

South Georgia & the South Sandwich Islands

Marine Protected Area 5-Year Review Workshop Report

March 2024



Government of South Georgia & the South Sandwich Islands
Government House, Stanley, Falklands Islands, FIQQ 1ZZ



The second 5-yearly review of the South Georgia & the South Sandwich Islands Marine Protected Area (MPA) was carried out in 2023/24 by the Government of South Georgia & the South Sandwich Islands with support from the Blue Belt Programme, the UK Government's flagship international marine conservation Programme. Since 2016 the Blue Belt Programme has worked closely with a number of UK Overseas Territories (UKOTs) to assist them in creating and maintaining healthy and productive ecosystems.

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South Georgia & the South Sandwich Islands Marine Protected Area 2nd 5-year Review Workshop Report

12th - 13th December 2023, Homerton College, Cambridge
&
7th February 2024, West Hub, Cambridge University

Summary of the MPA Review Workshop Outcomes

- There was agreement that the SGSSI MPA is achieving its intended objectives as laid out in the Management Plan noting that although the MPA has been in force for over 10 years, this still represents a relatively short time period over which to assess the efficacy of MPA measures. It has been less than 5-years since substantive new measures were introduced following the 2018 review.
- There was consensus that the MPA was well managed and resourced and there has been a high level of compliance with management measures. Monitoring and surveillance of the MPA remains vital, noting that the MPA covers a vast area and resources to ensure compliance need to be secured for the future.
- The introduction of a Research and Monitoring Plan and the SGSSI MPA GIS and Data Portal was very well received. These have proved exceptionally useful in driving science towards addressing identified data gaps. There has been substantial scientific investment in areas that were considered as data poor and in need of additional research at the previous MPA review. An extensive body of new scientific work supports the management of the MPA.
- The recovery of cetaceans, ongoing impacts of climate change, and recent disputes and disagreements within CCAMLR represent the key changes to have occurred since the previous review.
- The 5-year review process and high levels of engagement with a wide range of stakeholders provides an effective mechanism for regularly assessing the efficacy of both MPA measures and management effectiveness.
- There was no agreement over a proposal submitted by the Great Blue Ocean coalition which recommended full closure of the South Sandwich Islands (and offshore areas of South Georgia).
- It was recommended that GSGSSI consider the introduction of additional closed areas within the MPA as shown in Annex 6.
- It was agreed that GSGSSI should consider making vessel speed limits mandatory within the current voluntary speed limit 'polygon' in order to reduce the threat of ship-strike to whales within this high whale density region. Consideration should be given to appropriate seasonality of this measure and to how compliance and enforcement might be achieved.
- The MPA Management Plan and the Research and Monitoring Plan (RMP) should be revised in light of the outcomes of the review. The revised RMP should consider the implications of climate change more explicitly across all themes.

1. MPA Review Background

When the Government of South Georgia & the South Sandwich Islands (GSGSSI) first designated their Marine Protected Area (MPA) in 2012, they committed to undertake a review every five years to ensure the MPA was meeting its objectives. The first 5-year review took place in 2017/18 and led to a number of spatial and temporal enhancements, alongside additional environmental measures (see Section 2). In June 2023, GSGSSI commenced the second 5-year MPA review with a highly successful science symposium showcasing the research carried out within the MPA since the last review and considering how this science has contributed to the research and monitoring themes within the MPA Research & Monitoring Plan (<https://gov.gs/mpa-science-symposium/>). Following that event, GSGSSI undertook an internal Protected Area Management Evaluation (PAME) using a Management Effectiveness Tracking Tool (METT4). The two strands of science and management were then brought together at a review workshop hosted by GSGSSI on 12th - 13th December at Homerton College in Cambridge. The purpose of the workshop was to allow invited experts and stakeholders to consider the current management measures, including the outcomes of the PAME, alongside the scientific research conducted in the region to assess whether the MPA is still meeting its objectives and whether any additional evidence-based management enhancements are required.

The workshop had four key Terms of Reference (ToR) and the meeting agenda which was agreed by all participants [see Annex 1] was structured around these ToRs:

- To evaluate data collection and monitoring programmes within the MPA and how these align with the agreed research and monitoring plan (RMP).
- To consider any substantive changes which may have occurred within the SGSSI MPA since the last review including changes to species, habitats and threats.
- To evaluate whether sufficient information exists to assess the efficacy of the MPA measures including those introduced following the last MPA review.
- To consider whether the introduction of additional MPA measures is needed.

Dr Simon Brockington, Bursar of Homerton College, University of Cambridge was appointed as the independent chair for the workshop. Simon has extensive experience working in the field of marine conservation having been Executive Secretary to the International Whaling Commission and Head of Conservation at the Marine Conservation Society before joining the UK's Department of Environment, Food and Rural Affairs (Defra) in 2017 as the senior civil servant leading on the marine environment. In this role he was policy lead for planning and licensing at sea, as well as completion of the network of Marine Conservation Zones. He also led proposals to establish the first highly protected marine areas in UK waters. Simon took up his current position at Homerton College in 2022.

A broad range of stakeholders with expertise in South Georgia and the South Sandwich Islands, the polar regions, marine policy, and protected area management and assessment were invited to participate in the workshop [see Annex 2a]. Representatives from the science community, eNGOs, the fishing industry, the tourism sector, and UK Government departments and executive agencies joined together both in-person and online and provided a diverse range of expertise and opinions. Additionally, prior to the meeting a public call was made for submissions of any relevant information for consideration at the workshop to allow any interested parties to contribute to the review. Thirteen submissions were received [see Annex 3].

