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## South Georgia Patagonian toothfish longline



## Surveillance Report

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Fishery client	<b>Government of South Georgia and the South Sandwich Islands (GSGSSI)</b>
Assessment Type	Second Surveillance



## Assessment Data Sheet

Fishery name	South Georgia Patagonian toothfish longline	
Species and Stock	Patagonian toothfish ( <i>Dissostichus eleginoides</i> ) South Georgia Patagonian Toothfish CAMLR Sub-Area 48.3	
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## Glossary

ACAP	Agreement on the Conservation of Albatrosses and Petrels
BAS	British Antarctic Survey
BCA	Benthic Closed Area
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CAMLR	Conservation of Antarctic Marine Living Resources Convention.
CDS	Catch Documentation Scheme
Cefas	Centre for Environment Fisheries and Aquaculture Science
COLTO	Coalition of Legal Toothfish Operators Inc.
CPUE	Catch per unit of fishing effort
DCD or EDCD	Dissostichus Catch Document (or Electronic Dissostichus Catch Document.
DED	Dissostichus Export Document
ENGO	Environmental Non-Governmental Organisation
ETP	Endangered, Threatened and Protected species.
F	Fishing mortality (with subscripts such as $F_{MSY}$ = Fishing mortality at maximum sustainable yield).
FCO	Foreign and Commonwealth Office (department of UK Government)
GSGSSI	Government of South Georgia and South Sandwich Islands
HFO	Heavy Fuel Oil
IUU	Illegal unregulated unreported fishing activity
KEP	King Edwards Point, GSGSSI and BAS base on South Georgia
MFV	Motorised Fishing Vessel
MPA	Marine Protected Area
MRAG	Marine Resources Assessment Group
MZ	Maritime Zone
NPOA - Seabirds	National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries.
NTZ	No Take Zone
RIA	Reduced Impact Areas (relating to fishery impacts)
ROV	Remotely operated vehicles
SAERI	South Atlantic Environmental Research Institute
SGMZ	South Georgia Maritime Zone
SGSSI MZ	South Georgia and South Sandwich Islands Maritime zone
SSB	Spawning Stock Biomass
VME	Vulnerable Marine Ecosystem
WG - FSA	Working Group on Fish Stock Assessment (CCAMLR)
WWF	World Wildlife Foundation

## Executive Summary

1. This is the 2<sup>nd</sup> Annual Surveillance of the South Georgia Patagonian toothfish longline fishery, which was re-certified against the MSC Standard in 2018. The scope of the certified fishery and therefore of this surveillance is specified in the Unit of Certification set out below:

**Table 1: Scope of South Georgia Patagonian toothfish longline fishery MSC Unit of Certification (UoC).**

<b>Species:</b>	Patagonian toothfish ( <i>Dissostichus eleginoides</i> )
<b>Stock:</b>	South Georgia Patagonian Toothfish CCAMLR Sub-Area 48.3
<b>Geographical area:</b>	The waters around the island of South Georgia and the associated plateau to the west around Shag Rocks, within the South Georgia and the South Sandwich Islands 200nm Maritime Zone
<b>Harvest method:</b>	Bottom Set Longline.
<b>Client Group:</b>	Certification will apply to the whole South Georgia Longline Fishery. Licences are issued by the Government of South Georgia and the South Sandwich Islands
<b>Other Eligible Fishers:</b>	None

2. This surveillance was carried out in accordance with the MSC Fisheries Certification Process v2.1 by a team of two assessors (Dr Jim Andrews and Dr Paul Medley). The assessment team met with the client, officers of the Government of South Georgia & the South Sandwich Islands (GSGSSI), and scientists from the Centre for Environment, Fisheries & Aquaculture Science (Cefas) in September 2020.
3. No conditions of certification were raised nor were any certification recommendations made when the fishery was re-certified (against MSC FCR v1.3) in 2018. At this surveillance audit the assessment team carried out a review of current information about fishing operations, target stock status, environmental impacts and management of the fishery. The assessment team found that: -
  - a) There have been no significant changes in the status of the target stock of Patagonian toothfish; *Dissostichus eleginoides*
  - b) There have been no changes in the interaction between the fishery and the marine environment;
  - c) There have been no significant changes in the management system for the fishery;
  - d) There have been no changes that would affect the traceability arrangements in place for the fishery; and
  - e) That the fishery remains “in scope” for MSC Certification.
4. The assessment team found that: -
  - a) There were commercial catches of 1,884t of toothfish in 2020 season. This was less than the GSGSSI TAC of 2,000t. The estimated IUU catch was zero.
  - b) GSGSSI have continued to improve the management of the marine environment within the EEZ by updating their approach to marine habitat management in response to new information. In December 2019 the GSGSSI further extended the No Take Zones (NTZs) in the UoA.
5. The assessment team conclude that following this surveillance audit the MSC Certification of the South Georgia toothfish longline fishery **should continue subject to annual surveillance audits.**

# 1 Report Details

## 1.1 Surveillance information

Information about the nature of this surveillance audit, including the membership of the assessment team is presented below.

**Table 2. Surveillance Information**

1	Fishery name	
	South Georgia Patagonian toothfish longline	
2	Surveillance level and type	
	<p>Surveillance level 4 – onsite</p> <p>This surveillance year was scheduled to be on-site. However, because of the ongoing COVID-19 pandemic, this year will switch to a remote, off-site audit. This is in line with the MSC COVID-19 derogation, <a href="#">issued 27<sup>th</sup> March 2020</a>.</p>	
3	Surveillance number	
	2 <sup>nd</sup> Surveillance	X
4	Team leader	
	<p><b>Jim Andrews</b> – Team Leader and Principle 2/3 expert</p> <p>Jim Andrews is a marine biologist with over 20 years' experience working in marine fisheries and environmental management. His previous experience includes running the North Western and North Wales Sea Fisheries Committee as its Chief Executive from 2001 to 2005, previously working as the SFC's Marine Environment Liaison Officer (from 1996-2001), and prior to that working for the English Government's nature conservation advisor, English Nature on wildlife and coastal zone management in northwest England (from 1992-1996). During his time with the SFC he was responsible for the regulation, management and assessment of inshore finfish and shellfish stocks along a 1,500km coastline, as well as assessment and management of fisheries interactions with aquatic ecosystems in this area. He has an extensive practical knowledge of fisheries and environmental management as well as the enforcement and regulation of fisheries under UK and EC legislation. Jim has formal legal training &amp; qualifications, with a special interest in the policy, governance and management of fisheries impacts on marine ecosystems in the UK, EU and globally (this particular subject being the focus of his LLM research over the period 1997-99). He has worked as an assessor and lead assessor on more than 20 MSC certifications within the UK, in Europe and in India since 2007. In 2008 he worked with the MSC and WWF on one of the pilot assessments using the new MSC Risk Based Assessment Framework. Jim has carried out numerous MSC Chain of Custody assessments within the UK.</p> <p>Jim has passed MSC training and has no Conflict of Interest in relation to this fishery. Jim has completed the MSC RBF training in the past 3 years. Full CV available upon request</p>	
Leadership Experience	Jim has carried out multiple MSC assessments as Team Lead over the last 5 years and has passed his ISO 19011:2018 lead auditor training.	
5	Team members	
	<b>Paul Medley</b> – Principle 1 expert	



