

# MACALISTER ELLIOTT AND PARTNERS LTD

## SURVEILLANCE VISIT REPORT FOR SARPC KERGUELEN TOOTHFISH FISHERY (*DISSOSTICHUS ELEGINOIDES*)

CERTIFICATE CODE: MEP-F-018

SURVEILLANCE YEAR 1

Undertaken by:

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27<sup>TH</sup> AUGUST 2014

MEP QA REF: 2150R06B



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## GLOSSARY

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ACAP	Agreement on the Conservation of Albatrosses and Petrels
CASAL	C++ algorithmic stock assessment laboratory
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
COPEC	Contrôleur de Pêche
CoC	Chain of Custody
CROSSRU	Ministère de l'Écologie, du Développement durable et de l'Énergie: Centre régional de Surveillance et de Sauvetage de La Réunion
C3P	Comité de Pilotage des bonnes pratiques de pêche – TAAF (Fisheries Best Practice Steering Committee)
DMSOI	Ministère de l'Écologie, du Développement durable et de l'Énergie: Direction de la Mer - Sud de l'Océan Indien
DAIMA	TAAF: Direction des Affaires Internationales de la Mer et de l'Atlantique (Service Pêche)
DCPM	TAAF: Direction de la Conservation du Patrimoine Naturel (TAAF)
DPMA	Ministère de l'écologie, du développement durable et de l'énergie: Ministère délégué chargé des Transports, de la Mer et de la Pêche: Direction des Pêches Maritimes et de l'Aquaculture (in Paris)
HIMI	Hear Island and MacDonal Island (Australia)
MNHN	Muséum National d'Histoire Naturelle (in Paris)
PCR	Public Certification Report (PCR)
SARPC	Syndicats des Armements Réunionnais de Palangriers Congélateurs
TAAF	Terres Australes et Antarctiques Françaises
UoC	Unit of Certification
VME	Vulnerable marine ecosystems
WG-FSA	CCAMLR working group on Fish Stock Assessment

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**1. GENERAL INFORMATION**

Fishery Name	SARPC toothfish			
Unit of Certification	SARPC member vessels targeting toothfish by bottom set longline in the TAAF EEZ (Kerguelen only).			
Species	Toothfish ( <i>Dissostichus eleginoides</i> )			
Area	TAAF EEZ (Kerguelen only)			
Method of capture	Bottom-set longline			
Client Address	SARPC c/o SAPMER			
Client Contact Name	Justine Méhaut - SAPMER Darse de Pêche, Le Port, La Réunion 97823 - France			
Client Telephone No.:	+262 2 62 42 02 73			
Client Email	Qualite@sapmer.com			
Certificate number	MEP-F-018			
Certificate Issue Date	3 September 2013			
Certificate Expiry Date	2 September 2018			
Audit stage	Year 1	Year 2	Year 3	Year 4
Audit experts	Expert 1 (Team Leader): Dr Sophie des Clers Expert 2: Chrissie Sieben Expert 3 : Dr Jo Gascoigne			
Surveillance Audit Date	27th August 2014			
Conclusion	The overall conclusion is that the client group has made significant progress since its certification and while it is on target for three of its conditions, the team concluded that the fishery was behind target for the condition on the formulation of a draft management plan. The client group is on target with its non-binding recommendations. Two recommendations were added for the presentation of information regarding 1) the quantities of bait used and 2) the quantities of hooks and lines lost during fishing operations.			

## 2. INTRODUCTION

This report outlines the process and outcome of the first annual surveillance audit for the MSC certified fishery ‘SARPC toothfish’. The fishery is conducted by member vessels of the fishing group of companies Syndicat des Armements Réunionnais de Palangriers Congélateurs (SARPC), based in Réunion (see Table 1 for a list of vessels). The certified fishery takes place in the EEZ of the Terres Australes et Antarctiques Françaises (TAAF - French southern and Antarctic lands) around the island of Kerguelen in the Southern Ocean using bottom-set longlines. Note that the vessels also prosecute a fishery for toothfish around the island of Crozet, which is not included in the Unit of Certification.

**Table 1. List of the seven longliners included in the UoC of the SARPC toothfish fishery**

Fishing company	Vessel(s)
SAPMER	Albius, Croix du Sud I, Mascareignes III, Ile Bourbon
Cap Bourbon	Cap Horn I
SNC COMATA	Ile de la Réunion
Pêche Avenir	St. André

This audit is the first annual surveillance audit for the fishery since certification, achieved in September 2013 following a lengthy assessment, which commenced in October 2009. The on-site audit was carried out on the 27th August 2014 by Dr Sophie des Clers (Team leader) and Chrissie Sieben. Dr Jo Gascoigne, team leader during the initial assessment, also contributed to the surveillance report.

This fishery was certified, subject to four conditions, summarised in Table 2, as well as five non-binding recommendations, summarised in Table 3, and detailed in the [Public Certification Report](#). An in-depth discussion of the client group’s progress against both is provided in sections 1 and 0.

**Table 2. Conditions for the SARPC toothfish fishery**

Condition
<u>Condition 1:</u> PI 1.2.4 – Assessment of stock status (Harvest Strategy) - stock assessment By the end of the five-year certification period, the fishery must have in place a sustainable stock assessment process.
<u>Condition 2:</u> PI 2.1.1, 2.1.2 and 2.1.3 – Retained species outcome, management and information A monitoring system needs to be put in place for grenadiers and rays, appropriate to the scale of the fishery, which will provide indication of possible risks to the stock. The assessment team needs to see evidence of the systematic implementation of the code of conduct. A process of review and revision of the code of conduct in the light of trends in the fishery is required. The fishery should provide data on catch of rays and grenadiers at each annual audit.
<u>Condition 3:</u> PI 2.3.1 – ETP species outcome (grey petrels) Declines in bird mortality need to continue until all vessels are performing at the best possible level. In addition, a monitoring system is required to identify the level of risk posed by the fishery to the Kerguelen grey petrel population, including specific bycatch targets for grey petrels. Figures for estimated bird bycatch by species and by vessel should be provided at each annual audit
<u>Condition 4:</u> PI 1.2.2 Harvest control rules, 3.2.1 Fishery-specific objectives and 3.2.2 Decision-making processes Produce a management plan for this fishery, focusing on the management of the toothfish resource (i.e. P1).

**Table 3. Summary of recommendations for the SARPC toothfish fishery**

Recommendation
<u>Recommendation 1:</u> PI 1.2.3: It is recommended that SARPC investigates the utility of equipping all the vessels with tag detectors, as is reported standard in the HIMI zone.
<u>Recommendation 2:</u> PI 2.1.2: In addition to the condition, it is recommended that further information is sought, either from a desktop review or from field studies, on the survivorship of rays at Kerguelen after being cut off the line. On the basis of this information, the conservation strategy for rays could be reviewed.
<u>Recommendation 3:</u> PI 2.3.2: It would be useful to evaluate the effectiveness of the measures to limit seabird mortality, and of individual vessels, in relation to grey petrels specifically, and if necessary re-focus on those measures which reduce mortality of grey petrels in particular.
<u>Recommendation 4:</u> PI 2.4.2: It is recommended that research be continued into the mapping of benthic

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habitats and the identification of VMEs at Kerguelen.
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<b>Recommendation 5: PI 2.5.1:</b> It is recommended that research into the Kerguelen ecosystem and the role of toothfish within it should continue.
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The main purpose of the annual surveillance audit process is to review progress in meeting the conditions as set out in the Client Action Plan (a part of the certification process, see the [Public Certification Report](#) for this fishery) as well as progress against the non-binding recommendations. The audit team also reviewed the most recent information on the fishery to see if there had been any significant changes since certification.