2. MPA Background and Context

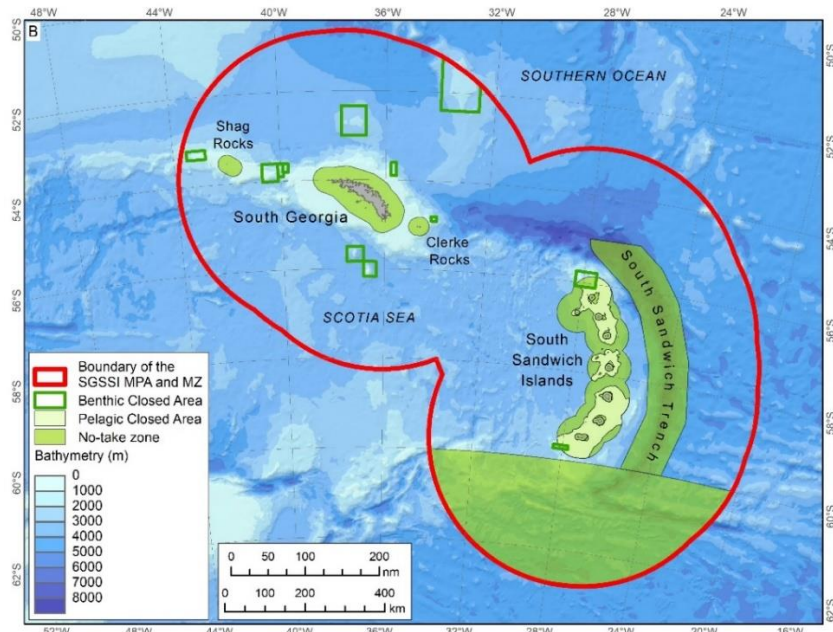


Fig.1: Current MPA spatial management measures in force within the SGSSI Maritime Zone

The SGSSI MPA covers the entire 1.24 million km² Maritime Zone (MZ), an area twice the size of France [Fig. 1]. It is the world's 7th largest MPA and the UK's largest, representing 30% of all UK domestic and Overseas Territories waters, and covers a broad range of habitats and ecosystems ranging from 0 to >8,000m depth. Highly precautionary fisheries are permitted within some areas, however the vast majority of the MPA is very deep water and has never been fished commercially.

The SGSSI MZ also falls within three different sub-areas (48.2, 48.3 and 48.4) managed by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) [Fig.2]. GSGSSI manages its fisheries in accordance with the UK's obligations under CCAMLR.

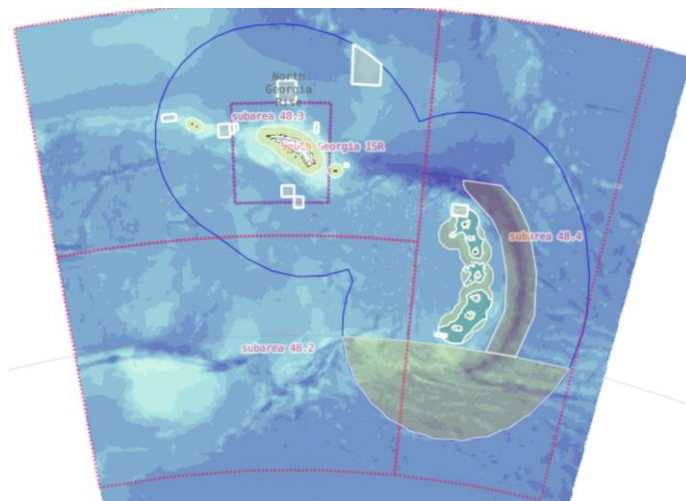


Fig. 2: SGSSI MPA and the CCAMLR sub-areas it falls within

CCAMLR Subarea	% of SGSSI MZ	% of Subarea
48.3	44	52
48.4	43	57
48.2	13	19

- No Take' zones cover 284,000 km², which is over 23% of the Maritime Zone and larger than the area of the UK.
- MPA and fishery regulations restrict krill and toothfish fishing to the winter months to reduce interactions with birds and mammals.
- Depth restrictions limit toothfish fisheries to <5% of the area (but the fishery footprint is far less).

- No krill fishing is licensed for the South Sandwich Islands (sub-area 48.4) or the 48.2 sector of the MPA (56% of the MZ in total) and no commercial catches have ever been taken in these areas in over 40 years.
- Commercial mineral and hydrocarbon extraction is prohibited within the MPA, as is the use and carriage of Heavy Fuel Oil (HFO).

3. Workshop Outcomes

Following two days of presentations and in-depth discussions based around the agreed agenda, in the final session of the workshop the independent Chair summed up the key points that had been raised and participants agreed that this was a fair and accurate representation of the workshop outcomes. The summary was structured around the four Terms of References with an overarching conclusion:

a) To evaluate data collection and monitoring programmes within the MPA and how these align with the agreed research and monitoring plan (RMP).

Overall, there was strong commendation of the Research and Monitoring Plan (RMP) which was developed following the first 5-year MPA review and was published in 2022. The review recognised that the RMP provides a clear framework for government and scientists to evaluate where resource should be directed in order to fill data gaps in the understanding of the MPAs ecosystem and to provide information on which to assess its efficacy.

It was also recognised that clear progress had been made in addressing the knowledge gaps identified at the last MPA review. In particular, the increased focus on the South Sandwich Islands was acknowledged, including two multidisciplinary research cruises to the region in 2019 which were funded by the UK Government's Blue Belt Programme. In addition, the increase in research activity on recovering cetacean populations was welcomed along with an increased research focus on the krill centric ecosystem during the winter months.

As part of the MPA Review process, Cefas prepared a benchmarking report which was intended as a means of assessing research and monitoring progress and outcomes in the SGSSI MPA since the last MPA review in 2018, and to help identify key areas which represent research gaps or priorities. A number of additional or ongoing research gaps were identified within the benchmarking report with which attendees concurred, and during the wide-ranging discussions over the course of the workshop, further potential research gaps were considered [see Annex 4].

With regard to updating the MPA Research and Monitoring Plan, it was noted that there is a logical process for an update starting with revisions to the Management Plan occurring prior to any RMP updates, however it would be sensible to consider these two documents in parallel. The timeline for any such revisions should be decided by GSGSSI. With a planned follow-up workshop in early 2024 to discuss candidate areas for additional, evidence-based spatial closures (see Section 3d), and a possible need for subsequent legislative changes, there is a logical progression for any outcomes of this review. Additionally, the newly designated SGSSI Terrestrial Protected Area (<https://gov.gs/enhanced-measures-for-terrestrial-protected-area-introduced-for-south-georgia-and-south-sandwich-islands/>) will also require a RMP and there is likely to be considerable overlap between the requirements for MPA and TPA monitoring, raising the potential for an overarching Protected Area RMP with separate sections for the MPA and TPA.

