

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

Mr Andrew Goulstone
Director, Commercial Fisheries
NSW Department of Primary Industries
PO Box 4321
Coffs Harbour NSW 2450

Dear Mr Goulstone

Thank you for you and your staff's participation in the workshop with members of the Threatened Species Scientific Committee (the Committee) on the progress towards revised management for Harrison's and southern dogfish. The Committee appreciates the efforts of the NSW Department of Primary Industries and the Australian Fisheries Management Authority (AFMA) to keep it informed and welcomed the opportunity to hear from the managers and researchers involved in the management of these species. The presentations by you and your staff were particularly helpful in providing a perspective on the current and potential management actions being taken in that part of the ranges of Harrison's and southern dogfish.

The members of the Committee considered that the day was extremely helpful in improving their understanding of the extent of work undertaken and updating them on the outcomes of this work to date, particularly with regard to understanding the biology of the species in question, their habitats, the risks to the species and the current management arrangements.

The Committee has summarised its understanding of the key findings in relation to the two species, as well as the significant agreements that have been made for the management of Harrison's and southern dogfish in Commonwealth managed waters. This information is provided at [Attachment A](#).

The Committee notes that in relation to the species in question, the Commonwealth measures being developed for the revised *Upper-Slope Dogfish Management Strategy* (the Strategy) would need to be complemented by parallel initiatives within waters managed by the NSW Department of Primary Industries as a 'management package'. Inclusion of the NSW management action is critical due to the co-occurrence of Harrison's and southern dogfish in fisheries in NSW managed waters. The package of collective management initiatives from both jurisdictions could be considered as a 'management plan' for the species under section 179 6b of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Committee notes that for a 'management plan' to be eligible for consideration in the assessment of a species for conservation dependent listing under the EPBC Act, the plan must *provide for management actions necessary to stop the decline of and support the recovery of, the species so that its chances of long term survival in nature are maximised*. The Committee notes that the statement in italics above would be a suitable overarching objective both for the Strategy and for the NSW initiatives.

Secretariat: Species Listing section

Australian Government Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787 | CANBERRA ACT 2601 | Tel: 02 6274 1943 | E: epbc.nominations@environment.gov.au

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

When framing its advice to the Minister with regards to Harrison's and southern dogfish, the Committee will give particular consideration to a number of key management principles in informing its decision as to whether the 'management plan' for these species will enable them to be considered eligible for potential 'conservation dependent' listing. These principles are provided at Attachment B.

We note that AFMA asked for specific advice on: (1) CSIRO's habitat work, (2) whether the Committee will consider Harrison's and southern dogfish as 'species' or 'separate stocks', and (3) the Committee's views on the depletion estimates work being undertaken by CSIRO. The Committee's views on these questions are reflected in Attachments A and B.

The Committee would be willing to give its 'in principle' support to an extension of the listing decision timeframe on the basis that the final 'management plan' will be available for the Committee's consideration at its November 2012 meeting and therefore available to the Committee Secretariat by the end of the first week of October 2012, noting that any decision about such an extension is entirely at the discretion of the Minister. The Committee also notes that to be eligible under section 179(6b) of the EPBC Act, the management plan must be 'in force under law'. While the Committee may make a recommendation subject to a 'management plan' that is pending under force of law, for the Minister to make a conservation dependent listing decision, the 'management plan' must be in force at the time of the Minister's decision.

Yours sincerely



Helene Marsh FTSE
Professor
Chair
25 May 2012

Secretariat: Species Listing section

Australian Government Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787 | CANBERRA ACT 2601 | Tel: 02 6274 1943 | E: epbc.nominations@environment.gov.au

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

Attachment A

Summary of the Committee's understanding of key issues as a result of the Gulper Shark Workshop on 3 May 2012