	<p>Dr Paul Medley is an experienced fishery scientist and population analyst and modeller, with wide knowledge and experience in the assessment of pelagic stocks (amongst a range of marine fish stocks and ecosystems). He holds a first degree in Biology and Computer Science (1st class honours) from the University of York, and a doctorate from Imperial College, London, based on a thesis "Interaction between Longline and Purse Seine in the South-West Pacific Tuna Fishery". He has travelled widely and worked with a range of fishery systems and biological stocks, both as principal researcher and as evaluator. He is familiar with MSC assessment procedures, having participated in a significant number of MSC full assessments across a range of fisheries, undertaken a substantial number of pre-assessments and acted as peer reviewer in still others. He is familiar with a wide range of fisheries in the North East Atlantic and other parts of the world, and over the period 2000 to 2005 he has been serving with the Centre for Independent Experts, University of Miami, as an evaluator of various US fishery research programmes. He has been working with the MSC on the development of guidelines for certification of small scale, data poor fisheries. He is based in York (UK).</p> <p>Paul has passed MSC training and has no Conflict of Interest in relation to this fishery. Full CV available upon request</p>
Local Context	<p>English is spoken by the client.</p> <p>Both Jim and Paul have had assignments in the region in the last 10 years.</p>
Traceability	Jim has completed the MSC traceability module
RBF	Jim has completed the RBF training.
6	Audit/review time and location
	The audit took place via online calls the week commencing the 21 <sup>st</sup> September 2020.
7	Assessment and review activities
	All relevant data and progress on the non-binding recommendations.

## 2 Background

A summary of changes to the fishery since it was re-assessed in 2018 are summarised below.

### 2.1.1 Changes in fleet structure or operation

The fleet of vessels operating in 2020 comprised 5 of the 6 vessels. The vessels currently licensed to fish in the toothfish fishery over the quadrennial licensing period 2018-21 are listed in Table 3.

**Table 3:** List of licensed vessels in the South Georgia Patagonian Toothfish Longline fishery, for the period 2018-21.

Vessel
Antarctic Bay
Argos Froyanes
Altamar*
Nordic Prince
Argos Georgia
San Aspiring

The fishing vessel *Altamar* did not fish during the 2020 season because it was stuck in dry dock during the Covid lockdown. The quota that would have been allocated to the *Altamar* was evenly divided and allocated to the remaining 5 vessels in the fleet.

There have been no changes in the fleet or the type of fishing gear used in the fishery since it was re-certified (currently 5 autoliners and 1 “Spanish” longliner). The type of gear used by each vessel is monitored by the observers aboard each vessel and reported to GSGSSI at the end of each trip.

It was noted that two of the vessels haul their longlines through a moon pool to minimise bird interactions, obviating the need for a “Brickle curtain” to minimise bird interactions. All of the vessels have tamper-proof electronic monitoring (CCTV) equipment on board in addition to 100% observer coverage.

### 2.1.2 Changes in management system

There have been no significant changes in the management system, since the transition from a biennial to a quadrennial licensing period during 2018. This change does not affect the ability to alter the TAC in accordance with CCAMLR advice. The first 2 years of the current licensing period were managed in accordance with the CCAMLR 2017 advice, and the fishery is now being managed under the 2019 advice.

### 2.1.3 Changes in relevant regulations

In 2019 the start of the fishing season was moved to the 1<sup>st</sup> of May to minimise the bird bycatch problems that have arisen in recent years. This start date was retained in 2020, but the closing date was extended from 31<sup>st</sup> August to the 14<sup>th</sup> September (the same date as the CCAMLR season end). The extension was carefully monitored to ensure that it was not associated with any bird mortality.

This extension was implemented in part to mitigate the loss of the 2 weeks at the start of the fishing season, and also in response to a change in CCAMLR data requirements (CCAMLR now only ask for the previous year’s data to be presented at the annual meeting in October).

These changes were not considered to have any impact on the outcome of the fishery assessment or scoring of any PIs.

### 2.1.4 Changes to personnel involved in science, management or industry

There have been no changes to personnel at the client fishery, GSGSSI, BAS or Cefas in the past year.

### 2.1.5 Changes to scientific base of information, including stock assessments

A summary of the information that was submitted by GSGSSI at this surveillance audit relating to the status of the target stock and marine is presented below.

### 2.1.5.1 Target species stock status

The results of the September 2019 assessment agreed by CCAMLR indicate that the toothfish stock in Subarea 48.3 was around 50% (95%CI 48%–53%) of the unfished biomass ( $B_0$ ) in 2017 (Earl 2019). This was now at the CCAMLR decision rule target of 50%  $B_0$ . The 2019 estimate of current spawning stock biomass was 40100t (35600-45400) and the estimate of  $B_0$  was around 79700t (73900-86200). CCAMLR agreed a new Conservation Measure, CM 41-02 (2019) for this fishery in response to the Cefas advice (CCAMLR 2019) which replaced the preceding version of this Conservation Measure (CCAMLR, 2017).

As a precaution, GSGSSI has adopted a management goal for this stock of 55%  $B_0$ , to ensure that changes in stock perception do not result in the stock status falling below the CCAMLR decision rule of 50%  $B_0$ . This strategy, and also the allowance for cetacean depredation, resulted in GSGSSI consistently set TAC lower than required by the CCAMLR decision rule.

The CCAMLR recommendation for the 2019/20 and 2020/21 TACs was 2,327t (a reduction from the 2600t TAC in 2018/19). After taking account of depredation and the more precautionary management goal of 55%  $B_0$ , the GSGSSI set a TAC of 2,000t for 2019/20.