There was substantial discussion around the opportunity to extend research and monitoring beyond the boundaries of the MPA and particular mention was made of monitoring upstream effects of fishing and climate change on krill stocks, the impacts of fishing on seabirds in areas

outside the MPA, and further investment in monitoring the ongoing recovery of baleen whales. Ocean circulation and climate induced shifts in the krill population were also highlighted as areas for future monitoring.

Whilst climate change is a research theme within the RMP, it was acknowledged that it should be included more explicitly than it currently is, including related topics such as range limited species, invasive species, changing distributions and methane hydrates.

Workshop participants noted that the first 5-year MPA review carried out by GSGSSI in 2017/18 was very positive, and many of the recommendations on research priorities arising from that review are still current, including around the need for winter data across the region, further information on whale recovery, and additional data collection at SSI. Building on that and highlighting engagement with fisheries science colleagues, and recognition of fisheries data feeding significantly into the MPA process, it was noted that fishing vessels provide opportunities for surveys and as research platforms (for example a Blue Belt project deploying cameras on longlines for research and monitoring purposes). Fishing vessels also provide opportunities to collect more winter data when research vessel activity is constrained. The current review should further build on the recommendations of the previous MPA review in 2017/18 (<https://gov.gs/wp-content/uploads/2024/01/2018-SGSSI-5year-MPA-Review-Summary-Report-to-GSGSSI.pdf>).

In terms of stakeholder engagement, it was highlighted that the South Georgia Heritage Trust (SGHT) who manage the museum at Grytviken on behalf of GSGSSI can potentially provide a valuable opportunity to educate visitors to South Georgia on the story of the MPA and the importance of marine management in the region.

It was noted that CCAMLR are in the process of updating their Ecosystem Monitoring Programme (CEMP) and that the GSGSSI monitoring programme should maintain consistency/synergy with the CEMP process rather than it being two separate things, as GSGSSI data collection will continue to be a significant contributor to CEMP as the new CCAMLR krill management strategy develops for the region.

b) To consider any substantive changes which may have occurred within the SGSSI MPA since the last review including changes to species, habitats and threats.

Several key areas were highlighted where changes have been identified since the last review, relating to the physical environment, biological processes, human activities in the MPA, the role of technology, data management, and the issues within the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR).

Climate

Climate related changes were recognised as being of overwhelming importance to biodiversity within the MPA, and the long-term monitoring of such changes was essential. More explicit monitoring of the impacts of climate change within the MPA should be integrated within the revised RMP.

Ice

Relating strongly to climate concerns, it was noted that several 'megabergs' have transited through the MPA in recent years with many potential environmental consequences. Knowledge on the frequency, prevalence, behaviour, and strength of such megaberg incursions is largely unknown. Potential changes and subsequent implications of fast ice extent were noted, along with the impacts glacial retreat, including freshwater input and other elements.

Biological Environment/Higher Predators

Populations of cetaceans, seals and birds (and krill) are all changing, with ongoing cetacean recovery likely to result in increased competition for resources with other predators. It was felt there was merit in the ongoing monitoring of key species and consideration should be given to how the range of monitored species could be increased. Changes to bird populations were highlighted, including potential new impacts from HPAI and issues of mortality occurring outside the MPA. Equally, the consequences from the eradication of rodents and reindeer will have positively impacted many bird species, although a lack of pre-eradication baseline data will constrain the ability to fully monitor the impact of those programmes.

Krill

Changes to krill dynamics both within the MPA and in the wider Antarctic region were noted. The need for real time surveys was highlighted, and also the need for more research during the winter period, noting the offer from the fishing industry to help facilitate winter data collection. The success of the BAS-led, Darwin funded winter krill project (<https://www.bas.ac.uk/project/winter-krill-at-south-georgia/>) was noted and highlighted that regular estimates of krill density can now be made during winter using data collected from the FPV *Pharos SG*, along with data on the winter distribution of krill dependent predators.

Tourism

Changes to the number of tourists visiting South Georgia were discussed, with a significant decrease during the Covid years and subsequent rebound in the number of vessels operating in the region. Recognising the steady growth and continuing interest in Antarctic tourism, monitoring is key, acknowledging that protection of wilderness includes allowing people to visit.

Volcanism

Whilst knowledge is limited and specific expertise was lacking in the workshop, it was acknowledged that volcanic activity is occurring at seafloor level as well as above ground/on island, and that there could be implications for biological systems and species from both types of volcanism.

Technological changes

The pace of change in how we can monitor the environment was noted, with more technological options now available for remote sensing and low-impact surveillance.

Data repositories

Changes and developments to data management suggest there are potentially more opportunities for data coordination, noting the success of the SGSSI MPA Data Portal for collating relevant research outputs and metadata relating to the MPA.

Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

It was noted that since the conclusion of the last MPA review, the management of South Georgia fisheries within CCAMLR has become considerably more challenging for the GSGSSI and the UK. For nearly 40 years fisheries have been managed following multilateral consensus agreement at CCAMLR with GSGSSI adopting a range of additional, more precautionary measures in its waters over the last 25 years. As with the GSGSSI's MPA measures, domestic fishery management is not discussed or agreed within CCAMLR due to the ongoing sovereignty dispute with Argentina. Since 2019 however, one CCAMLR member, Russia, has sought to disrupt and undermine this long-standing status quo by refusing to agree catch limits for the toothfish fishery at South Georgia despite scientific agreement on assessment methods and catch limits by all other CCAMLR members. Consequently, the Conservation Measure for this fishery was not adopted at the CCAMLR commission meeting in 2022 or 2023. Russia's politically motivated position has regrettably brought the sovereignty dispute with Argentina to

the fore. Since 2022 the GSGSSI has, with UK ministerial agreement, managed its toothfish fishery at South Georgia (CCAMLR subarea 48.3) under domestic regulations which remain consistent with and more precautionary than those previously agreed under CCAMLR.

Despite this the krill fishery, icefish fishery and the small research fishery for toothfish at the South Sandwich Islands remain under CCAMLR Conservation Measures but augmented with additional, more robust domestic management regulations.

