28th

Prince Edward Island Management Committee Meeting

26 February 2010

1. Lab manager. August — SLC?
2.

AGENDA
of the
28th PRINCE EDWARD ISLANDS MANAGEMENT COMMITTEE MEETING

****

VENUE: *Department of Environmental Affairs & Tourism*
Directorate: Antarctica & Islands Conference Room
East Pier Building
East Pier Road
V & A Waterfront
CAPE TOWN

DATE: Friday, 26 February 2010

TIME: 09:45

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1. **WELCOME AND OPENING**

2. **MINUTES OF THE 27th PRINCE EDWARD ISLANDS MANAGEMENT COMMITTEE MEETING (November 2009)** ***Doc 2***

MATTERS ARISING:

Item no.	*Items for discussion*	*Responsible person*	*Doc. No.*
2.1	Building of new and decommissioning of old Marion Island base - Update on progress made - Huts toilets - Equipping scientific laboratories	*Mr H Valentine* *Ms J Arnold* *Dr M Thaoge-Lefyedi*	*2.1*
2.2	Removal of rubble and building waste *(with D: EIE SANAP 3)* - Crane Point Project (for reference)	*Ms C Jacobs* *Mr H Valentine*	*2.2*
2.3	World Heritage Site (WHS) status for the Prince Edward Islands	*Dr H Hendricks*	
2.4	Publication and implementation of the Prince Edward Islands Management Plan and way forward	*Mr H Valentine*	
2.5	Extension of Special Nature Reserve Status of the Prince Edward Islands to include territorial waters out to 12 nautical miles (MPA)	*Mr H Valentine*	
2.6	Ramsar Wetland Reserve Status for the Prince Edward Islands	*Dr H Hendricks*	
2.7	House Mouse update *(par. 2.7)*	*Mr J Cooper*	
2.8	Application for King Penguins from Marion Island	*Ms K Ngxabani-Tikana*	
2.9	New huts at Marion Island - List of problem areas	*Mr H Valentine/* *Mr K Gierdien*	*2.9*

2.10	Developing ISO 14001 *(par 2.11)*	*Ms C Jacobs/Mr G van Zyl*	
2.11	Conservation reports - Flies on board the SA Agulhas (par. 3.1) - Eradication of alien species (January 2010 for reference) (par. 3.4) Rumex acetosella & red fungi Alternative hut communication (par. 3.5) Bird Strikes (par. 3.5)	*Ms K Ngxabani-Tikana* *All* *Mr G van Zyl* *Mr G van Zyl*	*2.11*
3.	**NEW ITEMS**		
3.1	Seabirds Landing on Ships		*Doc 3.1*
3.2	2010 Marion Island relief voyage SANAP 3 forms		
	Affiliation / Principal Investigator	*No. of participants*	*Doc No.*
3.2.1	DEA: Antarctica and Islands	*4*	*Doc 3.2.1*
3.2.2	DEA: Environmental Impact Evaluation	*1*	*Doc 3.2.2*
3.2.3	National Departmental of Public Works	*21*	*Doc 3.2.3*
3.2.4	Titan Aviation	*10*	*Doc 3.2.4*
3.2.5	South African Weather Services	*2*	*Doc 3.2.5*
3.2.6	Crawford R (PEI)	*5*	*Doc 3.2.6*
3.2.7	Crawford R	*4*	*Doc 3.2.7*
3.2.8	Chown SL (PEI)	*1 (rest with PEI group)*	*Doc 3.2.8*
3.2.9	Chown SL	*5*	*Doc 3.2.9*
3.2.10	Chown SL	*1 (rest with PEI group)*	*Doc 3.2.10*
3.2.11	Chown SL	*3 (3 with other groups)*	*Doc 3.2.11*
3.2.12	van Vuuren B	*1*	*Doc 3.2.12*
3.2.13	Smith V	*4*	*Doc 3.2.13*
3.2.14	Collier A	*3*	*Doc 3.2.14*
3.2.15	Monteiro P	*1 (ship-based)*	*Doc 3.2.15*
3.2.16	Meiklejohn I	*2*	*Doc 3.2.16*
3.2.17	Connan M	*2*	*Doc 3.2.17*
3.2.18	Bester MN	*2*	*Doc 3.2.18*

SHORE-BASED → 71 + 14 (M66) + 17 (M67) + 3 (UB) = 105
SHIP-BASED → 1

TOTAL 92 – en route to Marion
TOTAL 89 – en route to Cape Town

5. DATE OF NEXT MEETING

6. CLOSING

27TH PRINCE EDWARD ISLANDS MANAGEMENT COMMITTEE (PEIMC) MEETING

MINUTES OF THE MEETING HELD ON 24 NOVEMBER 2009 AT THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS, DIRECTORATE: ANTARCTICA AND ISLANDS, EAST PIER BUILDING, EAST PIER ROAD, V&A WATERFRONT, CAPE TOWN

PRESENT

Mr HR Valentine *(Chair)*	: Department of Environmental Affairs (DEA) Directorate: Antarctica and Islands (D: A&I)
Dr M de Villiers	: University of Cape Town (UCT)
Prof S L Chown	: University of Stellenbosch (US)
Mr M Gierdien	: National Department of Public Works (NDPW)
Ms C Phamoli	: DEA, D: A&I
Ms K Ngxabani-Tikana	: DEA, D: A&I
Dr M Thaoge-Lefyedi	: National Research Foundation (NRF)
Dr H Hendricks	: S A National Parks
Mr M Majodina	: South African Weather Services (SAWS)
Mr D Smit	: DEA, Directorate: Environmental Impact Evaluation (D: EIE)
Ms CA Jacobs	: DEA, Directorate: Environmental Impact Evaluation (D: EIE)
Ms J Arnold	: *(Scribe)*

APOLOGIES

Prof MN Bester	: University of Pretoria
Ms A van Wyk	: S A National Parks
Mr A Dreyer	: DEA
Mr H Smith	: NDPW (Mr Gierdien attending on his behalf)
Ms C Steele	: National Research Foundation (NRF)
Mr J Matshilli	: DEA, MCM
Mr J Cooper	: UCT

1. WELCOME AND OPENING

The Chair, Mr Valentine welcomed everyone present. The Chair went through the list of apologies and conveyed the information to the attendees that were present. The Chair was very pleased that the co-opt members could attend and that there was a quorum to fulfil the duties of the meeting. Mr Gierdien added that Mr Hein Smith was no longer within their section and he would be free to sit on the Committee once the new members were elected. The Chair added and informed the Committee that he would avail time on the agenda to re-look at the Committee members for the purpose of extension.

2. APPROVAL OF PREVIOUS MINUTES (24TH PEIMC MEETING)

A few minor editorial changes were made to the previous minutes and were accepted. The corrections were made and would be forwarded to the Committee.

The minutes were adopted.

MATTERS ARISING

2.1 Building of new and decommissioning of old Marion Island Base

- ***Update on Progress made***

The Chair reported on the current and latest developments of the Marion Island new base stating that the National Department of Public Works (NDPW) received a portion of the funding and they were currently in the process of prioritizing and getting tenders out as soon as possible for the completion of the base. Mr Gierdien added that for the 2010 takeover, NDPW would be sending a group of 21 personnel to have the construction site ready. Mr Giredien further stated that the second phase would be from August-November 2010 in which there would be a group of 50 personnel. Funding had been approved for the 1st phase and according to Mr Mike Murphy from NDPW funding for the 2nd phase would be approved in the new financial year. The Chair added that he would be having a meeting on 25 November 2009 with the DEA-Marion Island Project Manager, Mr Adriaan Dreyer and Mr Murphy from the NDPW to discuss this issue further. Prof Chown was concerned about the 2010 Voyage schedule dates, particularly the fact that the ship was due to depart late in April. DEA would have to re-visit the ship schedule for 2010 and all parties concerned would be notified accordingly. For now the immediate good news was that the base will be completed in the coming year, 2010. The Chair further added that DEA is planning the stocking of the base, the furniture tender was out. It was noted that the Chair would inform the Committee on the outcome of the meeting that was going to take place on 25 November 2009 between NDPW and DEA.

- ***Funding of Portaloos & investigate design options***

The Chair suggested to the Committee that it is time for them to resolve this issue on the hut toilets. Ms Phamoli participated in the 2009 relief voyage to Marion and reported that the 'telephone booth system' seemed to work better than the 'bucket system' and felt that NDPW could assist in securing the structure to withstand strong wind. Dr de Villiers questioned the capacity of the two systems. Ms Ngxabani-Tikana answered by informing the Committee that the 'bucket system' has a capacity

of 20 liters and the 'telephone booth system' 50 liters'. Mr Gierdien added that the 'telephone booth system' was placed as a test at Katerdraal and it seems like it endured the adverse weather conditions. Dr de Villiers added that it was also the least used hut on Marion Island and she showed some concerns about the capacity of that particular system.

Ms Jacobs suggested that the PEIMC make a decision in principle on the earth toilets, as the matter was mentioned in every month's reports from the current CO on Marion Island. She also distributed a draft summary, compiled by Mr Tambudzani Mulaudzi, on different systems/options for the Committee's perusal and added that the D: EIE would finalise document, including any additional options, and circulate it to the Committee for consideration. The Chair requested the Committee to take a decision on the earth toilets and suggested that spots that were dug should be clearly marked for future remediation and that if new toilets were dug, these should be big enough to last until the next takeover. The Chair mentioned that DEA would instruct the current team on Marion Island to clearly mark these earth toilet areas in the event of later remediation. The Chair further added that whatever system would be implemented the buckets used should be 100% sealable and that the 'telephone booth' could be placed over this and Ms Ngxabani-Tikana would drive the process. Dr de Villiers suggested that SANAP should work out capacity/volume of usage so that *Titan Aviation* could include this aspect of the work in their flying time, i.e. extra time to collect the used 'buckets' from the huts.

2.1.1 *Equipping scientific laboratories*

Dr Thaoge-Lefyedi provided feedback and informed the Committee that the NRF had received funding to the amount of R1.6 million. Thus far, not much had been done about the current situation and requested an indication from the Chair on when the equipment would be needed. The Chair felt that the new equipment should go down during the takeover when most of the Principal Investigators would be on Marion Island so they could assist and oversee the installation/setting up thereof. Prof Chown further added that some time ago he submitted a document to NDPW and DEA with the various measurements and heights surface structures that needed to be put in place and that it was a priority to re-think the management of these laboratories. The Chair suggested that DEA should consider setting up a meeting with NRF and (Prof Chown) proposing to employ or have a dedicated Laboratory Manager, by early next year (2010).

2.2 Removal of rubble and building waste (Country clean-ups at Marion)

The Chair requested the Committee's comments on the attached **Addendums 2.2 A; 2.2 B; 2.2.C and 2.2.D**. Prof Chown suggested that the Committee should convey their thanks to Mr Cooper for all his well informed and thorough reports.

Marion Island: Status Report of Crane Point

Mr Gierdien informed the Committee that he was requested to draft the report on the status at Crane Point. He further added that during the 'Wash up Meeting" on the return voyage from Marion Island (May 2009) to Cape Town he requested that DEA should consider having a Project registered for the rehabilitation of the area. The Chair requested from Mr Gierdien additional information on what would be expected from DEA once such a project was registered. Mr Gierdien responded that there was initially a project running like this but it had since stopped due to funding. He added that once a project was registered NDPW could complete the wall rehabilitation an extended takeover period. The Chair requested from the Committee if they could proceed with the

suggestion from Mr Gierdien. Mr Smit added that DEA could possibly require a EIA or Basic Report for the project, as it falls under earth moving and other construction, and that the assistance of an in-house Consultant with expertise (insight) would be of great assistance. Mr Smit added that enough evidence (with photos) had been gathered and undertook to assist DEA throughout the process, including granting approval for this. Prof Chown suggested that a desk-top study would be sufficient for the report and that perhaps someone from the PEIMC would be willing to undertake this. If required, Dr de Villiers volunteered her services in this regard, as she was based in Cape Town. The Chair was pleased with the outcome and added that by the next takeover this should be in place.

2.3 World Heritage Site (WHS) status for the Prince Edward Islands (PEI's)

The Chair reported that a meeting was held in Pretoria and some PEIMC Committee members attended, however, there had been no further progress. The Chair therefore requested the Committee to decide whether they still needed to continue with the matter. On reaching consensus to still pursue the matter, Dr Howard informed the Committee that there is a process that should be followed in order for a site to be nominated and guidance can be afforded to DEA. He felt that having members in Pretoria would be to the PEIMC's advantage as Mr Ntsizi November from DEA's Biodiversity Management offered his assistance in this regard. Dr Howard added that the reasons were given why the PEIM nomination was not submitted and that there were some outstanding issues that required closure before we could move on with the nomination. He further suggested that he and Ms Ngxabani-Tikana drive the process.

2.4 Publication and Implementation of the Prince Edward Islands Management Plan and way forward.

The Chair reminded the Committee about a previous meeting with Mr Geoff Cowan and how the way forward was planned in order to get the Management Plan finalised. A quotation was received to revise the plan and since it is in the completion of the base on Marion Island is heading for completion and also to constitute a new PEIM Committee.

2.5 Extension of Special Nature Reserve Status of the Prince Edward Islands to include territorial waters out to 12 nautical miles (MPA)

The Chair informed the Committee about the triple draft submission addressed to the Minister regarding a few objections from a Fishing Company and the Minister suggested SANAP attend to these. The proposal was that there would be another workshop with other stakeholders before it was gazetted. The Chair further read extracts from the submission by Dr Alan Boyd from Marine Protected Areas and Estuary Management, Integrated Coastal Management, MCM. Dr Howard felt that it would be of importance to the new Minister on this particular issue. Mr Majodina enquired whether there had been any dates scheduled for any future workshops. The Chair added that he would request Dr Boyd to copy the PEIMC members in any further communications relating to the subject.

2.6 Ramsar Wetland Reserve Status for the Prince Edward Islands (PEIs)

Ms Ngxabani-Tikana reported that in the meeting held with Biodiversity Management in Pretoria on 4 August 2009 it was indicated that after so many challenges encountered in the management of Ramsar sites and the implementation of the Ramsar Convention in the country, a need was

identified for the establishment of a National Committee to act as an advisory body on issues relating to the Ramsar Convention. She also reported that the establishment of this Committee was a requirement in terms of the Ramsar Convention and that it was decided during the meeting that a person in a management position should represent a particular entity for ease of decision-making.

Dr Howard, who also attended the meeting, added that the Committee had its first inception already and there were nominations and that the second meeting would constitute the nominated members. The Chair asked if Dr Howard, in his capacity as a member of the PEIMC would be able to serve in the Ramsar Committee?

2.7 House Mouse update

Mr Cooper was not present at the meeting for comment and there was no updated documentation available and/or any further feedback. The Chair mentioned that it was requested from Mr Cooper to draft a strategic work-plan to eradicate mice population on Marion Island. Mr Cooper was going to use the feasibility structure currently used by the British Government on Gough Island, however, nothing had happened.**

2.8 Application for King Penguins from Marion Island

Ms Ngxabani-Tikana reported that the Pretoria Zoo had requested permission to capture penguins in 2011. The PEIMC felt that as this application had been drawn out for so long, that the Pretoria Zoo be requested to re-submit a new application for consideration. Dr de Villiers added that the application required more information from the Zoo on how the birds would be looked after on board the ship, age and sex ratios, etc. Mr Smit added that the facilities in Pretoria must be inspected, as previously recommended by the PEIMC, to ensure its suitability for housing these birds before attempting any further action on this project. The Chair further added that once they were granted approval, a Committee member should oversee the process of capturing of the penguins on Marion Island and on board the ship as well. Ms Ngxabani-Tikana would draft such a response to the Pretoria Zoo, but would circulate the draft to the PEIMC for comments before onward transmission to the Zoo.

2.9 New Huts at Marion Island

The Chair relayed to the Committee that they had been made aware of all the problems with the huts on Marion Island and some of them were resolved during the 2009 takeover. However, there were still some outstanding issues which had been reflected in the reports. The Chair suggested that a list should be drafted for the NDPW and attend to it during the next takeover (2010). He further added that there were some issues relating to antennae wiring and bird strikes. Mr Gierdien agreed with the Chair on the drafted list for repairs. Dr de Villiers enquired about the antennae cabling (could the antennae be dropped when not in use).

2.10 CTBTO Station RN62 – Marion Island

The Chair reported that the e-mail sent to Ms Arnold, dated 23 November 2009 Prof Faanhof indicated that he might be seeking alternative sites for the station and would prefer to have a CTBTO site in South Africa rather than on Marion Island. The Chair informed the Committee that

they might be looking at the Mafikeng Campus at the Northwest University as a potential site. No formal withdrawal had been received and SANAP was waiting for the budget allocations.

2.11 Developing an ISO 14001

Mr Gideon van Zyl (D: A&I) joined the meeting and conveyed to the Committee the initial work that had been undertaken with Ms Jacobs, during and subsequent to their visit to the Australian Antarctic Division (AAD) in 2008. The AAD had provided valuable advice regarding the intended ISO14001-based environmental management system for SANAP. They studied the operations of SANAP, with the aim of developing standard operating procedures (SOPs) to improve certain aspects of our work. A few key areas had been identified and a workshop was held in August 2009 to finalise the overarching documents, which would define a lot of the policies. Mr van Zyl stated that SOPs as a matter of priority were envisaged for communications, safety, etc. Ms Jacobs added that the Chief Director: Environmental Impact Management wished to approve the system before its implementation.

NEW ITEMS

3.1 2009 Marion Island Relief Voyage Reports Conservation Reports

The Chair thanked the Committee for their consistency regarding feedback on the monthly reports. Ms Phamoli added that most of the minor concerns as contained in the reports received had been sorted out, but was concerned about the challenge faced by the department in obtaining a manufacturer for Egoli rubber gumboots.

