SC-04-12

4th Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific Committee

25–29 March 2019, Yokohama, Japan

Australia's Annual Report

Relates to agenda item: 3 Working paper ☒ Info paper ☐

Delegation of Australia

Abstract

This paper updates the SIOFA Scientific Committee on Australia's fishing activities in the SIOFA Area. Australian operators are currently authorised by the Australian Government to target various species with mid-water and demersal trawl, dropline, minor line, automatic longline and demersal longline gears. There was no fishing effort by Australia-flagged vessels during 2017. One trip was undertaken by a single vessel in 2018 (noting this also spanned into the 2019 fishing year). All catch and effort data for fishing operations during 2018 will be submitted to SIOFA in accordance with CMM 2018/02. All data presented in this report comply with Australia's domestic policy associated with the dissemination of fisheries data and this report does not disclose any non-public domain data within the meaning of SIOFA CMM 2016/03. The report will be made publicly available in perpetuity on the SIOFA website.

Recommendations *(working papers only)*

It is recommended that the SC:

- Notes the national report provided by Australia
- Notes that Australia has complied with the reporting requirements of the SIOFA Scientific Committee.

Australia's annual report on fishing activities in the Southern Indian Ocean Fisheries Agreement Area

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Acknowledgements

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Contents

Introduction

This report summarises fishing activity by Australian-flagged vessels in the Southern Indian Ocean Fisheries Agreement (SIOFA) Area. Australian operators are authorised by the Australian Government to target various species with midwater and demersal trawl, dropline, minor line, automatic longline and demersal longline. Tuna and tuna-like fisheries, over which the Indian Ocean Tuna Commission has competence, are not reported here. In accordance with CMM 2018/02 (Conservation and Management Measure for the Collection, Reporting, Verification and Exchange of Data related to fishing activities in the Agreement Area), Australia's historical fishing data have been provided to the SIOFA Secretariat.

Australian-flagged vessels undertaking high seas fishing in the SIOFA Area do so under High Seas Permits issued by the Australian Fisheries Management Authority (AFMA). The permits are granted for a period of up to 12 months. Consistent with SIOFA CMM 2018/02, Australian high-seas fisheries permits require the implementation of vessel monitoring systems, mandatory observer coverage on all trawl vessels and a target of 20 per cent observer coverage on all non-trawl vessels.

Australian policy associated with the dissemination of fisheries catch and effort data administered by the Australian Government allows for the public disclosure of:

a) Total fishing season catch and effort statistics for each species aggregated by fishing method, sector and/or fishery

b) The total area of waters fished within a season by fishery, sector and/or method, reported at a minimum spatial resolution of one degree square. This does not include catch or effort information where the data represents less than five vessels

c) Any other catch and effort information, including spatial information, where the information represents data from five or more vessels.

Australian data that do not meet these criteria are not included in this report. However, these data are submitted to the SIOFA Secretariat in accordance with SIOFA CMM 2018/02. The same data confidentiality applies to the Secretariat's use and handling of the data unless the disclosure and use of data is authorised by Australia.

This report excludes data from within Australia's Exclusive Economic Zone (EEZ). Scientific and common names for species referred to in this report are provided in Appendix A.

Description of fisheries

Fishing by Australian vessels targeting demersal fish species in the SIOFA Area is undertaken using midwater trawl, demersal trawl and demersal line gears. Midwater trawl gears usually have a sacrificial footrope in case the net touches the sea floor (Williams et al. 2011). Line fishing has historically been a minor component but has increased in recent years. Detailed descriptions of gears used are provided in Williams et al. (2011).

Reliable data for the fishery has been available since 1999 (Williams et al. 2011). In 1999, there was a substantial increase in deep-sea trawling in the area after orange roughy stocks were discovered (Japp & James 2005).

Fishing methods have been specified by AFMA since 2008. There are no records of gillnetting in the area (Williams et al. 2011) and the use of gillnets by Australian-flagged vessels was prohibited by AFMA in 2008.

Fleet composition

Five Australian-flagged vessels hold permits to fish in the SIOFA Area. This includes one multipurpose vessel (Table 1).