Stakeholders were informed of the scheduled site visit, its time and location and the proposed audit team on the 19<sup>th</sup> August 2014. No comments or requests for interviews were received. The following people were met during the Year 1 Surveillance Audit:

Name	Organisation
Justine Méhaut	SAPMER – SARPC contact person
Eric Mostert	CROSS de La Réunion
Cédric Marteau	TAAF, Direction Conservation du Patrimoine Naturel
Thibaut Thellier	TAAF, Chargé de mission, Suivi environnemental des pêcheries
Michel Albin	Cap Bourbon
Jean-Pierre Kinoo	Cap Bourbon
Graziella Jan	Cap Bourbon
Yannick Lauri	SAPMER
François Leray	SAPMER
Yvonick Lestrehan	Capitaine Albius
Sylvain Raithier	SNC COMATA
Laurent Virapoullé	Pêche-Avenir SA
Guy Ferrant	Equipe Albius
Michel Quinquis	Equipe Albius
Romain Sinegre	Museum National d’Histoire Naturelle (MNHN) via email
Sophie des Clers	MEP
Chrissie Sieben	MEP

The fishery remains in conformance with the Scope Criteria relating to unilateral exemption and destructive fishing practices (Certification Requirements v1.3, Section 27.4.4).

### 3. PRINCIPLE 1

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#### 3.1. BACKGROUND

The target species is the Patagonian toothfish, *Dissostichus eleginoides* (also known as Chilean seabass), a benthic-pelagic species, which inhabits sub-Antarctic waters near the Antarctic Convergence in the Pacific, Atlantic and Indian Oceans (see Public Certification Report for more detail). The fishery is subject to an annual TAC split into vessel quotas, formally set by the TAAF Préfet (see Principle 3), taking into account the scientific advice of MNHN, as well as the ‘avis’ of three ministries of the French government responsible for fisheries, overseas territories, and foreign affairs.

The TAC for the Kerguelen fishery has been fixed at 5,100 tonnes since 2008, with an extra 245 and 235 tonnes of toothfish for the POKER trawl research campaigns (2006 and 2010). It was originally fixed at this level because semi-quantitative analysis by the MNHM based on the first POKER research cruise in 2006 suggested that the corresponding level of fishing mortality was allowing the stock biomass to recover from an unknown but high level of illegal fishing in the late 1990s and early 2000s. As of 2010 a more quantitative stock assessment has been made using the CASAL (C++ algorithmic stock assessment laboratory) statistical stock assessment tool. The assessment was accepted in 2012 by CCAMLR as a basis for TAC advice in the short term.

The 2011 Code of Conduct for best fishing practices prescribes the setting of short (maximum of 9000 hooks) “test” lines when first fishing any area, in order to determine the presence of undersized (<60cm) toothfish. When the proportion of small fish is greater than 10% the vessel has an obligation to move on.

#### 3.2. SITUATION UPDATE

In 2013, the CCAMLR Fish Stock Assessment working group (FSA-WG) carried over the previous year’s recommendation that “until a more robust stock assessment is undertaken, the model described in WG-FSA-12/09 could be used to provide management advice for the 2012/13 season, and that the current catch limit of 5100 tonnes could be used as management advice for 2012/13”. No updated stock assessment was presented for toothfish in Kerguelen at the CCAMLR WG-FSA in October 2013; however, Romain Sinègre, newly recruited stock assessment specialist at the MNHN, has developed a revised model in collaboration with Australian government fisheries scientists, which is submitted for presentation to the CCAMLR WG-SAM and WG-FSA in October 2014; this is further discussed under Condition 1 (Table 10).

The new model has been calibrated with information collected by the 2013 trawl research campaign (POKER 3), by on-going toothfish tagging and recapture data and with life-history parameters used in the stock assessment for Heard Island (see CCAMLR, 2013 Kerguelen Fisheries report TOP5851). Fishing is forbidden in areas shallower than 500m depth and adults are present down to 2500m. Estimates from the POKER 3 cruises, which explore depths between 100m and 1000m, therefore correspond mostly to a biomass of juveniles little targeted commercially. The POKER 3 biomass for toothfish (Table 4) was estimated using state of the art techniques and validated with in collaboration with Australian scientists. It was the highest of the three campaigns.

**Table 4. Biomass estimates from POKER trawl research campaigns - Toothfish**

Species	POKER 1 (2006)	POKER 2 (2010)	POKER 3 (2013)
<i>Dissostichus eleginoides</i>	102,220	62,399	110,895

\*Excluding Skif Bank

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In the absence of a new assessment model, the CCAMLR TAC recommendation was carried over for the 2013/14 season that finished in August 2014, with an addition of 50 tonnes for the Kerguelen TAC towards the Poker 3 cruise. The TAC, vessel quotas and landings (in tonnes) recorded by the SARPC for the last three fishing seasons (1st Sept. to 30th Aug.) are given in Table 5. Annual TACs are adjusted to correct for vessel quotas under and overshoots in the past three seasons. The season 2011/12 was a very difficult year due to the passing of a captain from a heart attack and damage to three boats during the fishing campaign. During normal operations, a vessel exceeding its quota allocation incurs a heavy penalty consisting of a reduced allocation for the following year as well as a ‘surtaxe’ for the overfished amount (10 times the quota fee).

Note that since the 2012/13 fishing season there has been a TAC increase of 50 tonnes for Kerguelen through the TAAF’s multi-criteria vessel allocation system. It is unclear whether this increase reflects a smoothing of uncaught TAC from the previous two years, or is due to the criteria system. This is further discussed under condition 4 (Table 13).

**Table 5. Total Allowable Catch, landings (tonnes), days at sea and days fished at Kerguelen for the last three seasons to 2013/2014 (1<sup>st</sup> September to 31<sup>st</sup> August)**

	2011/12	2012/13	2013/14
<b>TAC (tonnes)</b>	5,100.00	5,150.00	5,141.45
<b>Toothfish landings (tonnes)</b>	4,893.66	5,160.73	5,118.61
<b>Days at sea</b>	1,490	1,562	1,449
<b>Days fished</b>	836	904	794

## 4. PRINCIPLE 2

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### 4.1. BACKGROUND

Fishing is by bottom set-longlines, with hooks baited with mackerel, horse mackerel and squid. Fishing is forbidden in territorial waters, waters shallower than 500m and in protected areas. Lines are set from 500 m down to ~2000 m depth and are now always deployed at night to mitigate bird mortality.

