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Marine Stewardship Council fisheries assessments

South Georgia Patagonian toothfish longline



Third Surveillance Report

| | |
|----------------------------------|--|
| Conformity Assessment Body (CAB) | LRQA |
| Assessment team | Jim Andrews |
| Fishery client | Government of South Georgia and the South Sandwich Islands (GSGSSI) |
| Assessment Type | 3rd Surveillance Report |

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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 |
| MCMC | Markov Chain Monte Carlo |
| 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 |

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Executive Summary

1. This is the 3rd 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 (UoC) set out below:

Table 1: Scope of South Georgia Patagonian toothfish longline fishery MSC UoC.

| | |
|--------------------------------|---|
| Species: | Patagonian toothfish (<i>Dissostichus eleginoides</i>) |
| Stock: | South Georgia Patagonian Toothfish CCAMLR Sub-Area 48.3 |
| Geographical area: | 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 |
| Harvest method: | Bottom Set Longline. |
| Client Group: | Certification will apply to the whole South Georgia Longline Fishery. Licences are issued by the Government of South Georgia and the South Sandwich Islands |
| Other Eligible Fishers: | None |

2. This surveillance was carried out in accordance with the MSC Fisheries Certification Process (FCP) v2.2 by a single auditor, Dr Jim Andrews. The audit was carried out off-site in accordance with FCP v2.2 7.28.6.2. Dr Andrews met with officers of the Government of South Georgia & the South Sandwich Islands (GSGSSI), a fish stock scientist from the Centre for Environment, Fisheries & Aquaculture Science (Cefas) and also with South Georgia stakeholders in October 2021. All interviews and meetings were conducted using video conferencing software.
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 auditor 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 has been no significant change 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 despite the failure of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) Scientific Committee to reach consensus on the total allowable catch (TAC) for the UoC area (Sub-Area 48.3) the fishery remains "in scope" for MSC Certification because, *inter alia*, the GSGSSI implements a harvest control rule (HCR) that is more precautionary than CCAMLR requirements.
4. The assessment team found that: -
 - a) There were commercial catches of 1,813t
 - b) 1,884t of toothfish was caught in 2020 season. This was less than the GSGSSI TAC of 1,920t. The estimated illegal, unregulated and unreported (IUU) catch was zero.
 - c) GSGSSI have continued to improve the management of the marine environment within the exclusive economic zone (EEZ) by carrying out further monitoring of seabed habitats in fished and unfished areas.

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5. The assessment team conclude that following this surveillance audit the MSC Certification of the South Georgia Patagonian toothfish longline fishery **should continue subject to annual surveillance audits.**

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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, issued 27th March 2020.</p> | |
| 3 | Surveillance number | |
| | 3 rd Surveillance | X |
| 4 | Team leader | |
| | <p>Jim Andrews – Team Leader</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 & 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. | |

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| | |
|---------------|--|
| 5 | Team members |
| | N/A |
| Local Context | English is spoken by the client. Jim has had several assignments in the region in the last 10 years. |
| Traceability | Jim has completed the MSC traceability module. |
| RBF | Not used in this assessment. |
| 6 | Audit/review time and location |
| | The audit took place via online video calls during the week commencing the 4 th October 2021. A follow-up call was held with the client and their scientific advisors on 4 th November 2021, after the completion of CCAMLR meetings the previous week. |
| 7 | Assessment and review activities |
| | All relevant data and progress on the non-binding recommendations. |

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2 Background

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

2.1 Changes in fleet structure or operation

The fleet of vessels operating in 2021 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 | Type |
|----------------|-------------------|
| Antarctic Bay* | Spanish longliner |
| Argos Froyanes | Autoliner |
| Altamar | Autoliner |
| Nordic Prince | Autoliner |
| Argos Georgia | Autoliner |
| San Aspiring | Autoliner |

* The fishing vessel *Antarctic Bay* did not fish during the 2021 season.

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. All of the vessels have tamper-proof electronic monitoring (CCTV) equipment on board in addition to 100% observer coverage.

2.2 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 has been managed under the 2019 advice during the period 2019-21.

2.3 Changes in relevant regulations

In 2019 the start of the fishing season was delayed until the 1st of May to minimise the bird bycatch problems that have arisen earlier in the year in recent seasons. This start date was retained in 2021, as well as the later closing date adopted in 2020 on the 14th September (the same date as the CCAMLR season end). This extension was implemented in part to mitigate the loss of the two 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 Performance Indicators (PIs).

2.4 Changes to personnel involved in science, management or industry

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

2.5 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.

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2.5.1 Target species stock status

The results of the September 2021 stock assessment presented by the UK to CCAMLR indicate that the toothfish stock in Subarea 48.3 was around 47% (95%CI 43%–53%) of the unfished biomass (B_0) in 2021 (Earl and Readdy 2021). The 2021 estimate of current spawning stock biomass was 34,300t (95%CI 30,500-39,700t) and the estimate of B_0 was around 72,600t (95%CI 68,200-78,500t).

The most recent stock assessment is the first to show a spawning stock biomass (SSB) of less than 50% B_0 . This is a result of a revised perception of B_0 in the most recent stock modelling exercise. The change in perception of B_0 is thought to be due to changes in fishing patterns and/or fish behaviour that are affecting the rate of tag recovery. A similar pattern has been seen in other toothfish stock models in the past, and Cefas are continuing to investigate how the tagging data influence the model outputs.