Dr de Villiers suggested that a dedicated/full-time Environmental Officer (EO) for Marion Island should be appointed, someone who would be more dedicated to the tasks at hand, as well as any future priorities. Mr Smit agreed that the D: A&I should consider this when the motivation for the posts for the new Marion base was submitted, and that the D: EIE could assist with setting up a criteria list for such a post. Ms Jacobs added that it was essential that the D: EIE was consulted prior to the appointment of the current overwintering COs, as their unit needed to provide training to these officials.

In terms of repeated recommendations in Mr J Cooper's CO s reports, Dr de Villiers enquired whether anything had been done about the quarantine procedures at the various SANAP Stores, as well as the PEIMC-supported recommendation for no Velcro on all SANAP-issued clothing. Ms Phamoli informed the Committee that the department had incurred some problems with the current suppliers and will be phasing Velcro out on protective clothing, but that sometimes items were required at short notice. Mr Gierdien added that there had not been a Clothing Committee meeting in a long while, suggesting that the matter be re-visited. Ms Phamoli undertook to educate the suppliers on the items required with specifications. Ms Jacobs recommended that in future, any new gear with Velcro that was received should be rejected.

Dr de Villiers continued with the recommendations, enquiring what was being done about the population of flies on board the SA Agulhas. Ms Phamoli advised that there were fly traps on board. Prof Chown stated that the flies were specifically breeding in the Officer's pantry on board, adding that they could be living in the ship's grey water system and that something should be done. Dr de Villiers suggested that this should be a priority for the next Marion voyage. Dr de Villiers

further enquired regarding the incineration of paper waste on the Islands. Mr Gierdien stated that burning on Marion Island had not occurred, in line with Mr Cooper's recommendation and Prof Chown suggested that burning should be prohibited. Ms Jacobs added that there was no burning in Antarctica or at Gough Island and, that with proper planning, this could easily be implemented at Marion Island. The PEIMC agreed and Ms Phamoli undertook to ensure that the D: A&I sent down sufficient cargo containers to facilitate this.

Dr de Villiers further enquired whether the '*Mire Run*' for initiation on Marion Island should be permitted to continue or be prohibited. After a brief discussion, the PEIMC decided that this activity should be prohibited and the D: A&I undertook to implement this accordingly. Dr de Villiers continued with the recommendations by enquiring whether an EIA was in place for the decommissioning of the old Marion Island base. Dr de Villiers stated that she understood that there were budget issues in this regard, as well as careful and meticulous planning, however, she enquired regarding any specific paperwork that might be required. Ms Jacobs stated that she had spoken to Mr Murphy of NDPW some time ago and that he had advised that the decommissioning would have to be registered as a new job. Mr Gierdien added that the D: EIE would need to advise regarding any EIA processes required in this regard. Ms Jacobs stated that the NDPW would need to provide the D: EIE with a draft proposal on how they intended to decommission the facility and its associated structures, whereafter the D: EIE could provide input. Prof Chown added that if at any time the old base was not decommissioned in a proper manner, the PEIMC would have a huge environmental disaster on Marion Island. In conclusion he stated that it was the mandate of the PEIMC to make sure that this does not happen.

3.2 Appointment of Expedition Conservation Officer

This item had been discussed under item 3.1 and Ms Jacobs added that that D: EIE must be consulted in the appointment of the overwintering CO, especially as this unit provided training for the CO.

Ms Ngxabani-Tikana informed the Committee that SANAP is awaiting a full Conservation report from Mr Innocent Mthembu (appointed on board as the Conservation Officer for Urban Brew cruise). The report would highlight all the procedures that were followed on board and on the Island. There is a delay on this as he corresponded with us informing (D: A & I) that he was under a lot of pressure and very busy, he would compile it at a later stage. Dr de Villiers further added that she would like to request the CO to include in his monthly reports of all Urban Brew's field and environmental activities during their stay on Marion Island.

3.3 Filming Policy (Urban Brew Studios)

Mr Chair addressed the Committee on this very sensitive topic and stated that it was an issue that made all the members very uneasy to start off with. The Chair thanked all the members for their comments. DEA receives footage for pre-screening before broadcast. There is now a greater public awareness of research done on Marion Island. Prof Chown added that he had a previous meeting with Dr Augustyn (Chief Director: Research, Antarctica & Islands) and had expressed concern about interactions between staff of Urban Brew and the members of the team on the Island. He relayed that the current organiser from Urban Brew was much more professional than the previous one they had. He suggested that for future voyages, flim crews should be accompanied by an experienced person who can educate them about conservation matters. Mr Smit stated that the D: EIE could provide the necessary Environmental Officer for such voyages, on

birds and/or the other option would be to have horizontal antennae and this might make the signal weaker. Mr van Zyl pointed out that we (DEA) should investigate and do a study on investing in horizontal antennae, he added that it might not be as successful or work as effectively or might not even work at all. Dr de Villiers enquired on the possibilities of investing in antennae that could be lowered/collapsed after use to prevent bird strikes. Mr van Zyl replied that this was an opinion - the current antennae could be lowered, but have been galvanised and fixed in place. He further suggested that we could replace all the fixtures/beacons with stainless steel, which would cause some effort but it could be done. The Chair suggested attaching a bird scaring device to the antennae and Mr van Zyl pointed out that they are considering this as one of the options that would be investigated. Mr van Zyl further informed the Committee that Mr Hoffman made some contact with *Eskom,* whereby they use a 'flapper' (metal disc) that attached to the wires as indicators, somehow this has a negative impact on the communication. The other option is a 'pigtail' (a plastic spiral wiring) that is attached to the wires as means of markings. Dr de Villiers further pointed out that most of the bird strikes happen at night, unlike *Eskom* system that would work in daylight visibility; she suggested a mechanism that makes a noise. Mr van Zyl wanted to know about the various areas where bird strikes were more prevalent. Grey-headed and Swartkop huts were mentioned. The Chair suggested that we look at all the options and compare them for further discussion.

4. CLOSING

Ms Phamoli thanked everyone on behalf of the Chair (Mr Valentine - who left during the session to attend another meeting) for their contribution to the meeting. Meeting was adjourned at 11h50.

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SIGNATURE: CHAIR PEIMC

.....

DATE

DOC 2.1

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11 February 2010
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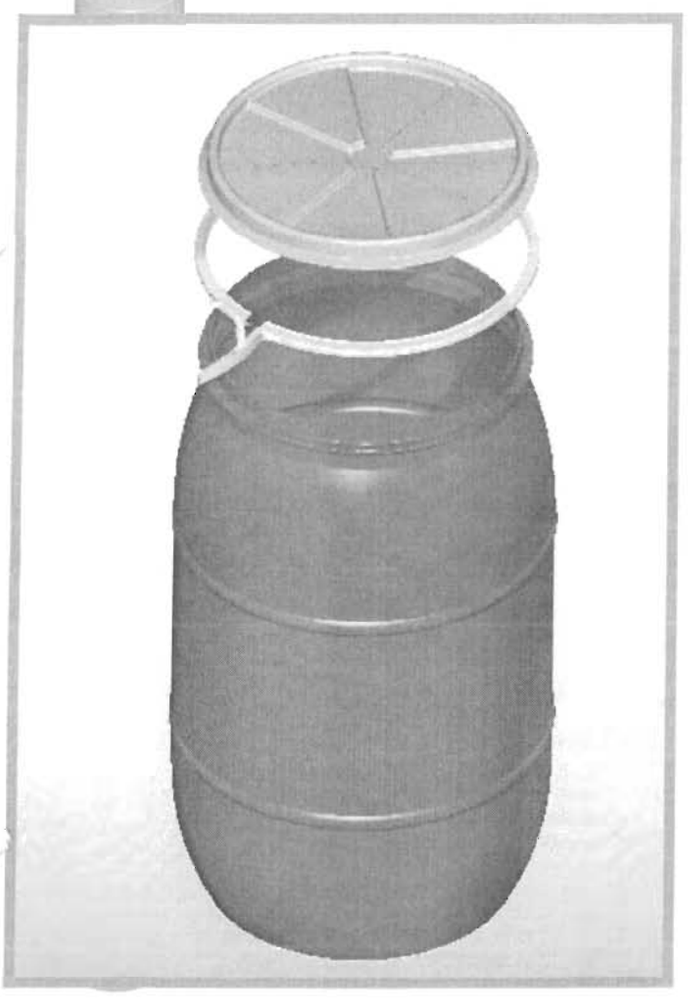

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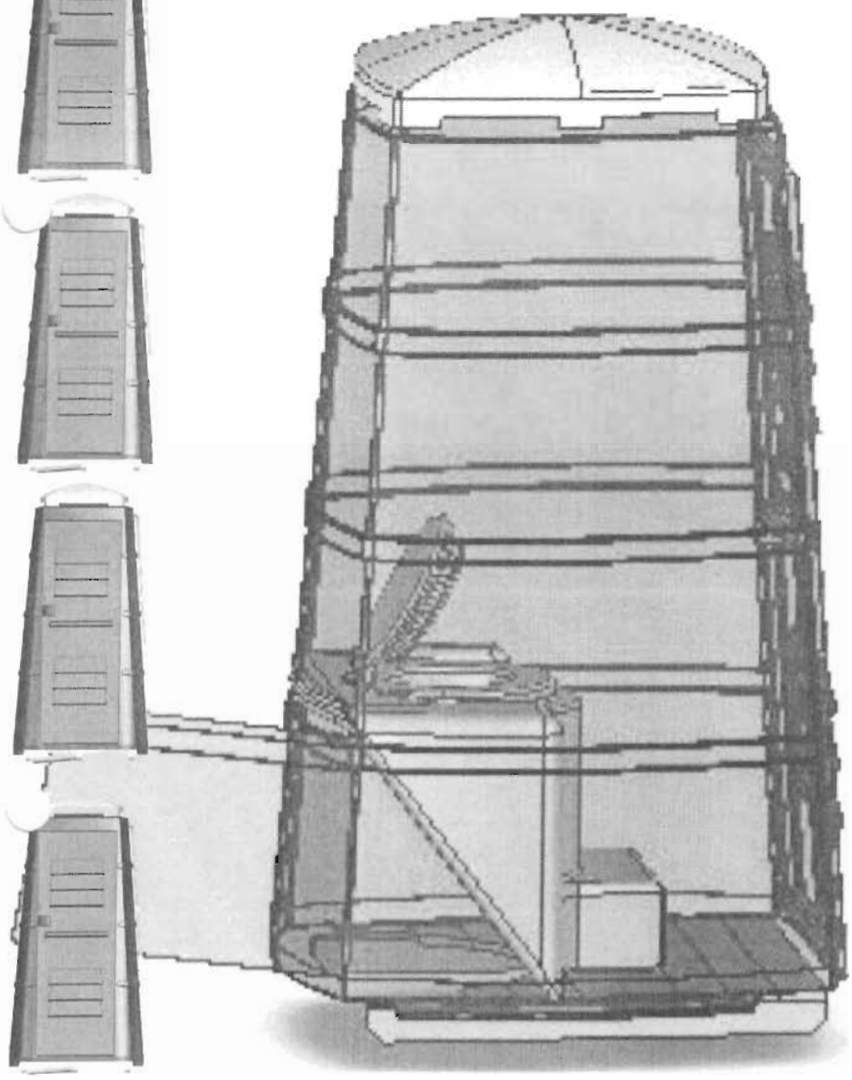

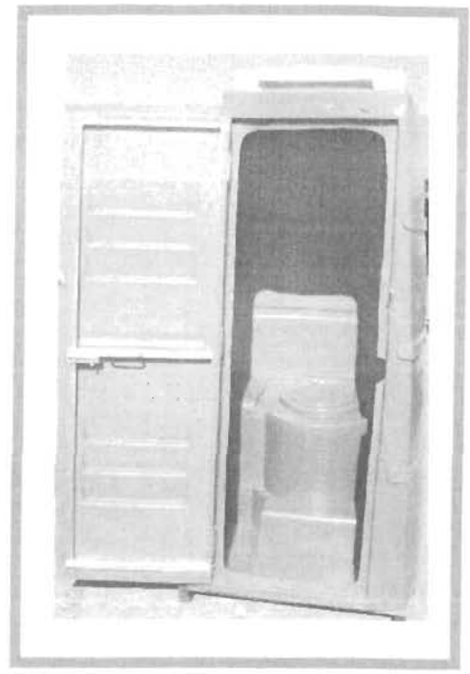

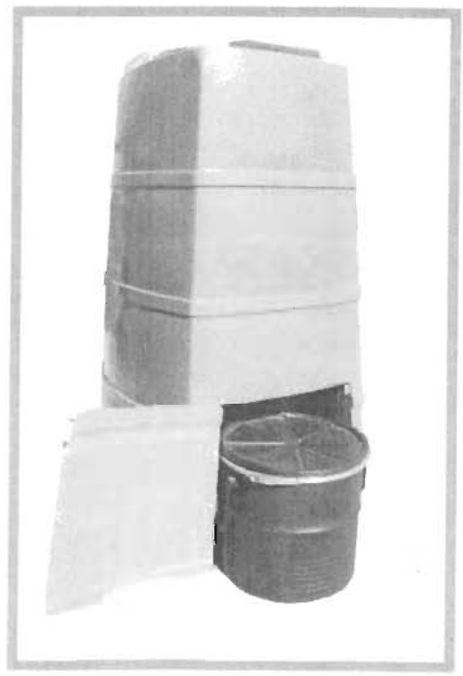

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ARMSA

Dc 2.1a

From: Carol Jacobs
To: Henry Valentine; John Cooper
Date: 2010/01/20 03:35:14 PM
Subject: Marion Island base and industrial archaeology

Dear All

In principle, I am in support of John's suggestions outlined below.

1) With regard to the archaeological project within SANAP - I trust this can be dealt with via a DST/NRF channel.

2) As regards the Environmental Impact Assessment (EIA) for the removal of the old Marion base and associated structures, as the decommissioning of the base is not a listed activity in accordance with the National Environmental Management Act's (NEMA) EIA Regulations, from a legal perspective neither a (i) Notice of Intent and Basic Assessment Report (BAR), nor a (ii) Scoping and EIA Report is required by DEA.

3) HOWEVER, there are legal obligations in this regard in terms of Section 28 of NEMA, which pertains to "Duty of Care", and it is thus recommended that the following are undertaken:

i) An environmental screening/environmental assessment (EA) of the decomissioning of the base and its associated structures (e.g. hydroshack, old wooden/polystyrene structure underneath the new base, etc.),

ii) An environmental risk assessment of potential pollutants, e.g. polystyrene, etc. and hazardous substances, e.g. asbestos, etc. (as this will inform the process in (iii) below),

iii) The provision of an outline/process/framework for the removal of the base and its associated structures (outlining the buildings that will be remaining and providing for the removal - in phases/stages if neccessary - of the remaining parts of the base and structures), and

iv) An environmental management plan that will guide operations/procedures during decommissioning.

4) The drafting of such a document is the responsibility of the Department of Public Works, in consultation with the Directorate: Antarctica and Islands of the Department of Environmental Affairs as organs of state. Once these two divisions are in agreement with the proposed course of action, as there are practical and logistic considerations from both parties, the proposal/application/document must then be submitted to the Directorate: Environmental Impact Evaluation (D: EIE) of the Department of Environmental Affairs for consideration.

5) An alternative course of action is for you to use the legislative framework of providing the D: EIE with a Notice of Intent and BAR (mentioned in 2(i) above) for consideration and acceptance.

6) Of course, you may choose to appoint a consultant/Environmental Assessment Practitioner (EAP) to undertake either course of action (either 3 or 5 above) on your behalf.

I trust this clarifies matters on your part and that we will be hearing from you soon in this regard.

Kind regards
Carol J

CC: adriaan.dreyer@sanap.ac.za; Candice@nrf.ac.za; Danie Smit; Gideon van Zyl; HE Dr <hep@sun.ac.za> Prozesky; Kusi Ngxabani-Tikana; Marienne De Villiers; mdevill@adu.uct.ac.za; Mustakim Gierdien <kim.gierdien@dpw.gov.za>; SL Prof Chown <SLCHOWN@sun.ac.za>; SME Mej

Doc 2.2

public works

Department:
Public Works
REPUBLIC OF SOUTH AFRICA

Private Bag X9027, CAPE TOWN. 8000 Int Code: +27 21 Tel: 402 2922 Fax: 418 7039
Cell: 082 928 346 e-mail: kim.gierdien@dpw.gov.za website: www.publicworks.gov.za

Mr. H. Valentine
Chairperson
Prince Edward Island Management Committee
East Pier
Waterfront
8001

25th May 2009

Good day Sir,

MARION ISLAND: STATUS REPORT ON CRANE POINT.

I am obliged to report on the deteriorating condition of the area referred to as crane point on Marion Island. Herewith, as requested via the chair of the 26th Annual Prince Edward Islands Management Committee meeting held at the offices of the then client department called Department of Environmental Affairs & Tourism.

