

**SC-01-11**

**5th Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific Committee  
30<sup>th</sup> March- 3<sup>rd</sup> April 2020, Mauritius**

## **National Report – Cook Islands**

*Relates to agenda item:3*

Working paper  info paper

## **Delegation of the Cook Islands**

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### **Abstract**

This paper provides an overview of the trawl fishing activities in the Southern Indian Ocean Fisheries Agreement area undertaken by Cook Island flagged vessels. It highlights activities during 2019 and takes the form of the Cook Islands National Report.

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### **Recommendation**

The meeting is invited to consider the Cook Islands National Report

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**Ministry of Marine Resources**  
**GOVERNMENT OF THE COOK ISLANDS**

SOUTHERN INDIAN OCEAN FISHERIES AGREEMENT

**Cook Islands National Report**

**2019**

**Prepared by the MMR Offshore Fisheries Division**

This report provides an overview of the trawl fishing activities in the Southern Indian Ocean Fisheries Agreement (SIOFA) area by Cook Islands vessels, and highlights activities during 2019.

It should be noted that two trips conducted fishing activities at the end of 2019 and were in progress at the time of writing this report. As such all catch and effort data in this report should be considered as provisional.

In 2019 the Cook Islands authorised two vessels to operate in the SIOFA area, pursuant to high seas fishing authorisations issued by the Ministry of Marine Resources (MMR). These vessels target deep-water finfish species, primarily alfonsino (*Beryx splendens*) and orange roughy (*Hoplostethus atlanticus*) using bottom and midwater trawl fishing methods. A list of species is given in Appendix 1. Cook Islands vessels are not permitted to fish within the Benthic Protected Areas listed in Appendix 2 of this national report, and additionally do not fish on the Del Cano Rise.

Catch is unloaded in Mauritius and South Africa. Alfonsino are generally exported to Japan and orange roughy to China. Some catch is sold in the local markets in Mauritius and South Africa, Thailand, New Zealand, Vietnam, Indonesia and Australia.

## 1. DESCRIPTION OF FISHERIES

In 2019, the Cook Islands authorised two trawl vessels to operate in the SIOFA area. These vessels have been the only Cook Islands vessels in the fishery since 2012. Prior to 2012 three additional vessels were authorised to operate in various years. Historically, the Cook Islands have had no non-trawl gears operating in the Agreement area.

## 2. CATCH DATA

In line with confidentiality restrictions that prevent the disclosure of fishing activity where only two vessels are active, fine scale catch data is not presented for Cook Islands operations in the SIOFA area, as this data would form part of the public record of SIOFA.

The three key species captured and reported by weight in 2019 were: alfonsino (46%) orange roughy (33%), and cardinal fish (11%) (Table 1). These species comprised 90% of the total catch. Alfonsino has been the species most commonly caught in this fishery since 2006, with the exemption of the 2018 fishing season. Orange roughy has steadily remained the second highest catch in this trawl fishery for trawl gears. Fishing effort peaked in 2010 at 900 days fished by three Cook Islands vessels in the Agreement area. Overall effort has remained steady over recent years that picked up again in 2019 after a notable drop in 2018 due to one vessel not fishing for half the year.

**Table 1: Summary table of provisional catch composition and fishing effort (days) from 2001 – 2019 and catch composition of main species caught by Cook Island trawlers. See Appendix I for species code definitions**