Proposed fishery removals are expected to result in a gradual increase in stock biomass to 50% B_0 (Figure 1).

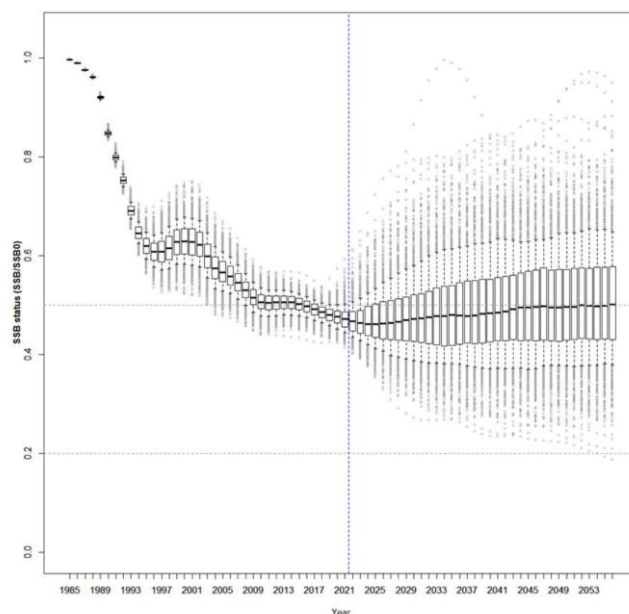


Figure 1: Stock status projections with uncertainty based on removals of 2,153t from the Markov Chain Monte Carlo (MCMC) model run. Boxes indicate inter-quartile range, and whiskers extent from 10-90%, with values outside this range being represented by circles. (Earl and Readdy 2021)

The CCAMLR Scientific Committee was unable to reach consensus on the stock assessment and proposed TAC for Subarea 48.2 in the 2021-22 season (see section 2.7.2 of this report). As a result, no new Conservation Measure has been implemented for this fishery to replace CM 41-02 (CCAMLR 2019).

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 an allowance for cetacean depredation, has resulted in GSGSSI consistently setting a 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 and 1,920t for 2020/21.

The TAC proposed (but not adopted) at CCAMLR in 2021 was 2,072t for 2021/22 and 2022/23 (Earl and Readdy 2021). GSGSSI have not yet determined a TAC for 2021/22.

LRQA have given careful consideration to the consequences of the revised perception of stock status for scoring of this fishery against the corresponding MSC Performance Indicators. In summary, the downward revision of stock status does not result in the perception of biomass falling below the MSC proxy values of 20% B_0 for the point at which recruitment would be impaired or 40% B_0 for maximum sustainable yield (MSY), so scoring of stock status is unaffected.

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2.5.2 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 2020/21 season, an overall TAC of 1,920t was set for all of Subarea 48.3, of which 0t was allocated to area A; up to 576t could be taken in area B and up to 1,344t 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 Table 4). For the 2021 season, GSGSSI report a total catch of 1,812.79t. The under-utilisation of the toothfish TAC was a consequence of the uptake of grenadier allocation in the 2021 season, which resulted in the early closure of the fishery (see section 2.5.3.1 of this report).

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.

The long running shallow lines research programme was suspended in 2021. Analyses of shallow line data collected in previous seasons indicated that the results were adding very little to the stock assessment models, and that the research protocol may need reviewing if the work is to be continued.

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, 2017).

LRQA have considered the consequences of the failure of CCAMLR to agree a new CM for this stock for scoring of this fishery against the corresponding MSC PIs. The conclusion is that, providing GSGSSI continue to implement the targets set in its HCRs, then scoring against management and governance PIs will be unaffected. The implications of this issue as a "controversial unilateral exemption against an international agreement" are considered in section 2.7.2 of this report. LRQA will keep this situation under review.



Table 4: Catch history for *Dissostichus eleginoides* in Subarea 48.3. SGSR: South Georgia–Shag Rocks stock; West: area outside the SGSR stock area. (Source: CCAMLR fishery reports for past seasons, and vessel catch and effort reports for current season, past CCAMLR reports for IUU catch). *indicates data for the current season which is incomplete (only catch up to 31st July) and not used in the assessment (Earl and Raddy 2021). [Note that actual catch in 2021 was reported by GSGSSI to be 1,812.79t.]

