

South Georgia & the South Sandwich Islands

Mackerel Icefish Fishery (48.3) Management Plan 2021-2023



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Management Plan

2021 - 2023

For enquiries relating to this plan contact:
Government of South Georgia & the South Sandwich Islands
Government House
Stanley
Falkland Islands
FIQQ 1ZZ
Telephone: +500 28214
e-mail: dof@gov.gs

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Preamble

The South Georgia & the South Sandwich Islands Maritime Zone (SGSSI MZ), was declared in 1993. It extends 200 nautical miles from the baselines (the coast of South Georgia and each of the South Sandwich Islands) and occupies approximately 1.3 million km². The South Georgia & the South Sandwich Islands MPA ([SGSSI MPA](#)) was declared in 2012 with additional protection measures established in 2013 and 2019 including the extension of the MPA to include the entire SGSSI MZ and an increase in the area of 'no –take zones (NTZs) to 23% of the total MPA area. The SGSSI MPA is a sustainable use MPA and includes no-take zones in all coastal areas, areas closed to all seabed fishing on the shelf, and temporally closed areas. A ban on the use and carriage of heavy fuel oil (HFO) by vessels across the whole SGSSI MZ was introduced in December 2020.

Conservation and management objectives

The '[Protect Sustain Inspire](#)' 5-year (2021 – 2025) strategy sets out the Government's values-driven approach to the stewardship of South Georgia & the South Sandwich Islands, and includes a commitment to manage fisheries in a precautionary manner in our Maritime Zone, to the highest international standards. Fisheries management will be consistent with all CCAMLR requirements in line with Article II of the Convention; so as to conserve fish stocks and other marine living resources. This will ensure long-term sustainability and provide the foundations for the Government's key conservation and management objectives for the fisheries within the SGSSI MPA. These are to:

- Improve public awareness about the high standards and sustainability of SGSSI fisheries and enhance two-way knowledge and best practice information sharing with other fisheries
- Maintain a strong, enforceable policy on Illegal, Unreported and Unregulated (IUU) vessels, deterring IUU activity through fishery patrolling while exploring scope for additional remote sensing options
- Collaborate with stakeholders to develop fishery management plans to guide management and research, with clear and transparent policy and updated fisheries legislation

The South Georgia & South Sandwich Islands Marine Protected Area

The SGSSI MPA incorporates a number of management tools designed to protect targeted stocks as well as ecological links to fisheries and the wider ecosystem. The tools relevant to this fishery are:

- Total ban on all commercial bottom trawling throughout the SGSSI MZ; and
- 30 km no-take zone around South Georgia, with 12 nautical mile no-take zones at Shag Rocks, Black Rock and Clerke Rocks;