No new MPAs have been agreed by CCAMLR since the Ross Sea MPA in 2016 and the prospect of more being introduced in the near future appear remote given the slow progress in reaching agreement on new measures among CCAMLR members. Despite this, plans for the 'Domain 1' MPA and Weddell Sea MPA continue to be developed in the South Atlantic sector of the Southern Ocean (Area 48) bordering the SGSSI MPA.

In contrast to the lack of agreement on MPAs, a new framework for the management of the krill fishery within Area 48 was agreed by consensus at the 2019 CCAMLR meeting. Despite the impacts of the Covid 19 pandemic, progress towards implementing the agreed krill management framework has continued with the primary focus on subarea 48.1 (Antarctic Peninsula). Concerns have been expressed that if there is failure to agree to a revised subdivision of catch limits across the whole krill fishery area (replacing CCAMLR CM 51-07 which now has to be agreed by Members on an annual basis) then the default management of krill in the Scotia Sea will be through CM 51-01 which would allow the entire precautionary catch limit of 620,000t to be caught anywhere within the Scotia Sea region.

c) To evaluate whether sufficient information exists to assess the efficacy of the MPA measures including those introduced following the last MPA review.

Participants noted that the SGSSI MPA has now been in existence for over 10 years since its declaration in 2012 and is now in its second review cycle. Over the life of the MPA there has been a very strong commitment by GSGSSI to ensuring the effectiveness of the MPA with a commensurate investment in resources. The review process, which enables participation of a wide range of stakeholders, provides for an adaptive management approach whereby revised and enhanced measures can be introduced in response to new information and emerging threats. It was recalled that 10 years remains a relatively short time when considering ecosystem impacts and whilst it was agreed that the SGSSI MPA appears to be effective, some long-term effects of the MPA may not be observable for decades and hence monitoring should continue over the long term. It was felt that there would be some value in developing a 'State of the Environment' report for SGSSI in advance of the next review to accompany information on science developments and updates to the RMP.

It was also agreed that research and monitoring across all habitats within the MPA is impossible due to its vast size and hence the assessment of the efficacy of MPA measures across all regions may not always be possible. However, the ability to accurately assess compliance with MPA measures and the ability to remotely assess activity including IUU within the MPA is likely to provide a good indicator or proxy of impacts, even when data on the status of habitats and the ecosystem is unavailable.

Whilst the 2017/18 MPA review largely focussed on the research and monitoring of the MPA, the current review has attempted to broaden the scope to consider management effectiveness in addition to further consideration of research and monitoring. To assist the Government in assessing management a range of management effectiveness tools were considered following discussion with MPA management experts and the METT tool (<https://www.protectedplanet.net/en/thematic-areas/protected-areas-management-effectiveness-pame?tab=METT>) was evaluated for use at SGSSI.

Attendees congratulated GSGSSI for making an initial review of management effectiveness using the METT and recognised that there are a range of alternative tools available to perform such a review, however there are strengths and weaknesses with the use of all of these different approaches, as highlighted during the expert presentations at the meeting. No tool will be perfect and the scale of very large MPA's does present challenges for their use, particularly when considering 'condition of habitats'.

The recurrent themes of governance, design, management and outcomes were noted and it was felt that the regular formal review process already provides an excellent mechanism for GSGSSI and stakeholders to consider these themes along with overall MPA effectiveness. Formal assessment through i.e. the METT process does allow for results to be standardised to some extent and provides a means of submitting outputs to i.e. the World Database on Protected Areas (WDPA). It was also suggested that consideration should be given to submitting outputs to the IUCN Green List in order that the effectiveness of the MPA be more widely recognised, although there may be some political sensitivities around doing so and it may be premature at this stage.

The development of the public facing MPA data portal for SGSSI was warmly welcomed and highlighted that other UK OTs are in the process of developing similar platforms based on the SGSSI portal. Given there are similarities in management of very large MPAs across the UK OTs, it was also recommended that practices in MPA management and management evaluation be shared between Territories. The Blue Belt Programme may provide a mechanism to do this.

d) To consider whether the introduction of additional MPA measures is needed.

Two proposals for additional MPA measures were made during the workshop – (1) the Great Blue Ocean (GBO) proposal for enhanced spatial closures and reduced krill catch limits (<https://greatblueocean.org/sqssi/>) and (2) introduction of a mandatory 10kt vessel speed limit to prevent whale strikes.

Great Blue Ocean Proposal.

Great Blue Ocean (GBO) welcomed the opportunity to participate in the MPA Review process. Johnny Briggs, as a representative of GBO, presented their three recommendations which were:

- 1) Significantly expand the no-take zone around the South Sandwich Islands—potentially adding up to 400,000 square kilometres of new full protections (allowing scientific fishing for toothfish to continue).
- 2) Close specific offshore areas of South Georgia which research has proven to be critical to returning and recovering whale populations to fishing for krill.
- 3) Set a more precautionary catch limit for krill around South Georgia.

GBO noted that there is no intent to “close” all fisheries. In fact, they support ongoing scientific research fishing for toothfish around SSI. The proposal has no impact on current fishing footprint, revenues or licensing.

GBO stated that their recommendations to the Review were based on five significant changes which have taken place since the last review period: 1) Climate change (lowest sea ice ever recorded this year around Antarctica, major failings of Emperor penguin colonies, and a recent BAS study of fur-seal population decline on Bird Island potentially tied to krill availability linked to sea-ice); 2) Baleen whale recovery (see the work of Zerbini et al and several other papers);

3) An increase in krill catches in CCAMLR and a state-sponsored strategic interest to increase catch from China (e.g. 4x the catch in 48.1 as part of the krill workplan); 4) The inability of CCAMLR to expand the network of Southern Ocean MPAs since 2016; 5) Avian flu – and its unpredictable impact.

GBO noted that the key pushback on the campaign objectives from UK and GSGSSI officials is related to concerns of the potential “upstream” impacts on ongoing CCAMLR krill negotiations. This concern is explicitly tied to the risk of closing the entirety of 48.4 under UK jurisdiction to krill fishing via MPA legislation which could accelerate a move to krill management solely under CM 51-01 and lead to the risk of all the krill catch limit (620,000t) being available for fishing within a single Subarea, potentially the Antarctic Peninsula (48.1) or the South Orkneys (48.2).

