

# Queensland Seafood

Industry Association

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## Australian Seafood Industry and Climate Change Symposium, 3<sup>rd</sup> - 4<sup>th</sup> March 2011 Symposium Overview

### Executive Summary

The Australian Seafood Industry and Climate Change Symposium provided an opportunity for a detailed discussion of the implications of climate change on industry and management. The key messages to emerge from the symposium include:

1. The Australian seafood industry is in its early stages of adapting to the impacts of climate change presenting real business challenges and opportunities.
2. Need to understand industry vulnerability and explore business level responses.
3. Develop strong incentives for industry to embrace climate change by recognising the benefits, accepting the challenges and improving industry risk management.
4. Develop strategies to adapt to climate change that can be used to initiate changes in policy that will benefit industry operators.
5. Managing climate change and climate change events requires coordinated adaptive responses from government, fisheries management and industry.
6. Fisheries management requires flexibility to enable industry to adjust to and develop strategies for acute climatic events and longer term climate change.
7. Government recognise that the ability of the seafood industry to adapt to climate change is severely hampered by uncontrolled market forces.
8. Develop closer and ongoing relationships between scientists, management and industry for the practical use of all available information and coordinate ideas for future investigation.

### 1. Introduction

The QSIA was proud to host the inaugural Australian Seafood Industry and Climate Change Symposium. The symposium brought together some of Australia's leading climate change researchers, seafood industry operators, industry body representatives and fisheries and marine park managers. It is hoped the symposium will be the beginnings of more intense dialogue between all Australian seafood industry stakeholders on preparing seafood businesses for the impacts of climate change in the short, medium and long-term.

### 2. Relevance to Industry, Management and Researchers

The symposium provided an opportunity for industry, management and researchers to understand the climate change issue from differing perspectives. With this in mind the symposium brought together eminent researchers in the climate change science field, industry operators and fisheries/conservation managers to discuss key issues from a sectoral and industry perspective.

### 3. Symposium Aims

- 3.1. Increasing awareness of options and uptake of strategies for dealing with climate change and climate variability
- 3.2. Increasing uptake of best-practice management techniques and strategies to reduce the gap between climate change research and everyday practice
- 3.3. Identifying synergies with other government and industry programs and initiatives by facilitating the delivery of integrated solutions to dealing with the impacts of climate change

### 4. Presentations and Concurrent Sessions

The symposium provided a host of issues for the Australian seafood industry and fisheries management to consider. This section summarises some of the key issues from an industry and management perspective.

**Session 1** - Climate change, implications for the Australian marine environment and industry. *Presenter - Associate Professor Neil Holbrook*

- There are opportunities for industry to get involved: by contributing to improved measurement coverage.
- Climate change uncertainties challenge management approaches to be flexible; and adaptive.

**Session 2** - Climate change impacts on fisheries. *Presenter - Dr Alistair Hobday*

- General ocean warming around Australia, particularly on the east coast due to strengthening of the East Australia Current, is predicted to change the location of suitable environments for fishing and aquaculture.
- Understanding changes in environmental conditions will enhance adaptation by businesses. Management and policy changes may be needed to allow appropriate responses by marine industries.

**Session 3** - The economic impacts of climate change on Australian fisheries as well as coastal communities to 2030. *Presenters - Dr Sean Pascoe and Dr Sarah Jennings*

- Fishers can not rely on any benefits from climate change in the future to solve current problems.
- Fishing is still the main factor affecting the health of Australia's commercial fisheries and the economic benefits it generates for the broader community. Management that focuses on ensuring appropriate effort and/or catch controls is essential irrespective of climate change.

**Session 4** - Primary industries and climate change project. *Presenter - Neil Cliffe*

- Success of the process depends on the sharing of practical and expert knowledge.
- Opportunity to meld existing or develop new fisheries vulnerability information with this approach to assist resource management planning.

