

NSW Strategy to assist with the rebuilding of Harrison's and southern dogfish populations

DRAFT for Consultation August 2012

Introduction

Why is this strategy being developed?

Both Harrison's and southern dogfish have been nominated for listing under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Commonwealth Minister for the Environment must make a decision on whether or not to list these two species by 28 February 2013. The Minister receives advice on listings from the Threatened Species Scientific Committee (TSSC). The TSSC is currently assessing whether or not to list each species and, if listed, under which category each should be listed. These categories are:

- extinct
- extinct in the wild
- critically endangered
- endangered
- vulnerable
- conservation dependent

It is highly likely that both species will be listed as threatened species due to their high levels of depletion in most of their core range area, which includes NSW coastal waters of between about 200 to 1000m in depth. Much of the depletion was caused over several decades by the Commonwealth Trawl Sector where the majority of trawl activity was within the core depth ranges of these species. Studies by the CSIRO suggest that most of the remnant populations are now found on the seamounts off the NSW coast, and in NSW-managed waters between Wollongong and Port Macquarie. Also, the life history characteristics of these species (and most other deepwater sharks) such as the extended time to reach sexual maturity and low reproductive rates, will make recovery a slow process.

The conservation dependent category provides for fishing operations to continue as long as a plan of management exists that stops the decline of, and supports the recovery of, the species. This draft strategy is aimed at ensuring that rebuilding of both species can occur to at least 25% of their unfished biomass, giving a greater chance for them to be listed in the conservation dependent category rather than in the higher threatened species categories. Current scientific projections show that recovery of stocks to this level is expected to take about 86 years for Harrison's dogfish and 62 years for southern dogfish.

Both NSW and the relevant Commonwealth agencies (primarily the Australian Fisheries Management Authority (AFMA)) must work together to reduce the risk posed by each jurisdiction's fisheries on these sharks. This draft strategy applies only to areas and methods under NSW jurisdiction. AFMA has been preparing its own strategy since 2008 when the south-east trawl and auto-longline sectors were identified as high risk to these dogfish. When complete, it is envisaged that the two strategies will be packaged together as a collective management plan upon which the TSSC will make its listing recommendation. The TSSC will be considering the matter at its October 2012 meeting, which means that both jurisdictions need to finalise their management proposals before the end of September. The proposals must be legislated and in force before the Federal Minister makes his decision in February 2013.

What science and information is available on the stocks and depletion rates?

The CSIRO reviewed all known and available datasets and scientific literature that included information on dogfish. Much of the fishery-independent information was gained from the Kapala research surveys done by Fisheries NSW in the mid-late 1970s and again in the late 1990s. This information, as well as catch and effort information supplied to CSIRO by Fisheries NSW from commercial fisheries logbooks, was used to estimate depletion levels.

For Harrison's dogfish, the depletion estimate for the entire east coast population is that about 10% of the unfished biomass remains. As previously stated, most of the depletion has occurred in waters south of Barrenjoey Headland due to the Commonwealth trawl fishery. The depletion estimate for this south-east area is that only 6% of the unfished biomass remains. In contrast, the depletion estimates for the area north of Barrenjoey (waters solely under the jurisdiction of NSW) are around 30% of the unfished biomass.

For southern dogfish, the depletion estimate for the entire eastern population is about 10% of the unfished biomass remaining, with the greatest level of depletion occurring south of the NSW/VIC border. Like for Harrison's dogfish, the area north of Barrenjoey Headland indicates that there has been less depletion (estimated level around 30%) than elsewhere for this population.

The main supporting scientific and information documents can be found on AFMA's website at:

<http://www.afma.gov.au/managing-our-fisheries/fisheries-a-to-z-index/southern-and-eastern-scalefish-and-shark-fishery/notices-and-announcements/upper-slope-dogfish-management-strategy/>

What are the current management arrangements?

Dogfish specific arrangements:

- 15kg whole weight (or 10kg processed weight) per day or per trip if longer than a day for operators in the Ocean Trap and Line and Ocean Trawl fisheries for four species: Harrison's, southern and Endeavour dogfish, and greeneye spurdog.
- Closure to bottom setlining in an area off Sydney to provide protection to the southern and Endeavour dogfish – known as the Endeavour dogfish closure.