CURRENT STATUS:

The area show advanced signs of severe weathering and has resulted in the exposure of old ding rubble, base waste and many other items. It can clearly be noted that proper filling was not used to fill the area under the slab that was cast previously. It has also been noted that the construction of a retaining wall had started but had not been anticipated all around the crane point area. A concrete area alongside the crane also show severe signs of stress and is starting to break up. The concrete slab is showing signs of severe stress and is breaking up in many areas.
Many old concrete support columns are visible in the area that previously housed the old emergency base. Quite frankly, this area is a "site for sore eyes" and is in urgent need of upgrade.
The site was cleared for human traffic and certain areas on the concrete slab were declared dangerous for the storage of cargo containers. These areas were cordoned off with visible rope and declared no go areas for human traffic as well. A photographic review will place into perspective, the status quo of the area around the crane point which would be followed with a proposal for a "new crane point" for perusal and urgent adoption as a project for the very near future:

PROPOSED STATUS:

A proposal is herewith made to register a project that would see the following implemented at crane point on Marion Island:

- Retainer walls are constructed all around the area – to include steel re-inforcement – minimum 35 mPa
- Well rammed filling with stoned drains on internal sections of retainers
- Re-inforced concrete slab with adequate expansion joints – minimum 35 mPa
- Removal of existing concrete columns
- Removal of existing concrete slab behind crane including pipe work that leads thereto

MEASUREMENTS AS FOLLOWS:

The area has been measured as follows:

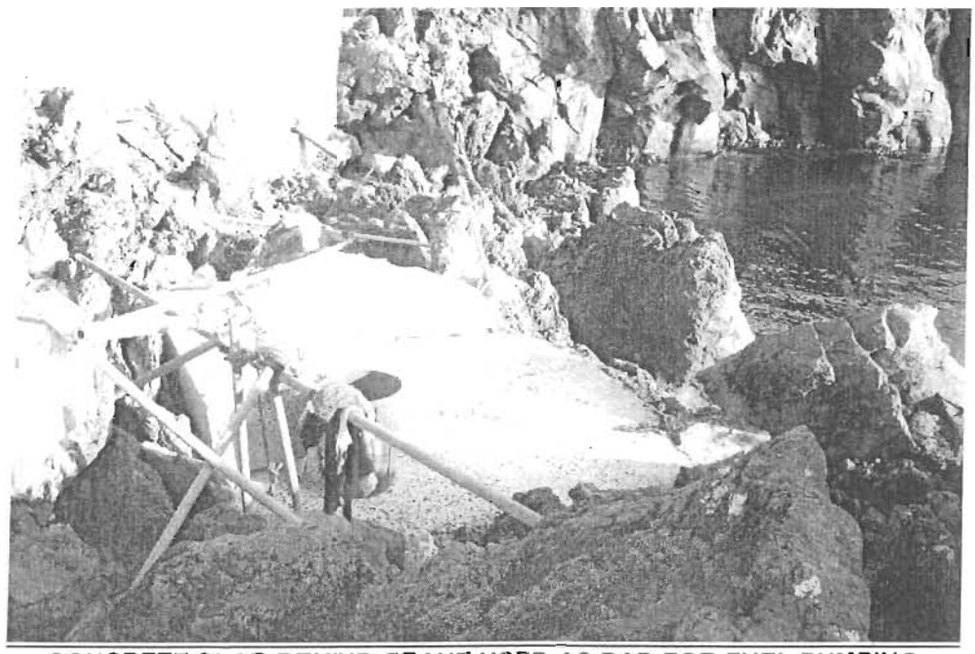
Length of retainer -	69,25 metres
Width -	00,300 millimeters
Depth -	4,0 metres
Area of concrete slab -	30 metres 20 metres x ±1 metre thick
Steps to crane -	1,400 metres^2 x 1 metre deep

An urgent appeal is made via this committee to the client department, to have the crane point re-constructed as soon as is practicably possible.

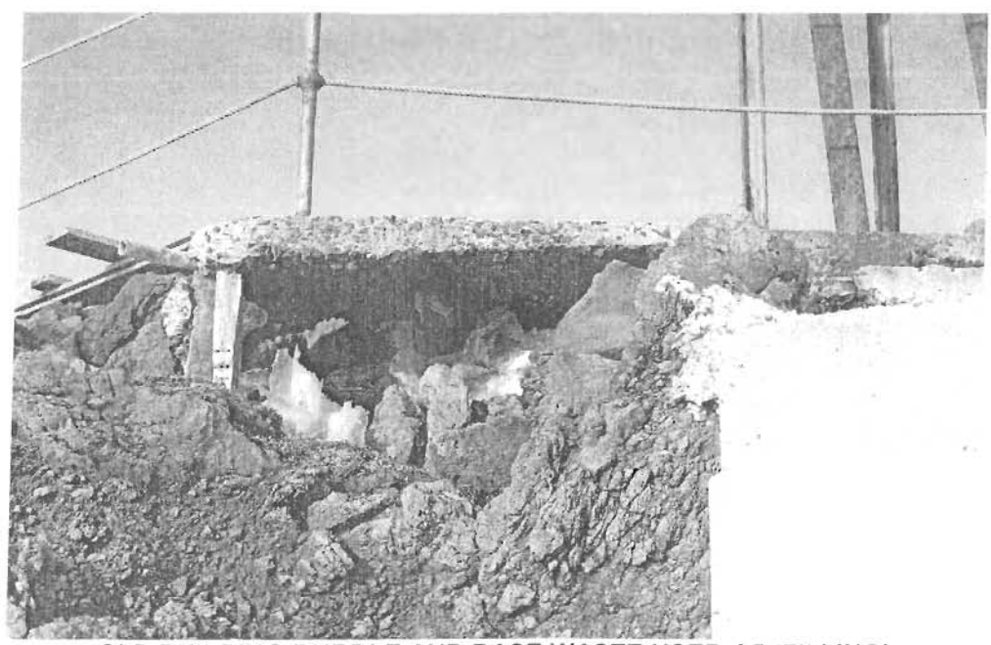
Kind regards

Mustakim Gierdien
Group Leader for Marion Island Take-over 2009
Project Manager: Other Islands
National Department of Public Works
Land: 021 402 2337
Mobile: 082 928 3462
E-mail: kim.gierdien@dpw.gov.za

CURRENT PHOTOGRAPHIC REVIEW



CONCRETE SLAB BEHIND CRANE USED AS PAD FOR FUEL PUMPING



OLD BUILDING RUBBLE AND BASE WASTE USED AS 'FILLING'

DCC 2.2.6
CRANE POINT
AT MARION

From:	Carol Jacobs
To:	Henry Valentine
Date:	2010/02/01 12:21 PM
Subject:	MARION ISLAND - REHABILITATION OF CRANE POINT
Attachments:	Listing Notice 1 No 386 of 21 April 2006.doc; BAR - Notice of Intent - Jan 2010.doc; BAR - Application form - Jan 2010.doc; BAR - Jan 2010.doc; EIA regulations No 385 of 21 April 2006.doc
CC:	adriaan.dreyer@sanap.ac.za; Danie Smit; Giel Louw; Godfrey Magagula; ...

Dear Henry & Kusi

Our telcons regarding the above and Marienne de Villiers' e-mail below refers.

The NDPW Crane Point Status Report dated 29 May 2009, and tabled at the PEIMC meeting on 24 November 2009, was reviewed by the D: EIE and legislation interpretation division. From the information provided in the report, we are of the opinion that the proposed construction activities at the crane point are listed as follows under the NEMA EIA Regulations Listing Notice No 386 (reflected in "blue" on the attached Listing Notice, for easy reference):

Activity no. 2,
Activity no. 6, and possibly
Activity no. 5 (this will need to be checked).

Accordingly, the following will need to be submitted by the NDPW/D: A&I to the D: EIE for consideration (templates attached for easy reference):

1) Application Form
2) Notice of Intent, and
3) Basic Assessment Report

Also attached, for easy reference, is a copy of the EIA Regulations, which outlines the process that should be followed in Sections 22-26.
Of course you are welcome to appoint someone to undertake this for you, should you wish.

Please feel free to contact me should you have any further queries in this regard.

Kind regards
Carol J

Dear Henry,

At the PEIMC meeting on 24 November I offered to do an assessment (basic or EIA, as advised by Danie's office) for the rehabilitation of crane point on Marion. It was proposed that this assessment be completed as soon as possible - preferably early Jan), so that it could be approved in time for the construction to proceed during the 2010 takeover period.

As I understand it, SANAP would be the applicant for the project and would thus need to appoint me to do the assessment. Would you please confirm if you wish me to go ahead with the assessment and if so, who I should speak to regarding the appointment.

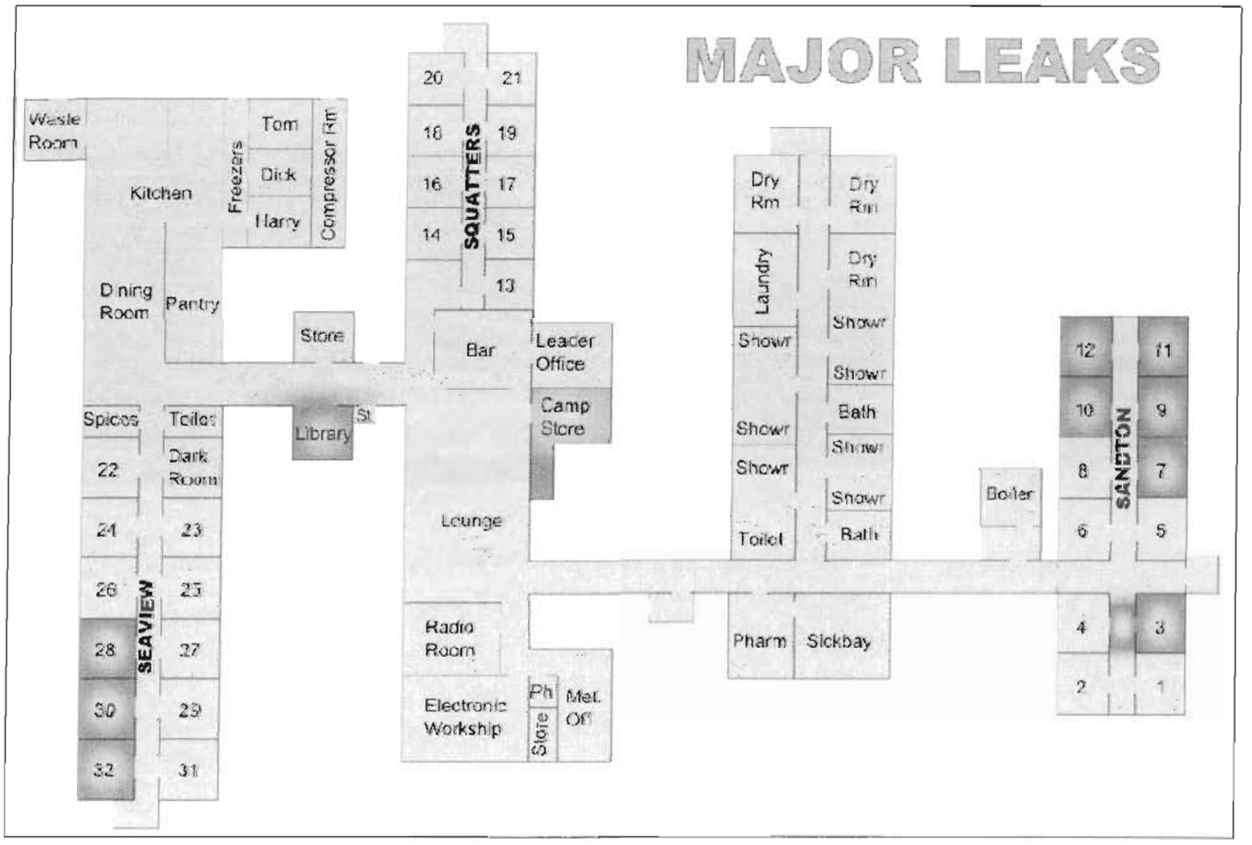
Many thanks,
Marienne

Doc 2.9

Marion Base - Outstanding repairs for Handover 2010

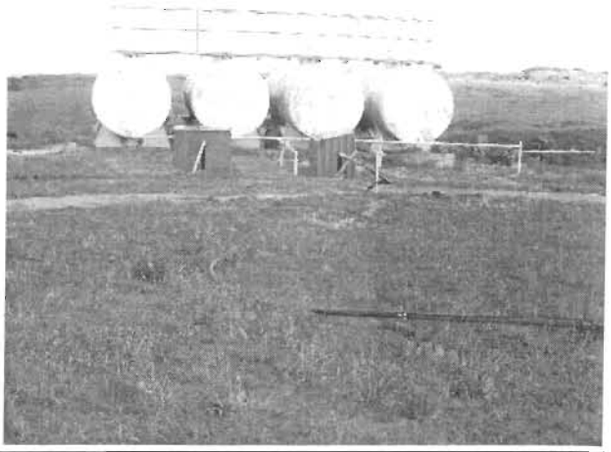
Base

- The roofing above the camp store should be attended to, as the leaks are persistent. The area size of this roof is 5meter x 6meters(camp store).
- Sea View cabins also have leaks, and the rooms are 28; 30; and 32.
- At "cyber Cafe", there is also a constant leak.
- At "Sandton", in front of room 4 there is a leak only when there is heavy raing with wind.
- In several rooms in "Sandton" there are also permanent leaks. (indicated on map)

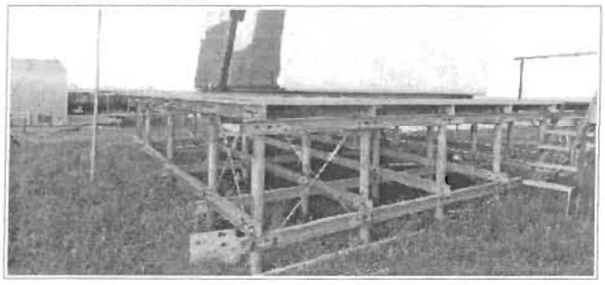


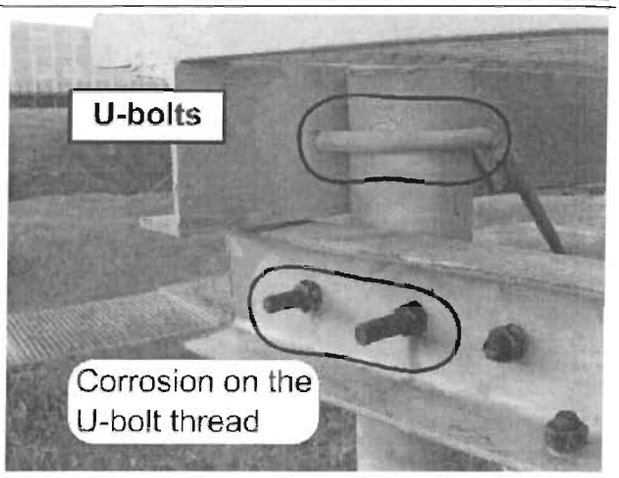
- The freezer door(Harry) needs Neoprene insulation on the door, since it can not seal properly anymore.

The diesel pipe behind the the kitchen that supplies the boiler needs to be replaced. It was replaced with a water piping when there was a diesel leakage.

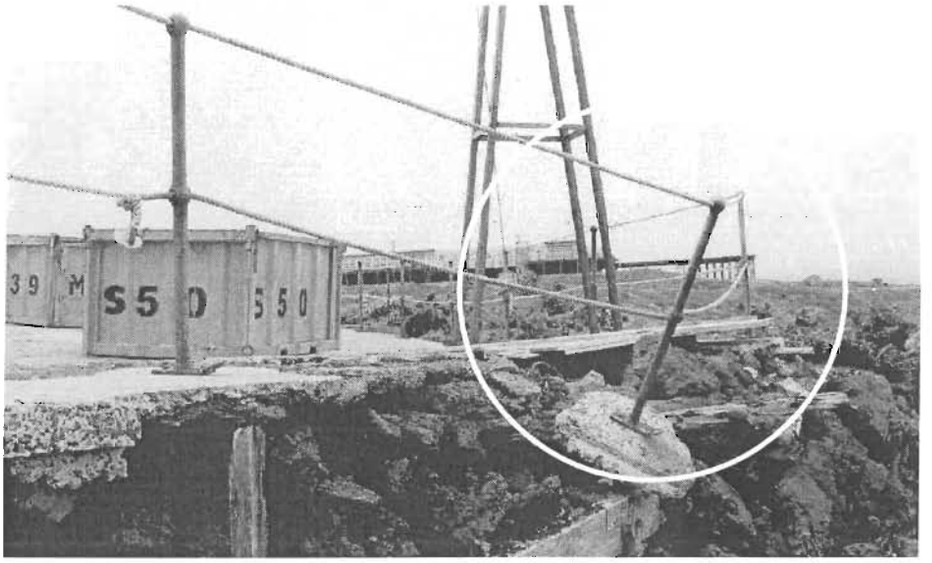


The satellite dish is mounted on to a platform which is attached to a poled frame. This has "U" Bolts securing the whole platform together. "U" Bolts have been ordered to replace the ones in use on the frame.

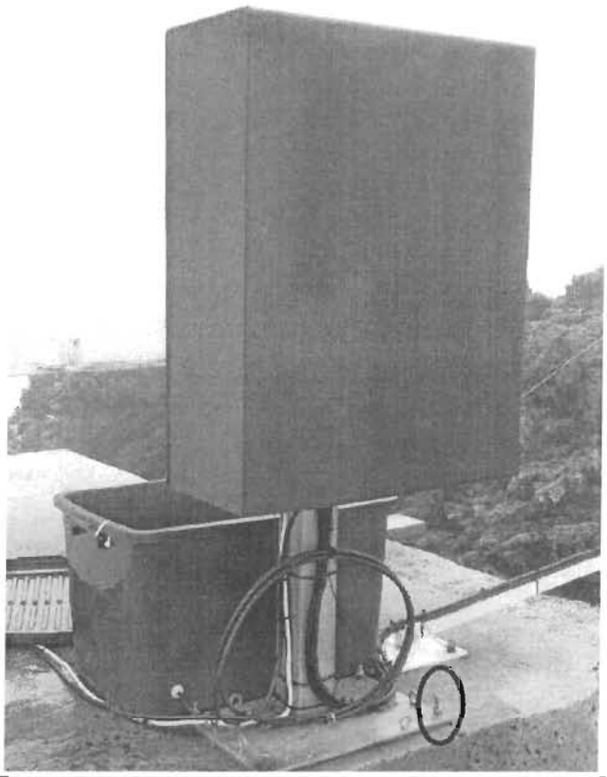




- Cement for the Crane Point where there are fixture Housing, Electronic Components are fastened to the cement. It is at these points the existing cement is crumbling.

