

Day 1

**Australian Seafood Industry
and Climate Change Symposium**

**Implications for Industry
and Fisheries Management**

Presentations and Concurrent Sessions

Presentations

Welcome and outline of conference theme: How will the seafood industry and fisheries management prepare themselves for the impacts of climate change?

Presenter - Dr Michael Gardner

- Develop strategies to manage acute climatic events.
- Develop and implement longer-term strategies to:
 - Reduce carbon emissions; and
 - Adapt management and practices to the best information available.
- Reducing carbon footprint – operators and management.
- Use of tools such as emissions calculators.
- Information – what is available and what do we need to know.

Session 1.

Climate change, implications for the Australian marine environment and industry

Presenter - Associate Professor Neil Holbrook

1.1. Industry Implications

- Communication is key.
- Opportunities for industry to get involved:
 - By contributing to improved measurement coverage; and
 - Through citizen science - notifications, e.g. via Redmap.

1.2. Fisheries Management Implications

- Climate change is expected to affect:
 - Species range (extension);
 - Recruitment;
 - Breeding; and
 - Phenology.
- Climate change uncertainties challenge management approaches to be
 - Flexible; and
 - Adaptive.

Session 2.

Climate change impacts on fisheries

Presenter - Dr Alistair Hobday

2.1. Industry and Fisheries Management Implications

- Climate change will impact fishing and aquaculture (maybe has already):
 - 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.

- Need local information in order to plan:
 - Selective breeding will adapt some aquaculture species; and
 - Changes in location may be required for some businesses.

- Need new partnerships to be “adaptive”.

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

3.1. Industry Implications

- The future is still highly uncertain in regard to the effects of climate change on fishers' incomes but in most cases is not a "bad-news" story on average at least in the medium-term.
- Fishers can not rely on any benefits from climate change in the future to solve current problems:
 - Any benefits will be at least 10-20 years away while current problems need to be addressed now.
- Fishers need to work with managers to help develop flexible management strategies that can capture the benefits when they do emerge and limit costs if they occur:
 - While average impacts may be positive, substantial negative impacts may appear in any given year:
 - e.g. Cyclones, floods; and
 - e.g. WA Rocklobster.

3.2. Fisheries Management Implications

- 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.

- In the medium term, many fisheries could benefit from climate change and management strategies need to be developed with flexibility to capture some of these benefits:
 - Adaptation strategies should consider minimising losses and maximising the benefits that could be brought by climate change.

- Output controls may be more flexible in this regard:
 - It is easier to increase a TAC than allow more effort back into a fishery once it has been removed.

- Fisheries management have identified further training needs in the following areas:
 - Bioeconomic modeling;
 - Cost-Benefit analysis;
 - Property rights, fisheries governance and co-management;
 - Impact analysis;
 - Non-market valuation;
 - Risk and uncertainty in fisheries;
 - Economics of climate change;
 - Technical efficiency in fisheries; and
 - Game theory analysis of fisheries.

Concurrent Sessions

Session A1.

How a fishing family is tackling climate change

Presenters - Tony and Karen Collard

A1.1. Industry Implications

- Commercial fishers are very knowledgeable, strengthen your position with up to date information – connect to all networks available to you.
- Use everything available to manage your business, e.g. Fishing Emissions Calculator.
- Draw on the experience of other fishers, share successes and failures.

A1.2. Fisheries Management Implications

- 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.
- What can Fisheries Managers do reduce carbon emissions?
 - Consider the ability of fishers to reduce carbon emissions under current management plans, with a view to reduce limitations; and
 - Assist challenged fishing sectors become successful to enable carbon reductions i.e. increase their adaptive capacity.

Session A2.

Tropical Cyclone Hamish - Lessons Learned

Presenter - Dr Andrew Tobin

A2.1. Industry and Fisheries Management Implications

- Data recording for the commercial fishery:
 - Deficient in allowing timely interrogation of fishery performance;
 - The need to consider electronic recording; and
 - To the benefit of all stakeholders.

- Vulnerability of single species / single market fishery:
 - Look toward product substitution (export live trade); and
 - Value add and strengthen domestic marketing of “dead fish”.

- Adaptive capacity is limited:
 - Only choice is to move away; and
 - Socio-economic issues are many.

Session B1.

How can commercial fishers better prepare for climate change?

Presenter - Dr Nadine Marshall and Dr Renae Tobin

B1.1. Industry Implications

- Be interested.
- Develop strategies.
- Experiment, learn and refine strategies.
- Network.
- Be flexible.
- Diversify:
 - Change is likely to be unpredictable;
 - Keep options open; and
 - Plan ahead:
 - Multiple species – quality markets; and
 - Ability to move areas or fisheries.
- Network - what can you learn from other fishers / fisheries / industries?

B1.2. Fisheries Management Implications

- Understand - why is adaptation so hard?
- Potentially assist with:
 - Facilitating networks;
 - Enhancing business approach;
 - Developing environmental awareness;
 - Communicating Risk; and
 - Providing financial flexibility.
- Encourage diversity!
 - Easier to manage more specialised fisheries;
 - Perhaps consider State-wide effort, rather than regions or fisheries:
 - Need overlap to allow adaptation; and
 - Without compromising sustainability and fair access.
- 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

B2.1. Industry Implications

- Focus on business planning.
- Value to community – fishers place in it.
- Recognition of fisher's knowledge/experience.
- Stewardship/partnerships require mutual trust and take time.
- Effective partnerships:
 - Building/extending management toolbox;
 - Good outcomes – short term; and
 - An insurance policy – long term.

B2.2 Fisheries Management Implications

- Adaptation involves managers and fishers.
- GBRMPA's approach is via EBM:
 - EBM includes people (triple bottom line).

- Integrated managers need EBM tools in place to enable adaptation:
 - Stewardship legislation;
 - Catchment to Reef; and
 - Integration across agencies, sectors, communities.