Table 1 The number of Australian vessels that actively fished in the SIOFA Area, 2011–2018

Year	Vessels that actively fished	
	Non-trawl	Trawl (including mid-water and demersal)
2011	0	1
2012	0	1
2013	0	1
2014	0	1
2015	1*	
2016	1*	
2017	0	
2018	1	0

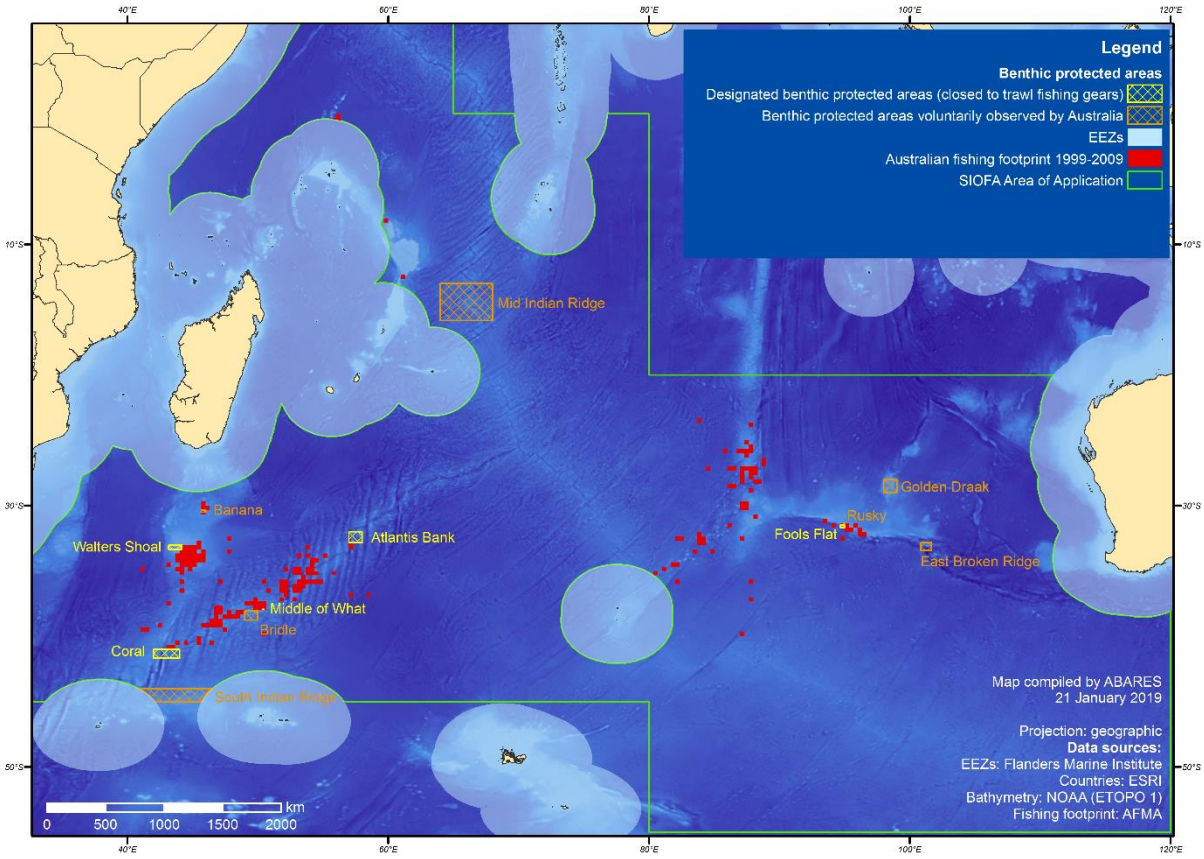
*multipurpose vessel (trawl and line methods)

Fishing effort and catch

Fishing effort

Since 2012, Australian vessels in the SIOFA Area have been restricted to fishing within the 1999–2009 Australian fishing footprint (Figure 1), and to the average annual level of catch within that same period.