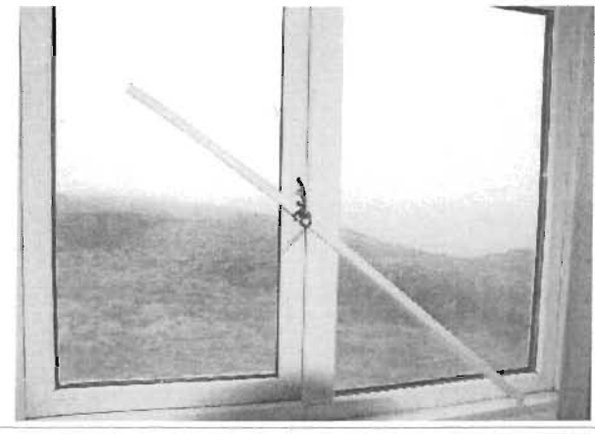


One of the bolts of the tidal gauge, at crane point. is pulling loose out of the concrete. This bolt need to be re-set in the concrete and re-tightened.

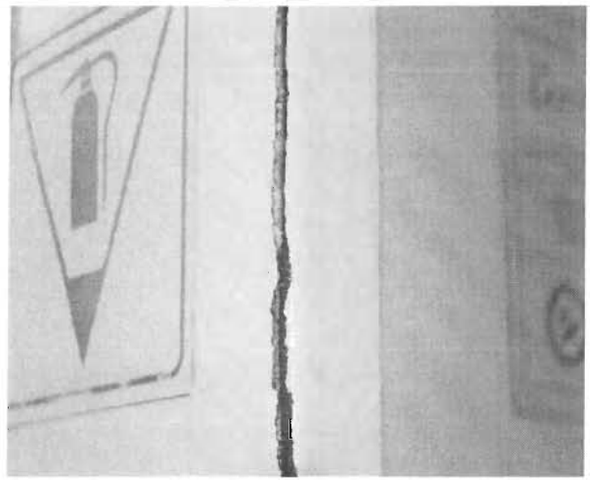


Huts

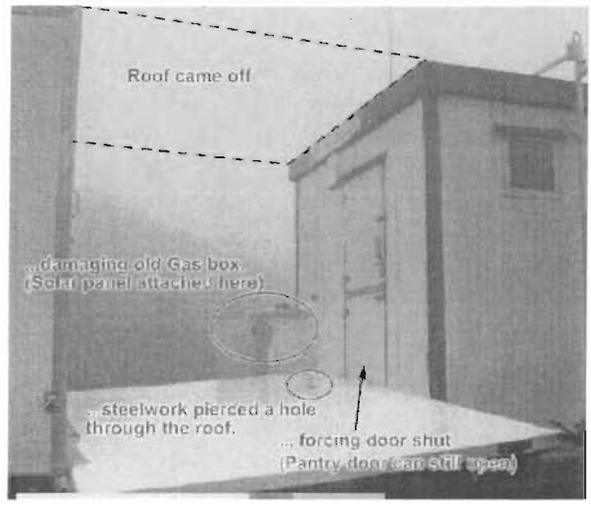
The Hut units around the island need attention applied to the windows that are in place, the internal mechanisms have failed(all hut except Rooks and Katedraal). the closing of these windows are not 100% secure.



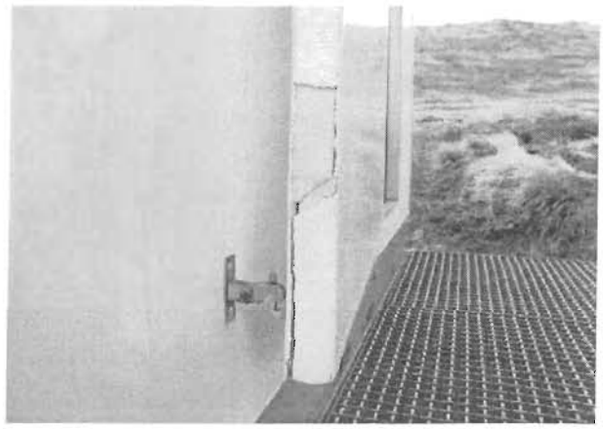
There are also various places where fiber glass has to be re-bonded to the existing wall frames,as cracks are forming.



At Katedraal the the upper roof partitioning between the food store and living quarters should be lifted into place and re-secured.

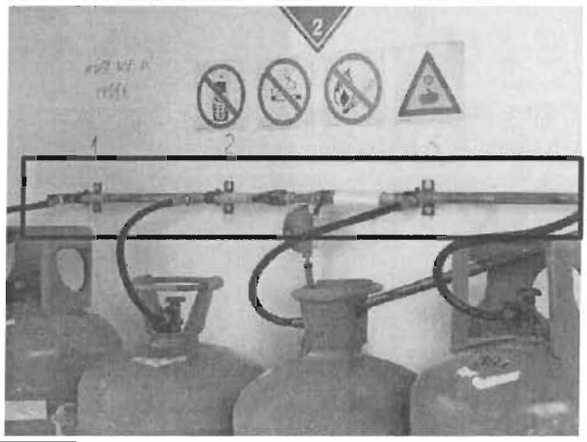


The door at Water tunnel and Cape Davis needs to be replaced completely, since it can not be repaired.

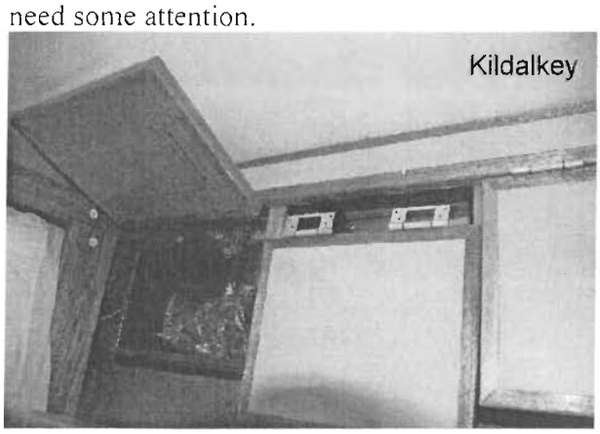


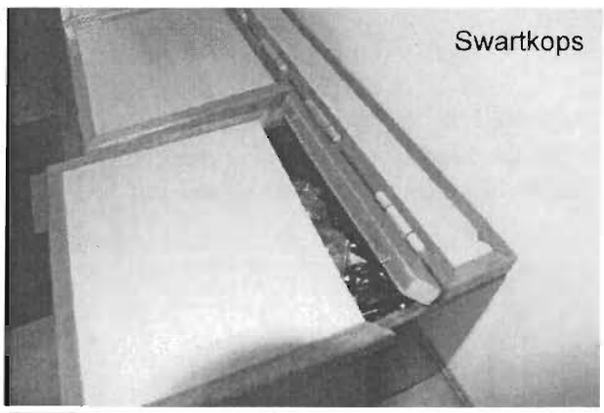
The gas manifolds need to be replaced, they seem not to stand the weather condition.

We suspect that the manifold at Mixed Pickle, already leaks. We lost all the gas at this hut.

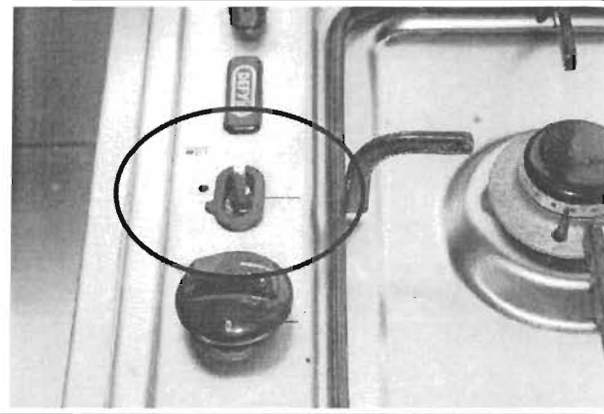


The bench hinges at Kildalkey and Swartkops need some attention.



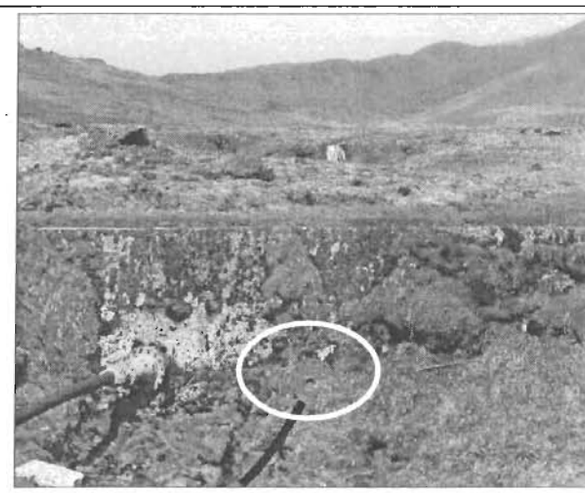


AtMixed Pickle. the knobs for the stove need to bereplaced or re-fitted, since the current knobs areloose and will not switch-off the stove safely.



Installation of storm handles inside the hut. for better handling or pulling the door during strong winds. (Some of the huts already have these handles on the outside of the doors).

A new 1&1/2" screw pipe fitting has been ordered to replace the fitting in use on the dam wall, connecting the 1&1/2" water pipe supply line to the base.



DOC 2.11

From: niek gremmen <gremmen@wxs.nl>
To: Kngxabani-Tikana@deat.gov.za; gremmen@wxs.nl
Date: 2/8/2010 5:09:12 PM
Subject: Re: Rumex acetosella and red fungi on Marion Island

Dear Kusi,

In answer to your questions, and the Marion Island January conservation report, regarding the Rumex acetosella and the red fungus, the following:

Rumex acetosella

Rumex acetosella (Sheep's Sorrel) is native to Europe, parts of Asia and Northern Africa (in biogeographic terminology: it has a Eurasian distribution). It has been introduced, amongst others, in North and South America, Australia, New Zealand, tropical and southern Africa and large parts of Asia, as well as on many southern ocean islands. There is no doubt that on Marion Island it is an alien species.

Sheep's Sorrel can spread by seed, and produces a long-lived seed bank in the soil. It also often spreads vegetatively, and can come up from root fragments. This makes it quite hard to get rid of. It appears that in the last decade or so it has been producing seeds abundantly, in some years at least.

The size of the Rumex patch on the picture looks somewhat larger than what it was some years ago. There are more small patches of Rumex in this same general area, not illustrated in the picture. It does not look like Rumex is spreading rapidly at this moment (although a single photograph is not really a sufficient basis for such a judgement). The main danger, however, is not in an increase in size of this patch, but of spreading the species to other areas.

To minimize the risk of further spread of this species, the least one can do is avoid the area where it grows. It may, however, be a good idea to try and get rid of it. This will remove the risk of further spread by people passing through this area. The only practical method seems to me a regular spraying regime with glyphosate or a similar systemic herbicide. Manual removal, or attempts to dig it up, should be avoided, as this species can easily grow again from small root fragments, which are easily spread around when digging up Rumex plants.

Rather than doing this on an ad hoc basis, each time someone gets worried or uncertain about one introduced species or the other, it would be best to do this within the framework of an integral alien species management program.

Red fungus

The red cup fungus is presumably a native species, of the genus Scutellinia (eyelash cup), or maybe Sarcoscypha (elf cup). This or a similar species is known from several other subantarctic islands (Kerguelen, Macquarie). There is no reason to assume it is not native. I have observed it at many sites on the island.

With best regards,

Niek

Dec 2-11
cont.

From: Carol Jacobs
To: Kusi Ngxabani-Tikana
Subject: Re: Rumex acetosella and red fungi on Marion Island

Many thanks for this, Kus

In view of Dr Gremmen's comments, I suggest you circulate his e-mail to the PEIMC and co-opt members immediately for their input/comments (by a certain date), along with the following proposed amendment of the current overwintering CO's Duty Sheet:

"The sites where Rumex acetosella plants (currently at Gentoo Lake and/or near the base) are present, must be clearly marked and sprayed as soon as possible and then again from August to March with *Glyphosate 360 (refer to attached "directions for use"), on a sunny, relatively wind-still day (3rd priority). The plant should not be dug out, as this could facilitate the spread thereof. The Marion team should be made aware of the Rumex acetosella (at the currently identified site/s), and requested to avoid patches of these plants, and to record them where they are seen, so that these sites may be marked and sprayed as well. This is especially important during takeover, when large numbers of people take short walks near the base."

Should the PEIMC be in agreement with this course of action, an e-mail to the Marion CO can be drafted with the accepted course of action (Dr Gremmen's e-mail could be attached for information). You could also assure him that the "strange" red fungi is, in fact a native species to the island (this is good news for us!).

Of course, Dr Gremmen's e-mail could also still be tabled at the PEIMC meeting, as his proposed "Alien Species Management Programme" supports one of the requirements of the new/revised PEIMP, namely the "Invasive species control and eradication strategy (and budget implications) mentioned in the attached terms of reference.

Kind regards
Carol J

>>> Kusi Ngxabani-Tikana 2010/02/09 09:31 AM >>>
Dear Dr Gremmen

Many thanks for your advice and, it is very much appreciated.

The Committee will discuss the aspects of managing these alien plants in detail during the next PEIMC meeting and will keep you posted of any developments and progress made.

Thanking you kindly
Kusi

>>> niek gremmen <gremmen@wxs.nl> 02/08/10 5:05 PM >>>
Dear Kusi,

In answer to your questions, and the Marion Island January conservation report, regarding the Rumex acetosella and the red fungus, the following:

Rumex acetosella

Rumex acetosella (Sheep's Sorrel) is native to Europe, parts of Asia and Northern Africa (in biogeographic terminology: it has a Eurasian distribution). It has been introduced, amongst others, in North and South America, Australia, New Zealand, tropical and southern Africa and

Doc 2.11a

From: Kusi Ngxabani-Tikana
To: sam Oosthuizen <soosthuizen@deat.gov.za>
Date: 2010/02/04 12:46 PM
Subject: Fwd: Re: 28th PEIMC Meeting & List of Actions
Attachments: minutes27-draft-K.doc

CC: Carol Jacobs; Henry Valentine; Jasmine Arnold; Phamoli, Chuma

Dear Sam

The subject matter refers.

Emanating from the above-mentioned meeting held on 24 November 2009 in our boardroom, you are kindly requested to attend to item 3.1 par. 4 of the attached draft PEIMC minutes. Carol's comments and suggestions under "**LIST OF ACTIONS**", the last paragraph in her e-mail below gives guidance on the proposed course of action.

Should you require any further information or clarity on the matter please do not hesitate to contact either me or Carol.

Thanking you kindly
Kusi

* flies in Officers Pantry and SA

(2010/01/28) Carol Jacobs - Re: 28th PEIMC Meeting & List of Actions

From: Carol Jacobs
To: Jasmine Arnold
Date: 2010/01/28 05:15 PM
Subject: Re: 28th PEIMC Meeting & List of Actions
Attachments: minutes27-draft-K.doc

CC: Danie Smit; Henry Valentine; Kusi Ngxabani-Tikana; Tambudzani Mulaudzi

Dear Jasmine (& Kusi)

LIST OF ACTIONS

With regard the D: EIE's responsibility in the "List of Actions" you sent out, in terms of the "eradication of alien species - flies on the SA Agulhas", it is recommended that the D: A&I contact a reputable pest control company in Cape Town to investigate the matter on the return of the vessel from Antarctica and to provide advice on how to eradicate the flies on board. The proposed course of action/s could then be circulated to the PEIMC and Smit Amandla for approval and then implemented accordingly, preferably prior to the Marion relief voyage departing on 08 April 2010.

I hope this helps.

Kind regards
Carol J

>>> Jasmine Arnold 2010/01/22 09:32 AM >>>
Dear PEIMC and co-opt members

I hope this finds you well.

The year is brand new and full of hope for the whole country as we see the dawn of the FIFA 2010.

Please find attached the Draft Minutes for the 27th PEIMC meeting that was held on the 24 November 2009. We have some possible dates for the upcoming 28th PEIMC meeting that will be held shortly in February 2010, please be so kind as to confirm your availability.

Possible dates:
24; 25 or 26 February 2010
Time: 10h00
Venue: DEA Office, Waterfront

Dec 2116

From: Kusi Ngxabani-Tikana
To: Carol Jacobs; Gideon Van Zyl; Marienne.DeVilliers@uct.ac.za; pjndebru...
Date: 2010/02/25 12:39 PM
Subject: Communication with the huts

CC: Henry Valentine; Jasmine Arnold; Phamoli, Chuma

Dear Colleagues

Emanating from the 27th PEIMC meeting held in November 2009 and the recent Conservation reports regarding the above, Mr Valentine requests to have a separate in-depth discussion tomorrow (26 Feb 2010) after the PEIMC meeting on the matter for a way forward. Attached as a reminder, please see communication (below) in this regard.

Your inputs and advice will be greatly appreciated.