| Season | GSGSSI Regulated Fishery | | | Depredation Correction Factor | Estimated IUU catch (t) | Total Removals (t) | | |
|--------|--------------------------|---------------------------------|----------|-------------------------------------|----------------------------|----------------------------|------|---------|
| | | <i>D. eleginoides</i> catch (t) | | | | SGSR Used in Assessment | West | Subarea |
| | Number of Vessels | Limit | Reported | | | | | |
| 1985 | 1 | - | 521 | | 0 | 517 | 4 | 521 |
| 1986 | 1 | - | 733 | | 0 | 733 | 0 | 732 |
| 1987 | 1 | - | 1954 | | 0 | 1954 | 0 | 1954 |
| 1988 | 2 | - | 876 | | 0 | 876 | 0 | 876 |
| 1989 | 3 | - | 7060 | | 144 | 6962 | 241 | 7204 |
| 1990 | 2 | - | 6785 | | 437 | 6838 | 384 | 7222 |
| 1991 | 1 | 2500 | 1756 | 1.007 | 1775 | 3555 | 0 | 3531 |
| 1992 | 23 | 3500 | 3809 | 1.007 | 3066 | 6910 | 11 | 6875 |
| 1993 | 18 | 3350 | 3020 | 1.007 | 4019 | 7086 | 0 | 7039 |
| 1994 | 4 | 1300 | 658 | 1.006 | 4780 | 5280 | 191 | 5438 |
| 1995 | 13 | 2800 | 3371 | 1.01 | 1674 | 5021 | 73 | 5045 |
| 1996 | 13 | 4000 | 3602 | 1.022 | 0 | 3607 | 72 | 3602 |
| 1997 | 10 | 5000 | 3812 | 1.021 | 0 | 3888 | 4 | 3812 |
| 1998 | 9 | 3300 | 3201 | 1.019 | 146 | 3410 | 0 | 3347 |
| 1999 | 12 | 3500 | 3627 | 1.022 | 667 | 4387 | 0 | 4293 |
| 2000 | 17 | 5310 | 4904 | 1.03 | 1015 | 6087 | 9 | 5919 |
| 2001 | 18 | 4500 | 4047 | 1.03 | 196 | 4358 | 11 | 4243 |
| 2002 | 17 | 5820 | 5742 | 1.03 | 3 | 5887 | 29 | 5745 |
| 2003 | 19 | 7810 | 7496 | 1.015 | 0 | 7616 | 18 | 7634 |
| 2004 | 17 | 4420 | 4462 | 1.016 | 0 | 4532 | 37 | 4532 |
| 2005 | 8 | 3050 | 3032 | 1.024 | 23 | 3105 | 0 | 3105 |
| 2006 | 11 | 3556 | 3522 | 1.022 | 0 | 3601 | 0 | 3601 |
| 2007 | 11 | 3554 | 3527 | 1.019 | 0 | 3594 | 2 | 3594 |
| 2008 | 12 | 3920 | 3807 | 1.019 | 0 | 3879 | 0 | 3879 |
| 2009 | 11 | 3920 | 3382 | 1.023 | 0 | 3459 | 0 | 3459 |
| 2010 | 9 | 3000 | 2518 | 1.046 | 0 | 2633 | 0 | 2633 |
| 2011 | 6 | 3000 | 1732 | 1.029 | 0 | 1783 | 0 | 1783 |
| 2012 | 6 | 2600 | 1846 | 1.03 | 0 | 1902 | 0 | 1902 |
| 2013 | 6 | 2600 | 2094 | 1.04 | 0 | 2177 | 0 | 2177 |
| 2014 | 6 | 2400 | 2180 | 1.039 | 0 | 2265 | 0 | 2265 |
| 2015 | 6 | 2400 | 2195 | 1.033 | 0 | 2267 | 0 | 2267 |
| 2016 | 6 | 2750 | 2196 | 1.037 | 0 | 2278 | 0 | 2278 |
| 2017 | 6 | 2750 | 2195 | 1.023 | 0 | 2246 | 0 | 2246 |
| 2018 | 6 | 2600 | 1950 | 1.056 | 0 | 2060 | 0 | 2060 |
| 2019 | 6 | 2600 | 2124 | 1.041 | 0 | 2211 | 0 | 2211 |

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| | | | | | | | | |
|------|---|------|-------|-------|---|------|---|------|
| 2020 | 5 | 2327 | 1884 | 1.061 | 0 | 1999 | 0 | 1999 |
| 2021 | 5 | 2327 | 1344* | | | | | |

2.5.3 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.

2.5.3.1 Non-target species

The most abundant non-target species in the catch from this fishery are macrourids (grenadiers), skates and rays, and blue antimora. The quantity of grenadiers and rays caught in the UoC relative to catch limits since 1985 is shown in Table 5. GSGSSI report that the catch of grenadiers in the 2021 season was 96.2t; the rajid catch was 3.4t; and 55.3t of blue antimora were caught.

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 2021 the GSGSSI catch limit for grenadiers was met before the toothfish TAC had been fully utilised, resulting in the fishery closing 12 days early. This also happened previously, during the 2018 fishing season when the season closed one week early.

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, and indeed the entire fleet was comprised of autoliners in 2021); an increase in macrourid abundance; or differential depredation of longlines by cetaceans, which prefer toothfish to macrourids.

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.

In order to ensure that the fishery operates within its catch constraints Cefas is now providing advice on macrourid TAC uptake at regular five-day 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.



Table 5: Reported catch and catch limits for the most abundant non-target species (grenadiers (*Macrourus* spp.) and rays (Rajids)) in the South Georgia Patagonian toothfish longline fishery (CCAMLR 2021a).