The stock assessment includes responses to the Stock Assessment Review for Toothfish (SC-CCAMLR-XXVII Table 3), and indicates progress made where relevant to the various issues made. In general good progress is being made in improving the assessment and addressing issues raised by the review.

### Stock Management

The changes to the management of the fishery which were reported in last year's surveillance audit have been maintained. These are summarised below.

Since 2004, the TAC allocated for the fishery has been split between management areas A, B and C. For the 2019/20 season, an overall TAC of 2,000t was set for all of Subarea 48.3, of which 0t was allocated to area A; of which up to 600t could be taken in area B and up to 1,400t in area C. The Area-based TAC allocations are intended to spread fishing effort and assist with the tagging programme that is an important part of the stock assessment for this fishery.

The catch history for this fishery shows good compliance with CCAMLR advice (see Figure 1).

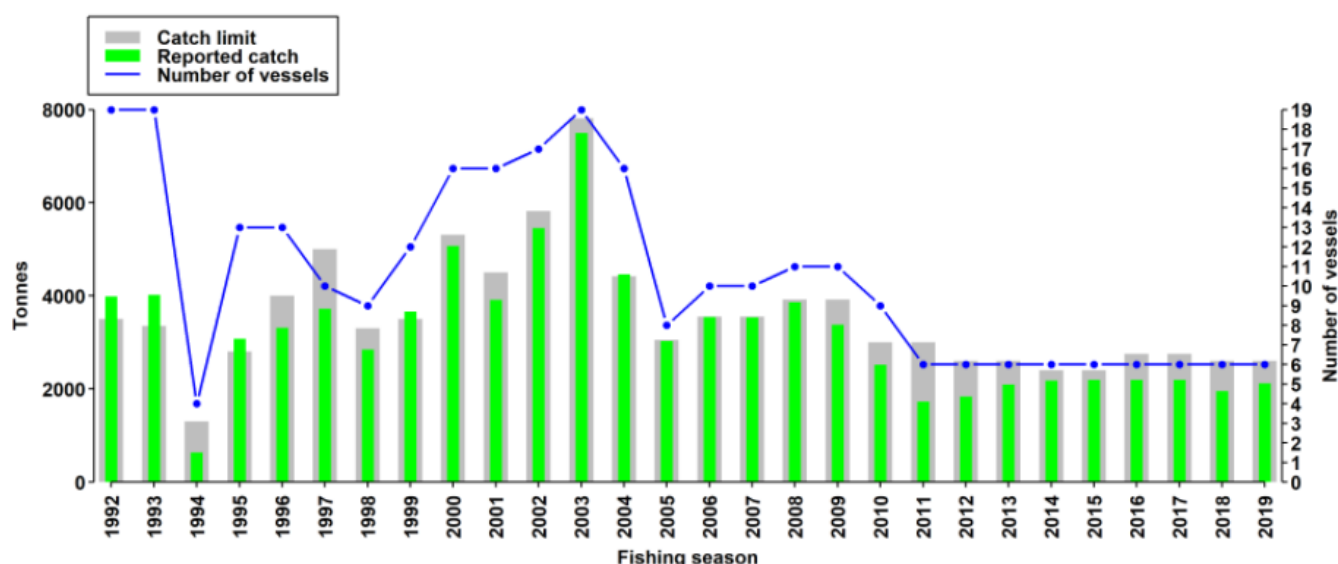


Figure 1: Catch and effort history for the South Georgia toothfish fishery, 1982-2019 (CCAMLR 2020a).

Prescribed fishing within three Benthic Closed Areas has continued similarly to previous years. Vessels were allocated a small quota to allow them to carry out scientific fishing, with the aim of better data representation in the toothfish tag/release program. The results from these trials are still being evaluated.

In addition to this, the GSGSSI has continued with a shallow-water fishing program to find out more about the abundance and future recruitment of younger fish in the stock, and also conducted some additional work on ageing of the stock. This will be reported on when analyses are complete.

The GSGSSI has collated the management objectives, scientific advice, and research priorities into a single management plan document for the fishery. This document sets the management of the fishery in the context of the South Georgia & South Sandwich Islands Strategy 2016-2020 and the management strategy for the SGSSI Marine Protected Area. A final version of this document was published on the GSGSSI website in November 2017 (GSGSSI, 2017d).

### **2.1.5.2 Marine environment**

There have been no changes in the fishing method (demersal longlines), and therefore no changes in the nature of interactions with the South Georgia ecosystem. There has been ongoing research into ecosystem interactions, which was reported during the audit.

#### **2.1.5.2.1 Non-target species**

The most abundant non-target species in the catch from this fishery are macrourids (grenadiers), skates and rays, and blue antimora. CCAMLR set catch limits for macrourids and skates & rays, and the GSGSSI set a catch limit for macrourids of 5% of the toothfish TAC.

In 2018 the catch rate for grenadiers was observed to have increased and the GSGSSI catch limit for these species was met before the toothfish TAC had been fully utilised, resulting in the fishery closing 2 weeks early. At the end of the 2020 season, 94.2% of the toothfish TAC had been utilised and 87.5% of the macrourid TAC, showing that the relative catch rates had returned to normal.

The quantity of grenadiers and rays caught in the UoC relative to catch limits since 2004 is shown in Table 4.

**Table 4: Reported catch and catch limits for the most abundant non-target species (grenadiers (*Macrourus* spp.) and rays (Rajids)) in the South Georgia toothfish longline fishery (CCAMLR 2020b).**

Season	<i>Macrourus</i> spp.		Rajids			Other catch	
	Catch Limit (tonnes)	Reported Catch (tonnes)	Catch Limit (tonnes)	Reported Catch (tonnes)	Number Released	Catch Limit (tonnes)	Reported Catch (tonnes)
2004	221	30	221	6	0	-	4
2005	152	121	152	8	0	-	19
2006	177	136	177	7	21056	-	35
2007	177	129	177	4	9265	-	26
2008	196	161	196	12	19558	-	36
2009	196	110	196	22	23709	-	33
2010	150	70	150	7	15810	-	16
2011	150	74	150	4	12832	-	9
2012	130	54	130	2	13503	-	9
2013	130	59	130	2	14005	-	11
2014	120	61	120	3	12969	-	15
2015	120	56	120	2	10937	-	10
2016	138	64	138	2	14960	-	14
2017	138	54	138	3	12916	-	16
2018	130	107	130	4	21235	-	29
2019	130	107	130	3	23817	-	41

The reasons for the increase in catch rate for macrourids in recent years is being investigated. It may be due to a change in fishing gear (most of the vessels in the fishery are now autoliners); or it could be due to an increase in macrourid abundance. The fishing industry has trialled the use of different baits and hooks to try to reduce the catch of macrourids, these seem to have no clear effect on catch composition but analysis of data is ongoing.