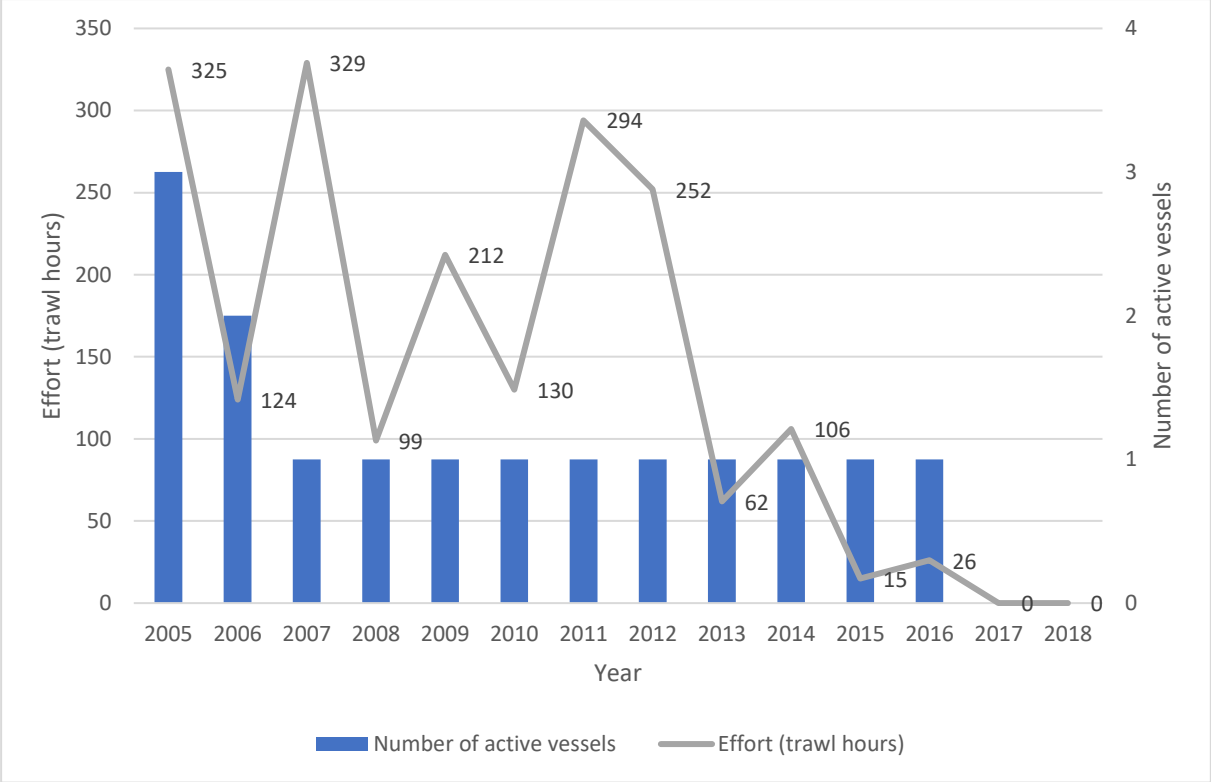
Figure 1 Australia's fishing footprint defined by the period 1999–2009 in the SIOFA Area



There was no fishing activity by Australian vessels in the SIOFA Area in 2017. One Australian flagged vessel fished using demersal longlines and droplines in the SIOFA Area in 2018 (Table 1). The vessel recorded 27,600 demersal longline hooks (19 sets) and 5660 dropline hooks (54 sets). There was no trawl effort by Australian-flagged vessels in 2018.

The trend in trawl effort and the number of active vessels between 2005 and 2018 is presented in Figure 2.

Figure 2 Effort (trawl hours) and number of active vessels in the SIOFA Area, 2005 to 2018



Catch

In line with Australia's confidentiality requirements, annual catch volume data are not presented for Australian operations in the SIOFA Area due to fewer than five vessels operating during the reporting period. Data on catch composition is provided.

Australian catch in 2018 was landed in Port Louis, Mauritius. The top species caught by non-trawl methods in 2018 as reported in logbooks were hapuku (*Polyprion oxygeneios*), bass groper (*Polyprion americanus)* and jackass morwong (*Nemadactylus macropterus*) which together comprised 84 per cent of the total catch reported in logbooks in 2018.

Summary data for catch composition and effort for trawl fishing methods are shown in Table 2.

Summary data for catch composition and effort for non-trawl fishing methods are shown in Table 3.

Table 2 1 Number of active trawl vessels, fishing effort (hours) and catch composition of major species reported in logbooks by Australian trawlers in the SIOFA Area, 2005–2018

Year	No. of vessels	Effort (hours)	Catch of major species (proportion of total catch)						Total catch a
			Alfonsino	Blue-eye trevalla	Ocean blue-eye trevalla	Orange roughy	Rubyfish (mixed)	Other species	
2005	3	325	0.25	0.01	0.35	0.11	0.03	0.25	Confidential
2006	2	124	0.67	0.06	0.00	0.09	0.01	0.17	Confidential
2007	1	329	0.37	0.08	0.39	0.00	0.06	0.11	Confidential
2008	1	99	0.79	0.00	0.20	0.00	0.00	0.01	Confidential
2009	1	212	0.07	0.03	0.07	0.71	0.00	0.13	Confidential
2010	1	130	0.04	0.00	0.05	0.67	0.01	0.24	Confidential
2011	1	294	0.55	0.05	0.03	0.29	0.00	0.07	Confidential
2012	1	252	0.58	0.00	0.23	0.06	0.06	0.06	Confidential
2013	1	62	0.54	0.00	0.40	0.00	0.00	0.06	Confidential
2014	1	106	0.16	0.00	0.28	0.08	0.36	0.12	Confidential
2015	1	15	0.81	0.15	0.00	0.00	0.00	0.04	Confidential
2016	1	26	0.29	NA	0.51 **b**	0.00	0.17	0.03	Confidential
2017	0	-	-	-	-	-	-	-	0
2018	0	-	-	-	-	-	-	-	0

a In line with confidentiality restrictions that prevent the disclosure of fishing activity by fewer than five vessels, catch data cannot be presented for Australian operations in the SIOFA Area.

b Due to a probable species reporting error found in the 2016 logbook data, this catch proportion is likely to be comprised predominantly of *Schedophilus velaini* (Ocean blue-eye trevalla) but may contain some *Hyperoglyphe antarctica*. Most of the catch in 2016 was reported by observers to be *Schedophilus velaini*.