| Season | <i>Macrourus</i> spp. | | Rajids | | Number Released | Other catch | |
|--------|-----------------------|-------------------------|----------------------|-------------------------|-----------------|----------------------|-------------------------|
| | Catch Limit (tonnes) | Reported Catch (tonnes) | Catch Limit (tonnes) | Reported Catch (tonnes) | | Catch Limit (tonnes) | Reported Catch (tonnes) |
| 1985 | 0 | 0 | 0 | 4 | 0 | 0 | <1 |
| 1986 | 0 | <1 | 0 | 9 | 0 | 0 | <1 |
| 1987 | 0 | <1 | 0 | 3 | 0 | 0 | <1 |
| 1988 | 0 | <1 | 0 | <1 | 0 | 0 | <1 |
| 1989 | 0 | <1 | 0 | 11 | 0 | 0 | <1 |
| 1990 | 0 | <1 | 0 | <1 | 0 | 0 | <1 |
| 1991 | 0 | 1 | 0 | 4 | 0 | 0 | <1 |
| 1992 | 0 | <1 | 0 | 2 | 0 | 0 | <1 |
| 1993 | 0 | 2 | 0 | <1 | 0 | 0 | <1 |
| 1994 | 0 | <1 | 0 | 12 | 0 | 0 | <1 |
| 1995 | 0 | 12 | 0 | 90 | 0 | 0 | <1 |
| 1996 | 0 | 32 | 0 | 54 | 0 | 0 | <1 |
| 1997 | 0 | 33 | 0 | 43 | 0 | 0 | 2 |
| 1998 | 0 | 21 | 0 | 13 | 0 | 0 | 1 |
| 1999 | 0 | 21 | 0 | 19 | 0 | 0 | <1 |
| 2000 | 0 | 18 | 0 | 12 | 0 | 0 | 2 |
| 2001 | 0 | 21 | 0 | 27 | 0 | 0 | 1 |
| 2002 | 0 | 50 | 0 | 25 | 0 | 0 | 5 |
| 2003 | 0 | 74 | 0 | 37 | 0 | 0 | 10 |
| 2004 | 221 | 30 | 221 | 6 | 0 | - | 3 |
| 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 |
| 2020 | 116 | 87 | 116 | 3 | 23610 | - | 47 |

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2.5.3.2 Endangered, Threatened and Protected (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 1st May of each year.

Observer reports for the 2021 fishing season show a very low level of interaction between ETP species and fishing gear (CCAMLR 2021b, 2021c, 2021d, 2021e, 2021f). The observer reports include records of target species catch, and catches of both non-target fish species as well as ETP species.

The only bird mortalities were associated with deck/vessel strikes, accounting for a total of 27 recorded mortalities. Some entanglements with fishing gear were reported, all resulting in birds being released unharmed. No mortalities were associated with the deployment or retrieval of fishing gear.

One of the vessels reported 16 bird mortalities arising from collisions with the vessel: ten unidentified petrels & shearwaters; three South Georgia diving petrels (*Pelecanoides georgicus*); a single white-chinned petrel (*Procellaria aequinoctialis*); one diving petrel (*Pelecanoides urinatrix*); and one unidentified giant petrel (CCAMLR 2021b). Dead birds from this vessel were retained and handed over to GSGSSI at the end of the trip for analysis.

GSGSSI is working with the local Agreement on the Conservation of Albatrosses and Petrels (ACAP) coordinator to develop a standardised reporting procedure for all vessels operating in the GSGSSI MZ (including cruise ships and research vessels as well as fishing vessels). A recent project proposal submitted to the UK Government 'Darwin Plus' programme was successful in its bid for funding, and is now in the early stages of developing these protocols with the intention of carrying out at-sea trials next season.

All of the observers reported depredation of toothfish from longlines by cetaceans (Orcas, *Orcinus orca* and sperm whales, *Physeter catodon*) over the course of the fishing season. A fall in catch per unit effort (CPUE) of toothfish was observed when cetaceans were present at hauling, and recovered hooks frequently retained fish lips or heads, providing evidence of depredation. Observers noted that depredation seemed to be higher in the early season and particularly around good fishing areas such as Shag Rocks. Vessels responded by avoiding these areas until later in the season when the cetaceans are thought to migrate north from Subarea 48.3.

Several observers reported that when Orcas were present the catch of toothfish could be reduced to zero. The only mitigation measure that has shown any level of success has been to cease the recovery of gear when Orca are present, buoy off the line and leave the area, returning to recover the line after the cetaceans have dispersed. This method is used regularly by boats in the South Georgia fleet.

At this surveillance audit it was also noted that one observer reported depredation of blue antimora and macrourids by pinnipeds (Antarctic fur seals, *Arctocephalus gazella* and leopard seals, *Hydrurga leptonyx*) (see Figure 4).

No mortalities or entanglement of marine mammals were reported by any of the observers.

Cefas reported that a paper about assessing whale depredation from longlines in the UoC has been published in the ICES Journal of Marine Science recently (Earl *et al.* 2021). This paper compared estimates of depredation calculated using different statistical methods based on both observed depredation and "cryptic" (i.e. unobserved) depredation determined from the ratio of toothfish and macrourids. The outputs from the different methods are illustrated in Figure 2 below.