It was noted that one of the vessels (Antarctic Bay) was using sardine as bait because the skipper of the vessel felt that this resulted in a lower bycatch rate than squid (CCAMLR 2020c). Other vessels were still using a mix of squid and other pelagic fish (such as mackerel).

In order to ensure that the fishery operates within its catch constraints Cefas is now providing advice on macrourid TAC uptake at regular (5d) intervals and are also carrying out work to improve understanding of the macrourid stock status.

The status of the skate stock in Subarea 48.3 has been assessed by Cefas and reported to CCAMLR (CCAMLR 2018a, 2018b). The current level of bycatch exploitation of Antarctic starry skates is considered to be around 1% of the estimated biomass.

#### 2.1.5.2.2 ETP species

As noted in previous surveillance reports, ETP species mortality prior to 2014 had been negligible for several years and the GSGSSI had trialled an earlier start to the fishing season. Following a high mortality of white chinned petrels in the early season during 2018, the start date of the season has been 1<sup>st</sup> May of each year.

Observer reports for the 2020 fishing season show a very low level of interaction between birds and fishing gear. A single white chinned petrel mortality was recorded on 3<sup>rd</sup> May aboard one of the vessels (CCAMLR 2020d). A single southern giant petrel was hooked on the wing during the hauling of a line aboard one of the vessels. The bird was brought onto the vessel where the hook was removed and the bird was released without any apparent ill effect (CCAMLR 2020c). The crew aboard one of the other vessels reported catches of 8 giant petrels in fishing gear, all of which were also released uninjured (CCAMLR 2020e).

One of the vessels reported 16 bird mortalities arising from collisions with the vessel: a single white-chinned petrel (*Procellaria aequinoctialis*) was found prior to commencing fishing whilst in Cumberland Bay; two Kerguelen petrels, (*Lugensa brevirostris*), two Antarctic petrels, (*Thalassoica antarctica*) and 11 diving petrels (*Pelecanoides urinatrix*) were found and retained during the fishing trip (CCAMLR 2020g). All birds were retained and handed over to GSGSSI at the end of the fishing trip for analysis. It is understood that this particular vessel has a more stringent protocol for checking for deck strikes which may explain its higher than normal records.

In response to the apparently anomalous bird strike records for a single vessel, GSGSSI is working with the local ACAP coordinator to develop a standardised reporting procedure for all vessels operating in the SGSSI MZ (including cruise ships and research vessels as well as fishing vessels). An application has been made for “Darwin Plus” funding to create and trial these protocols.

Observer reports for the 2020 fishing seasons provide evidence of ongoing interactions between the fishery and cetacean species (CCAMLR 2020f, 2020e, 2020c, 2020g, 2020d). Both Orcas (*Orcinus orca*) and sperm whales (*Physeter catodon*) were observed depredating on fishing lines. It was reported that when these species were present the catch of toothfish was reduced significantly, with many hooks retaining toothfish lips or heads. The frequency of cetacean interactions appears to have varied between vessels: one observer reported sighting cetaceans on 4.7% of hauls; others reported their presence on most line hauls.

The vessels were reported to take various steps to evade cetaceans and reduce depredation: longlines were not set in areas where cetaceans had been sighted, and if cetaceans appeared during hauling of gear the vessel would cease hauling, tie off the fishing gear and steam away from the area. This was not always successful: one observer reported that on an occasion when one vessel left its gear because of a high abundance of orcas and returned to it 10 days later, the same pod of orcas immediately reappeared and on this occasion not a single toothfish was landed from this line set (the same vessel caught an average of over 1.5t of toothfish per line during the 2020 season, giving an indication of the scale of the depredation event).

No adverse interactions with cetaceans were reported; one sperm whale was briefly entangled in a line during a depredation event but is reported to have rapidly freed itself and swam away with no adverse effect.

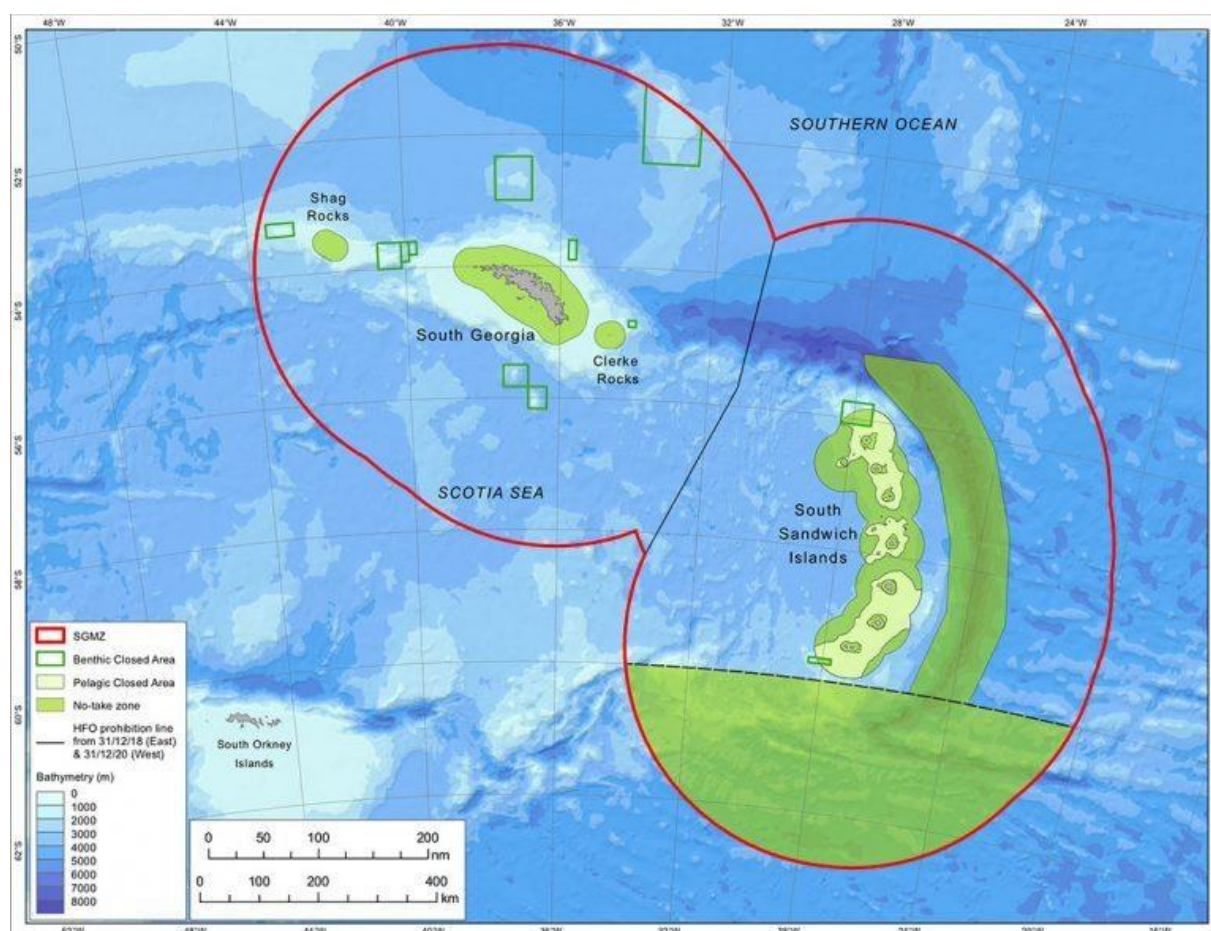
Cefas reported that they have submitted a paper about assessing whale depredation from longlines to the ICES Journal of Marine Science. This uses statistical methods to detect “cryptic” depredation as well as observed depredation using information about the ratio of toothfish and macrourids.