Year	Effort (days)	Catch of major species proportionate to total catch									
		BYS	BWA	BOE	SSO	ONV	ORY	EPI	SEY	EDR	OTHER
2001	272	0.37	0.00	0.00	0.03	0.13	0.42	0.05	0.00	0.00	0.00
2002	293	0.36	0.00	0.00	0.01	0.14	0.47	0.01	0.00	0.00	0.00
2003	292	0.48	0.00	0.00	0.02	0.14	0.32	0.04	0.00	0.00	0.00
2004	276	0.41	0.00	0.00	0.00	0.13	0.42	0.04	0.00	0.01	0.00
2005	256	0.29	0.00	0.00	0.02	0.03	0.58	0.08	0.00	0.00	0.00
2006	468	0.61	0.00	0.00	0.00	0.01	0.25	0.06	0.04	0.01	0.01
2007	537	0.47	0.02	0.00	0.00	0.01	0.41	0.03	0.00	0.05	0.00
2008	553	0.52	0.01	0.00	0.00	0.02	0.34	0.04	0.00	0.08	0.00
2009	673	0.58	0.00	0.00	0.02	0.01	0.19	0.08	0.03	0.08	0.00
2010	900	0.67	0.01	0.01	0.00	0.02	0.18	0.02	0.04	0.05	0.00
2011	599	0.54	0.00	0.00	0.00	0.02	0.28	0.06	0.05	0.04	0.00
2012	490	0.75	0.01	0.00	0.00	0.02	0.18	0.04	0.01	0.01	0.00
2013	524	0.61	0.01	0.00	0.00	0.01	0.23	0.04	0.04	0.04	0.00
2014	523	0.66	0.01	0.00	0.00	0.02	0.19	0.07	0.03	0.01	0.00
2015	501	0.62	0.00	0.00	0.00	0.00	0.23	0.07	0.03	0.02	0.03
2016	455	0.57	0.00	0.00	0.00	0.00	0.20	0.17	0.01	0.03	0.01
2017	495	0.57	0.00	0.00	0.00	0.03	0.29	0.07	0.00	0.01	0.02
2018	301	0.31	0.00	0.00	0.00	0.01	0.57	0.02	0.00	0.06	0.03
2019	343	0.46	0.00	0.00	0.01	0.02	0.33	0.11	0.00	0.06	0.00