NA Not available.

Table 3 2 Number of active vessels, fishing effort ('000 hooks) and catch composition of major species reported in logbooks by Australian vessels using non-trawl (hook) gears in the SIOFA Area, 2005–2018

Year	No. of vessels	Effort ('000 hooks)	Catch of major species (proportion of total catch)			Total catch a
			Hapuku	Reef ocean perch	Other species	
2005	0	0	-	-	-	0
2006	0	0	-	-	-	0
2007	0	0	-	-	-	0
2008	1	22	0.43	0.29	0.29	Confidential
2009	0	0	-	-	-	0
2010	0	0	-	-	-	0
2011	0	0	-	-	-	0
2012	0	0	-	-	-	0
2013	0	0	-	-	-	0
2014	0	0	-	-	-	0
2015	1	2	0	0.02	0.98 **b**	Confidential
2016	1	40	0.65	0.02	0.33	Confidential
2017	0	0	-	-	-	0
2018	1	28	0.42	0	0.58	Confidential

a No catch data are presented as Australian confidentiality restrictions prevent the disclosure of fishing activity by fewer than five vessels.

b In 2015, over 99 per cent of the 'other species' were reported to be *Squalus megalops*. The remainder were reported to be Pentacerotidae. All 'other species' in 2015 were reported to have been discarded.

– Not applicable.

Catch per unit effort (CPUE)

Catch rate data are not presented as indices generated from the data (including nominal CPUE) are not considered reliable due to the low and spatio-temporally variable effort in the fishery. CPUE standardisation has not been undertaken for any species in this fishery.

Vulnerable marine ecosystem indicator thresholds and ecological impacts

Australian-flagged vessels are required to record any evidence of a Vulnerable Marine Ecosystem (VME) such as coral or sponges encountered in a fishing shot in logbooks. Any Australian-flagged vessels fishing in the SIOFA Area must also cease fishing:

a) within an area two nautical miles either side of the trawl track extended by two nautical miles at each end of the trawl track if the combined catch of coral or sponge in any one trawl shot exceeds 50kgs; or

b) within a radius of one nautical mile from the midpoint of the line segment if the combined catch of coral or sponge in any one shot for line method exceeds 10kgs for any 1 000 hook section of line or a 1 200 metre section of line, whichever is the shorter.

The vessel must not fish in that area using the same method as used for that shot that triggered the limit until AFMA notifies otherwise. The encounter must be reported to AFMA within 24 hours of the shot. The notification must include details of the shot including the location, as outlined in Annex 1 of the SIOFA CMM 2018/01 (Conservation and Management Measure for the Interim Management of Bottom Fishing in the SIOFA Agreement Area).

According to logbook data, no thresholds were triggered by any Australian-flagged vessels in 2018. Observer data are not yet available.

Seabird interactions and mitigation measures

Although there is no seabirds CMM in force in SIOFA, Australian longline vessels operating in high seas areas, including the SIOFA Area, are required to deploy tori (streamer) lines to deter seabirds. Requirements include that the tori line:

- must be a minimum of 150 metres in length;
- must be deployed from a position on board the boat and utilise a drogue so that it remains above the water surface for a minimum of 100 metres from the stern of the boat;
- must have streamers attached to it with a maximum interval between the streamers of 3.5 metres; and
    - all streamers must be maintained to ensure their lengths are as close to the water surface as possible.

Source: High Seas Management Arrangements Booklet 2017, AFMA.

The discharge of offal from longline fishing vessels is regulated by Division 3 of the *Fisheries Management Regulations 1992*, prohibiting the discharge of offal in setting and hauling of pelagic and demersal longlines.

Fisheries data collection and data verification

AFMA collects detailed information on fishing trips in accordance with CMM 2018/02.

Some Australian fishing vessels employ electronic monitoring (e-monitoring) systems. One vessel that holds a permit to fish in the SIOFA Area has such a system installed, although this vessel has not fished in the SIOFA area.

