagicus*, River garfish *Hyporhamphus regularis*, Mulloway *Argyrosomus japonicas* and Silver biddy *Gerres subfasciatus*. Information was also collected on Tailor *Pomatomus saltatrix*, Hairtail *Trichiurus lepturus*, Southern herring *Herklotsichthys castelnaui*, Squid spp. various (Class: *Cephalopoda*), Octopus *Octopus spp.*, Leatherjacket *Leatherjacket spp. various* (Family: *Monacanthidae*), Whaler shark spp. *Carcharhinus spp.*, Stingray spp. various (Family: *Dasyatidae/Urolophidae*), Trevally spp. various (Family: *Carangidae*) and Australian salmon *Arripis trutta*.

## Location

Information has been provided on individual OW MF fishing location to promote regionality of locally caught seafood.

## Sustainability

Information has been provided on the EGF, linking the user to relevant information on the NSW DPI webpage. Further information included access to the EC, EIA, FMS, Food Safety Plan (FSP) and biotoxin management plans (BMP). The tab has been embedded with links to short videos demonstrating sustainable fisheries practices such as; bycatch mitigation, techniques adopted to maximise survival of non-retained fish, quality assurance, and food safety and sustainable practices adopted in the harvest of seafood. Further hyperlinks have been provided linking the OceanWatch webpage, describing some of the work with the Australian fishing industry on sustainability and other information relevant to the management of Australian fisheries.

## Training

Information has been made available on the OW MF project, including individual recognised training completed by the recognised fishermen, and their maritime competency and food safety endorsements.

## Recipes

Species specific seafood recipes have also been provided via hyperlinks to the SFM website.

## Objective 8- Extend results of the project to stakeholders and consumers

The extension component of the project had multiple stakeholder streams that it fed into at various stages of its development, including:

- Professional fishers
- Seafood consumers
- Local seafood suppliers

The project was designed in a manner that would self-perpetuate its extension for the life of the website and the relevance of information (legislation, licensees etc). This relevance directly relies on maintaining accurate information on the website as the fishery, its participants, and management evolve.

The first stream of extension of the project and content involved the professional fishers during the formal certification workshop, Certificate 2 *Participate in Environmentally Sustainable Work Practices*, which is aligned to the Seafood Industry Training Package. Certification is obtained through a single day course process where information is extended to fishers followed by subject assessment tasks for certification, which includes:

- Threatened, endangered and protected species handling and reporting
- MARPOL
- Bio-security
- Indigenous cultural fishing
- fisheries management tools
- log book reporting
- knowledge of the EC

The information extension within the training workshop goes beyond the *Cert 2* qualification subjects, and includes the topics:

- Social licence
- Product quality
- Animal welfare
- Fish habitat
- Water quality
- Work Health & Safety
- Government and industry organisations

The first stage of adoption for participants is achieved when certification is granted. Following successful completion of assessment tasks the participant is given a unique QR code.

The website perpetuates ongoing extension to interested individuals, through creating a platform to access information relevant to the local seafood industry.

For e.g. providing the website user access to:

- EC
- EGF EIA
- EGF FMS
- FSP
- BMP

This component of the extension can be facilitated at the point of sale, for example at seafood retail outlets, restaurants and market floors. This can be further extended and promoted through the placement of QR codes on the side of fishing vessels, cars, promotional information including at point of sale and at public events. The QR code is the point of first contact for extension of the entire project and provides an inexpensive and reliable platform to drive consistent and targeted extension.

A variety of posters were developed to deliver information on the OW MF program to consumers and the community. Local poster content included personal profiles of recognised fishers, and information relevant to the fishery in which they operate, made available through quick response codes that link to the OW MF database. The posters identified fishers that work within specific areas. A project poster was also created to promote all recognised OW MF operating in the EGF. To aid longevity, posters were created on water resistant core flute (Appendix Q).

The posters were also created and designed to link directly with the consumer at point of sale in the co-operative shops. Information for the consumer has been made accessible by using quick response codes embedded in the posters. This links the consumer to the OW MF database, where all the personal profiles of fishers, short videos, recipe links and information pertaining to environmental awareness, responsibility and sustainability are located.

## Media coverage

### *Print*

The Australian

<http://www.theaustralian.com.au/news/nation/scan-a-fish-for-facts-with-oceanwatch-itll-have-you-hooked/story-e6frg6nf-1227131195271?nk=5800251a450dc181c0d6bea38a63b30f>

The Land

<http://www.theland.com.au/news/agriculture/livestock/general-news/consumer-wins-on-world-fisheries-day/2717958.aspx>

Food Magazine

<http://www.foodmag.com.au/news/oceanwatch-australia-increases-tractability-with-q>

FRDC Fish Magazine, page 15. Grassroot actions earn OceanWatch stewardship role.

### *Radio*

Live to air radio interviews:

702 – NSW metro

ABC South East – SA and Vic regional

ABC Darwin

2GB Sydney

### *Project Launch*

The Professionalising Industry – NSW Pilot was officially launched as the OW MF project at the SFM by Parliamentary Secretary to the Minister for Agriculture, Senator Richard Colbeck on the 21<sup>st</sup> November 2014 at the Sydney Fish Market in Pyrmont, Sydney.

Representatives from FRDC, OceanWatch, recognised OW MF, SFM, NSW Co-ops Association and the media attended through an invitation only event.

