

**Marine Stewardship Council (MSC) 4th Annual
Surveillance Report**

**SARPC Kerguelen and Crozet toothfish (*Dissostichus
eleginoides*) fishery**

On behalf of SARPC

**Prepared by
ME Certification Ltd**

April 2018

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Glossary

Acronym	Definition
AAMP	Agence des Aires Marines Protégées (French MPA Agency)
ABC	Acceptable Biological Catch
ACAP	Agreement on the Conservation of Albatrosses and Petrels
C3P	Comité des bonnes pratiques de la pêche palangrière (TAAF Longline fishery Best Practice Committee)
CASAL	C++ algorithmic stock assessment laboratory
CBC	Code de Bonne Conduite (code of conduct) for minimising bycatch
CC	Conseil Consultatif (TAAF)
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CEBC-CNRS	Centre d'Etudes Biologique de Chizé (research on birds and marine mammal fisheries interactions)
CEMR	Compagnie des Experts Maritimes de la Réunion (catch landing certificates)
CNRS	Centre National de la Recherche Scientifique
COLTO	Coalition of Legal Toothfish operators
COPEC	Contrôleur de Pêche
CoC	Chain of Custody
CPUE	Catch Per Unit Effort
CROMEBA	Crozet Marine Ecosystem Based Management
CROSS-RU	Centre regional de Surveillance et de Sauvetage de la Réunion (MEDDE)
DE	Direction de l'Environnement (TAAF)
DMSOI	Direction de la Mer – Sud de l'Océan Indien (MEDDE)
DPMA	Direction des Pêches Maritimes et de l'Aquaculture (MAA)
DPQM	Direction des Pêches et des Questions Maritimes (TAAF)
EEZ	Exclusive Economic Zone
ETP	Endangered Threatened Protected (species)
FAM	Fishery Assessment Methodology
FCR	Fisheries Certification Requirements (MSC scheme document)
FMP	Fishery Management Plan
GRT	Gross Tonnage
GTPA	Groupe de Travail Pêche Australe
HCR	Harvest Control Rule
HIMI	Heard Island and MacDonal Islands (Australia)
IRCS	International Radio Call Sign
IUU	Illegal, Unreported, Unregulated (fisheries)
LRP	Limit Reference Point
LTL	Low Trophic Level (species)

Acronym	Definition
MAFMC	Mid-Atlantic Fisheries Management Council (USA)
MEC	ME Certification Ltd
MEDDE	Ministère de L'Ecologie, du Développement Durable et de l'Energie
MAA	Ministère de l'Agriculture et de l'Alimentation
MEP	MacAlister Elliott and Partners Ltd
MNHN	Muséum National d'Histoire Naturelle (in Paris, France)
Nm	Nautical mile
MOM	Ministère des Outre-Mer
MPA	Marine Protected Area (=AMP Aire Marine Protégée)
PCR	Public Certification Report
PI	Performance indicator (of the MSC Standard)
RFMO	Regional Fisheries Management Organisation
RNN	Réserve Nationale Naturelle des TAAF
SARPC	Syndicats des Armements Réunionnais de Palangriers Congélateurs
SG	Scoring Guidepost
SSB	Spawning Stock Biomass
TAAF	Terres Australes et Antarctiques Françaises
TAC	Total Allowable Catch
TRP	Target Reference Point
UoA	Unit of Assessment
UoC	Unit of Certification
UPMC	Université Pierre et Marie Curie
VME	Vulnerable Marine Ecosystems
VMS	Vessel Monitoring System
WG-FSA	CCAMLR Working Group on Fish Stock Assessment
WG-IMAF	CCAMLR Working Group on Incidental Mortality Associated with Fishing

1 General summary

Fishery name	SARPC toothfish fishery		
Unit(s) of assessment	UoA 1	UoA 2	
	Species	Toothfish (<i>Dissostichus eleginoides</i>)	Toothfish (<i>D. eleginoides</i>)
	Geographical range	TAAF EEZ Kerguelen	TAAF EEZ Crozet
	Method of capture	Bottom-set longline	Bottom-set longline
	Stock	Kerguelen toothfish stock	Crozet toothfish stock
	Client group	Syndicat des Armements Réunionnais de Palangriers Congélateurs (SARPC)	SARPC
Date certified	3 rd September 2013 (Kerguelen) and 16 th December 2016 (Crozet)	Date of expiry	2 nd September 2018
Surveillance level and type	Surveillance level 6, on-site		
Date of surveillance audit	13 th to 15 th February 2018		
Surveillance stage (tick one)	1st Surveillance		
	2nd Surveillance		
	3rd Surveillance		
	4th Surveillance	X	
	Other (expedited etc)		
Surveillance team	Lead assessor: Sophie des Clers Assessor(s): Robin Cook Supporting team member: Henry Ernst		
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2 Updated fishery background

This report outlines the process and outcome of the fourth annual surveillance audit for the SARPC toothfish Kerguelen and Crozet fishery. Note that this surveillance audit combines both Kerguelen and Crozet components of the fishery. This surveillance is therefore the fourth for the Kerguelen component and the first for Crozet.

The Kerguelen component of the fishery was certified by MEP on the 3rd September 2013 with 4 conditions, using MSC Fishery Assessment Methodology (FAM) version 2.0 (2009) for scoring. The conditions, as well as their status prior to the year 4 surveillance audit, are summarised in Table 12, Section 2.7.

The Crozet component of the fishery was certified by MEC on the 16th December 2016 through an expedited assessment as an extension of scope of the certified SARPC toothfish Kerguelen fishery, using the same FAM version 2.0 (31st July 2009) for scoring, but the assessment procedure followed the MSC Fisheries Certification Requirements (FCR) version 2.0 (1st October 2014), which were not yet in place in when the Kerguelen UoA certification process was initiated.

The SARPC fleet counts seven (7) longliner vessels (Table 1). During the 2015-16 season, the newly built “Cap Kersaint” vessel replaced the “Cap Horn I” of the Cap Bourbon company (TAAF Décisions 2016-82, 2016-111), and Cap Horn I replaced the SAPMER “Croix du Sud” through a leasing agreement (TAAF Décisions 2016-180, 2016-192). The COMATA Scapêche company is expecting a replacement for its vessel “Ile de la Réunion I” in October 2018.

Table 1. List of SARPC longliner vessels in the fishery during 2015-2016

Fishing company	Vessels	IRCS	GRT	Length (m)
Armas Pêche	Mascareignes III	FOVB	1 295	55.49
Armements Réunionnais	Ile Bourbon	FOSP	1 295	55.49
SAPMER	Albius	FPXZ	1 295	55.49
SAPMER*	Croix du Sud I replaced by Cap Horn I*	FNHQ	1 654	54.30
Cap Bourbon*	Cap Horn I replaced by	FQBI	1 295	55.49
	Cap Kersaint*	FISH	2 086	59.45
COMATA-Scapêche	Ile de la Réunion I	FQBU	1,295	55.49
Pêche Avenir	Saint-André	FNTD	1,282	56.40

* Vessel replacements: only 7 vessels in the SARPC fleet at any one time

Table 2. List of SARPC longliner vessels in the fishery – February 2018

Company	Vessel	IMO Number	IRCS	Length (m)	GRT
Armas Pêche	Mascareignes III	9245407	FOVB	55.49	1,295
Armements Réunionnais	Ile Bourbon	9245421	FOSP	55.49	1,295
SAPMER	Albius	9245433	FPXZ	55.49	1,295
SAPMER	Cap Horn I	9246968	FQBI	55.49	1,295
Cap Bourbon	Cap Kersaint	9747601	FISH	59.45	2,086
COMATA Scapêche	Ile de la Réunion I**	9246970	FQBU	55.49	1,295

Company	Vessel	IMO Number	IRCS	Length (m)	GRT
Pêche Avenir	Saint-André	9511181	FNTD	56.40	1,282

* Will be replaced by new vessel Ile de la Réunion II during autumn 2018

2.1 TAC and catch data

TAC and catch data for both stocks were provided by the TAAF (Table 3 and Table 4). CCAMLR catch data summaries cannot be directly compared to the TAAF annual TACs, because of a small difference in fishing season dates used by the TAAF (1 September -31 August) and CCAMLR (1 December-30 November).

The team therefore issued a new recommendation: for TAAF to look into the feasibility of using CCAMLR season dates, in order to make TAAF and CCAMLR data easily comparable and to increase transparency (see Section 4) .

The 2016/17 TACs (TAAF Arrêté n° 2016-61) corrected for depredation were 5 050 tonnes for Kerguelen, reduced from 2015/2016 to account for depredation, and 1 300 tonnes for Crozet increased from 1 000 tonnes following the new assessment model. For the first time, a vessel outside the SARPC was allowed to join the fishery, with an allocation of 80t of UoA1 and 20t of UoA2 stocks (see section 2.2).

By the time of the surveillance audit site visit, the TAAF had fixed the 2017/18 TACs for the two UoAs to be the same as the previous seasons (Kerguelen 5 050t and Crozet 1 100t to account for depredation). This responds to a recommendation to achieve a more transparent decision-making process fixing annual TACs after their validations by CCAMLR (see Table 21 and Table 27 in Section 4).

Table 3. TAC and Catch (tonnes) for the Kerguelen stock (UoA1)

TAC	Year	2016/17	Amount	5 323t (5 050 tonnes)*
UoA share of TAC	Year	2016/17	Amount	98%
Total green weight catch by UoC	Year (most recent)	2015/16	Amount	5 314
	Year (2 nd most recent)	2014/15	Amount	5 158

Table 4. TAC and Catch (tonnes) for the Crozet stock (UoA2)

TAC	Year	2016/17	Amount	1 650t (1 300 tonnes)*
UoA share of TAC	Year	2016/17	Amount	98%
Total green weight catch by UoC	Year (most recent)	2015/16	Amount	985
	Year (2 nd most recent)	2014/15	Amount	840

In 2015/16, catches overshot the published 'TAC' for Kerguelen UoA1 for the first time by a small margin (1.2%), which led to a warning from TAAF to all vessels during the annual fishery meeting (C3P: TAAF (2017)), and penalties in the form of future TAC allocation, for the vessels involved.

Note that the CCAMLR 2016 Fishery reports for the 2015/2016 season for Kerguelen (CCAMLR, 2017a) and Crozet (CCAMLR, 2017b) report no IUU-listed vessels observed in the zones since 2014, although IUU fishing gear (nets) were recovered in the region.

2.2 Changes in the management system

The fishery's institutions involved in the management system are as described in the PCR for Kerguelen (MEP, 2013) and Crozet (MEC, 2016). The fishery is managed as before, through annual regulations that complement the FMP by setting the annual TACs for the two UoAs and allocating vessel quotas (initial, leftover during the season and any swaps as a result of vessel engine failure of other).

The TAAF toothfish Fishery Management Plan (FMP) developed as part of the fishery's MSC certification efforts and published in 2015 for three years, is currently being reviewed. The review process was initiated at the end of 2017 with a finalized 5-year FMP scheduled to be published in August 2018, on time for the 2018/19 season. The FMP drafting process will involve a large number of stakeholders. At this time, five Working Groups (socio-economics, environment, regulation, TAC changes, and catches and scientific monitoring) are planned, who will also provide some external review of existing arrangements (TAAF, 2018). It will formalise the TAAF Environment Division (TAAF-DE) programme to monitor and keep the fishery's impacts low, and to protect the populations of marine mammals, seabirds and bycatch fish species including sharks and rays. For the latter, the TAAF-DE is also planning more collaborative work to update the IUCN Red List of species to be protected (TAAF-DE FG42, pers.com.).

Of note over the last year was the amendment to the FMP to allow for a maximum of seven vessels active at any one time in a given fishing area (UoA1 or UoA2 ; TAAF Arrêté n° 2016-60¹) and quota (100t in UoA1 and 20t in UoA2) awarded to an additional non-SARPC vessel authorized during the 2015/16 season (TAAF Arrêté n° 2016-97 cf. previous Kerguelen surveillance report, MEC (2017)). Although the vessel concerned did not renew its license for the 2016/17 season due to administrative and financial difficulties, the three French ministries who oversee the fishery (Foreign Affairs, Fisheries, Overseas Territories) mandated a joint independent expert mission to evaluate the current fishery's management system and examine the possibility of an additional vessel in the future. The mission travelled to La Réunion and interviewed all parties and is due to report in the Spring of 2018. The report is unlikely to be public, but its recommendations will be incorporated into the new FMP.

2.3 Personnel involved in science, management or industry

The 2015-2016 fishing season saw a continuation of the process to extend the Réserve Nationale Naturelle des TAAF (RNN) initiated in 2015. The RNN extension has prompted a number of new projects bringing together a wide range of scientific partnerships (TAAF, 2016a), including through the UMR BOREA² and for the top predators, the Chizé Centre for Biological Studies³. With the RNN marine extensions, additional scientific observers are now placed on the fishery's vessels when they operate inside the RNN zones, which provides additional monitoring and management capacity regarding bycatch, ETP species and VMEs.

COLTO, the Coalition of Legal Toothfish Operators (COLTO), initiated a series of Industry-Science workshops and set up a Working Group on Science Collaboration⁴, which met in 2015 and in 2016. The WG discusses challenges and shares best practice between deep water longline fisheries (including Alaska sablefish), and "to agree on up to 6 science programs that could work collaboratively with science and industry".

¹ All TAAF regulations are published in the official Journal <http://www.taaf.fr/Journal-officiel-des-TAAF>

² Research Unit Biology of Aquatic Organisms and Ecosystems, <http://borea.mnhn.fr/en>

³ http://www.cebc.cnrs.fr/GB_index.htm

⁴ <https://www.colto.org/toothfish-collaboration/norway-workshop/toothfish-science/>

The SARPC capacity was also strengthened, with a dedicated full-time General Secretary, a fisheries scientist, recruited in October 2017, who supports the vessels in their efforts to keep the fishery’s impacts to a minimum.

2.4 Scientific base of information, including stock assessments

2.4.1 Principle 1

The CASAL stock assessment model parameters are still updated on an annual basis, with the addition of new information from tag returns, age determination, and recommendations from CCAMLR’s previous year Fish Stock Assessment (FSA) working group meeting, for both UoAs (CCAMLR, 2016, 2017a). A fourth scientific marine benthic research survey around the Kerguelen Islands, “Poker 4”, took place in September 2017.