#### 2.1.5.2.3 Habitat management & research

At this surveillance audit the GSGSSI and Cefas provided the assessment team with a verbal report of progress with marine habitat mapping being carried out by scientists, and also the work the that fishing industry are doing with underwater video cameras to monitor seabed character and interactions in the toothfish longline fishery. Though this research is specifically relevant to the areas fished for toothfish, it is improving the overall understanding of the marine habitats and species within the South Georgia EEZ.

In 2019 the GSGSSI enshrined into law a number of enhancements to its Marine Protected Areas (see Figure 2). A key change has been to extend the 12nmi (22.2km) No Take Zone (NTZ) around South Georgia to extend 30km offshore. This change has been made in response to satellite tag data from gentoo penguins which shows that they forage for krill further offshore than previously thought. The move to 30km is consistent with the voluntary measures introduced by the Association of Responsible Krill harvesting companies (ARK) around the Antarctic Peninsula.





**Figure 2:** Current extent of Marine Protected Areas within the South Georgia EEZ following enhancements introduced in 2019. (GSGSSI 2019)

A further change has been the introduction of a pelagic closed area around the South Sandwich Island which extends 50km offshore. Again, this is largely to ensure that the krill resources in this area are available to the penguin colonies on the South Sandwich Islands.

In addition to these changes, a NTZ covering 62,900km<sup>2</sup> and which prohibits all fishing activity in the vicinity of the South Sandwich trench has been established. This will protect the deepest part of the Southern Ocean (>8000m). This area is likely to contain unique habitats that are currently poorly studied and mapped. Protecting the trench area will provide a pristine environment for scientific research and education. The no-take zone stretches 50km either side of the mid-point of the trench covering depths from 3000m – > 8000m from 55°S.

The GSGSSI has also formally designated the region of its Maritime Zone located south of 60° South as a full NTZ within the MPA which is closed to all commercial fishing activity. This region contains complex bathymetry and habitats including seamounts, deep trenches and a large area of the South Sandwich Fracture Zone – a region of high hydrothermal and tectonic activity. The seafloor invertebrate communities are poorly described but thought to be diverse, including many species of deep-water coral. The region is an important area of biological connectivity between the South Sandwich Islands and the islands and seamounts of the Southern Scotia Arc. It lies within the seasonal pack-ice zone an area completely covered by sea ice in winter. The area protected exceeds 170,000 km<sup>2</sup>.

As a further measure to protect the marine and terrestrial environment, the GSGSSI has introduced a ban on the use of Heavy Fuel Oil (HFO) for all vessels operating in the South Sandwich Islands and is due to roll out this ban to the rest of the SGSSI EEZ at the end of 2020.

### 2.1.5.3 Observer coverage

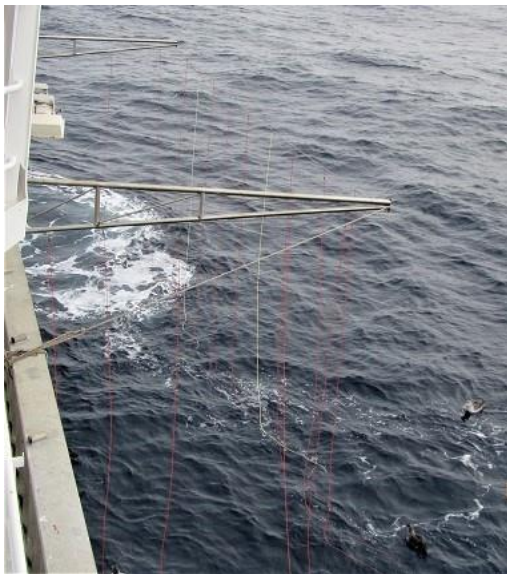
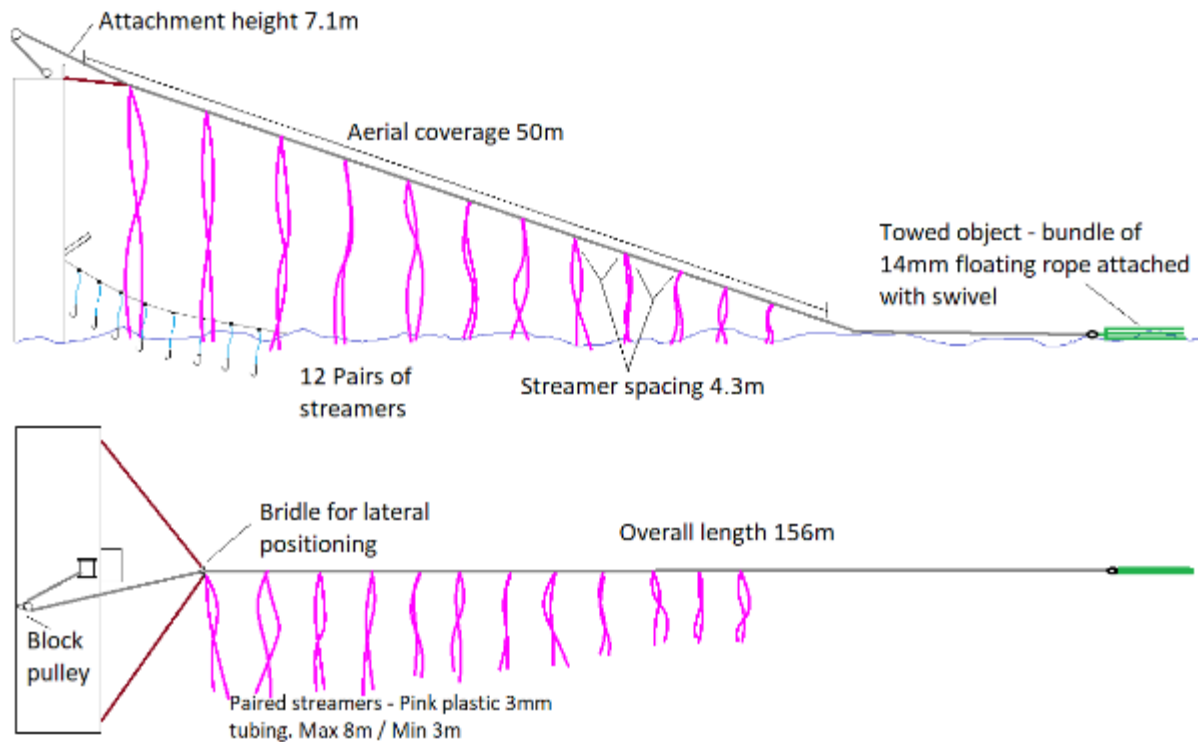
All vessels operating in the fishery are required to have at least one observer on board in accordance with the CCAMLR Scheme of International Scientific Observations (SISO).