Other arrangements

While not implemented specifically for the species at risk, the following arrangements also provide some protection to Harrison's and southern dogfish:

- 5 shark (total) recreational bag limit;
- Limited access arrangements for commercial fishing;
- Commercial fishing gear limits (including a maximum 1200 hook limit per fishing business endorsement in waters beyond 3 nm);
- Total prohibition on fish trawling north of Smoky Cape (South West Rocks).

What are the risks posed by NSW fisheries?

Fisheries NSW has undertaken a risk assessment of all ocean-based fishing methods (commercial and recreational) and their potential impacts on each of the 26 species of deepwater sharks that are present in waters off NSW. The results of the risk assessment show that, for most methods, there is a low potential impact on most species. The results for the two species under current consideration are as follows:

- Harrison's dogfish – at high risk from dropline and setline/trotline fishing, at medium risk from handline and royal red prawn trawl fishing, and at low or no risk from all other methods.
- southern dogfish - at high risk from dropline and setline/trotline fishing, at medium risk from handline fishing, and at low or no risk from all other methods.

Does more need to be done?

While the current management arrangements imposed in both NSW and Commonwealth managed waters have slowed the decline of these species, further action to reduce interactions and assist with their rebuilding was recommended by an independent review of the Commonwealth's Draft Upper Slope Dogfish Management Strategy done in June 2011. Therefore, to assist with the rebuilding of Harrison's and southern dogfish populations, it is necessary to reduce: (i) the mortality of inadvertently captured dogfish, and (ii) the likelihood of interactions. The primary focus of this NSW draft strategy is the high and medium risk methods known to (or with the greatest potential to) capture dogfish, with a secondary focus on the lower risk methods that could interact with them. For example, fish trawling was assessed as low risk because it only occurs along a small percentage of the NSW coastline

and less commonly in the core depth ranges of dogfish. However, on the occasions when interactions do occur, mortality is highly likely and is something the strategy aims to avoid.

Fisheries NSW is currently of the view that a combined strategy that includes restricting commercial fishing activities in areas where it has been identified that remnant populations of the two species remain, and changes to operational measures in all fisheries, will promote the rebuilding of deepwater shark populations and provide support for their listing in the conservation dependent category.

Options for consideration

Three options for consideration are detailed below. Commercial fishers have an opportunity to comment on the options with a focus on how best to achieve the goals of rebuilding the populations of both Harrison's and southern dogfish while reducing the economic impacts on their businesses.

Please note that when reading the options, the "restricted areas" cover the depth range of between 200 and 1000m on the continental slope. Refer to Figure 1 for habitat segment names and segment co-ordinates (in decimal degrees) and to Figure 2 for areas off the NSW coast where AFMA's draft strategy is proposing further restrictions to fisheries under its jurisdiction. Table 1 also provides an assessment of each option.

Furthermore, none of the options extend into the proposed Hunter Commonwealth Marine Reserve (CMR). The overall strategy is partly reliant on the CMR to provide adequate protection to, and enable rebuilding of, the populations of Harrison's and southern dogfish, as part of the overall strategy for protecting biodiversity in Australia's ocean waters.

Restrictions that will apply to all waters under NSW jurisdiction

The following restrictions are proposed to apply in addition to those that would apply under each option below:

- Prohibit the landing (for sale) of Harrison's and southern dogfish. It is proposed to allow commercial fishers to land the species for scientific/identification purposes as, and when, authorised by Fisheries NSW (i.e. protected species with a zero trip limit).
- Prohibit the landing of Harrison's and southern dogfish by recreational fishers and charter boat operators (i.e. protected species with a zero bag limit).
- Development and extension of an education kit to assist commercial and recreational fishers with identification issues, handling methods to maximise post release survival and to increase reporting accuracy.

Option 1

Restricted area – between the southern boundary of AFMA's Area A or B proposal (whichever is decided by AFMA) and the southern boundary of the proposed Hunter Commonwealth Marine Reserve (CMR). Note that in the restricted area south of Barrenjoey Headland, the activities targeted by this NSW strategy only relate to line fishing methods.

Action within the Option 1 restricted area:

- Prohibit the methods of droplining, setlining/trotlining, handlining¹, royal red prawn trawling and fish trawling that apply to commercial and/or recreational fishers.
- Mandatory VMS for commercial prawn (offshore and deepwater) trawl, fish trawl and deepwater line operators.