Catch and observed data are kept and analysed by the TAAF. The fishery has a bycatch consisting of three groups of taxa: grenadiers (macrourids, mainly *Macrourus carinatus*), rays (mainly *Bathyraja eatonii* and *B. irrasa*) and *Antimora* spp. Both grenadiers and rays were assessed as retained bycatch while *Antimora* spp were assessed as discards. The main tool for management of bycatch is a code of conduct prepared by MNHN in 2011, integrated into the fisheries regulations of 2012) (see Public Certification Report for further details). Other measures to relating to bycatch include:

- Discards, with the exceptions of sharks and rays, all species caught are required to be brought into the factory aboard the vessels, sorted and their catch reported in logbooks before discard.
- Live rays and crustaceans should be released live if possible, immediately after being de-hooked according to CCAMLR protocol.
- Sharks cannot be targeted and should be released alive if possible.
- Discards are estimated by observers.
- Lines must not be hauled in the presence of orcas (to avoid depredation). Hauling must stop if orcas are sighted.
- There must be no discarding at sea of plastic, rubbish or hooks
- Discards of bait or non-target species takes place away from lines
- No discarding in waters <500m

**Bird mortality** was identified as a key issue for this fishery under the ETP species component. Although bycatch of albatrosses substantially reduced by limiting fishing operations to night time, there was concern about interactions with the white-chinned petrel (*Procellaria aequinoctialis*) and grey petrel (*Procellaria cinerea*), both of which forage at night. Measures to limit seabird mortality in this fishery include:

- Prohibition on day-time longlining
- Closed season from 1 February to 15 March
- Vessels' performance in reducing incidental bird mortality is included in annual toothfish vessel quota allocation criteria.
- TAAF Seabird Action plan which includes provisions on weighted lines, use of streamer lines during setting and Brickle curtain during hauling to scare birds away, discarding of offal and food waste etc. Vessels cannot discard dead birds and must provide data on bird interactions and mortality after each trip (cf. Public Certification Report).

## 4.2. SITUATION UPDATE

### 4.2.1. Retained and discarded species

The technical measures pertaining to Principle 2 for this fishery have been updated with a new TAAF regulation for the 2014/15 season (Arrêté n°2014-78 du 19 Août 2014), which replaces the 2012 Arrêté n°2012-78.

The TAAF enforced monitoring system for bycatch is fully functional for all retained species, including grenadiers and rays. Throughout the fishing season 25% of the lines hauled are checked by scientific observers (COPEC) on board each vessel. The 2011 MNHN Code of Conduct for bycatch (retained and discarded species) has been developed further for rays. It now integrates CCAMLR’s colour photographic identification guide for the severity of wounds for rays (4 states: 4-good, 3-average, 2-bad, 1-dead). All rays must be cut off the line during hauling, assessed for tags and state, the hook removed, put back if health state 3 or 4, kept to be processed or discarded at a later stage otherwise. The vessel has an obligation to move on by more than 2.5 nautical miles if more than 50 rays are caught /1000 hooks in any one line. The Code of conduct for rays/skate is now supplemented by the CCAMLR picture guide to assess chances of survival as the fish is being hauled in with the line. The guide is annexed to the new Fisheries regulation (arrêté n°2014-78) and the cut off and move on rule mandatory is mandatory for the season 2014/15.

A decrease in numbers caught and the numbers cut off over the last three seasons show obvious improvement in reducing the fishery’s impact on rays (Figure 1).

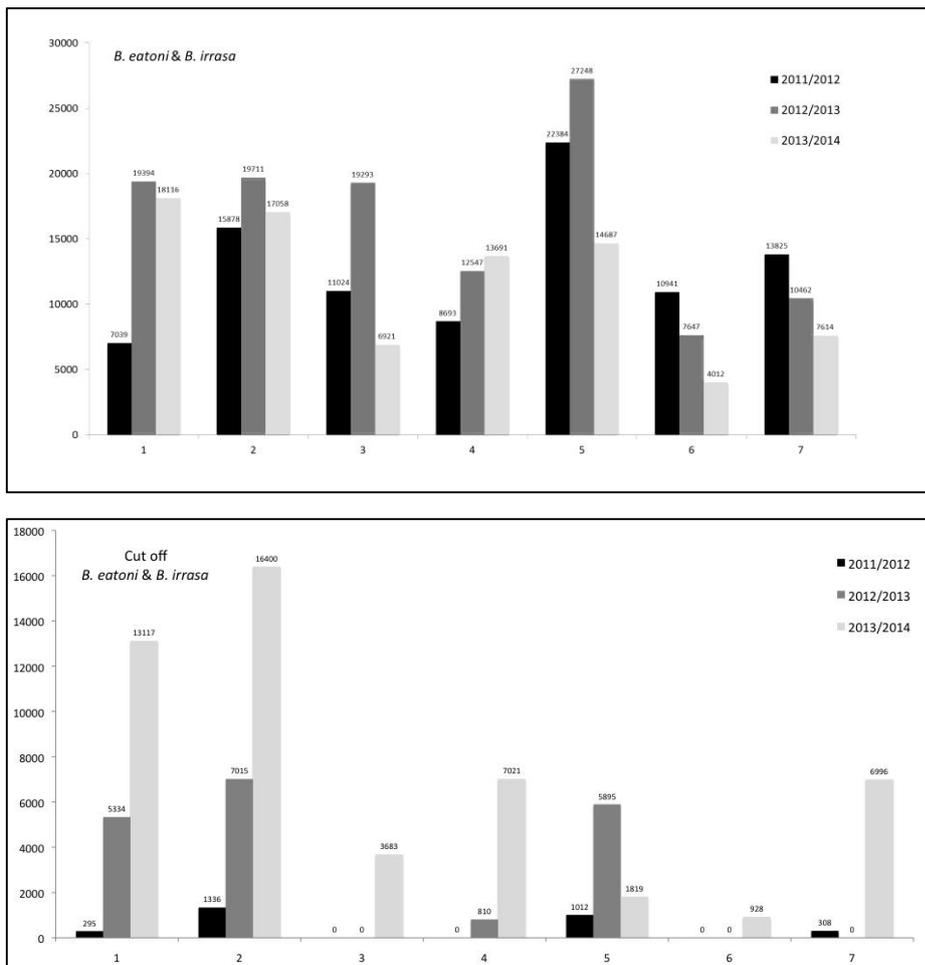
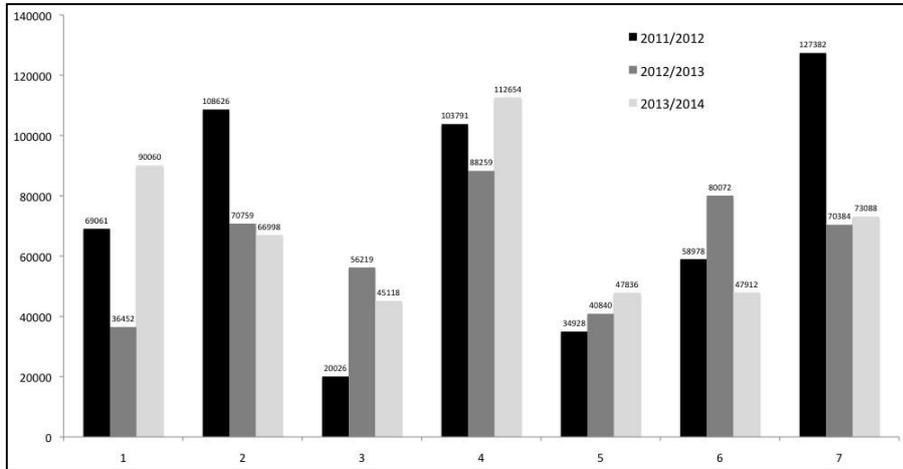


Figure 1. Numbers of rays (*B. eatoni* and *B. irrasa*) caught (top) and released cut off (bottom graph) by each vessel in the last three seasons

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By contrast, the numbers of grenadiers caught have not decreased markedly across the fleet (Figure 2), in large part because the vessels are fishing further away for the coast and/or in deeper waters to avoid rays and birds.



