REPORT OF THE EXPERT PANEL ON A DECLARED COMMERCIAL FISHING ACTIVITY:

FINAL (SMALL PELAGIC FISHERY) DECLARATION 2012

October 2014

Letter of Transmittal to the Minister

Dear Minister

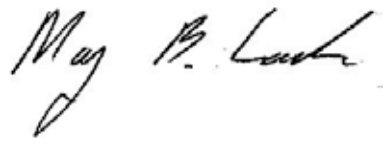
I am pleased to present the report of the Expert Panel to Assess a Declared Commercial Fishing Activity (*Final (Small Pelagic Fishery) Declaration 2012*).

The report assesses and advises on:

1. the likely nature and extent of direct interactions of the Declared Commercial Fishing Activity with species protected under the *Environment Protection and Biodiversity Conservation Act* (EPBC Act), particularly seals and dolphins
2. the potential for any localised depletion of target species (arising from the Declared Commercial Fishing Activity) to result in adverse impacts to the Commonwealth marine environment, including the target species' predators protected under the EPBC Act
3. actions that could be taken by operators of the Declared Commercial Fishing Activity or relevant regulatory authorities to avoid, reduce and mitigate adverse environmental impacts of the activity
4. monitoring or scientific research that would reduce any uncertainties about the potential for adverse environmental impacts resulting from the Declared Commercial Fishing Activity.

The panel's advice on these issues was informed by consultation with national and international experts in the relevant fields, by targeted, commissioned research and by broader stakeholder consultation.

The panel members hope that this report will assist your assessment of the environmental impacts of the Declared Commercial Fishing Activity and help inform future government decision making on the Small Pelagic Fishery.



Mary Lack
Chair
Expert Panel on a Declared Commercial Fishing Activity

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Executive summary

Background

The *Final (Small Pelagic Fishery) Declaration 2012* (the Declaration), prohibited large-scale mid-water trawl operations in the Small Pelagic Fishery (SPF) for up to two years while an expert panel (the panel) undertook an assessment of the potential for the Declared Commercial Fishing Activity (DCFA) to cause adverse environmental impacts.

The panel has assessed the direct impacts of the DCFA on species protected under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act), particularly seals and dolphins, and the adverse impacts of any localised depletion of SPF target species, caused by the DCFA, on the Commonwealth marine environment, including on the target species' predators protected under the EPBC Act. Based on that assessment, advice has been provided on actions that could be taken to avoid, reduce and mitigate any adverse environmental impacts, and scientific research and monitoring that could reduce uncertainties about those impacts. A synthesis of the panel's assessment and advice is presented in Chapter 7 and an overview of the key outcomes is provided below.

The DCFA

The DCFA is a commercial fishing activity which:

a. is in the area of the Small Pelagic Fishery

b. uses the mid-water trawl method

c. uses a vessel which is greater than 130 metres (m) in length, has an on-board fish processing facility and has storage capacity for fish or fish products in excess of 2000 tonnes.

A primary consideration in the panel's assessment was the likely pattern of fishing of the DCFA. The species targeted, the area and times of year fished and the intensity of that fishing will all have a large bearing on the nature and extent of interactions with protected species and those species that might be adversely affected by localised depletion arising from the DCFA.

A key characteristic of the DCFA is the ability to stay at sea for an extended period and, therefore, the potential to fish more extensively, spatially and temporally, in the SPF area than previous mid-water trawl operations in the fishery. The fishing plan of the DCFA in terms of species composition, the spatial/temporal pattern of fishing and the intensity of fishing, will be dictated by prevailing environmental and economic conditions. It was not possible for the panel to predict this fishing plan in detail but the panel considered that the DCFA would most likely focus its fishing effort on the shelf and slope areas of the SPF where the target species are predominantly distributed. The panel considered it likely that the DCFA would fish these areas more extensively and might fish in slightly deeper water off the shelf than previous mid-water trawl operations in the SPF.