Observer reports were provided by the GSGSSI at this surveillance audit for all of the five vessels in the UoC (CCAMLR 2020f, 2020e, 2020c, 2020g, 2020d). GSGSSI have confirmed that observers were aboard all of the vessels throughout their fishing operations in the SGSSI EEZ.

The reports provide a record of the observations both of the target species, non-target species and interactions with ETP species during each fishing trip. The observers also record the deployment of seabird exclusion devices around the vessel and compliance with regulations concerning offal discharge. Some photographs from recent observer reports are shown in Figure 3.

It was noted that these observers are now gathering information about interactions with benthic species (corals and other VME indicator species) in addition to the biological samples from fish that have been gathered in previous years. These samples were retained for analysis as part of the GSGSSI programme to improve understanding of the distribution of VME species and to inform the development of an appropriate management strategy.





**Figure 3:** Images from observer reports for South Georgia toothfish longline vessels showing the configuration of the tori lines deployed from the vessel *Nordic Prince*; bird exclusion curtain deployed from the vessel *Argos Froyanes*; a female orca following the vessel *Antarctic Bay* during steaming (CCAMLR 2020f, 2020e, 2020c)

## 2.1.6 Any developments or changes within the fishery which impact traceability or the ability to segregate between fish from the Unit of Certification (UoC) and fish from outside the UoC (non-certified fish)

There has been no relaxation of any rules or regulations under the Covid-19 pandemic response. All vessels were inspected before leaving Port Stanley in the Falkland Islands with GSGSSI staff wearing appropriate PPE during inspections (see Figure 4), and 100% observer coverage has been maintained (vessels were required to be at sea for 2 weeks prior to the observer coming aboard and the observer was required to quarantine for 2 weeks before joining the vessel). At-sea boardings and inspections were carried out by GSGSSI enforcement staff for four of the five longliners during the 2020 fishing season

Toothfish catch verification at the end of fishing trips is carried out in Port Stanley under contract to GSGSSI. Catch verification has continued during the Covid-19 pandemic,.



**Figure 4:** GSGSSI Marine Environment & Fisheries Manager Sue Gregory (left) carrying out a toothfish vessel pre-licensing inspection aboard one of the UoA vessels in Port Stanley, September 2020.

It is concluded that there have been no changes within the fishery that would impact traceability.

## 2.2 Version Details

The versions of the fisheries program documents used for this assessment are listed in the table below.

**Table 5.** MSC Fisheries program document versions used for this assessment

Document	Version number
MSC Fisheries Certification Process	Version 2.1
MSC Fisheries Standard	Version 1.3*
MSC General Certification Requirements	Version 2.4.1
MSC Surveillance Reporting Template	Version 2.01

\* Default assessment tree

## 2.3 Confirmation of Scope

The fishery was considered to be “in scope” for MSC certification during its initial assessment (see MSC FCP v2.1 section 7.4). The surveillance team made enquiries during this audit to confirm that the fishery remains in scope. The findings are listed below.

### 2.3.1 Destructive fishing practices

The client confirmed that no destructive fishing practices (explosives or poisons) are used in this fishery.

### 2.3.2 Controversial unilateral exemptions

No indication was given during the site visit that the fishery is subject to any controversial unilateral exemptions.

### 2.3.3 Enhancement activities

This is not an enhanced fishery.

### 2.3.4 Forced & Child Labour

The assessment team confirmed that fishery operators have not been prosecuted for any violations against forced labour laws. The client has submitted a Declaration on Forced and Child Labour to the MSC as required by §7.4.4.2 *et seq* of FCP v2.1.

## 3 Results

### 3.1 Surveillance results overview

#### 3.1.1 Summary of conditions

No conditions of certification were raised when the fishery was re-certified in 2018. Having reviewed the changes that have occurred since the fishery was re-certified, the assessment team has concluded that no Performance Indicators require re-scoring, and that there remain no conditions of certification.

#### 3.1.2 Total Allowable Catch (TAC) and catch data

The TAC and catch data for the most recent fishing year are summarised below.