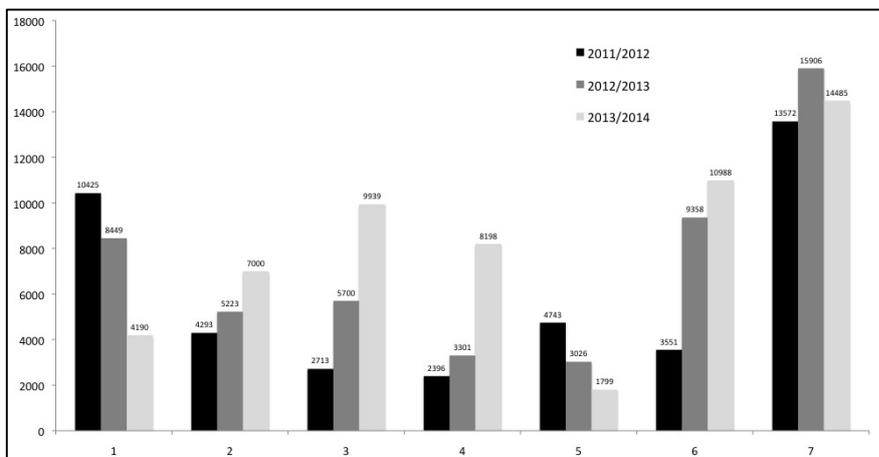
**Figure 2. Numbers of grenadiers (*Macrourus carinatus*) caught by each vessel in past three seasons (TAFF)**

Biomass estimates for the main retained and discarded species were obtained from the 2013 POKER 3 research campaign, and were compared with those from the previous two POKER campaigns (Table 6 and Table 7). We note that - as explained in the Public Certification Report, these estimates are likely to be biased by the POKER sampling strategy (trawls in relatively shallow waters), which may not be completely suitable for these types of deep-water species). Differences between campaigns are not considered to be indicative of the state of the deeper water species (Poker 3 report, 2014).

**Table 6. Biomass estimates from POKER trawl research campaigns – rays and grenadier**

Species (tonnes)	POKER 1 (2006)	POKER 2 (2010)	POKER 3 (2013)
<i>Bathyraja eatonii</i>	15,872	18,921	15,220
<i>Bathyraja irrasa</i>	5,315	9,203	8,918
<i>Macrourus carinatus</i>	4,604	5,836	4,077

\*Excluding Skif Bank



**Figure 3. Numbers of Antimora (*Antimora rostrata*) caught by each vessel in past three seasons (TAFF)**

**Table 7. Biomass estimates from POKER trawl research campaigns - Antimora**

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Species	POKER 1 (2006)	POKER 2 (2010)	POKER 3 (2013)
<i>Antimora rostrate</i>	778	1,244	607

In the absence of stock assessment for the sustainable production of these species, there are no set targets, and TAAF’s policy is for vessels to avoid catches of rays. The information per vessel is discussed with the captains and some information is shared between vessels to avoid areas and depth of higher catches as much as possible.

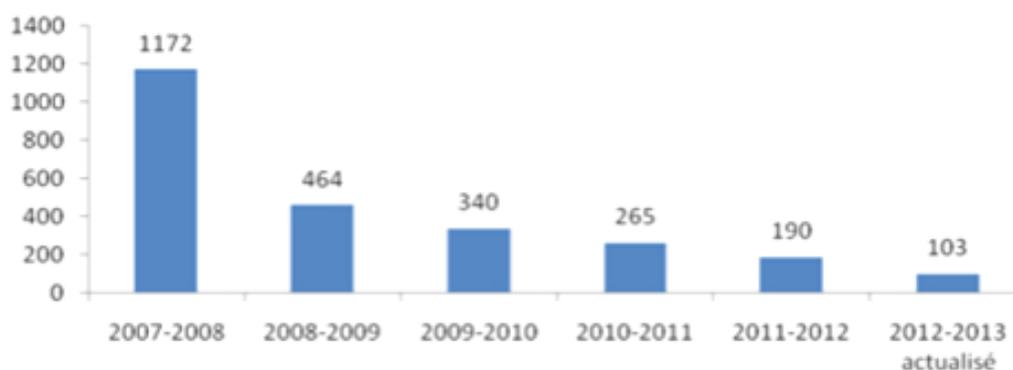
**The quantities and species of bait used were brought up during discussions with the client group. The team made a recommendation that annual summaries are compiled for the next surveillance audit.**

### 4.2.2. ETP species

Bird mortalities in the Kerguelen and Crozet fisheries are reported annually using the CCAMLR protocol to ACAP (Agreement on the Conservation of Albatrosses and Petrels) as part of its Action Plan to collect reliable data to allow the accurate estimation of the nature and extent of interactions worldwide between ACAP-listed species and fisheries (ACAP, 2013a).

There has been a steady downward trend in the numbers of birds caught accidentally by the longline fishery in the Kerguelen EEZ since 2008 (Figure 4), and particularly over the last three seasons both in absolute numbers and rate per hooks set (Table 8). Numbers reported to ACAP and CCAMLR (WG-FSA-13/68 Rev. 1) differ from SARPC figures for several reasons, in particular:

- TAAF numbers are raised to account for the fact that i) only 25% of the lines are being fully observed and that ii) all birds coming into contact with gear are considered killed (CCAMLR protocol); SARPC only count numbers of birds observed as they are found on the lines;
- CCAMLR statistical year (1<sup>st</sup> December to 31<sup>st</sup> November) differs from that of the TAAF (1<sup>st</sup> September to 31<sup>st</sup> August) and is numbered by the end year, as opposed to SARPC that uses the start year, for example, CCAMLR statistics year 2013 corresponds to 1<sup>st</sup> December 2012 to 31<sup>st</sup> November 2013, and SARPC data year 2013 corresponds to 1<sup>st</sup> September 2013 to 31<sup>st</sup> August 2014.



**Figure 4. Total estimated number of birds caught during the Kerguelen toothfish longline fishery operations (Adjusted for on-board observation rate and CCAMLR season, from TAAF)**

TAAF and SARPC members are pursuing their systematic efforts to reduce bird mortality in the fishery, through a number of conservation measures, precise observations of accidental bird mortalities and interactions with fishing gear are recorded by on-board observers and by crew and skippers. The TAAF is moving to a risk-based approach for its Action Plan, with an identification of locations, times

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of the year and fishing practices (e.g. longer lines, shallower waters) posing higher risks, and is working with vessel owners, skippers and crew to communicate and further develop best practice (ACAP, 2013b). The data are analysed, presented and discussed with poorly performing vessels after each fishing trip by the TAAF and presented annually at the C3P annual meetings in order to share best practice (see Principle 3).