Kind regards
Kusi

Dear PEIMC
>
> I very much echo Nico's views. The matter of safety keeps being raised, and he is quite right. The technology is affordable, portable, and allows management of use with ease. I do think it is time that we moved conservation and safety practise at Marion forward to where it must be. I would imagine that the costs of fitting the base out with 20 GPS and sat phone units and paying for appropriate airtime (pay as you go is available) would be quite easy to meet over a 2-5 year phased in period.
>
> We (as in my group doing alien plant work) hope to show you how effective it is having GPS receivers available all the time. And imagine if we got Cybertracker to do the main aliens on Marion. SANParks has really pioneered the use of this system for their rangers and it is truly amazing.
>
> Regards
>
> Steven
>
> Steven L. Chown
> Professor and Director
> Centre for Invasion Biology
> Stellenbosch University
> Private Bag X1
> Matieland 7602
> South Africa
>
> Tel: +2721 808-2385
> Fax: +2721 808-2995
> E-mail: slchown@sun.ac.za
>
> PA: Anel Garthwaite
> Tel: +2721 808-2705
> E-mail: ag@sun.ac.za
>
> -----Original Message-----
> From: Nico de Bruyn [mailto:pjndebruyn@zoology.up.ac.za]
> Sent: 03 February 2010 16:17
> To: Jasmine Arnold
> Cc: Adriaan Dreyer; Carol Jacobs; Chuma Phamoli; Danie Smit; Henry Valentine; Kusi Ngxabani-Tikana; Justice Matshili; hein.smith@dpw.gov.za; mathoto.thaoge-lefyedi@dst.gov.za; john.cooper61@gmail.com; Candice Levieux; antionetv@sanparks.org; howardh@sanparks.org; Chown, SL, Prof <slchown@sun.ac.za>; marienne.devilliers@uct.ac.za; majodina@weathersa.co.za
> Subject: Re: Conservation Report: Marion Island - January 2010
>
>
> Dear Jasmine,
>
> Thank you for the report. Well done to Derek for his efforts in this

> regard, despite the heavy load of his remaining field duties.
>
> I concur with John that the Rumex next to Gentoo Lake requires action.
> This area is an especially favoured one for moulting elephant seals and I
> remember noticing that the growth of the patch (in the photograph) appears
> to grow aggressively during this period (January/February). Of course the
> movement of elephant seals that moult around Gentoo Lake is also a concern
> for the spread of this alien.
>
> Furthermore, I believe the issue raised as an afterthought 'P.S.' by John;
> that of Derek not owning a GPS device, runs deeper than the mere
> 'surprise' he expressed. As a past expeditioner I have long been concerned
> with the relative lack of simple field safety and communication at the
> island (especially at the huts/ away from base). I understand that this is
> a recurring issue, but that in itself should illustrate the seriousness of
> the issue. While the carrying of a GPS device by each individual remains
> debatable in my mind; technological advances in epirp, satellite
> communications, VHF functionality etcetera at ever decreasing cost leaves
> me astounded that more has not been done to ensure the safety of the hard
> working personnel on the island in an emergency situation. A considerable
> amount of potentially devastating problems in future can be effectively
> limited/reduced by addressing these relatively simple safety/communication
> issues.
>
> Kind regards
> Nico
>
>
>
> > Dear PEIMC and co-opt members
> >
> > The subject matter refers.
> >
> > Please see attached the January 2010 Report as received from the Team
> > leader on Marion Island, please forward your comments on or before the
> > Wednesday, 10 February 2010 so I can forward them to Derek (Conservation
> > Officer).
> >
> > However, if I do not receive any comments from you, I will accept that you
> > are pleased with the content of the report.
> >
> > Kind regards
> > Jasmine
> >

CONSERVATION OFFICER REPORT: MARION ISLAND 66 EXPEDITION

To: Department of Environmental Affairs and Tourism
Directorate: Antarctica and Islands

Attention:	Eric Buenk
Organization:	DEA&T (Cape Town)
Fax No:	021 – 405 9415
Tel No:	021 – 405 9424

From: Marion Island - 66 Team

From:	Derek van der Merwe
Position:	MRI Sealer & DEAT Team Conservation Officer
Tel No:	(012) 351 1805
Fax No:	(012) 351 1705
E-Mail:	dsvdm23@gmail.com

No of Pages	9

Subject:	Conservation Officer Report January 2010

REPORT

Conservation Officer report for January 2010:

Contents:

1. Base

A few pieces of sheet metal were picked up on the other side of the new base. I tried to locate the source of these metal sheets, however I could not find anything. The grass under the catwalks is starting to protrude through. Commencement to cut this grass is planned in the upcoming month.

2. Wreckage

Very little beach debris was picked up over the past month. The little that has been collected has been passed on to the birders to be weighed and catalogued. Johann Hoffman also tried to locate the very large buoy in Santa Rosa valley on the coast, however his efforts were in vain and we couldn't get a GPS position so that it could be picked up. I will try see if I can locate it, however I do not have a GPS but will try lend one from the birders.

3. Alien species

- Mice

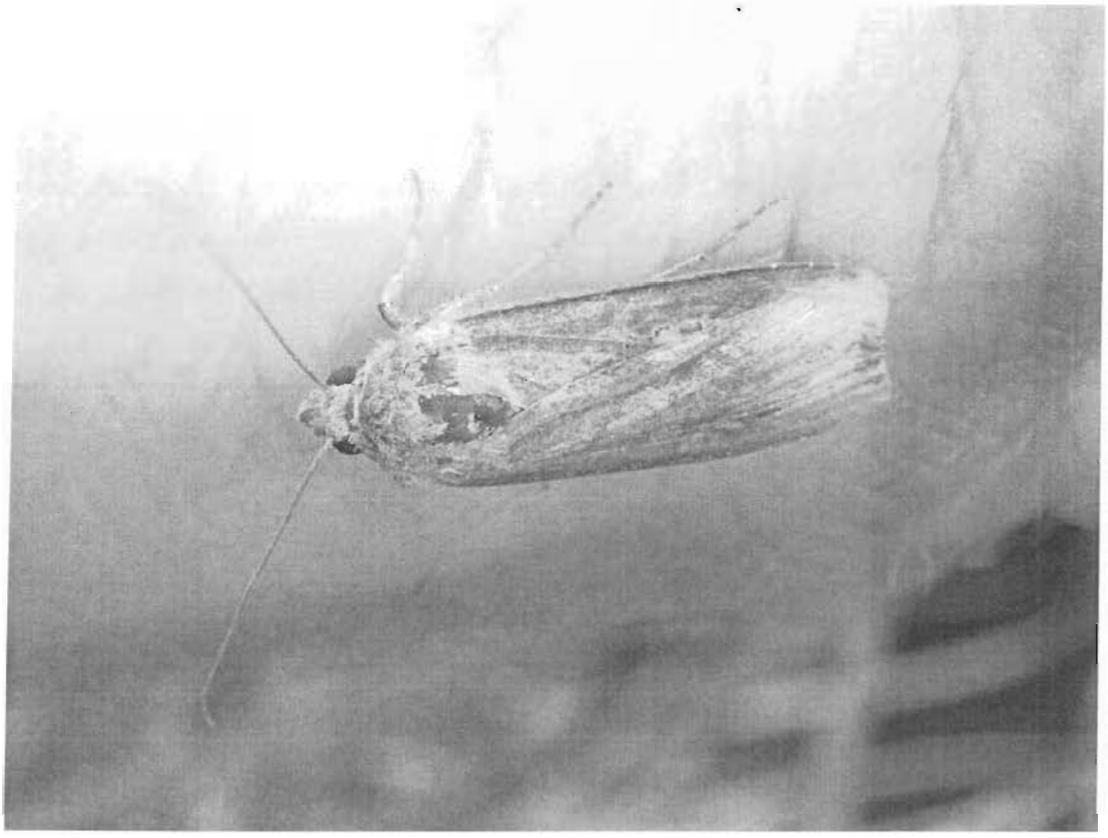
There were no reported mice kills this month.

- Isopods

Due to bad weather no isopods have yet to be collected. I will be out of base during the next couple of days, so I have asked Asanda Phiri to try and collect during the next few days.

- Lepidoptera

I found one dead moth as well as a live one between Bullard (South) beach and Killer whale Cove. I was aware of the flightless moths found on the island, however this was a winged moth and could fly. Attached is a photo of the moth.



- Diptera

Asanda Phiri found a dead blow fly (Calliphoridae) in one of the egg boxes in the kitchen. I suspect the fly died in the container *en route* to Marion. I have collected and stored the fly in alcohol.

- Alien grasses/vegetation

I am pleased to hear that the spreading of the alien grass at ships is noted with concern. I have continued to spray the designated areas during the past month! The grass at Ships was sprayed on the 12th of January and the grass at base seems to be dead however I did spray the area on the 14th of January. I am however a little concerned about the Rumex near Gentoo Lake It seems to be growing rapidly. During takeover I was not requested to spray it! Therefore I would like to know if I must spray this area.

Fig.1 Rumex at Gentoo lake.

I also found this strange red fungi just on the other side of the new base. Below is a photo.

Fig.2 Fungi seen near base.

-Vagrants

There have been no reported vagrants sighted this month.

4. Day trips

Table 1 summarises the sites visited between 1st January 2010 and the 31st of January 2010.

Table 1: Summary of *day trips* undertaken between 1st January 2010 and the 31st of January 2010.

	1st January and the 31st of January 2010
Destination	**Amount of (return) trips - (thus, amount of times route was travelled)**
v.d. Boogaard and Rockhopper	46
Skua Ridge and Duikers Point	14
Ship's Cove	6
Long Ridge	0
Sealer's Beach	5
Goney Plain	2
Trypot and Fault	43
Macaroni Bay	11
East Cape	3
Tafelberg	0
Piew Craggs	0
Nellie Humps	0
Third Sister	0
Archway	8
Freds & Tates Hills	0
Juniors	0
Cape Davis	1
Log Beach	2
Bullard	5
Katedraal	2

5. Hut (personnel) nights

Table 2 summarises the amount of nights spent by team members in the various huts around the island between 1st January 2010 and the 31st of January 2010.

Table 2: Summary of amounts of nights spent by team members in the various huts between 1st January 2010 and the 31st of January 2010 (R = Repetto's; CD = Cape Davis; MP = Mixed Pickle; SK = Swartkop; RK = Rook's GH = Grey Headed; WT = Watertunnel; K = Kildalkey; KD = Katedraal)

1st January 2010 and the 31st of January 2010											
		Hut nights									
Team member	Research Program	R	CD	MP	SK	RK	GH	WT	K	KD	Tot
Asanda Phiri	CIB Stellenbosch/US aid	1	0	1	0	0	0	0	0	0	2
James Wilshere	CIB Stellenbosch/US aid	4	0	3	1	0	0	0	0	0	8
Ben Dilley	PFIAO birder	0	0	1	2	0	4	1	1	0	9
Marlene van Onselen	MCM birder	0	2	1	3	1	2	1	2	0	12
Delia Davies	MCM birder	0	0	1	2	0	3	1	1	0	8
Derek van der Merwe	MRI (UP) sealer	2	0	1	0	0	0	2	1	0	6
Martin Postma	MRI (UP) sealer	2	0	10	0	0	1	0	1	0	14
Mia Wege	MRI (UP) sealer	0	3	3	0	1	0	6	3	0	16
Kholokile Cita		0	0	0	0	0	0	0	0	0	0
Johann Hoffman		0	2	1	3	1	2	1	2	0	12
Mark White	DEA&T	0	0	0	0	0	0	0	0	0	0
Mpho Koalepe	SAWS	0	0	0	0	0	0	0	0	0	0
Jack Mathabata	SAWS	0	0	0	0	0	1	0	0	0	1
Dianah Mabizela	SAWS	0	0	0	0	0	0	0	0	0	0
Riaan Laubser	Urban Brew	2	2	0	0	0	0	0	6	0	10
Marianne Fraser	Urban Brew	2	2	0	0	0	0	0	6	0	10
Innocent Mtembu	Urban Brew	2	2	0	0	0	0	0	6	0	10
Total hut nights/hut		**15**	**13**	**22**	**11**	**3**	**13**	**12**	**29**	**0**	**118**

6. Bird strikes

There have been no reported bird strikes this month.

7. Entanglements

An effort was made to try and spot the entangled female sub-Antarctic fur seal seen at Sickle Cove, she was however not seen, we will continue to monitor this area in the attempt to remove the entanglement.

8. Urban Brew Team

The Urban Brew Team came to me very concerned in regard to filming the historical sights. I was not aware that these sights were Zone 4 areas however after consulting the management plan I found out that they were. I could not find any list of these Historical sights except for a Map I eventually found listing 4 areas. Namely, Cape Davis, Swartkops, Ship's Cove and Sealers cave. I have since informed them that these are the only Historical Sights I could find and that they are please not to disturb these areas. I would like to know if there is a list of these areas. There have been no other concerns regarding the Film Crew.

9. Other concerns

Waste

Sloppy - We have only deposited 1 sloppy bucket full's into the ocean this month and the teams efforts are much appreciated.

Conclusion

This concludes the Conservation Officer report for January 2010.Thank you for all the feedback concerning my November and December reports. It is much appreciated! I look forward to future feedback.

Many thanks,

Derek van der Merwe M66

Doc 3.1
Next PEIMC meeting Feb 2010

From: Carol Jacobs
To: John Cooper; Kusi Ngxabani-Tikana; Samuel Oosthuizen
Subject: Re: Seabirds Landing on Ships

Hi Kusi

I am in agreement with your proposed course of action. Perhaps along with the information to be tabled you could table a draft implementation plan from the D: A&I (e.g. printing of X amount of posters for ship, Marion, etc.) for the committee's consideration.

Kind regards
Carol J

>>> Kusi Ngxabani-Tikana 2010/01/29 11:34 AM >>>
Dear John and Carol

Thank you for the advice regarding the subject matter. These indeed are useful tools and thought it would be feasible to table the documents during the next PEIMC meeting for views and advice for further action thereof.

Kind regards
Kusi

>>> Carol Jacobs 01/14/10 1:28 PM >>>
Dear John (& Sam/Kusi)

Many thanks for these useful tools. I am in support of your various suggestions.

Kusi/Sam, please advise should you embark on any course of action as proposed by John below (e.g. printing of posters), so that we don't duplicate.

From an environmental perspective, I will probably incorporate some of the slides/information into our environmental presentation for the SANAE & Marion voyages.

Kind regards
Carol J

>>> John Cooper <john.cooper61@gmail.com> 2009/12/25 04:27 PM >>>
Dear friends

While browsing the IAATO web site (www.iaato.org) today I found new to me the attached poster and Power Point presentation.

You might like to consider supplying them both to the Captains of the various vessels that visit the Prince Edward and Tristan-Gough groups of islands and/or to the Conservation Officers/Environmental Inspectors/Fisheries Observers travelling aboard them.

Additionally, the poster could usefully be printed out in colour and displayed on notice boards on these ships, as well as being added to the SANAP sailing instruction documents.

As far as I can see the advice given seems very sensible, and of course, the SA Agulhas and Africana at least are already strict about instituting a black-out policy when near the islands.

Kusi and Clare: you might also think it worthwhile to send the documents for background knowledge to members of the PEIMC and T-BAG.

Carol/Steve and Doug: this advice could also perhaps be referred to (or included) in the new management plans for the Prince Edwards and for the Gough-Inaccessible World Heritage Site that are currently being written/finalized.

Perhaps the only thing I would add is that the advice given on reducing outside lighting to a minimum becomes even more important to follow on foggy/misty nights and/or nights with no moon.

Seasonal greetings to all!
John
****

John Cooper
Information Officer
Agreement on the Conservation of Albatrosses and Petrels
www.acap.aq

Honorary Research Associateships:
Animal Demography Unit, University of Cape Town
Centre of Excellence for Invasion Biology, Stellenbosch University
Honorary Conservation Officer, Tristan da Cunha

Tel: +27-(0)21-685-1357
Mobile: +27-(0)82-701-3379

9, Weltevreden Avenue
Rondebosch 7700
SOUTH AFRICA

Carol Jacobs
Assistant Director
Environmental Impact Evaluation (Antarctica & Islands)

Department of Environmental Affairs
Private Bag x 447
PRETORIA, 0001

Tel: +27 (0)12 310-3510
Fax: +27 (0)12 320-7539
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
There are only two ways to live your life ~
One is as though nothing is a miracle ...
The other is as if everything is.
(Albert Einstein)
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

CC: Clare Stringer; Danie Smit; Doug Gilbert; Henry Valentine; James Glass; Jasmine Arnold; Norman Glass; pryan31@gmail.com; Richard Cuthbert; SL Prof Chown; Tambudzani Mulaudzi; trevor glass

DOC 3.2.1

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the March 2010 SANAP Marion relief voyage (voyage 149) should describe their plans in detail on this form and submit it by no later than 28 January 2010 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

H R Valentine Tel 021-4059405

2. AFFILIATION/INSTITUTION/GROUP

DEA – DIRACTORATE: ANTARCTICA AND ISLANDS

3. NAME OF RESEARCH PROJECT/PROGRAMME

MANAGEMENT OF THE ANNUAL RELIEF VOYAGE ACTIVITIES

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

Mr. J A Dreyer	DCO
Mr. G Magagula	ADCO
Mr. AN OTHER	General technician
AN OTHER	Chef

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Berths onboard SA Agulhas during voyage down and back
Helicopter flights from the ship to base and back
Accommodation on Marion Island for the duration of the take-over period.
Helicopter flights to the field huts for inspection and re-stocking purposes

Special diets: Garlic allergy for 1 person

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details). Detail motivation for zones 3 & 4 are required.

Mr. J A Dreyer	Zone 1 – 4 (zone 4 should it be necessary)
Mr. G Magagula	Zone 1 - 4 (zone 4 should it be necessary)
Mr. AN OTHER	Zone 1, 2 & 3
AN OTHER	Zone 1, 2 & 3

7. NAME OF COMPILER – SIGNATURE – DATE

J A Dreyer	JA Dreyer	27 January 2010
.....	.....	.....

