

Collaborative research and monitoring tools for the SGSSI Marine Protected Area

Susie Grant, Helen Peat, Caitlin Allan, Phil Trathan

*Delivering through collaboration – future
collaborative opportunities in the OTs*



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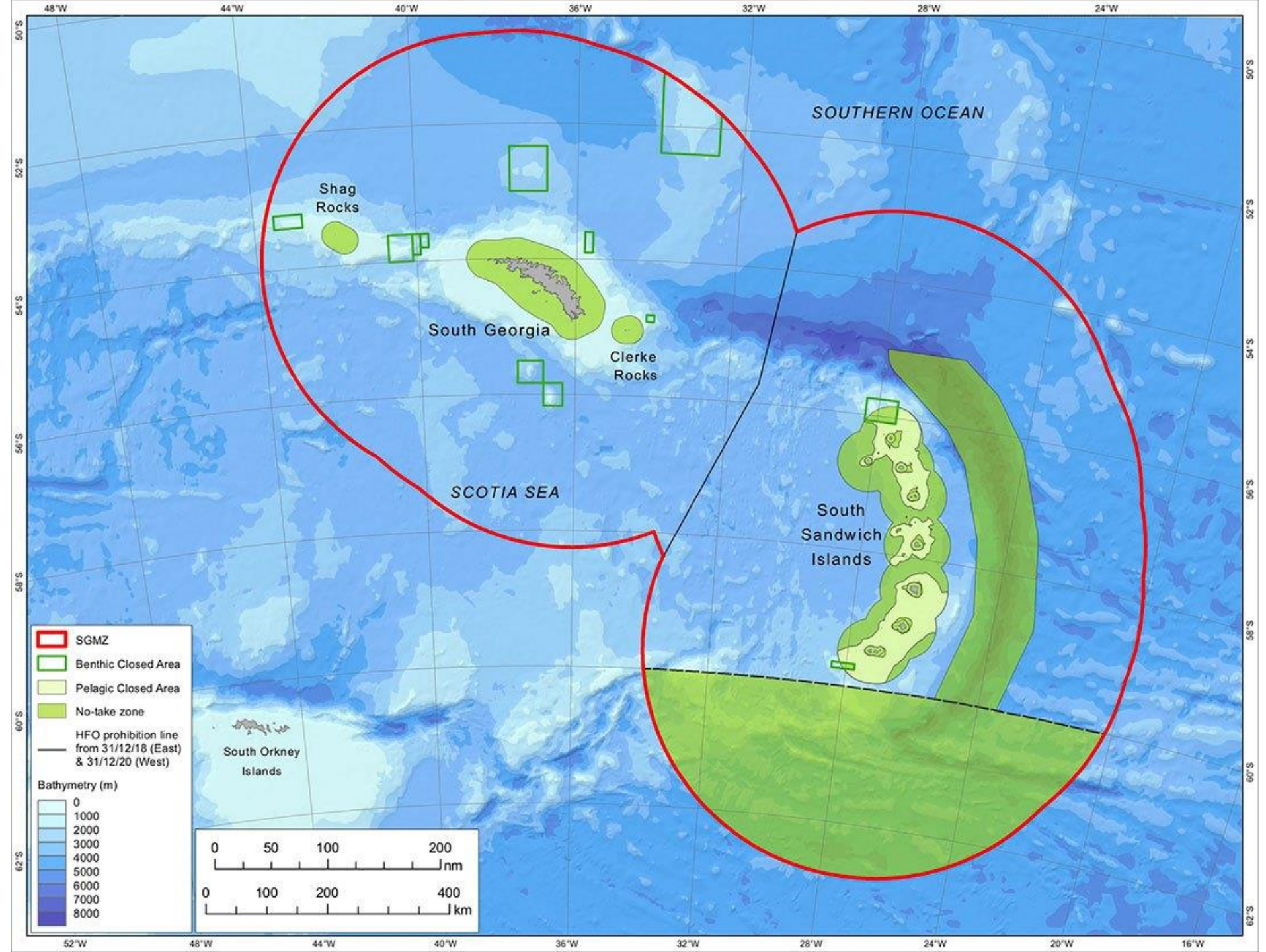
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Outline

- Development of the South Georgia & South Sandwich Islands MPA
- MPA review process
- Collaborative research and monitoring tools (**Darwin Plus DPLUS069**)
 - MPA GIS
 - MPA Data Portal
 - Research & Monitoring Plan
- Future collaboration – opportunities and priorities