# 5. Discussion

## i. Community perception of industry

Australia's fisheries access community owned resources, and operate on community owned waterways. This is often in direct competition with other on-water user groups and stakeholders, including recreational and Indigenous fishers and the conservation sector. Even community members who never eat seafood have an interest in how our marine resources are managed - as the Australian community is the ultimate owners and stewards of these resources.

Fisheries management decisions are influenced by a combination of science and evidence, as well as the social context and politics surrounding a particular issue. Issues that are highly contentious are more likely to have increased political and social scrutiny.

Despite indicators of good management, sustainable stocks, and a track record of continual environmental improvement, the sustainability message is not getting through to the Australian community. Results from a 2013 FRDC survey identified that only 30% of the survey respondents believe that commercial fishing is sustainable. These results were similar to those described in a 2011 survey (27%) and in 2003 (25%).

From the fishing industry's perspective, this is a case of perception being at odds with reality. For the fishing industry to prosper in the future, negative community perceptions will need to be addressed. In addition, industry may benefit from demonstrating shared values to improve public trust.

Through the early stages of the training workshop, fishers were engaged through presentations and group discussion to improve their understanding of factors that may influence the community perception of the fishing industry. Positive and negative case studies directly relative to recent events within the EGF and other Australian fisheries were used to stimulate group discussion.

With a shared understanding of the social environment relating to the fishing industry amongst the group, training progressed to include presentations and assessment tasks relevant to the EC.

At the completion of the training, and with an increased knowledge and understanding of current best practice, fishers committed to complying with their internationally relevant EC to be recognised as an OW MF.

The linking of these fishers to the supply chain through the fisher profile and fishing method videos was designed to put a face to the community's local fishers, and to provide more transparency regarding industry practices. It has also been used as an opportunity to present OW MF in a positive light by highlighting their commitment to international best practice, and their demonstrated improvement through formal training and assessment.

## ii. Discussing the concept of social licence

The concept of social licence is introduced and discussed with participants as the privilege of operating with minimal formalised restrictions (legislation, regulation, or market requirements) based on maintaining public trust by doing what's right. Further discussion highlights that maintaining social licence requires building public trust that industry is doing the right thing environmentally and ethically, and living up to community expectations.

An initial key question discussed 'Is commercial access to the community's fish a privilege or a right, or a combination of both?' provides context for the complete OW MF program.

Discussions and references to the need for fishers to generate social licence to continue to access public resources is a key theme throughout the training program, including the importance of “professional” behaviour within the industry, taking in environmental, consumer and community perspectives, as well as fishers’ own perspectives. The purpose of these initial discussions is to help fishers understand the benefits of being seen within the community as acting professionally and ethically, leading to building community trust in their activities.

### **iii. Importance of aligning the EC with the FAO Code**

The FAO Code represents a global voluntary consensus from 170 member nations regarding a wide range of fisheries and aquaculture issues. Australia is a signatory to the FAO Code, and has agreed to a set of principles and standards that provide a framework that encourages sustainable fishing in harmony with the environment, conservation, management and development of global fisheries.

The Responsible Fisheries model is based on globally relevant, comprehensive and respected fisheries management guidelines, and provides an international standard for fisheries evaluation. Although the FAO Code is voluntary in terms of practical implementation, some principles are based on compliance with national, state and international regulations, rules and standards.

The FAO-based model has been described as meeting the highest benchmarks for credible certification by the Alaska Seafood Marketing Institute. Other environmental non government assessments for e.g. MSC sustainability assessments are also based in part on the FAO Code. Iceland also applies the FAO-based model.

Modifying the EC to ensure that it reflects the principles of the FAO Code encourages fishing practices that align with international standards of responsible fishing. The alignment of the EC to the FAO Code may assist fishers to ‘tell their story’ of responsible and sustainable harvest practices. Abiding by a code that reflects the principles and objectives of the FAO Code may help to develop public trust, important for the social sustainability of the EGF.

### **iv. Importance of industry ownership, adoption and implementation of the EC**

The original EC was prepared a number of years ago through a partnered approach between NSW DPI, the EGF MAC and the OceanWatch SeaNet Environmental Extension Program. The adoption of an industry wide code was considered a positive step forward that could assist fishers to communicate commitment to best practice in the responsible supply of local seafood. Although formal adoption of the original EC by industry was declared by NSW DPI following a mail out to EGF fishers, former EGF MAC members (officially disbanded in 2009) highlighted limited industry awareness, ownership, implementation and progression of the EC within industry. OceanWatch recognised that an EC will only have value if it has relevance to industry’s current working conditions, was adopted by industry as their own, and not imposed by the regulator.

### **v. Influences on training material development and delivery**

Fishers in NSW have been involved in industry structural adjustment of one type or another for over 20 years. The current restructure of fisheries in NSW has consumed much of the EGF fishers and the EGF Manager’s attention, and resulted in delays in the development and sign off of the training material and workshop delivery.

Training materials were developed ensuring direct relevance to EGF, for e.g. OceanWatch developed training topics discussing habitat, water quality, animal welfare and waste and pollution. OceanWatch staff with experience in extension of bio-security best practice i.e. the National System for the Prevention and Management of Marine Pest Incursions, developed materials on Marine Pests in collaboration with NSW DPI Aquatic Biosecurity. Similarly, EGF management and legislation training materials were developed by the NSW DPI EGF Manager ensuring relevance to current fisheries legislation.

In particular, the development of the NSW DPI fisheries management topic within the training materials was considerably delayed due to the commitment of management staff to structural reform workshops throughout NSW. Despite these issues, project staff continued to liaise with the NSW DPI to ensure finalisation of training materials as soon as practicable, in order to initiate the delivery of training workshops.