**Table 8. Bird mortality recorded by SARPC and estimated total reported to CCAMLR and ACP**

Fishing season	2011/12	2012/13	2013/14
Fishing days (TAAF season)	836	904	794
Fishing days (CCAMLR season)	953	914	928
Number of hooks set (CCAMLR-STALAN)	25,294,727	27,216,492	23,967,288
SARPC Number of birds killed	121	56	26
SARPC Bird mortality rate per 1 million hooks	4.78	2.06	1.08
TAAF estimated bird mortality*	190	103	52**

\*CCAMLR year runs from 1<sup>st</sup> December and SARPC fishing season from 1<sup>st</sup> September; \*\* from TAAF pre-CCAMLR 2014 meeting.

Bird mortality is one of the conservation criteria in the formula to adjust annual vessel toothfish quotas (cf. C3P presentation, August 2014). Therefore it is important that the TAAF and SARPC share a common database including the data submitted to ACAP and CCAMLR, and the data used to compute vessel performance indicators. This will improve transparency and SARPC's vessel partnership contribution to the bird mortality reduction Action Plan.

There are several measures in place to avoid attracting marine mammals to the fishery operations. In Kerguelen waters, hauling is forbidden or must be immediately stopped in the presence of orcas or other whales to avoid depredation behaviour (see PCR report). Fishing operations reported no capture of marine mammals.

There has been a reduction in the length of fishing trips as vessels have an interest in keeping trips, and therefore costs, as short as possible to avoid rough seas and poor weather. A decrease in interactions with ETP bird and cetacean species from best practice enforced and shared between vessels resulted in fewer mandatory move on actions and fewer fishing days.

### 4.2.3. Habitats and ecosystems

The initial assessment concluded that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. A recommendation was made, however, to continue research into the mapping of benthic habitats and the identification of VMEs at Kerguelen (PI 2.4.2 Habitats management, see section 0). A specific research cruise was tentatively programmed in 2013, but in the absence of funding, some data and benthic specimens were collected during POKER 3.

Taking effect in the 2014/15 fishing season, the TAAF have introduced technical measures (TAAF arrêté N° 2014-78) to keep on board all benthic specimens found on the 25% of lines examined in detail by the COPEC. The specimens will be identified and classified as from VMEs according to the CCAMLR guide annexed to the arrêté. Any rare specimen spotted by the crew will be reported. A limit of 10kg/1000 hooks is now set to trigger a move on rule (2.5 nautical miles).

Observer reports consulted during the surveillance audit include a summary of the numbers of hooks set, hauled and the number of lost hooks. The potential effect is deemed important enough for the TAAF to include hook loss as a new criterium in its vessel quota allocation formula from the 2014/15 season. **It is therefore recommended that, for the next annual surveillance audit, SARPC and TAAF compile an annual summary per vessel per trip, similar to that for rays and for bird**

species, in order to assess the magnitude of hook and leaded line losses, discuss potential effects on the ecosystem, and develop guidance for best practice.

## 5. PRINCIPLE 3

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### 5.1. BACKGROUND

The TAAF is an administratively and financially autonomous territory, designated as a French ‘PTOM’ (pays et territoires d’outre-mer – overseas territories and countries). The TAAF administrative services based in La Réunion are headed by a senior administrator appointed by the French central government represented in the territory by the Préfet. In relation to the fishery, management decision-making is the responsibility of the Préfet of the TAAF, after consultation with the three ministries concerned.

The Commission on the Conservation of Antarctic Marine Living Resources (CCAMLR) is the regional fisheries management organisation (RFMO) for the Southern Ocean, including the Kerguelen and Crozet TAAF. CCAMLR has a Scientific Committee, made up of scientific representatives from the member countries of the Commission. The Scientific Committee convenes Working Groups (WG), in particular WG-SAM for statistics and assessment methods, WG-FSA for fish stock assessment, and WG-IMAF for incidental mortality associated with fisheries.

The French Natural History Museum (Muséum National d’Histoire Naturelle -MNHN) based in Paris provides scientific advice for this fishery. The MNHN has a research laboratory that focuses mainly on the marine and fisheries ecology of the TAAF sub-Antarctic area and maintains the PECHEKER database, which contains all fisheries data available for Kerguelen. The MNHN also operates the periodic POKER research cruises for the TAAF (POKER 1 – 2006, POKER 2 – 2010, POKER 3 – 2013).

Each of the seven SARPC vessels in the fishery has a “contrôleur de pêche” (COPEC - fishing controller employed by the TAAF) on board, who has a dual role in enforcement and scientific data collection and is tasked to examine 25% of the longlines hauled.

The Centre régional opérationnel de surveillance et de sauvetage en mer – La Réunion (CROSSRU - part of the DMSOI de la Réunion et des îles Eparses) is the organisation responsible for MCS in this fishery. CROSSRU has the use of a dedicated satellite surveillance system (all vessels are equipped with a tamper-proof VMS system) including radar, organises surveillance patrols, shares intelligence with Australia (for the Heard Island toothfish fishery on the Kerguelen Plateau) and cooperates on Port State measures at regional level. The special status of TAAF means that all fishing vessels, French registered or otherwise, land their catch in sealed containers that are systematically inspected on landing at La Réunion.

### 5.2. SITUATION UPDATE

The team noted some confusion regarding the precise details of the vessel quota allocation criteria used by TAAF to reward contributions, and conversely penalise any contravention, to its conservation policy. TAAF’s conservation measures, regarding birds and rays especially, have been embraced by SARPC vessels, but there is still no public document issued by the TAAF that gives clear details and justification of vessel quotas changes from year to year.

TAAF holds a Comité de Pilotage des bonnes pratiques de pêche (C3P - Fisheries Best Practice Steering Committee) meeting annually with vessel captains and vessel owners (armements) to discuss vessel performance for the past fishing season and implications for the next one. There is currently no publicly available agenda or meeting minutes. The Australian Heard Island and MacDonald Island

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toothfish fishery (HIMI) MSC certification has a condition under Principle 3 Management Systems and related to PI 3.1.2 (cf. PCR and surveillance reports<sup>1</sup>), to “exchange more information about the French consultative process”.

Consultation is also a pre-requisite to devise a Management Plan, under condition 4. The team noted that MNHN scientists met with SARPC in 2013 to present development of the resource assessment models presented at CCAMLR. However, MNHN staff were not present at the C3P meeting in 2014 when guidelines regarding the TAC were presented by the TAAF, which appear to be in contradiction with MNHN findings of a healthy biomass. It would be beneficial for the C3P process to be more transparent and more positive in showcasing the significant joint conservation achievements of TAAF and SARPC and the latest scientific advice from MNHN. This is a key aspect to developing an effective Management system under the condition 4, for which consultation has not yet started (Table 13).

The details of fishing licences and toothfish quotas in the Kerguelen EEZ awarded to each company or vessel each year through a “Décision” (or bylaw) of the Préfet are published in the TAAF Official Journal (see Table 9).