Option 2

Restricted area – between the southern boundary of AFMA's Area A or B proposal (whichever is decided by AFMA) and the northern boundary of the Five Canyons habitat segment. Note that in the restricted area south of Barrenjoey Headland, the activities targeted by this NSW strategy only relate to line fishing methods.

¹ handlining refers to commercial and recreational demersal methods using weights and baited hooks, and does not include related methods such as jigging, spinning or trolling.

Action within the Option 2 restricted area:

- Prohibit the methods of setlining/trotlining
- Prohibit commercial droplining other than:
 - attended lines with a single weight, and
 - ≤20 hooks per line, and
 - ≤20 min soak time per line, and
 - the use of best practice handling techniques to increase post-release survival, and
 - some level of observer coverage.
- Prawn and Fish Trawl fisheries
 - mandatory VMS across the entire prawn (offshore and deepwater) and fish trawl fleets – with vessels not able to fish in the Option 2 restricted area until VMSs are fitted and the system is operational
 - 100% observer coverage (physical observer or e-monitoring) in the first instance (level reduced as appropriate after review of findings)
 - Move on provisions – if one or more Harrison's or southern dogfish are encountered, vessels must move out of the Option 2 restricted area
 - Offshore and deepwater prawn trawl only – as above and also mandatory requirement to use a Nordmore grid/TED with an appropriate prawn trawl cod-end when fishing in the Option 2 restricted area.

Option 3

Restricted area – AFMA's Area A or B proposal (whichever is decided by AFMA) and the Five Canyons habitat segment. Note that in the restricted area south of Barrenjoey Headland, the activities targeted by this NSW strategy only relate to line fishing methods.

Actions within the Option 3 restricted area:

- Prohibit the methods of setlining/trotlining
- Prohibit commercial droplining other than:
 - attended lines with a single weight, and
 - ≤20 hooks per line, and
 - ≤20 min soak time per line, and
 - the use of best practice handling techniques to increase post-release survival, and
 - some level of observer coverage
- Prawn and Fish Trawl fisheries
 - mandatory VMS across the entire prawn (offshore and deepwater) and fish trawl fleet
 - some level of observer coverage
 - Fish trawl only – as above plus day time fishing only in waters between 329 m – 512 m (180 – 280 fathoms),, plus all trawling prohibited in waters >650 m (355 fathoms).
 - Deepwater prawn trawl (and any offshore prawn > 200 m) only – as above plus day time fishing only and the requirement to use a Nordmore grid/TED if interactions with the species are found to occur through the observer program.