Doc 3.2.2

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the March 2008 SANAP Marion relief voyage (voyage 142) should describe their plans in detail on this form and submit it by no later than 11 February 2008 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Mr DWJ Smit (P/Bag X447, Pretoria, 0001)
Tel: 012 310-3659/69
Fax: 012 320-7539
E-mail: dsmit@deat.gov.za

2. AFFILIATION/INSTITUTION/GROUP

Department of Environmental Affairs (DEA)
Directorate: Environmental Impact Evaluation (Antarctica and Islands), Pretoria

3. NAME OF RESEARCH PROJECT/PROGRAMME

Environmental Control Officer – April-May 2010 Marion Island Relief Voyage

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

AN Other (TBC by 05 February 2010 – awaiting appointment from HR)

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

GENERAL:

- Standard protective clothing issue for 1 person
- Accommodation for 1 person on board and ashore for the duration of the voyage

- Standard Boot Washing Ceremony arrangements (approx. 2-4 hours) for all SANAP participants on board the SA Agulhas
- Helicopter flights to and from the base
- Helicopter flights to ALL field research huts for inspection purposes
- Inspection of the current (old) base and associated infrastructure. and the new base and its associated infrastructure
- Checking of the offloading and unpacking of all relief and construction containers, equipment and materials
- Ensuring that there is no incineration of all burnable waste (all waste to be returned to South Africa, as is standard practice for Antarctica and Gough)
- Inspection of installed new scientific huts and old hut site scars
- Inspection of HMO/UKZN equipment in accordance with DEA Environmental Authorisation

COUNTRY CLEAN-UP AIR SUPPORT REQUIREMENTS
(with assistance from John Cooper):

1. Removal of cached scaffold poles (27) and wooden planks, as well as wooden platform and scaffolding at the hydroshack, and scaffold poles at Repetto's Hill Hut (1, plus planks), Cape Davis Hut (3), Kampkoppie rondavel site (8; but perhaps first by hand to Mixed Pickle Hut), Swartkop Hut (7), Rook's Peninsula rondavel site (8; but perhaps first by hand to Grey-headed Albatross Ridge Hut) and Watertunnel Stream Hut (3). Those at huts to be removed during hut restocking, those at the hydroshack and rondavel sites will require dedicated flights with strops and/or nets. Alternatively, the poles can be first cut into shorter lengths and removed inside the helicopter.

2. Removal of all remaining structures (metal base frames and stakes) at the three defunct repeater station sites on Snok (2) and Repetto's Hill.

3. Removal of cached mooring rope at Hooker Cove.

4. Removal of partially buried power cable which runs from near the dam to the old Base. To be dug/pulled out, coiled in cut sections and removed by air.

5. Removal of redundant water pipe buried behind E-base towards Junior's Kop. To be dug out, coiled in cut sections and removed by air.

Special diets: **None**

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details). Detail motivation for zones 3 & 4 are required.

Zone 1-2
(Site visits to conduct final inspection on the status of the new scientific hut sites)

7. NAME OF COMPILER – SIGNATURE – DATE

.....CA Jacobs..... .... 2010/01/29

DOC 3.2.3

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the March 2010 SANAP Marion relief voyage (voyage 149) should describe their plans in detail on this form and submit it by no later than 28 January 2010 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

G.E.G. LOUW
(021) 402 2045 or 0827491529

2. AFFILIATION/INSTITUTION/GROUP

DEPARTMENT OF PUBLIC WORKS

3. NAME OF RESEARCH PROJECT/PROGRAMME

REPAIRS, MAINTENANCE AND PRECONSTRUCTION PROGRAMME

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

MANAGEMENT TEAM:

1 G. LOUW	TEAM LEADER
2. G. H. SMITH	ELECTRICAL. MANAGER
3. A. ABRAHAMS	BUILDING MANAGER

MAINTENANCE TEAM:

4. A. SCHUTTE
5. E. BIZAARE
6. I.S. VAN DER BERG
7. G. FORTUIN
8. N. MENTOOR
9. P.J. GROENEWALDT
10. J. COERT
11. B. VAN LOGGENBERG
12. W.H. VAN DER WESTHUIZEN

13. A. HENDRICKS (Amin)
14. A. LEEMAN
15. A. MAGWA
16. M. MAHE
17. J. van NIEKERK
18. M.E. DALIWE
19. A. PETERSEN (Adinaan)
20. M. DIKE
21. PRIVATE CONTRACTOR

I. **Provision must be made for seven Muslim faith team members.**
II. **All the members are males no females.**

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

WORK SCHEDULE:

MARION ISLAND RESEARCH BASE: MAINTENANCE/CONSTRUCTION

OLD BASE & HUTS

A. General maintenance to building, mechanical and electrical installations which entails: Repairs to roofs, walls, floors, windows, structure and doors. (No specific requirements or requests have been received form the island)

NEW RESEARCH BASE: (CONSTRUCTION)

B. Preconstruction to new research base, to be operational for the final construction phase from August to November 2010.

AIR SUPPORT REQUIRED:

- Air support will be required to transport personnel from the ship to the Island and vice versa.
- Air support will be required to offload, from the ship, all the necessary construction materials, maintenance containers and equipment for the new base.
- Air support will be required for materials and equipment to and from all the scientific huts.
- Air support will be required for the removal of redundant crating from the site.
- For the purpose of progress reports, air support will be required for aerial photography of the site, after the offloading of the materials and at

the conclusion of the maintenance/construction period.

- Air support will be required to backload construction materials, maintenance containers and equipment from the island to the ship

6. NAME OF COMPILER – SIGNATURE – DATE

Signature:

G.E.G. Louw
PROJECT MANAGER
Date: 29 January 2010

Doc 3.2.4

SANAP 3
MARION

Version: 29.01.2010

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the April 2010 Marion relief voyage (voyage 149) should describe their plans in detail on this form and submit it by no later than 29 January 2010 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Capt V.R.(Dick)Hilland
hilland@iafrica.com
mobil: 0824546646

2. AFFILIATION/INSTITUTION/GROUP

TITAN HELICOPTER GROUP
14817 Pearl Street
Tamsui Industria
GEORGE
P.O.Box 10326
South Africa

3. NAME OF RESEARCH PROJECT/PROGRAMME

MARION Construction and Take Over Voyage 149

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

1.Capt V R Hilland	**Project Manager/Pilot**
2.Capt H.Barnard	**Senior Pilot**
3.Capt A.Walker	**Pilot**
4.F/O Janneman	**First Officer**
5.J.Britton	**Senior Engineer**
6.Vladim	**Engineer**
7.M.Alexandroi	**Engineer**
8.B.Hilland	**Fireman**
9.C vd Merwe	**Technical Assistant**
10.S.Mbubwana	**Technical Assistant**

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Tiatan Aviation provides aerial support for Deat .During the voyage it is of outmost importance that the crew stays as close as possible together and close to the hangar, to be contactable via phone at any time to attend to any emergency, which could occur.

Otherwise Titan is self supporting and will utilizes the hangar facilities and the allocated space on board the SA Agulhas.

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details). Detail motivation for zones 3 & 4 are required.

Titan requires all relevant permits for all team members to fly and operate in the by DEAT specified zones.

7. NAME OF COMPILER – SIGNATURE – DATE

Capt V.R.Hilland.....signed on board SA Agulhas 21.01.2010

last update date ! 29.01.2010 **69 days before departure.**

TITAN Helicopter Crew for Voyage : V 149 Marion

From 08.04.2010 to 20.05.2010 43 Days

A/C. 1. KA 32 ZS - ? 2. B 212 ZS -RGV

Name:	Function/Position:	born:	Fire:	Med:	Pass:	Cloth:	Ps.Data:
1. Capt.D.Hilland	Project MG. / Pilot	14.12.40	X	19.11.10	X	X	X
2. Capt B.Barnard	Senior Pilot	18.04.62	X	required	X		X
3. Capt. A.Walker	Pilot 212	10.02.53		required			X
4. F/O Janneman	F/O on Ka 32	02.11.84		required			X
5. J.Britton	Senior Eng.	27.09.47	X	20.11.10	X		X
6. Vladim	KA 32 Eng	09.08.69		required			X
7. M.Alexandroi	KA 32 Eng.	08.04.67	X	required	X		X
8. B.Hilland	Fireman	22.10.45	X	20.11.10	X		X
9. C.vd Merwe	Technical Assistant	08.04.65	X	required	X		X
10. S.Mbubwana	Technical Assistant	21.10.76		required			X

DOC 3.2.5

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the March 2010 SANAP Marion relief voyage (voyage 149) should describe their plans in detail on this form and submit it by no later than 28 January 2010 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Mr J Stander
REGIONAL MANAGER: Western and Northern Cape, Antarctica and Islands
South African Weather Service
Tel: 021 934 0836
Fax: 021 934 0450

2. AFFILIATION/INSTITUTION/GROUP

SOUTH AFRICAN WEATHER SERVICE

3. NAME OF RESEARCH PROJECT/PROGRAMME

Marion Island Weather Office

4. FULL NAME(S) OF PARTICIPANTS

*(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the **group** leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)*

Group Leader: Segale Motsetso
Lara Munkelt

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

1. SA AGULHAS

Routine three-hourly surface observation will be carried out by the SAWS take-over personnel and met team members for the duration of the voyage. Should the Met Office become inaccessible owing to bad weather, we request that South African Weather Service personnel on duty be permitted to conduct observations from the bridge, using the SA Agulhas' observation and communication facilities.

Ms Lara Munkelt will provide a forecasting service.

2. Buoy Deployments

There are three buoys to deployed on this voyage. Positions: 35.5°S (longitude may vary), 36°S 22°E and 40°S 27°E.

3. REPLACEMENT OF VAISALA ANTENNA STAND

The stand for the Vaisala antenna on the roof of the base has rusted and now needs to be replaced. A replacement stand will be sent to Marion and the work can be carried out by the met teams, overseen by the SAWS group leader. We do, however, request the technical assistance of two persons from the NDPW.

4. INSPECTION

Segale will carry out an inspection of the offices and other SAWS meteorological installations.

Special diets: None

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details). Detail motivation for zones 3 & 4 are required.

Permits are required for Zone 1&2 are required for both Mr. Segale Motsetso and Ms Lara Munkelt.

7. NAME OF COMPILER – SIGNATURE – DATE

SL Mkatshwa..... ..... 26/01/2010.....

DOC 3.2.6

SANAP 3 MARION AND PRINCE EDWARD

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed). Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

R.J.M. Crawford
Tel: 021 402 3140
Email: crawford@deat.gov.za

2. AFFILIATION/INSTITUTION/GROUP

Department of Environmental Affairs, Marine & Coastal Management, Private Bag X2, Roggebaai, 8012

3. NAME OF RESEARCH PROJECT/PROGRAMME

Visit to Prince Edward Island, April 2010 TRACKING CRITICAL SEABIRD POPULATIONS @ PRINCE EDWARD ISLANDS

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group)

BM Dyer
G Jones
AB Makhado (group leader)
L Visagie ♀
J Visagie

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

LOGISTIC DETAILS

Transport

The SA *Agulhas* will be operating at Marion Island during the 66th Annual Relief Voyage. Helicopter support is required to drop five scientists and their gear on Prince Edward Island and to collect them and their gear after eight days.

Prince Edward Island

It will be necessary to survey both the eastern and western plateaus of this island. The team for the visit will consist of two persons. It is requested that the team spend eight days at the island to accomplish all the objectives.
Two options are presented for consideration:
1) the whole team and gear get dropped off and collected at a site close to Cave Bay;
2) all but two of the team are dropped at Cave Bay. The helicopter then proceeds to Kent Crater in the west and drops the remaining two team members and their gear there before returning to Marion or SA *Agulhas*. Team members dropped at the west of Prince Edward Island would not need to be collected there but would walk back to the main site near Cave Bay after completing their work on the western plateau.
If option 2 is not practical, two team members will hike in both directions to the western plateau to survey that section of the island.
At the conclusion of the overall survey of the island, the entire group will be collected from the designated site near Cave Bay.

Equipment and communications

MCM will provide dedicated outer protective clothing, camping gear, survey equipment and all food for the Prince Edward Island (PEI) survey. A separate issue of clothing will be used by the PEI party when they transfer to Marion Island. Use of DEAT protective clothing ("takeover issue") is requested for all survey personnel transferring from PEI to Marion Island. While at PEI, the team will have two BGAN Inmar Satellite Telecommunication Systems capable of contacting the SA *Agulhas* and Marion Island. It is requested that a hand held radio be made available for the team travelling to the western plateau of PEI, as a back-up for direct communication with the ship or Marion base. All members of the PEI team will ensure they have necessary survival gear (space blanket and pencil flare set), a torch and a GPS. The team will take a first-aid kit that will include material to treat minor burns, blisters, bird/seal bites, sprains and infections.

A portable toilet system will be used by the PEI team at Cave Bay. All solid waste will be removed from Prince Edward Island via the ship to Cape Town.

CONSERVATION ISSUES

Procedures to be adopted to ensure full compliance with the Prince Edward Islands' Environmental Management Plan are set out in detail in Annex 1.

RESEARCH ACTIVITIES

Seabirds

A justification for the work on seabirds that is proposed to be undertaken in April 2010 is presented in Annex 2. Details of methods that will be used are given in Annex 3.

Estimates of numbers of seabirds and their distribution

Counts will be made of active nest sites of all five albatross species breeding at PEI (Wandering, Grey-headed, Indian Yellow-nosed, Sooty, Light-mantled). Counts will also be made of the numbers of chicks of these species that have survived to April, which will give some indication of breeding production. GPS positions will be recorded for most nests of Wandering Albatross for comparison with 2001. The distributions of breeding colonies of the other species will be mapped.

Numbers of King Penguins incubating or brooding and numbers of King Penguin chicks will be counted. All colonies will be mapped. Although Macaroni Penguins will not be breeding, the extents of breeding areas will be gauged through GPS mapping of the outer extents of breeding areas. Care will be taken not to disturb breeding birds. It may also be possible to measure densities of old nests. Rockhopper Penguins also will have stopped breeding and Gentoo Penguins will not have started breeding. Notes will be kept of observations of these species (approximate numbers for Rockhopper Penguins and accurate numbers for Gentoo Penguins) and their locations. Brown Skuas, Northern Giant Petrels and Southern Giant Petrels will not be breeding but numbers of these birds present at the island and their locations will be recorded.

Searches will be conducted for Crozet Shags, Kelp Gulls, Kerguelen Terns and Antarctic Terns. Their numbers, maturity categories and locations (using GPS) will be recorded. Counts will be made of numbers of Lesser Sheathbills at the island.

The presence, distribution, relative abundance and breeding status of burrowing petrels will be investigated by visual observations, spot-lamping, tape playbacks and examination of bird remains in skua territories. Morphological and moult data will be collected for all burrowing petrels caught. Attempts will also be made to continue the mapping of the distribution of burrows of White-chinned Petrels (begun in December 2008) and assessment of their densities. Attempts will be made to locate Grey Petrels, to describe their main breeding habitat and to obtain estimates of the density of nests of this species (listed on the appendix of ACAP) at several localities.

Population demography

Searches will be made for banded Wandering and Indian Yellow-nosed Albatrosses. Observations of banded birds for any other species will also be recorded. The status of any banded bird seen (e.g. breeding, loafing) will be recorded.

The following bands will be deployed on chicks: Indian Yellow-nosed Albatrosses 150 metal only, 50 PVC and metal; Grey-headed Albatross 150 metal only; 50 PVC and metal; Sooty Albatross 50 metal only. Attempts will also be made to band up to 100 adult Indian Yellow-nosed Albatrosses (both metal and PVC bands). All burrowing petrels caught will be fitted with metal bands before release. The sites of deployment of bands will be recorded using GPS.

Wing and tail moult will be recorded for all adult albatrosses handled.

At-sea distributions and diets

PTTs will be attached to up to ten Indian Yellow-nosed Albatrosses to gain information on their distribution at sea during the chick-rearing stage. At either PEI or Marion Island, attempts will be made to deploy three PTTs on female Southern Giant Petrels and three on female Northern Giant Petrels.

No directed diet sampling will be undertaken on any seabirds but regurgitations obtained from handling birds will be collected.

Other activities

GPS of accessible historical sites (known or discovered) will be recorded. An inventory and photographic record of surface-exposed artefacts will be made, without moving or otherwise disturbing the artefacts.

6. TYPE OF PERMIT/S REQUIRED

(Zones 1,2, 3 and 4 – Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details)

Prince Edward Island

Special Entry and Zone 4 permits are requested for the five persons listed in Part 4 of this application.

Research/collection permits are requested for seabird research as follows:

- Catching and banding with metal and inscribed PVC bands: Indian Yellow-nosed Albatross (300, 1% of population); Grey-headed Albatross (200, 1% of population); Sooty Albatross (50, 2.5% of population); burrowing petrels (maximum 200, estimated to be much less than 1% of population). Estimated handling time is less than 1 min for albatrosses and about 5 min for burrowing petrels;
- Catching banded seabirds to read the band numbers (in all instances expected to be much less than 1% of the population for less than 1 min per bird);
- Catching and attaching PTTs to up to ten Indian Yellow-nosed Albatrosses which is less than 1% of the population. Handling time is some 5 min per bird;
- Collecting diet samples regurgitated during handling of albatrosses and burrowing petrels (= 100 samples). Proportion of populations involved will be much less than those for numbers banded (see above). No additional handling time is involved.
- Collecting freshly dead carcases of seabirds for transport to Cape Town (maximum 10) for investigation of cause of death.