Delays in the development and finalisation of training materials did however, allow some fishers time to assimilate the OW MF training objectives and distinguish and separate training and assessment from industry reform workshops. Many of industry's former representatives and advisors were affording less time to participation at formal meetings, potentially burned out following involvement in recent restructure workshop processes.

In the early stages of the project, the fisheries management topic was planned for delivery by NSW DPI EGF Manager. However, it was decided in consultation with NSW DPI that OceanWatch would deliver the fisheries management topic content, and minimise the likelihood of restructure issues derailing the training workshops and the broader project.

After feedback from a NSW FRAB and FRDC Indigenous Reference Group member, an Indigenous fishing topic was developed by an OceanWatch director who identifies himself as an Awabakal man, with demonstrated experience in the development of the NSW Indigenous Fishing Strategy, and delivery of cultural awareness training to NSW DPI staff. The topic was designed to give EGF fishers a greater understanding of the activities and aspirations of Indigenous fisheries.

A number of fishers who had intended on participating in a workshop delivered in Maclean, had to cancel due to a funeral. Some fishers interested in completing training, notified trainers on the date of training delivery that they could not attend, due to work commitments, which included the opening of NSW Estuary prawn fisheries and a number of part-time fishers who are alternately committed to working on cane farms.

## **vi. Importance of training the trainer**

The OW PM completed training Certificate IV Training and Assessment TAE40110 through the NSW FITC. The skill sets derived from the units of competency within the qualification are deemed suitable for those engaged in the delivery of training and assessment of competence in a workplace context.

Completion of the TAE40110 qualified the OW PM with appropriate skills to plan, organise and facilitate assessment activities and processes through group based learning. Attaining the qualification allowed the OW PM to formally assess participants as a component of the OW MF training workshops, aligned with the Elements and Performance Criteria of the SFIEMS201b Unit of competency.

The attainment of Training and Assessment qualifications by the OW PM ensured the workshops were designed and delivered to fishers by a person:

- consistent with the requirements of the Australian Quality Framework
- with an ability to plan, organise and deliver the training workshops
- with an ability to lead participants in the discussion of various fisheries and environmental topics
- who has demonstrated practical experience, knowledge and awareness of the fishing industry workplace
- who has extensive practical experience in fisheries research and fisheries extension
- who can bring science based extension information and industry practice together

In effect, training was developed and delivered by those with an intimate knowledge of the EGF and the work practices of the fishers, as opposed to a professional trainer. This was a major feature of the design of the project, and was intended to increase buy in from participants.

## **vii. Value of formal accreditation underpinning the delivery of training**

Designing a training package that recognises improved awareness and adoption of best practice aligned with international standards adds validity to the statement that OW MF are professional.

Training topics were developed to ensure information was relevant, accurate and culturally appropriate. The development of training materials and assessment items was additionally overseen by the NSW FITC to ensure relevance to competency unit requirements.

Early drafts of the training materials provided an opportunity for feedback and review prior to the commencement of formal training workshops. The first workshop was observed by a number of OceanWatch staff members, including the Project PI to allow comment and suggestions to improve engagement in training.

With many in the community questioning the sustainability of commercial fisheries in Australia, overall awareness and subsequent perception of the seafood industry is generally poor. Improving recognition amongst the community of the responsible harvest of local sustainable fisheries resources was therefore a major consideration of the project.

The formal training, assessment and OW MF recognition process, combined with the communications aspects of the project, enables OceanWatch, an environmental organisation with a demonstrated long term commitment to sustainable seafood, to contribute positively to the Australian seafood industry story in the public space.

## **viii. Aligning NSW Seafood Industry, Australian Government and OceanWatch priorities**

### **NSW Seafood Industry Priorities**

As identified above, addressing people development skills and improving the profile of the fishing industry amongst the community are currently key priorities for the NSW fishing industry. These key priorities were determined following a fishing industry wide call for RD&E ideas by the NSW FRAB and an open invitation priority setting workshop held in 2012 at SFM.



## Australian Government Priorities

The project aligns with current Department of Agriculture (Dept. Ag) objectives to increase the profitability and productivity of primary industries by:

- applying innovative technologies
- helping producers manage natural resources in an integrated way
- adding value to primary products by demonstrating product provenance or integrity.
- improving biosecurity surveillance systems and tools to help producers plan for and respond to pests and disease
- consolidating knowledge of extension and adoption to better deliver practical results to primary producers

Further development of the OW MF program is also consistent with deliverables within the current Australian government/OceanWatch Marine Natural Resource Management contract, including:

*“Review of Code of Practice and development of Professionalising Industry training materials for NSW Ocean Haul Fishery”.*

*“Publish and promote EMS and Code of Practice outcomes”*

Formal training and assessment within the Seafood Training Package has enabled a measurable and reportable outcome, as well as underpinning the rigour and validity of the OW MF recognition process.

Recognition of participants as OW MF, combined with the development of individual web based fisher profiles, has been designed to provide an incentive for fishers to engage in the environmental training; providing some private benefit to ensure industry and public benefit.

Promotion of recognised OW MF provides a vehicle for communicating industry environmental credentials to consumers at point of sale and to showcase the local seafood industry in the best light.

