



**WAFIC** FISHING  
PEARLING  
AQUACULTURE

## SENATE ENVIRONMENT AND COMMUNICATIONS REFERENCES COMMITTEE

### INQUIRY INTO THE ENVIRONMENTAL, SOCIAL AND ECONOMIC IMPACTS OF LARGE-CAPACITY FISHING VESSELS COMMONLY KNOWN AS 'SUPERTRAWLERS' OPERATING IN AUSTRALIA'S MARINE JURISDICTION

#### 1. Introduction

The following is a submission to the abovementioned Senate Environment and Communications References Committee (the Committee) on behalf of the Western Australian Fishing Industry Council (WAFIC). The submission is formatted to follow the order of the Terms of Reference (TOR) issued by the Committee. WAFIC is grateful to the Committee for providing the opportunity to present this information.

WAFIC notes the current debate on this issue has received significant media, social, and political attention. As a result the term "supertrawler" has become laden with emotive connotations. The internationally accepted description for such vessels is "factory vessel". This submission will; use the term factory vessel throughout.

While most of the recent media, social, and political attention on this issue has centred on the vessel *FV Geelong Star*, factory vessels have operated in Australian waters for decades. Factory vessels have operated in the commonwealth Blue Grenadier fishery off western Tasmania, and the orange roughy fishery also off Tasmania. Practically all vessels which fish in sub Antarctic waters head and gut their catch before freezing the product to ultra low temperatures. This is also the practice for vessels in the Western Tuna and Billfish fishery. While the issue of the *FV Geelong Star* cannot be omitted, this submission speaks more broadly to the issue of factory vessels in Australian waters.

#### 2. Background

A number of issues raised in this section will be returned to as the submission tracks the Committee's TOR. They have been presented in this section to allow Committee members to have a consolidated summary of some of the key points of the issue at hand. The issues in this section are not presented in order of priority as they are all of importance when considering fishing management as a whole, and the impacts of factory vessels in particular.

Perhaps the most significant omission in recent media attention given to factory vessels is the fact there is no correlation between vessel size and fishing power. At its simplest, a factory vessel uses approximately the same fishing gear configuration and owes it size to the fact the vessel must provide space for a processing factory (including snap freezing), and higher volumes of refrigerated storage than a vessel fishing on a fresh fishing cycle.

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In the case of the *FV Geelong Star*, the fishing gear configuration is almost exactly the same as that of previous midwater trawlers used in the Australian small pelagic fishery.

It is also the case that a factory vessel can only take fish at the rate its processing plant can work to. In many fisheries across the world, factory vessels take fish at a lower rate than fresh fish vessels due to this factor. The submission will return to this point but would like to draw the Committee's attention to the fact that in considering the use of fresh or factory vessels, there is no correlation between the likelihood of a localised depletion of a fish stock, and the size of the vessel which harvests the animals.

Localised depletion is influenced by the lifecycle of the animal in question. The likelihood of localised depletion is often affected by the viscosity of the stock, along with rates of fishing. Animals such as orange roughy, for example, are long lived with a high age at first maturity and have a whole of life habituation to a single seamount with no migration between seamounts. The effect of fishing effort on stocks such as this have a high probability of localised depletion. It is well known North American salmon are habituated to a single stream to which they return each year to breed. Fishing effort on such streams can cause localised depletion within a stream system, even though they may not significantly affect the biomass level of the fishery when it is considered at the oceanic level.

In the case of the small pelagic fishery, viscosity levels are fluid. A pelagic animal is by definition free swimming and mobile. The animals move from area to area following favourable abundance of food sources. For some animals the area of travel is limited by environmental conditions such as water temperature. For other pelagic animals such as tunas, the movement of the fish is not only affected by food abundance and water conditions, it also takes into account their life cycle which sees them return to tropical waters to breed, and then to temperate waters to the south of Australia to feed and grow.

It is noteworthy that fresh fishing vessels are limited on range to proximity to port for unloading. The factory vessel does not have this constraint and can be more wide ranging. Paradoxically it may be the case that the factory vessel has a lower potential to cause localised depletion than the fresh vessel.

