Driving sustainability in the Queensland seafood Industry through innovative partnerships

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Industry initiative and innovation is the best driver of change, integration into the regional NRM model is critical.

Abstract

OceanWatch Australia, a national not-for-profit company, works to achieve sustainability in the Australian seafood industry through action based partnerships with the Australian seafood industry, government, natural resource managers, business and the community. Two case studies are discussed showing how the Queensland seafood industry is moving towards sustainability through unique partnership based projects.

1) *Tide to Table* is about drawing the connection between activities that occur in the upper catchment to the delectable seafood on our dinner plates. The project is operating across the Burnett Mary region in Queensland and funded under the Natural Heritage Trust (NHT). It concentrates on partnering marine (fishers) and land based (farmers) primary producers with the community to restore fish habitat. It strives to highlight the importance of land management activities in the catchment that impact on estuarine wetlands and water quality and have a flow on effect to the productivity of the seafood industry.

2) *SeaNet,* an NHT funded national extension project, aims to improve the sustainability of Australian fisheries through partnerships with professional fishers to develop cost effective and practical solutions to reducing the environmental impacts of fishing, minimising the catch of non-target species (bycatch) and encouraging environmental best practice. Within Queensland, industry is driving a number of improvements to reduce the environmental impacts of fishing, in partnership with regions, researchers and fisheries managers. The industry is also seeing Environmental Management Systems as an opportunity to integrate into the regional delivery of natural resource management. Whilst the EMS identifies steps toward a more sustainable industry, it also aims to foster partnerships between industry and natural resource management groups such as the Far North Queensland NRM Group.

Full Paper

OceanWatch Australia, a national not-for-profit company, works to achieve sustainability in the Australian seafood industry through action based partnerships with the Australian seafood industry, fishers, government, natural resource managers, business and the community. Established in 1989 by the NSW seafood industry to address poor water quality off Sydney, it has since expanded to be a national company focused on working with the Australian seafood industry as it strives for sustainability.

Our vision of *"healthy catchments and healthy oceans for sustainable quality Australian seafood"* is founded on the premise of connectivity – connectivity between the catchment the coast and the marine environment. To that end we work across all coastal and marine natural resource management issues that impact on the fishing industry or to which the industry contributes. Our focus is on fostering behavioural and attitudinal change through developing and implementing effective and practical solutions through partnerships. To achieve this in Queensland, we operate a number of projects including our flagships *Tide to Table* and *SeaNet*.

The commercial fishing industry in Queensland is very important to not only the state economy, but also the national economy. The Queensland Department of Primary Industries and Fisheries (DPI&F) states that by value, Queensland ranks third among Australia's fisheries, and eighth among all Queensland's primary producers.

There are over 1,700 licensed fishing boats in Queensland which represents around 20 per cent of Australia's commercial fishing fleet. This figure does not include Commonwealth managed fisheries such as the eastern tuna and billfish fishery that have operators based in Queensland.

Operating in all Queensland waters across the State, the fishing industry is vital to the economies of many regional and remote coastal towns and communities. The fisheries are very diverse, with a range of methods being used including trawling, line fishing, trapping, and hand-harvesting (collection). All fisheries in Queensland are managed and controlled by the DPI&F.

Having a sustainable fishing industry is paramount to the fishers in Queensland. OceanWatch Australia has been working in partnership with the industry and others for the past 9 years on practical and effective solutions to address environmental issues that impact on the sustainability of the industry. Two case studies are provided.

1) SeaNet Environmental Extension Service for the Australian fishing industry

For many years now, the agricultural sector has bridged the gap between farmers and research scientists by employing extension officers. These officers talk to farmers about new techniques or products to improve their practices and productivity. The concept of SeaNet is to bring this level of communication to the seafood industry, but with an environmental focus.

SeaNet is a Natural Heritage Trust (NHT) funded national extension project, which aims to improve the sustainability of Australian fisheries through partnerships with professional fishers to develop cost effective and practical solutions to reducing the environmental impacts of fishing, minimising the catch of non-target species (bycatch) and encouraging environmental best practice.

SeaNet works directly with industry, managers and researchers to develop and implement improved fishing gear, technology and methods. Through the provision of a professional extension service, SeaNet aims to facilitate change in the commercial fishing industry by ensuring for effective communication and network links between

researchers and fishers, improving current fishing and management practices and protecting the environmental integrity of Australia's marine and estuarine habitats and fisheries resources. However, extension is more than just a 'one way street', no research is perfect and local conditions may require a modification as to its application. SeaNet ensures a two way communication between fishermen and researchers, helping to 'fine tune' research for local application.