R.J.M. CRAWFORD 29 October 2009

Annex 1

COMPLIANCE WITH THE PRINCE EDWARD ISLANDS ENVIRONMENTAL MANAGEMENT PLAN AND RELATED CONSERVATION ISSUES

It is intended that the various provisions of the new Prince Edward Island Environmental Management Plan (PEIEMP) will be strictly followed. Any other specific requirements placed on the survey on the advice of the Prince Edward Islands Management Committee (PEIMC) will also be strictly followed. Full compliance will be achieved by careful adherence to the following major actions and activities:

1. Presence on the survey of a Conservation Officer (CO) appointed by DEAT on the advice of the PEIMC. The survey's CO based on Marion Island will liaise closely with the M67 (2010) DEAT CO.

2. The CO will make electronic copies of the PEIMP available to all team members prior to sailing. They will then be expected to become reasonably familiar with its contents.

3. Prior to the southward voyage a meeting will be held in Cape Town for members of the PEI survey team at which information on management of the Prince Edward Islands and its biota will be given by the CO. A further briefing session will be given by the CO aboard the ship on its southward voyage.

4. Especial care will be taken in relation to quarantine procedures. These will include presence of rat guards, a de-ratting certificate and pre-sailing fumigation of the *SA Agulhas* internal spaces, packing of all supplies (especially food) in secure containers in closed, rodent and pest-free rooms, provision of fly traps and poison-bait stations on the *SA Agulhas* and inspection and necessary cleaning (wheels and interiors) of all ship's rubber ducks and the helicopters taken aboard the vessel. The exterior decks of the ship will be hosed down on the southward voyage to flush out any crawling insects that may be present (such as crickets). All survey personnel will be required to ensure their personal clothing and equipment has been properly cleaned before boarding the ship. All survey supplies and equipment will be packed prior to sailing in sealed containers inside closed rooms. Supplies will not be left on the dock-side or ship's exterior spaces unattended or for any length of time in order to avoid the deposition of avian faeces. Any such faeces will be immediately washed off on discovery.

5. The Prince Edward Island team members will be issued with new protective clothing, packs, tents, camping equipment, etc. on board the *SA Agulhas*. Prior to this, the above items will be kept in their original wrappers as purchased and kept packed in sealed containers.

6. All protective clothing, back and day packs, camera/video bags, tripods, walking sticks, etc. (including the newly-issued Prince Edward Island items) will be inspected aboard ship on the southward voyage and all foot wear will be cleaned in a bleach solution and then inspected by the CO as part of a "boot-washing ceremony". Camera/video bags, tripods and walking sticks of the Prince Edward Island team will be re-inspected aboard ship by the Prince Edward Island CO, before a subsequent landing on Marion Island.

7. No fresh fruit or vegetables will be taken to either island. Emptied food containers (cans, bottles, packets, etc.) will be placed in sealed containers for removal from the island and eventual disposal in continental South Africa and not washed out, so as to reduce the amount of grey water produced and disposed of on the island, especially that containing particulate matter.

8. A portable toilet with a bag system will be taken to Prince Edward Island, and all solid human wastes and left-over food will be removed in sealed containers from the island for eventual disposal within continental South Africa. Grey water from cooking and washing activities and urine will be deposited in the inter-tidal zone whenever feasible. Efforts will be made to reduce the amount of particulate matter (e.g. rice grains) in grey water as much as is feasible, and the use of a simple filtering system for this purpose will be used. Campers at Kent Crater will remove their solid human waste from that site.

9. No field samples, camping equipment, unused food or protective clothing (including foot wear) used ashore by the Prince Edward Island party will be taken ashore on Marion Island.

10. Cigarette butts are to be kept on one's person. No littering of any sort is permitted.

11. Moving or tampering with historical artifacts at historical sites is not permitted, nor is leaving graffiti anywhere.

Annex 2

JUSTIFICATION FOR A SURVEY OF SEABIRDS AT THE PRINCE EDWARD ISLANDS IN AUTUMN OF 2010

Seabirds in the Southern Ocean are threatened *inter alia* by fishing, climate change and altered ecosystem processes (e.g. Brothers 1991, Cunningham and Moors 1994, Bingham 1998, Guinet *et al.* 1998). At South Africa's Prince Edward Islands, the conservation status of seabirds has deteriorated since the 1980s, with populations of several species decreasing (Crawford and Cooper 2003). Twelve of the 16 surface-nesting seabirds there are now regarded as Threatened or Near Threatened, either regionally or globally (Barnes 2000, BirdLife International 2000, 2004). The main causes of the seabird population decreases are thought to be by-catch mortality of albatrosses and petrels in long-line and other fisheries (e.g. Nel *et al.* 2002, Petersen *et al.* 2009) and environmental change influencing the availability of prey to penguins and the Crozet Shag (Cormorant) *Phalacrocorax [atriceps] melanogenis* (Crawford and Cooper 2003). Increasing populations of fur seals *Arctocephalus* spp. (e.g. Hofmeyr *et al.* 2006) also may be having an impact on some seabird populations at the Prince Edward Islands (Guinet *et al.* 1994). Introduced animals have depleted several populations (e.g. Bester *et al.* 2000). Disease may also have had an impact (e.g. Cooper *et al.* in press).

South Africa ratified the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) in 1982 and the Agreement on the Conservation of Albatrosses and Petrels (ACAP) in 2003. ACAP was developed in terms of the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals), to which South Africa acceded in 1991. These international instruments, together with South Africa's Sea Birds and Seals Protection Act of 1973, Marine Living Resources Act of 1998, National Environmental Management: Protected Areas Act of 2003 and National Environmental Management: Biodiversity Act of 2004, place both international and national obligations on South Africa to monitor and conserve its sub-Antarctic seabird populations. Parties to ACAP have been requested to report on the trends, demographic parameters and foraging distributions of albatrosses and petrels covered by the Agreement. South Africa reports on the status of these and other species (especially penguins) to CCAMLR.

ACAP was developed from awareness that albatrosses and the larger petrels are an integral part of marine ecosystems, which must be conserved for the benefit of present and future generations, and that their conservation is a matter of international concern, particularly in the Southern Hemisphere (www.acap.aq). The conservation status of albatrosses and petrels can be adversely affected by factors such as degradation and disturbance of their habitats, pollution, reduction of food resources, abandonment of non-selective fishing gear and incidental mortality as a result of commercial fishing activities (e.g. Croxall *et al.* 1990, Jouventin and Weimerskirch 1990). The Prince Edward Islands support substantial proportions of the global populations of Wandering Albatross *Diomedea exulans*, Grey-headed Albatross *Thalassarche chrysostoma*, Indian Yellow-nosed Albatross *T. carteri*, Sooty Albatross *Phoebetria fusca*, Light-mantled Albatross *P. palpebrata*, Southern Giant Petrel *Macronectes giganteus*, Northern Giant Petrel *M. halli* and White-chinned Petrel *Procellaria aequinoctialis* (44%, 10%, 21%, 10%, 2%, 5%, 9% and 10% respectively), all species to which the Agreement on the Conservation of Albatrosses and Petrels applies (Robertson and Nunn 1998, Barnes 2000, Crawford and Cooper 2003). Estimates of numbers of White-chinned Petrels breeding at Prince Edward Island have high uncertainty. In 2008, a start was made with the mapping of nests of White-chinned Petrels at this island. This work needs to be continued and the densities of nests within occupied areas established in order to obtain a tighter estimate of numbers at the island. Grey Petrels *P. cinerea* (also an ACAP species) breed on Prince Edward Island in larger numbers than they do on Marion Island. However, there are no data available to estimate the population at Prince Edward Island. As they

are a winter breeding species, a visit in April provides opportunity to investigate means to estimate numbers (e.g. areas of breeding and densities of nests).

Little information exists on the at-sea distributions of most seabird species breeding at the Prince Edward Islands. PTTs deployed on Indian Yellow-nosed Albatross in December 2008 provided some information on the at-sea distributions of these birds early in the breeding season, and showed probable overlap with longline and demersal fisheries operating off South Africa (Fig. 1). It will be beneficial to complement these data with information collected later in the breeding season. It is necessary to examine the extent of the overlap of fishing areas and distributions of albatrosses and petrels at sea, so that the potential for mortality of birds in fisheries can be examined. Because the Indian Yellow-nosed Albatross *Thalassarche carteri* does not breed at Marion Island, it has not been possible to estimate or report demographic parameters such as survival. The pursuance of mark-recapture observations (using banding) will rectify this situation in time.

For some of the seabirds, especially for most burrowing species, basic information is lacking, including aspects such as morphometric measures that will allow analysis of the discreteness of populations.

Barnes, K. N. (Ed.) 2000 – *The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland*. Johannesburg: BirdLife South Africa.

Bester, M. N., Bloomer, J. P., Bartlett, P. A., van Rooyen, M. and H. Buchner 2000 – Final eradication of feral cats from sub-Antarctic Marion Island, southern Indian Ocean. S. Afr. J. Wildl. Res. 30: 53–57.

Bingham, M. 1998 – The distribution, abundance and population trends of Gentoo, Rockhopper and King Penguins at the Falkland Islands. *Oryx* 32: 223–232.

BirdLife International 2000 – *Threatened Birds of the World*. Barcelona and Cambridge, UK; Lynx Edicions and BirdLife International.

BirdLife International 2004 – *Threatened birds of the world 2004*. CD-ROM. Cambridge, UK: BirdLife International.

Brothers, N. 1991 – Albatross mortality and associated bait loss in the Japanese longline fishery in the Southern Ocean. *Biol. Conserv.* 55: 255–268.

Cooper, J., Crawford, R. J. M., De Villiers, M. S., Dyer, B. M., Hofmeyr, G. J. G. and A. Jonker (in press) Disease outbreaks among penguins at sub-Antarctic Marion Island: a conservation concern. *Marine Ornithology*

Crawford, R. J. M. and J. Cooper 2003 – Conserving surface-nesting seabirds at the Prince Edward Islands: the roles of research, monitoring and legislation. *Afr. J. Mar. Sci.* 25: 415–426.

Croxall, J. P., Rothery, P., Pickering, S. P. C. and P. A. Prince 1990 – Reproductive performance, recruitment and survival of Wandering Albatrosses *Diomedea exulans* at Bird Island, South Georgia. *J. Animal Ecol* . 59: 775–795.

Cunningham, D. M. and P. J. Moors 1994 – The decline of Rockhopper Penguins *Eudyptes chrysocome* at Campbell Island, Southern Ocean and the influence of rising sea temperatures. *Emu* 94: 27–36.

Guinet, C., Chastel, O., Koudil, M., Durbec, J. P. and P. Jouventin 1998 – Effects of warm sea-surface temperature anomalies on the Blue Petrel at Kerguelen Islands. *Proc. Roy. Soc. Lond., Series B* 265: 1001–1006.

Guinet, C., Jouventin, P. and J-Y. Georges 1994 – Long term populations of fur seals *Arctocephalus gazella* and *Arctocephalus tropicalis* on subantarctic (Crozet) and subtropical (St. Paul and Amsterdam) islands and their possible relationship to *El Niño* Southern Oscillation. *Antarctic Science* 6: 473–478.

Hofmeyr, G. J. G., Bester, M. N., Makhado, A. B. and P. A. Pistorius 2006 – Population changes in Subantarctic and Antarctic fur seals at Marion Island. South African Journal of Wildlife Research 36: 55–68.

Jouventin, P. and H. Weimerskirch 1990 – Long-term changes in seabird and seal populations in the Southern Ocean. In Antarctic Ecosystems. Ecological Change and Conservation. Kerry, K. and G. Hempel (Eds). Berlin; Springer-Verlag: 208–213.

Nel, D. C., Ryan, P. G. and B. P. Watkins 2002 – Seabird mortality in the Patagonian toothfish fishery around the Prince Edward Islands, 1996-2000. *Antarct. Sci.* 14: 151–161.

Petersen, S. L., Honig, M. B., Ryan, P. G. and L. G. Underhill 2009 – Seabird bycatch in the pelagic longline fishery off southern Africa. Afr. J. Mar. Sci. 31: 191–204.

Robertson, C. J. R. and G. B. Nunn 1998 – Towards a new taxonomy for albatrosses. In: Albatross Biology and Conservation. G. Robertson and R. Gales (Eds). Chipping Norton, Australia; Surrey Beatty: 13–19.

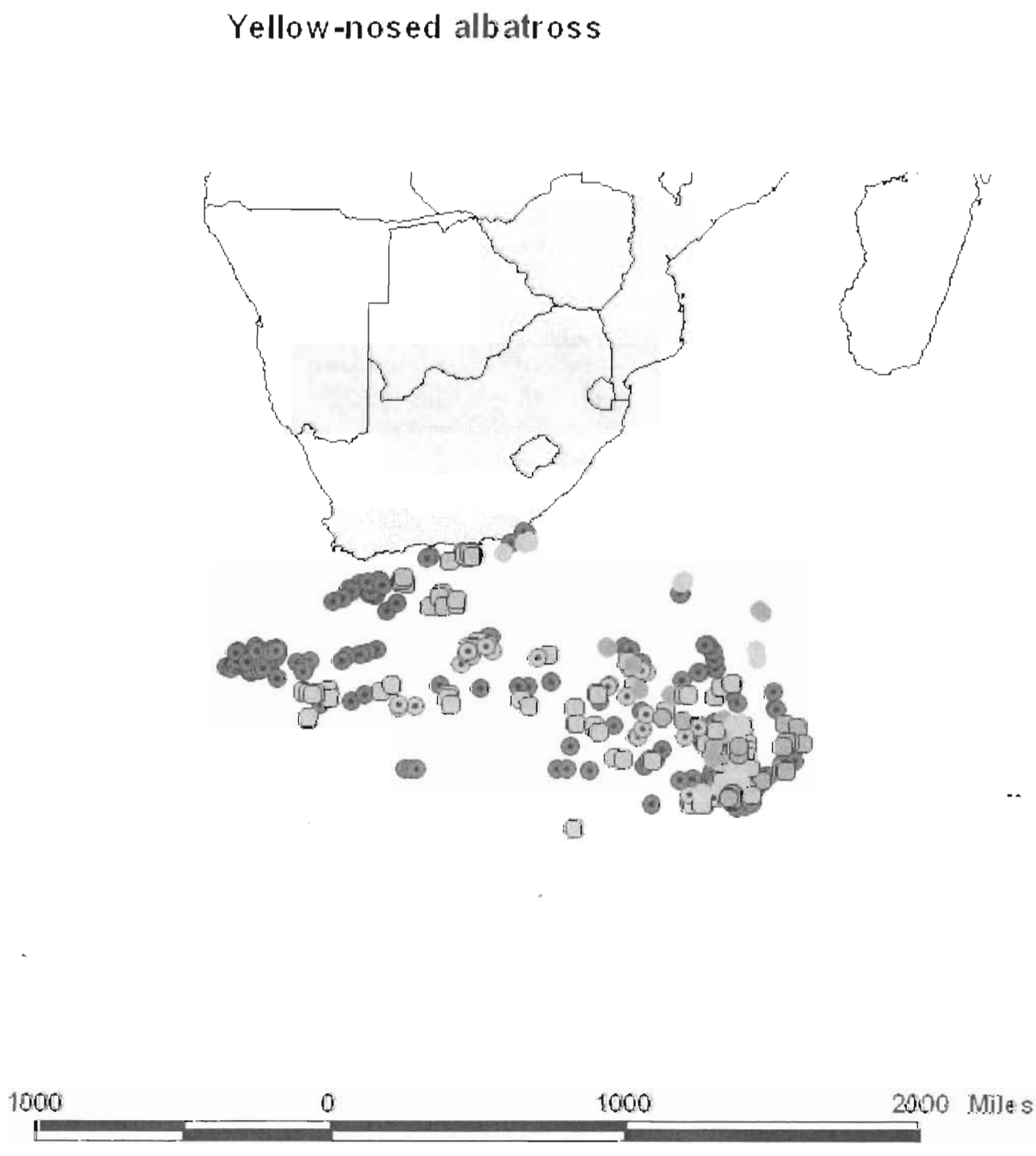


Fig. 1. The at-sea distributions of those Indian Yellow-nosed Albatrosses that were equipped with PTTs in December 2008

Annex 3

FIELD METHODS TO BE APPLIED DURING THE PROPOSED PRINCE EDWARD ISLANDS AUTUMN SURVEY, APRIL 2010

BIRDS

Counts

Counts of surface-breeding birds do not require handling of birds. The aim is to estimate the number of birds that are breeding. Breeding birds are counted from distances of 5–100 m. usually with the aid of binoculars. Counting distances depend on the bird species, the colony reaction to human presence, the prevailing weather conditions and the topography. Personnel are instructed to cease approach to colonies at the first indication of stress-related activity (e.g. birds standing up at their nest, fidgeting, threat displays). Counts are made from that distance or a little farther back. Counting is facilitated using a four-digit hand tally counter. Any disturbance or mortality caused by research activity is recorded.

Kelp Gull, Kergeulen and Antarctic Terns nest over wide areas and are hard to find. Roosts or clubs of these taxa are aged as adult, immature or juvenile to estimate the breeding population productivity.

Night-birding and banding/recapture

Burrowing petrels ("night-birds") are active mostly at night to avoid predation, primarily by the Brown Skua. A 1–2 million candle-watt spot-lamp is used to down birds (bringing them to the ground) or to identify them in the air. Whether birds are downed is dependent on the weather and the experience of the spot-lamp operator.