Re-certification of the Australian Heard and MacDonalD Islands (HIMI) fishery on the Kerguelen Plateau concluded, on the basis of tagging studies of toothfish movements, that the two fisheries (HIMI and Kerguelen) could be assessed as separate management units (SCS, 2017). Therefore, the separate HCRs used are valid and can be considered to take into account the main uncertainties (also see Section 2.5).

Separate models are now fully functional for Kerguelen and for Crozet. They are used to devise TACs that conform to the published precautionary HCRs. The stock assessment models were used as previously, to devise TACs for 2016/17 using the TAAF precautionary target reference point of 60%B₀, of 5 323t for Kerguelen UoA1 and 1 650t for Crozet UoA2. These are then decreased to account for separate estimates of depredation in both UoAs (Gasco et al., 2016; Sinègre and Duhamel, 2016a, 2016b), leading to the “published TAC” or in fact ‘allowed landings’, communicated to the fleet at the beginning of each season (Table 3 and Table 4). The conditions for PI 1.2.2 for both UoAs and PI 1.2.4 for the Kerguelen UoA can therefore be closed (Section 4.1.1) and the PIs re-scored (Appendix 1).

2.4.2 Principle 2

Captures of non-target species are reviewed annually, from the data collected and estimates obtained from detailed examination of 25% of all lines hauled by the COPEC observers on each vessel. For the last two seasons, total catches are indicated in Table 5 for Kerguelen and Table 6 for Crozet. Generally, the tonnage of non-target ‘Other’ bycatch species is commensurate to the fishing pressure (between four and five times higher in Kerguelen), which is determined by the toothfish TAC.

Table 5. UoA1 – Kerguelen: Total catch (tonnes) (TAAF)

Fishing season	toothfish	Others	Total catch (t)
2014/15	5 158	893	6 051
2015/16	5 314	683	5 997

Table 6. UoA2 – Crozet: Total catch (tonnes) (TAAF)

Fishing season	toothfish	Others	Total catch (t)
2014/15	840	181	1 021
2015/16	985	201	1 186

Management measures in place to stabilise impacts on non-target species remain effective, as illustrated by the tonnage per species groups reported to CCAMLR each year, which show similar quantities for the 2015/16 season as before (Table 7 and Table 8). There has been an important decline in the tonnage of rays kept, mirrored by an increase in the numbers cut off in both UoAs. Relatively to the total catch, rajids are caught in higher numbers in Crozet, which was noted in the latest C3P report (TAAF, 2017).

From 2018, MNHN will organise for the TAAF to have direct access to its catch and scientific observation database for Kerguelen and Crozet. In the meantime, the detailed information collected by scientific observers (COPEC - summarised in Avistock/Avipêche) is still only available as tables in the pdf report files. Catch data for e-logbooks are directly available to the TAAF, but observer-collected information needs validation by MNHN before it can be used. Some data were entered manually by the team to interpret the bycatch summaries further. The proportions of bycatch species, retained or discarded remain as per the detailed analyses presented in the certification reports (MEP, 2013; MEC, 2016). Macrourids (grenadiers) are mostly retained (82% in UoA1 and 77% from UoA2) and made up 10% (UoA1) and 9% (UoA2) of the total catch in 2015/16. Catches of *Antimora rostrata* (1.2% in UoA1 and 3.5% in UoA2) were all discarded.

Main retained species have not changed and are grenadiers (macrourids) and rays in both UoAs, although the latter are increasingly released.

Table 7. UoA1 – Kerguelen: Reported catches (tonnes) of by-catch species taken in the toothfish fishery in the French EEZ in Division 58.5.1 (CCAMLR, 2017a)

Fishing season	Macrourids	Rajids		<i>Antimora rostrata</i>
	Catch (t)	Catch (t)	Nb. released	Catch (t)
2010/11	887	456	2	58
2011/12	860	437	535	52
2012/13	690	433	15 878	26
2013/14	728	308	12 455	67
2014/15	750	68	39 727	75
2015/16	605	9	33 641	69

Table 8. UoA2 – Crozet: Reported catches (tonnes) of by-catch species taken in the toothfish fishery in the French EEZ in Division 58.6 (CCAMLR, 2017b)

Fishing season	Macrourids	Rajids		<i>Antimora rostrata</i>
	Catch (t)	Catch (t)	Nb. released	Catch (t)
2010/11	113	56	6 836	78
2011/12	93	29	2 484	23
2012/13	96	75	2 457	21
2013/14	64	33	1 242	17
2014/15	92	53	10 182	36

Fishing season	Macrourids	Rajids		<i>Antimora rostrata</i>
	Catch (t)	Catch (t)	Nb. released	Catch (t)
2015/16	109	17	22 575	75

2.4.2.1 Retained species - Macrourids

The catch of macrourids in the season 2015/16 has remained stable in Kerguelen (Table 7) and in Crozet (Table 8). The Code of Conduct is effective at keeping quantities of bycatch species stable.

A POKER biomass survey was undertaken around the Kerguelen Islands (CCAMLR Division 58.5.1) in 2017, following similar campaigns in 2006, 2010 and 2013. Random stratified trawl surveys down to 1 000m deep form the basis of scientific advice by the MNHN regarding retained species. The MNHN stated there were no grounds for concern regarding the biomass of macrourids (or rays) during the site visit.

The second International Symposium on the Kerguelen Plateau took place in Tasmania (Australia) in November 2017, the proceedings of which are expected by the end of 2018. The Code of conduct (Code de Bonne Conduite – CBC) was found to be valid and its application is strictly monitored and enforced. Minutes of the reports to the C3P, which detail vessel performances against the CBC are now public (TAAF, 2017).

In 2017 management measures have been further strengthened by additional spatial closures and scientific observations for the reserve (RNN) marine extension.

2.4.2.2 Skates and rays

CCAMLR’s current policy to cut off all rays caught and release them if possible, unless they show obvious signs of morbidity is now widely implemented by all vessels in the fishery. The tonnage reported as caught by CCAMLR has decreased notably in both UoAs (Table 7 and Table 8). Compliance with this and others measures in the code of good conduct (CBC) have been closely monitored over three seasons to 2015/2016 and show an overall decrease in capture rates in both Kerguelen and Crozet. A decline of skates and rays bycatch was also observed in total numbers caught and released across the fleet in both UoAs. This is with the exception of Crozet during the 2015/16 season, when vessels spent more time attempting to catch their toothfish allocated vessel quotas (TAAF, 2016b) and caught more skates in the process, which for the vessels concerned, led to toothfish quota penalties for the 2016/17 season.

The species of rays caught were as before, *Bathyrāja eatonii* and *Bathyrāja irrāsa* in Kerguelen (UoA1) and *Amblyrāja taaf* in Crozet (UoA2). A review of the distribution and abundance of skates (*Bathyrāja* spp.) on the Kerguelen Plateau (Nowara et al., 2017) found no evidence of the certified fisheries’ (Kerguelen longline and HIMI trawl and longline) impacts on the Eaton’s skate (*Bathyrāja eatonii*) and Kerguelen sandpaper skate (*Bathyrāja irrāsa*).

In their ecoregionalisation studies for Kerguelen and Crozet, Koubbi et al. (2016) included skates and rays, and these three species in particular, in order to inform the MPA extension boundaries and keep potential impacts of the fishery at a minimum. For both UoAs, this complements existing catch minimisation measures and strategy.

The TAAF-DE also insists on counting the rays that have been cut off as precisely as possible. They expect to complete Ecological Risk Assessments (ERAs) for all species concerned in 2018.

The team however did issue the following recommendation: It is recommended that TAAF compile annual weight equivalents of all rays caught by species and UoA so that the effectiveness of the Code of Conduct to limit skates and rays bycatch can be monitored in more detail (also see Section 4).

2.4.2.3 Retained species - Bait

The only non-target primary species in the fishery are those used as bait, the species and stocks used are the same as last year. According to SARPC compilation, nearly 800 tonnes of bait were used in 2015/2016, mostly mackerel from the West and East Atlantic (*Scomber scombrus* Table 9).

Table 9. Quantities of bait species and stocks used in the fishery in 2015/16

Species	Mackerel (<i>Scomber scombrus</i>)		Squid (<i>Illex spp.</i>)	Saury (<i>Scomber japonicus</i>)	Total (tonnes)
	FAO 21	FAO 27	FAO 41	FAO 61	
Tonnage	423.1	241.7	77.3	35	777
% Total catch	5.9%	3.4%	1.1%	0.5%	

The source of bait by species, FAO Area and stock is now scrutinised by each fishing company within SARPC and evaluated to ensure their sustainability. Although the quantities used are relatively small compared to the yield of both stocks of mackerels, the companies now obtain and share information within SARPC regarding bait stock status and management.

The largest quantities (423 tonnes) are from the West Atlantic stock (FAO 21) shared between the US and Canada. According to the US Mid-Atlantic Fisheries Management Council (MAFMC), the stock status is currently ‘unknown’ (MAFMC Species, stock status, 2017), although the latest benchmark assessment concludes that it is currently overfished, and overfishing is occurring. There is a managed commercial fishery that operates within a maximum acceptable biological catch (ABC) set at about 20,000 tonnes (U.S. + Canada⁵).

The second largest source of bait is the Eastern Atlantic mackerel stock (FAO 27), which is assessed by ICES (subareas 1–7 and 14, and in divisions 8.a–e and 9.a) to be at a level above MSY, but with a risk of overexploitation. Most of the fisheries on this stock are MSC-certified (Acoura Marine, 2017). The total catch in 2015 was 1.2 million tonnes (ICES, 2016).

2.4.2.4 ETP species

The total number of birds observed to be dead or wounded during fishing operations on 25% of the lines observed in Kerguelen was 19 in Kerguelen (Table 10) and 6 in Crozet (Table 11) for the 2016-17 season (CCAMLR 2016a and b). Note however that these figures differ slightly from those of TAAF because of the difference in season start (see new recommendation in

⁵ <https://www.nefsc.noaa.gov/saw/saw64/saw-64-summary-report.pdf> and benchmark reports <https://www.nefsc.noaa.gov/saw/saw64/saw-64-panelist-reports.html>

section 4). Individual vessel performances are presented and discussed annually during the C3P meeting (TAAF, 2017).

The scientists in charge of monitoring the fishery’s impact on birds confirm that mortality rates remain low (Nicolas Gasco, MNHN, pers. com.) and that there are no detectable impacts at population levels for petrels at present. Grey petrels (several thousand birds) are followed at Kerguelen through mark-recaptures and there have been no detectable changes. An analysis is expected to be published in 2018 (Henri Weimerskirch, pers. com.). The condition set originally for Kerguelen can now be closed (see below and Section 4). Regarding white-chinned petrels in Crozet (several hundred thousand pairs), interactions remain very low. In the context of the RNN extension, the TAAF have done a census in 2018, which is expected to be published in 2019.

Table 10. Number of birds killed and injured in the Kerguelen longline fishery (French EEZ Division 58.5.1, (CCAMLR, 2017a)

Bird	Species	2014	2015	2016
White-chinned petrel	<i>Procellaria aequinoctialis</i>	4	9	7
Grey petrel	<i>Procellaria cinerea</i>	0	3	7
Giant petrel	<i>Macronectes</i> spp.	2	0	5

Table 11. Incidental mortality of birds in the French EEZ in Subarea 58.6 (CCAMLR, 2017b)

Bird	Species	2014	2015	2016
White-chinned petrel	<i>Procellaria aequinoctialis</i>	6	11	6
Grey petrel	<i>Procellaria cinerea</i>	0	0	0
Giant petrel	<i>Macronectes</i> spp.	0	0	0

SARPC is analyzing in detail the combinations of risk factors of bird accidental capture, to provide a statistical basis for the emergence of best practices, stemming from an internal investigation with every vessel. So far, a detailed analysis for the 4 Sapmer ships over the three seasons since 2014/2015 was presented (E. Cousin, pers. com.). The draft report, which was communicated to the team, is expected to be published shortly.

It is also worth noting that the new vessel (“Cap Kersaint”) configuration with a moon pool and hidden line shooting through the stern reduces the risks of interaction.

2.4.2.5 Habitats and ecosystems

Koubbi et al. (2016) have published typologies of the marine ecosystem components into marine “ecoregions” around Kerguelen and Crozet that were used to justify the MPA (RNN) extension, and to inform its future management plan. The collaborative work (TAAF, Agence des Aires Marines Protégées - AAMP, UPMC, CNRS (Chizé) and MNHN), has resulted in a typology based on three ecosystem components: i) marine benthic, ii) marine pelagic, and iii) seabirds and marine mammals. The work aims to identify biodiversity features and “hotspots” to protect. It will lead to the publication of atlases for each of the components, and to an update of the existing top predator atlas.

Most of the MPA 'reinforced protection' no-fishing extension concerns grounds that are not specifically used by the fishery or that were already excluded by the current management regime, such as waters shallower than 500m. On the Kerguelen Plateau, some zones were designated to join up with existing areas of the Australian Marine Reserve system also based on bioregionalization with the explicit goal of protecting a comprehensive, adequate and representative collection of the existing Australian marine biota (SCS, 2017). A notable exception is the Skiff Bank to the west of Kerguelen, which had been identified as a high biodiversity and VMEs hotspot and is now in part closed to fishing (TAAF, 2016a).

The CROMEBA (Crozet Marine Ecosystem Based Management) project launched in 2014 (Overseas Ministry and RNN funding) and carried out by the UMR BOREA 7208 (MNHN-UPMC) had the aim to remedy the relative lack of synthetic data for the Crozet archipelago. It finished in 2017 (RNN, 2016). The second international scientific symposium on the Kerguelen Plateau took place in Tasmania (Hobart) in November 2017, the public report of which is expected in April 2018.