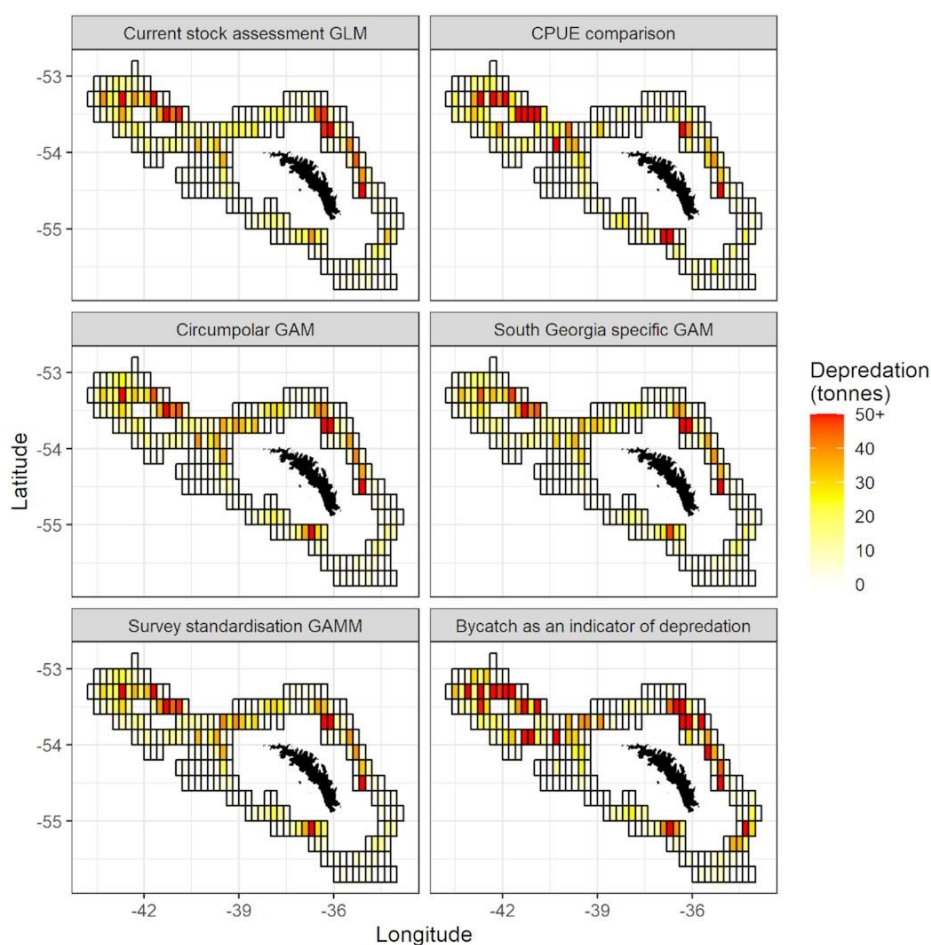


Figure 2: Estimated total depredated toothfish catch in tonnes by 0.2° x 0.2° cells around South Georgia for the period 2003-2019 using different methods (GLM = Generalised Linear Model; GAM = Generalised Additive Model; GAMM – Generalised Additive Mixed Model; CPUE = Catch per Unit Effort). Shag Rocks are the area to the west of the main island around 42°W 53.5°S. (Earl *et al.* 2021)

One of the key findings from this work is that the total depredation estimated by using bycatch indicators is around 7.4% of the total catch per year; other methods estimate the depredation rate at between 4.8-5.3% of the total catch. The research also clearly demonstrates the clear spatial pattern of depredation (common to all of the estimates), with higher rates around Shag Rocks.

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2.5.3.3 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 that the fishing industry are doing with underwater video cameras to monitor seabed character and interactions in the toothfish longline fishery.

The Blue Belt Discovery Expedition 99 to the South Sandwich Islands took place between February and March 2019. Acoustic data and seabed imagery from this trip is being used to help develop the predictive model of habitat distributions in the GSGSSI EEZ. One of the key findings is that the more fragile erect benthic species in the unfished areas tend to be found in waters to a depth of around 500-700m, which is shallower than the minimum depth limit for UoC activity.



Figure 3: Route of the RRS Discovery Expedition 99 research cruise to the South Sandwich Islands in 2019. (UK Government 2019).

The use of cameras on longlines is specifically relevant to the areas fished for toothfish. One of the key findings from this research is that VME species are more abundant in the Benthic Closed Areas (which are only fished at low intensity as part of the stock assessment procedure); and that Vulnerable Marine Ecosystem (VME) indicator species are only seen on a very small proportion of longline deployments.

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2.5.4 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). In addition to the designated CCAMLR SISO observers, four of the five vessels in 2021 had a second either national or company observer on board.

Observer reports were provided by the GSGSSI at this surveillance audit for all of the five vessels in the UoC (CCAMLR 2021b, 2021c, 2021d, 2021e, 2021f). 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 of target species, non-target species and interactions with ETP species during each fishing trip (including in the most recent reports, photographs of bird rings in sufficient detail to read numbers and identify individuals). 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 4.