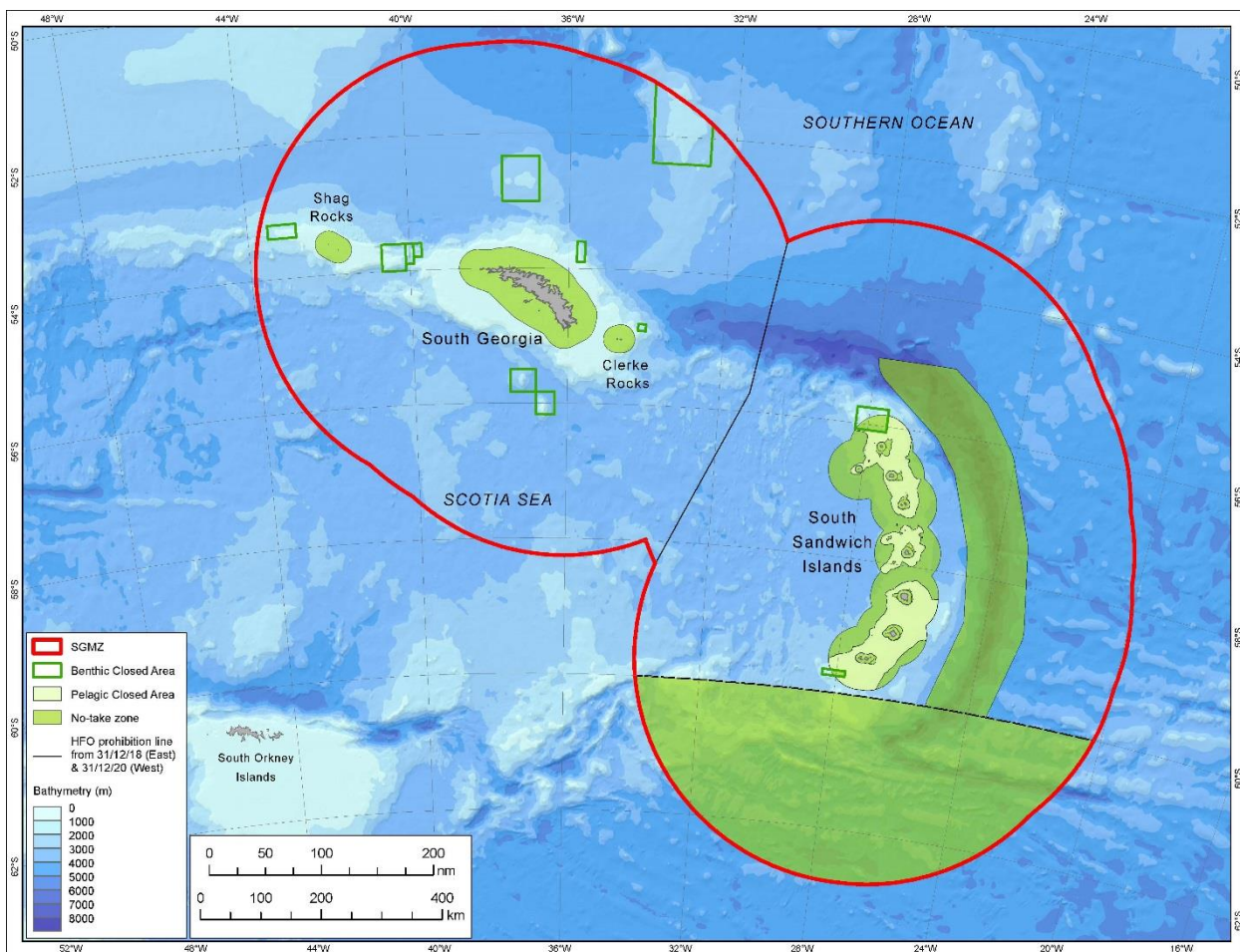


Figure 1: The SGSSI Maritime Zone and Marine Protected Area

History of the South Georgia Mackerel Icefish Fishery

The fishery for mackerel icefish (*Champsocephalus gunnari*) in the SSGSSI MZ is a pelagic trawl fishery and operates under CCAMLR regulations. Fishing for mackerel icefish began in South Georgia waters in the late 1970s, with large catches taken by eastern European (ex-Soviet bloc) vessels. Catches peaked in 1981/82 with a reported 178,000 tonnes, although there is some doubt about the accuracy of the data. Following the establishment of CCAMLR in 1982 concerns were expressed about depletion of stocks, which led to CCAMLR closing the fishery in 1989. The fishery was later re-opened with additional controls to ensure long-term sustainability including those imposed by the Government of South Georgia & the South Sandwich Islands. Very small allowable catches were permitted and the fishery was limited to pelagic trawling only to avoid adverse impacts on non-target species. In recent years the allowable catch has been between 1,500 and 5,000 tonnes, although the full quota has not always been taken up. The fishery is Marine Stewardship Council (MSC) certified.

The SSGSSI MZ is within the area covered by the Convention on the Conservation of Antarctic Marine Living Resources, to which the United Kingdom is a contracting party. Accordingly, fisheries in the SGMZ are managed under the auspices of CCAMLR. It is a condition of every licence that all applicable CCAMLR Conservation Measures (CMs) must be adhered to. GSGSSI sets additional compliance conditions which are often more precautionary than those agreed under CCAMLR.

Fishery Management

| | |
|------------------------------|--------------------------------------------------------------------------------------------------|
| Primary Legislation: | Fisheries (Conservation and Management) Ordinance 2000. |
| | Wildlife and Protected Areas Ordinance 2011 (as amended). |
| | Marine Protected Areas Order 2013 and 2019 |
| | Fisheries (Transshipment and Export) Regulations 1990 (as amended). |
| Fishery Documentation | Mackerel Icefish Licensing Information for Applicants for the 2021/22 – 2022/23 Fishing Seasons. |

CCAMLR Schedule of Conservation Measures in Force 2021/22 (as updated from time to time).

CCAMLR Fishery Report 2021: *Champscephalus gunnari* South Georgia (Subarea 48.3).

| | |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Fishing Season | 1 December until 30 November |
| Valid Fishing Areas | Beyond 30 km around South Georgia only. Fishing is not permitted at Shag Rocks (west of 40° W) for the 2021/22 or 2022/23 seasons. |
| Fishing Methods Permitted | Pelagic trawling |
| Licencing | 2 year licencing, with quota allocation confirmed bi-annually on the basis of scientific advice. |

Fishery Management Timetable

- **December 1 - November 30** - South Georgia (Subarea 48.3) mackerel icefish fishing season.
- **October** - Stock assessment presented at CCAMLR at which two-year catch limits are agreed (2021).
- **December** - Annual licence advice presented to the Government of South Georgia & the South Sandwich Islands.
- **January/February**- Updates to mackerel icefish Information for Applicants and licence conditions published.

2021-2023 South Georgia (48.3) Mackerel Icefish Fishery Licence Advice

Stock Assessment

The icefish stock assessment was updated at CCAMLR 40 (2021) using data on stock abundance from the May 2021 UK groundfish survey. The survey-swept area biomass estimate of demersal icefish is an underestimate of the total stock biomass due to the omission of fish likely in the water column. To adjust for some of the omitted biomass, survey density data are raised by the correction factor 1.241 to take into consideration the difference in catchability between the UK trawl net and a Russian net, used in previous surveys, which deployed a higher headline. A stratified bootstrap of icefish catch density based on the survey catch rate indicated a biomass of 22,047 tonnes (after applying the conversion factor), with a lower one sided 5th percentile of

13,279 tonnes. Projecting forward from the lower 5th percentile, a harvest rate of 0.234 in 2021/22 and 2022/23 ensures that 75% of the unfished biomass remains after 2 years, consistent with the CCAMLR Decision Rule.

