



11<sup>TH</sup> November 2014

The Secretary  
Senate Standing Committee on Environment and Communications  
Parliament House  
Canberra, ACT, 2600

**Ref: Inquiry into the impacts of climate change on marine fisheries and biodiversity**

Dear Sir or Madam:

Please find attached our submission on impacts of climate change on marine fisheries and biodiversity.

We would be happy to provide further commentary as required or to appear before the committee.

Yours truly,

David Carter

CEO



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**SUBMISSION BY**  
**AUSTRAL FISHERIES PTY LTD**  
**TO**  
**INQUIRY INTO THE IMPACTS OF CLIMATE CHANGE ON MARINE FISHERIES AND BIODIVERSITY**

## Executive Summary

Austral Fisheries Pty Ltd (“Austral”) is one of Australia’s largest wild capture fishing companies, operating in Commonwealth fisheries, including the Northern Prawn Fishery (10 prawn trawlers) and the Australian sub-Antarctic fisheries for toothfish and icefish at Heard Island and McDonald Islands, as well as for toothfish in waters Macquarie Island (2 demersal longline vessels, and one multi-purpose longline and trawl vessel).

We consider the impacts of climate change, and the adaptation of the environment, fish stocks and, consequently, our operations, to those climate changes as a critical priority, if not the highest priority, for our business.

We recognised that, to continue to demonstrate our stated claim we are a “sustainable seafood” business, meant we needed to address the negative impacts our business was having on the climate. As such, we became the first fishing company in the world to be certified as Carbon Neutral for both our products, and our operations, under the Australian Government Carbon Neutral Program, following the standards set out in the National Carbon Offset Scheme.

We are currently offsetting all of our identified CO2 emissions via the purchase of carbon credits from trees which have been growing for many years, and with the carbon sequestration levels independently tested, calculated, monitored, verified and validated by the only Gold Standard certified project in Australia (<http://www.goldstandard.org/>).

That Gold Standard project is a native revegetation program in Western Australia, operated by Carbon Neutral Pty Ltd (<http://carbonneutral.com.au/>) and known as the Yarra Yarra Biodiversity Corridor (<http://carbonneutral.com.au/yarra-yarra-biodiversity-corridor/>).

Austral has been at the forefront of environmentally responsible fishing for the past two decades, and has forged many close links with other industry members, conservation groups, national and international science agencies, governments, and inter-governmental bodies during this time. We are open about our desire to ensure fisheries are managed in an environmentally sustainable, and responsible manner.

We believe our leadership position in the seafood industry brings with it responsibilities to be proactive and transparent in our activities, and we are constantly evaluating risks to, and future vulnerabilities of, the fisheries we operate within, and environment they rely upon.

In addition to the offset of our carbon emissions, we are constantly evaluating ways to reduce further our existing carbon footprint; looking to work with agencies to develop measures to have 'blue carbon' schemes validated to Gold Standard level (eg mangroves, sea grasses, or estuarine activities which can be independently validated in terms of the amount of carbon sequestered); and encouraging our peers, suppliers, customers, and network of contacts to follow our example and reduce their carbon emissions wherever possible, and offset those emissions which remain.

We are in the process of implementing some longer term programs for marine environment climate monitoring, such as recording temperature, salinity changes, and other details, from our vessels. That is in addition to the many existing scientific monitoring and recording programs we have in place, such as acoustic recording of micro-nekton, collection of weather bureau data sets, and standard fisheries data collection on species, bycatch, and habitats.

We consider there is a need to ensure a well-coordinated, properly funded, long term national scientific program to monitor and evaluate the changing climactic conditions in Australia, and address the issues of climate change as directly as possible.