SeaNet officers are employed by OceanWatch Australia Ltd and are hosted by an industry organisation within their relevant state or fishery. There are three SeaNet Officers in Queensland servicing the far north, central and south east regions. All are hosted by the Queensland Seafood Industry Association, the peak industry body. In partnership with industry and fisheries researchers, SeaNet officers identify projects and work with professional fishermen to develop solutions for the continual improvement of professional fishing practices. For fishermen, involvement with SeaNet is voluntary (the project was initiated by the industry 8 years ago) and there is no charge. However the time, effort and expertise provided by fishermen are essential in developing new and practical ways to reduce by-catch, minimise interactions with protected species and improve their overall environmental sustainability. In 2005, OceanWatch Australia received the United Nations World Environment Day Award for Excellence in Coastal and Marine Management for the SeaNet project.

SeaNet is achieving results in Queensland

Within Queensland, through participation in SeaNet, industry is driving a number of innovative improvements to reduce the environmental impacts of fishing, in partnership with natural resource management regional groups, researchers and fisheries managers. For example:

1) The Gulf of Carpentaria Commercial Fishermen's Association (GoCCFA) have engaged in a Northern Gulf NRM sponsored collaborative SeaNet project with DPI&F and James Cook University Electrical Engineering to reduce interactions with marine mammals. To assist fishing operations to avoid entanglements with marine mammals, vessels are being provided with a commercial quality hydrophone to detect dolphin and dugong sounds. Gillnet operators in attendance with their nets will be able to detect the presence of marine mammals in the vicinity of their nets during the hours of darkness and make fishing decisions to avoid entanglement. Larger vessels will be equipped with a project designed Marine Mammal Early Warning System based on multiple hydrophones utilising on-board computers and localisation systems, developed in association with a recent Fisheries Research and Development Corporation study on toothed whales in the Coral Sea.

2) The "Popeye Fishbox" bycatch reduction device (BRD) was recently approved by the Australian Fisheries Management Authority for use as a BRD in the Northern Prawn Fishery. At sea trails of this BRD in combination with the standard Turtle Excluder Device (TED) have resulted in over a 50% reduction in small bycatch. SeaNet worked with the net maker "Popeye' who developed this device to improve and trial it across the Queensland East Coast Trawl Fishery and NPF prior to AFMA adopting it as a regulated device.

3) The turtle-smart crab pot has been developed by a commercial fisher in Morton Bay. SeaNet is working with the fisher and others within industry to trial the modified crab pots with the intention that it will be extended more broadly across industry following the trials. Although, only a small number of turtles that interact with crab pots become trapped, the industry is keen to ensure that these interactions are minimised.

The intention is that the results from these trials will also have application for recreational pots and alternate designs developed.

4) The Queensland fishing industry is seeing Environmental Management Systems (EMS) as an opportunity to integrate into the regional delivery of natural resource management. Whilst the EMS identifies steps toward a more sustainable industry, it also aims to foster partnerships between industry and natural resource management groups such as the Far North Queensland NRM Group. The Hinchinbrook Seafood Industry Inc. is an example of a group of fishers who are looking to develop and implement an Environmental Management System. SeaNet successfully assisted this group of fishers to obtain a grant to develop an EMS. SeaNet will be involved in assisting fishers to implement the EMS on the ground in conjunction with Far North Queensland NRM Ltd and QSIA.

The SeaNet model has provided an effective way to foster behavioural change at a grass roots level within the fishing industry. The face to face component of this project is not to be underestimated as it builds trust and is crucial to understanding the complexity of some fisheries and the management regimes that apply to them. It is critical that by-catch reduction techniques and more sustainable fishing techniques have also positive aspects for the fishermen, e.g. improved catches, fuel savings, improved public perception, etc – again a core principal of SeaNet. Now in its 8th year, SeaNet has proven to be an effective change agent within industry for practical and cost effective environmental improvements that have been embraced by industry. The project has also resulted in reduction to impacts on protected species, bycatch and detrimental effects on the marine environment.

2) *Tide to Table: Restoring Aquatic Habitat*

Tide to Table is about drawing the connection between activities that occur in the upper catchment to the delectable seafood on our dinner plates. It focuses on repairing the environment that marine life relies upon for food, shelter, breeding and good health. The project works to combine the needs of the seafood industry with management actions occurring on the land. As such, professional fishers, aquaculture operators, land based primary producers, local and state government, landcare and bushcare groups and recreational fishers are working together to support projects that involve on ground rehabilitation works. These works aim to improve the fish habitat and water quality that in turn support and build sustainable seafood resources for the future. Tide to Table is currently underway across 3 regions within NSW (Sydney Metropolitan, Hunter Central Rivers, Hawkesbury Nepean), funded through the National Landcare Program. To date, the project has successfully undertaken a wide range of projects from stormwater improvements and saltmarsh rehabilitation through to implementation of an effluent management system on a dairy farm.