**Session A1** - How a fishing family is tackling climate change. *Presenters - Tony and Karen Collard*

- Commercial fishers are very knowledgeable, strengthen your position with up to date information - connect to all networks available to you.
- What impact does Climate Change have on the fish stocks in our oceans? The experts are still modelling; industry needs get involved and stay informed.

**Session A2** - Tropical Cyclone Hamish - Lessons Learned. *Presenter - Dr Andrew Tobin*

- Data recording for the commercial fishery: (1) deficient in allowing timely interrogation of fishery performance, (2) the need to consider electronic recording; and (3) to the benefit of all stakeholders.
- Vulnerability of single species / single market fishery: (1) look toward product substitution (export live trade), and (2) value add and strengthen domestic marketing of "dead fish".

**Session B1** - How can commercial fishers better prepare for climate change? *Presenters - Dr Nadine Marshall and Dr Renae Tobin*

- Diversify:
  - Change is likely to be unpredictable;
  - Keep options open; and
  - Plan ahead:
    - Multiple species - quality markets; and
    - Ability to move areas or fisheries
- Develop skills in business planning.
- Minimise risk by accessing information.
- Encourage communication and learning:
  - What can we all learn from other fishers / fisheries / industries?
  - Implement mentoring programs.

**Session B2** - Business is not 'as usual' - making partnerships work. *Presenters - Randall Owens and Margie Atkinson*

- Effective partnerships:
  - Building/extending management toolbox;
  - Good outcomes - short term; and
  - An insurance policy - long term.
- Integrated managers need EBM tools in place to enable adaptation:
  - Stewardship to legislation;
  - Catchment to Reef; and
  - integration across agencies, sectors, communities.

**Session C1** - Part 1 - Cost effective Climate Change Adaptation by Industry and Management. Part 2 - Climate Change and Adaptation in the South East. *Presenters - Dallas D'Silva and Dr Daniel Spooner*

- Take notice of changes and report new species and unusual observations.... knowledge in industry should be shared.
- Consider implications for your 5-10 year business planning, including the ability to diversify your business.
- We need to have good resource sharing arrangements in place to deal with species moving across jurisdiction boundaries.
- We need to implement education and communication programs to increase awareness and understanding - this includes creating the right incentives.
- Climate change will create opportunities as well as challenges.
- Fisheries management controls such as bag, size limits, quotas etc need to be set in a way that they do not exacerbate the negative impacts of climate change.
- Adaptation can come in many forms but it doesn't always have to be costly.
- Adaptation may require action from other NRM (i.e.- catchment, water and coastal planning) agencies to manage for fisheries outcomes.

**Session C2** - Increasing food production from the sea while improving conservation benefits. *Presenter - Dr Keith Brander*

- Opportunities for increased marine production may be few so high value, sustainability and light ecological footprint are important.
- Adaptive co-management (society-industry-policy-science) is needed to develop an acceptable balance and to design, implement and support management that is well informed, robust and responsive.

**Session D1** - Ways to save on fuel and energy costs. *Presenter - Dr David Sterling*

- Use energy audits to:

- Raise awareness of the factors affecting energy efficiency; and
- Strategically move forward with a holistic view of your business.
- Need to increase the scope of fisheries management to include energy efficiency.

**Session D2** - Climate Change Adaptation and the Coral and Aquarium Fish Sector. *Presenter - Ryan Donnelly*

- Business as usual is highly unlikely.
- Collaborate with resource managers.
- Build relationships and trust.
- Adaptive and flexible approach to management.

## 5. Panel Session

The panel session demonstrated a range of views from key stakeholder groups. It was clear that work in terms of adapting industry is in its early stages. Question posed to the panel - What are the challenges and opportunities in preparing the seafood industry for the impacts of climate change?