We are directly impacted already by climate change in our fisheries, including evident rainfall reductions in the northern Australia region and sea water temperatures consistently being at "record warmest levels" in recent years. This has, and will continue, to impact on levels of prawn stocks, and impacts on ecologically related species to prawns, such as die-back of mangroves that we have seen in the past year, around the Eastern Gulf of Carpentaria. In our sub-Antarctic fisheries at Heard Island and McDonald Islands, we have seen record warmest sea surface temperatures occur from May to July this year (2016) and we believe this may have had detrimental impacts on the availability of toothfish in our fishery.

We are also very aware of the coral bleaching events happening in northern regions of the Great Barrier Reef, as well as kelp bed die back off southern Western Australia, along with record warmest temperatures on the East coast of Tasmania with associated Hazard Algal Blooms which have necessitated temporary closures of fisheries such as oysters, scallops, abalone and rock lobster to ensure public health and safety is maintained.

Some points under each of the Terms of Reference include:

**(a): The current and future impacts of climate change on marine fisheries and biodiversity, including recent and projected changes in ocean temperatures, currents and chemistry associated with climate change;**

- Austral is willing to contribute directly to long term monitoring and evaluation of climate change impacts on marine fisheries and biodiversity, if there is a coordinated, calibrated, program of research that is developed by scientists. That would then permit voluntary data collection (eg via data storage tags, or acoustics, or release of Argos buoys and so forth) for analyses and evaluations by scientists. We have already implemented a number of monitoring programs in an ad-hoc manner with different groups of scientists, and look forward to having those drawn together in a more cohesive, directed manner in future years.
- We believe the specific adaptations to climate change which our fisheries will be subject to are hard, if not impossible, to evaluate with certainty. To deal with the changes that do occur will require dynamic, flexible, resource management approaches for marine resources with a clear outline of objectives and regulation that both facilitates continued commercial activity, and provides sufficient buffer to account for the expected increased fluctuations due to climate change for some species. What is clear to us already, is that climate changes will see:
  - shifts in ranges of species (either expand, contract, or move);
  - changes in availability and/or abundance of some marine species, either positively or negatively;
  - ocean current changes, such as those already identified off the western side of the Kerguelen Plateau in the sub-Antarctic, and off the east coast of Tasmania; and
  - environment-wide changes with unknown implications, such as increased acidity in the marine environment leading to food chain changes, species extinctions, species expansions, or other.

**(b) recent and projected changes in fish stocks, marine biodiversity and marine ecosystems associated with climate change;**

- There have been a number of identified changes in distribution and abundance of marine species already around Australia, including through the use of programs such as “Red Map” (<http://www.redmap.org.au/>) an initiative by scientists from the Institute of Marine and Antarctic Studies, at the University of Tasmania to link science with the public (known as ‘citizen science’) to monitor range shifts in species.
- We expect that changes in marine ecosystems will continue to be evident in coming years, and recognise that will require adaptation from the environment, those of us who

rely upon the marine environment for a living, and society which can be integrally impacted by climate change (eg via sea level rise).

- We are directly and currently concerned with obvious recent impacts of climate change around Australia, including on coral reef bleaching; kelp forest die backs; tropical mangrove dieback; hazardous algal blooms and more.

**(c) recent and projected changes in marine pests and diseases associated with climate change;**

- We would defer to the science in terms of direct commentary on this aspect, although it is axiomatic in our view that, as the marine environment changes there will be shifts in marine pests and diseases. The Hazardous algal blooms that have been seen off the east coast of Tasmania would be one example of that, and we are sure that other instances have, and will continue to, occur around Australia. There are extensive (and evidently effective) monitoring programs already in place around Australia for the prevention of introduction of marine pests and diseases, but it remains to be seen how effective these will be against climate-driven shifts and changes.
- Again, Austral may be able to assist science, and government agencies, through implementation of monitoring programs that are initiated through a coordinated, and properly resourced, scientific program.