Factory vessels are almost exclusively worked in Commonwealth fisheries which fall within the jurisdiction of the Australian Fisheries Management Authority (AFMA). The over-arching management strategy used by AFMA to manage a fishery is the same, regardless of the vessel configuration. The cornerstone for this management is a harvest strategy for the target species. The harvest strategy considers a number of aspects including (among others):

- The life cycle of the animal including age at first maturity of the animal, natural longevity, and reproductive capacity;
- The biomass of the stock both in absolute tonnage, and in relative abundance compared to pre-fishing levels; and
- An ecosystem based analysis which considers factors such as catch rates for by-product and by-catch species<sup>1</sup>, and modification of the physical environment fished such as the impact of bottom trawling on the ocean floor.

Fishing management planning under an ecosystem based management plan considers all of these factors and carries out a risk based assessment on fishing activities to determine if fishing activities are likely to have significant impact on both the target species, and the rest of the natural environment fished. This analysis not only leads to the calculation of an

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<sup>1</sup> By-catch is the living organisms which are taken incidentally to fishing activities and which are not intended to be retained for commercial purposes. By-product refers to the organisms which are taken incidentally to fishing activities and which ARE intended to be retained for commercial purposes.

appropriate total allowable catch (TAC), it also influences other factors such as (among others) conditions on:

- Fishing gear type and configuration (demersal trawl, mid-water trawl, longline etc. net mesh size, hook size etc.);
- The incorporation of devices into fishing gear to exclude certain species;
- The need to carry an independent scientific or compliance observer on the vessel; and
- Deficiencies in the knowledge of the environmental management of the fishery and the derivation of research priorities from these.

The formulation of management advice to and by AFMA typically uses both a scientific and a management committee for each fishery. These committees meet at a frequency determined by the importance and urgency of the issues at hand for any particular fishery. Both the scientific and management committees have the following set of attributes:

- An independent chair who has either broad scientific or fisheries management expertise but no direct links to the fishery under consideration;
- An independent executive officer charged with recording the views of the committee impartially (as well as circulating meeting agenda, the collection of third party information for the committee, consultation with members out of session etc.);
- Representatives from the fishing industry involved in the fishery, from other (state and territory) jurisdictions involved in its management;
- Representatives from significant community bodies affected by the fishery such as recreational and traditional fishers; and
- Representatives from an environmental NGO.

Members are drawn on an expertise basis. It is inevitable that some members cannot claim full independence from the fishery's management (commercial and recreational fishers etc.), but all members have a formal responsibility to declare any interests they may have<sup>2</sup>.

It is critical to emphasise these committees work to a consensus model and not to a voting majority. The committee structure is such that the proportional representation of each sector does not affect the decision making outcome of the committee. The committee structure has a second line defence in that it provides non-binding advice to AFMA. Senior management at AFMA have the discretion to vary from this advice if they feel it necessary. AFMA's advice to the Minister is similarly non-binding with the ultimate decision making authority resting with the Minister.

WAFIC is aware any fishery must be examined in a way which considers the scientific impacts on the environment, the financial benefits to all Australians by having a community resource harvested by individuals, and the social impacts of a fishery including community perceptions. However, this submission notes that community's perceptions can often be influenced by popular media and social networks rather than independent and informed advice. In the case of the small pelagic fishery currently harvested by the *FV Geelong Star* and others, it is independently verifiable that the fishery received little adverse attention when fished by so called conventional vessel. It is also verifiable that media reporting of scientific and ecological issues of that fishery, including interactions with seals and dolphins, received no attention prior to the arrival of the *FV Geelong Star*. Factory vessels have historically worked in Commonwealth fisheries for years, if not decades. They have worked in a range of Commonwealth fisheries including the sub Antarctic (Heard and McDonald Islands, Macquarie island), the Blue Grenadier fishery off western Tasmania, the Northern Prawn Fishery, a number of orange roughy fisheries, and in the Coral Sea. In some cases these vessels have interactions with species protected under the *EPBC Act* yet none of

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<sup>2</sup> The term "interests" is deliberate. The term "conflicts of interests" is not used as an interest does not necessarily imply any conflict of interest.

these have received significant media attention, or provoked any significant community response.