Logbook data

Since 2002, permit conditions have included the requirement to record daily catch and fishing effort data in logbooks on a shot-by-shot basis, including the location of fishing operations. The logbooks have been revised on several occasions. The current longline logbook (LN01A—Line Fishing Daily Fishing Log) and trawl logbooks (EFT01B—Eastern Finfish Trawl Daily Fishing Log; SWT01A—Southern and Western Finfish Trawl Daily Fishing Log) were introduced in 2007. Fishers are also required to record information on discards and interactions with VME indicator and protected species.

Landings are monitored by AFMA through formal catch disposal records. Catch disposal records are completed by both the fisher and licensed fish receiver at the point of unloading to obtain verified weight by species. Compliance checks are conducted on landings as part of a risk-based compliance program.

Logbook data are provided to SIOFA in accordance with SIOFA CMM 2018/02.

Vessel Monitoring System

AFMA introduced a compulsory requirement for all Commonwealth-endorsed fishing vessels to be fitted with Integrated Computer Vessel Monitoring Systems (ICVMS) in 2007. AFMA uses the ICVMS to assist in planning inspections and operations, to assist the observer program in deploying scientific observers and to actively monitor compliance with closed areas.

Research activities

Bottom Fishery Impact Assessment

AFMA commissioned a bottom fishing impact assessment of Australian fishing activity in the SIOFA Area, which was published in 2011 (Williams et al. 2011). This report is available at www.afma.gov.au/fisheries/high-seas-permits/ and is publicly available through the SIOFA website.

Research

In 2011, Australia commissioned an analyses to assess the sustainability of the harvest of key commercial species in the SIOFA Area by Australian vessels (Woodhams et al. 2012). There was limited stock assessment information for the species targeted within the SIOFA Area. A weight of evidence process was used to determine status of stocks by considering the spatial and temporal extent of Australian fishing activity in the context of potential habitat area and what is known about similar fisheries for the same, or similar, species in other oceans. The study assessed alfonsino, blue-eye trevalla, ocean blue-eye, orange roughy, smooth oreodory and spikey oreodory. The results indicated that most species or stocks accessed by Australian operations are only accessed in a small proportion of the total assumed available habitat area. No species in the Australian fishery were assessed as subject to overfishing. The fishing mortality status for alfonsino, orange roughy and all other species as a result of Australian fishing was assessed to be uncertain.

In 2017, the Australian Government commissioned an independent review of the benthic protected areas proposed by the Southern Indian Ocean Deepsea Fishers Association in SC-01-INF-15 (Goldworthy 2017). The review found that most of the SIODFA proposed areas met certain rationale and criteria in the protocol for protected areas designation (subsequently updated). The review made a number of expert recommendations relating to research and management requirements for individual protected areas in SIOFA. The review has been provided as an information paper to the 1st meeting of the SIOFA Protected Areas and Ecosystems Working Group and the 4th SIOFA SC meeting.

As part of the SIOFA Stock and Ecological Risk Assessment Working Group's (SERAWG's) Terms of Reference and the SC's workplan, Australia is currently undertaking ecological risk assessments for the effects of demersal and midwater trawl, longline and gillnet fishing methods on deepwater chondrichthyans and teleosts in the SIOFA Area. Results for the chondrichthyans risk assessment are due to be finalised in 2019 and will be presented to the SIOFA SERAWG and SC in 2019. Preliminary results for the teleosts risk assessment will be presented to the SIOFA SERAWG and SC in 2019.

During 2018 Australia made progress on development and refinement of the SIOFA species list, which was a necessary task for informing the teleosts risk assessment but also has flow-on implications for improving the quality and consistency of SIOFA databases. This research has identified a number of inconsistencies in SIOFA species reporting and potential errors in the SIOFA databases. During 2019, Australia has also made progress on the implementation of the SIOFA stock assessment framework. Data characterisation (including that being undertaken through the alfonsino and Patagonian toothfish scoping studies) will help inform categorisation of SIOFA stocks into the assessment framework.

Biological sampling and length/age composition of catches

Length–frequency data are collected by Australian observers in the SIOFA Area. Length frequencies of alfonsino caught by trawl in 2014 and 2016 are presented in Figure 3, and length frequencies of orange roughy caught by trawl in 2014 are presented in Figure 4. Alfonsino length is presented as length to caudal fork (LCF), whereas orange roughy length is presented as standard length. Figure 5 presents length frequency of hapuku measured by observers on Australian non-trawl vessels during 2016. Figure 6 presents length frequency for bass groper measured by observers on Australian non-trawl vessels during 2016. Lengths for other species collected by observers on board non-trawl vessels are available but not presented as the sample sizes for these species are low (typically <100 individual fish sampled).