- Management of Harrison's and southern dogfish will be undertaken in accordance with the principles of the Commonwealth Fisheries Harvest Strategy Policy.
- The revised Upper-Slope Dogfish Management Strategy has identified:
 $B_{LIM} = B_{25}$ (25 percent of original biomass) using habitat as a proxy for abundance.
- The Committee notes a number of uncertainties concerning Harrison's and southern dogfish that are unlikely to be scientifically resolved within the timeframe of the Committee's advice to the Minister. These include:
 - Depletion levels, noting that lack of reliable estimates of depletion are reported to be the biggest challenge and that it is unlikely that significant further work will resolve this issue due to historic data deficiencies.
 - Recovery timeframes, noting that such timeframes will be dependent to some extent on knowledge of depletion levels, but also noting that the life history of these species means that recovery will probably take of the order of 60 years or more.
 - The adequacy of using habitat as a proxy for biomass. The Committee notes the low levels of correlation between habitat and abundance and notes the Scientific Working Group's (October 2011) recognition that there is not likely to be a simple one to one relationship between area of habitat and unfished biomass.
 - The number and geographic range of stocks.
- Declines in Harrison's and southern dogfish have historically occurred due to pressure from fishing from several methods, in particular trawl, gillnet and automatic long lining. There is evidence of rapid depletion at low levels of trawl effort. Targeted fishing of gulper sharks by gillnet as well as hook and line could have resulted in an equally rapid decline.
- Fishing pressure not only interacts with the species but can also cause decline in the quality and extent of the species' habitat.
- There are likely to be three stocks of southern dogfish – the western stock, central stock and eastern stock (as described by the Scientific Working Group, April 2012) and two stocks of Harrison's – the offshore seamounts stock and a stock on the coastal margin of the east coast. The Committee notes that genetic determinations will not be established within the

Secretariat: Species Listing section

Australian Government Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787 | CANBERRA ACT 2601 | Tel: 02 6274 1943 | E: epbc.nominations@environment.gov.au

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

timeframe required for the Committee's listing advice, but would encourage further work using genetics to refine these stock determinations in the near future (See Attachment B).

- The extent of interactions between recreational fishing and gulper sharks is unknown. The Committee supports the efforts of the NSW Department of Primary Industries in implementing a zero catch policy for recreational fishing.
- The Committee notes that there may be a potential for the gillnet fishery in Western Australia to impact the stocks of southern dogfish. The Committee appreciates that this matter is not resolvable before the Ministerial decision regarding the status of these species.
- There have been a number of recent measures implemented to reduce the number of interactions between commercial fisheries and Harrison's and southern dogfish. The Committee notes that AFMA and the NSW Department of Primary Industries consider that additional measures are required to facilitate the recovery of dogfish. The Committee understands that the additional measures will include both a range of closures and operational measures such as:
 - New or expanded total fishing closures, temporal closures, closures to specific gear types, especially in areas of core habitat
 - Zero total allowable catch
 - Mandatory handling practices to ensure likely survival of gulpers returned to the sea
 - Move-on provisions and trigger limits
 - Increases in observer coverage and/or Compulsory Video Monitoring Surveillance
- The Committee notes that proposed Commonwealth Marine Reserves are unlikely to be in place under law by the time the Committee is required to make its advice to the Minister and that these Reserves are not being designed as fisheries management tools. The Committee will therefore be required to consider only those management measures expected to be in force under law at the time of the Minister's listing decision. The Committee understands that any subsequent spatial closure may provide further opportunity for protection and recovery for the species.

Secretariat: Species Listing section

Australian Government Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787 | CANBERRA ACT 2601 | Tel: 02 6274 1943 | E: epbc.nominations@environment.gov.au

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

Attachment B

Matters which the Committee will consider in framing its advice to the Minister about Harrison's and southern dogfish

In making an assessment against the listing criteria for **Harrison's and southern dogfish**, the Committee must consider the elements described in the EPBC Act. For potential listing as conservation dependent, these will include:

- The species is the focus of a plan of management (179(6)bi)
- The plan of management provides for management actions (6bii). The Committee expects that a plan of management would include:
 - Clear specification of objectives
 - Actions to stop the decline of the species
 - Actions to support the recovery of the species so that its chances of long term survival in nature are maximised
 - Rebuilding targets
 - Timeframe for recovery
 - Monitoring and evaluation performance criteria to evaluate the effectiveness of the Strategy against its objectives
 - A research plan
- The plan of management is in force under a law (or laws) of the Commonwealth or of a state or Territory (6biii)
- Cessation of the plan of management would adversely affect the conservation status of the species (6biv)

Species or stock

The EPBC Act provides for inclusion of species or subspecies in the threatened species list. The Committee therefore considers listing assessments at a 'whole of species' level. Nonetheless, the Committee considers that for Harrison's and southern dogfish, closures and operational management measures should be applied appropriately across all stocks for each species and across the entire range of each species, to ensure recovery of the species as a whole and to maximise retention of existing genetic diversity.