Many contributors to the MPA review, including UK CCAMLR scientists and others at the workshop and the authors of some written submissions, also considered that any announcement of a proposed unilateral closure of the South Sandwich Islands to krill fishing through domestic MPA regulations would greatly increase the risk that CM 51-07 would not be agreed by CCAMLR members, resulting in the default management of krill under CM 51-01 which would greatly increase the risk of ecological impacts to krill predators in regions upstream of South Georgia. However, this view was not shared by the representatives of the GBO coalition.

GBO highlighted that it has sought professional advice from NGOs operating within CCAMLR, and takes a different view on these risks (as noted in great detail within the GBO review submission and a paper submitted to the Review by Phil Trathan). GBO consider the risks to CCAMLR as no greater than those presented in 2019 by the announcement of enhanced MPA measures by GSGSSI following the last review.

In relation to the introduction of additional measures many attendees felt that it was necessary to consider:

- Recognising the relationships with CCAMLR and respecting the integrity of the CCAMLR process and that it is the best way to manage krill.
- That multilateral relationships at CCAMLR, where the UK needs to maintain a constructive and coherent position within that organisation.
- The need for scientific evidence for specific proposals, so that they can be defended at CCAMLR should there be any issues raised with that fora.

GBO noted that their initial proposal was a starting point for discussion and during their presentation offered a compromise – presenting recent scientific publications on whale and penguin movements which could underpin a zonation of scientifically justifiable new protections, which, in the view of GBO, also negate the stated risks to CCAMLR (i.e. leaving a section of 48.4 open to maintain a notional CCAMLR krill quota). As per the presentation: “The combined evidence from two species of penguin, three species of baleen whale, and hydrothermal vent communities suggests that the area in green, or zones therein, could be given legal no-take precautionary protection. GBO stated that precautionary protection of the South Sandwich Trench, and of the area south of 60°S was implemented in 2018, with a lesser degree of supporting scientific evidence. The subsequent discussion largely focussed on the required burden of proof to enhance protection in relatively data-poor areas (i.e. the need for *more science* versus the imperative to *act now*).

There was no agreement at the meeting that the revised, compromise GBO proposal would bring any additional conservation benefits to the South Sandwich Islands with many noting that no fishing takes place at the South Sandwich Islands and GSGSI does not issue fishing licences for this region.

Many noted that the strongest conservation gains and the lowest risks are likely to come from more specific proposals in areas either where CCAMLR regulations are no longer in place, or in areas where there is strong scientific evidence for those specific areas, as opposed to broadscale closures. GSGSSI offered to help facilitate discussions around how new proposals could come forwards. During one of the breaks, a subgroup discussed a variety of suggested candidate areas for which there may be sufficient evidence to justify spatial closures.

A follow-up meeting was proposed to discuss the specifics of these candidate areas and the supporting evidence, noting that GSGSSI should dictate the timing of the meeting, giving consideration to when experts will be available following their fieldwork seasons in the Antarctic (February 2024 at the earliest). The candidate areas were given names [see Annex 5] and the proposals could form the Terms of Reference for that meeting. The follow-up workshop needs to consider not only the evidence to support additional management in certain areas, but also what monitoring of compliance in those areas might look like.

GBO welcomed GSGSSI's initial suggestions to enhance protections in specific zones – and noted a reference to achieving “30% full protection” in SGSSI waters. It was agreed that a *Workshop to Identify Additional Closures* would take place subsequent to the December workshop report being published, and GBO stressed that such a meeting should take place in February. Acknowledging that if SGSSI were to achieve 30x30 – that would add approximately 90,000km² in new full protections – GBO stressed that this commitment falls short of their ambitions (considering the above risks and changes to the SGSSI ecosystem) and that an opportunity exists to increase legal protections further, for example, by interconnecting proposed and existing full protections in South Sandwich Islands waters.

GBO indicated that they look forward to continuing to engage in the Review process, and again, welcomed the opportunity to present and discuss their proposal.

Mandatory 10kt vessel speed limit to prevent collisions with whales.

In 2022 GSGSSI implemented a voluntary speed limit of 10kts within a defined polygon where a high risk of whale strike had been identified. Discussion on making this a mandatory measure was largely supportive noting the additional benefit of reducing underwater noise levels and potentially improving fuel efficiency of vessels. Differences between cruise ships and fishing vessels were noted, including the size of vessels, their behaviour and timings when they operate in the MPA. Again, the lack of winter data on whale distribution was considered a research gap and the possibility of using fishing vessels as research platforms was mentioned. Implementation of a speed limit was considered an area where adaptive management could be an option. Questions were raised on compliance and enforcement of the speed limit, both currently as a voluntary measure and in the future if it became mandatory.

4. Outcomes of the Spatial Management Workshop, 7th February 2024, ‘West Hub’, University of Cambridge

An additional workshop, open to all participants of the MPA review, was held at the University of Cambridge ‘West Hub’ on the 7th February specifically to discuss candidate areas for additional MPA measures that had been proposed during the December meeting. A representative range of stakeholders attended the in-person workshop [see Annex 2b] where GSGSSI presented a range of candidate areas for additional closures as indicated in Annex 5. In addition, a revision of the GBO proposal for further closures within the MPA, which incorporated and expanded upon the GSGSSI proposals, was also tabled for consideration

by the workshop attendees. The scientific rationale and potential risks and constraints of the proposed closures were considered in detail at the meeting.

Following the conclusion of these discussions the additional closures shown in Annex 6 were recommended for the consideration of GSGSSI.

Agreement for the full closure of the area highlighted in red in Annex 6 could not be reached at the workshop. Several participants, including the UK's CCAMLR Scientific Committee Representative felt that there was currently insufficient data to justify a full closure of this region. In addition, concern was expressed that closure of this area to fishing could limit future options for developing the CCAMLR krill management strategy in this region and in particular that closing the area now might constrain GSGSSI's ability to spread fishing effort into deeper water in the future. However, other attendees felt that there was already sufficient evidence of the use of this region by krill dependent predators to justify its closure on a precautionary basis through revised MPA legislation, although it was noted that little or no krill fishing had ever taken place in this region.