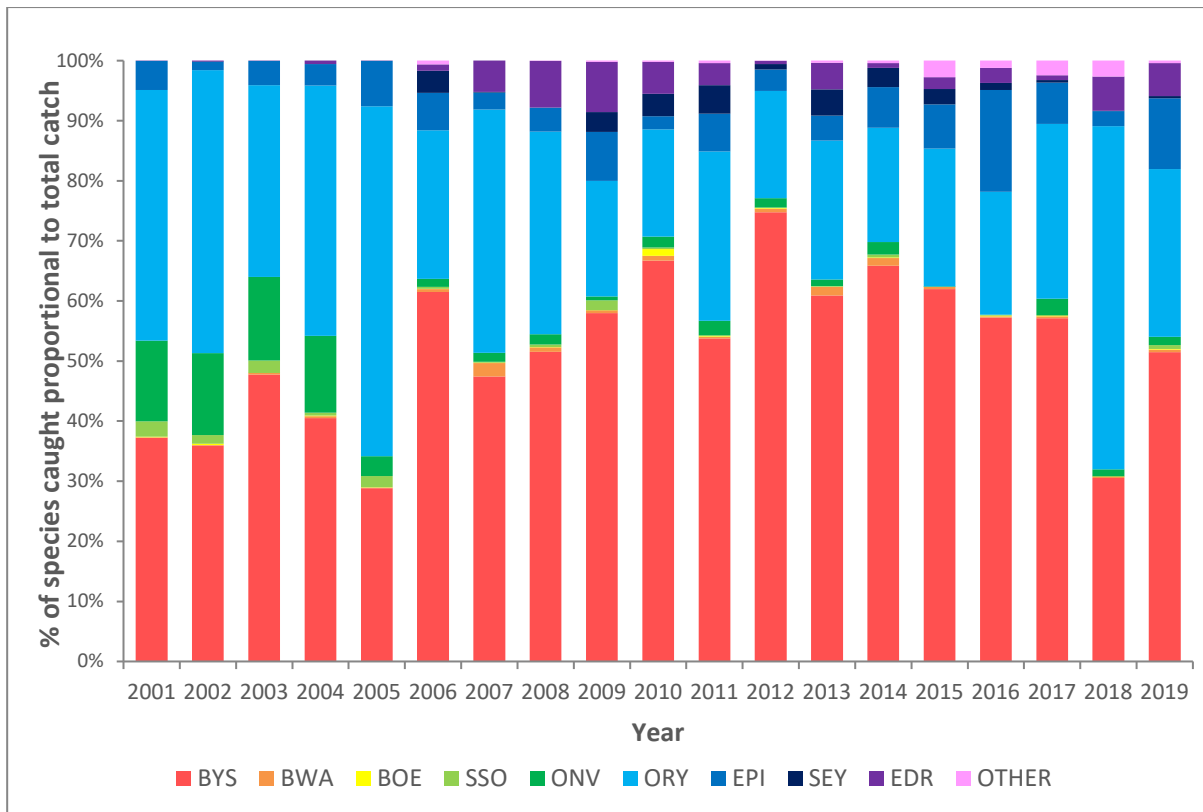


Figure 1: Proportion of by species in trawl catch by Cook Island vessels in the SIOFA Area from 2001 – 2019

Catch per unit effort (CPUE) of major target species is no longer being reported in the national report CPUE itself is not considered a reliable index of abundance for orange roughly.

### 3. FISHING EFFORT DATA

‘Midwater trawl’ is defined as fishing with a pelagic net designed for off-bottom fishing, but may include occasional contact with the sea floor.

The split in effort between bottom trawl and midwater trawls (Table 2) varies between years, and is driven by changing markets and exchange rates. The provisional number of midwater trawl shots for alfonsino has significantly increased from 2011 to 2019 with the exemption of 2018. Bottom trawling effort has experienced a gradual decline from 2011-2019, except in 2018 when there was a higher effort of bottom trawling.

