Australian Government

Australian Fisheries Management Authority

Great Australian Bight Trawl Sector

Bycatch and Discarding Workplan
2018 - 2019

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1 Introduction

In carrying out its functions, the Australian Fisheries Management Authority (AFMA) must pursue objectives in the *Fisheries Management Act 1991*, including having regard to the impact of fishing activities on non-target species and the long term sustainability of the marine environment.

Under the *Southern and Eastern Scalefish and Shark Fishery Management Plan 2003*, AFMA is required to develop and implement a bycatch action plan (now referred to as a Bycatch and Discarding Workplan) to ensure that information is gathered about the impact of the Great Australian Bight Trawl Sector (GABTS) on bycatch species, that all reasonable steps are taken to minimise incidental interactions with threatened, endangered and protected (TEP) species, and that the ecological impacts of fishing on habitats are minimised.

This Workplan covers otter board trawling in the Great Australian Bight Trawl Sector (GABTS). It has been developed to support the overall objectives of the *Southern and Eastern Scalefish and Shark Ecological Risk Management (ERM) Strategy 2015*. They are to:

- reduce the number of high risks assessed through AFMA's Ecological Risk Assessment process
- minimise interactions with species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- reduce discarding of target and non-target species to as close to zero as practically possible
- minimise overall bycatch in the fishery over the long-term.

Action items for the period 2018-19 are outlined in Table 3 of this document. Progress against action items from the 2014-16 Great Australian Bight Trawl Fishery Bycatch and Discarding Workplan (2014-16 GABTF workplan) are outlined in the final report, available on the AFMA website at http://www.afma.gov.au/managing-our-fisheries/environment-and-sustainability/bycatch-and-discarding/

Some actions from the 2014-16 GABTS Workplan have been carried over to the 2018-19 Workplan.

This Workplan should be read in conjunction with:

- *Commonwealth Policy on Fisheries Bycatch 2000 and AFMA's Program for Addressing Bycatch and Discarding in Commonwealth Fisheries: an implementation Strategy 2008*
- *Southern and Eastern Scalefish and Shark Fishery Management Plan 2003*
- *Ecological Risk Management –Report for the Great Australian Bight Trawl Sub-Fishery of the Southern and Eastern Scalefish and Shark Fishery, Australian Fisheries Management Authority, Canberra, 2015*
- *Commonwealth Fisheries Harvest Strategy Policy and Guidelines 2007.*

2 Fishery description

The GABTS is a sector of the SESSF and extends from Cape Leeuwin, Western Australia, to Cape Jervis near Kangaroo Island, South Australia (Figure 1). The sector excludes state (SA and WA) fishery shelf waters to the extreme east and west which have traditionally been fished by state based fishers. The GABTS is a multi-species trawl fishery covering a broad spectrum of ecological and depth strata. The sector is primarily a demersal (bottom) trawl sector based on regular trawling of shelf species and periodic trawling for the deeper dwelling species.