Figure 3 Length frequency of alfonsino measured by observers on Australian trawl vessels in the SIOFA Area, (a) 2014 and (b) 2016

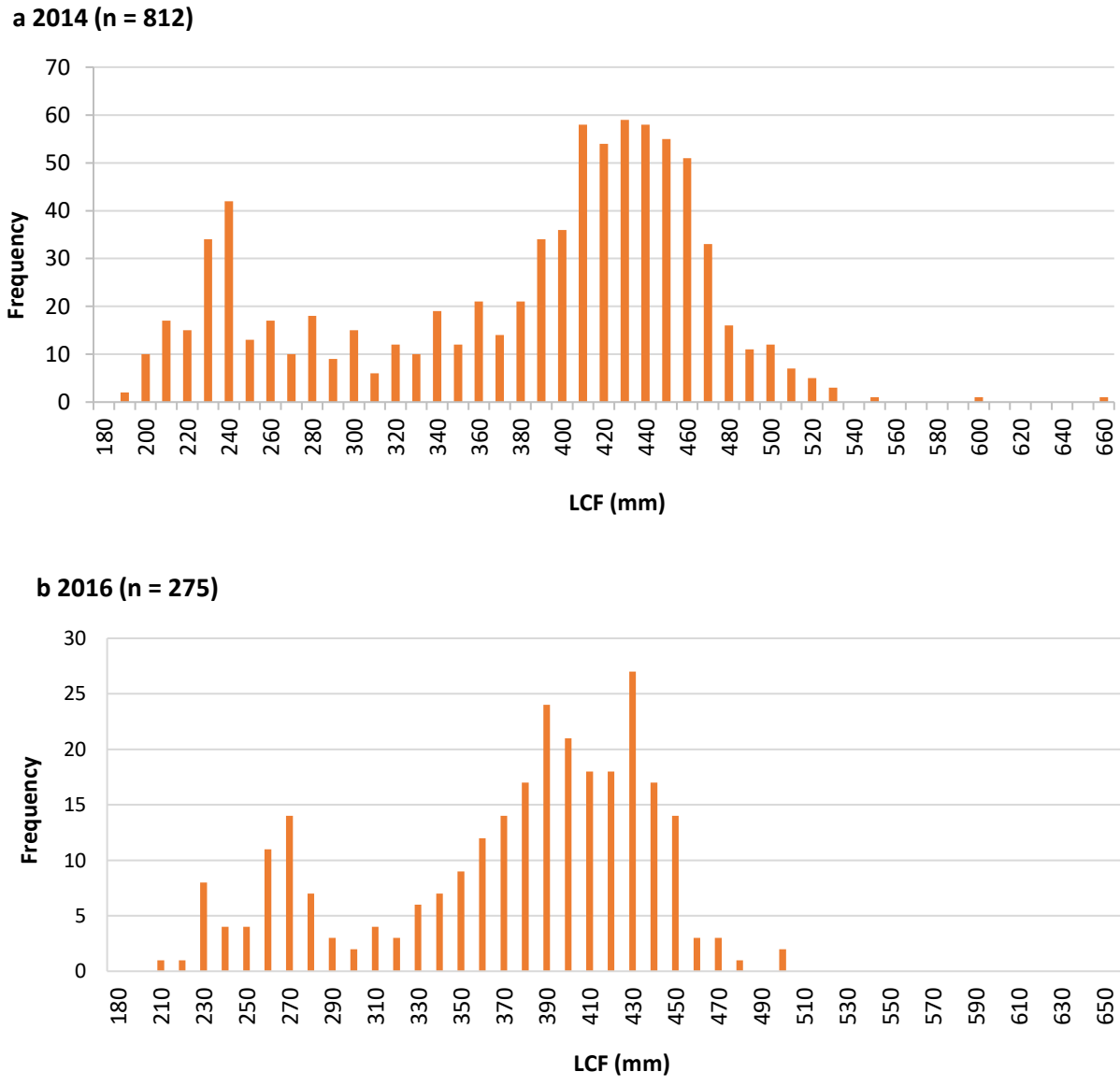


Figure 4 Length frequency of orange roughy measured by observers on Australian trawl vessels in the SIOFA Area, 2014