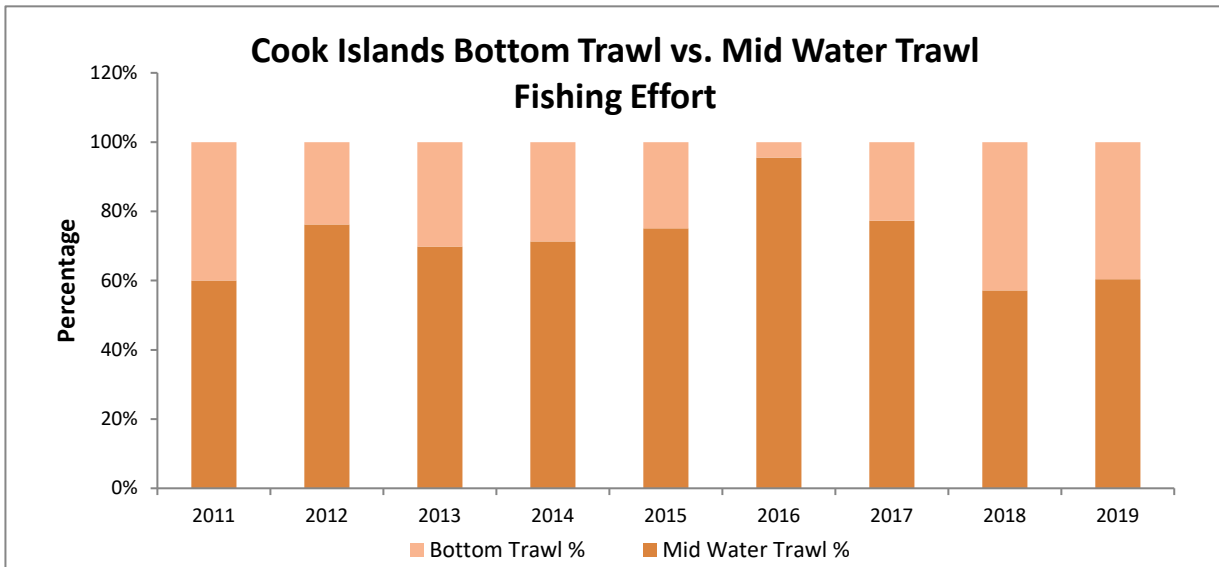


Figure 2: Provisional composition of Cook Islands Bottom Trawl Effort 2011-2019

Table 2 Cook Islands provisional vessel effort 2011-2019

Year	Total trawls	Midwater	Bottom	Days Fished	Days at sea
2011	1899	1088	728	590	664
2012	1781	1357	424	490	602
2013	1601	1118	483	524	636
2014	1971	1406	565	523	645
2015	2729	2050	679	501	604
2016	1999	1909	590	455	544
2017	1985	1534	451	495	627
2018	1569	897	672	317	387
2019	1468	887	581	287	428

In 2019 bottom trawling comprised 40% and mid water trawling comprised 60% of overall effort (Figure 2). Midwater trawling for alfonsino was consistently the major effort in the fishery from 2011 to 2019 for Cook Islands vessels.

In 2019, the Cook Islands vessels trawled for an overall estimated duration of 643 hours, with 329.5 hours midwater trawling and 313.5 hours bottom trawling.

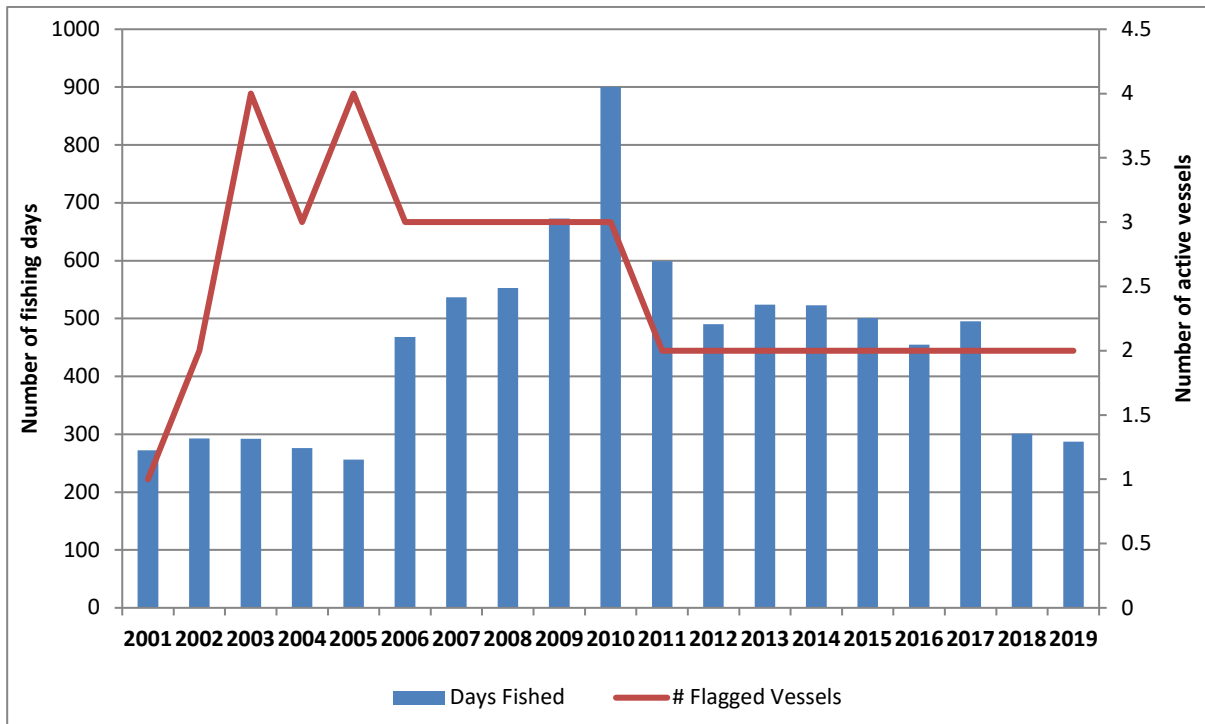


Figure 3: Trend in effort (fishing days) and number of CK flagged vessels from 2001-2019

#### 4. FISHERIES DATA COLLECTION

Cook Islands vessels are issued high seas fishing authorisations, in accordance with Section 21 and Section 35 of the Marine Resources Act 2005. Cook Islands regulations require vessels carrying high seas authorisations to record daily information on catch and effort, including position information.