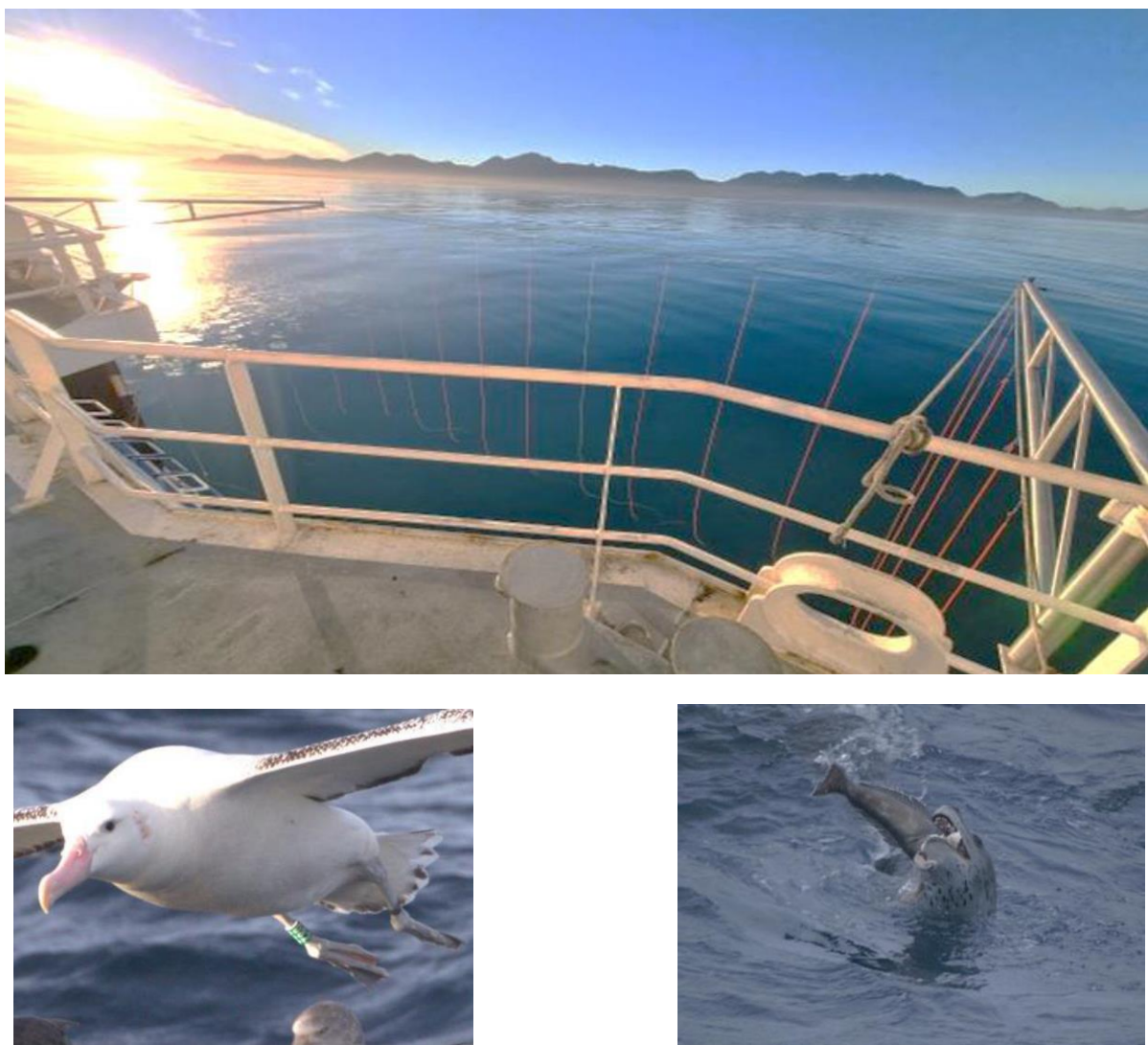


Figure 4: Images from observer reports for South Georgia Patagonian toothfish longline vessels showing the configuration of the Bird Exclusion Device (BED) on the vessel *Argos Froyanes*; a wandering albatross (*Diomedea exulans*) photographed from the vessel *Altamar*; and a leopard seal (*Hydrurga leptonyx*) consuming a fish depredated from a longline alongside the vessel *San Aspiring* (CCAMLR 2021e, 2021f, 2021b)

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2.5.5 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 either before leaving Port Stanley in the Falkland Islands or at King Edward Point in South Georgia by GSGSSI staff and 100% observer coverage has been maintained. At-sea boardings and inspections were carried out by GSGSSI enforcement staff for four of the five longliners during the 2020 fishing season, and on all five of the vessels in the 2021 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.

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

2.6 Version Details

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

Table 6: MSC Fisheries program document versions used for this assessment.

| Document | Version number |
|--|----------------|
| MSC Fisheries Certification Process | Version 2.2 |
| MSC Fisheries Standard | Version 1.3* |
| MSC General Certification Requirements | Version 2.4.1 |
| MSC Surveillance Reporting Template | Version 2.01 |

* Default assessment tree



2.7 Confirmation of Scope

The fishery was considered to be “in scope” for MSC certification during its initial assessment (FCP v2.2 section 7.4). The surveillance team made enquiries during this audit to confirm that the fishery remains in scope. The findings are listed below.

2.7.1 Destructive fishing practices

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

2.7.2 Controversial unilateral exemption to an international agreement

The GSGSSI reported at this surveillance audit that the CCAMLR Scientific Committee was unable to reach consensus on the TAC for the UoC area (Statistical Subarea 48.3). This was a result of a dispute between the UK and Russian delegations to CCAMLR over the perception of *D. eleginoides* stock status in Subarea 48.3 (Delegation of the Russian Federation 2021, Delegation of the United Kingdom 2021). As a consequence, the Conservation Measure (CM41-02) has not been renewed by CCAMLR for the 2021/22 season.

GSGSSI indicated during the surveillance audit that it is their intention to permit a fishery to proceed in Subarea 48.3 during the 2021/22 season that is in accordance with the GSGSSI HCRs (summarised in section 2.5.1 of this report). The GSGSSI have a management goal of maintaining biomass above 55% of the unfished biomass (B_0), which is more precautionary than the CCAMLR decision rule of 50% B_0 .