**Table 9. Fluctuations in Kerguelen toothfish quota allocations for each vessel in the client group.**

Vessel name	2011/12	2012/13	2013/14
Albius	728.99	724.32	729.77
Croix du Sud I	707.21	702.66	696.45
Ile Bourbon	701.34	731.99	733.81
Mascareignes III	720.33	705.11	715.29
Cap Horn I	833.28	849.36	833.84
St. André	655.08	631.03	607.50
Ile de la Réunion	753.77	805.54	824.80

During normal operations, a vessel exceeding its quota allocation incurs a heavy penalty consisting of a reduced allocation for the following year as well as a ‘surtaxe’ for the overfished amount (10 times the quota fee). However, a vessel quota undershoot also carries a penalty.

According to the CROSSRU, SARPC vessels contribute actively to the MCS effort against IUU while steaming and when fishing in the zone. None of the vessels in the fleet had reported non-compliance records.

IUU activities are still seen as a threat, with occasional radar sightings on the High Seas at the edge of the Kerguelen or the HIMI EEZ and surveillance is reinforced outside the fishing season. There have been no IUU catches estimated since 2011 (CCAMLR, 2013 Fishery Report).

<sup>1</sup> [http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/southern-ocean/heard\\_island\\_and\\_mcdonald\\_islands\\_himi\\_toothfish/assessment-downloads-1/20140827\\_SR\\_TOO227.pdf](http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/southern-ocean/heard_island_and_mcdonald_islands_himi_toothfish/assessment-downloads-1/20140827_SR_TOO227.pdf)

## 6. CONDITIONS AND ACTION PLAN

The most important aspect of the annual audit is to assess progress with the Action Plan towards meeting the conditions. The SARPC toothfish fishery was certified with four conditions, which are further detailed in Table 10 to Table 13).

**Table 10. Condition 1 - Sustainable stock assessment process**

PI	1.2.4 – Stock assessment
Condition	By the end of the five-year certification period, the fishery must have in place a sustainable stock assessment process which i) evaluates the fishery with reasonable regularity; ii) is used to inform decisions about the level of the TAC by TAAF and other stakeholders and iii) is presented for regular review by CCAMLR WG-FSA.
Timeline	Year 1: Implement WG-FSA workplan. Start to put in place resources (financial and human) to ensure that the stock assessment process is sustainable. Year 2: Finalise the establishment of a sustainable, long-term stock assessment process, which will i) evaluate the resource on a regular basis; ii) provide the main input into scientific advice on management, notably the level of the TAC; and iii) work with CCAMLR WG-FSA and other bodies as appropriate. Year 3 and ongoing: Continue stock assessment process as integral part of fisheries management system
Action Plan	1. Implement WG-FSA work plan (2012) and submit a report to WG-FSA 2013 and if necessary to WG-FSA 2014 in order to finalise the establishment of a sustainable, long term stock assessment model. By the end of Year 2 of certification. 2. Get the stock assessment model fully approved by CCAMLR scientific committee. By the end of Year 4 of certification. 3. Resources (financial and human) will be put in place to ensure that the stock assessment process is sustainable. By the end of Year 4 of certification. 4. Continue stock assessment process as integrate part of fisheries management system (including data from Poker 3). Ongoing basis - Poker 3 at the end of 2013.
Actions -Year 1	Since the fishery's certification, the MNHN has appointed a stock assessment specialist, on a full-time contract. No updated stock assessment was presented for toothfish in Kerguelen at the CCAMLR WG-FSA in October 2013. It was explained that the third POKER campaign (POKER 3) had only just terminated at that stage and that its biomass estimates would be incorporated into the stock evaluation for the following year. Some provisional results were presented at CCAMLR-FSA in 2013, however, following adjustments in the analysis in collaboration with Australian Heard Island fisheries scientists, in terms of the number of fisheries and seasons used, weighting of data according to the method of Francis and incorporation of biomass and length-frequency estimates following the POKER 3 campaign. The revised stock assessment model is to be presented at CCAMLR-FSA in 2014. Results were also presented and discussed by the MNHN with TAAF and with SARPC. This demonstrates that progress has been made against the CCAMLR WG-FSA workplan for a more robust stock assessment.
Evidence provided during Year 1 Audit	CCAMLR XXXII, 2013. Fisheries report and WG-FSA report. (Rapport du groupe de travail charge de l'évaluation des stocks de poissons, Hobart, Australia Oct. 2013). Scientists' presentations to SARPC, Jan. 2013. TAAF presentations at August 2014 C3P. CCAMLR XXXIII 2014 papers are not officially available until after all meetings have been held in November.
Conclusion of Year 1 Audit	Evidence was provided that the WG-FSA workplan is being implemented, that the MNHN has made significant progress in developing of a stock assessment model based on the latest scientific evidence, and that financial and human resources to ensure a sustainable stock assessment process have been put in place. Progress against this condition is therefore on target.

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**Table 11. Condition 2 - Systematic monitoring of grenadiers, rays and bycatch code of conduct**

<b>PIs</b>	<b>2.1.1, 2.1.2 and 2.1.3 – Retained species outcome, management and information</b>
<b>Condition</b>	<p>A monitoring system needs to be put in place for grenadiers and rays, appropriate to the scale of the fishery, which will provide indication of possible risks to the stock. This may be by analysis of trends in CPUE or by some other suitable method. The assessment team needs to see evidence of the systematic implementation of the code of conduct.</p> <p>A process of review and revision of the code of conduct in the light of trends in the fishery is required. Future iterations of the code of conduct should be more specific about management requirements, and circumstances under which vessels should move on, and these should be formalised in management regulations as required. The fishery should provide data on catch of rays and grenadiers at each annual audit.</p>
<b>Timeline</b>	<p>1. Monitoring of grenadiers and rays: Year 1: Consult with MNHN on a monitoring systems for grenadiers and rays, including resource requirements. Year 2: Finalise and implement the monitoring system for grenadiers. Year 3 and on: Continue implementation. Review management as required in the light of monitoring results.</p> <p>2. Implementation of code of conduct Year 1 and on: Provide evidence that the code of conduct is being implemented systematically by all SARPC members (e.g. examples of decisions taken, data on bycatch).</p> <p>3. Review and revision of code of conduct Year 3: After two years of data, work with MNHN to review the results of the code of conduct in terms of reduction in bycatch rates. Year 4: Revise code of conduct as required in the light of monitoring and review results.</p>
<b>Action Plan</b>	<p>1. Finalise the implementation of the monitoring system for grenadiers and skates by-catch - MNHN with data provided by TAAF observer collected on SARPC Fishing Vessels - Fully operational by start of Year 2 of certification</p> <p>2. Vessels moving on when high catches of bycatch species are obtained, avoiding hotspot areas - DPMA / TAAF observers - Fully operational by start of Year 2 of certification</p> <p>3. Assessment of the code of good practice in terms of reduction in by-catch rates. – MNHN - Fully operational by start of Year 3 of certification</p> <p>4. Revision of the code of good practise and issuance of conservative measures if necessary - MNHN, TAAF, DPMA, SARPC - Fully operational by start of Year 2 of certification</p>
<b>Actions during Year 1</b>	<p>Monitoring system for bycatch is fully functional for grenadiers, rays and any other fish species, checked by observers (COPEC) on board each vessel. Code of conduct for rays/skate supplemented with CCAMLR picture identification of wounds signs and health state of rays to guide cut off decisions. Catch figures show a decrease of the two main species of ray caught by the fishery over the past three seasons. From season 2014/15, the cut off and move on rules are mandatory.</p>
<b>Evidence provided during Year 1 Audit</b>	<p>POKER 3 report; Observer reports, Instructions to captains; with CCAMLR visual criteria to determine state of rays to be cut off/ released (part of code of conduct) as new technical measure in Arrêté n°2014-48 (Fishery management regulations). Catch data from TAAF, Presentations from the C3P meeting August 2014.</p>
<b>Conclusion of Year 1 Audit</b>	<p>Progress against this condition is therefore on target.</p>