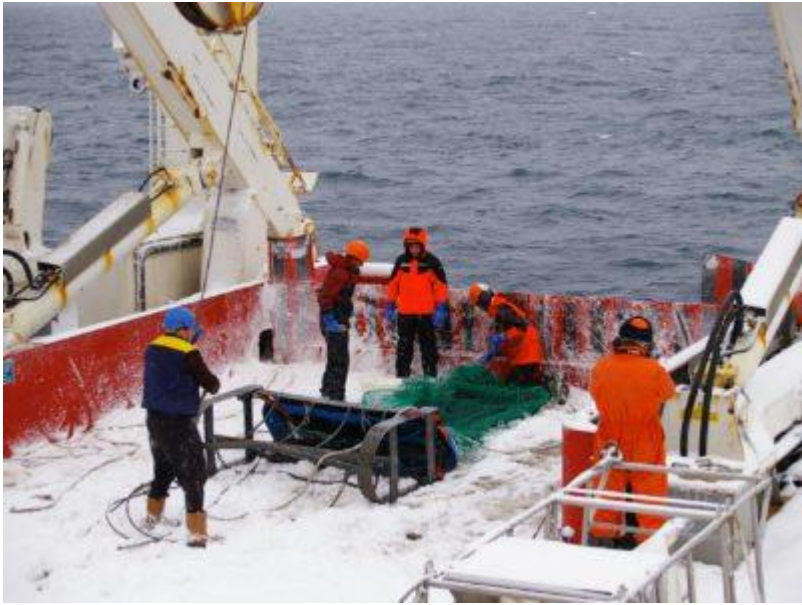


Development of the Marine Protected Area

- Established in 2012 (with further updates in 2013) based on scientific background and stakeholder consultation.
- The MPA covers 1.07 million km², and includes no-take zones protecting predator foraging areas.
- Summer closure of the krill fishery to protect breeding predators.
- Benthic Closed Areas protecting vulnerable seafloor habitats.
- No bottom trawling; no fishing shallower than 700m or deeper than 2250m.

- 5-year review period – first review in 2017/18





200+ peer-reviewed publications relevant to the SGSSI marine region, since the MPA was designated.

Over 20 research cruises during the first MPA review period.

Land-based predator monitoring for over 30 years.

Extensive data on fisheries, by-catch, and fisheries-ecosystem interactions collected from commercial fishing vessels.



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Review outcomes

- Changes in scientific understanding since 2013
- Advice on the efficacy of existing MPA measures
- Future research and monitoring priorities

MPA enhancements announced in 2018

- No-take zones extended to reduce overlap between predators and the winter krill fishery – the MPA now includes 284,000 km² of no-take zones (23% of the total area)
- New no-take zone for the South Sandwich Trench
- 2-month extension to the seasonal closure of the krill fishery (Oct-Apr)
- Prohibition on exploitation of minerals or hydrocarbons



Collaborative research and monitoring tools

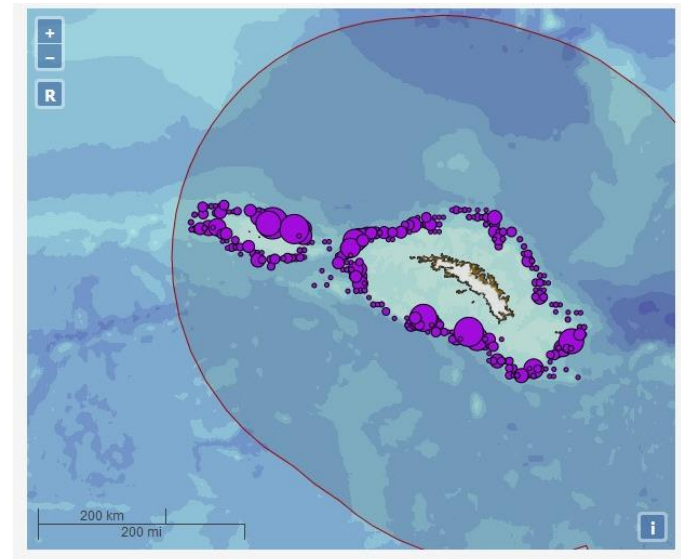
- Review and ongoing management of the SGSSI MPA requires comprehensive and accessible data on the status and trends of marine biodiversity, ecosystem features and human activities.