2.4.3 Principle 3

New mechanisms of cooperation have been put in place by the fishery and marine environment managers (TAAF Directorates - DE and DPQM), which have addressed all conditions and recommendations regarding Principle 3. In particular, the Groupe de Travail de la pêche australe (GTPA) brings managers (ministerial levels and TAAF), scientists and vessels owners together to discuss research findings and a wide range of topics, including the workplan to devise the new Fishery's Management Plan (FMP) during 2018 (TAAF, 2018). It meets at least once a year and is presently scheduled to meet regularly to steer the revision of the Management Plan. The minutes have been communicated to the assessors in order to demonstrate the transparency of the new FMP process. The allocation criteria for vessel quotas will also be examined as part of the FMP revision.

The C3P has now published minutes (Condition 4 on 3.2.2 for Kerguelen UoA1 and Condition 5 for Crozet UoA2 can now be closed) and the revision of the FMP is a collaborative process (section 2.2) involving all stakeholders.

Compliance continues to be good in the fishery. Vessels are controlled at sea on average three time per year. The CROSS still reports active cooperation to fight potential IUU activities and no systematic non-compliance. The same applies for controls of the fisheries technical measures by on board COPECs.

2.5 Harmonisation

The audit team in charge of the Australian Heard Island and MacDonald Island (HIMI) toothfish fishery re-certification initiated a conference call with the MEC team on the 11th November 2016, before they finalised the 4th surveillance audit. On the basis of new research evidence, it was concluded that the HIMI and Kerguelen stocks could be considered as separate management units.

The audit team took into account the harmonisation considerations presented in the Australian HIMI certified fishery PCR (SCS, 2017) for the re-scoring of the P1 and P3 Performance Indicators upon closing of the conditions for this fishery.

2.6 Traceability

There were no changes within the fishery that could impact on traceability or the ability to segregate between fish from the Units of Certification (UoCs) and fish from outside the UoCs (non-certified fish).

2.7 Summary of Assessment conditions and recommendations

The Kerguelen component of the fishery was certified by MEP on the 3rd September 2013 with 4 conditions, using MSC Fishery Assessment Methodology (FAM) version 2.0 (2009) for scoring. The conditions, as well as their status prior to the year 4 surveillance audit (MEC, 2017), are summarised in Table 12.

Table 12. Summary of Assessment Conditions, scoring and status for the Kerguelen component (UoA1) prior to this audit. None of the original PI scores have been revised as of yet.

Condition number	Performance indicator (PI)	Status	PI original score
1	1.2.4	On target	70
2	2.1.1, 2.1.2, 2.1.3	On target	60, 70, 70
3	2.3.1	On target	75
4	1.2.2, 3.2.1, 3.2.2	On target	70, 75, 70

The Crozet component of the fishery was certified by MEC on the 16th December 2016 (MEC, 2016) through an expedited assessment as a scope extension of the certified SARPC toothfish fishery, using the same FAM version 2.0 (31st July 2009) for scoring, but the assessment procedure followed the MSC Fisheries Certification Requirements (FCR) version 2.0 (1st October 2014).

Five conditions were set for the Crozet UoA, summarised in Table 13. Some of the conditions differ from existing conditions in Kerguelen because of recent progress made in the modelling (Principles 1) and management of the fishery (Principle 3), or because of differences between the two ecosystems (Principle 2). The higher number of conditions for the Crozet UoA is due to a different presentation with the use of MSC FCR v2.0 (7.11.1.1), which requires that “the CAB shall ensure that every PI that receives a score of less than 80 has its own distinct condition associated with it.”

Table 13. Summary of Assessment Conditions, scoring and status for the Crozet component (UoA2) prior to this audit. None of the PI scores have been revised as of yet as this is the first surveillance for this UoA.

Condition number	Performance indicator (PI)	Status	PI original score
1	1.2.2	On target	65
2	2.1.1	On target	60
3	2.1.3	On target	75
4	2.4.3	On target	75
5	3.2.2	On target	75

A number of recommendations were also made. Three recommendations remain open for Kerguelen and six for Crozet. Progress against the conditions and recommendations is discussed in section 4.1 for the Kerguelen UoA and section 1.1 for the Crozet UoA. These recommendations are summarised below.

Table 14. Summary of Assessment Recommendations and status for the Kerguelen component (UoA1) prior to this audit. None of the open recommendations were closed during the year 3 surveillance audit.

Recom. number	Description	Status
1	PI 1.2.3: It is recommended that SARPC investigate the utility of equipping all the vessels with tag detectors, as is reported standard in the HIMI zone.	Closed at year 2 surveillance
2	PI 2.1.2: 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.	Open
3	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 refocus on those measures which reduce mortality of grey petrels in particular.	Open
4	PI 2.4.2: It is recommended that research be continued into the mapping of benthic habitats and the identification of VMEs at Kerguelen.	Closed at year 2 surveillance
5	PI 2.5.1: It is recommended that research into the Kerguelen ecosystem and the role of toothfish within it should continue.	Closed at year 2 surveillance
6	PI 2.3.1 It is recommended 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	Closed at year 2 surveillance
7	PI 3.2.2 It is recommended 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	Closed at year 2 surveillance
8	PI 3.2.2 Effective decision making processes: It is recommended that TAC changes should apply to the season following CCAMLR meetings at the earliest.	Raised during year 2 surveillance - Open

Table 15. Summary of Assessment Recommendations and status for the Crozet component (UoA2) prior to this audit. This is the first surveillance for these recommendations.

Recom. number	Description	Status
1	In the observer reports there are one or two comments which suggest that the CBC is not being taken as seriously as it should be. Although it is clear that this is a minority of cases, the team recommends that SARPC members and TAAF review observer reports at the end of each year and provide feedback to the captain and fishing controller concerned, emphasising the importance of the CBC and ray cut-off rules.	Open
2	PI 2.2.1: It is recommended that SARPC monitors the quantities of bait used, by species and FAO stocks/ areas of origin and sustainability status, per year (added during the Kerguelen Surv 1	Open

Recom. number	Description	Status
	audit), with a view to avoid the use of bait from stocks that are assessed to be at unsustainable levels.	
3	PI 2.5.1: It is recommended that research be continued into the mapping of benthic habitats and the identification of VMEs at Crozet ecosystems should continue.	Open
4	PI 2.5.2 and PI 3.2.2: 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/ and per zone) lost during fishing operations (added during the Kerguelen Surv 1 audit), in the view to assess potential ecosystem impacts and devise voluntary best practice guidelines.	Open
5	3.1.4 and PI 3.2.3 The procedures and criteria for allocating variable amounts of quota between different vessels annually should be reviewed and published, to ensure that they do not contribute to unsustainable fishing practices and to ensure that they are consistently applied to provide effective deterrence.	Open
6	PI 3.2.2: It is recommended that TAC changes introduced by TAAF annual decrees should apply to the season following CCAMLR meetings at the earliest (added during the Kerguelen Surv 2 audit), to allow for prior peer review and validation by CCAMLR working groups.	Open

Given the different timetables and scoring tables used for the two UoAs, the conditions and recommendations are examined separately for the Kerguelen and for Crozet UoAs. The time lag between Kerguelen UoA 3rd surveillance audit (published) and extension of scope with Crozet UoA (published December 2016) has meant that some rescoring of conditions was already made for the Crozet UoA, but these were not closed during Kerguelen's UoA 3rd surveillance audit to allow the milestones to be met and actions to take place for all PIs within the same condition.

3 Assessment Process

The SARPC toothfish fishery (Kerguelen only) was certified on the 3rd September 2013. The initial assessment team consisted of Dr Jo Gascoigne (Team Leader, Principle 1), Terry Holt (Principle 2) and Sophie des Clers (Principle 3). The site visit for the assessment took place in Paris, France in February 2010.

Based on the relatively high risk level of this fishery, as well the number and nature of conditions to which the certification is subject, a surveillance level of 6 was awarded in accordance with the MSC FCR v2.0 (7.23.2). Level 6 is the maximum level of surveillance, requiring 4 on-site visits annually.

The year 1 surveillance audit consisted of an on-site audit held in La Reunion, France in August 2014 and was carried out by Sophie des Clers (Team leader) and Chrissie Sieben. Jo Gascoigne, team leader during the initial assessment, also contributed to the surveillance report. Overall, the fishery was considered on target although progress against condition 4 (Management plan) was behind target. The team raised two new recommendations.

The second surveillance audit equally took place in La Réunion, in September 2015, with team leader Sophie des Clers on site. Kat Collinson and Jean Claude Brêthes participated remotely. The fishery was considered on target overall and five recommendations were closed. One new recommendation was, however, raised.

The third surveillance audit took place in La Reunion on the 7th and 8th November 2016 with team member Sophie des Clers on site, supported off site by team leader Chrissie Sieben. The Client Group was generally on target with addressing the conditions, although the persistent lack of effective cooperation between TAAF and fishing captains, for example through the C3P, was considered by the team to be slowing the sharing of best practice in this fishery. No new conditions or recommendations were raised as a result of this surveillance audit.

The Crozet component of the fishery was certified by MEC on the 16th December 2016 through an expedited assessment as an extension of scope of the certified SARPC toothfish Kerguelen fishery, using the same FAM version 2.0 (31st July 2009) for scoring, but the assessment procedure followed the MSC Fisheries Certification Requirements (FCR) version 2.0. The Year 4 surveillance therefore covered both the Kerguelen and Crozet Units of Assessments.

The fourth surveillance audit took place in La Réunion between the 13th and 15th February 2018, in combination with the re-certification audit site-visit. The team consisted of Sophie des Clers (Team Leader) and Robin Cook, supported by Henry Ernst. Stakeholders were informed of the scheduled site visit on the 11th January 2018. No remote submission was received regarding the 4th surveillance audit. The audit was attended in person and remotely through conference calls by the participants listed in Table 16.

Table 16. Stakeholders met or interviewed by telephone and teleconference during the Year 4 surveillance site visit

Name	Organisation
Delphine Ciolek	SARPC (point of contact)
Laurent Pinault	SAPMER group
Eric Cousin	SAPMER group
Armelle Denoize	SAPMER group
Michel Beilloeil	SAPMER (skipper "Ile Bourbon")

Name	Organisation
Patrick Péron	SAPMER (skipper "Ile Bourbon")
Laurent Nicolle	Le Garrec / Cap Bourbon
Graziella Jan	Cap Bourbon
Tugdual Poirier	Cap Bourbon
Laurent Virapoullé	Pêche-Avenir SA
Sylvain Raithier	COMATA – Scapêche
Maëlla Bourdet	COMATA – Scapêche
Thierry Clot	TAAF – Direction des Pêches et Questions Maritimes
Martin Devaux	TAAF DPQM – stagiaire
Thibault Thellier	TAAF - Direction de l'Environnement
Prof. Guy Duhamel	MNHN
Nicolas Gasco	MNHN
Romain Sinègre	MNHN
Charlotte Chazeau	MNHN
Alexis Martin	MNHN
Dominique Person	CROSS Réunion
Christophe Guinet	CNRS Chizé (Marine mammals)
Henri Weimerskirch	CNRS Chizé (Birds)
Sophie des Clers	MEC Assessment Team
Robin Cook	MEC Assessment Team
Henry Ernst	MEC Assessment Team

4 Results

An overview of the conditions and recommendations and their status prior to the Year 4 Surveillance audit is shown in Section 2.7. The following section explores the Client Group's progress against open conditions and recommendations. As conditions were closed, the relevant performance indicators were re-scored. Rescoring tables are shown in the Appendix. Note that given the ongoing re-certification audit using the new version of the standard (v2.0), PIs were re-scored as appropriate against the SG80 level, but no higher scores were examined.

Given the recent scope extension for the Crozet UoA, and following 7.11.1.3 on Exceptional Circumstances, the audit team invoked this clause for UoA2 – Crozet Condition 2 (PI 2.1.1) to remain open at the time of re- assessment. Note that the condition milestones and client action plan already took this into account so were not redrafted.

4.1 Kerguelen UoA1

4.1.1 Conditions

Progress against the conditions raised during the initial assessment are shown below.

Table 17. Kerguelen UoA1 - Condition 1: Sustainable stock assessment process

UoA1 Condition 1	PI number	Scoring issue/scoring guidepost	Score
Performance Indicator & Score	1.2.4 – Stock assessment	a. The assessment is appropriate for the stock and for the harvest control rule.	70
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.		
Milestones	<p>Year 1: Implement WG-FSA work plan. Start to put in place resources (financial and human) to ensure that the stock assessment process is sustainable.</p> <p>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.</p> <p>Year 3 and on-going: Continue stock assessment process as integral part of fisheries management system</p>		
Client action plan	<ol style="list-style-type: none"> 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). On-going basis - Poker 3 at the end of 2013. 		