The workshop agreed that further data collection of predator and krill distribution in the pelagic offshore region of South Georgia and the South Sandwich Islands throughout the year would assist in future management of the MPA. Of particular interest is the region lying to the north of the South Sandwich Trench No Take Zone, potentially a key foraging area for multiple species and a region of significant hydrographic interest and variability. Consideration should be given to further highlighting this as a priority area for the RMP. It was also agreed that the region around Shag Rocks was also a key foraging area for krill dependent predators and therefore warranted an additional research focus [see Annex 4].

5. Chair's concluding remarks

The independent chair of the workshop, Dr Simon Brockington, noted that:

GSGSSI and all attendees should be incredibly positive about the work that's been done as it's a world apart from most MPA management regimes. GSGSSI and the science institutes, the 2 statutory bodies, Cefas and MMO, should be commended on what they do, the rigour of what they do, and the length of time over which they've done it.

The SGSSI MPA is one of the world's biggest MPAs, and the commitments, especially to adaptive management through the review cycle, the establishment of the RMP, and the science investment that has gone on needs to be more widely recognised.

The bringing together of such a broad range of stakeholder groups, including input from CCAMLR representatives, the IWC, and UK Government representatives should also be commended. Such stakeholder engagement is hugely meritorious, and it has been very encouraging to see so many different stakeholder groups including NGOs and the tourist and fishing industries sat around the same table – it is noteworthy that this situation is uncommon with other MPAs.

The funding these partnerships have attracted, from Darwin to Blue Belt to others has clearly been really successful and it is hoped that this can be successfully taken forwards. Overall, the review process should be a model for other MPAs and it is clear that not all are managed in this way although it is hoped they will be in the future.

**South Georgia & the South Sandwich Islands
Marine Protected Area 2nd 5-year Review Workshop**

**12th -13th December 2023, Homerton College, Cambridge
Draft Agenda**

Terms of Reference

- To evaluate data collection and monitoring programmes within the MPA and how these align with the agreed research and monitoring plan (RMP).
- To consider any substantive changes which may have occurred within the SGSSI-MPA since the last review including changes to species, habitats and threats.
- To evaluate whether sufficient information exists to assess the efficacy of the MPA measures including those introduced following the last MPA review.
- To consider whether the introduction of additional MPA measures is needed.

Day One – Tuesday 12th December		
0900 – 0930	<i>Arrive, tea & coffee available</i>	
0930 – 1000	Welcome, housekeeping and introductions	Simon Brockington (Chair) Mark Belchier (GSGSSI)
1000 – 1030	Workshop objectives and expectations <ul style="list-style-type: none"> - Terms of reference - Timeline for review process - Outputs - Meeting notes 	Simon Brockington (Chair)
1030 – 1115	Current MPA measures <ul style="list-style-type: none"> - GSGSSI Presentation - Strategic priorities and regional context 	Mark Belchier (GSGSSI)
1115-1130	<i>Tea & coffee break</i>	
1130– 1245	Evaluation of data collection and monitoring programmes within the MPA. <ul style="list-style-type: none"> - Review submissions - Symposium output Progress with the Research & Monitoring Plan (RMP). <ul style="list-style-type: none"> - RMP overview - Benchmarking Knowledge gaps, future research needs	Martin Collins (BAS) Stephanie Martin (BAS) Susie Grant (BAS) Oli Hogg (Cefas) All
1245 – 1345	<i>Lunch</i>	
1345 – 1515	Consider any substantive changes which may have occurred within the SGSSI MPA since the last review. <ul style="list-style-type: none"> • Climate change • Cetacean recovery • Krill 	All
1515 – 1530	<i>Tea & coffee break</i>	
1530 – 1645	Evaluate whether sufficient information exists to assess the efficacy of the MPA measures. <ul style="list-style-type: none"> - Review effectiveness of current measures if appropriate 	All
1645 – 1700	Day One synthesis <ul style="list-style-type: none"> - Summary of discussions from Day One 	Simon Brockington (Chair)
1700	Close	

Day Two – Wednesday 13th December		
0830 – 0900	<i>Arrive, tea & coffee available</i>	
0900 – 0915	Review of discussions and key issues from Day One	Simon Brockington (Chair)
0915– 1030	Consideration of need for additional MPA measures <ul style="list-style-type: none"> - GBO proposal - Whale speed limits - Other proposals/submissions 	All Johnny Briggs (GBO)
1030 – 1100	<i>Tea & coffee break</i>	
1100 – 1230	- Continue as above	All
1230 – 1330	<i>Lunch</i>	
1330 – 1500	Assessment of management effectiveness Introduction to Protected Area Management Evaluation (PAME) and the Management Effectiveness Tracking Tool (METT) SGSSI METT	All Sue Wells (Consultant/IUCN)
1500 – 1530	<i>Tea & coffee break</i>	
1530 – 1630	Synthesis of workshop outcomes <ul style="list-style-type: none"> - Key conclusions 	Simon Brockington (Chair)
1630 – 1700	Development of recommendations from the Review Panel to GSGSSI <ul style="list-style-type: none"> - Next steps, including process for preparation of a Review Panel report - Management Plan revision 	All
1700	Close	

SGSSI MPA Review Workshop (12th – 13th December 2023)
Homerton College, Cambridge
List of Participants