As a result, the panel considered that historical data on direct interactions with protected species or the absence of data that showed any adverse impacts on these species from localised depletion by historical fishing, did not necessarily inform the likely nature and extent of potential direct or indirect impacts of the DCFA on protected species or the Commonwealth marine environment.

Assessment of direct interactions with protected species

There are 241 species protected under the EPBC Act that occur in the SPF area including pinnipeds (seals), cetaceans, dugong (possible but unlikely), seabirds, turtles, seasnakes, sharks and rays, syngnathids and other teleost fishes. The panel focussed its assessment on species considered at increased risk of interactions from mid-water trawling which included three species of pinnipeds (Australian fur seal *Arctocephalus pusillus doriferus,* New Zealand fur seal *A. forsteri* and Australian sea lion *Neophoca cinerea*), 21 cetacean species, and seabirds as a group. Some common themes with respect to the likely nature and extent of direct interactions by the DCFA with these species are apparent across the taxa:

- It is inevitable that the DCFA would have direct interactions with protected species of pinnipeds, cetaceans and seabirds and some interactions will result in mortalities regardless of the adoption of the best available mitigation and management measures; however, there remains uncertainty about the extent of those interactions.
- It is possible to identify the likely nature of the interactions and the species that are more likely to interact or are more vulnerable to interactions.
- There remains considerable uncertainty about the level of direct interactions that would result in an adverse environmental impact on pinnipeds, cetaceans and seabirds, but there are opportunities for research and monitoring that could reduce the uncertainties associated with the DCFA's interaction with protected species.
- Some progress has been made, domestically and internationally, on measures to manage the risks of direct interactions between fishing operations and seals and dolphins, but mitigation measures for marine mammals need further development and testing before they could be applied with confidence.
- Substantial progress has been made on measures to manage the risks associated with direct interactions of fishing operations with seabirds.
- Management and mitigation measures, individually and as a package, require testing and refinement to ensure their operation is optimised in the context of the fishery, the protected species, the vessel, its gear and the fishing plan.
- One hundred per cent observer coverage of all fishing operations and bycatch mitigation devices is paramount.

Assessment and advice on localised depletion

The panel interpreted localised depletion as a spatial and temporal reduction in the abundance of a targeted fish species that results from fishing. The central issue for the panel's assessment was whether the fishing activity of the DCFA could be concentrated enough, both spatially and temporally, to cause a localised depletion of SPF target species sufficient to cause adverse environmental impacts to the Commonwealth marine environment including the target species' predators. The panel assessed the potential impact of localised depletion on the target species and on protected species of central place foragers (CPF) that prey on SPF target species. The key points arising from the assessment are:

- The target species of the SPF are susceptible to capture but also have characteristics that are likely to reduce the temporal and spatial extent of localised depletion.
- The available evidence does not suggest that past extensive fishing activity for jack mackerel *Trachurus declivis* in the area of the SPF has significantly affected reproductive capacity or caused impacts on genetic diversity in that stock; nor does available evidence suggest an impact on age or size structure of the other SPF target species.
- The dependency on near-colony prey resources at certain locations and times increases the vulnerability of protected species of CPFs to localised depletion of SPF target species, and the nature and extent of the impact will depend on the spatial and temporal scale of the depletion.
- Very few studies anywhere in the world have linked reduced foraging and reproductive performance of CPFs to the impacts of fishing, and even fewer to localised depletion. Active management of the potential impacts of localised depletion on CPF species is rare.
- The available data suggest that the CPF species at greatest risk from localised depletion in the SPF are the Australian

fur seal, New Zealand fur seal, Australasian gannet *Morus serrator*, short-tailed shearwater *Ardenna tenuirostris*, little penguin *Eudyptula minor*, crested tern *Thalasseus bergii* and shy albatross *Thalassarche cauta* and that key foraging areas for these species within the SPF are Bass Strait, Tasmania and South Australia.

- There remains uncertainty about the importance of SPF target species to other CPF predators, because diet information is poor or unavailable.
- The ecosystem modelling studies available indicate that the SPF target species are not as influential in the southern Australian ecosystem compared to small pelagic species in other more productive global upwelling systems that support much larger biomasses of similar species.