Recognition as an OW MF has also been designed to:

- demonstrate industry professionalism through engagement with formal training processes, provide added depth to information extension techniques and to assess the level of information uptake
- progress fishers competency and skills through the Australian Qualifications Framework
- encourage fishers to operate according to international, national and regional expectations
- ensure fishers are recognised for competency in TEP handling, reporting, marine pests etc
- recognise participating fishers existing skills, competencies and environmental stewardship
- act as an incentive to encourage other fishers to participate and improve their environmental performance
- provide a vehicle to tell industry’s story, enable promotion of positive messages and increase transparency with the community
- promote industry environmental improvement in the public space using smart phone technology

- link seafood industry and individual fisher information to products at the point of sale
- increase community access to information regarding local seafood production methods and sustainability credentials
- encourage consumers to consider the source of their seafood purchases
- provide an opportunity to distinguish locally produced OW MF products in the marketplace

### OceanWatch Priorities

The project aligns holistically with OceanWatch's vision as a not for profit ENGO –

***'Australia's marine ecosystems are healthy, productive, valued; and used in a responsible way'***.

## ix. Connecting the industry with the consumer, increasing transparency and demonstrating responsibility

To increase community awareness of fishers training and recognition, OceanWatch has developed an interactive database. In an attempt to bridge the gap between fishers and the community, the project has utilised relatively new smart phone technology known as QR codes. The database aimed to profile industry, provide access to readily available information relating to fishing practice, and build awareness of responsible and sustainable supply of local seafood industry in the community.

The database development has included work to develop mobile friendly web design applications, which aim to improve communication and extension to and within industry, and to seafood consumers and the community. A demonstration site was presented to NSW fishermen at a number of NSW fishermen's co-operatives AGMs to allow feedback on database/website content.

A set of protocols were followed, ensuring consistency with the EC throughout all method and profile videos, in areas such as animal welfare, WHS, product handling etc.

## x. Developing profile videos

Linking the OW MF to the supply chain using short descriptive videos has been designed to 'put a face' to local fishers, and increase transparency of fisher's practice. The OW MF database provides an opportunity to display the fishing industry in a positive way, and demonstrate commitment to international best practice through formal training and assessment.

The fisher and fishing method profile videos were filmed, edited and uploaded by project staff. The videos were produced using inexpensive off-the-shelf technologies such as I phones and Go Pro cameras and incorporated sub titles to expand their usability, for example, looping method videos for NSW fishermen's co-operatives retail shops.

## **xi. Engaging the conservation sector**

An initial meeting held with Greenpeace on 4/12/14 resulted in comments including:

“This is a very impressive body of work” and “I wish we had done this”

The concept whereby fishers are trained and accredited in their environmental and ethical responsibilities, linked to improved provenance for local seafood was well aligned to Greenpeace’s current Label My Seafood campaign. Further exploration/highlighting of linkages between the aims of the project and NGO marine/fishing campaigns may lead to improved seafood industry/NGO relationships.

## **xii. Selection of NSW EGF**

The NSW EGF was chosen to be the focus of the project for the following reasons:

### **xii.a. A high likelihood of interactions with the community**

The fishers operating within the EGF work within NSW estuaries and lakes, often directly in competition with recreational and Indigenous fishers. These fisher’s workplaces are some of the most accessible commercial fisheries for the community, with the “sea change” phenomenon over the past decade increasing the potential for conflict between user groups. While there is currently no scientific observer program within the fishery, interactions between fishers and other user groups out on the water and at public boat ramps could suggest that local communities are the de facto observers for this fishery. The concept of community observers features prominently in the training discussions.

### **xii.b. An alternative to third party certification**

A current seafood industry trend/response is for third party certification at the fishery level. The cost and complexity of these schemes is potentially prohibitive for small scale, multi method, multi species fishers, particularly in light of the current industry restructure intended to improve the financial viability of NSW fishers.

### **xii.c. Linking to other projects**

The EGF is currently the subject of a project determining conformance with the objectives of the FAO code from a fisheries management perspective. (CRC Project 2012/746, FAO Based Responsible Fishery Management project, Sevaly Sen)

### **xii.d. Industry contribution**

EGF fishers consign product through their local co-operatives for sale locally within NSW and through the SFM auction. An environmental levy is applied to products sold through SFM and NSW Co-operatives (OceanWatch levy). The OceanWatch levy has been used as a cash contribution to this project – effectively an industry cash contribution.

## **xiii. Certifying a fishery versus recognising best practice**

There is a fundamental difference to third party certification offered by organisations such as Marine Stewardship Council, and recognition as an OceanWatch Master Fisherman.

The third party certification process certifies a fish stock as being sustainably fished and acts as a third party audit process for fisheries management. These schemes focus on the impact of the fishing activity on the fish stock, as well as wider ecosystem implications. It’s all about the fish.

The OW MF program focuses on the awareness of, and commitment to, best practice by the individual fishers engaging with the program. The OW MF program focuses on the actions of the individual fisher, not the status of the fish stock.

#### **xiv. Funding the Professionalising Industry project**

As described above, the program has significant public benefit, and was funded through an FRDC competitive grant, as well as a cash contribution from OceanWatch.

The NSW fishing industry contributed financially to the project via the following mechanisms:

- Cash contributions to FRDC via NSW Fisheries management and research levies,
- Cash contribution through an OceanWatch SFM environmental levy added to project budget

#### **xv. In kind contributions**

Participating fishermen have contributed in kind through their attendance at the training workshops, foregoing their income producing fishing activities to engage with the project.