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**Table 12. Condition 3 - Targets and best practice for grey petrels**

<b>PI 2.3.1 – ETP species outcome (grey petrels)</b>	
Condition	<p>Declines in bird mortality need to continue until all vessels are performing at the best possible level. There should be an improvement (decline) in bird mortality each year of certification, with a target at the end of Year 4 of certification of not more than 25 birds for each vessel, and/or an overall average of 20 birds/vessel at Kerguelen (all species combined). (Note: it is not possible to set quantitative targets for grey petrels specifically because the bycatch numbers are too small to make this realistic – this is explained in detail in the response to stakeholder comments, Annex 6.)</p> <p>In addition, a monitoring system is required to identify the level of risk posed by the fishery to the Kerguelen grey petrel population, including specific bycatch targets for grey petrels.</p> <p>Figures for estimated bird bycatch by species and by vessel should be provided at each annual audit.</p>
Timeline	<p>Year 1: Continued implementation of bird action plan by all vessels. Establish system within SARPC to lower performing vessels to learn from best performers. Start discussion with TAAF and bird experts on requirements for monitoring and bycatch targets for the Kerguelen grey petrel population.</p> <p>Year 2: Implementation of bird action plan by all vessels. Finalise plan for grey petrel monitoring, and bycatch targets for grey petrels.</p> <p>Year 3: Implement monitoring programme, and evaluate population status and bycatch impacts. Revise bycatch targets as required.</p> <p>Year 4: If bycatch targets are not met, develop a second action plan which identifies the main causes of ongoing bycatch and how to address them. Year 5 and on: Implement second action plan if required</p>
Action Plan	<ol style="list-style-type: none"> <li>1. Continue implementation of bird action plan by all vessels. TAAF- SARPC Ongoing process already started</li> <li>2. Establish system within SARPC with agreement of TAAF to allow lower performing vessels to learn from best performers. SARPC-TAAF In place by Year 2</li> <li>3. Continuation of the Assessment of the Kerguelen grey petrel population. Results will be presented to ACAP 2013 by Year 2 of certification and ongoing (TAAF)</li> <li>4. Bycatch figures compiled and analysed by species and by vessel TAAF Year 1 and ongoing</li> </ol>
Actions during Year 1	Ongoing implementation of the Action Plan by all vessels and detailed monitoring is in place and has shown a dramatic decrease of numbers of birds caught in the fishery during Year 1 of certification. Some sharing of best practice through C3P and between vessels takes place through SARPC.
Evidence provided during Year 1 Audit	ACAP (2013a and b), Marteau 2013, CCAMLR-FSA WG-FSA-13/06. Discussions with SARPC and TAAF bird expert; Observer reports; TAAF presentations from the C3P meeting August 2014
Conclusion of Year 1 Audit	Progress against this condition is ahead of target

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**Table 13. Condition 4 - Management plan**

<b>PIs 1.2.2 Harvest control rules, 3.2.1 Fishery-specific objectives and 3.2.2 Decision-making processes</b>	
Condition	Produce a management plan for this fishery, focusing on the management of the toothfish resource (i.e. Principle 1). The plan should set out for the short- term (~5-10 years), i) the objective of management; ii) how that objective will be achieved; i.e. the harvest control rules which control how decisions on the TAC will be taken, iii) what information will be used and how it will be used and iv) how the management plan will be evaluated, reviewed and revised on an ongoing basis. The management plan should be available to stakeholders on a transparent basis.
Timeline	Year 1: Consultation on management plan between SARPC, TAAF and MNHN. Methods and means for drafting plan agreed. Year 2: Draft plan and present for review to stakeholders Year 3: Finalise plan Year 4 and on: Implement plan
Action Plan	1. Finalising and approving the plan of management of the fishery, which is based on the draft memo issued by TAAF. By the end of Year 2 of certification Draft management plan no yet – Final management plan 2. Assess the implementation of the Management plan as stated by the TAAF and approved by all stakeholders By the end of Year 4 of certification 3. Review and improvement of the management plan by Year 5 of certification
Actions during Year 1	Significant progress has been made on developing the stock assessment model (condition 1) with the Australian scientists providing scientific management advice for the HIMI stock of the Kerguelen Plateau. Once this step is validated at the forthcoming CCAMLR 2014 meeting, a Fisheries Management Plan will be produced. It will bring together existing elements in a coherent and comprehensive manner.
Evidence provided during Year 1 Audit	TAAF regulation n°2014-78; TAAF presentations to C3P 2014 meeting.
Conclusion of Year 1 Audit	Progress against this condition is behind target. New sets of conservation measures to strengthen management have been introduced but consultation on the management plan has not been initiated. Information presented at the 2014 C3P meetings does not correspond to MNHN analyses on state of stock.  To stay on target, the following will need to be finalised before the next surveillance audit: <ul style="list-style-type: none"> <li>- Harvest control rules, which control how decisions on the TAC will be taken</li> <li>- Communication of information used and the rules of the vessel quota allocation formula, publicly available summary data tables for toothfish, main retained, discarded and ETP species (indicating corrections for 25% observation rule)</li> <li>- Communication of the agenda and minutes of C3P meetings</li> <li>- A process for the evaluation and revision of the Management Plan.</li> </ul>

## 7. PROGRESS AGAINST RECOMMENDATIONS

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The audit team also checked the fishery's progress against the non-binding recommendations provided following the initial assessment:

**Recommendation 1:** *PI 1.2.3: Both peer reviewers queried whether tag returns in this fishery might be lower than those on the Australian side, and whether this makes the data less useful overall. It is therefore recommended by the assessment team, that SARPC investigate the utility of equipping all the vessels with tag detectors, as is reported standard in the HIMI zone.*

There appears to be a very high variability in toothfish tag return rates between fishing zones, fishing gear (higher from fish marked from trawl than from longline), areas and years within CCAMLR fisheries, which is not yet explained. CCAMLR's recommendations have been to provide additional training to scientific observers for a selection of the healthiest fish and proper tagging techniques. The COPECs note support from the crew during tagging and a strong motivation to return tags. FSA-WG report, 2013 and Observer reports.

**Recommendation 2:** *PI 2.1.2: In addition to the condition, the team recommends that further information is sought, either from a desktop review or from field studies, on the survivorship of rays at Kerguelen after being cut off the line, to elucidate the apparent differences between Kerguelen and South Georgia, which could relate to the species mix, the ecosystem or fishing practices, or a mixture. On the basis of this information, the conservation strategy for rays could be reviewed.*

No specific progress on this aspect.