In April 2019, Cook Islands trawl vessels commenced the use of electronic logsheets as a trial to record catch and effort information during fishing trips. The use of an eLogsheets streamlines the submission of catch and effort of a trip from the vessel to MMR's Offshore Division. The electronic format captures a range of catch and effort data in line with CMM 19-02. The timely transmissions and automated processes of the eLogsheets has also resulted in less administrative overhead for MMR since the trial's commencement. Original log sheets are still being sent to MMR for comparative purposes throughout the trial.

Cook Islands vessels unload in Mauritius or South Africa and are monitored by Cook Islands Observers, Fisheries Officers and officers from port State fisheries agencies. Landing information is sent to MMR in Rarotonga for oversight, verification and certification.

All vessels are required to carry automatic location communicators. Trawl vessels are prohibited from targeting sharks, but where sharks are caught in the normal operations of the vessel they are required to be handled in a manner that affords them the best chance of survival before release.

## 5. RESEARCH ACTIVITIES

All Cook Islands vessels follow the scientific data guidelines as described in 2006 FAO Fisheries Circular 1020, updated in 2012 (FAO 2012). The 2012 document includes sampling methods for alfonsino and recommendations on how to conduct acoustic surveys.

All Cook Islands vessels are required to undertake commercial fishing vessel surveys with calibrated echo-sounders, as recommended by the FAO Expert Consultations (FAO 2012) and the FAO Deepsea Guidelines (FAO 2009). A number of acoustic surveys on orange roughy were carried out in 2017 to overcome a quadrant failure in some data collected in 2016. In January 2017, FAO convened a workshop under the ABNJ program to review the acoustic studies in the Indian Ocean presented at SC-01, for review by the Meeting of the Parties at SIOFA III. The workshop provided an opportunity for experts to review and recommend further work in 2017.

In 2019, the Cook Islands provided 908 otoliths to be read for the 2020 alfonsino stock assessment. Additionally, in 2020 to assist the stock assessment, the Cook Islands undertook work to estimate provisional growth equations for otoliths taken from alfonsino in the 'East' of the assessment area. This will be presented as a working paper to the second Stock and Ecological Risk Assessment Working Group (SERAWG2).

## 6. VME THRESHOLDS FOR BOTTOM FISHING ACTIVITY

Cook Islands supports the protection of biodiversity, taking into account UNGA Resolution 61/105 and subsequent resolutions, which call on states to implement measures for the high seas in accordance with the precautionary principle and ecosystem approaches to fisheries management.

The Cook Islands notes that other RFMOs have progressed to spatial management as a standardised conservation and management measure to minimise bottom fishing impacts as being more effective than move-on rules, and supports the use of Benthic Protected Area (BPA) conservation closures to meet the requirements of Resolution 61/105.

Many areas in SIOFA are already identified and closed to Cook Islands vessels due to the potential for significant adverse impact on known VMEs by bottom trawling activity. Others are closed to Cook Islands vessels as a precautionary measure to maintain and protect biodiversity.

Findings by Cook Islands Fisheries Observers on board indicate that there have been low encounter rates with vulnerable marine benthic ecosystems by Cook Islands vessels.

MMR has developed an advanced encounter protocol with input from industry over a number of years to include holistic management approaches, either by moving off encounter areas, or more significantly by voluntary BPA fishing closures. Five BPA closures were implemented by the Meeting of the Parties in 2018. The Cook Islands maintains that a further seven areas should also be closed and these areas remain closed to Cook Islands vessels.