Project partners who have made various in kind contributions to the project include:

- PFA
- NSW DPI
- NSW FITC
- SFM
- NSW Fisherman's Co-operatives Association
- MFMA
- Steering Committee members

#### **xvi. Compulsory training for new entrants?**

Discussions have been held with industry stakeholders within NSW FRAB meetings concerning the potential to make the training and recognition compulsory for new entrants into the fishery. Some meeting participants suggested that there may be positive industry benefits if new entrants were trained through the program, ensuring fishing activities are aligned with the EC and the principles of responsible fishing.

Further discussions concerned the potential risk that forcing fishermen to attend training workshops without actively engaging with the objectives of the program, could threaten the integrity of the program. This approach could also potentially increase the reputational risk to OceanWatch through the public recognition of OW MF. After discussion, compulsory training was not supported by any of the meeting participants.

## xvii. Incentives for Public/Industry/Private Benefit

'Public benefits' are those benefits that accrue to a wide cross section of the community, and that many members of the community would value highly and wish to ensure that they continued to be produced' (CRRDC 2008).

Many of the project aims have private and wider seafood industry benefit inextricably linked to public benefit. The ability to quantify the extent of public benefit is limited by the lack of a market where ecosystem benefits can be valued.

Ecosystems provide many services from which humans benefit but whose value is not recognised in the most prevalent system for social coordination – the market (Coggan *et al.* 2009). For example, whilst there is no shortage of markets for ecosystem service goods such as clean water or apples; the services underpinning the production of these goods (water purification and pollination) are essentially free in current market operation (Salzman *et al.* 2003). With no market for these services, those who produce ecosystem services are not rewarded for the benefits that they provide, whilst those who damage these services do so without bearing the cost that they impose on others (Murtough *et al.* 2002). In such circumstances 'market failure' is said to have occurred (Coggan *et al.* 2009).

The OW MF recognition coupled with the QR code OW MF profiles have been used as a Market Based Instrument, intended to deliver incentives for best practice, for which there are currently no price signals within the market place.

Inability to quantify public benefit is not necessarily a barrier to public investment, as described below:

"If public contributions were solely based on the quantified public benefits, the RDCs would be subject to a perverse incentive to invest only in those areas where public benefits could be reasonably quantified, thus diverting resources from the projects that have a wide range of social and environmental values" (CRRDC 2008).

Combining the focus on public benefit outcomes with industry and individual fisher's priorities was a key feature of the OW MF project. This approach was developed to ensure a higher level of participation by the seafood industry in comparison to progressing public benefit outcomes in isolation. Examples of topics which include a proportion of public benefit include bycatch reduction and handling, threatened species handling and reporting, bio-security, waste and pollution, animal welfare and improved catch reporting.

Many previous OceanWatch projects have used incentives to engage the seafood industry and landholders in public benefit environmental works. Recent Australian Government Caring for our Country (CfoC) contracts: OC11-00867, Accelerated recovery of priority fish habitats in Queensland and OC11-00887 and EMS: audit, production, review and database for the NSW oyster industry, have used cash incentives matched with in kind and or cash from individual businesses, to enable significant on ground works to be undertaken for the benefit of ecosystem services.

The OW MF project differs in that it has used non cash incentives to engage fishers and influence change. The initial incentive has been to offer training to participants free of charge. Individual fisher's appetite for training within the NSW fishing industry is currently low, reflected in the wider industry priority for people development. The offer of free training was a key factor in workshop attendances as the participating fishers see themselves as contributing in kind to a public benefit through attending the workshop when they could be going fishing and generating income.

In the case of the OW MF project, however, the principle incentive used to influence change is something less tangible. The ability to display the sustainability credentials of local seafood in the public space has been a significant driver for many fishers who feel under pressure from conservation and recreational fishing groups for continued access to fishing grounds.

“There has always been a great dilemma for commercial fishers, a mechanism to enable them to tell their story, provide timely and accurate information and engage in a positive way with the end users of the seafood they produce. Seafood consumers ever increasingly seek provenance information regarding the food they eat. The OW MF QR code now provides that mechanism.” (Byrnes pers. com. 2015)

The following comments indicate a wider benefit from the use of this incentive for the post harvest sector and the consumer.

“The fishermen that participated in the program were impressed by what they learnt and how well the program was put together for them. They have all received their QR code stamps and we are integrating that into our point of sale in our retail shop here at the Co-op. The benefits to our retail customers is they can scan the QR code in the shop and see who has caught the product, how it was caught, how to cook the product. It's actually about building trust with the consumers and the fishermen. We believe that any positive information the general public can get about our industry is helping build a relationship.” (McEnallay pers. com. 2015)

The concept of influencing fisher's practices through market forces rather than via regulatory or other means has already had some success, even at this early stage of the project.

“In essence, a significant number of commercial fishers came forward voluntarily to participate in the OWMF program and in doing so make a public statement, openly rededicated themselves to the principles, rules, regulations and ethics that underpin their fishery's sustainability. Moreover, participants recognised and embraced the public's expectations and thirst for information about how their seafood is procured through actively showing and having recorded real life examples of the capture, handling, storage and consignment of their product.” (Byrnes pers. com. 2015)

A key question is whether the public promotion of best practice by local fishers will add value through a price premium, or continued or improved access to fishing grounds or markets in the future.

## **xviii. Is there a public benefit to make information more readily accessible?**

The web based fisher profiles could be considered purely private benefit if they were designed in isolation to promote fishers or their products, but this is not the case. The fisher profiles are also intended to make information from regulators and researchers more readily available to consumers, to improve transparency of practice and management.