Name	Organisation
Javier Arata	Association of Responsible Krill harvesting companies (ARK)
Mark Belchier	Government of South Georgia & the South Sandwich Islands (GSGSSI)
Johnny Briggs	Great Blue Oceans (GBO) / Pew Charitable Trusts
Simon Brockington	Homerton College – Workshop Independent Chair
Martin Collins	British Antarctic Survey (BAS)
Deborah Davidson	Argos Froyanes Ltd
Melissa Dawson *	Foreign, Commonwealth & Development Office (FCDO) / Blue Belt Programme
Alana Dowling *	Foreign, Commonwealth & Development Office (FCDO)
George Duncan-Jones	Great Blue Oceans (GBO) / Greenpeace UK
Timothy Earl	Centre for Environment, Fisheries and Aquaculture Science (Cefas)
Emma Eastcott	Whale & Dolphin Conservation (WDC)
Adrian Gahan	Great Blue Oceans (GBO) / Blue Marine Foundation
Susie Grant	British Antarctic Survey (BAS)
Amanda Gregory *	Joint Nature Conservation Committee (JNCC)
Sue Gregory	Government of South Georgia & the South Sandwich Islands (GSGSSI)
Emily Hardman *	Marine Management Organisation (MMO)
Oliver Hogg	Centre for Environment, Fisheries and Aquaculture Science (Cefas)
Jennifer Jackson *	British Antarctic Survey (BAS)
Katrin Linse	British Antarctic Survey (BAS)
Amanda Lynnes *	International Association of Antarctica Tour Operators (IAATO)
Stefano Marra	Joint Nature Conservation Committee (JNCC)
Stephanie Martin	British Antarctic Survey (BAS)
Katie McPherson	Marine Management Organisation (MMO)
Alison Neil *	South Georgia Heritage Trust (SGHT)
Joseph Peters	Marine Management Organisation (MMO)
Lisa Readdy	Centre for Environment, Fisheries and Aquaculture Science (Cefas)
Phoebe Reid	Polar SeaFish
Jane Rumble	Foreign, Commonwealth & Development Office (FCDO)
Pål Skogrand *	Aker BioMarine
Matt Spencer	World Wide Fund for Nature (WWF)
Iain Staniland	International Whaling Commission (IWC)
Tim Stowe	South Georgia Heritage Trust (SGHT)
Peter Thomson	Argos Froyanes Ltd
David Vaughan	Joint Nature Conservation Committee (JNCC)
Sue Wells	Marine conservation consultant / International Union for the Conservation of Nature (IUCN)

* Participants joining the workshop online

SGSSI MPA Review Spatial Management Workshop (7th February 2024)
West Hub, Cambridge
List of Participants

Name	Organisation
Mark Belchier *	Government of South Georgia & the South Sandwich Islands (GSGSSI)
Johnny Briggs	Pew Charitable Trusts / Great Blue Ocean (GBO)
John Clorley	Government of South Georgia & the South Sandwich Islands (GSGSSI)
Martin Collins	British Antarctic Survey (BAS)
Chris Cox	Foreign, Commonwealth & Development Office (FCDO)
Alana Dowling	Foreign, Commonwealth & Development Office (FCDO)
George Duncan-Jones	Greenpeace UK / Great Blue Ocean (GBO)
Timothy Earl	Centre for Environment, Fisheries and Aquaculture Science (Cefas)
Adrian Gahan	Blue Marine Foundation / Great Blue Ocean (GBO)
Susie Grant	British Antarctic Survey (BAS)
Sue Gregory	Government of South Georgia & the South Sandwich Islands (GSGSSI)
Tom Hart	Oxford Brookes University
Oliver Hogg	Centre for Environment, Fisheries and Aquaculture Science (Cefas)
Jennifer Jackson	British Antarctic Survey (BAS)
Sebastian Jennings	Marine Management Organisation (MMO)
Rhona Kent	World Wide Fund for Nature (WWF)
Lisa Readdy	Centre for Environment, Fisheries and Aquaculture Science (Cefas)
James Smith	Department for Fisheries, Agriculture and Rural Affairs (Defra)
Matt Spencer	World Wide Fund for Nature (WWF)
Peter Thomson	Argos Froyanes Ltd
Philip Trathan	Southampton University / Great Blue Ocean (GBO) affiliated

* Workshop chair

SGSSI MPA Review Workshop Stakeholder Submissions

In advance of the MPA Review workshop on the 12 -13 December, GSGSSI made a public call for written stakeholder submissions to inform the work of the group. It was noted that GSGSSI would particularly welcome submissions that relate to the objectives of the review workshop:

- to evaluate data collection and monitoring programmes within the MPA and how these align with the agreed research and monitoring plan (RMP).
- to consider any substantive changes which may have occurred within the SGSSI-MPA since the last review including changes to species, habitats and threats.
- to evaluate whether sufficient information exists to assess the efficacy of the MPA measures including those introduced following the last MPA review.
- to consider whether the introduction of additional MPA measures is needed.

Thirteen responses were received from the following individuals/organisations:

1. Jose Xavier, Jose Abreu, Jose Queiros, Joana Frãgao & Jose Seco – Marine and Environmental Science Centre (MARE), University of Coimbra, Portugal
2. Pew Charitable Trusts*
3. Great Blue Ocean coalition (GBO)
4. Philip Trathan (University of Southampton)*
5. South Georgia Heritage Trust (SGHT)
6. Association of Responsible Krill harvesting companies (ARK)
7. Marine Conservation Society*
8. Tom Hart, Oxford Brookes University
9. World Wide Fund for Nature (WWF)
10. Whale and Dolphin Conservation (WDC)*
11. Royal Society for the Protection of Birds (RSPB)*
12. Blue Marine Foundation*
13. Greenpeace UK*

* Member of the Great Blue Ocean coalition or otherwise affiliated with GBO

SGSSI MPA Review Workshop Potential Research Gaps

- 1) Identified during the Benchmarking report by Cefas and presented at the December workshop by Oliver Hogg:
 - Gaps in classifying key SGSSI habitats.
 - What are the indicator species of environmental change and how do responses differ?
 - Less work on early life stages of toothfish – distribution of spawning and nursery grounds, larval transport and retention.
 - Some areas take longer to assess, e.g., the effectiveness of BCAs/recovery of benthic species. Worth considering what success would look like and the need for monitoring.
 - Need for monitoring and understanding of frequency, intensity and impact of extreme events and how resilient populations are.
 - Understanding upstream impacts on SGSSI.

- 2) Raised during workshop discussions (December 2023):
 - “Climate change”
 - Drivers & predictions
 - Range-edge species: indicators, changes, range limits
 - ‘Megaberg’ frequency & impacts, development of an action plan to respond to incidences
 - Impacts of grounded icebergs on benthic communities
 - Impacts of increased methane seepage (resulting from warming temperatures and hydrostatic instability caused by glacial retreat) on marine ecology
 - Icefish nests
 - Invasive species
 - Benthic monitoring stations for long-term, repeat surveying
 - Threats to migratory species (e.g. albatross, cetaceans) outside of the MPA
 - Oceanographic conditions – fine scale studies, east-west and north-south changes
 - Volcanism: effects of seafloor and surface eruptions on biodiversity
 - Fast ice: extent, interannual variability, long term trends
 - Recovery of cetaceans, winter distribution and behaviour – routine whale monitoring
 - HPAI and potential risks from other diseases
 - Strategic approach for selection of indicator species for monitoring
 - Ecological monitoring – periodical large-scale surveys to supplement the regular monitoring at Bird Island/Maiviken (disentangle site specific vs island wide trends)
 - Mesopelagic fish
 - Management response plan for ‘tipping point’ scenarios
 -