There are also Commonwealth, state and territory fisheries which do not involve factory vessels but have interactions with species protected under the *EPBC Act*. These fisheries have historically attracted no media or social attention despite having been documented for decades.

WAFIC would ask the Committee to explicitly consider the effect of media reporting and social media on "community perceptions". In particular, the submission asks the Committee to consider whether the factors such as media profile afforded to any particular fishery is actually representative of the broad community perceptions. WAFIC draws the Committee's attention to a corollary comparison such as the attention given to live exports of farmed animals and asks whether the views expressed by niche animal welfare groups are representative of those held by the broader Australian community?

The broad issue of by-catch, and the specific issue of interactions with species listed under the *EPBC Act* itself is worthy of discussion. A term frequently used in fisheries management is "charismatic megafauna". This term refers to animals such as, among others, dolphins, seals, sealions, turtles, albatross etc. The *EPBC Act* offers protection to a range of species which do not traditionally fall within this category. For example, all seabirds are covered under the *EPBC Act*, including the lowly seagull. There are a number of human activities both from the commercial fishing sector and from without which have negative impacts on the seagull. These include recreational fishing interactions, the use of all night lighting adjacent to and on the marine environment (including urban development and drilling rigs), the development of fully managed and approved landfill sites and so on. The approval of a dedicated and approved cull of seagulls is quite common in the remediation of some of the non-fishing impacts. Thus not all protected species are afforded the same level of media or community attention.

Fishing by-catch also extends to species not listed under the *EPBC Act*, such as small fish with no public appeal and so forth. It is important to note that the ecological role of, and the importance of the interaction of ALL by-catch is currently considered under the AFMA management regime. Scientific and risk assessment is not determined on the public appeal of the species under consideration. WAFIC would ask the Committee to consider this aspect of fisheries management in its deliberations.

**3. This section consider the Committee's TOR covering:**

- *Impacts on fish stocks and the marine food chain, and*
- *Bycatch and interactions with protected marine species.*

As covered in Section 2, the harvest strategy method used by AFMA covers the impacts on fish stocks. Harvest strategies are developed using the most current scientific evidence available. AFMA does not possess a research arm. As a result the formulation of the scientific evidence is provided at arm's length from the management body. The scientific advice is predominantly drawn from either CSIRO, the Bureau of Resource Sciences (BRS), the Fisheries Research and Development Corporation (FRDC), independent research, or state and territory bodies. All considerations involving the above 2 bullet points are risk based. They consider the risk of an adverse impact and this risk assessment is fed directly into the advice offered to AFMA.

The use of a risk based assessment is critical to this debate. This issue is explored below using the exemplar of the small pelagic fishery which is topical at this point in time.

As mentioned in Section 2, small pelagic fish are relatively short lived, mobile animals which do not habituate a localised area. The rate of harvest is determined by a formal harvest

strategy and all management conditions are policed by AFMA which has formal observer, and compliance sections. The fishery management is also formulated within an ecosystem based framework. These factors cover issues of fish stocks and the marine food chain.

Bycatch management covers ALL living organisms which are taken in fishing activities but which are not intended to be retained for commercial sale. Bycatch analysis includes not only the effect on the populations of animals taken, but their role within the broader marine ecology. In the case of the small pelagic fishery, the bulk of the attention on bycatch and the interaction with protected marine species has been devoted to New Zealand fur seals, and oceanic dolphins, both of which have been taken by the *FV Geelong Star*.