Darwin Plus funded project (DPLUS069)

– *‘Building data resources for the SGSSI Marine Protected Area’*

Outputs include:

- Updated SGSSI MPA web-based Geographic Information System
- MPA Data Portal
- Research and Monitoring Plan to support MPA management

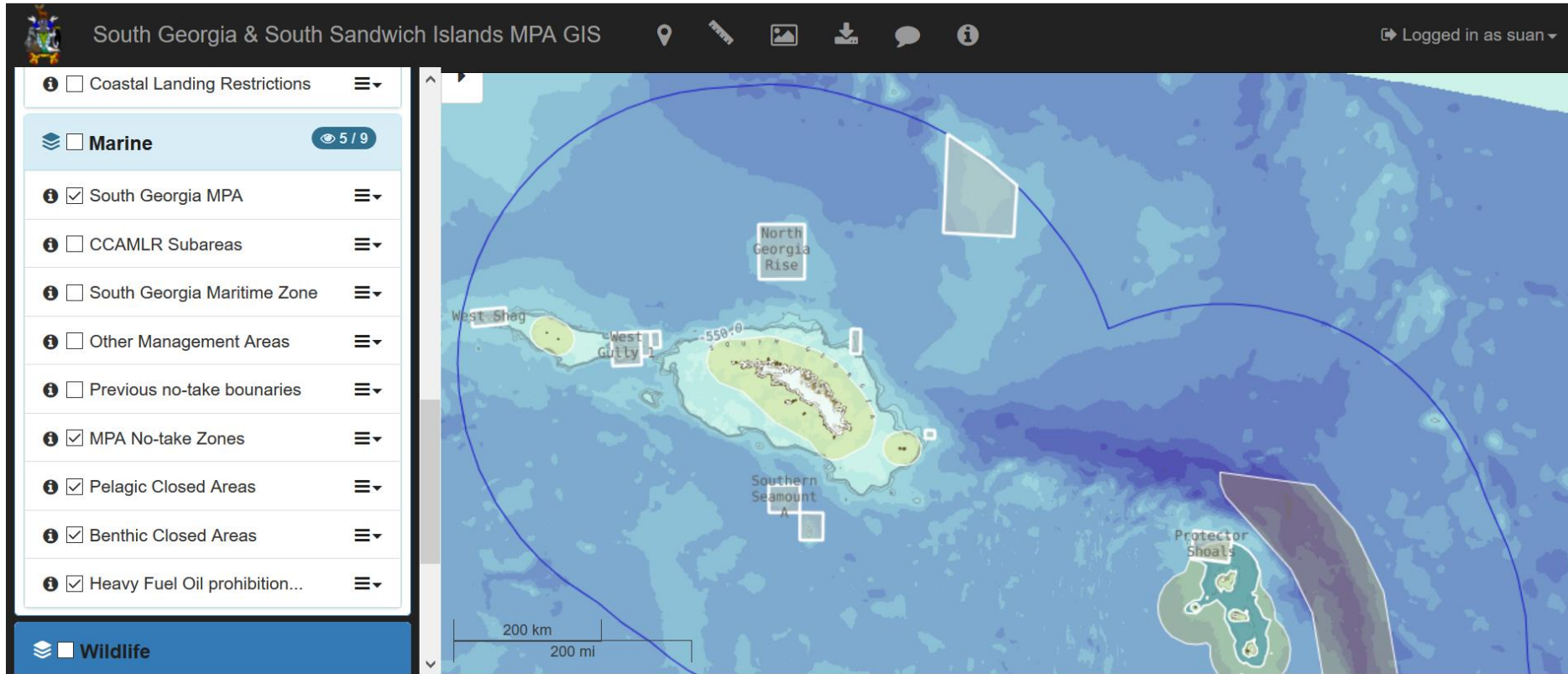


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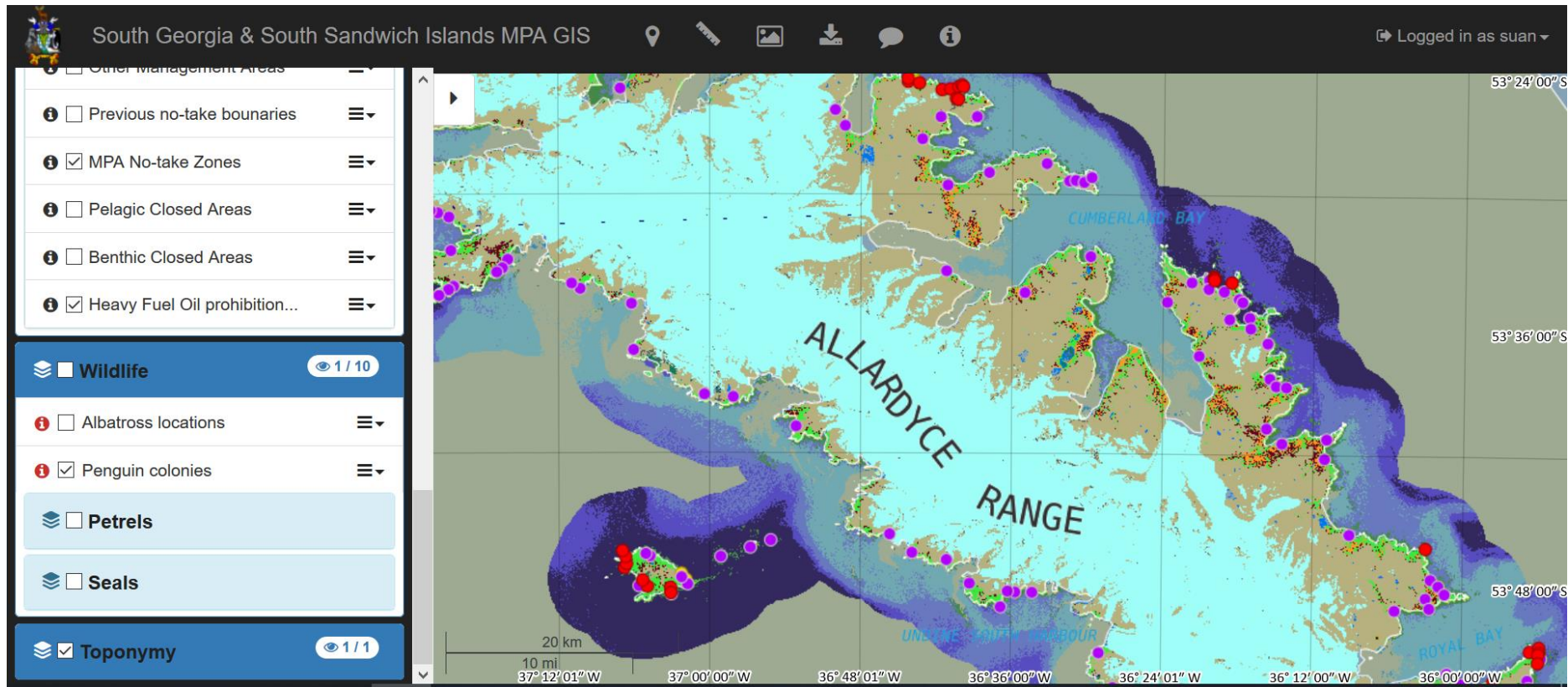
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SGSSI MPA Geographic Information System



- Management boundaries, bathymetry, sea ice, oceanography...