An indication of the value to the public of access to information about science and evidence based fisheries management arrangements can be found by considering the resources invested in developing and communicating this information. Public sector organisations see major public benefit in communicating information to the community, evidenced by investment in websites, Facebook pages and twitter accounts, fact sheets, printed reports, newsletters, journals and communication staff. This project explores other avenues to make information of public benefit more accessible through the use of new technology and linking information to products at point of sale.

In the case of the OW MF project, it could be argued there are elements of public benefit within the incentive used to ensure industry buy in. The inclusion of public benefit within the incentive must serve to increase the value generated by the incentive, beyond the direct value to the project participant.

## **xix. Balancing the Debate – Sustainable Seafood**

There are currently many actors in the sustainable seafood debate in Australia, and the absence of any coherent, long-term narrative from Australia's seafood industry; the public perception of the industry is currently being influenced by others.

Although there is information readily available that describes Australia's fisheries management and practices as world class (Alder and Pauly 2008), the message is not getting through to everyone in our community. At present the community, as well as decision makers, are being confronted with messages from groups with a strong conservation agenda, resulting in the sustainability of Australia's seafood industry being continually questioned in the public space.

The seafood industry is better served with decisions being influenced by research and evidence more than community perceptions. It stands to reason there is a need to address negative community perceptions, particularly those founded on misinformation or lack of accessibility to factual, industry supportive information.

The science and evidence based information available through the OW MF QR code is intended to improve industry transparency, and to provide easy access to information supportive of Australia's evidence and risk based fisheries management approach. Attaching factual information to the seafood product allows ready access for those with an interest in sustainability, and also allows for supportive information to be readily available to defend industry's sustainability credentials in the public space.

***Using new technology to provide increased information access for consumers is a tool to balance the debate on sustainable seafood. The OW MF project was officially launched using the by line:***

***“everything you need to know about choosing and eating Australian seafood”.***

## **xx. Commercialisation**

OceanWatch recognises prior training, delivered by RTOs, in maritime competency and food safety as part of the OW MF recognition process.

Any Registered Training Organisation (RTO) can develop training materials, assess and accredit against the unit of competency used for the environmental training and assessment component of the project - *SFIEMS201B Participate in Environmentally Sustainable Work Practices*.

However, the OW MF recognition differs in a number of ways:

1. Initially, the CoP for the specific fishery needs to be reviewed to align with the FAO Code.

Any changes to the fishery CoP needed to align with the FAO Code must be agreed and adopted by the fishery participants, to ensure industry ownership of the reviewed CoP.

A conformance report must be developed to show alignment between the reviewed fishery CoP and the FAO Code

The reviewed fishery CoP is then used to develop the OW MF training materials, specific to the fishery and CoP.

2. The training delivered by OceanWatch through the project uses topics and assessment tasks tailored for the specific fishery (EGF), to ensure relevance and buy in from participants
3. Topics and discussion outside the scope of the unit of competency are integral to the training workshop, to ensure fishers understand the benefits of complying with their CoP, as well as what is in their CoP
4. Training and discussions being lead by experienced current and former fishers, and fisheries scientists/extension experts ensures relevance and buy in from participants
5. Fishers are then invited to commit to the CoP, as a requirement for recognition as an OW MF

Only when the training and assessment process is complete, OceanWatch is confident to promote to the community that recognised OW MF:

- have professional knowledge and skills backed by training and assessment
- operate under International, National, State & Regional regulations to ensure sustainable and responsible fishing

Initial discussions at an OceanWatch board level have highlighted the importance of the above steps to ensure the integrity of the program, and to minimise the reputational risks to OceanWatch from recognised fishers “bringing the industry into disrepute”.

Hence, fishers must be trained through the OW MF program, to be recognised as OW MF.



## 6. Conclusion

The community perception of the NSW fishing industry has arguably been influenced by external stakeholders and interest groups, rather than from the industry itself entering into dialogue with the community. The Professionalising Industry project was subsequently conceived following the identification of key industry priorities, i.e., addressing people development skills and improving the profile of the NSW professional fishing industry amongst the community.

Recognition amongst the community of the responsible harvest of local sustainable fisheries resources was a major consideration of the project. Key messages delivered throughout the training workshops have ensured participant awareness and discussion of the importance of delivering positive messages to the consumer and community, and the potential benefits to the fishing industry and to fisher's individual businesses.

A major objective was to create a framework to underpin fisher's knowledge, experience and environmental performance, and consequently measure of success of the approach. Formal training, assessment and accreditation with a unit of the Seafood Industry Training Package has enabled a measurable and reportable outcome, as well as underpinning the rigour and validity of the OW MF recognition process.

Linking the training to the Seafood Training Package underpins the statement -

***OceanWatch Master Fishermen have professional knowledge and skills backed by training and assessment***

The preparation of a conformance report, which described the alignment of the EC with the FAO Code, helps demonstrate relevance to the FAO Code. Corresponding actions within the EC were provided to assist in describing alignment with the key objectives and principles of the FAO Code, i.e. cross referencing the FAO Code against the EC.

The EC guidelines are integral to each training topic, ensuring the materials delivered improve participants understanding of issues relevant to their business, as well as the importance of working according to agreed guidelines and principles.

The linking of the EC, FAO Code objectives, national Seafood Industry Training Package competencies and individual fisher's commitment to complying with the EC underpins the strength of the statement relating to international best practice.