It is not widely understood that seals and dolphins enter and exit fish trawls either as part of feeding, or as is often the case with dolphins, out of curiosity. This behaviour is well documented and in some trawl fisheries has been captured extensively on underwater video systems. It is not uncommon to see the same animal enter and leave the trawl on a number of times in a single fishing activity. There are also documented cases where such an animal will float back past the camera either unconscious or dead after several dives. It could be hypothesised that while the animals have evolved to dive for food, they may not be capable of withstanding frequent dives over a short duration. Regardless of this scientific speculation it is important to note that the nature of the interaction is not one of the animal being "mowed down" by the trawl. It is a complex interaction of learned behaviour by intelligent animals. It is probable that most of the fatal interactions with seals and dolphins occurs due to either the abovementioned loss of consciousness of the animal, or the animal entering the trawl at the time it is being winched up which may cause the closure of the net. It is highly probable the animals interact with the trawl on a near continuous basis without adverse consequences.

As is the case with target and by-product species, the critical scientific factors in any evaluation centre on the impact on the life cycle of the species and the potential risk from fishing activities. For example, New Zealand fur seals have a different set of life attributes to Australian Sealions. The former are in greater abundance and show signs of a higher degree of recovery from hunting activities for skins and meat in the late 19<sup>th</sup> and early 20<sup>th</sup> century (<http://www.abc.net.au/news/2015-10-25/in-pictures-nz-fur-seals-back-from-brink-of-extinction/6883292> ). The following 2 paragraphs are of significance and their highlighting here is, WAFIC believes, not out of context. The two paragraphs appear in this order, and as consecutive paragraphs in the source material.

*"The report found the number of fur seals killed annually has decreased steadily since a peak in 2005, with the latest data showing an estimated 508 were killed as bycatch in 2013.*

*New Zealand's Department of Conservation said that the number of fur seals now stands at about 200,000, with half of the animals actually in Australia."*

NZ fur seals are now recovering at a rate that they are posing serious risks to the economic viability of some Australian fisheries and potentially to native wildlife as presented on 27 October at Seafood Directions 2015 in Perth.

<http://www.abc.net.au/news/2015-04-24/fur-seals-attack-rare-birds-pelicans-fishing-nets-coorong-lower/6418046> )

Species such as sealions (which are not taken by the *FV Geelong Star*), on the other hand, form small tight knit colony structures which are localised despite the animals in a single colony having wide foraging ranges. A small number of breeding females in any colony carry most of the reproductive capacity of the colony. The removal of these females can have a highly significant impact on the viability of the colony, and therefore the localised

abundance of the animals. NZ fur seals do not have similar life cycles and the removal of a similar number of animals has minimal impact on overall population numbers and localised colony numbers.

Similarly there is a significant difference between coastal and oceanic dolphins with the former having a smaller, tighter knit pod configuration and the latter having pods in the hundreds, if not thousands.

In both cases, the scientific focus should not be on the total number of NZ fur seals and oceanic dolphins taken during fishing activities, but on the likely impact on the biological and genetic structure of localised populations.

WAFIC is aware that management must consider economic and social implications of such interactions. Within the context of the relevant two bullet points of the Committee's TOR under consideration in this section, it is clear the current management arrangements for Commonwealth fisheries takes these factors into account. State and territory fisheries are also covered under the auspices of the *EPBC Act* and all work to a fairly consistent framework. It is a safe assumption that all Australian fisheries use this framework, regardless of whether they deploy factory vessels or not.

#### **4. This section consider the Committee's TOR covering:**

Current research and scientific knowledge;

- *Social and economic impacts, including effects on other commercial fishing activities and recreational fishing;*
- *The effectiveness of the current regulatory framework and compliance arrangements.*

A 50 meter fresh fish boat is likely to employ a skipper, a mate, an engineer, and 3 or 4 crew. A factory vessel such as the *FV Geelong Star* employs approximately 31 crew. Seven of these are European officers with the balance being locally recruited. Both fresh and factory vessels source provisions for crew and fuel locally and both have a range of engineering and maintenance tasks which are typically carried out in adjacent ports. It is probable that there is little to no relative economic or social advantage from using either type of vessel in terms of local impacts. It is certainly NOT the case that the use of factory vessels deprives local communities of employment or commercial opportunities.