- Fine-scale coastal features, glacier front changes, wildlife colonies...

MPA Data Portal



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[Home](#) [The MPA](#) [Ecology](#) [Physical Environment](#) [Human Activities](#) [Research and Monitoring](#) [South Georgia GIS](#)

Welcome to the South Georgia and South Sandwich Islands MPA Data Portal



- Central source of information on the MPA, ecology, physical environment, human activities, and research activities.



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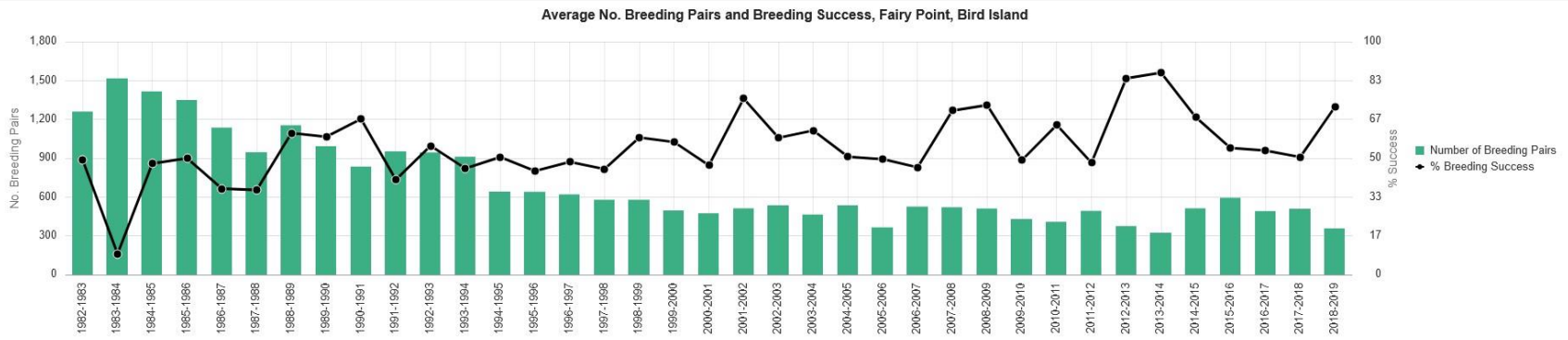