The Cook Islands fully supports the use of Benthic Protected Areas (BPA) conservation closures to meet the requirements of UNGA Resolution 61/105. Many areas in SIOFA are already identified and



closed to Cook Islands vessels due to the potential for significant adverse impact on known VMEs by bottom impact activity, and these are well known to Cook Islands vessels.

In 2019, Cook Islands vessels adhered to a VME threshold set by the Ministry of Marine Resources upon its trawl gears. This was superseded by the VME encounter threshold established in the interim CMM 19/01 section 12(b) when it came into affect in the second half of 2019.

**Table 3: Threshold levels for VME encounters and move-on protocols in areas other than BPAs for Cook Island vessels**

Gear/fishery	Thresholds	Move-on protocols
Trawl (CMM 19/01-12b)	More than 60 kg of live corals and/or 300 Kg of sponges in any tow.	For bottom or mid water trawling, or fishing with any other net – two miles either side of a trawl track extended by two (2) nautical miles at each end;
Trawl (MMR VME Threshold)	<p><b>First encounter:</b> 60kg of live coral and/or 400kg of live sponge</p> <p><b>Second encounter:</b> 30kg of live coral/and or 200kg of live sponge</p>	<p>First encounter breach:</p> <ul style="list-style-type: none"> <li>• Reported to the Director Offshore, Ministry of Marine Resources within 24 hours.</li> <li>• The Fisheries Observer on board must be immediately informed.</li> </ul> <p>Should any subsequent trawl within 1nm of the first encounter exceed the second encounter threshold, the vessel must <b>not fish within 5nm of the area</b> until Ministry of Marine Resources has completed its investigation.</p>

Cook Islands vessels intending to transit any Benthic Protected Area shall:

- a) Give at least 24 hours advance notice to MMR prior to entering or exiting any Benthic Protected Areas;
- b) Ensure their vessel monitoring system polls once every hour while in the Benthic Protected Area; and
- c) Require that fishing gear is properly stowed before entering, and in transit through, a Benthic Protected Area and not able to be deployed.

In 2019 a total of 581 bottom trawl shots were carried out by Cook Islands vessels, and based on provisional data no shots breached the VME threshold.

## 7. BIOLOGICAL SAMPLING AND LENGTH/AGE COMPOSITION OF CATCHES

Biological data has been collected from Cook Islands vessels since 2004. Data has been collected by vessel crews, Cook Islands Observers, or scientists on specific voyages. Length frequency distributions of orange roughy vary significantly within the SIOFA area, as reported in 2016 (SC-01-INFO- 15). In total 50,369 orange roughy were sampled for length, weight, sex and maturation from 522 target trawls shots between 2004 and 2015. This database has now increased to 66,400 samples following a

major increase in sampling during 2017. This was to provide data for age composition for the planned stock assessment. These fish were aged, and provide the first ever age composition data for a high seas orange roughy stock anywhere in the world.

## 8. OBSERVER PROGRAMME

In 2019 The Cook Islands National Observer Programme (CINOP) maintained 100% Observer trip coverage, with Cook Islands vessels in the SIOFA area completing a total of eight trips. Two of which were still ongoing at the time of this National Report submission.

MMR has also trained two additional Observers from the Pacific Islands Regional Fisheries Observers (PIRFO) Programme to carry out placements on Cook Island vessels.

An issue encountered by MMR Observers is the current visa restrictions to enter South Africa, making it impractical to easily deploy staff that do not hold Seafarers Books to vessels berthed in South Africa. In 2018 MMR issued Cook Islands Seafarers Books to alleviate the issue in relation to the deployment of Observers to the one vessel based in Cape Town.