***OceanWatch Master Fishermen operate under International, National, State & Regional regulations to ensure sustainable and responsible fishing.***

*International* – FAO Code for Responsible Fishing

*National* – EPBC Act, ASIC Code of Practice

*State* – NSW DPI Fisheries legislation and regulation

*Regional* – regional aspects of fisheries management regulations (zonings and closures) and local government regulations

Smart phone technology has been utilised to link seafood consumers to information at the point of sale. QR codes have been created to provide shortcuts to online information, increasing transparency of activities within the EGF. The aim has been to build consumer trust and demonstrate commitment to responsible and sustainable local seafood practices, backed by formal training and assessment.

The use of this technology has allowed the following three statements to be underpinned by information easily accessible through the OW MF webpage.

***OceanWatch Master Fishermen have professional knowledge and skills backed by formal training and assessment***

***OceanWatch Master Fishermen operate under International, National, State & Regional regulations to ensure sustainable and responsible fishing***

***OceanWatch Master Fishermen provide quality, locally produced seafood to the Australian community***

The value of the training process has been enhanced by the recognition of participating fishers as OW MF.

OceanWatch has been recognised by the Australian government as the leader in marine natural resource management, and has a proven track record of 25 years operating to promote sustainability and best practice within the Australian seafood industry. As such OceanWatch is well placed to engage in a conversation with the Australian community concerning responsible and sustainable fishing.

# 7. Implications

## i. OceanWatch Master Fishermen – the industry

The following benefits are outcomes from the project:

- Formal recognition of participating fishers for having extensive experience and skills, and responsibly harvesting a local sustainable resource
- Fisher's knowledge and experience underpinned with training and assessment
- Improved understanding for participants of factors influencing the community perception of the fishing industry
- Improved provenance for local seafood
- A point of difference for locally produced OW MF products in the market place

Through the training package professional fishers have developed a better understanding of their total operating environment. The formal training has built on their existing knowledge base and formally recognised their skills and experience. The information linked via QR codes creates transparency, provenance and a potential point of sale difference for OW MF products.

A further notable outcome is the further development of the fisher's professional standing within the community and their personal attitude toward fishing.

## ii. NSW Fisheries – the regulator

The following benefits are outcomes from the project:

- Improved awareness of regulatory and voluntary actions within the EC
- Improved fisher's awareness and performance around logbook and TEP species reporting
- Improved fisher understanding of fisheries management approaches and issues
- Increased transparency of industry practices for the community
- Improved access to sustainability and industry information for the community

The training strongly focused on why individual fishers should adopt best practice, and the benefits of complying with regulation. Information has been delivered to raise awareness of fisheries management decision making processes, and the practical assessment tasks are directly relevant to improving the fisher's interaction with the regulator, including log book and TEP species reporting.

## iii. Supply Chain – wholesalers, retailers, restaurants

The following benefits are outcomes from the project:

- Improved access to sustainability, industry and provenance information for wholesalers and retailers
- A point of difference for locally produced OW MF branded products in the market place
- Increased transparency of industry practices

Recently, there has been strong industry and community interest regarding the development of Australian laws requiring suppliers of seafood to include complete and accurate information at point of sale; including the fish species, where it has been sourced, and method of harvest.

On 23 June 2014, the Senate (Australian Government) moved that a number of matters detailing the current requirements for labelling of seafood and seafood products, be referred to the Rural and Regional Affairs and Transport References Committee for inquiry. Of the matters under inquiry the OW MF concept aligns and addresses these matters and contributes greatly to addressing the current lack of product information.

The Terms of Reference include:

- Whether the current requirements provide consumers with sufficient information to make informed choices, including choices based on sustainability and provenance preferences, regarding their purchases;
- Whether the current requirements allow for best-practice traceability of product chain-of-custody;
- Regulations in other jurisdictions, with particular reference to the standards in the European Union (EU) under the common market regulation (EU) No 1379/2013 Article 35;
- Need for consistent definitions and use of terms in product labelling, including catch area, species names, production method (including gear category), and taking into account Food and Agriculture Organisation guidelines;
- Need for labelling for cooked or pre-prepared seafood products with reference to the Northern Territory's seafood country of origin regulation;
- Recommendations for the provision of consumer information as determined through the Common Language Group process conducted by the Fisheries Research and Development Corporation;
- Whether current labelling laws allow domestic seafood producers to compete on even terms with imported seafood products; and
- Any related matters.

The OW MF database has captured and detailed almost all of the matters listed, and has gone beyond what the enquiry seeks to achieve. The database, as an information conduit, is fully functional and provides information to the general community from a well respected, independent source.

The extension of accurate information to the seafood consumer and general public may assist in abating preconceived negative perceptions. The OW MF profiles increase industry transparency, working to improve community understanding of the local fishing industry. Community acceptance of fishing industry practices may increase by demonstrating the strict management and responsible fishing of local seafood by trained fishers. Increased awareness of product provenance allows consumers to make an informed choice when purchasing seafood.

# 8. Recommendations

## i. Further extension of OW MF through the supply chain

Supply chain extension was not a focus for this project. Further research and extension to value add to initial media interest will be undertaken (funded by OceanWatch) with NSW Co-operatives retail shop staff (Wallis Lake and Newcastle) and wholesalers at SFM.

## ii. A trawl fishery

The next phase in the development of the OW MF program should focus on the NSW Ocean Trawl Fishery (OTF).

### Rationale

#### ii.a. Improving visibility of OW MF products

Participants in the OTF supply iconic species such as king prawns to markets throughout NSW, as well as providing large volumes of fish for the local fresh fish market. Engagement with this sector will increase visibility for the OW MF program within metropolitan areas of NSW, enhancing consumer engagement outcomes discussed within Section 5. xix. of this report.