LRQA have carefully considered whether a decision to proceed with a toothfish fishery in Statistical Subarea 48.3 for the 2021/22 season would represent a “Controversial unilateral exemption to an international agreement” *sensu* FCP v2.2. §7.4.2.3. The findings at this surveillance audit are that:-

- With respect to the definitions set out for CABs in §7.4.2.3.a:
 - i. **“Controversial”**: The dispute about the status of the toothfish stock in subarea 48.3 exists between 2 states (UK and Russia), and not with the wider international community; hence this criterion is not met.
 - ii. **“Unilateral”**: If the UK/GSGSSI take action to implement the TAC as proposed, they will have acted unilaterally;
 - iii. **“Exemption”**: The UK has not taken any reservation or exception to a measure adopted by CCAMLR, nor proposes any action to undermine the sustainable management of the fishery. This criterion is not therefore met.
 - iv. **“International agreement”**: CCAMLR is an international agreement.
- With respect to the considerations for CABs set out in 7.4.2.3.b:
 - i. Throughout the period that CCAMLR has existed, and in all other areas of jurisdiction, the UK and GSGSSI have recognised and adhered to CCAMLR CMs and acted to uphold CCAMLR objectives.
 - ii. If GSGSSI allow a fishery to proceed under its own HCRs it will result in a higher level of conservation (i.e. a biomass target of 55% B_0 rather than the CCAMLR target of 50% B_0).
 - iii. The proposed GSGSSI TAC for subarea 48.3 will not undermine the sustainable management of the fishery.

In summary, if the UK/GSGSSI take unilateral action to permit a fishery for toothfish in Subarea 48.3 for the 2021/22 season it will not constitute a “Controversial unilateral exemption to an international agreement” because the dispute about the stock status in this area is bilateral; the action would not represent a reservation or exception to a CCAMLR measure; and because the action proposed by the UK/GSGSSI will result in a higher level of conservation, so it will not undermine the sustainable management of the fishery.

LRQA conclude that this dispute does not, therefore, represent a controversial unilateral exemption to an international agreement at this time. This is an important management issue that will be kept under review at future surveillance audits.

2.7.3 Enhancement activities

This is not an enhanced fishery.

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2.7.4 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 §7.4.2.5 *et seq* of FCP v2.2.

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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 PIs 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 7: Total Allowable Catch (TAC) and catch data.

| | | | | |
|---------------------------------|---------------------------|-------------|--------|-----------------|
| TAC | Year | 2021 | Amount | 1,920t |
| UoA share of TAC | Year | 2021 | Amount | 1,920t |
| UoA share of total TAC | Year | 2021 | Amount | 100% |
| Total green weight catch by UoC | Year (most recent) | 2021 | Amount | 1812.79t |
| Total green weight catch by UoC | Year (second most recent) | 2020 | Amount | 1883.7t |

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 CR v1.3. When the fishery is re-assessed, it will need to meet the requirements of FCR v2.0 (or its successor). MSC FCR v2.0 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 limit reference point (LRP).

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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 FCR v2.0) 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 CR v2.0) 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

3.1.4 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 5).

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.

3.1.5 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 2.5.3.1 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.

3.1.6 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*, *Ilex* and *Dosidicus*, with South American Humboldt squid (*Dosidicus gigas*) being the main species used.

3.1.7 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 2.5.3.3 of this report.

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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 2.5.3.3 of this report) to ensure that the fishery is compatible with MSC Fisheries Standard v2.01 requirements.

3.1.8 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 that the 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 VMEs.

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 ‘Little Leonardo’ 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 Areas.

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 online video conferencing software on the 8th October and the 4th November 2021.

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 Table 8.

Table 8: List of meetings and attendance for this surveillance audit.

| Date | Meeting and Attendance |
|-------------------------------|--|
| 8 th October 2021 | GSGSSI Stakeholder Engagement Meeting (on-line video conference event). Attended by GSGSSI officials, scientific advisors, industry and NGO representatives. |
| 8 th October 2021 | Surveillance Audit, (on-line video conference event). Attended by:- Chris Darby, Cefas Mark Belchier, GSGSSI Sue Gregory, GSGSSI Martin Collins, BAS |
| 4 th November 2021 | Discussion with client and Cefas staff following completion of CCAMLR meetings for 2021. Attended by:- Chris Darby, Cefas Mark Belchier, GSGSSI Sue Gregory, GSGSSI Martin Collins, BAS |

4.1.2 Stakeholder Participation

A total of 22 stakeholder organisations and individuals having relevant interest in the assessment were identified and notified, via email, of the surveillance process. This email 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.

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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.

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4.3 Revised surveillance program

The MSC FCP v2.2 specifies that after each certification, surveillance and re-certification the 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 9: 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 10: 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. Reassessment |

Table 11: Timing of surveillance audit

| Year | Anniversary date of certificate | Proposed date of surveillance audit | Rationale |
|------|---------------------------------|-------------------------------------|--|
| 4 | September 2022 | September 2022 | Coincides with certificate anniversary & annual fisheries – science stakeholder meeting in London, UK. |

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Table 12: Surveillance level rationale

| Year | Surveillance activity | Number of auditors | Rationale |
|------|-----------------------|---------------------|--|
| 4 | On-site | 2 auditors, on-site | This will be the fourth surveillance audit and re-assessment site visit. It is appropriate for two auditors to be present on-site (if permissible under Covid-19 rules in place at that time). |

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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 v2.2.