As covered in other sections of this submission, all vessels operating in an Australian fishery are harvesting part of a TAC set to a range of criteria regardless of whether they are fresh fish or factory vessels. TAC is not "created" to accommodate a factory vessel. Under the AFMA model, the quota which comprises the TAC is a freely tradeable instrument. The fact that these vessels are capable of fishing with quota is testament to the fact that other fishery participants have been willing to sell or lease their quota to the operators of a factory vessel. It cannot therefore be argued these vessels have an impact on other commercial fishers.

Most fisheries deploying factory trawlers are large scale, deep water fisheries with little to no recreational fishing component. Given their management arrangements already considers an ecosystem based approach, there is limited scope for a "knock on" ecological impact to affect adjacent recreational fisheries. If secondary impacts were a concern to recreational fishers, the Commonwealth fisheries model has the capacity to include a "resource sharing" arrangement between the commercial and other sectors (including traditional sectors). The first formal resource sharing arrangement for a Commonwealth fishery was developed for the (then) Southern and Western Tuna and Billfish Fishery, and brokered with input from AFMA and the Department of Fisheries and Forestry (DAFF). This agreement came into place in 2002 and is commonly referred to as the Coolangatta Communique. Current

regulatory arrangements therefore have the capacity to safeguard the recreational fishing sector.

Many commentators only consider the compliance of fisheries regulations when speaking to "management arrangements". The *Fisheries Management Act 1991* has a number of Objectives which are shown at Attachment 1 of this submission and all of which must be considered by AFMA under its ambit.

Most of the Objectives of the Act such as cost effective management and compliance with international law are self explanatory. Objectives relating to the conservation of fish stocks, and the principles of ecologically sustainable development (ESD) have largely been dealt with in the information presented above.

Two objectives which are not widely considered are 1c which deals with maximising the economic returns to the Australian people through the harvesting of a common resource, and 2b which deals with the optimum utilisation of Australia's living resources.

Factory vessels process their catch at sea. Typically the catch is processed and stored at -40° C within hours of it being taken. By comparison, "fresh" vessels may hold their catch on ice for up to 10 days before unloading. The fish may then take several days to pass through markets and reach the point of sale. It is not uncommon for "fresh" fish in Australian outlets to be more than 10 days old. The "fresh" definition largely refers to the fact the product has never been frozen.

Factory vessels therefore generate a higher quality product than fresh vessels. In most cases this is the specific reason they are deployed. AFMA has a legislative obligation to take this into account if it is the case that factory vessel product leads to higher fish prices and therefore higher returns from the common resource than other fishing methods.

In some cases Objective 2c refers to the utilisation of a living resource between sectors. For example, a decorative reef species in on shore waters may best be utilised as a conservation or tourism resource than as a commercially harvested food source. Similarly, fish popular to recreational fisher may be preserved for use by that sector and to generate tourism market.

In the case of competing methods within the commercial fishing sector, it could be argued that a fresh processed product stored at ultra low temperature is not only a superior product, it is also better suited for transport to wider diversity of markets be they domestic or international.

It is probable that the use of factory vessels will, in some instances, be more consistent with the Objectives of the *FMA 1991* than the use of fresh vessels.

In terms of compliance, it has been noted AFMA has both a compliance and an observer section. All Commonwealth fisheries have a mandated obligation for the completion of a range of logbooks. AFMA officers have the regulatory power to board a vessel, inspect logbooks, search the vessel, measure fishing gear and so forth. Increasingly, most commercial vessels operating in Commonwealth fisheries must also be fitted with a vessel monitoring system (VMS) which allows AFMA to use satellite communication to precisely locate each vessel at any time.

Virtually all factory vessels operating in Australia have been obliged to carry an AFMA observer. In many cases the vessels carry multiple observers but in all cases one of them is an AFMA officer. Data taken by AFMA officers has a greater weighting in prosecution cases.

The combination of the management plans for a fishery, the continual review of scientific evidence, the Objects of the Act, the capacity for remote monitoring of vessel movements,

and the capacity to mandate an observer presence results in little to no scope for any vessel to avoid effective regulation.