*Industry body representatives - Dr Andrew Tobin and Michael Garrahy*

*Government representatives - Dallas D'Silva and Collin Creighton*

*Industry representatives - Karen Collard and Simon Boag*

*Science representatives - Dr Renae Tobin and Associate Professor Neil Holbrook*

*Moderator - Dr Paul Marshall*

### 5.1. Overall Issues

- United fisheries sector.
- Climate change is just another issue that the seafood industry will need to deal with.

### 5.2. Peak Body

- Carbon information on products (large consulting industry growing in this area).
- Fuel saving paramount.
- Leveraging and accessing funding to deal with climate change.

### 5.3. Government

- Understanding the various demographics in the community and educating them on the positive aspects of the seafood industry.
- Need statements from fisheries management and Ministers to defend and promote the value of sustainable fisheries.
- Build culture of open and constructive debates and relationships.
- Blue carbon provides us with a win-win opportunity as wetlands sequester 50% of the world's carbon - rehabilitating wetlands for carbon and fish habitat should be a priority as indeed should be allowing for landward expansion as sea levels gradually rise.
- National Climate Change Action Plan for Fisheries and Aquaculture provides us with an opportunity to improve flexibility and resilience in fisheries management arrangements - and in time might lead to fisheries in Australia being managed through 3 broad regions - Tropical, Western and South East.
- Industry leadership as part of the solution is essential with the sustainability issues for agriculture and industry leadership in Reef Rescue providing an example of the way forward.

- With more extreme events as predicted, so fish populations will vary and management must be attuned to this. Examples include more flexible zonings in marine parks, variable catch entitlements, better population predictions translated into effort and catch, and flexible recreational fishery management.
- A ramping up of investment in climate forecasting, especially multi-week forecasts out about 6 to 8 weeks based on improved dynamic climate models is essential and will benefit multiple industries, emergency services and the Australian community generally.

#### 5.4. Research and Funding

- Using multi-disciplinary information to foster smarter business strategies, remembering that climate is another driver and opportunity for business profitability.
- Provide well informed climate risk information and multi-week forecasting so that industry can develop their own adaptation strategies.
- Better understanding of scale of climate change impact is required for each industry and its sectors. Value chain analysis from a climate change perspective may prove worthwhile.
- The existing \$6 million R&D investment covers both marine biodiversity and fisheries management and any further initiatives should preferably continue to examine the entire suite of marine policy and management issues.

#### 5.5. Industry Representatives

- Better understand industry vulnerability (e.g. climate change and other change).
- Better traction on getting solutions implemented into policy and practice.
- Flexible management to allow variability in quota allocation to deal with extreme weather events.

#### 5.6. Discussion

- Industry wants to be proactive but needs more knowledge to do so.
- Capturing carbon we have in the system right now - carbon management within own system/farm and using 'blue' carbon technologies on farms - sinks or as a way to become carbon neutral.
- Industry and scientific community engaging on the issue for the benefit of both; more dialogue required.
- Climate change has helped to start embracing the social and economic issues into the mix. This may be beneficial for how fisheries are managed as climate change considerations are factored into management decision-making.
- All stakeholders need to ensure a communication strategy progresses climate change response at all levels.

### 6. Where to from here?

The dialogue between stakeholders will need to continue in context of preparing industry for the impacts of climate change. One simple and low cost way to do this is to ensure industry operator's experiences are catalogued and provided to industry. This can be achieved through the project website, through industry representative bodies and through management agencies.

Industry adaptation will take place at the business level. It is therefore essential to explore ongoing avenues to communicate with industry and to involve industry in finding solutions to adapt to climate change. The QSIA is grateful to symposium presenters for their following responses to the question:

**How can we jointly (industry bodies, fisheries/conservation management and researchers) take the climate change impact message to the Australian seafood industry?**

#### 6.1. Associate Professor Neil Holbrook notes:

- Researchers to provide better information about climate risk.

- All researchers to provide clear communication of climate risk.
- Researchers to encourage and help enable industry engagement with the science.
- All stakeholders to communicate the important scales (time and space) for their industry.
- All stakeholders to help build near-term climate information into strategies for adaptation.
- Researchers to provide more comprehensive information regarding rates of change and/or extremes.