**(d) the impact of these changes on commercial fishing and aquaculture, including associated business activity and employment;**

- We believe we have already seen evidence of negative impacts on the fisheries we operate within.
  - Banana prawns in the Northern Prawn Fishery are well known to be reliant on adequate rainfall and consequent river flows at the correct time of the life cycle of the prawn, to ensure the stocks are productive and generate good recruitment. If climate change leads to longer periods of lower rainfall in northern Australia, or if river flows are negatively impacted due to either lower rainfall, or other diversions of the available water, then we will see direct negative impacts on prawn stock abundance. Given the management regime which exists in that fishery, it will not require any changes to the system of management, but will result in lost income, higher carbon emissions generated as operators spend longer at sea burning diesel fuel to search for prawns, and lower catches of prawns.
  - Toothfish stocks in the sub Antarctic underwent a dramatic shift in availability in May 2016, for a period of nearly 5 months, after which the availability of the fish returned (equally as dramatically) to previous levels. Large shifts in species ranges have been known to occur in that region in past, resulting in changes to foraging species such as elephant seals (needing to travel further to locate food, dive deeper, and unable to feed their pups well enough to ensure survival). If

these events occur more regularly, or with greater intensity, there will be a need to alter our operations, and possibly management regimes, to take those shifts into account. For example, like in situations where fisheries are temporarily closed due to hazardous algal blooms, it may be necessary to change seasonal access to sub Antarctic fisheries, at times of the year when toothfish availability may be more stable.

**(e) the impact of these changes on recreational fishing;**

- Many of our staff, and contractors, are enthusiastic recreational fishers. In the same way as changes will impact directly on professional fishing, we would expect changes will necessitate changes to recreational fishing management. It is highly likely for some species which are shared between recreational and professional fishers, that there will need to be consideration given to how future access may be facilitated for both groups to the same stocks. This will require careful planning, coordination, and understanding amongst all groups. The same will be evident across State and Commonwealth regions, as marine species change their ranges, and habitats.

**(f) the adequacy of current quota-setting and access rights provisions and processes given current and projected climate change impacts;**

- As mentioned above, it is likely there will need to be differing levels of response, on a fishery-by-fishery basis, if not on a species-by-species basis around Australia in response to climate induced changes. In the Commonwealth fisheries where we operate, the Northern Prawn Fishery may not require changes to management regulations, but may well require direct consideration before decisions are made in future which may impact on fresh water river flows, for example. Or there could be invasive species from northern regions, outside Australian waters, which move to invade the fishery, which requires different monitoring programs to avoid negative impacts on the fishery.
- The sub Antarctic fisheries quota regime would be unlikely to require change (as it is a mechanism to allocate proportions of the scientifically assessed available catch each year) but may require changes to other management controls, such as season lengths, fishing gear restrictions or requirements, and other.
- Any changes should only be made after careful scientific assessment of the impacts which, in turn, necessitates an effective, comprehensive, long-term scientific program to monitor and evaluate indicators of climate change. Austral is willing to continue our role in supporting such programs, and would like to see support from the Inquiry to set up a climate monitoring program in marine environments around Australia, with clear direction, funding, and commitment across the government.

**(g) the adequacy of current and proposed marine biodiversity protections given current and projected climate change impacts;**

- We believe the various protections are currently adequate, with the exception of the fundamental monitoring program, under a cohesive scientific group.

**(h) the adequacy of biosecurity measures and monitoring systems given current and projected climate change impacts;**

- Existing biosecurity measures appear to be effective in the marine environment. It is possible they may need to be expanded in future, to deal with possible range shifts, and other impacts, of climate change.

**(i) any other related matters.**

- We believe that the government, and this Inquiry, should continue to encourage the reduction of carbon emissions by all Australians, and internationally, to help reduce the possible negative impacts of climate change, or at least to mitigate those impacts somewhat. Greater support from within government for the Carbon Neutral Program, and various programs designed to encourage industry to offset and reduce carbon emissions should be forthcoming.

It is pleasing to have the opportunity to make a submission to this Inquiry, and we would be happy to expand upon our views in person.

Yours sincerely

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