**Recommendation 3:** *PI 2.3.2: It would be useful to evaluate the effectiveness of the above measures, and of individual vessels, in relation to grey petrels specifically, and if necessary re-focus on those measures which reduce mortality of grey petrels in particular. We note that further to the PCDR stage of this report, TAAF have started this process (draft note on conservation objectives in relation to grey petrels provided to assessment team, July 2013).*

TAAF and SARPC are actively working on reducing interactions with grey petrels. Only 8 grey petrels were reported caught (dead) for 2013/2014. With the extrapolation from only 25% of the lines fully observed, this correspond to about 1 bird for each for two of the SARPC seven vessels. The current process of bird mortalities being discussed with each vessel concerned after each fishing trip and best practice emerging from shared understanding is proving very effective. TAAF data table in annex.

**Recommendation 4:** *PI 2.4.2: Further to stakeholder comments at the PCDR stage of this assessment, it was requested that the assessment team add a recommendation that research be continued into the mapping of benthic habitats and the identification of VMEs at Kerguelen. The assessment team is aware that this research is ongoing, and is a key part of the long-term objectives of the POKER cruises (the next to be held in 2013), and is happy to add this recommendation.*

Some identification of benthos and benthic habitats took place during POKER 3, but there has been no recent dedicated research cruise. However, taking effect from the 2014/15 fishing season, the new fisheries regulation dictates to keep on board all benthic specimens found on the 25% of lines examined in detail by a COPEC. The specimens are to be identified and classified as from VMEs according to the CCAMLR guide annexed to the regulation (arrêté). Any rare specimen spotted by the crew will also be reported. A limit of 10kg of benthos/1000 hooks is now set to trigger a move on rule (2.5 nautical miles). POKER 3 report and presentations from the C3P meeting August 2014.

**Recommendation 5:** *PI 2.5.1: Further to stakeholder comments at the PCDR stage of this assessment, it was requested that the assessment team add a recommendation that research into the Kerguelen ecosystem and the role of toothfish within it should continue. The team is happy to add this recommendation.*

There is a comprehensive programme of ecosystem research on Kerguelen, covering the terrestrial as well as the marine side. The appointment of a full-time fisheries scientist at the MNHN dedicated to the Kerguelen fisheries triggered an increase in the collaboration with Australia and New Zealand. In La Réunion, the TAAF has just recruited a young scientist in charge of the environmental monitoring of fisheries impacts.

## 8. HARMONISATION

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Following the year 1 surveillance audit, the assessment team liaised with the assessment team of the Heard Island and McDonald Islands (HIMI) toothfish fishery who considered the information provided on PI 3.1.2 in the SARPC toothfish Public Certification Report and the previous version of this Year 1 surveillance report (published on the 16<sup>th</sup> October 2014). The issue about “opportunities for all interested and affected parties to be involved” was specifically considered. The HIMI team clarified that their concerns about how this requirement was met under the French management system related essentially to opportunities for engagement by groups such as eNGOs rather than to collaboration between scientists. The team further noted that while one eNGO raised concerns about consultation processes in commenting on the PCDR for the SARPC toothfish fishery, other eNGOs did not, and ultimately no objection to certification was made in relation to P3.1.2. In addition, the information provided in the SARPC assessment report confirms that there are some opportunities for eNGO involvement.

Overall, the HIMI team reported that progress made by the SARPC fishery was positive and that they will review their condition at the next audit with a view to closing it, based on the information provided on the SARPC fishery.

## 9. TRACKING AND TRACING OF FISH PRODUCTS

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Following the initial assessment it was decided that each vessel involved in the fishery would be subject to separate CoC certification, which is not further discussed here.

## 10. CONCLUSION AND CERTIFICATION RECOMMENDATION

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The audit team concludes that progress has been made towards the conditions that were set and to implement the non-binding recommendations. The fishery’s progress against three of the conditions were considered to be **on target** whilst progress against condition 4 (Management plan) was **behind target**.

The surveillance audit brought up two aspects that need detailed information to be further assessed:

1. The quantities and species of bait used per year;
2. The number of hooks and length of leaded lines (per fishing trip/campaign) lost during fishing operations.

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**Table 14. Recommendations for the SARPC toothfish fishery introduced during the Year 1 surveillance audit.**

<b>Recommendation</b>
<u>Recommendation 6:</u> The team recommends that SARPC compiles a summary table per fishing season indicating the quantities of bait used, by species and FAO stocks/ areas of origin, per year
<u>Recommendation 7:</u> The team recommends that TAAF/SARPC compiles a summary table per fishing season indicating the total number of hooks and the length of leaded lines (per fishing trip/campaign) lost during fishing operations.

On the basis of the above, MEP recommends that SARPC should retain its MSC certification for the Kerguelen toothfish fishery for another year.

## 11. SURVEILLANCE SCORE

In accordance with the Certification Requirements v1.3, the frequency of future surveillance visits was calculated for this fishery. The overall Surveillance Score is calculated by adding the scores in Table 15 and matching those with the Surveillance Level in Table 16.

This fishery’s score was calculated at 5, which implies a normal surveillance level with annual on-site surveillance audits.

**Table 15. Criteria to determine Surveillance Score**

Criteria	Surveillance Score	SARPC Score
<b>1. Default Assessment Tree used?</b>		
Yes	0	0
No	2	
<b>2. Number of conditions</b>		
Zero conditions	0	1
Between 1 – 5 conditions	1	
More than 5	2	
<b>3. Principle level Scores</b>		
≥85	0	2
≤85	2	
<b>4. Conditions on outcome PIs?</b>		
Yes	2	2
No	0	
<b>Total Score</b>		<u>5</u>

**Table 16. Surveillance Level**

Surveillance score (from Table C3)	Surveillance level	Years after certification or recertification				
		Year 1	Year 2	Year 3	Year 4	
2 or more	Normal Surveillance	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & recertification site visit	
1	Remote Surveillance	Option 1	Off-site surveillance audit	On-site surveillance audit	Off-site surveillance audit	On-site surveillance audit & recertification site visit
		Option 2	On-site surveillance audit	Off-site surveillance audit	On-site surveillance audit	
0	Reduced Surveillance	Review of new information	On-site surveillance audit	Review of new information	On-site surveillance audit & recertification site visit	

## 12. REFERENCES

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## ANNEX 1. DATA TABLES

Estimated avian mortality from SARPC longlining activities in Kerguelen waters in 2013/14 (TAAF season)

Estimated bird captures (25%)	SARPC Vessels							Total
	1	2	3	4	5	6	7	
<b>Total Kerguelen EEZ</b>	<b>12</b>	<b>12</b>	<b>16</b>	<b>4</b>		<b>4</b>	<b>4</b>	<b>52</b>
<b>Wounded</b>			<b>12</b>			<b>4</b>		<b>16</b>
Pétrel géant subantarctique*			12			4		16
<b>Apparently fine</b>		<b>8</b>	<b>4</b>					<b>12</b>
Pétrel géant subantarctique		8	4					12
<b>Dead</b>	<b>12</b>	<b>4</b>		<b>4</b>			<b>4</b>	<b>24</b>
Pétrel à menton blanc**	8	4					4	16
Pétrel gris***	4			4				8
<b>Total Kerguelen EEZ</b>	<b>12</b>	<b>12</b>	<b>16</b>	<b>4</b>		<b>4</b>	<b>4</b>	<b>52</b>

\* Giant, \*\*white-chinned and \*\*\*grey petrels