UoA1 Condition 1	PI number	Scoring issue/scoring guidepost	Score
<p>Progress on Condition Year 1</p>		<p>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.</p> <p>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 work plan for a more robust stock assessment.</p>	
<p>Progress on Condition Year 2</p>		<p>A regular collaboration between the MNHN and the Australian modellers through annual meetings since 2014 has led to significant progress in model development. The improved model presented at CCAMLR WG-FSA in October 2014, which incorporates data from the Poker3 research cruise. The FSA commended the work progress so far and found that the model could be used to provide short-term management advice. Points 1 and 4 of the Client action plan above are therefore met.</p> <p>The stock-assessment specialist at the MNHN has been recruited on a long-term contract, with a clear commitment from the French Ministry (DPMA) that the post is made permanent. Point 3 of the Action Plan is therefore met ahead of schedule.</p> <p>New model developments are to be presented at the CCAMLR meetings in October 2015, which include new Kerguelen-specific ageing data and simulations to evaluate harvesting scenarios. Point 2 is on schedule.</p> <p>To remain on target with the client action plan, the stock assessment process should be approved by WG-FSA as the basis for on-going (rather than just short term) scientific advice by audit Year 4 (i.e. CCAMLR meeting 2016, assuming audit timing remains the same).</p> <p>In relation to the milestones set by the MSC assessment team, Year 2 required '...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'. This is essentially met, as noted above. However, the audit team were concerned about how the scientific advice feeds into the TAC-setting process (point ii) – notably the lack of transparency around how TAAF sets the TAC and allocates individual quotas. It appears to the team that the MNHN analysis is mainly used as a post-hoc process to check that the TAC set by TAAF is within sustainable limits, rather than as an upfront basis for deciding what the TAC should be. This has not, for the moment, impacted on the sustainability of the fishery, however (although it is not ideal), and hence is more a question related to Condition 4 (harvest control rules and tools, decision-making process) and is discussed further in that context.</p>	
<p>Progress on Condition Year 3</p>		<p>Progress has been steady; the condition is on target with the client action plan. The new stock assessment model and process in general is increasingly similar to that used by the Australian scientists to provide scientific advice for the HIMI toothfish fishery. It has been approved by WG-FSA as the basis for ongoing scientific advice (CCAMLR meeting 2016 unpubl.). The condition should therefore be closed once the documents are published on the CCAMLR website by audit Year 4.</p>	

UoA1 Condition 1	PI number	Scoring issue/scoring guidepost	Score
Progress on Condition Year 4		The models used to provide scientific advice are now the same as those used in the Australian HIMI toothfish fishery. A long-term precautionary yield is still not calculated, but the model results are used to inform the annual catch limits set by France, which comply with the CCAMLR decision rules. The WG-FSA documents are publicly available from the CCAMLR website (CCAMLR, 2016), within 6 months of the annual meeting.	
Status of condition		The condition is now closed. PI 1.2.4 is re-scored (see Evaluation Table 3)	

Table 18. Kerguelen UoA1 - Condition 2: Systematic monitoring of grenadiers, rays and bycatch code of conduct

UoA1 Condition 2	PI numbers	Scoring issue/ scoring guidepost	Score
Performance Indicators & Scores	2.1.1	a. Main retained species are highly likely to be within biologically based limits c. If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	60
	2.1.2	a. There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved. c. There is some evidence that the partial strategy is being implemented successfully.	70
	2.1.3	b. Information is sufficient to estimate outcome status with respect to biologically based limits. d. Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)	70
Condition	<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.</p> <p>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.</p> <p>The fishery should provide data on catch of rays and grenadiers at each annual audit.</p>		
Milestones	<p>1. Monitoring of grenadiers and rays: Year 1: Consult with MNHN on a monitoring system for grenadiers and rays, including resource requirements. Year 2: Finalise and implement the monitoring system for grenadiers. Year 3</p>		

UoA1 Condition 2	PI numbers	Scoring issue/ scoring guidepost	Score
		<p>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>	
Client action plan		<ol style="list-style-type: none"> 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. 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. 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. 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. 	
Progress on Condition Year 1		<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>	
Progress on Condition Year 2		<p>Monitoring systems are in place for all species groups, based on the detailed COPEC observation of 25% of the lines hauled. The 2011 MNHN Code of conduct has been supplemented by CCAMLR guidelines to cut off rays that may survive, and management measures have been adapted (TAAF, 2014). Observer data suggest that mandatory cut off and move on rules from 2014/15 may have reduced ray catches substantially (from 3.9 to 2.9 /1000 hooks), but a detailed analysis has not yet been done by MNHN.</p> <p>In terms of the client action plan, points 1 and 2 are met and progress against points 3 and 4 is on target. In terms of the milestones, the monitoring system is in place (point 1 – all milestones met); evidence of implementation of the code of conduct is provided by observer reports (point 2 milestone met).</p> <p>For the next surveillance audit, TAAF and MNHN will need to analyse all available information in terms of bycatch rate reduction, in order to evaluate the effectiveness of the code of conduct prior to any revision following on from Gasco and Duhamel (2011) (milestones point 3, client action plan, point 3).</p>	
Progress on Condition Year 3		<p>Monitoring systems are in place for all species groups, based on the detailed COPEC observation of 25% of the lines hauled. The 2011 Code of Conduct has been complemented by compilations of catch rates of the main species on maps showing depth and area-specific hotspots in 2013 and 2014 (Gasco et al., 2014).</p> <p>For the next surveillance audit, a routine reporting format will be needed to monitor the impact of the fishery.</p>	

UoA1 Condition 2	PI numbers	Scoring issue/ scoring guidepost	Score
		<p>An evaluation of the Code of Conduct and Guide has mostly been done but not presented as such and not yet published with the in-depth analysis of annual catch rates in collaboration with the HIMI fishery (Nowara et al., 2017). The data and analyses available suggest that, at its current level, the impact of the Kerguelen toothfish longline fishery on skates may be sustainable.</p> <p>In terms of the client action plan, points 1 and 2 are met and progress against points 3 and 4 is on target. In terms of the milestones, the monitoring system is in place (point 1 – all milestones met); evidence of implementation of the code of conduct is provided by observer reports (point 2 milestone met). The effectiveness of the Code of Conduct and Guide has been evaluated in part (point 3 milestone), and a Strategy to further implement the Code of Conduct is planned for 2017 (Year 4, point 4 milestone).</p> <p>On the basis of information soon to be published, the first two PIs could be rescored. Provided the TAAF can communicate information more transparently and develops more collaboration with the fishing vessel captains as a group, this condition is expected to be closed at the next audit.</p>	
Progress on Condition Year 4		The Code of conduct was found to be valid and its application is strictly monitored and enforced. Minutes of the reports to the C3P are now public (TAAF, 2017). Catches of main retained species have remained stable. For rays in this fishery, Nowara et al. (2017) found that biomass and numbers estimated for the two species through the Poker surveys are stable. In 2017 management measures have been further strengthened by additional spatial closures and increased scientific observations for the reserve (RNN) marine extension.	
Status of condition		The condition is now closed. PIs 2.1.1, 2.1.2 and 2.1.3 are re-scored (see Evaluation Table 4, Evaluation Table 5 and Evaluation Table 6)	

Table 19. Kerguelen UoA1 - Condition 3: Targets and best practice for grey petrels

UoA1 Condition 3	PI number	Scoring issue/ scoring guidepost	Score
Performance Indicator & Score	2.3.1	b. The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species - for grey petrels	75
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, PCR 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>	
Milestones		Year 1: Continued implementation of bird action plan by all vessels. Establish system within SARPC to lower performing vessels to learn from best	

UoA1 Condition 3	PI number	Scoring issue/ scoring guidepost	Score
		<p>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 on-going bycatch and how to address them. Year 5 and on: Implement second action plan if required.</p>	
<p>Client action plan</p>		<ol style="list-style-type: none"> 1. Continue implementation of bird action plan by all vessels. TAAF-SARPC On-going process already started. 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. 3. Continuation of the Assessment of the Kerguelen grey petrel population. Results will be presented to ACAP 2013 by Year 2 of certification and on-going (TAAF). 4. Bycatch figures compiled and analysed by species and by vessel TAAF Year 1 and on-going. 	
<p>Progress on Condition Year 1</p>		<p>On-going 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.</p>	
<p>Progress on Condition Year 2</p>		<p>In terms of measures, implementation by the vessels and reporting of results, the condition is way ahead of target, with continued low number of birds caught, below the quantitative targets set by the MSC team (at the insistence of stakeholders). The bird action plan is fully implemented according to observer reports and is a mandatory requirement.</p> <p>In terms of grey petrels, DCPN monitor and report bird deaths and injuries by species, with no impacts on grey petrels amounting to 3 dead animals (reported) in the 2013-14 season. Quantitative targets have not been set, but the team accepted the argument that this level of mortality would be below any likely target (or maximum) levels.</p> <p>On this basis, the Year 1 and 2 milestones and action plan requirements have been met.</p> <p>Further progress may be limited by a lack of transparency regarding individual vessel results, which are only discussed with individual vessels by TAAF and not shared cooperative in discussions between vessel captains.</p> <p>The C3P does not currently allow for discussion and exchange of best practice between the best and least performing vessels. Results are briefly presented by TAAF, but SARPC would rather the discussion be more transparent and cooperative with TAAF DCPN and bird experts and openly between vessels. Furthermore, the basis by which TAAF 'rewards' good performing vessels with additional quota is unclear and un-transparent. In this respect, more analysis and a Task group process are needed to ensure that current results keep improving – as acknowledged by TAAF.</p>	
<p>Progress on Condition Year 3</p>		<p>The bird action plan is fully implemented according to observer reports, and is a mandatory requirement. For grey petrels, TAAF through the COPEC systematically monitors and reports bird deaths and injuries by species. There was no mortality of grey petrels in the 2014-15 season, but 6 birds observed dead in 2015/2016, extrapolated to 80 for the all lines set.</p>	

UoA1 Condition 3	PI number	Scoring issue/ scoring guidepost	Score
		Vigilance will be strengthened in January and during full moon when most of the interactions with the grey petrels appear to take place. Further progress regarding all interactions with birds could be improved through more transparency regarding individual vessel performances, which are currently not openly shared by TAAF to elicit collective discussions with and between all vessel captains.	
Progress on Condition Year 4		Transparency and discussions of individual vessel targets are taking place, and the C3P minutes are now published. In addition, SARPC have undertaken a detailed study of risk factors for all vessels over the last four years in order to identify specific risk factors, with the aim to devise a best practice guide from the point of view of the vessels captains and crews to be published shortly (the audit team was communicated a draft). Monitoring is very detailed and confirms that all possible actions are taken, evaluated and discussed by TAAF-DE with the vessels at least once per year. Monitoring of the bird populations themselves has been further reinforced to inform the extension of the marine part of the RNN. No quantitative targets were set but the drastic reduction in numbers of birds impacted by the fishery is maintained.	
Status of condition		The condition is now closed. PI 2.3.1 is re-scored (see Evaluation Table 8)	

Table 20. Kerguelen UoA1 - Condition 4: Fishery management plan

UoA1 Condition 4	PI numbers	Scoring issue/ scoring guidepost	Score
Performance Indicators & Scores	1.2.2	Harvest control rules and tools	70
	3.2.1	Fishery-specific objectives	75
	3.2.2	Decision-making processes	70
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 on going basis. The management plan should be available to stakeholders on a transparent basis.	
Milestones		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.	
Client 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 and Year 3 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	

UoA1 Condition 4	PI numbers	Scoring issue/ scoring guidepost	Score
<p>Progress on Condition Year 1</p>		<p>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.</p> <p>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 the state of stock.</p> <p>To stay on target, the following will need to be finalised before the next surveillance audit:</p> <ul style="list-style-type: none"> Harvest control rules, which control how decisions on the TAC will be taken; 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); Communication of the agenda and minutes of C3P meetings; <p>A process for the evaluation and revision of the Management Plan.</p>	
<p>Progress on Condition Year 2</p>		<p>A draft management was circulated among stakeholders, and published in August 2015 (TAAF, 2015c). The Management Plan evaluation is scheduled after three years (2018). Progress for this condition is therefore back on target in relation to the milestones and the client action plan, although some essential aspects are missing from the draft plan for the condition to be closed as yet:</p> <p><u>Harvest control rules (HCRs) are not yet sufficiently clear and transparent.</u> The team accepted the argument that this is due to the fact that the process of full development of the stock assessment model is still ongoing. However, to remain on target, transparent harvest control rules will need to be incorporated into the management plan once the new model developments are validated by CCAMLR to provide a firm basis for TAC decision rules. <u>Progress on this point by next year's audit is essential;</u></p> <p>Some detailed information was presented by TAAF at the C3P meeting regarding vessel performance with respect to rays, birds and the hook/line loss criteria now part of the vessel quota allocation rules. Some changes in the rules for 2015/16 have not been openly communicated and have been part of an ongoing discussion between stakeholders. The criteria system will need to be published and explained (or incorporated into the management plan) in order to serve its purpose as a basis for transparent decision-making;</p> <p>The C3P will need to convene as a more transparent task group to analyse information from the vessel captains and encourage open discussions between vessels and with TAAF and MNHN scientists to collaborate identifying further best practice rules.</p>	
<p>Progress on Condition Year 3</p>		<p>The management plan came into force in September 2015 (TAAF, 2015) with an evaluation scheduled in 2018.</p> <p>The stock assessment model has been updated (see Condition 1) and is now used to inform TAC decisions validated by CCAMLR in 2016. Once the new model developments are validated by CCAMLR to provide a firm basis for TAC decision rules, a set of HCR will need to be incorporated into the Management Plan. The TAAF has also pledged to propose changes to the TAC for the season starting <u>after</u> the CCAMLR reports are publically available (see Recommendation 8). Under the current precautionary management regime, the condition is therefore on target.</p>	

UoA1 Condition 4	PI numbers	Scoring issue/ scoring guidepost	Score
		<p>Contrary to best practice, which postpones modifications to the Management Plan for the period set in the Plan (three years), an aspect of the Management Plan was modified in 2016, to make possible the introduction of a new entrant for the 2016/2017 season. So far, the number of vessels active in the zone at any given time has been modified to “7 at any one time”, but the consequences on the sustainability of the fishery will have to be evaluated as a matter of urgency.</p> <p>This year, TAAF provided the audit team with a copy of the C3P presentation (although the vessel owners didn’t have one), and the meeting minutes have been published (TAAF, 2016b). At the C3P TAAF present detailed information on individual vessel performances with respect to tag returns, catches of juvenile toothfish, skates, birds and the hook/line loss criteria etc. It is felt that more transparent and open discussion are needed with TAAF and MNHN scientists and vessel captains collectively, to develop best practice and help improve further individual and collective environmental performances of the fleet.</p> <p>The current secretive discussions of individual vessel results used in the vessel quota allocation appear to have divided the fleet and decreased their possibilities to collaborate among themselves. For improved governance, the quota allocation criteria system will need to be published and explained in the next version of the management plan.</p>	
<p>Progress on Condition Year 4</p>		<p>The C3P has now published minutes, which are widely circulated (TAAF, 2017). The Groupe de Travail de la pêche australe (GTPA) brings managers (ministerial levels and TAAF), scientists and vessels owners together at least once a year, to discuss research findings and a wide range of topics, including the workplan to devise the new Fishery’s Management Plan (FMP) during 2018 (TAAF, 2018). It is scheduled to meet more often to steer the revision of the Management Plan. The minutes have been communicated to the assessors in order to demonstrate the transparency of the new FMP process.</p> <p>The allocation criteria for vessel quotas will be examined as part of this exercise.</p> <p>Time will tell if collaborative processes remain in place as part of the new FMP, but in Year 4, necessary actions have been taken to fulfill the condition.</p>	
<p>Status of condition</p>		<p>The condition is now closed. PIs 1.2.2 (Evaluation Table 1), 3.2.1 (automatically re-scored to Crozet SG80 see MEC (2017)) and 3.2.2 (see Crozet Evaluation Table 10) have been re-scored.</p>	

4.1.2 Recommendations

Recommendations 1, 4, 5, 6 and 7 were closed during the year 2 surveillance – they are therefore not repeated here. Progress against recommendations 2, 3 and 8 is shown in the tables below.