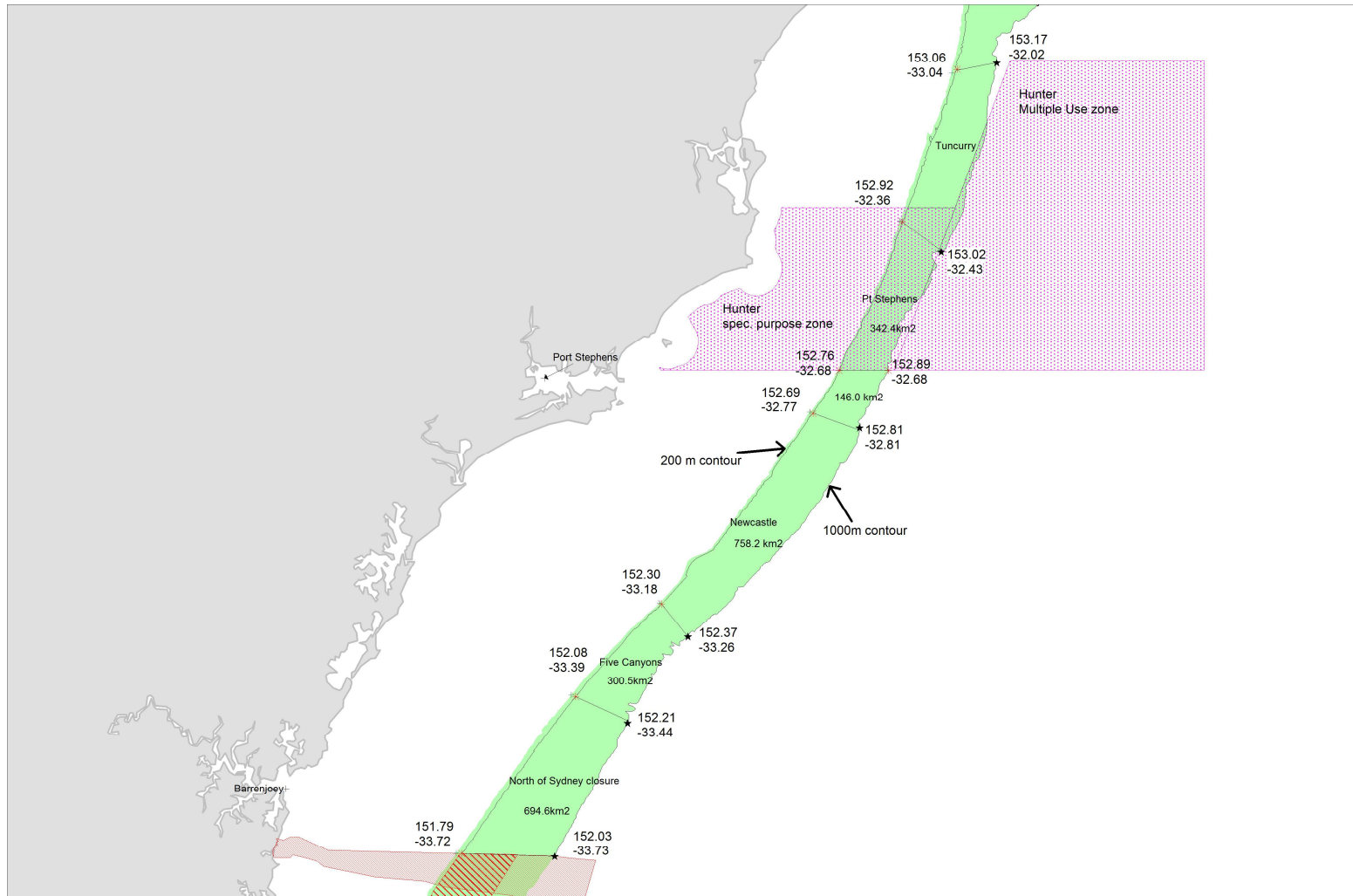


Figure 1 – 200m-1000m habitat area along the NSW central/mid-north coast (green zone). Habitat segment names are provided and co-ordinates refer to segment boundaries. Pink dotted zone is the area for the proposed Hunter Commonwealth Marine Reserve. The red shaded areas are the submarine cable and Endeavour dogfish closures.