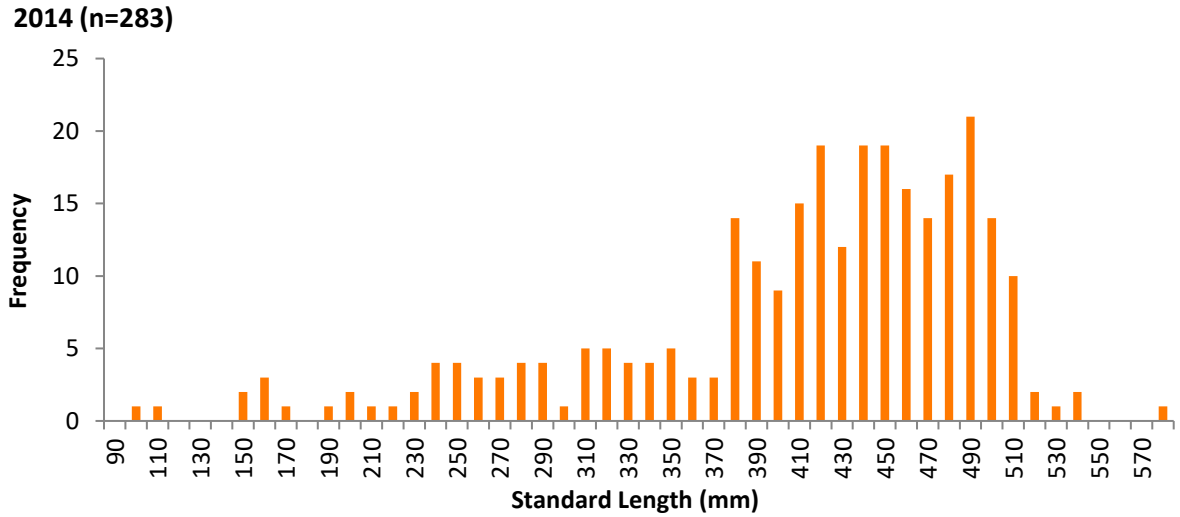
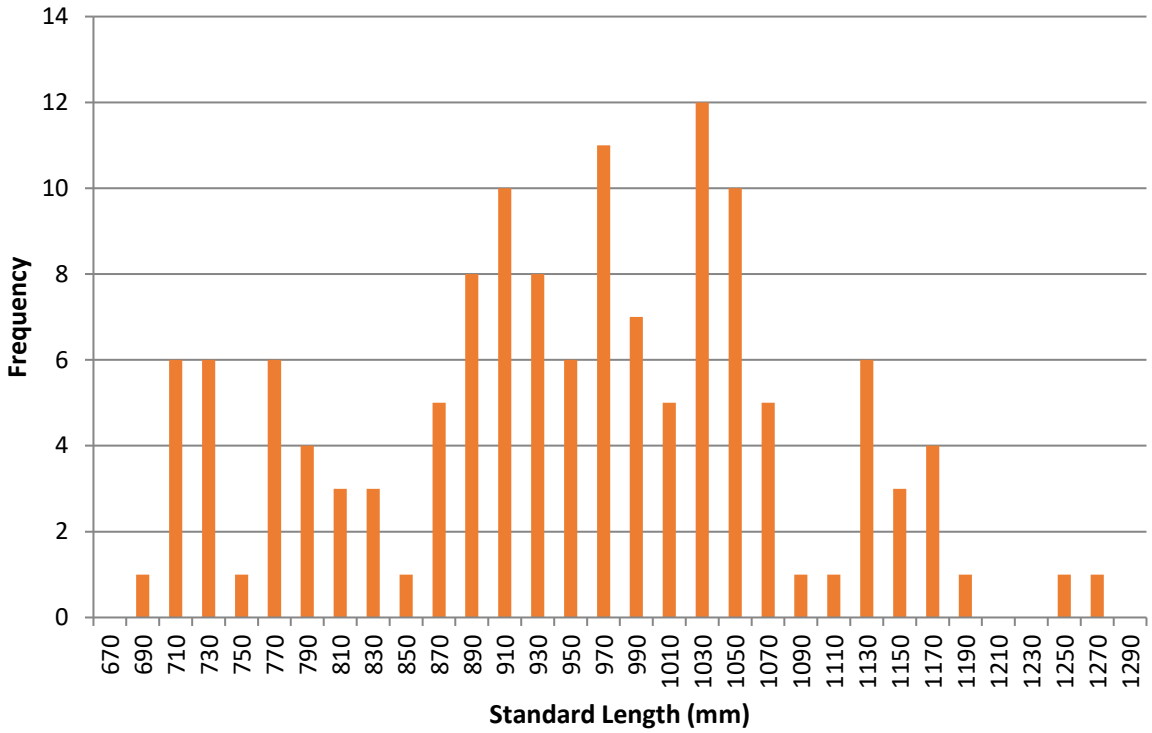
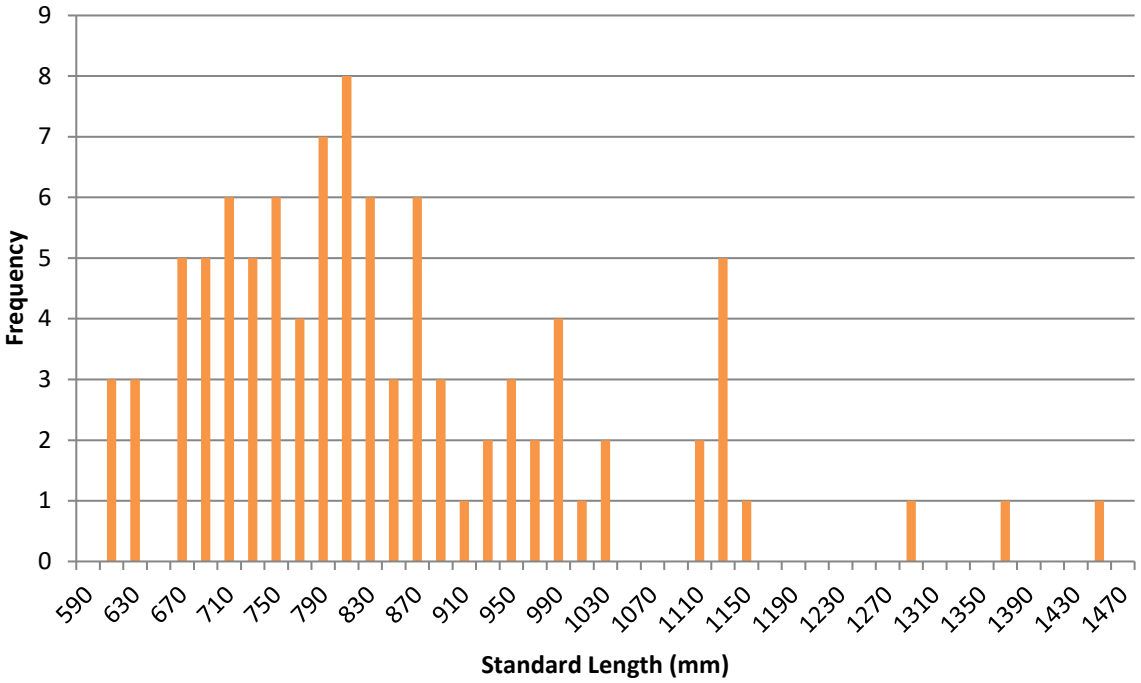