Data pages

- Introductory information
- Data visualisations
- Links to records in UK Polar Data Centre catalogue



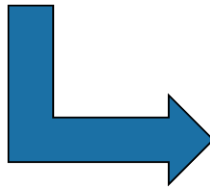
Breeding Success



See Raw Data

Metadata

The metadata record for these data can be found [here](#)



Discovery Metadata System

Breeding success of Macaroni penguins at Bird Island
GB/NERC/BAS/AEDC/00330

[Brief Record](#) [Full Record](#) [Request Data](#)

Related Links

Summary

Abstract:
The breeding success (calculated from nest and chick counts) of Macaroni penguins is monitored annually at Bird Island, South Georgia. A transect is used to estimate the incubating nests and chicks hatched in the large colony at Goldcrest Point where counts have been made since 1976. The number of incubating nests and chicks reaching fledging stage in the whole of the smaller colony at Fairy Point are counted and data exist from 1982 onwards.

Keywords:
Bird Island, Macaroni penguin, breeding success, chick count, nest count

Research activities

Science Cruises around South Georgia

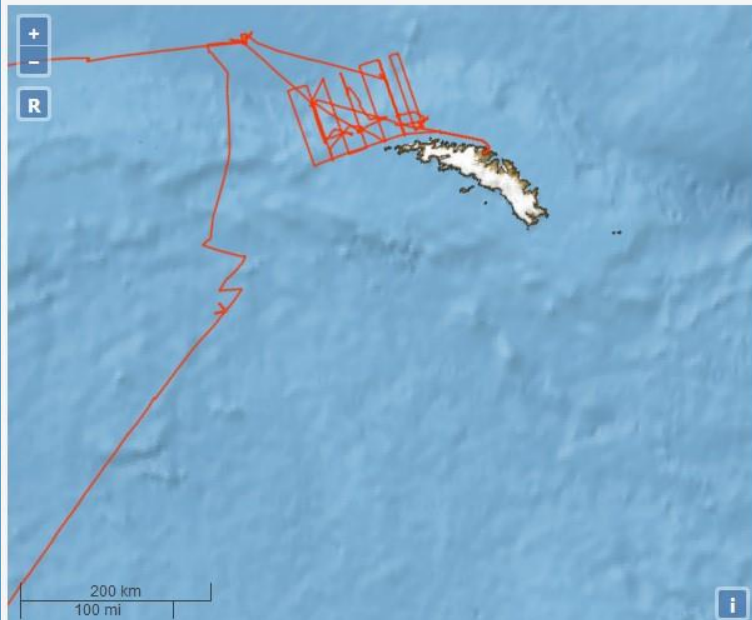
Select Cruise 2017-12-30 - JR170

Cruise	Date Began	Date Ended	Vessel	Purpose	Title of Cruise	Cruise Description	Report Link
JR17002	30-DEC-2017	22-JAN-2018	James Clark Ross	research	JR17002 (SME 982) is a Western Core Box cruise on the vessel RRS James Clark Ross to the South Georgia region of the Scotia Sea	JR17002 (SME 982) cruise undertook the regular Western Core Box survey, an acoustic grid survey of 8 transects each 80 km in length, together with associated net and oceanographic sampling that consisted of regular CTD and XBT deployments, continuous underway data logging and RTM8 net sampling in day and time stations. In addition, net sampling for zooplankton, micro- and nano-plastics were performed and followed up by incubation experiments. Furthermore, two long term moorings in the South Georgia region, at the P3 and WCB site, were successfully refurbished and the P2 site mooring recovered.	cruise report

