

# Progress Report

## Gentoo Penguin Research at the Falkland Islands 2013/14

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to Ruffords Small Grants Foundation

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Nelson Mandela Metropolitan University (NMMU)

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## Previous work

For an overview of what the project has already achieved please see the previous report: "Gentoo penguin research at the Falkland Islands 2012/13". An electronic version of this report can be viewed at: [http://www.rufford.org/files/12372-1%20Detailed%20Final%20Report\\_0.pdf](http://www.rufford.org/files/12372-1%20Detailed%20Final%20Report_0.pdf)

## Research licence

This project was approved under licenses granted by the Falkland Islands Government, Environmental Planning Department: R17/2011 & R13/2012. **The R13/2012 licence was updated by the Environmental Committee on 27 September 2013 to allow for continuation of field work until 30<sup>th</sup> April 2014.** Animal ethics approval was granted by Nelson Mandela Metropolitan University ethics committee (ALL-SCI-ZOO-014).

## Season overview

Limitations this season meant that we were not able to sample at Steeple Jason Island. This limitation arose mainly due to academic commitments at NMMU. The season was a great success for the primary goals that we had set out. This mostly included work focused at Bull Roads (North Arm) and Cow Bay (Johnsons Harbour):

1. Continue with GPS+TDR deployment to monitor foraging distribution
2. Continue with stomach sampling and feather collection (for stable isotope analysis) for understanding diet.
3. Deploy high definition video cameras
4. Deploy accelerometers
5. Collect humerus bones and feathers from deceased adults and chicks respectively for long term diet investigation via stable isotope analysis.

For understanding the complete picture of penguin foraging behaviour, penguins were fitted with a combination of camera + GPS + dive logger + accelerometer. The GPS and accelerometers used this

season were half the size compared those used last season and merged into a single unit. With any units there is the potential for hindering affects. These units were deployed for only a single foraging trip, and this season we recorded the greatest mass gain by any bird over the previous 3 seasons (1.4kg) and the deepest recorded dive of 212m for a Gentoo penguin. The fact that during this study units were deployed for only a single foraging trip and penguins achieved recorded maximums, devices were not believed to have had a hindering affect.

Figure 1 below highlights the primary data collected this season. (Refer to previous report for remainder).

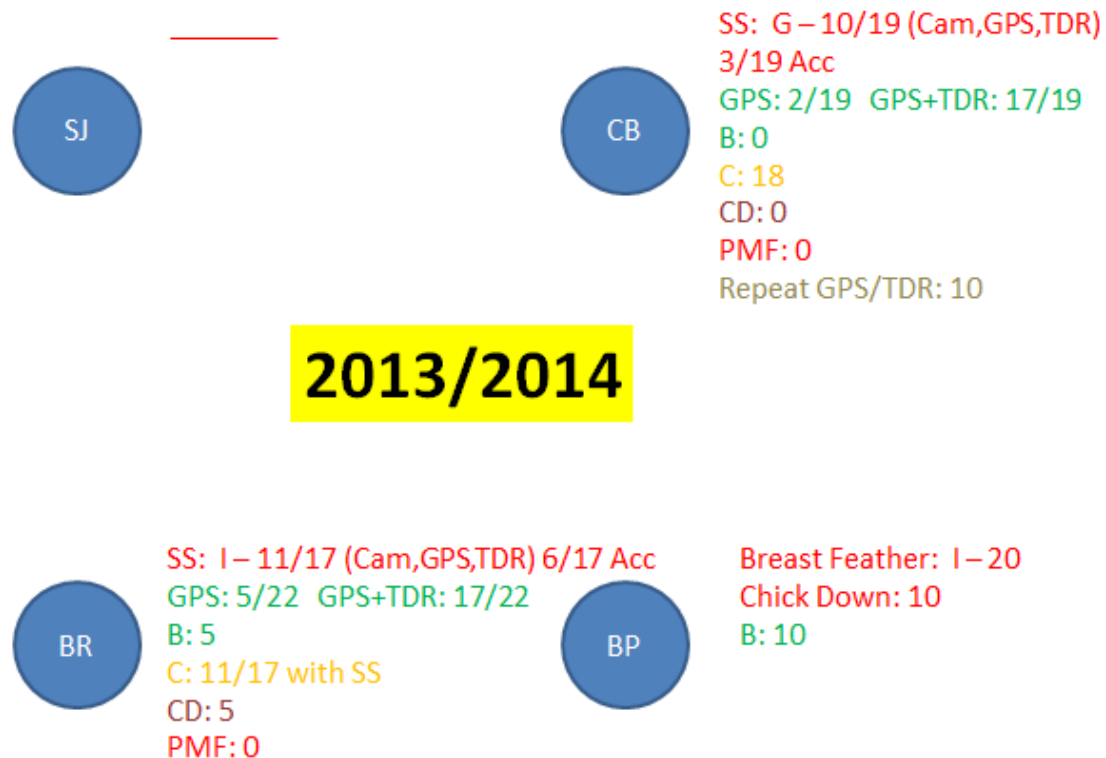


Figure 1: Data collected during the course of the Gentoo research during the 2013/14 season at SJ (Steeple Jason), CB (Cow Bay), BR (Bull Roads), BP (Bull Point). Colours represent different sampling protocols. See key.