This submission would argue that AFMA not only has the regulatory power to formulate effective management arrangements for a fishery, it also has a demonstrated capacity for effectively enforcing the compliance of those management arrangements.

#### **5. Any other related matters.**

The "other related matters" of importance to WAFIC are covered in Section 2 of this submission.

#### **6. Additional Information**

Additional information regarding this submission can be obtained from:

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Mr Harrison and/or a representative are available to make representations on this submission on behalf of WAFIC either to the assembled Senate Committee, or to individual Committee members out of session.

#### **7. References**

AFMA (2009) Small Pelagic Fishery Harvest Strategy June 2008 (Last Revised April 2015)  
Australian Fisheries Management Authority, Canberra

AFMA (2013) Small Pelagic Fishery Management Plan Amendment 2013, Australian Fisheries Management Authority, Canberra

AFMA (2015) Small Pelagic Fishery Management Arrangements Booklet, 2015 – 16,  
Australian Fisheries Management Authority, Canberra

AFMA (2015) Vessel Management Plan (VMP): Small Pelagic Fishery, Geelong Star, )  
Australian Fisheries Management Authority, Canberra

Office of Parliamentary Counsel (1991) *Fisheries Management Act 1991* (1991) Office of  
Parliamentary Counsel, Canberra



Office of Parliamentary Counsel (1999) *Environmental Protection and Biodiversity Conservation Act 1999* (1999) Office of Parliamentary Counsel, Canberra

*Web Links*

<http://www.abc.net.au/news/2015-04-24/fur-seals-attack-rare-birds-pelicans-fishing-nets-coorong-lower/6418046> )

<http://www.abc.net.au/news/2015-10-25/in-pictures-nz-fur-seals-back-from-brink-of-extinction/6883292>

<http://www.afma.gov.au/small-pelagic-fishery-faqs-3/>

## **Attachment 1: Objectives of the *Fisheries Management Act 1991***

### Objectives

*(1) The following objectives must be pursued by the Minister in the administration of this Act and by AFMA in the performance of its functions:*

- (a) implementing efficient and cost-effective fisheries management on behalf of the Commonwealth; and*
- (b) ensuring that the exploitation of fisheries resources and the carrying on of any related activities are conducted in a manner consistent with the principles of ecologically sustainable development (which include the exercise of the precautionary principle), in particular the need to have regard to the impact of fishing activities on non-target species and the long term sustainability of the marine environment; and*
- (c) maximising the net economic returns to the Australian community from the management of Australian fisheries; and*
- (d) ensuring accountability to the fishing industry and to the Australian community in AFMA's management of fisheries resources; and*
- (e) achieving government targets in relation to the recovery of the costs of AFMA.*

*(2) In addition to the objectives mentioned in subsection (1), or in section 78 of this Act, the Minister, AFMA and Joint Authorities are to have regard to the objectives of:*

- (a) ensuring, through proper conservation and management measures, that the living resources of the AFZ are not endangered by over-exploitation; and*
- (b) achieving the optimum utilisation of the living resources of the AFZ; and*
- (c) ensuring that conservation and management measures in the AFZ and the high seas implement Australia's obligations under international agreements that deal with fish stocks; and*
- (d) to the extent that Australia has obligations:*
  - (i) under international law; or*
  - (ii) under the Compliance Agreement or any other international agreement; in relation to fishing activities by Australian-flagged boats on the high seas that are additional to the obligations referred to in paragraph (c)—ensuring that Australia implements those first-mentioned obligations; but must ensure, as far as practicable, that measures adopted in pursuit of those objectives must not be inconsistent with the preservation, conservation and protection of all species of whales.*

### **Principles of ecologically sustainable development**

The following principles are **principles of ecologically sustainable development**:

- (a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equity considerations;*
- (b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;*
- (c) the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;*
- (d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;*
- (e) improved valuation, pricing and incentive mechanisms should be promoted.*