- 3) Raised during the Spatial Management Workshop (February 2024):
 - Northern Scotia Ridge corridor in the area between the newly agreed North-East Georgia Rise and North Scotia Ridge No Take Zones - potential significance as a humpback whale corridor and key foraging area for penguin and marine mammal species

- Area to the north of the South Sandwich Trench No Take Zone - potentially a key foraging area for multiple species and a region of hydrographic significance
- Shag Rocks region, including the area between Shag Rocks and South Georgia No Take Zones - potentially a key foraging area for multiple species

To Note:

- The CCAMLR Ecosystem Monitoring Programme (CEMP) is also currently under review. Advisable to ensure GSGSSI maintains consistency/synergy with CEMP.
- GSGSSI will be developing a Research and Monitoring Plan for their Terrestrial Protected Area, there is likely to be synergy/overlap with the MPA RMP which will require consideration.

**SGSSI MPA Review Workshop
Candidate Areas for Additional Protection**

1. North-East Georgia Rise (NESG BCA)

Justification: beyond the management boundaries previously set by CCAMLR CM 41-02, already a BCA, optimum toothfish habitat, gyre creates area of increased productivity

2. North Scotia Ridge (area between Clerke Rocks and SSI)

Justification: beyond the management boundaries previously set by CCAMLR CM 41-02, potentially key toothfish habitat, key migration route for toothfish between SG and SSI, benthic habitats [migration corridor – include deep water to the north of proposed area?]

3. North-East South Sandwich Islands

Justification: bathymetric features suggest potential toothfish habitat?

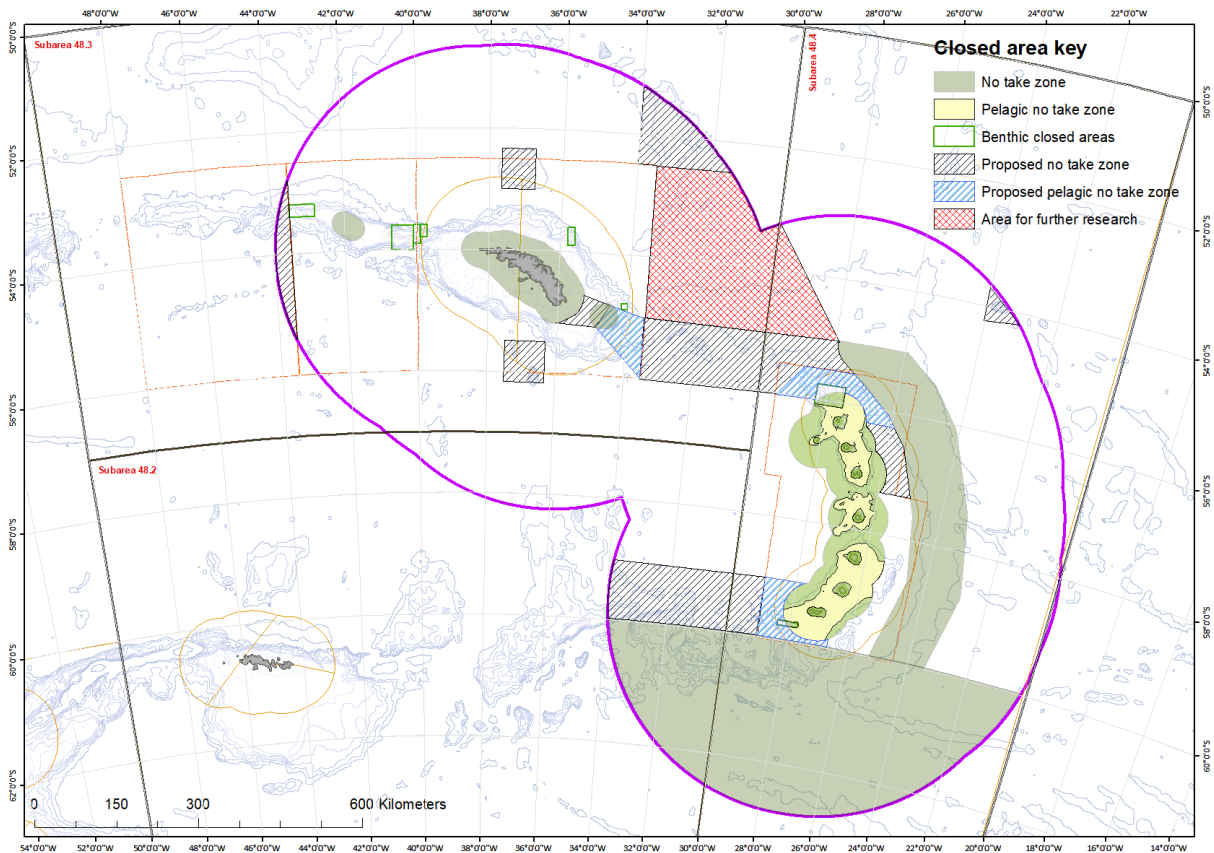
4. Herdman Bank

Justification: CCAMLR sub-area 48.2 beyond management under CM 41-02/03, strengthen case to restrict research under CM 24-01, key toothfish habitat, potentially important linkage between South Georgia and the South Orkneys

Additional possibilities:

- Benthic Closed Areas (excluding the three BCA's where additional toothfish tagging is required) - make full No Take Zones
- The section of CCAMLR Management Area A which falls within the SGSSI MZ – designate as a No Take Zone

Additional Spatial Closures Recommended by the Spatial Management Workshop



This map indicates the potential additional management areas within the current SGSSI MPA for consideration by GSGSSI, which were agreed by the participants in the spatial management workshop held on 7th February 2024. The black hatched areas represent proposed total No Take Zones and the blue hatched areas represent proposed pelagic closed areas where krill fishing would be prohibited, but a small amount of longline fishing would be allowed primarily for stock assessment purposes. The red hatched area was recognised as a region where access could be restricted whilst additional research is conducted.



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March 2024