Figure 1 Key:

- I, G, C – Incubation, Guard and Creche period respectively
- SS – Stomach Samples
- TDR – Time Depth Recorder, note: 0 values for 2012/13 as these are included in the GPS deployments
- B – Humerus Bones from deceased penguins
- C<sub>orange</sub> – Video Camera Deployments
- GPS – GPS deployments, NB these are always with a TDR
- CD – Deceased Chick Feathers
- PMF – Feathers collected from adult Gentoo penguins during the post moult period

## Public awareness

This season we extended the scope of our public outreach and were able to reach a greater audience across the Falklands and internationally. Again, this has allowed promotion of the parties involved and also provided unique educational opportunities for the public. Continuing from the previous report:

8. November 2013: Presentation in South Africa at Nelson Mandela Metropolitan University – project summary to date.
9. January 2014: Project summary presented on Falkland Islands Television
10. February 2014: Presentation at the Mount Pleasant Complex Military Base at the Falkland Islands – project overview and introduction to Falkland Islands seabirds. This is a naturalist group with members that range from long term stay (>2yrs) to short deployments (<6wks).
11. February 2014: Larger project overview, including teaching session with children from Falkland Islands Government School, presented on Falkland Islands Television.
12. February 2014: Presentation at Chamber of Commerce to Falkland’s community members – presentation involved discussion on seabird monitoring: the devices available to us, their history and conservation use.
13. April 2014: Article to be published in Penguin News, local Falklands newspaper, giving overview of project and thanking supporters of the work.
14. April 2014: Youtube videos to be uploaded highlighting beauty of Falklands wildlife, life in the field and project overview.

## Falkland Islands Fisheries Department

The Falkland Islands Fisheries Department have played a fundamental role in this project. During their research cruise of October 2013 they collected many vital exemplar specimens which will be of great benefit toward use in stable isotope mixing models. Furthermore, they provided full access to both their wet and dry labs at no fee allowing for a fantastic place to work while processing samples. The entire fisheries team provided valuable knowledge that greatly assisted my work. The reference collections that they house of species found in the Falkland Island waters and beyond are of great scientific value and a valuable asset to researchers. I would like to highly commend this exceptional team and express my utmost thanks.

## Collaborations: Current and future

Moving into a third season, with now a vast data set at hand, collaboration will be essential to ensure data is managed most appropriately. This project began as a master’s thesis and has now moved into a doctoral study. Guidance moving forward and collaborative work will come from:

Person	Organisation	Project affiliation
Dr. Pierre Pistorius	NMMU	Promoter/Supervisor
Dr. Andrew Stanworth	FC	General guidance. To co-author papers together. Assist in developing management plan for Gentoo penguins
Sarah Crofts	FC	General guidance. To co-author papers together. Assist in developing management plan for Gentoo penguins
Dr Paul Brickle	SAERI	To become Co-promoter/supervisor
Dr Norman Ratcliffe	BAS	Assist with spatial analysis
Dr Maelle Conan	NMMU	Assist with stable isotope analysis
Dr Andrea Thiebault	NMMU	Assist with video camera data analysis

## Assisted projects

The scientific community is now more connected than ever on a global scale allowing many opportunities to assist other projects. This season we supported three such projects by collecting samples during our field work.

1. Collection of blood and tail feathers for Gemma Cluclas (PhD candidate: University of South Hampton + Oxford University), Dr. Tom Hart (Oxford University) and Mike Polito (Woods Hole Oceanographic Institute). Genetics and stable isotope work.
2. Collection of blood for Gisele Dantas (Departamento de Biologia Geral, ICB, UFMG). Genetics work.
3. Collection of penguin skulls and feathers from deceased birds for David Schutt. These are being sent to University Park Elementary school in Denver, Colorado (USA) for education/display.

## Acknowledgements

Numerous parties have made this project possible. We extended our greatest thanks to them for their generous support through funding and equipment use.

- Falklands Conservation
- Nelson Mandela Metropolitan University
- John Cheeck Trust
- Ruffords Small Grants Foundation
- Environmental Planning Department
- Institut de recherche pour le développement
- British Antarctic Survey

The support from landowners and land managers is ever grateful.

- Steeple Jason – Wildlife Conservation Society
- Johnsons Harbour – Jan Cheeck, Mickey Reeves and Derek Petterson
- North Arm – Steve and Emma Dixon