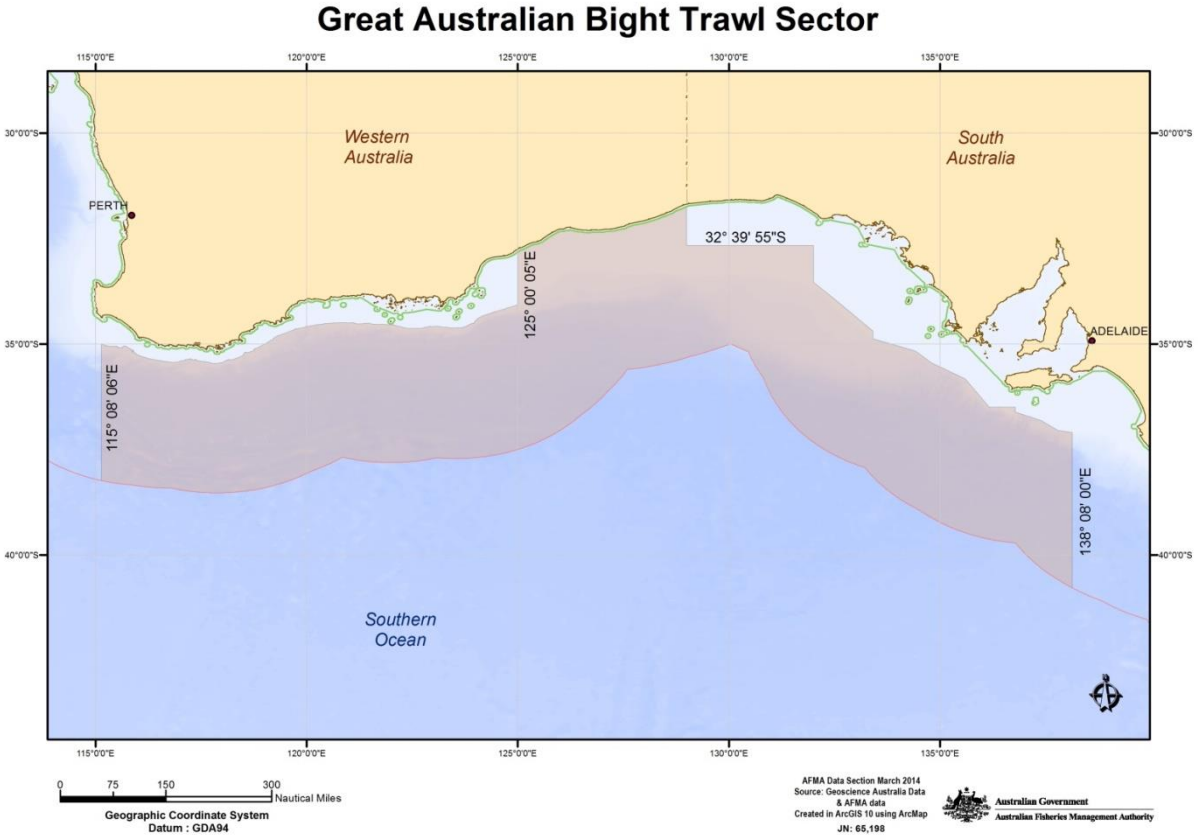

Figure 1 Area of the Great Australian Bight Trawl Sector.

The GABTS is managed through a system of output controls based on Total Allowable Catches (TACs) for three species:

- Bight redfish (*Centroberyx gerrardi*)
- Deepwater flathead (*Neoplatycephalus conatus*)
- Orange roughy (*Hoplostethus atlanticus*)

Historically, orange roughy have been an important deep water target species, in depths of 750 to around 1,200 metres. However, there is now no commercial targeting of orange roughy and a research program is in place to assist in determination of the stock status of GABTS orange roughy.

The distribution of trawling in the GABTS is across a very small area with most of the effort in the fishery concentrated on the upper continental shelf and slope, in depths ranging

from 100 to 400 metres. Given the management boundaries of the fishery and bottom terrain (making many areas difficult to trawl), this effort mostly occurs across a relatively small longitudinal range, from about 126° East to 133° East.

Generally, trawling is considered to be a relatively non-selective fishing method, catching a range of species of varying sizes in any one shot. Over 100 species of teleosts (bony fish), chondrichthyans (sharks and rays) and invertebrates are harvested in the GABTS. A smaller number of species, presently considered to be of no commercial value, are discarded during fishing.

3 Process for Workplan Development

The 2018-19 GABTS workplan is designed to build upon the progress made within the GABTS under the previous GABTS Bycatch and Discarding Workplan and to identify strategies to assist the GABTS in continuing to reduce overall bycatch and discarding.

In developing a workplan for a specific fishery, several aspects need to be considered and steps undertaken before a workplan can be implemented. In developing the 2018-19 GABTF workplan, the following process was followed:

1. High risk species identified in the ERA process were considered
2. General bycatch issues in the fishery were identified and considered
3. Analysis of progress of action items listed in the previous workplan e.g. what was achieved, are there any outstanding items?
4. Developed workplan in consultation with the Great Australian Bight Management Advisory Committee (GABMAC) and the Great Australian Bight Industry Association (GABIA)

4 Workplan activities

The activities to be completed as part of this Workplan are detailed as action items in Table 3. Generally they aim to:

- improve skipper consistency in reporting bycatch and discards and make revisions to the established Integrated Scientific Monitoring Program (ISMP) to address concerns over resolution of reporting teleosts and chondrichthyans to species level
- increase the fisheries utilisation of bycatch and byproduct species
- maintain efficacy of seabird mitigation measures implemented in the GABTS.