Table 21. Recommendation 2 for the Kerguelen component (UoA1)

Recommendation	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.
Progress on Recommendation Year 1	No specific progress on this aspect.
Progress on Recommendation Year 2	A first analysis by TAAF DCPN of the numbers of rays processed, discarded and cut off was presented to the vessel captains, showing that most rays are presently cut off irrespective of their survival prospects. A study is planned.
Progress on Recommendation Year 3	<p>A marked decrease in the volume of rays caught (from 456t in 2010 to 68t in 2014) has been noted, while the number of individuals released alive has increased significantly: from 2 in 2010 to just under 40,000 in 2014.</p> <p>The impacts of the Kerguelen fishery on skates have been analysed in detail over the period 1997-2014 in collaboration with Australian colleagues for the HIMI fishery. The study concludes that, although survival rates from the cut-off policy are unknown, there appears to be little change in the abundance of the Kerguelen skate species as indicated by their catch rates in the toothfish fishery. Therefore, the CCAMLR fisheries conservation measures and marine reserves in the area “appear to provide effective protection for the skates “...” at least in the shallower waters where the trawl fisheries operate” (Nowara et al., 2017). Careful monitoring in the Kerguelen fishery is ongoing, together with the cut-off and move-on rule (Thibault Thellier). However, TAAF noted large remaining differences between vessels.</p>
Progress on Recommendation Year 4	Some tagging of rays is taking place, in order to assess survivorship of the rays cut off. This recommendation is closed. During re-certification, a different recommendation will be made, for the fishery’s to initiate a CCAMLR-wide discussion to assess the effectiveness across all longline fisheries of the cut-off measures that are currently enforced across the SARPC fleet.

Table 22. Recommendation 3 for the Kerguelen component (UoA1)

Recommendation	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).
Progress on Recommendation Year 1	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 is discussed by TAAF with each vessel concerned individually after each fishing trip and best practice guidelines that have emerged are proving very effective. However, figures are not shared or discussed by TAAF

	openly with all vessels captains present, which limits shared understanding within the fleet.
Progress on Recommendation Year 2	Three grey petrels were reported caught (dead) for 2014/15 on the 25% lines observed. The TAAF DCPN is monitoring progress and urging for further decrease. A possible cooperative TAAF-SARPC task group, to identify and openly discuss further improvements constraints and opportunities between vessels is considered.
Progress on Recommendation Year 3	The total number of birds observed to be dead or wounded during fishing operations was 18 (12 white-chinned and 6 grey petrels) for the 2015-16 season from 25% of all lines hauled by the fleet (TAAF, 2016b). TAAF noted large remaining differences between vessels (from 2 to 6 birds) and a strong possibility that the crew under-reported observations on the 75% lines not observed, and therefore that improvements are possible.
Progress on Recommendation Year 4	The scientists in charge of monitoring and research on the bird populations report no visible impacts on populations of petrels in both UoAs. A detailed analysis of possible risk factors has been undertaken by SARPC from COPEC observations and captains survey. It is designed to assess all potential contributing factors to seabird mortality (visibility, wind, sea state, light, scaring devices etc.) for each individual vessel incident in the fishery over the last three seasons and identify key factors that reduce interactions. The analysis and resulting Best practice Guide communicated to the assessors in draft form will be published in 2018.

Table 23. Recommendation 8 for the Kerguelen component (UoA1)

Recommendation	The team recommends that TAC changes should apply to the season following CCAMLR meetings at the earliest.
Progress on Recommendation Year 1	N/a
Progress on Recommendation Year 2	N/a
Progress on Recommendation Year 3	TAAF representatives present at the site visit confirmed that, effective from the 2016/2017 season, TAC changes would be presented at CCAMLR and validated before the beginning of the following season for changes to be introduced. Therefore, a TAC of 5,300 tonnes is to be kept for 2017/2018. If this is confirmed at the next audit, the recommendation will be closed.
Progress on Recommendation Year 4	From the 2017/18 season, the TAAF takes its TAC setting decisions for both UoAs for the fishing season following the CCAMLR WG-FSA and SC meetings (see section 2.1).

4.2 Crozet UoA2

4.2.1 Conditions

Five performance indicators scored below 80 and the corresponding conditions are shown in the tables below. Please note that in some circumstances corrective action is shared between conditions – where this was the case, the conditions were combined.

Table 24. Crozet UoA2 - Conditions 1 and 5: Harvest control rules and decision-making processes

UoA2 Conditions 1 and 5	PI number	Scoring issue/ scoring guidepost	Score
Performance Indicator & Score	1.2.2 – Harvest control rules	a. Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached b. The selection of the harvest control rules takes into account the main uncertainties.	65
	3.2.2 Decision-making processes	d. Information on fishery performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	75
Condition	<p>General harvest control rules exist, expressed in the numerous measures (limited access, effort control at sea, observer coverage, dock-side monitoring, VMS) to control and limit exploitation. TAAF has the entire power to take further actions if the global objective of the strategy is threatened. However, the team did not consider that the HCRs are 'well-defined', in the sense that the links between scientific advice, reference points and decisions on the TAC are not clear and transparent. Rather, the TAC is determined by the TAAF and three French ministries concerned. That TAC is tested <i>a posteriori</i> by the MNHN with the CASAL model.</p> <p>The MNHN scientific advice is not publicly available until it has been presented and is published on CCAMLR website around December time. Therefore annual TAC decisions made by the TAAF in August are so far based on information and scientific advice that is not publicly explained. Likewise there is no requirement for TAAF to explain the basis and decision-making process used to vary individual vessel quotas each year. Although some explanations are provided to vessel owners on an individual basis, they are informal and not clearly linked to monitoring results, and there is no review of management actions,</p> <p>By the end of Year 3 (to coincide with Kerguelen re-certification), the fishery must have in place a set of Harvest Control Rules defined in the Management Plan, associated with established decision-making processes based on these HCRs and objectives which are clearly explained to fishery stakeholders.</p>		

UoA2 Conditions 1 and 5	PI number	Scoring issue/ scoring guidepost	Score
Milestones		<p>Year 1: Stakeholders discuss and agree a set of explicit objectives for Principle 1 (management of the toothfish stock) at Crozet, which can form the basis of the HCRs, and which are compatible with the CCAMLR reference points or otherwise compatible with the requirements of MSC Principle 1 (1.1.2) Criteria for allocation of the TAC between vessels published by TAAF.</p> <p>Score 1.2.2: 65; Score 3.2.2: 75</p> <p>Year 2: Preliminary harvest control rules developed which show how the TAC (and/or other management measures) are adapted in response to the status of the stock. HCRs reviewed with relevant stakeholders.</p> <p>Score 1.2.2: 65; Score 3.2.2: 75</p> <p>Year 3: Revised management plan presented for Crozet: explicit Principle 1 objectives in the form of agreed management reference points; explicit, well-defined HCRs based on those objectives; and a transparent decision-making process for the setting of the TAC and allocation of individual quotas according to the pre-agreed rules.</p> <p>Score 1.2.2: 80; Score 3.2.2: 80</p>	
Client action plan		<p>1. Define rules to control the level of annual catches per stock (HCR), the objectives of the management and decision-making processes. Clear rules and simple catch level control will be integrated in the management plan once the new productivity evaluation model of the stock will be validated by CCAMLR, which will provide a solid basis for decision making regarding the level of annual TACs.</p> <p>By the end of Crozet certification of year 2.</p> <p>2. – Assess the implementation of the fishery management plan once it is established by the TAAF and approved by stakeholders.</p> <p>By the end of Crozet certification of year 2.</p> <p>3. Review and improve the Management Plan, including the HCRs.</p> <p>By the end of Crozet certification of year 3.</p>	
Consultation		TAAF in collaboration with the MNHN et le SARPC. Emails demonstrating support of the relevant parties to the action plan were provided to the CAB.	
Progress on Condition Year 1		<p>The fishery has a set of Harvest Control Rules in place, with reference points conform to those of the CCAMLR (LRP and TRP) and more precautionary (TAAF-TRP=60%B₀). The TAC follows scientific advice based on modelling and simulations peer reviewed that are found to be conform by the CCAMLR WG-FSA. Condition 1 is closed.</p> <p>The Management Plan, associated with established decision-making processes based on these HCRs and objectives which are clearly explained to fishery stakeholders.</p>	
Status of condition		<p>Condition 1 is ahead of its target and can now be closed. The PI 1.2.2 is re-scored (see Evaluation Table 2)</p> <p>Condition 5 is also re-scored (see Evaluation Table 10).</p>	

Table 25. Crozet UoA2 - Condition 2 and 3: Strategy and information to manage the fishery’s impacts on grenadiers and rays

UoA2 Conditions 2 and 3	PI numbers	Scoring issue/ scoring guidepost	Score
	2.1.1	a. Main retained species are highly likely to be within biologically based limits or if outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	60
	2.1.3	b. Information is sufficient to estimate outcome status [of main retained species] with respect to biologically based limits.	75
Condition	<p>The team considered that the CBC and other measures certainly constitute a 'partial strategy'. The team was not, however, provided with evidence that it is 'demonstrably effective' – i.e. there has not yet been any analysis as to whether the objectives of the CBC in terms of bycatch reductions are being met, even though the 3-year period foreseen to achieve them has more or less passed.</p> <p>Qualitatively speaking, it is reasonable to argue that given the strategy in place for main retained species, the low catches over a large area and the closed area <500m, it is not at all likely that the fishery is having an impact on the population which would affect its status in relation to biologically-based limits. The available data could also provide a basis for a semi-quantitative analysis (e.g. based on CPUE statistically adjusted for changes resulting from implementation of the CBC, or based on length-frequency – observers carry out length-frequency measurements, or following the Australian risk-assessment methodology). It is not, however, currently possible to estimate outcome status in relation to biologically-based limits in any quantitative way, because the available data have not been analysed in this way.</p> <p>The data available on the bycatch of the fishery (main retained species – <i>Macrourus carinatus</i> and <i>Amblyraja taaf</i>) from Avistock and Avipeche should be analysed to evaluate whether the targets of the CBC in terms of bycatch reduction have been met. If the CBC has not been 'demonstrably effective' new or additional measures should be put in place or action otherwise taken such that the fishery is able to demonstrate that these species are within biologically-based limits or that the fishery is not hindering recovery.</p>		
Milestones	<p>Year 1: Analyse data and evaluate if CBC targets are being achieved Score 2.1.1: 60; Score 2.1.3: 75</p> <p>Year 2: Start to put in place a mechanism for periodic evaluation of fishery-dependent data on <i>M. carinatus</i> and <i>A. taaf</i> to provide some (proxy) evaluation of stock status. If CBC targets not achieved, evaluate whether a new approach or additional measures are required to ensure the sustainability of these stocks. Score 2.1.1: 60; Score 2.1.3: 75</p> <p>Year 3: Finalise the methodology for periodic evaluation of stock status for <i>M. carinatus</i> and <i>A. taaf</i>. Finalise and agree new management measures, if required. Score 2.1.1: 60; Score 2.1.3: 75</p> <p>Year 4: Implement new management measures, if required. Score 2.1.1: 80; Score 2.1.3: 80</p>		
Client action plan	<p>1. Evaluation of Good Practice Guide in terms of reduction in catch rates non-target species. TAAF and MNHN should analyze available information in terms of reducing</p>		

UoA2 Conditions 2 and 3	PI numbers	Scoring issue/ scoring guidepost	Score
		catch rates non-target species to assess the effectiveness of existing practices, before any revision of the Guide 2011 (N. Gasco and G. Duhamel). 2. Revision of the Good Practice Guide and establishing protective measures if necessary – MNHN, TAAF DPMA, SARPC; By August, 2018 (Kerguelen surveillance audit and end year 2 Certification Crozet)	
Consultation		TAAF in collaboration with the MNHN et le SARPC. Emails demonstrating support of the relevant parties to the action plan were provided to the CAB.	
Progress on Condition Year 1		Regarding 2.1.1, The TAAF-DE and MNHN confirm that, although there are no publication on the subject, catch rates and fish sizes are monitored for main retained species to ensure that these are highly likely to be within biologically based limits. For grenadiers, there still isn't enough publicly available data analyses to demonstrate that they are highly likely to be within biologically based limits, but regular monitoring and POKER surveys have found no evidence to suggest that they might not be. For rays, Nowara et al. (2017) show that biomass and numbers estimated through the POKER surveys have remained stable. For all species, the comprehensive strategy in place to limit catches of non-target species by the fishery is demonstrably effective, as it limits the quantities of all bycatch caught over the last five years, and most of the rays caught are now cut off. Regarding 2.1.3b, the CBC implementation is closely monitored. The MNHN has confirmed that all species (retained or not) caught are sampled by on-board scientific observers (COPEC) including the rays that are now mostly cut off. Data for size, sex, maturity and other indicators by species are collected systematically, which allows monitoring of catch rates and the identification of hot spots. The recent extension of the RNN has meant that the TAAF-DE now also have specific observers on board (in addition to COPEC), who monitor the fishery's interaction with all species other than toothfish, including grenadiers and rays.	
Status of condition		Condition 2 for PI 2.1.1: the condition is on target. Following the milestones set and proposed Action Plan, it will need to be carried over for the fishery's re-certification of UoA2. No changed score. Condition 3 for PI 2.1.3 is ahead of target and can now be closed, the PI is re-scored (Evaluation Table 7).	