#### ii.b. Industry contribution

Participants in the OTF contribute to OceanWatch through an environmental levy on product sold through SFM - further discussed in Section 5. xiv of this report. OceanWatch has used the levy as a cash contribution on behalf of industry to secure initial funding to develop this pilot project. A logical progression is to continue to use the OceanWatch levy as leverage to further develop the program for the benefit of levy contributors.

#### ii.c. Expressed interest

Fishers active within the OTF have already expressed an interest in engaging with the OW MF program. As yet there is no mechanism to include this fishery within the program.

#### ii.d. Code of Practice

The NSW OTF currently lacks a unified fishery wide CoP. Expanding the OW MF project into this fishery would ensure that development of an OTF CoP is done in a manner that ensures consistency with the FAO Code. Linking the CoP development with formal training, assessment and OW MF recognition will support further industry adoption and uptake.

#### ii.e. Efficient use of resources

The framework developed under the pilot program requires a thorough knowledge of the total work environment of the fishers to be engaged. OceanWatch have previously worked, through the former SeaNet program, to successfully develop individual vessel based Environmental Management Systems (EMS) with 2 "fisher champions" in the OTF fishery. OceanWatch staff will utilise the knowledge of the fisher's practices, and the trusting relationships developed through the EMS process, as a foundation for progressing the OW MF program within the fishery.

#### ii.f. Partners

The initial OW MF pilot project included input from partners including NSW DPI, PFA, SFM, NSW Co-ops Assoc, NSW FITC in the development of the concept. Working with another NSW based fishery will enable OceanWatch to further leverage the mature relationships and in kind contributions from these partners, for the benefit of fishers in the OTF.

#### ii.g. Industry priorities

The OW MF pilot program was developed as a direct response to RD&E priorities expressed by the NSW seafood industry. While OceanWatch understands the issues addressed within the pilot project are potentially priorities for the Australian seafood industry more widely, no other states have formally requested OceanWatch work on these priorities on their behalf. To maintain the integrity of the OW MF program, it is important for OceanWatch to work with fishers who are prepared to actively engage with the OW MF program. Further discussion of this point is within Section 5. iv., viii., xvi. of this report.

### iii. Linking OW MF to a MSC certified fishery

It may be useful to link the OW MF program to a fishery undergoing MSC certification, to trial a holistic response to community concerns about the responsible use of Australia's marine resources. Linking the two programs could potentially address issues regarding sustainability based fisheries management right through to responsible practices at an on deck level.

Linkages have not been investigated as they are outside the scope of this project.

### iv. External Funding

For the program to expand it will need to rely on external funding sources for a period of time.

For further discussion of this point refer to Section 5. viii., xiv., xv., xvii., xviii., xx. of this report.

## 9. Further development

### i. National context

The framework and methodology utilised is transportable for use with other fishers/fisheries and to the national context. OW MF training and recognition can offer a pathway for fishers not willing or able to support the costs of third party certification.

### ii. Other fisheries

The OW MF has been further developed through funding from the Australian government's National Landcare Program.

The NSW Ocean Haul Fishery CoP (OC) has been reviewed by OceanWatch, former Ocean Hauling Fishery (OHF) MAC representatives and NSW DPI OHF Manager.

A conformance report has been prepared to describe alignment of the OC with the FAO Code, with OW MF training materials developed for the OHF as part of the work plan for the current OceanWatch NRM Regional Stream contract with the Department of Agriculture. To date, no training workshops have been delivered to participants in this fishery.

# Project materials developed

Item	Description
Master Fisherman logo	A logo developed by OceanWatch to further extend OW MF
Master Fisherman website	A dynamic website database with: 6 primary pages (profile, methods, sustainability, species, training and locations), 54 Primary Master Fisherman customised profile pages, each containing 6 customised sub-pages, Each customised sub page has multiple pages feeds to shared information (specific to each fisherman and dependent on endorsements and target species), > 350 navigable customised pages.
Manual trainers (Hard copy)	162 page trainers manual in hard copy format, specifically designed for the trainer delivering workshop content
Manual trainers (Digital)	162 page trainers manual in digital format, specifically designed for the trainer delivering workshop content
Manual (Hard Copy)	162 page trainee manual in hard copy format, specifically designed for the trainee to follow during training and assessment workshop
Manual (Digital)	162 page trainee manual in digital format, specifically designed for the trainee to retain
Method Videos	8 method videos produced demonstrating methods used by EGF for harvesting product including: Meshing, Fish seining (Estuary hauling), Trap (Mud crab), Trap (Blue swimmer crab), Trap (Finfish), Trap (Longfin eel), Prawn (Set pocket), Hand Gathering (Pipi and beachworm).

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# List of appendices

1. List of researchers and project staff
2. Program logic to identify alignment of project elements to strategic planning
3. Reviewed Estuary General Fishery Code of Practice
4. EC conformance reporting against the FAO Code
5. OW MF Training Manual
6. OW MF Trainers Manual
7. Written and Practical Assessment Items
8. Certificate IV Recognition for OW PM
9. Master Fisherman Training Evaluation Sheet
10. OW MF Application for Recognition Form
11. OW MF Recognition Certificate
12. FITC Certification of Recognition through the Seafood Industry Training Package
13. OW MF Summary Flipchart
14. Individual Fisher Information Sheet
15. Extension and adoption plan
16. PR communication plan
17. Master Fisherman Community Extension Posters
18. OW MF Training Evaluation
19. Professionalising Industry Update
20. Original EC (prior to review)
21. Reference list