**Table 6. Total Allowable Catch (TAC) and catch data**

TAC	Year	<b>2020</b>	Amount	<b>2,000t</b>
UoA share of TAC	Year	<b>2020</b>	Amount	<b>2,000t</b>
UoA share of total TAC	Year	<b>2020</b>	Amount	<b>100%</b>
Total green weight catch by UoC	Year (most recent)	<b>2020</b>	Amount	<b>1883.7t</b>
Total green weight catch by UoC	Year (second most recent)	<b>2019</b>	Amount	<b>2,124t</b>

#### 3.1.3 Recommendations

Recommendations are non-mandatory requirements of certification and address any areas where the performance of the fishery against the MSC standard could be improved. The assessment team made five recommendations for this fishery when it was re-assessed in 2018: -

- 1. Non-target species (PI2.1.1 & 2.2.1):** the fishery meets all of the requirements for non-target (retained and discarded) species under MSC CRv1.3. When the fishery is re-assessed, it will need to meet the requirements of FCRv2.0 (or its successor). MSC FCRv2.0 considers "primary" and "secondary" non-target species. It is recommended that the status of the non-target species and management measures in place are reviewed in order to ensure that the fishery is compatible with this change to the MSC Certification Requirements.
- 2. Non target species - review of alternative measures:** although the fishery meets all of the MSC CR v1.3 requirements with respect to managing impacts on non-target species, it is a requirement under MSC FCR v2.0 to review the potential effectiveness and practicality of alternative measures to reduce UoA-related mortality of unwanted catches of both primary and secondary species (PI2.1.2e & 2.2.2e). The SG80 standard requires that there is a **regular review** of such measures, and that they are implemented as appropriate. It is recommended that a system for regular review of unwanted mortality is established during this period of certification in order to ensure that the fishery is compatible with this change to the MSC Certification Requirements.
- 3. Bait (PI2.1.2):** At the last re-assessment the Assessment Team recommended that in order to make the score under this SI more secure, it would be appropriate for the fishery to adopt a policy that will ensure that bait are sourced from stocks that meet the SG80 requirements (i.e. that the stock status is above a level at which recruitment may be impaired). This is particularly relevant to the sardines used as bait in the fishery, as the status of one of the Spanish sardine stocks (27.8c/9a) has recently been reviewed and is now considered to be below its LRP.

In order to ensure that the fishery remains compliant with the current and any future versions of the MSC Certification Requirements, the Assessment team recommend that this commitment to sourcing bait from stocks that meet the SG80 requirements for this SI (or its successor) is maintained.

4. **Habitat management (PI2.4.2)** – the fishery meets all of the requirements for habitat management under MSC CR v1.3. The management plan for the fishery is currently undergoing its quinquennial review. The scoring of the PIs relating to habitat management under CRv1.3 (and looking ahead, to reassessment under FCRv2.0) would be improved if the new management plan took account of emerging norms for habitat management, including the adoption of a “move-on rule” for vulnerable marine ecosystems.
5. **Habitat outcome & information (PI2.4.1 & 2.4.3):** again, while the MSC CR v1.3 requirements are fully met for these PIs, the information required to allow the assessment of the fishery against PI2.4.1 in CR v2.0 is more onerous. In particular the new CR required that there is an understanding of impacts on “commonly encountered” habitats and “vulnerable marine ecosystems”. The scoring of these PIs under CR v1.3 (and looking ahead, to reassessment under CRv2.0) would be improved by the work currently being carried out to investigate the extent and character of benthic habitats.

An update on recent progress with each recommendation is provided below

### 3.1.3.1 Recommendation 1: Review of status of non-target species

Interactions with non-target species continue to be recorded by observers and are reported to CCAMLR. The catches of grenadier and skate are the most important non-target component of the catch, and both are subject to an annual catch limit (see Table 4).

Cefas reported that Macrourid stock status and trends is being kept under review using CPUE data but that there has been no new stock assessment for grenadiers considered at CCAMLR.

The status of the Antarctic starry skate (*Amblyraja georgiana*) has been assessed and reported to CCAMLR, along with genetic studies which suggest that several of the skate “species” reported in catches (*A. georgiana*, *A. georgiana* sp. Anon and *A. taaf*) are not separate species but are in fact different morphological forms of *Amblyraja* from two geographically isolated stocks: one occurring around South Georgia and the other around the South Sandwich Islands.

### 3.1.3.2 Recommendation 2: Review of “alternative measures” for unwanted catch of non-target species

It was noted at this surveillance audit that the GSGSSI is keeping the catch of non-target species under review (see section 2.1.5.2.1 of this report). The client fishery has been trialling the use of different baits and hooks to determine whether these may affect catch composition. One of the operators was using solely sardines as bait during the 2020 season as a measure to reduce the catch of non-target species.

These activities indicate that measures for reducing catches of non-target species are being actively considered by GSGSSI and the operators in the fishery.

### 3.1.3.3 Recommendation 3: Bait sourcing policy

The GSGSSI has specified in its licence conditions that bait used in the fishery must be from a sustainable source. Vessels are also required to report the species, source and quantity of bait that they use to the Director of Fisheries.

It was reported that the mackerel and sardines used as bait in the fishery are from MSC-certified fisheries. The squid species used most frequently in this fishery are *Loligo*, *Illex* and *Dosidicus*, with South American Humboldt squid (*Dosidicus gigas*) being the main species used.

### 3.1.3.4 Recommendation 4: Habitat management

The GSGSSI and Cefas provided an update at this surveillance on the work that has been carried out to improve the understanding and management of interactions between the fishery and marine habitats in the UoA. Details of this work are provided in section 2.1.5.2.3 of this report.

CCAMLR Conservation Measure 22-06 (and hence 22-07) do not apply in subarea 48.3. There are thus no CCAMLR VMEs or VME Risk Areas assigned in this area; nor do the CCAMLR move-on rules apply here. GSGSSI are continuing to gather information and implement their own management strategy (see section 2.1.5.2.3 of this report) to ensure that the fishery is compatible with MSC Fisheries Standard v2.01 requirements.

### 3.1.3.5 Recommendation 5: Habitat outcome & information

At this surveillance audit the GSGSSI and Cefas provided the assessment team with a verbal report of progress with marine habitat mapping being carried out by scientists, and also the work the that fishing industry are doing with underwater video cameras to monitor seabed character and interactions in the toothfish longline fishery. This work is



being carried out to identify the character of Commonly Encountered Habitats within the UoA, and also the location of Vulnerable Marine Ecosystems.

Cefas reported that video data have been gathered in different studies:-

1. South Sandwich Islands – in 2019 a high resolution deep water camera was used to survey transects around the South Sandwich Islands. These transects showed that VME taxa were found to a depth of around 500-700m.
2. Fishing lines – both miniature cameras and GoPro cameras have been deployed on commercial fishing lines around South Georgia, Shag Rocks and the South Sandwich Islands. These cameras have been provided by Cefas and also purchased by the industry. Key aspects of this study are:-
  - a. 500 fishing lines have been monitored using the lower resolution cameras; and
  - b. 100 fishing lines have been monitored using the higher resolution GoPro cameras.

Although the information has not been fully analysed, the initial indications are that 95% of the images show that fishing takes place on a seabed of mud or gravel, and that most records of VMEs are from research fishing within the Benthic Closed Area.