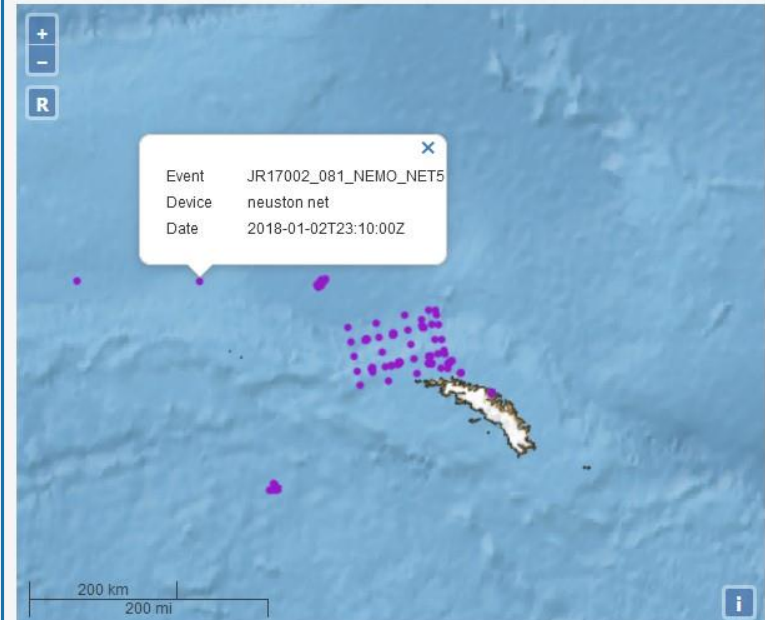
Download to spreadsheet



Track Map for cruise including JR17002



Events Map for cruise including JR17002 (SG events only)



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MPA Research and Monitoring Plan (RMP)

- Developed collaboratively in consultation with scientists and stakeholders
- Aims to guide scientific activities that will:
 - contribute to an increased understanding of the marine ecosystem
 - provide information to evaluate the effectiveness of the MPA
 - assess the nature and extent of change
 - inform the development of enhanced management as required
- Activities include ongoing monitoring, as well as specific research to address questions related to the MPA objectives and to improve knowledge and understanding of the SGSSI marine ecosystem.



Research Theme 8 - Impact of fisheries – interaction with higher predators

MPA Objectives

- Conserve marine biodiversity, habitats and critical ecosystem function
- Ensure that fisheries are managed sustainably, with minimal impact on associated and dependent ecosystems
- Protect the foraging grounds of land-based predators that forage within 30 km of South Georgia, notably gentoo penguins
- Protect the foraging grounds of land-based predators that forage within 50 km of the South Sandwich Islands
- Reduce the risk of competition between the krill fishery and krill-dependent predators during their breeding season

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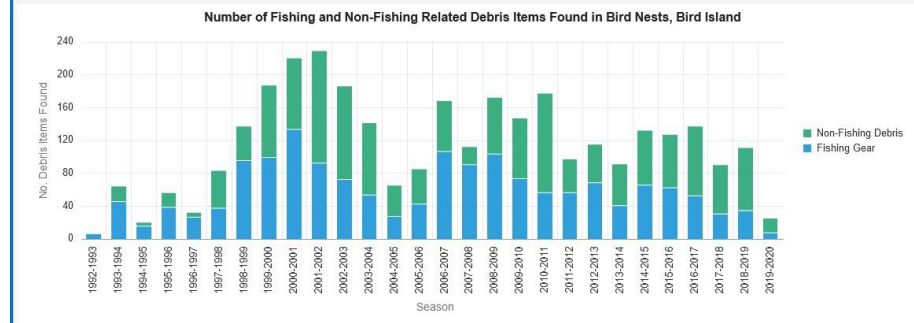
Monitoring Activities

	Zone	Status/Frequency	Priority	See data
Data collected by observers on all fishing vessels – bycatch and incidental mortality; seabird and marine mammal observations (CCAMLR Scheme of International Scientific Observation and additional requirements under GSGSSI licensing)	All fished areas	All fishing operations	High	81
Monitoring of albatross nests for hooks and debris associated with fishing	Bird Island	1992 onwards	High	77
Bird strikes reported from fishing vessels	-	2017 onwards	-	81

1 - 3

- 10 research themes linked to MPA objectives.
- Access to the RMP and associated datasets through the MPA Data Portal.

Debris Found in Bird Nests



Future collaboration – opportunities and priorities

- Building tools to support conservation and management – other OTs?
 - Shared data platforms for accessible information & integrating outputs
 - Mechanisms for upload and incorporation of new datasets
- Implementation of research & monitoring plans
 - Use habitat maps to prioritise/guide land-based research activities
 - Collaboration across stakeholder groups, e.g. fishing/tourism industries
- Measuring conservation effectiveness
 - Establish baselines for assessing change
 - Indicators to evaluate management effectiveness



Thank you

suan@bas.ac.uk