**6.2.** There is some uncertainty about the future climate, but that is no different to any situation. Some things are sufficiently clear so to allow some decisions to be made now (e.g. some species will change distribution). Fishers need to consider what would they do differently if they had information about the future. What information would be most valuable for decision making? Does it need to be "perfect" information (e.g. fish moving 340.54 km south), or would a trend be sufficient (e.g. fish moving south)? Linkages between fishers, managers and scientists will improve the range of future options... *Dr Alistair Hobday.*

**6.3.** Industry will be uniquely affected by climate change impacts. Many commercial fishers have the business savvy to prepare for climate impacts and survive/adapt. Many commercial fishers do not have the necessary business skills to plan for 'surprises' whether they be risks or opportunities associated with climate change. Most commercial fishers do not have an interest in changing their business to suit their changing environment.

I strongly encourage any effort that helps commercial fishers to develop strategic skills sets whether they be to cope and adapt to climate changes, or any changes in the seafood world. We do not think it is necessary to focus on climate changes in particular - developing strategic skills will be important in general... *Dr Nadine Marshall.*

**6.4.** Key message for me in the seafood industry climate change adaptation space is that all stakeholders work together collaboratively to conduct risk and vulnerability assessments to provide guidance for industry, resource management, research and policy outcomes.

Specifically in relation to the matrix and my presentation, the dot points I used to sum up might be the best to use: (a) risk matrix approach provides an opportunity to meld existing or develop new fisheries vulnerability information to assist resource management planning; (b) the process is a vehicle for engagement and discussion between all fishery stakeholder groups; and (c) process can be applied across the diverse range of fishery situations... *Neil Cliffe.*

**6.5.** The Australian fishing industry is (rightfully) subject to very strong environmental (EPBC Act) and fisheries (FM Act) controls. However, there is a cost of complying with these environmental/fisheries safeguards that can be looked upon as the "cost of sustainability". The Australian Government has (again *probably* correctly) resolved the address climate change by costing carbon in the economy to minimise emissions and incentivise clean(er) technologies. Another "cost of sustainability".

As a net importer of seafood (more than \$1 billion pa) international fishing operators now have a significant cost advantage because they are generally not subject to these costs of sustainability. This is particularly important as the purchasing power of the \$A rises and rises, one of three things need to occur:

a) All imported fish needs to meet Australian standards (i.e. have a wildlife trade operation certification) and face an import tax on carbon (or come from a country where carbon is costed like NZ); b) Australian food producers (such as the fishing industry) need to be exempt from the carbon tax; and c) At the very least country of origin labelling needs to extend all the way through to cooked seafood (the NT model) so consumers can make an environmental choice around seafood that is incentivised to reduce carbon emissions and is sustainable. If one of these does not occur imports will replace sustainable Australian seafood... *Simon Boag.*

**6.6.** Flexibility in this case can be a whole range of strategies and activities such as:

- Better population prediction so we can vary total allowable catch's in response to varying climate;
- Multi-species fisheries management so that a fisher can move across fisheries with minimal increased capital investment and maximum profitability;

- Fishers participating along the value chain for their catch so that the fishers are more of a price maker than a price taker;
- Improved and more facilitative planning and regulation to encourage aquaculture development;
- Enhanced technology and gear for smarter, safer and less energy demanding enterprises;
- Multi-objective management and actions so we improve both fisheries profitability and marine biodiversity; and
- Repair and protection of all wetlands and estuary habitats for increased fisheries production as well as carbon mitigation.

Indeed many of the responses to a changing and more varied climate are the same as those FRDC is advocating for more profitable and sustainable fishing sectors. FRDC recognises that ongoing investment in research and industry skills development underpins all such strategies and that climate is one of the many opportunities / threats that must be taken into account in both research investment and skill development... *Colin Creighton.*

**6.7.** Industry would dearly like to reduce its carbon footprint but is constrained because of little timely R&D investment in improved harvest technology that increases fuel efficiency or allows low-carbon fuel to be used. The fishing industry in Australia is locked into high-carbon fuel because there is a rebate on high-carbon fuel but no rebate on low-carbon fuel.