Table 26. Crozet UoA2 - Condition 4: Habitats information / mapping

UoA2 Condition 4	Insert relevant PI number	Scoring issue/ scoring guidepost	Score
	2.4.3	The nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.	75
Condition		There are no habitats maps from Crozet, and little work has been done on demersal habitats. Unlike at Kerguelen, the POKER research cruises do not (cannot) operate at Crozet, so an important source of fishery-independent data is missing. Nevertheless, habitats are monitored to the extent that VME species coming up on the lines are identified and quantified. This provides a basic	

UoA2 Condition 4	Insert relevant PI number	Scoring issue/ scoring guidepost	Score
		<p>understanding of the type and distribution of these vulnerable habitats. The footprint and impact of this fishing method on the benthos (even taking gear loss into account) is small, and given that significant areas of the Crozet EEZ are protected from fishing (see Figure 13 of the main report), the level of detail required to be 'relevant to the scale and intensity of the fishery' is relatively low. Nevertheless, the team noted that there has so far not been any mapping of the VME observer data in the way that has been done for bycatch: this could be used to identify VME hotspots which could then be avoided. The team considered that this lack of analysis of the existing habitat data (which is understandable since the VME rules are quite recent) precludes SG80 being met.</p> <p>The observer data on bycatch of VME indicator organisms should be archived, analysed and mapped on an ongoing, periodic basis, so as to build up over time an improving picture of the location of VMEs in the Crozet fishing zone. This may be done by the TAAF, the MNHN or any body with suitable expertise.</p>	
	Milestones	<p>Year 1: Develop a system for inputting data in a form which can be analysed (e.g. a database, GIS software programme or other suitable form), if not already in such a form. Enter historic data if necessary. Score 2.4.3: 75</p> <p>Year 2: Show that observer data are being entered in the system on an ongoing or periodic basis. Analyse existing data and prepare initial maps. Provide a plan as to how often and by whom these maps will be updated. Score 2.4.3: 80</p>	
	Client action plan	<p>1. Mapping and analysis of observer data on vulnerable marine ecosystems in the same way that this is done to catch of non-target species. By Crozet certification of year 2</p>	
	Consultation	TAAF / MNHN / or other expert (not yet defined). Emails demonstrating support of the relevant parties (TAAF, MNHN) to the action plan were provided to the CAB.	
	Progress on Condition Year 1	A vast amount of work took place in order to inform the extension of the National Reserve around Crozet (RNN). Koubbi et al. (2016) have published a typology of the marine ecosystem components into marine "ecoregions" to justify the MPA (RNN) extension, and inform its management plan. The collaborative work (TAAF, Agence des Aires Marines Protégées - AAMP, UPMC, CNRS (Chizé) and MNHN), has devised a typology based on marine benthic species and VMEs to identify biodiversity features and "hotspots" to protect.	
	Status of condition	The condition is ahead of target and now closed. PI 2.4.3 is re-scored (Evaluation Table 9).	

4.2.2 Recommendations

Table 27. Recommendation 1 for the Crozet component (UoA2)

Recommendation	In the observer report there are one or two comments which suggest that the CBC is not being taken as seriously as it should be. Although it is clear that this is a minority of cases, the team recommends that SARPC member and TAAF review observer reports at the end of each year and provide feedback to the captain and fishing controller concerned, emphasising the importance of the CBC and ray cut-off rules.
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Progress on Recommendation Year 1	The ray cut-off is applied across all vessels, as confirmed by the COPEC reports. This recommendation is therefore closed. However, the MNHN scientists are now questioning the effectiveness of the CCAMLR cut-off rule, see Table 21.
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Table 28. Recommendation 2 for the Crozet component (UoA2)

Recommendation	It is recommended that SARPC monitors the quantities of bait used, by species and FAO stocks/ areas of origin and sustainability status, per year (added during the Kerguelen Surv 1 audit), with a view to avoid the use of bait from stocks that are assessed to be at unsustainable levels.
Progress on Recommendation Year 1	SARPC establishes an annual tally of bait quantities used by species and FAO stock area. Vessel owners also check the sustainability status prior to ordering, and ensure that catch certificates are obtained for all orders to guarantee traceability. This recommendation is therefore closed.

Table 29. Recommendation 3 for the Crozet component (UoA2)

Recommendation	It is recommended that research be continued into the mapping of benthic habitats and the identification of VMEs at Crozet ecosystems should continue.
Progress on Recommendation Year 1	Permanent MNHN and MPA (TAAF-DE RNN) staff have been recruited to monitor describe and analyse impacts on VMEs and report to CCAMLR and other fora. This recommendation is therefore closed.

Table 30. Recommendation 4 for the Crozet component (UoA2)

Recommendation	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 and per zone) lost during fishing operations (added during the Kerguelen Surveillance 1 audit), in the view to assess potential ecosystem impacts and devise voluntary best practice guidelines.
Progress on Recommendation Year 1	Annual summaries have been provided since 2014/2015 for the whole fishery, this recommendation is now closed.

Table 31. Recommendation 5 for the Crozet component (UoA2)

Recommendation	The procedures and criteria for allocating variable amounts of quota between different vessels annually should be reviewed and published, to ensure that they do not contribute to unsustainable fishing practices and to ensure that they are consistently applied to provide effective deterrence.
Progress on Recommendation Year 1	The TAAF has included this aspect in its collaborative revision of the FMP (see section 2.2), a discussion and decision on way forwards should be available by end of 2018 as the FMP is revised. The recommendation is now closed.

Table 32. Recommendation 6 for the Crozet component (UoA2)

Recommendation	It is recommended that TAC changes introduced by TAAF annual decrees should apply to the season following CCAMLR meetings at the earliest (added during the Kerguelen Surveillance 2 audit), to allow for prior peer review and validation by CCAMLR working groups.
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**Progress on
Recommendation
Year 1**

From the 2017/18 season, the TAAF takes its TAC setting decisions for both UoAs for the fishing season following the CCAMLR WG-FSA and SC meetings (see section 2.1). The recommendation is now closed.

5 Conclusion

The audit team confirms that this fishery continues to conform to the MSC Principles and Criteria for sustainable fishing.

All existing conditions were closed except for one concerning PI 2.1.1 for Crozet (UoA2) which was raised during the 2016 expedited assessment and is scheduled to be closed out in this fishery's second certification cycle. The PIs concerned were re-scored (see Appendix). No new conditions were raised as a result of this surveillance audit. Some recommendations were closed and others remain open; two new recommendations were made.

The audit team recommends that this fishery should remain certified and that product remains eligible to enter further chains of custody.

6 Evaluation results

The Principle scores for both UoCs in this fishery have changed since the last surveillance, as indicated in the tables below.

6.1 Principle-level scores

Following the 4th surveillance audit, the final principal scores are as follows.

Principle	Score UoA1 Kerguelen	Score UoA2 Crozet
Principle 1 – Target Species	82.5	83.1
Principle 2 – Ecosystem	84.0	83.1
Principle 3 – Management System	85.4	80.0

6.2 Summary of PI-level scores

Table 33. Principle 1 scores for Kerguelen (UoA1) and Crozet (UoA2) (re-scored PIs in orange)

Component	Wt	Performance Indicator (PI)		Wt	Score UoA1 KER	Score UoA2 CRO
Outcome	0.33	1.1.1	Stock status	0.5	80	80
		1.1.2	Reference points	0.5	90	90
		1.1.3	Stock rebuilding	N/A	-	-
Management	0.67	1.2.1	Harvest strategy	0.25	80	80
		1.2.2	Harvest control rules & tools	0.25	80	80
		1.2.3	Information & monitoring	0.25	80	80
		1.2.4	Assessment of stock status	0.25	80*	85

* Small differences in scores for the two UoAs are linked to the different scoring tables used for their certification

Table 34. Principle 2 scores for Kerguelen (UoA1) and Crozet (UoA2) (re-scored PIs in orange)

Component	Wt	Performance Indicator (PI)		Wt	Score UoA1 KER	Score UoA2 CRO
Retained species	0.2	2.1.1	Outcome	0.33	80	60
		2.1.2	Management strategy	0.33	80	80
		2.1.3	Information/Monitoring	0.33	80	80
By-catch species	0.2	2.2.1	Outcome	0.33	90	90
		2.2.2	Management strategy	0.33	85	85
		2.2.3	Information/Monitoring	0.33	85	85
ETP species	0.2	2.3.1	Outcome	0.33	80	95
		2.3.2	Management strategy	0.33	90	95
		2.3.3	Information strategy	0.33	90	85
Habitats	0.2	2.4.1	Outcome	0.33	85	90
		2.4.2	Management strategy	0.33	80	85
		2.4.3	Information	0.33	80	80
Eco-system	0.2	2.5.1	Outcome	0.33	80	80
		2.5.2	Management	0.33	90	90
		2.5.3	Information	0.33	85	85

Table 35. Principle 3 scores for Kerguelen (UoA1) and Crozet (UoA2) (re-scored PIs in orange)

Principle	Component	Wt	Performance Indicator (PI)		Wt	Score UoA1 KER	Score UoA2 CRO
Three	Governance and policy	0.5	3.1.1	Legal and customary framework	0.25	90	90
			3.1.2	Consultation, roles & responsibilities	0.25	85	85
			3.1.3	Long term objectives	0.25	100	100
			3.1.4	Incentives for sustainable fishing	0.25	80	80
	Fishery specific management system	0.5	3.2.1	Fishery specific objectives	0.20	80	80
			3.2.2	Decision making processes	0.20	80	80
			3.2.3	Compliance & enforcement	0.20	90	85
			3.2.4	Research Plan	0.20	80	80
			3.2.5	Management performance evaluation	0.20	80	80

* Small differences in scores for the two UoAs are linked to the different scoring tables used for their certification

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Appendix – Rescoring tables

Evaluation Table 1 – Kerguelen UoA1 – PI 1.2.2 (quoted from MEP 2013, obsolete text ~~crossed-out~~, updated text in blue)

1.2.2 Harvest control rules and tools: There are well defined and effective harvest control rules in place
SG 60: Generally understood harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached. There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.
SG 80: Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. The selection of the harvest control rules takes into account the main uncertainties. Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.
SG 100: Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. The design of the harvest control rules take into account a wide range of uncertainties. Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
<p><u>Rationale</u></p> <p>All the key elements of a harvest strategy are in place for the Kerguelen stock (see above). There is a harvest control rule in the sense that there is a TAC, although the stock assessment has not up till now been used to set the TAC, but rather to check that the TAC is sustainable and precautionary, and to evaluate it against CCAMLR reference points.</p> <p>It has been agreed between the stakeholders in the fishery (basically TAAF, MNHN and SARPC) that the TAC will is fixed for now at 5100 tonnes, which is compatible with CCAMLR reference points. It is assumed that since a A formal stock assessment process is now apparently in place, therefore any discussion about increasing the TAC has been and will in future be based on projections of stock status in relation to CCAMLR reference points (see condition under 1.2.4 below).</p> <p>The HCR can therefore be is now defined as the following: <i>the TAC that corresponds to a long-term (35 years) yield that maintains the stock biomass at or above 60%B₀. shall remain at 5100 tonnes until there is good reason (and agreement among all stakeholders) for increasing it.</i> Nevertheless, the assessment of the HIMI fishery (SCS 2012) and stakeholders (see Annex 6) considered that from their perspective, the HCR could not be considered to be ‘well defined’, because i) The TAC of 5100 t was originally set for reasons other than those relating to the stock assessment or to CCAMLR reference points. has now been aligned with CCAMLR standard practice although it is more precautionary than the 50%B₀ target reference point. It is based on the latest available data and model simulations and peer-reviewed by the WG-FSA (Sinègre and Duhamel, 2016a). and ii) because it is difficult for external observers to understand the situation in relation to how the TAC is reviewed and evaluated (i.e. the process is not transparent). The annual WG-FSA and Fishery reports are widely shared with stakeholders and external observers at CCAMLR meetings (CCAMLR, 2017a).</p> <p>In addition, some concerns have been raised about the fact that the HCRs are completely separate for the two sides of the Kerguelen plateau — i.e. the TACs are set separately. As outlined in the rationale for PI 1.1.1, it seems that biomass estimates in relation to B₀ are rather similar for the two jurisdictions, and TACs are roughly in proportion to the relative area of each jurisdiction (i.e. the French TAC is twice the Australian TAC, and the French EEZ is roughly twice as big). This implies that the two fisheries management systems are more or less ‘in harmony’ in relation to their approach to</p>

1.2.2 Harvest control rules and tools: There are well defined and effective harvest control rules in place

~~harvest strategy and control rules — however this could be regarded as more a matter of luck than judgement — at least up till recently. Tagging studies of toothfish movements have shown that the HIMI and Kerguelen fisheries could be assessed as separate management units (SCS, 2017). Therefore the HIMI and TAAF HCRs can be separate and take into account the main uncertainties.~~

This HCR takes into account uncertainties in the sense that i) the reference points are precautionary and ii) the stock assessment suggests that the stock status with a constant TAC at this level is well within reference points (although it is clear that estimates derived from the stock assessment are uncertain – compare for example the difference in estimates of B_{2011}/B_0 in 2011 (0.59) and B_{2012}/B_0 in 2012 (0.72), although noting that both estimates are within reference points). ~~This has since been and remains ($B_{2016}/B_0=0.58$ Sinègre and Duhamel (2016b)).~~

Evidence suggests, however, (observers, CCAMLR estimates of IUU) that the appropriate exploitation rate implied by the TAC is being met in practice. Aside from the TAC, other tools are i) limited licences; and ii) ban on fishing above 500m (to protect juveniles).