**Table 4: Observer coverage summary table**

<b>Gear</b>	<b>Trip coverage (%)</b>	<b>Total No. sets/hauls</b>	<b>No. sets/hauls covered</b>	<b>Within set/haul coverage</b>	<b>Incidental bycatch (bird, mammal) observation coverage</b>
Trawl	100%	1,468	1,284	87%	87%

## 9. PORT SAMPLING AND INSPECTION PROGRAMME

Cook Islands vessels unload in either Cape Town or Port Louis. Entry and unloading at port is governed by the relevant Port State authorities under their domestic legislation. Unloadings from the vessel hold to cold storage were monitored by Cook Islands authorised Officers at port in Port Louis.

The Cook Islands does not have a port sampling programme as sampling is conducted onboard the vessel by the observer.

Competent Authority inspection by MMR Fisheries Officers in conjunction with dockside boarding and inspections are also conducted during the monitoring of unloading at Port Louis.. The Cook Islands has drafted significant legislative changes in recent years to achieve effective Competent Authority requirements. A full sanitary inspection was completed at the end of 2019 on both trawl vessels.

## 10. VESSEL MONITORING SYSTEM (VMS)

Cook Islands vessels are required by law to carry and operate approved ALC/MTU units. The installed systems poll once an hour via Inmarsat-C systems to the service provider, with the vessels monitored at the Oceans Monitoring Centre, MMR Rarotonga.

## Appendix 1

List of common and scientific names for main species caught by Cook Islands vessels.

FAO Code	Cook Islands Code	Common Name	Scientific Name
BYS	BYX	Alfonsino	<i>Beryx splendens</i>
BOE	BOE	Black Oreo	<i>Allocyttus niger</i>
SEY	BBF	Black Butter Fish	<i>Schedophilus velaini</i>
BWA	BNS	Blue nose	<i>Hyperoglyphe antarctica</i>
EDR	BOR	Boarfish	<i>Pentaceros richardsoni</i>
EPI	CDL	Cardinal Fish	Family Apogonidae
ORY	ORH	Orange Roughy	<i>Hoplostethus atlanticus</i>
SSO	SSO	Smooth Oreo Dory	<i>Pseudocyttus maculatus</i>
ONV	SOR	Spiky Oreo Dory	<i>Neocyttus rhomboidalis</i>

## Appendix 2

Benthic Protected Areas.

	Area	Coordinates			
		Lat (S)	Long (E)	Lat (S)	Long (E)
1	<i>Gulden Draak</i>	28° 00'	98° 00'	29° 00'	99° 00'
2	<i>Rusky</i>	31° 20'	94° 55'	31° 30'	95° 00'
3	<i>Fools Flat</i>	31° 30'	94° 40'	31° 40'	95° 00'
4	<i>East Broken Ridge</i>	32° 50'	100° 50'	33° 25'	101° 40'
5	<i>Mid-Indian Ridge</i>	13° 00'	64° 00'	15° 50'	68° 00'
6	<i>Atlantis Bank</i>	32° 00'	57° 00'	32° 50'	58° 00'
7	<i>Bridle</i>	38° 03'	49° 00'	38° 45'	50° 00'
8	<i>Walters Shoal</i>	33° 00'	43° 10'	33° 20'	44° 10'
9	<i>Coral</i>	41° 00'	42° 00'	41° 40'	44° 00'
10	<i>South Indian Ridge (North/South) this region abuts the CCAMLR-managed one to the south and lies between the South African EEZ around Prince Edward and Marion Islands to the west and the French EEZ surrounding Crozet Island to the east. The estimated points of contact with the EEZ areas are: 44°S, 40.878°E: 44°S, 46.544°E: 45°S, 42.124°E: 45°S, 45.711°E.</i>	44° 00'	40.878° 00'	44° 00'	46.544° 00'
		45° 00'	42.124° 00'	45° 00'	45.711° 00'
11	<i>Banana</i>	30° 20'	45° 40'	30° 30'	46° 00'
12	<i>Middle of What (MoW)</i>	37° 54'	50° 23'	37° 56.5. 5'	50° 27'