The video data from longlines also indicate that “sweeping” of the seabed during gear recovery is very limited. Data from accelerometers placed on fishing lines will be used to help determine the likely extent of sweeping and movement of longlines on the seabed.

The next stages in this area of work will be to carry out an expert review of the video data and to develop a management strategy in response to the findings.

### **3.2 Client Action Plan**

There is no client action plan as there are no conditions of certification for this fishery.

### **3.3 Re-scoring Performance Indicators**

Having reviewed the information presented by the client, Cefas and GSGSSI, the assessment team concluded that no Performance Indicators required re-scoring at this surveillance audit.

## 4 Appendices

### 4.1 Evaluation processes and techniques

#### 4.1.1 Site visits

This off-site surveillance audit was carried out through interviews conducted using on-line video conferencing software on the 24<sup>th</sup> September and the 2<sup>nd</sup> October 2020.

As part of the site visit the assessment team attended an online stakeholder meeting at which the fishing industry and other stakeholders were present, and where stakeholders from the fishing industry, science community and NGOs had the opportunity to comment on information presented by GSGSSI about South Georgia fisheries and environmental management activities in the past year and the GSGSSI proposals for future management.

A list of the meetings held during this surveillance audit and the attendance at each meeting is provided in **Error! Reference source not found..**

**Table 7:** List of meetings and attendance for this surveillance audit.

Date	Meeting and Attendance
24 <sup>th</sup> September 2020	GSGSSI Stakeholder Engagement Meeting (on-line video conference event). Attended by GSGSSI officials, scientific advisors, industry and NGO representatives.
24 <sup>th</sup> September 2020	Surveillance Audit, (on-line video conference event). Attended by:- Chris Darby, Cefas Mark Belchier, GSGSSI Sue Gregory, GSGSSI Philip Holyman, Cefas Martin Collins, BAS

#### 4.1.2 Stakeholder Participation

A total of 21 stakeholder organisations and individuals having relevant interest in the assessment were identified and notified, via e-mail, of surveillance process. This e-mail highlighted the potential process for engagement in the surveillance, if desired. In addition, the interest of others not appearing on this list was solicited through the postings on the MSC website.

No stakeholders came forward requesting a meeting with members of the assessment team during the site visit.

### 4.2 Stakeholder input

Verbal comments were made by the stakeholders listed in section 4.1.1 above. The comments are referred to in the relevant sections of this report.

No verbal comments or queries were made to the audit team which required a formal or written response.

No written comments from stakeholders were received during this surveillance audit.

### 4.3 Revised surveillance program

The MSC FCP v2.1 specifies that after each certification, surveillance and re-certification the Certified Accreditation Body (CAB) shall, with input from the client, determine the level at which subsequent surveillance of the fishery shall be undertaken.

The assessment team considers that it would be appropriate to assign the equivalent "Level 4" surveillance score to this fishery under the CR v2.0 requirements. The surveillance programme that complies with this surveillance score is set out below.

**Table 8: MSC Surveillance levels**

Surveillance level	Surveillance requirements
Level 6 <i>Default Surveillance</i>	4 on-site surveillance audits
Level 5	3 on-site surveillance audits 1 off-site surveillance audit
Level 4	2 on-site surveillance audits 2 off-site surveillance audits
Level 3	1 on-site surveillance audits 3 off-site surveillance audits
Level 2	1 on-site surveillance audits 2 off-site surveillance audits 1 review of information
Level 1 <i>Minimum Surveillance</i>	1 on-site surveillance audit 1 off-site surveillance audit 2 review of information

**Table 9: Fishery Surveillance Program**

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 4	Off-site surveillance audit.	On-site surveillance audit.	Off-site surveillance audit	On-site surveillance audit. Re-assessment

**Table 10: Timing of surveillance audit**

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
3	September 2021	September 2021	Coincides with certificate anniversary & annual fisheries – science stakeholder meeting in London, UK.

**Table 11: Surveillance level rationale**

Year	Surveillance activity	Number of auditors	Rationale
3	Off-site	2 auditors, off-site	This fishery presently has no conditions of certification, has returned a high score against all 3 MSC Principles, and has demonstrated an



			excellent track record of compliance with the MSC Scheme requirements as well as conditions of certification generated during earlier periods of certification. The fishery is well documented, and the GSGSSI has consistently provided comprehensive and verifiable information about the fishery that enables remote surveillance to be carried out
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## 4.4 Harmonised fishery assessments

The assessment team has reviewed the harmonisation requirements for this fishery in accordance with Annex PB of the MSC FCP v2.1.

There are presently 6 MSC-certified toothfish fisheries in the Southern hemisphere. They are listed in Table 12.

None of these fisheries overlap with the South Georgia fishery, nor do they remove fish from the South Georgia toothfish stock. There is therefore no need for harmonisation of Principle 1 or Principle 2 scores.

All of the MSC-certified toothfish fisheries with the exception of the Falkland Islands toothfish fishery operate within the CCAMLR area. The scores awarded for Principle 3 of all of these CCAMLR fisheries are very similar and the conclusions of the assessments are identical.

**Table 12:** List of MSC-certified toothfish fisheries. [Source: MSC website]

Fishery name	Certification status and date	Performance Indicators to harmonise
<a href="#">Ross Sea toothfish longline</a> Toothfish (Antarctic) ( <i>Dissostichus mawsoni</i> )	Certified	P3 Pls 3.1.x
<a href="#">Falkland Island toothfish</a> Toothfish (Patagonian) ( <i>Dissostichus eleginoides</i> )	Certified	N.A
<a href="#">SARPC Toothfish</a> Toothfish (Patagonian) ( <i>Dissostichus eleginoides</i> )	Certified	P3 Pls 3.1.x
<a href="#">South Georgia Patagonian toothfish longline</a> Toothfish (Patagonian) ( <i>Dissostichus eleginoides</i> )	Certified	P3 Pls 3.1.x
<a href="#">Macquarie Island (MI) toothfish</a> Toothfish (Patagonian) ( <i>Dissostichus eleginoides</i> )	Certified	P3 Pls 3.1.x
<a href="#">Australian Heard Island and McDonald Islands Toothfish &amp; Icefish fisheries</a> Mackerel icefish ( <i>Champsocephalus gunnari</i> ), Toothfish (Patagonian) ( <i>Dissostichus eleginoides</i> )	Certified	P3 Pls 3.1.x

The assessment team has therefore concluded that no further harmonisation activity is required at this surveillance audit.

## 4.5 References

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