Additional action items may be added during the period of this workplan if they are consistent with the objectives and there is capacity to undertake further projects.

5 Ecological Risk Assessment Results

The Ecological Risk Assessment (ERA) process is undertaken to determine the impact of fishing on marine species and habitats. Assessment of marine species is based on a series of parameters including life history, biological productivity and susceptibility to fishing gear. It involves a hierarchy of risk assessment methodologies progressing from a

comprehensive, largely qualitative analysis at Level 1, through a Level 2 Productivity Susceptibility Assessment (PSA) to a quantitative analysis at Level 3 Sustainability Assessment for the Effects of Fishing (SAFE). This approach is a means of screening out low impact activities and low risk species and focusing more intensive and quantitative analyses on those species assessed as being of higher potential risk from the impact of fisheries. For the detailed methodology please refer to *Ecological Risk Assessment for the Effects of Fishing: Methodology* (Daley et al, 2007) or see http://www.afma.gov.au/managing-our-fisheries/environment-and-sustainability/ecological-risk-management/#sessf

The highest level of assessment undertaken in the GABTS was the Sustainability Assessment of Fishing Effects (SAFE) for teleost and chondrichthyans, and a Residual Risk Analysis of Level 2 PSA results for all other species. No teleost and chondrichthyan species were assessed as high risk after SAFE, while two species groups (octopods and cuttlefishes) were assessed as being at high risk from otter trawl fishing in the GABTS based on a Level 2 PSA. These are detailed in Table 1. These species groups were identified as at high risk due to a lack of information. To maintain a conservative approach to the assessments, AFMA's Level 2 and Level 3 risk assessment apply a high risk score in situations where a lack of information hampers quantification of a metric.

A SESSF ERA is due to be updated during in 2018. The results from this update will be used to inform subsequent Bycatch and Discarding Workplans which will form part of an overall Fisheries Management Strategy (FMS).

Table 1: High risk species groups identified from the Residual Risk Assessment of Level 2 Productivity Susceptibility Analysis for the GABTS.

Scientific Name	Common Name	Role in Fishery	Highest Level of Assessment	Risk Score	Addressed in Action Item (see Table 3)
Order *Octopoda* (undifferentiated)	octopods	Byproduct	L2 Residual Risk	High	1
Family *Sepiidae* (undifferentiated)	cuttlefish	Byproduct	L2 Residual Risk	High	1

6 Existing measures to reduce bycatch

A range of input management controls apply to the GABTS, including a limit on the number of vessels permitted to operate in the fishery (a maximum of 10), minimum mesh size for trawl gear and spatial/temporal closures.

6.1 T-90 mesh

The selectivity of the gear used in the GABTS is governed by the stipulation of a minimum mesh size of 90 mm as well as an industry code of conduct which mandates the use of T-90 extension and industry practices, which typically see 100 mm minimum mesh sizes used in the fishery.

6.2 Individual Vessel Seabird Management Plans

On 31 October 2011 AFMA amended operators' concession conditions to require every trawl boat to have an AFMA approved Seabird Management Plan (SMP). It is a requirement for all operators to carry a signed copy of their individual boat seabird management plan on the vessel at all times. The seabird management plans provide details of best practice seabird mitigation measures and are designed to assist the GABTS industry in meeting their requirements outlined in SFR and fishing permit conditions.

During 2014-15 SETFIA and AFMA undertook scientific trials of bird bafflers and seabird sprayers on SESSF trawl vessels. The devices were highly effective and reduced seabird interactions by 96 and 92 per cent respectfully. As a result, since 1 May 2017 all GAB trawl operators have been required to have an approved seabird management plan that defines one of the three approved seabird mitigation devices: bird bafflers; sprayers; or pinkies with specified offal retention procedures.

6.3 Spatial Closures

Spatial closures provide a refuge for species and their habitat from the effects of trawling. A series of spatial closures have been developed in the GABTS. These closures are designed to reduce the potential for species becoming over fished and to protect specific taxa and habitat from the effects of fishing. Some closures are designed to complement the objectives for areas protected under other Commonwealth legislation. The closures in place for the GABTS can be found in the *Southern and Eastern Scalefish and Shark Fishery Management Arrangements Booklet.*

Table 2: Purpose of GABTS closures.