There are presently six MSC-certified toothfish fisheries in the Southern hemisphere. They are listed in Table 13.

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 13: List of MSC-certified toothfish fisheries. [Source: MSC website]

| Fishery name | Certification status and date | Performance Indicators to harmonise |
|---|-------------------------------|-------------------------------------|
| <u>Ross Sea toothfish longline</u> Toothfish (Antarctic) (<i>Dissostichus mawsoni</i>) | Certified | P3 Pls 3.1.x |
| <u>Falkland Island toothfish</u> Toothfish (Patagonian) (<i>Dissostichus eleginoides</i>) | Certified | N.A |
| <u>SARPC Toothfish</u> Toothfish (Patagonian) (<i>Dissostichus eleginoides</i>) | Certified | P3 Pls 3.1.x |
| <u>South Georgia Patagonian toothfish longline</u> Toothfish (Patagonian) (<i>Dissostichus eleginoides</i>) | Certified | P3 Pls 3.1.x |
| <u>Macquarie Island (MI) toothfish</u> Toothfish (Patagonian) (<i>Dissostichus eleginoides</i>) | Certified | P3 Pls 3.1.x |
| <u>Australian Heard Island and McDonald Islands Toothfish & Icefish fisheries</u> 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.

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4.5 References

- CCAMLR. 2018a. Stock status and population assessment of the Antarctic starry skate (*Amblyraja georgiana*) in Subarea 48.3. Page 33. CCAMLR, Hobart, Tas.
- CCAMLR. 2018b. Genetic analysis of skates (*Amblyraja* spp.) caught as by-catch around South Georgia and the South Sandwich Islands. Page 9. CCAMLR, Hobart, Tas.
- CCAMLR. 2019. Conservation Measure 41-02 (2019): Limits on the fishery for *Dissostichus eleginoides* in Statistical Subarea 48.3 in the 2019/20 and 2020/21 seasons. Page 3. CCAMLR, Hobart, Tas. https://www.ccamlr.org/sites/default/files/41-02_1.pdf.
- CCAMLR. 2021a. Fishery Report 2020: *Dissostichus eleginoides* in Subarea 48.3. Page 13. CCAMLR, Hobart, Tas. https://fishdocs.ccamlr.org/FishRep_483_TOP_2020.pdf.
- CCAMLR. 2021b. CCAMLR Scientific Observer Longline Vessel Cruise Report: San Aspiring, 31st March 2021 to 5th September 2021. Page 24. CCAMLR, Hobart, Tas.
- CCAMLR. 2021c. CCAMLR Scientific Observer Longline Vessel Cruise Report: Nordic Prince, 29th March 2021 to 16th September 2021. Page 16. CCAMLR, Hobart, Tas.
- CCAMLR. 2021d. CCAMLR Scientific Observer Longline Vessel Cruise Report: Argos Georgia, 7th April 2021 to 10th September 2021. Page 14. CCAMLR, Hobart, Tas.
- CCAMLR. 2021e. CCAMLR Scientific Observer Longline Vessel Cruise Report: Argos Froyanes, 13th May 2021 to 14th September 2021. Page 14. CCAMLR, Hobart, Tas.
- CCAMLR. 2021f. CCAMLR Scientific Observer Longline Vessel Cruise Report: Altamar, 29th April 2021 to 20th July 2021. Page 20. CCAMLR, Hobart, Tas.
- Delegation of the Russian Federation. 2021. Revision of the precautionary approach to ensuring the rational use of a living resource (*Dissostichus eleginoides*) in CCAMLR Subarea 48.3. <https://www.ccamlr.org/en/sc-camlr-40/15>.
- Delegation of the United Kingdom. 2021. Comments on WG-FSA 2021/41 and SC-CAMLR-40/15. On the revision of the precautionary approach to ensure the rational use of the living resource (*Dissostichus eleginoides*) in Subarea 48.3. <https://www.ccamlr.org/en/sc-camlr-40/bg/08>.
- Earl, T., E. MacLeod, M. Söffker, N. Gasco, F. Massiot-Granier, P. Tixier, and C. Darby. 2021. Whale depredation in the South Georgia Patagonian toothfish (*Dissostichus eleginoides*) fishery in the South Atlantic: a comparison of estimation methods. ICES Journal of Marine Science. <https://doi.org/10.1093/icesjms/fsab212>.
- Earl, T., and L. Readdy. 2021. Assessment of Patagonian Toothfish (*Dissostichus eleginoides*) in Subarea 48.3:36.
- GSGSSI (2017) *South Georgia & the South Sandwich Islands Toothfish Fishery (48.3 and 48.4) Management Plan 2018*. Stanley, Falkland Islands: Government of South Georgia & the South Sandwich Islands, pp. 1–14. Available at: http://www.gov.gs/docsarchive/Fisheries/171115%20Toothfish%2048_3%20&%2048_4%20Fishery%20Management%20Plan%20-%20FINAL.pdf (Accessed: 30 April 2018).
- UK Government. 2019. Discovery Expeditions to South Georgia & the South Sandwich Islands, Tristan da Cunha and St Helena. <https://marinedevelopments.blog.gov.uk/2019/02/05/discovery/>.

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