The panel concluded that in the context of the management regime in place in the SPF, any localised depletion of SPF target species that might arise from the DCFA was unlikely to affect the overall status of the target stocks in the SPF. However, the panel considered that this did not preclude the possibility of localised adverse environmental impacts on some protected species, particularly CPFs.

The panel considered that localised depletion caused by the DCFA has the potential to have adverse impacts on CPF species and that under the current monitoring regime it is unlikely that such impacts would be detected. It is possible to provide an indication of the CPF species most at risk from localised depletion but dietary data are lacking for many other CPF species. It is not possible, based on currently available data, to determine the degree of localised depletion that would result in adverse environmental impacts to protected CPFs.

Key advice

The panel has identified many possible management and operational responses and opportunities for research and monitoring to address the risks associated with the impacts of the DCFA on the Commonwealth marine environment, particularly for protected species of seals and dolphins. Of those, the panel considers that the following actions and associated research are central to addressing those risks.

- Spatial closures
  - Mitigate bycatch mortality of the threatened Australian sea lion in the SPF area by implementing spatial closures that encompass foraging areas around all colonies, including those in waters off Western Australia.
  - Mitigate bycatch mortality of fur seals by implementing spatial closures especially adjacent to breeding colonies.
  - Mitigate against the potential adverse impacts of localised depletion on protected CPF species by implementing closures that preclude the DCFA from critical habitats at important times.
- Excluder devices
  - Develop and optimise an excluder device or devices for seal and dolphin bycatch mitigation.
  - Once the excluder device is operationalised, use underwater video to monitor the behaviour of marine mammals within the trawl net and in the vicinity of the excluder device to assess its efficacy and quantify levels of cryptic mortality.
- Trigger limits
  - Reduce the daily and per-shot trigger limits for fur seals under which the DCFA was proposed to operate.
  - Introduce a bycatch rate trigger limit for the fishery or fishing area, or a total mortality trigger for a fishing season and/or fishing areas, for fur seal and dolphin species.

  - Ensure that move-on rules associated with trigger limits are evidence-based or implemented on a precautionary basis where necessary.
  - Ensure that move-on rules associated with trigger limits can be implemented effectively by requiring 100 per cent observer coverage of all fishing operations and ensuring that underwater interactions and mortalities are detected quickly enough to allow move-on rules to be effected in a timely manner.
- Research
  - Identify critical habitats for protected species including key foraging areas for central placed foragers (seabirds and pinnipeds) and important habitats used by cetaceans that are at increased risk of interaction with the DCFA.
  - Determine the cumulative fishery-related mortality of protected species in the SPF area that interact with the DCFA, to ensure that this does not compromise the sustainability of their populations.
  - Confirm the integrity of the current management of SPF target stocks by clarifying the extent of sub-structuring of SPF target species in the Eastern and Western zones.

Concluding comments

The panel's assessment is based on a specific DCFA fishing scenario and some associated assumptions. These had a significant bearing on the outcome of its assessment and any changes to those would necessarily affect the validity of the panel's assessment and advice.

The panel has been able to identify the likely nature of the interactions of the DCFA with protected species in the SPF. The form of direct interactions, and the species most likely to be affected by both direct interactions and localised depletion, have been identified and the panel has provided specific advice on measures that could be taken to avoid, reduce and mitigate these impacts. However, even with these measures in place, the panel considers that direct interactions with protected species and localised depletion, as defined by the panel, will occur under the DCFA. The panel's assessment has confirmed that there are considerable uncertainties relating to the extent of those impacts and the level of impact that would create adverse environmental outcomes.

As in other fisheries facing similar uncertainties, a precautionary and adaptive, risk-based approach to management of the potential impacts of the DCFA is required. Further, it is important that the assessment of the DCFA be considered in the context of the role of SPF target species in the southern Australian marine ecosystem, the management regime and of the cumulative impacts of fishing in the area of the SPF on protected species affected by the DCFA.