Figure 5 Length frequency for hapuku (*Polyprion oxygeneios*) measured by observers on Australian non-trawl vessels in the SIOFA Area, 2016



Note: Some length data includes specimens measured using the Length to Caudal Fork (LCF) method

Figure 6 Length frequency for bass groper (*Polyprion americanus*) measured by observers on Australian non-trawl vessels in the SIOFA Area, 2016
2016 (n=96)



Note: Some length data includes specimens measured using the Length to Caudal Fork (LCF) method

Summary of observer and port sampling programs

Observer program

Since 2010, Australian permit conditions for bottom fishing in the SIOFA Area have required 100 per cent observer coverage on all vessels permitted to use trawl gear. A target of 20 per cent observer coverage is required for vessels using non-trawl fishing methods. All observer coverage requirements were met during 2018.

AFMA recruits and trains the observers. About sixteen observers are currently employed in the AFMA observer program. Observers have a scientific background and/or experience in the fishing industry or other maritime industries and must demonstrate skills in collecting biological data at sea, fisheries research methodologies and collection of associated scientific data. Observers also hold a sea safety certificate and medical certificate, and have completed an AFMA observer training course. Some observers hold a marine radio operators certificate of proficiency (or similar qualifications).

Observers collect a range of data on vessel characteristics, fishing activity, catch composition, discarding and bycatch.

Observer data are not yet available for 2018.

Port sampling program

Australia does not have a port sampling program for vessels that fish in the SIOFA Area. The landings are monitored through catch disposal records where the catch is verified by an AFMA-approved fish receiver.

References

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Woodhams, J, Stobutzki, I, Noriega, R & Roach, J 2012, *Sustainability of harvest levels by Australian flagged vessels in the high seas areas of the South Pacific Ocean and South Indian Ocean*, ABARES report to client prepared for the Australian Fisheries Management Authority, Canberra, November 2012.

Appendix A Common and scientific names of key species

Common Name	Scientific Name
Alfonsino	*Beryx splendens*
Blue-eye trevalla	*Hyperoglyphe antarctica*
Bass groper	*Polyprion americanus*
Cardinal fish	Family Apogonidae
Hapuku	*Polyprion oxygeneios*
Orange roughy	*Hoplostethus atlanticus*
Ocean blue-eye trevalla	*Schedophilus velaini*
Reef ocean perch	*Helicolenus percoides*
Rubyfish	*Plagiogeneion* spp.
Smooth oreodory	*Pseudocyttus maculatus*
Spikey oreodory	*Neocyttus rhomboidalis*