Catch Limits

CCAMLR

CCAMLR advice for the conduct of the fishery and the Subarea 48.3 catch limit is based on the CCAMLR (2021) assessment of stock status as presented in CM 42-01 (2021), which covers fishing activity directed at mackerel icefish in the 2021/22 and 2022/23 seasons. The catch limits provided by CM 42-01 are 1,457 tonnes for 2021/22, and 1,708 tonnes for 2022/23, based on the projections from the assessment.

The CM (CM42-01) for this fishery is for two years. It excludes vessels that catch more than 19 birds from the fishery for the rest of the season.

GSGSSI

In 2014, the Government introduced a precautionary reference limit for the management of Subarea 48.3 icefish set at 8,000 tonnes, below which the fishery would be closed, based on the survey estimate of biomass in 2005. In 2020, the GSGSSI management protocol was updated to include a buffer threshold of 11,200 tonnes, below which the CCAMLR catch limit would be proportionately decreased to reduce the risk that the stock declines to the 8000 t threshold at which the fishery would be closed. Given the nature of the stock the catch limits set by CCAMLR for this two-year period are within the Government's biomass survey index reference limit. To avoid exceeding CCAMLR catch limits the Government has set a quota of 1,450 tonnes for the 2021/22 season and 1,700 tonnes for the 2022/23 season.

Based on scientific advice the Government will prohibit fishing for mackerel icefish at Shag Rocks and Black Rocks (west of 40°W) for the 2021/22 and 2022/23 seasons. The latest trawl survey indicated that there is currently a low biomass of mackerel icefish in this region.

Management of By-Catch

By-catch limits for the fishery are contained within CCAMLR CM 33-01 (1995) and CM 42-01 (2021).

Science and Monitoring: Current and Near Future

King Edward Point science programme (*British Antarctic Survey - BAS*)

The Government of South Georgia & the South Sandwich Islands has contracted BAS to manage the research base at King Edward Point since 2001. The station houses office and laboratory facilities where scientists conduct higher predator monitoring and fisheries science work all year round. The research directly supports the management of the mackerel icefish fishery including the stock assessment work. KEP Science is guided by the KEP Science 5-Year Plan. Current projects include:

1. Long term studies of mackerel icefish diet based on stomach samples collected on commercial vessels and from the biennial fish survey;
2. Analysis of bird by-catch specimens; and
3. Scientific support for observers and on-board vessel data collection.

Stock assessment and population science (*Centre for Environment, Fisheries and Aquaculture Science - Cefas*)

Cefas has been contracted since 2012 to carry out annual icefish stock assessments, provide licensing advice, and conduct other population-level science. The contract is jointly operated by the Government of South Georgia & the South Sandwich Islands and the UK Foreign, Commonwealth and Development Office.

The assessment and associated management approach for the icefish stock in Subarea 48.3 are well suited to the limited data currently available for the estimation of sustainable long-term exploitation rates and the provision of responsive, precautionary management advice. There is limited room for improvement in the stock assessment method until factors such as the amount of icefish in the water column can be determined using reliable acoustic methods.

Suggested research priorities include collaboration with the fishing industry to help them identify concentrations of icefish which could help to optimise fishing efficiency and effect a greater uptake of the quota.

Observer Programme (*MRAG / CapFish*)

The consortium of MRAG and CapFish manage the South Georgia scientific observer programme. MRAG/CapFish are tasked with providing highly experienced and capable observers whose role is to both meet the reporting requirements for CCAMLR as well as the additional standards and tasks set by GSGSSI. The GSGSSI Scientific Observer programme currently includes:

1. 100% observer coverage on icefish vessels;
2. Diet sampling through the collection of stomach samples for analysis by BAS scientists;
3. Improved whale photographic ID gathering; and
4. Additional monitoring of seabird presence.

Government fishery research priorities

The Government has identified the following priorities for the 2021 – 2023 licensing period based on existing research, and collaboration with fishery operators and non-governmental organisations, and current policy development:

1. **Target species research:** work to identify concentrations of mackerel icefish so helping to optimise fishing efficiency, including through collection of acoustic data;
2. **Gear trials:** trials of different net designs, including shape and mesh size, to investigate impacts on catch efficiency and minimising bird by-catch;
3. **Warp strikes:** implementation of CCTV monitoring of warps to investigate frequency of bird strikes and survival outcomes;
4. **Diurnal migration:** standardised trials of day and night setting in the same locations to investigate the impact of fish movement in the water column on catch rates; and
5. **Intra-annual variation:** investigate the distribution of mackerel icefish around the MZ throughout the season, requires better spatial variation in hauls rather than focus on preferred fishing grounds.