A large number of species targeted by the Queensland fishing industry rely upon healthy estuaries throughout their lifecycle and therefore are affected greatly by catchment landuse and management practices. With the large scale developments along the Queensland coast from urban use, primary industry and other landuses a large amount of quality fish habitat has been lost or degraded. In addition, the impacts of landuse practices on water quality has only recently been recognised as a serious problem for receiving water ways and the Great Barrier Reef. With the adjustments to the fishing industry following changes to the Great Barrier Reef Marine Park zoning, the importance to the Queensland fishing industry for healthy catchments and good water quality to remain viable cannot be underestimated.

Tide to Table recently commenced operation across the Burnett Mary region in Queensland (around Bundaberg), funded under the Natural Heritage Trust (NHT). It is a partnership between OceanWatch Australia, the Burnett Mary Regional Group, land based primary producers, the fishing industry and others. It concentrates on partnering marine (fishers) and land based (farmers) primary producers with the community to restore fish habitat. It strives to highlight the importance of land management activities in the catchment that impact on estuarine wetlands and water quality and have a flow on effect to the productivity of the seafood industry. Although in its early stages, this project will seek to provide the fishing/ aquaculture industry with the capacity to direct investment for on ground habitat/water quality improvements that will underpin sustainability in both the fishing/aquaculture industries and land based primary production industries. The project will also seek to harness the considerable pool of knowledge that exists within the seafood industry and with land based primary production industries, for the benefit of sustainable commercial and recreational fishing, aquaculture farming ecosystems and sustainable and profitable land based production

Tide to Table engages upstream and downstream primary producers; fishing, aquaculture and agriculture/grazing industries, for the purpose of improving the sustainable management and health of coastal catchments within the selected subregions of the Burnett Mary region. The project focuses on identifying and implementing the specific land management actions needed to maintain the heath of receiving catchment environments, for the promotion of habitats essential for productive seafood industries. This project also provides an opportunity to assist in the implementation of relevant actions from Farm Management Systems (FMS) developed by the Queensland Farmers Federation industry members and Environmental Management Systems (EMS) developed by marine primary industry.

The types of works being undertaken include the protection and rehabilitation of saltmarsh/estuarine wetlands from grazing, human and weed pressures impacting on the wetland functioning, nutrient and sediment mitigation and riparian buffer zone management working with landholders to increase best practice techniques focusing on outcomes that affect water quality.

In addition to the ongound works component of this project, a number of educational activities are also undertaken that foster behavioural change, rather than just raise awareness of the issues. The activities include connectivity tours and mentoring to allow farmers to experience the fishing industry and fishers to experience life on a farm, showing the links between how on farm practices impact on downstream users. The focus is on increasing knowledge and providing tools to effect change with respect to what makes healthy fish habitat, how improving fish habitat can also improve land productivity and its importance to the recreational fisher and commercial seafood/ aquaculture industry. The education activities are also tailored to foster an understanding of and behavioural change relating to the use of water on a community level impact on aquatic biota and the very real flow on effect this has to local recreational activities, the tourist industry and environment of the Great Barrier Reef.

Take home messages

Process

The case studies provided are good examples of the potential that exists when industry plays a pivotal role in driving and owning the behavioural change for improved environmental outcomes. Effective outcomes are possible where all stakeholders involved in a problem partner to solve those problems. It is important that the methods

used to effect change are suited to the group of stakeholders engaged. Although this point is often made, it is very seldom followed. A behavioural change program is more effective when it is specifically tailored to suit the audience and given the longevity needed to effect that change. SeaNet is now in its 8th year and the outcomes over that time have continued to effect dramatic improvements within the fishing industry relating to environmental performance. A one year project that tries to achieve similar results is unlikely to be effective as behavioural change is about changing core values, beliefs and building trust and ownership to allow a safe environmental for people to try alternates. All this takes time and long term funding is necessary to allow the full potential of projects of this nature to be seen.

Queensland fishing industry

The sustainability of the Queensland fishing industry is just as much about healthy catchments as it is about how many fish are caught by the industry. The connectivity between what happens in the catchment and the impact this has on estuaries and coastal waters and the aquatic ecosystems that rely on these environments is seldom made. If there is no habitat there will be no fish – it is as simple as that. To address the sustainability of our fisheries, we need a balanced approach – to restore aquatic habitat to improve the sustainability of fisheries productivity, as well as work with industry to reduce their impacts.

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