~~Overall, the assessment team, having revised this rationale to take into account stakeholder comments, has concluded that the first element of SG80 is not met (the harvest control rule is not ‘well-defined’), and but that the other elements of SG80 are met, leading to a score of 70 overall.~~

~~The HCRs are now well defined, **SG 80 is met.**~~

Condition

~~A score <80 requires a condition. Condition 4 applies to this PI, as well as to PIs 3.2.1 and 3.2.2 (fishery-specific objectives and decision-making processes).~~

~~Produce a management plan for this fishery, focusing on the management of the tooth-fish 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.~~

Additional references

~~(Sinègre and Duhamel, 2016b; CCAMLR, 2017a; SCS, 2017)~~

Evaluation Table 2 - PI 1.2.2 Crozet – UoA2 (quoted from MEC 2016, obsolete text ~~crossed-out~~, updated text in blue)

PI 1.2.2		There are well defined and effective harvest control rules in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	
	Met?	Y	N Y	
	Justification	<p>MSC considers harvest control rules (HCRs) as actions that management takes in response to changes in the fishery and/or changes in status in relation to reference points. They are defined as the pre-agreed rules and management actions that will be taken in response to changes in indicators of stock status with respect to explicit or implicit reference points.</p> <p>General harvest control rules exist, expressed in the numerous measures (limited access, effort control at sea, observer coverage, dock-side monitoring, VMS) to control and limit exploitation. TAAF has the entire power to take further actions if the global objective of the strategy is threatened. The rules are generally understood and complied with, and SG 60 is met.</p> <p>However, the team did not consider that the HCRs are ‘well-defined’, in the sense that the links between scientific advice, reference points and decisions on the TAC are not clear and transparent. Rather, the TAC is determined by the three French ministries concerned and the industry. That TAC is tested a posteriori by the MNHN with the CASAL model. So far, it has been the case that this post hoc testing has shown that the TAC is precautionary in relation to CCAMLR reference points, but the actions which would be taken in the event that this is not the case are not well-defined. SG80 is not met. The HCR are based on a target reference point (TAAF-TRP) of 60%B₀, which is more precautionary than the CCAMLR TRP of 50%B₀. The limit reference point (LRP) is also defined (20%B₀) as for CCAMLR HIMI fishery (SCS, 2017). The exploitation level (TAC) is reviewed on an annual basis to ensure that the stock fluctuates around the TAAF-TR, which produces a median escapement of the spawning biomass at the end of a 35-year period that is 60% of the median pre-exploitation level (CCAMLR, 2017a). SG80 is met</p>		
b	Guidepost		The selection of the harvest control rules takes into account the main uncertainties.	The design of the harvest control rules takes into account a wide range of uncertainties.
	Met?		N Y	N

PI 1.2.2		There are well defined and effective harvest control rules in place		
	Justification	<p>Pre-agreed rules and management actions that will be taken in response to changes in indicators of stock status are not defined. Since, the harvest control rules are not selected in agreement with pre-agreed rules, It is not possible to say that those rules take uncertainty into account. SG 80 and 100 are not met. The projections used to verify that constant catches would be consistent with the HCRs incorporate the main uncertainty in all model parameters including recruitment and growth variability and fishery selectivity. Uncertainty is also taken into account by the requirement that catches meet the requirements of the CCAMLR and TAAF control rules over a 35 year projection period. SG80 is met. However, instead of the model projections being used to determine the TAC, the model is still only used to check the validity of a chosen TAC, which may exclude some modelling uncertainty. SG100 is not met.</p>		
c	Guidepost	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
	Met?	Y	Y	N
	Justification	<p>Even if the rules are not designed, a set of tools exists to control exploitation. Current exploitation levels respect the CCAMLR's recommendation to keep biomass above 50 % of the virgin biomass, as the stock never fell below 60 % of the virgin biomass. There is evidence that the tools are appropriate and effective to achieve exploitation levels required by the general control rules. Both SG 60 and 80 are met. Exploitation levels conform to those required by HCRs, but annual stock assessment models are still being modified from year to year, for example in the way depredation is included, making the overall evidence less clear. SG100 is not met</p>		
References		<p>Sinegre, R. & G. Duhamel. 2015. Updated assessment of Patagonian toothfish (<i>Dissostichus eleginoides</i>) in the vicinity of Crozet Islands (Subarea 58.6). CCAMLR, WG-FSA-15/69.</p> <p>TAAF. 2014. Arrêté n°2014-78 du 19 août 2014 prescrivant les règles encadrant l'exercice de la pêche à la légine australe (<i>Dissostichus eleginoides</i>) dans les zones économiques exclusives de Crozet et Kerguelen.</p>		
OVERALL PERFORMANCE INDICATOR SCORE:				65 80
CONDITION NUMBER (if relevant):				4 N/a

Evaluation Table 3 – Kerguelen UoA1 - PI 1.2.4 (quoted from MEP 2013, obsolete text ~~crossed out~~, updated text in blue)

1.2.4 Assessment of stock status - There are well defined and effective harvest control rules in place
SG 60: The assessment estimates stock status relative to reference points. The major sources of uncertainty are identified.
SG 80: The assessment is appropriate for the stock and for the harvest control rule, and is evaluating stock status relative to reference points. The assessment takes uncertainty into account. The stock assessment is subject to peer review.
SG 100: The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery. The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way. The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored. The assessment has been internally and externally peer reviewed.
<p><u>Rationale</u></p> <p>The details of the stock assessment are set out in the main report and also summarised in PI 1.1.1. The stock assessment evaluates stock status in relation to pristine biomass B₀, and also evaluates the harvest strategy in relation to CCAMLR reference points.</p> <p>The uncertainties in the stock assessment can be summed up as follows:</p> <p><u>Major uncertainties:</u></p> <p>Fisheries-independent biomass estimates from the POKER cruises are extremely uncertain, and vary considerably between POKER I and POKER II and depending on the extrapolation method used. It is also important to note that these reflect biomass only down to 1000m, while the fishery operates considerably deeper than this (and toothfish may live deeper still).</p> <p>Trends in CPUE data and trends in fisheries-independent biomass estimates appear to conflict with each other, meaning that model likelihood profiles have to be smoothed out to get a sensible result.</p> <p>Estimates of past IUU fishing are uncertain.</p> <p><u>Minor uncertainties:</u></p> <p>The size-at-age relationship used in the model is taken from the Australian part of the Kerguelen plateau</p> <p>For the tagging data, the tag detection rate was estimated at 90%. Some of the tagging data could not be used due to data storage problems.</p> <p>The Bayesian approach allows all available data to be used, and data sources to be weighted according to the perceived level of uncertainty and the extent to which they conflict with other data sources. This is a relatively subjective process – however, MNHN was working in cooperation with Australian scientists who are extremely experienced in using CASAL, so it is assumed that this was done in the most appropriate way.</p> <p>For SG60, the stock assessment estimates stock status in relation to reference points (CCAMLR probabilistic reference points and biomass reference points), and identifies major sources of uncertainty, so this is met.</p> <p>For SG80, the assessment must be ‘appropriate to the stock and the harvest control rule’. A review of the 2012 stock assessment by CCAMLR WG-FSA concluded: “3.2.33 The Scientific Committee agreed that the current catch limit of 5 100 tonnes for D. eleginoides in Division 58.5.1 could be used as management advice for 2012/13. It also agreed that a more robust stock assessment was required to provide advice on catch limits beyond 2012/13.”</p>

1.2.4 Assessment of stock status - There are well defined and effective harvest control rules in place

~~Thus WG-FSA consider that the stock assessment is appropriate for the HCR only in the short term (until next season), after which a more robust stock assessment is required. Therefore, it is reasonable to conclude that this element of SG80 is not met.~~

Progress to develop the stock assessment data and model for the Kerguelen UoA has been steady, as reported in the past three annual surveillance audit reports and reviewed by the CCAMLR fish stock assessment working group (WG-FSA) each year. The latest advice to CCAMLR scientific Committee was that WG-FSA-16 “agreed that the catch limit set by France of 5050 tonnes in 2016/17 was consistent with the CCAMLR decision rules in the peer-reviewed model runs (CCAMLR, 2016, 2017a)

The other elements of SG 80 are: i) that stock status is evaluated in relation to reference points (which is met as set out above), ii) that uncertainty is taken into account (which is met, in that the evaluation of stock status suggests that the harvest strategy is very precautionary) and iii) that there is peer review (which is met as set out above).

Therefore ~~the overall score is 70.~~ **SG80 is met**

However, there has been no testing in the form of retrospective analyses or simulation that might have been undertaken to explore any systematic biases in the model SG100 is not met.

Condition

~~A score <80 requires a condition. The stock assessment process needs to continue to the point where it can provide management advice (on the appropriate level of the TAC) over the long term. (...)~~

~~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.~~

Reference

(CCAMLR, 2016, 2017a)

Evaluation Table 4 - Kerguelen UoA1 - PI 2.1.1 (quoted from MEP 2013, obsolete text ~~crossed out~~, updated text in blue)

2.1.1 Retained species Outcome status - The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species
SG 60: Main retained species are likely to be within biologically based limits or if outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species. If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.
SG 80: Main retained species are highly likely to be within biologically based limits, or if outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.
SG 100: There is a high degree of certainty that retained species are within biologically based limits. Target reference points are defined and retained species are at or fluctuating around their target reference points.
<p><u>Rationale</u></p> <p>Main retained species are the grenadier (<i>Macrourus carinatus</i>), Eaton skate (<i>Bathyraja eatonii</i>) and sandpaper skate (<i>Bathyraja irrasa</i>). SG60 requires that the main retained species are likely to be within biologically-based limits, or that measures are in place to avoid fisheries-related impacts on the population. Since the catch relative to the overall biomass is low, according to POKER II estimates of biomass, and since measures are in place (the code of conduct, required in the regulation), then the team concluded that this is met.</p> <p>SG80 requires that the stock status is 'highly likely' to be within biologically-based limits. The team did not consider that this was met because not enough quantitative information was provided on stock status for either macrourids or rays. The team assumes that a time series of CPUE data is available for these species (as per the data presented in Gasco and Duhamel 2011). However, there does not appear to be any kind of systematic analysis of these data to provide a quantitative index of stock status. In addition, since the code of practice is new, it is not yet 'demonstrably effective'. The overall score is therefore 60. For grenadiers, there still isn't enough publicly available data analyses to demonstrate that they are highly likely to be within biologically based limits, but during the site visit the MNHN and TAAF-DE have found, through regular monitoring and POKER surveys, that there is no evidence to suggest that they could be outside these limits. For rays, (Nowara et al., 2017) show that biomass and numbers estimated through the POKER surveys have remained stable. For all species, the comprehensive strategy in place to limit catches of non-target species by the fishery is demonstrably effective, as it limits the quantities of all bycatch caught over the last five years, and most of the rays caught are now cut off.</p> <p>BAIT: The main species of bait come from two mackerel stocks in the Northern Atlantic, both managed. The NW stock (FAO area 21) is outside biological limits. However, the fishery ensures that all fish imported for bait carry NOAA catch certificates attesting these are caught within the management system allowance. Most mackerel from the NE stock (FAO area 27 – ICES subareas 1-7 and 14 and divisions 8a-e and 9a) comes from a certified fishery (Acoura Marine, 2017) SG80 is met</p>
<u>Condition see section 4</u>
<p><u>References</u></p> <p>(ICES, 2016; Acoura Marine, 2017; Nowara et al., 2017; TAAF, 2017) MNHN and TAAF-DE (pers. com.)</p>

Evaluation Table 5 - Kerguelen UoA1 - PI 2.1.2 (quoted from MEP 2013, obsolete text ~~crossed out~~, updated text in blue)

<p>2.1.2 Retained species Management - There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.</p>
<p>SG 60: There are measures in place that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding. The measures are considered likely to work, based on plausible argument (eg, general experience, theory or comparison with similar fisheries/species).</p>
<p>SG 80: There is a partial strategy in place that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding. There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved. There is some evidence that the partial strategy is being implemented successfully.</p>
<p>SG 100: There is a strategy in place for managing retained species. The strategy is mainly based on information directly about the fishery and/or species involved, and testing supports high confidence that the strategy will work. There is clear evidence that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its overall objective.</p>
<p><u>Rationale</u></p> <p>The assessment team considered that the code and associated regulations constitute a ‘strategy’ for restricting fisheries impacts on <i>M. carinatus</i> and rays. An Australian assessment in EEZ shows that fishing mortality on these species from toothfish fisheries (longline and trawl combined) is within sustainable limits (Zhou et al. 2009). There is therefore an objective basis for considering that this strategy will work, particularly given that efforts are being made to reduce fishing effort on bycatch species further. Conversely, there is not yet any strong evidence regarding implementation, and it is not yet possible to evaluate whether the three year objectives are likely to be achieved. Two elements of SG80 are therefore met, but the third element is not met, leading to a score of 70.</p> <p>Implementation of the CBC is monitored closely and annual reports to the C3P are now public. Any increase in bycatch of main retained species may be penalised by a reduced toothfish quota in the following season. Data over the past five years show that quantities are stable and the majority of rays caught are now cut off (Table 7 this report). For rays, recent data analyses showed no decline in biomass from the POKER surveys, and no significant changes in cpue (numbers, biomass) or fish size (Nowara et al., 2017). Similar analyses are not published for grenadiers but the MNHN and TAFF-DE (pers com.) stated that they have no concerns during the site visit. SG80 is met</p>
<p><u>Condition</u></p>
<p><u>References</u></p> <p>(Nowara et al., 2017)</p>

Evaluation Table 6 - Kerguelen UoA1 - PI 2.1.3 (quoted from MEP, 2013, obsolete text ~~crossed-out~~, updated text in blue)

2.1.3 Retained species Information - Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species
SG 60: Qualitative information is available on the amount of main retained species taken by the fishery. Information is adequate to qualitatively assess outcome status with respect to biologically based limits. Information is adequate to support measures to manage main retained species.
SG 80: Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery. Information is sufficient to estimate outcome status with respect to biologically based limits. Information is adequate to support a partial strategy to manage main retained species. Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).
SG 100: Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations. Information is sufficient to quantitatively estimate outcome status with a high degree of certainty. Information is adequate to support a comprehensive strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective. Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
<p>Rationale</p> <p>Quantitative catch data is available for this fishery going back around 15 years (see main report). These data can be considered accurate and verifiable (see discussion of monitoring and enforcement below). The information is sufficient to support a clear strategy to manage impacts on bycatch species (Gasco and Duhamel 2011). SG60 is therefore met.</p> <p>As noted in the rationale for PI 2.1.1 above, the information available (trends in CPUE by area and depth) are probably sufficient to estimate population status in relation to biologically based indicators, and to estimate risk level on a regular basis, as has been done in the Australian HIMI EEZ (Zhou et al. 2009). The assessment team could, however, find no evidence that CPUE data for macrourids and rays are regularly analysed in this way. These elements of SG80 are therefore not met.</p> <p>Two elements of SG80 are therefore met, while two are not met, giving an overall score of 70.</p> <p>The MNHN has confirmed that all species caught (retained or not) are sampled by on-board scientific observers (COPEC) including the rays that are now mostly cut-off. Data for size, sex, maturity and other indicators by species are collected systematically, which allows monitoring of catch rates and and the identification of hot spots. These are complemented by data from the regular POKER surveys. Data are analysed, and were recently published for rays, showing no decline in cpue (numbers, biomass) or fish size (Nowara et al., 2017), but not published for grenadiers, but these analyses show that the nature and extent of the information is more than adequate to support the TAAF strategy to manage main retained species. SG80 is met.</p>
<u>Condition</u>
<u>References</u> (Nowara et al., 2017)