Closure Area	Reason For Closure
GAB Marine Park Benthic Protection Zone	Preserve a representative sample of the sediments and benthic biota of the GAB.
GAB Marine Park Mammal Protection Zone	Protect the calving area for the Southern Right Whale and colonies of the endangered Australian Sea Lion in the area, additionally offering some protection of a representative sample of the seabed in deeper waters of the Commonwealth Park.
Great Australian Bight Trawl Gulper Shark closure	Closed to demersal otter trawl methods to protect Southern Dogfish.
Commonwealth Murray Marine Protected Area	Protection and maintenance of marine biological diversity in the South-east marine region.
GABIA Deepwater closures	Closed to trawling to protect deepwater shark species and orange roughy.
GABIA Orange Roughy Research Zones (accessible only by scientific permit)	Closed to trawling methods to protect orange roughy stocks.

6.4 Fishery Monitoring Program

GABTS data has been obtained principally through logbooks, catch disposal records, fishery independent surveys and the ISMP (on-board observers). Port based sampling (eg. otolith collection) is used to obtain more detailed biological information about landed species.

In 2005, the GABTS implemented a fishery independent survey (FIS) for the fisheries two main target species (Bight Redfish *Centroberyx gerrardi*, and Deepwater Flathead *Neoplatycephalus conatus*). These surveys are carried out biennially and aim to provide an alternative index of abundance for a range of species that is independent of changes in fishing effort/commercial fishing. Observer data gathered through the ISMP provides information on the quantity, size and age composition of retained and discarded quota species as well as bycatch caught in the GABTS.

As part of the shift towards co-management, GABIA has aided the GABTS in implementing a bycatch and discard recording program whereby ISMP scientific observers collect data in one year and then crew-member observers collect data on every second year.

6.5 Fishery research program

This workplan outlines a range of agreed actions, some or all of which will fall into a specific research category. This work will continue to be factored into the fishery research program and prioritised along with wider fishery research projects. The GABRAG will use the bycatch and discarding workplan to assist in annually updating the priorities for research in the fishery.

7 Bycatch Workplan Action Items

Table 3: Interim action items for the GABTS 2018-19 Bycatch and Discard Workplan

Action Items	Risk/Issue to be addressed (workplan object.)	Timeframe	Cost $	Responsible Parties	Performance Indicators	Milestones
1. Further develop the SESSF Trawl Discard Reporting Strategy	Improve reporting of discards	Dec 2018	Within existing AFMA staff budget	AFMA trawl team OLRAC	Improved reporting of discards Instructional screenshots provide GAB skippers on how to complete e-logs	Draft strategy developed Industry consultation (inc. screenshots)

8 Summary

The GABTS has undertaken considerable measures to reduce the fisheries impact on bycatch species. GABIA with AFMA and GABMAC have been proactive in addressing the fisheries environmental sustainability, which is reflected in the results of the risk assessments.

Ongoing refinement in gear designs and the successful implementation of vessel management plans have resulted in positive change with regard to the impact the GABTF has on bycatch in the Great Australian Bight ecosystem. Progress will be assessed every six months and a full biennial review against performance indicators to evaluate the fisheries progress against objectives.

9 Review Process

Bycatch and Discarding Workplans are largely output focused. The action items included here are only some of the measures AFMA undertakes as part of the Ecological Risk Management (ERM) Strategy and it is difficult to measure the specific contribution of an action item to the overall objectives of the ERM Strategy. As part of the ERM Strategy AFMA have specific and measureable objectives with outcomes to be quantitatively assessed as part of the annual review.

This Workplan is effective as of May 2018 and will be reviewed as described below:

- every 6 months to
  - ensure actions are progressing well
  - determine if any additional actions can be taken
- as part of the annual Ecological Risk Management Strategy Review to
  - ensure actions are progressing well
  - ensure that objectives of the ERM Strategy are being met
  - determine if any additional actions can be taken
- final review at 24 months as part of the annual Ecological Risk Management Strategy Review to
  - to ensure that action items have been completed
  - report against performance indicators
  - determine actions for subsequent Workplans.

At the end of the two year period the outputs of this Workplan will be reported to the Department of Environment and a new Workplan will be developed and implemented.