The fishing industry produces seafood with relatively low carbon footprint, because most of the energy for production is renewable and provided free by the natural environment. The profitability of the harvesting sector though is very sensitive to fuel prices because the harvesting process is very energy intensive and is currently dependent on high performance manmade fuels.

A broad framework is necessary for looking at reducing the carbon footprint for commercial fisheries because there are a lot of strong interactions with factors outside the 1<sup>st</sup> order input/output process between fuel and seafood products. The harvesting process produces large wastes of energy and marine materials and is not always well in tune with the natural processes that make seafood production possible.

It is interesting to note that a tariff was recently placed on the import of biodiesel into Aus on the basis of claims by Australian biodiesel manufacturers that US production was being cost subsidized by the US administration. This makes biodiesel more expensive for the Australian fishing industry. This is somewhat unfair given that no import tariff on imported prawns is available to protect the local industry from seafood products that do not internalize the full environmental cost of their production in now degraded inshore wetlands in Asia... *Dr David Sterling.*

**6.8.** We need to put aside the divides, do it in collaboration, as a partnership - accepting that there will be change and we need to pool our combined knowledge and experience to prepare for it - that certainly is not business as usual... *Randall Owens and Margie Atkinson.*

**6.9.** We will need to make sure the message is consistent and easy to understand. It will need to highlight the tangible benefits to industry. The adaptation message is not likely to be the same for all sectors; adaptation will need to be taken in many forms. Ranging from simple practical measures to major changes in the way fisheries operate both spatially and temporally.

The key to success will be remove the focus on whether climate change is occurring and what's driving it, and focus on developing strategies that enable industry to exist sustainably in the face of climate variability and extreme weather events... *Dr Daniel Spooner.*

**6.10.** Policy and legislative frameworks should be reviewed to ensure they do not unnecessarily limit adaptive capacity, efficiency or innovation by industry. Education strategies should be implemented to raise stakeholder awareness about climate change and it's implications for fisheries. New opportunities should also become available and fishers should be encouraged to diversify their operations where possible... *Dallas D'Silva.*

## 7. Attendee Feedback

Attendees at the symposium were very interested in participating in the many discussions generated by presenters and in particular the panel discussion. Noted below are some comments from symposium attendees.

7.1. Building a national seafood industry broad based policy on the impact of the seafood industry on the climate, and the industries strategic direction on how it intends to minimise its impact upon the environment. The policy framework will need to define clear objectives/benchmarks, and define how far the industry has come, and how far it is still to go. The policy could also be used to reference comparison to other protein producing industries, and their impact on climate. It should be an evolving document that can be presented to key policy makers in government circles. It can also serve to align the industries focus on limiting the impact we have on the climate, and taking a proactive stance on all matters relating to climate impact and climate change... *James Paratore*.

7.2. The seafood industry will need to consider the following issues:

- Trade exposure - need details to mount a case;
- Fuel smarts - how the industry is continually improving its energy use...and what government could do to further increase the rate of adoption of smart practices;
- Habitat repair - wetlands for both fish/prawns and carbon;
- Management arrangements - more flexibility for more profitability;
- Rethink the enforcement paradigm - for example is the energy expended and costs by govt really delivering marine protection / biodiversity / sustainability; and
- Rethink the conservation paradigm - is locking up specific area the most appropriate management approach... *Colin Creighton*.

## 8. Project Website

All workshop materials and videos of each session will be placed on the project website: [www.climatechangefishing.com.au](http://www.climatechangefishing.com.au). This site offers us all an opportunity to show case what we doing in the climate change field to assist the seafood industry adapt to climate change.

## 9. Symposium Contact

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