Plan of management

The Committee recognises that Harrison's and southern dogfish require management over more than one jurisdiction and that the Commonwealth's revised Upper Slope Dogfish Strategy will be the 'plan of management' that the Committee will consider for the species within Commonwealth managed waters, while the NSW Department of Primary Industries is developing complementary management measures for NSW managed waters. The Committee will consider these two management packages collectively as the 'plan of management' for the species' eligibility in the conservation dependent category. The Committee will consider the NSW package as a significant

Secretariat: Species Listing section

Australian Government Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787 | CANBERRA ACT 2601 | Tel: 02 6274 1943 | E: epbc.nominations@environment.gov.au

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

and essential component of the ‘management plan’, noting that at least 27% of Harrison’s dogfish core habitat lies within NSW managed waters.

Objectives

The Committee notes that a suitable overarching objective for the Strategy is: *to provide for management actions necessary to stop the decline of and support the recovery of, the species so that its chances of long term survival in nature are maximised.* A similar objective would be appropriate for the NSW initiatives.

Management actions of the plan to stop the decline and support the recovery

In considering management measures within the ‘management plan’ the Committee will give consideration to a number of actions including: (1) the extent to which closures are in place within the species’ core habitats, (2) the ability to meet B_{LIM} , and (3) the extent and relevance of other operational measures relative to the objective of stopping the decline of and supporting the recovery of both species. The Committee accepts that there may be several options/packages for achieving this objective.

An acceptable package might include:

- **A minimum of 25% spatial closures to all fishing methods that potentially catch Harrison’s and southern dogfish within core habitat across the ranges of each species.**

These closures should include a significant proportion of:

- good quality core habitat
- areas of historical and current high abundance
- undamaged and/or structured habitat
- representative areas of each of the above within the ranges of each stock

together with additional operational measures undertaken in commercial fisheries to reduce mortality to the species outside of the spatial closures such as:

- zero total allowable catch
- mandatory handling practices to ensure likely survival of gulpers returned to the sea
- increased observer coverage and/or use of VMS (especially in NSW)
- move on provisions and triggers
- temporal closures to reduce likelihood of interactions

Given the uncertainty around the use of habitat as a proxy for biomass, a combination of operational measures and closures will provide the foundation upon which the Committee can consider that this management is likely to *stop the decline of and support the recovery of the species so that its chances of long term survival in nature are maximised.*

Rebuilding targets

$B_{LIM} = B_{25}$ (25 percent of original biomass) has been identified for the revised Upper-Slope Dogfish Management Strategy. The Committee understands that the Strategy will be using habitat as a proxy for abundance and expects that complementary targets will be applied across the species’ ranges.

Secretariat: Species Listing section

Australian Government Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787 | CANBERRA ACT 2601 | Tel: 02 6274 1943 | E: epbc.nominations@environment.gov.au

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

Recovery time

The Committee considers recovery timeframes to be a requirement of a ‘management plan’, noting that for Harrison’s and southern dogfish this timeframe will probably be 60 years or more.

Monitoring and evaluation

The Committee expects the ‘management plan’ to include methods of research, monitoring and evaluation for both Harrison’s and southern dogfish. Areas of emphasis include but are not limited to:

- Identification of reference sites in areas open and closed to fishing, and those of current and historic abundance, to be sampled through time (nominally every 5 years) to monitor population recovery or decline.
- Identification of baseline numbers of individuals in reference sites described above to aid in long-term monitoring of upper slope dogfish populations.
- Genetic analysis to define stocks in both southern and Harrison’s dogfish as recommended by the Musick review. This work could include application of new techniques such as close kin analysis to help define population size, survival and breeding success.
- Comprehensive life history analysis, particularly age and growth, to refine generation time and recovery potential as recommended by the Scientific Working Group (Oct 2011).
- Definition of the extent of movement of Harrison’s dogfish similar to research conducted on southern dogfish to define movement of that species.

Secretariat: Species Listing section

Australian Government Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787 | CANBERRA ACT 2601 | Tel: 02 6274 1943 | E: epbc.nominations@environment.gov.au