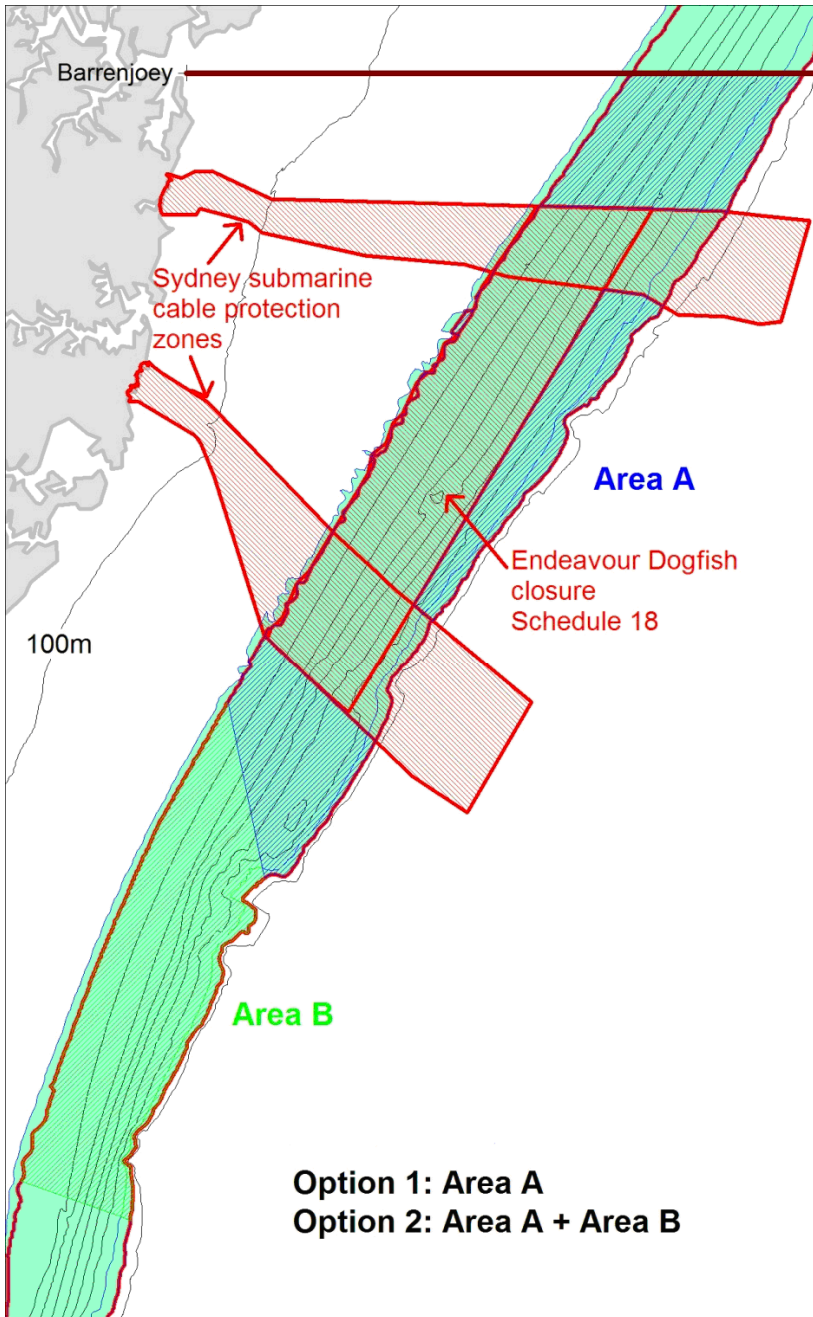


Figure 2 – Proposed option areas in AFMA's Upper-Slope Dogfish Management Strategy Consultation Document. The line at Barrenjoey Headland indicates where the Commonwealth jurisdiction for trawl fishing stops.

Table 1 – Assessment of options. (FBs = commercial Fishing Businesses)

Option	Advantages	Issues	Impact
1	<ul style="list-style-type: none"> ✓ Highly likely to support recovery of Harrison's and southern dogfish ✓ Highly likely to be supported by the TSSC and C'wealth Minister ✓ Complementary to AFMA's options in waters where activities overlap 	<ul style="list-style-type: none"> • Significant impact on viability of FBs leading to flow-on impacts to supply chain, infrastructure and employment. 	<p>In 2010/11, 13 FBs reported anywhere from 1 to 81 fishing events in reporting grids that contain dogfish habitat in the Option 1 area for methods where restrictions apply.</p>
2	<ul style="list-style-type: none"> ✓ Likely to support recovery of Harrison's and southern dogfish ✓ Reduced impact on commercial fishers ✓ Complementary to AFMA's options in waters where activities overlap 	<ul style="list-style-type: none"> • Uncertain as to the acceptance of Option 2 by the TSSC and C'wealth Minister. • Costs of implementing the observer program, VMS, modifying or acquiring gear may outweigh benefit of being able to access Option 2 area. • Time taken to establish a functioning VMS system are likely to delay ability to access waters in Option 2. 	<p>In 2010/11 12 FBs reported anywhere from 1 to 81 fishing events in reporting grids that contain dogfish habitat in the Option 2 area for methods where restrictions apply. Most would be able to continue to fish in the Option 2 area under modified arrangements.</p>
3	<ul style="list-style-type: none"> ✓ Likely to have minimal impacts on commercial fishing operations ✓ Complementary to AFMA's options in waters where activities overlap ✓ Costs associated with this option are less than Option 2 	<ul style="list-style-type: none"> • Questionable benefits in support of recovery of Harrison's and southern dogfish. • Unlikely to be supported by the TSSC and C'wealth Minister. If not supported, C'wealth may insist on large scale area closures to relevant fishing methods. • Costs of implementing the observer program, VMS, modifying or acquiring gear may outweigh benefit of being able to access Option 3 areas. 	<p>In 2010/11, 12 FBs reported anywhere from 1 to 81 fishing events in reporting grids that contain dogfish habitat in the Option 3 area for methods where restrictions apply. Most would be able to continue to fish in the Option 3 area under modified arrangements.</p>