Evaluation Table 7 - Crozet UoA2 - PI 2.1.3 (quoted from MEC 2016, obsolete text ~~crossed-out~~, updated text in blue)

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Qualitative information is available on the amount of main retained species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
	Met?	Y	Y	N
	Justification	<p>Main retained spp. = <i>Macrourus carinatus</i>, <i>Amblyraja taaf</i>; minor = lithoides crabs</p> <p>Avipeche/avistock provide data by species on the catch of all species, whether retained or discarded (including those eaten by the crew) – these data were provided for 2013-14 and 2014-15 in Table 9 and Table 10 of the main report. Observers evaluate how carefully discarded catch is being recorded.</p> <p>The two Atlantic mackerel bait species are also considered as ‘main’ retained, for which information is available. SG80 is met. SG100 is not met because population-level information is not available for any all of the retained species.</p>		
b	Guidepost	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
	Met?	Y	N Y	N
	Justification	<p>Qualitatively speaking, it is reasonable to argue that given the strategy in place for main retained species, the low catches over a large area and the closed area <500m, it is not at all likely that the fishery is having an impact on the population which would affect its status in relation to biologically-based limits. The available data could also provide a basis for a semi-quantitative analysis (e.g. based on CPUE statistically adjusted for changes resulting from implementation of the CBC, or based on length-frequency – observers carry out length-frequency measurements, or following the Australian risk-assessment methodology). On this basis, the team considered that SG60 is met.</p> <p>It is not, however, currently possible to estimate outcome status in relation to biologically-based limits in any quantitative way, because the available data have not been analysed in this way, so SG80 is not met. There are no biologically based limits set, other than keeping bycatch quantities or numbers to a minimum with a year on year overall reduction. Large amounts of information are collected, analysed and summarised by the MNHN, TAAF and collaborating scientists on all species (retained or not). They are submitted to CCAMLR annually and presented to the vessel captains, including catch rates and numbers caught per species and pere vessel, which are sufficient to monitor species outcome. The data presentations and conclusions from TAAF in C3P minutes are now publicly available. SG80 is met.</p>		

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species		
c	Guidepost	Information is adequate to support measures to manage main retained species.	Information is adequate to support a partial strategy to manage main retained species.	Information is adequate to support a comprehensive strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	Y	Y	N
	Justification	A strategy is in place for main retained species, based on a coherent scientific analysis, as described above; so SG80 is met. The strategy does not include minor retained species (lithoides crabs) nor has the outcome of the strategy been evaluated 'with a high degree of certainty', so SG100 is not met.		
d	Guidepost		Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
	Met?		Y	N
	Justification	Extensive and high-quality data are collected on the fishery, which should be sufficient to evaluate ongoing risk – i.e. avistock/avipeche and observer reports. SG80 is met. SG100 is not met because since population level data are not available, ongoing mortalities cannot be estimated.		
References		(Zhou and Fuller, 2011; TAAF, 2014, 2016b) Observer reports		
OVERALL PERFORMANCE INDICATOR SCORE:				75 80
CONDITION NUMBER (if relevant):				3

Evaluation Table 8 - Kerguelen UoA1 – PI 2.3.1 Targets and best practice for grey petrels (quoted from MEP 2013, obsolete text ~~crossed out~~, updated text in blue)

2.3.1b. The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species - for grey petrels
SG 60: Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species. Known direct effects are unlikely to create unacceptable impacts to ETP species
SG 80: The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species. Direct effects are highly unlikely to create unacceptable impacts to ETP species. Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts
SG100: There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species. There is a high degree of confidence that there are no significant detrimental effects (direct and indirect) of the fishery on ETP species.
<p><u>Rationale</u></p> <p>A list of protected species in the TAAF area is given at http://www.taaf.fr/Liste-des-especes-protegees (following the Arrêté Ministerial of 14 August 1998). The fishery potentially interacts with three of these ETP species: i) grey petrels (<i>Procellaria cinerea</i>), ii) white-chinned petrels (<i>Procellaria aequinoctialis</i>) and iii) orcas (<i>Orcinus orca</i>). Mortality of albatross has been eliminated across the CCAMLR area (with the exception of illegal fisheries) by setting and hauling lines only at night. Bycatch of giant petrels (<i>Macronectes</i> spp.) is negligible</p> <p>3. Grey petrels</p> <p>Grey petrels breeds on the islands of Tristan da Cunha, Prince Edward and Marion, Crozet, Kerguelen, Amsterdam, Macquarie and the Campbell and Antipodes islands, with the largest breeding population on the Antipodes Islands estimated at ~53,000 pairs (2001). At Kerguelen the breeding population of grey petrels has been estimated at 1,900- 5,600 breeding pairs (Birdlife International, 2012a). They are listed by IUCN as ‘near threatened’.</p> <p>Barbraud et al. (2009) analysed the population dynamics of grey petrels breeding on Kerguelen. They estimate that the population can support additional fishing mortality of 180-530 animals before it starts to decline (noting that the grey petrel may suffer mortality from other fisheries apart from this one - e.g. from tuna longline fisheries). The most recent extrapolated data on total mortality of grey petrels from this fisheries is given in Table 25 for the last three years (2011-12 added after the PCDR stage of the assessment). From Table 25, we estimate that the fishery imposes ~9% of the minimum estimate of maximum ‘sustainable’ fishing mortality on this population of grey petrels, and represents ~6-7% of the total fishing mortality, assuming no change in the other fisheries which have impacts on this population (using the most recent data available). We also note a consistent improvement over the three years. The team concluded that since all French and CCAMLR requirements are being met, the fishery was operating within national and international standards for the protection of grey petrels, and concluded that the current mortality rate is not likely to cause an ‘unacceptable impact’ (the decline of the population). Therefore SG60 is met for grey petrels. It was not, however, possible to say that impacts are ‘highly unlikely’ to be unacceptable, as required by SG80. Indirect impacts may include discarding of hooks – this is, however, now banned, although the Action Plan (Marteau 2009) notes that it is difficult for observers to monitor. Two elements out of three of SG80 are therefore met, giving a score of 70 for grey petrels.</p>

2.3.1b. The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species - for grey petrels

Specifically for grey petrels in Kerguelen, the population is followed through tagging and recapture. A census was done three years ago and results will soon be published. Additional work is now being undertaken by the RNN, who send an additional scientist on board the vessels. The scientists involved in monitoring (H. Weimerskirch, N. Gasco and TAAF, pers. com.) consider the decreased levels of mortality now achieved and possible indirect effects from this fishery unlikely to create unacceptable impacts. **SG 80 is met.**

Condition

Additional references

Evaluation Table 9 - Crozet UoA2 - PI 2.4.3 (quoted from MEC 2016, obsolete text ~~crossed-out~~, updated text in blue)

PI 2.4.3		Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidpost	There is basic understanding of the types and distribution of main habitats in the area of the fishery.	The nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
	Met?	Y	N Y	N

PI 2.4.3		Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types	
Justification	<p>As noted above, there are no habitats maps from Crozet, and little work has been done on demersal habitats. Unlike at Kerguelen, the POKER research cruises do not (cannot) operate at Crozet, so an important source of fishery-independent data is missing. Nevertheless, habitats are monitored to the extent that VME species coming up on the lines are identified and quantified. This provides a basic understanding of the type and distribution of these vulnerable habitats, sufficient to meet SG60.</p> <p>Koubbi et al. (2016) have published a typology of the marine ecosystem components into marine “ecoregions” around Crozet that was used to justify the MPA (RNN) extension, and to inform its future management plan. The collaborative work (TAAF, Agence des Aires Marines Protégées - AAMP, UPMC, CNRS (Chizé) and MNHN, has devised a typology based on three ecosystem components: i) marine benthic, ii) marine pelagic, and iii) seabirds and marine mammals, which was used to identify biodiversity features and “hotspots” to protect.</p> <p>In relation to SG80, the team noted that given that The footprint and impact of this fishing method on the benthos (even taking gear loss into account) is small, and given that significant areas of the Crozet EEZ are protected from fishing (see Figure 13 of the main report), the level of detail required to be ‘relevant to the scale and intensity of the fishery’ is relatively low. Nevertheless, the team noted that there has so far not been any mapping of the VME observer data in the way that has been done for bycatch: this could be used to identify VME hotspots which could then be avoided. The team considered that this lack of analysis of the existing habitat data (which is understandable since the VME rules are quite recent) precludes SG80 being met.</p> <p>The ecoregion typology used the MNHN databases from scientific surveys on benthos, VMEs and demersal fish to identify hotspots and extend the marine domain of the RNN. SG80 is met.</p> <p>VME studies are still in progress with the establishment of new protocols in the Crozet EEZ, SG100 is not met.</p>		
b	Guided post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.
	Met?	Y	N
	Justification	<p>An analysis of the impacts of demersal longlines on VMEs is provided in the Kerguelen report and is not repeated here. The spatial distribution of the fishery is monitored by VMS, and the overlap of the fishery and VMEs is evaluated by observers as noted above. SG60 is met. The information from other fisheries on demersal longline impacts (see Kerguelen report) and the observer data on VMEs is sufficient, the team concluded, to allow an evaluation of the nature and (qualitative) magnitude of habitat impacts (as per PI 2.4.1), so the first part of SG80 is met. VMS provides reliable information on the timing and location of fishing gear. SG80 is therefore met. It is not, however, true to say that the physical impacts of the gear on habitat at Crozet have been quantified. SG100 is not met.</p>	

PI 2.4.3		Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types	
c	Guidpost	Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	Changes in habitat distributions over time are measured.
	Met?	Y	N
	Justification	The observer data provide sufficient information to detect changes in risk (e.g. if new areas were opened up, or if catch rates of VMEs changed over time). SG80 is met. There is, however, no direct information on habitat distributions so SG100 is not met.	
References		COPEC Observer reports (MEP, 2013; TAAF, 2014; Koubbi et al., 2016)	
OVERALL PERFORMANCE INDICATOR SCORE:			75 80
CONDITION NUMBER (if relevant):			4

Evaluation Table 10 - Crozet UoA2 - PI 3.2.2 (quoted from MEC 2016, obsolete text ~~crossed-out~~, updated text in blue)

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	There are informal decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	Y	Y	
	Justification	<p>There are clearly established decision-making processes in this fishery, as can be seen by the example of the TAC: the MNHN provides advice including stock assessment. The three ministries (ministries in charge of fisheries, foreign affairs and overseas territories) and vessel owners provide opinions for the préfet of the TAAF to decide. In her /his decisions, the préfet is supported by a Consultative Council that meets twice a year and the Austral Fisheries Working Group, that are able to discuss and make recommendations.</p> <p>Likewise for Principle 2 issues, there is a process for taking and implementing decisions – for example in relation to the recent code of good conduct for bycatch, advice is provided by MNHN, based on their own research and on CCAMLR good practice, following which TAAF takes the decision to incorporate the code into the regulations.</p> <p>These and other decisions have resulted in measures and strategies to achieve the objectives defined in particular through the 1st version of a Fishery Management Plan (TAAF, 2015c) – even if some of the objectives are somewhat vague, SG80 is met.</p>		
b	Guide post	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	Y	Y	N
	Justification	<p>Decisions have been made in response to serious issues identified in research and annually within CCAMLR working groups – stock management, bird mortality, bycatch, VMEs etc. While the fishery (Crozet as Kerguelen) has not always been at the forefront of decision-making within CCAMLR (e.g. in relation to birds) it has to be noted that despite limited human and financial resources, collaborations within CCAMLR and in the region ensure wider issues as taken into account. Decision-making has not always been transparent, but this has certainly improved greatly over the last few years – for example in relation to the peer review of the stock assessment by CCAMLR WG-FSA since 2011. SG80 is met.</p>		

c	Guide post		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		Y	
	Justification	SG80 requires that decisions are precautionary and are based on the best available information. While the TAC is said to be precautionary, the basis and decision-making process by which the TAC was increased from 850t in 2014/15 to 1000t for 2014:15 is unclear, although that has been an a posteriori confirmation by CCAMLR FSA that the new TAC satisfied CCAMLR decision rules (CCAMLR FSA prelim, 2015) and is therefore precautionary. SG80 is met.		
d	Guide post		Explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?		N Y	N
	Justification	<p>The MNHN scientific advice is not publicly available until it has been presented and is published on CCAMLR website around December time. Therefore, annual TAC decisions made by the TAAF in August are so far based on information and scientific advice that is not publicly explained. Likewise there is no requirement for TAAF to explain the basis and decision-making process used to vary individual vessel quotas each year. Although some explanations are provided to vessel owners on an individual basis, they are informal and not clearly linked to monitoring results, and there is no review of management actions. SG80 is not met. A change of calendar following recommendations 8 (UoA1) and 6 (UoA2) since the 2016/17 season means that scientific advice is now presented and validated at CCAMLR WG-FSA and circulated before TAC decisions are made for the future fishing season. The Groupe de Travail de la pêche australe (GTPA) brings managers (ministerial levels and TAAF), scientists and vessels owners together to discuss research findings and a wide range of topics, including the workplan to devise the new Fishery's Management Plan (FMP) during 2018 (TAAF, 2018). It meets at least once a year and is scheduled to meet regularly to steer the revision of the Management Plan. The minutes have been communicated to the assessors in order to demonstrate the transparency of the new FMP process. SG80 is met. The fully transparent and collaborative process is being initiated. Future practice will tell if the collaborative process between management, science and fishing companies remains effective, for the time being SG100 is not met.</p>		
References	(CCAMLR, 2015; TAAF, 2015, 2018)			
OVERALL PERFORMANCE INDICATOR SCORE:				75 80
CONDITION NUMBER				5