If birds show no sign of coming down, they are quickly identified and the light is turned off allowing them to escape. However, if brought to the ground they are caught, either using a net or by hand, and placed in a cotton bag of sufficient size to hold the different species until processed. Bags are turned inside out to prevent birds becoming entangled in the stitching. Processing can take place in the field and includes:

- fitting a lightweight stainless steel or aluminium band of appropriate dimensions to the leg, using the appropriate bird ringing pliers. A plastic coiled band may also be placed on the opposite leg or above the metal band. Leg diameter is measured to ensure that the correct size bands are used where there is doubt about the size of ring to be used;
- measurements of total head length, bill length and bill depth;
- scoring the moult of wing and tail feathers;
- weighing each bird in a cotton bag using a Pesola spring balance.

Birds are released immediately after the last measurement is taken and recorded. Generally the handling time is some 5–10 minutes per bird. Spot-lamping is halted the moment any Brown Skuas arrive and linger on the scene.

Resightings of banded birds are made with binoculars. If the band number cannot be properly read the bird may be caught using a pole with a crook.

Instrumentation

Satellite tracking devices (PTTs) will be attached to one species of albatross and both species of giant petrel. The PTTs are activated and tested to be transmitting before birds are caught in order to reduce handling time.

The attachment method for is as follows: Birds are caught by hand or with a crook and held on

the ground with their wings folded closed. A bag/sock is placed over the head to calm the bird. A bird is allowed to vomit if handling causes this (preventing this increases the risk of the bird choking). The PTT is fitted high on the underside of the central two tail feathers with two pre-fitted small cable ties to give maximum support to the attached PTT. Locktite 401 is applied to the feathers and cable ties, bonding instantly. The cable ties are clipped so that there is no part protruding. Birds are banded prior to their being released. Handling time is 3–5 minutes for all species. The signal can transmit for a period in excess of six months depending on the pre-set PTT transmission programme. Care is taken to note the state of moult of tail feathers prior to attachment. PTTs are not deployed onto birds which are undergoing tail moult because of the risk of the feathers falling out and thus prematurely losing the PTT.

The Locktite becomes brittle in contact with sea-water eventually disintegrates. Alternatively, the attached PTT will fall away when feathers are moulted. No damage is caused to regenerated feathers. For re-captured flying birds, the central tail feathers are cut at their base in order to remove the PTT. For instruments deployed at Prince Edward Island, recovery is not anticipated because of the time intervals between surveys.

Diet

Regurgitations and pellets will be collected opportunistically from seabirds, usually during banding or recapture for reading of band numbers. These samples are bagged (one sample per bag), labeled (species, location, date), frozen or preserved in ethanol. Analysis of samples is undertaken in South Africa.

From: Jasmine Arnold
To: PEIMC group
Date: 1/25/2010 2:16:06 PM
Subject: **SANAP 3 Application: Crawford**

Dear PEIMC and co-opt members

I hope this email finds you in good health.

Please see attached a SANAP 3 Application [R.M.J. Crawford] for comment that might arise in order for the applicant to address them timeously. The (possible) revised document could be tabled for the upcoming 28th PEIMC meeting for further discussion and finalisation thereof.

Thanking you kindly
Jasmine

Ms Jasmine Arnold
Administrative Officer
Directorate: Antarctica & Islands
P.O.Box 52126
Waterfront
8002

Tel: +27 21 405 9425
Fax: +27 21 405 9424

"Be kinder than necessary, for everyone you meet is fighting some kind of battle"
Unknown

Doc 3.2.7

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the SANAP Marion relief voyage should describe their plans in detail on this form and submit it to DEAT by no later than 6 February 2010 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed). Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Dr R.J.M. Crawford : 0825781533 (Cellular)
021-4023140 (Work)
021-9483697 (Home)

2. AFFILIATION/INSTITUTION/GROUP

Department of Environment Affairs (DEA)

3. NAME OF RESEARCH PROJECT/PROGRAMME

Monitoring seabirds at Marion Island

4. FULL NAME(S) OF PARTICIPANTS

(Including overwintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group)

MCM group

Relief voyage (takeover) personnel:

Mr A.B. Makhado (Group Leader, DEA - male)
Mr B.M. Dyer (DEA - male)
Mrs L. Visagie (Upfold) (DEA - female)
Mr J. Visagie (Cape Nature - male)

Overwintering expedition members (if any):

Ms L.J. Clokie (female)
Ms Y. Galada (female)

~~*PELAO group*~~

Relief voyage (takeover) personnel:

Miss G. Jones (Group Leader-PFIAO, female)
Mr Morgan Commins

Overwintering expedition members (if any):

Ms M. Cerfontein (female)

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Objectives

MCM group

- Updating of all historical time series of seabird data;
- De-briefing of Ms Davies and Ms van Onselen following the 2009/10 CEMP-monitoring at Marion Island. Interrogation and validation of all data collected and of results obtained;
- Completion of CCAMLR submission forms;
- Finalization of the 2010/11 work schedule and procedures for the new field assistants;
- Training and orientation of new field assistants at all seabird monitoring sites. ***Remove burrow camera equipment in the heli-hanger for return to RSA***;
- Training to apply methods used for analysis of seabird diet samples;
- Census of King Penguins at all breeding sites – incubators, brooders and independent chicks: The use of photography to validate counts/estimates will be tested, particularly for the larger colonies at Kildalkey and King Penguin Bay. GPS measures of area occupied by King Penguins will be made for all sites. Measures of densities of breeding birds will be made at all sites;
- Collect 5 diet samples from King Penguins at either Archway or Sealers Beach;
- Visit all field huts on a round island orientation hike with new field assistants over an eight day period; visit all seabird monitoring sites for monitoring and orientation purposes – note that some of the sites to be visited, e.g. all Gentoo Penguin, Crozet Shag and Southern Giant Petrel colonies, are classified as Zone 4 areas. Count fledgling Grey headed Albatross at all breeding sites on this trip. Also count age classes of Kelp Gull, Kerguelen Tern, Antarctic Tern and Crozet Shag on round island;
- Search for and get GPS positions of all White-chinned Petrels burrows found around island;
- Visit all nest sites of Light-and Dark-mantled Sooty Albatross for which GPS positions

island;
- Check and refurbish, if necessary, all nest markers at monitoring sites;
- Investigate nesting density of Great-winged Petrel at Skua Ridge;
- Identify species composition of burrowing petrels at Nellies Humps and Skua Ridge through the aid of spot-lamping. Check for bands and band and take measurements of all birds downed;
- Spend three nights at each of Mixed Pickle and Swartkop to ascertain species composition and abundance of night birds;
- Deployment of Platform Terminal Transmitters (PTT's) to satellites: three female Southern Giant Petrels and 3 Northern Giant Petrels to gather data on their winter foraging;
- Check all sites for the birds on which PTT's were deployed in April 2009;
- Stock taking of equipment and bird bands and transfer of new and replaced equipment to new staff members;
    - Measure the estimates colony area of the Macaroni Penguin colonies at Swartkop, Rooks, Bullard North and Kildalkey using a GPS. GPS key positions at colonies including all boundary markers and quadrants. Prepare GIS map for field use.

PFIAO group

- Continue monitoring of of Maci, Goney and Sealers Wandering Albatross study colonies (once at the beginning of handover and again about two weeks later.
- Collect blood samples from 100 Wandering Albatross chicks at Goney Plain
- Round Island census of brood/guard phase Wandering Albatrosses.
- Complete monitoring of Grey-headed Albatross colonies.
- Ring of Grey-headed Albatross chicks in study colonies.
- Conduct round island census of Grey-headed Albatross fledglings.
- Establish Skua study areas and initiate masters research.
- Orientate overwinter personnel on round island routes, census areas and Northern Giant Petrel and Wandering Albatross nesting areas.
- Show overwintering personnel inland route to Grey-headed hut.
- Show overwintering personnel Northern Giant Petrel study colony areas.
- Retrieve GLS loggers from Grey Petrel incubators; redeploy on Skuas?
- Orientate overwintering personnel for recovery of GLS loggers from White-chinned Petrel nesting sites.
- Prepare overwintering personnel laboratory equipment.
- Provide instructions regarding field and laboratory methods, data capture requirements and database particulars.
- Prepare database for longterm monitoring colonies.
- Back-up previous year's data.

MCM group

Air Support

- Helicopter support will be required to transport four staff to Swartkop and Mixed Pickle with nightbird equipment (Spot lamp and 4 X 12v batteries per group).
- Should the proposal to spend a week on Prince Edward Island be approved, then helicopter support to drop off and collect scientists and their gear will be required as laid out in that proposal.
- Diet samples (n=10) left at Swartkop hut will need to be collected and returned to Base. This can be accomplished during the hut re-stock. Samples are preserved in ethanol.

MCM group

Ship requirement

- 2 m^2 freezer space may be required aboard the *SA Agulhas* for samples returning to

South Africa.

Camping Equipment n/a

MCM group
Hut Bookings

- Kildalkey, Grey-headed, Rook's, Swartkop, Mixed Pickle, Cape Davis and Repetto's will each be needed each for one night. It is preferred that this round island co-incides with the group visiting PEI's visit, so that both trips end more or less at the same time, thus optimizing the take over for the group.
- One overnight stay of three nights at each of Kildalkey, Repetto's, Mixed Pickle and Swartkop is requested to investigate King Penguin census techniques and nightbird occurrence.
- One night at Katedraal is requested to investigate inland breeding success of Light-mantled Sooty Albatross. This is a weather dependant option.

PFIAO group

- Three nights at Grey-headed Hut will be required for the annual census and chick ringing as soon as possibly after the ship arrives and also to coincide with the PEI visit-ideally for the 17-19 of April
- A single night at Kildalkey, Watertunnel, Rook's, Swartkop's, Mixed Pickle and Cape Davis Huts for round island census work-preferably between 28 April and 6 May

MCM group
Laboratory Space ashore

- MCM requires space in the left-hand office in the Bird Laboratory for its over-wintering staff. Additional counter space will be required for "office" space for at least two of the group during the takeover. There is a large chest freezer used to preserve samples and specimens collected during the year in the open area. Other equipment is also stored in cupboards in the open area.
- A metre of wet area on either side of the double basin in the open lab area is required to train field assistants with the methods of analysis of penguin diet samples during the takeover.

PFIAO group

- We require continued use the right-hand office in the Bird Laboratory for over-wintering staff. Additional counter space will be required for "office" space for at least two of the group during the takeover. Equipment will be stored in this office.
- Laboratory surface space for dissection and sample analysis will be required during hand over and the year.

6. **TYPE OF PERMIT/S REQUIRED**

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected etc – please refer to the Prince Edward Islands

Management Plan for details)

MCM group

Access to Zones 1, 2, 3 and 4 and all permit types for all members will be required for research, orientation and training purposes during the April-May 2010 takeover.

- All Zone 4 seabird sites, e.g. all Gentoo Penguin, Crozet Shag and Southern Giant Petrel colonies may require approach closer than 200 m for orientation and training purposes:
- Use of all the island's huts will be required for orientation purposes.

A separate proposal to conduct research and monitoring at Prince Edward Island was submitted to the PEIMC for approval. Special Entry Permits will be required should the proposal be approved.

Samples collected (and some to be returned to South Africa)

- 30 Rockhopper Penguin diet samples (5 in January and 10 in February and March collected from Skua Ridge to Archway and 5 samples collected at Swartkop in January; the analysis of these will be completed during takeover). Unidentified material will be returned to Cape Town;
- 45 Macaroni Penguin diet samples (10 in December and January; 15 in February collected at Bullard North; 5 collected at Swartkop in January). The analysis of these samples will be completed during takeover. Unidentified material will be returned to Cape Town;
- 5 diet samples from King Penguins at Archway. These samples will be collected and analyzed during takeover. Unidentified prey will be returned to South Africa;
- 20 opportunistic diet samples from burrowing petrels that may regurgitate during handling;
- As many pellets as possible (but not more than 50) from Crozet Shags throughout the post incubation period and before post brooding-fledging period to minimize disturbance. Pellets will be returned to South Africa for analysis.
- Freshly dead carcasses or organs of seabirds for morphometric and moult data or to identify potential disease outbreaks (max. 20);
- Abandoned seabird eggs for morphometric information (max. 20 in total and not more than 6 per species);
- Banding seabirds for age at first breeding, longevity, morphometric, moult and movement information (max. 500 – all species, but does not include the four penguin species, Crozet Shags nor Southern Giant Petrel);
- Attachment of PTT's to 3 female Southern Giant Petrels and 3 female Northern Giant Petrels.

Overwintering expedition members (if any):

Ms L.J. Clokie
Ms Y. Galada

- Access to Zones 1, 2, 3 and 4 will be required for data collection and monitoring purposes during 2010/11.
- All Huts will be used up to seven times annually (May/ August/ September/ October/ December/January/ March). Duration of visits is 1-3 days per hut. Kildalkey and Repetto's hut may be used for an additional six overnight visits. In addition they will require the use of Katedraal hut on at least two occasions (December/March) for one night while conducting inland census' of Light-mantled

- All Zone 4 seabird sites, e.g. all Gentoo Penguin, Crozet Shag and Southern Giant Petrel colonies require approach closer than 200 m to conduct required censuses and monitoring. Passage through the Macaroni Bay, Goney Plain and Sealers Beach Wandering Albatross study sites will also be necessary for census purposes; Movement along Grey-headed Albatross Ridge will be necessary to census Sooty and Light-mantled Sooty Albatrosses as well as assisting with the censuses of Grey-headed Albatross.
- The over-wintering members will also require permits to collect those samples listed in Point 6 - "Type of Permits required" during 2010/11.

PTAO group

Access to Zones 1, 2, 3 and 4 and all permit types for all members will be required for research, orientation and training purposes during the April-May 2010 takeover.

- Zone 4 sites required include Wandering albatross and Greyheaded albatross breeding colonies.
- Use of all the island's huts will be required for orientation purposes.

Overwintering expedition members (if any):

Ms M. Cerfontein

- Access to Zones 1, 2, 3 and 4 will be required for data collection and monitoring purposes during 2010/11.
- All Huts will be used as specified in the work schedule. Hut use time will be flexible and depend on bird behaviour.
- Ms Cerfontein requires permits to work in and collect samples in Zone 4 Grey-headed Albatross and Wandering Albatross study colonies (Macaroni Bay, Goney Plain and Sealer's Beach). At times assistance may be required from fellow field workers in these colonies.
- The over-wintering member will require permits to collect feather, egg shells and blood samples from studied species (albatrosses, petrels and skuas).

7.	**NAME OF COMPILER – SIGNATURE – DATE**
	B.M. DYER 22 JANUARY 2010

Doc 3.2.8

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the SANAP 2010 Marion Island relief voyage should describe their plans in detail on this form and submit it to Ms Kusi Ngxabani-Tikana for approval to e-mail: kngxabani-tikana@deat.gov.za. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed). Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Professor SL Chown, Centre for Invasion Biology (CIB), Stellenbosch University
slchown@sun.ac.za

2. AFFILIATION/INSTITUTION/GROUP

Centre for Invasion Biology, Stellenbosch University

3. NAME OF RESEARCH PROJECT/PROGRAMME

Promoting South Africa's Antarctic Legacy
Albatrosses as ecosystem engineers/Sheathbills/Aliens

4. FULL NAME(S) OF PARTICIPANTS

(Including overwintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group)

Relief voyage (takeover) personnel:

~~Dr. Jennifer E. Lee (F) (UK) (Group Leader – contact 082 718 5176).~~
Mr. John Cooper (M)
~~Mr Jaco Boshoff (M), Iziko Museums Of Cape Town Maritime Centre~~
Mr. Greg McClelland (M) (Canada)
Ms. Anne Treasure (F)

Overwintering expedition members (if any):

Nil

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Prince Edward Island

1. Drop off by air support at previously used camp site at Cave Bay, preferably in early morning. Collection from same locality eight days later (i.e. on day 8, allowing seven full days on island) by air support. Camping gear previously used only at this site by the CIB (December 2008) group will be used. The timing and length of the Prince Edward visit will fit in with the MCM and/or CIB visits, as will the various quarantine protocols and procedures required in terms of dedicated clothing, equipment, supplies, food, treatment and removal of solid wastes, etc. If possible, Mr. Cooper and Mr. Boshoff to be dropped on West Coast with lightweight minimalist camping to be set up at Kent Crater. They will traverse by foot to East Coast.

2. **Archaeology:** Mr. Cooper and Mr. Boshoff. Visits to all west- and east-coast known and suspected historical sites in company with CIB and/or MCM field teams to record positions by GPS, and to undertake a photographic and descriptive record of the sites and any exposed artefacts, including of inscriptions carved into rocks. Any surface-exposed artefacts deemed to be in immediate risk of further severe deterioration or loss (e.g. due to their fragility or the cumulative effects of seal trampling) may be collected for preservation on Marion Island with previously collected and stored post-1947 artefacts (see below) or in the Iziko Museums Maritime Centre in Cape Town (the SANAP-designated repository for historical items and records from the Prince Edward Islands). Visits to all named geographical features on Prince Edward Island to record GPS positions and to make a photographic record for the Historical Gazetteer of the Prince Edward Islands.

3. **Alien plant and arthropod surveys:** Dr. Lee, Ms. Treasure. Surveys of the northern and western parts of the island for alien vascular plants and invertebrates will be completed (not completed in 2008). Additional survey work will be undertaken on a gridded basis to record real absences of alien species and ad hoc survey work will continue to document GPS locations of all alien plant species. Collections of all arthropods will be made to ensure that the species inventory for the island is updated. This will include taking 100 core samples for return for processing to Marion Island. At Marion island, all processed samples will be stored in red bins in double-plastic for return to South Africa for disposal or for disposal at sea more than two-days sailing from the islands, as advised by the PEIMC. The alien survey work is proposed here to complete the drawing up of alien eradication plans and a biodiversity management plan for the islands. The data collected will be used in conjunction with recently purchased satellite imagery of the island (40 cm resolution) to provide spatially explicit plans.

4. **Sheathbill genetics and population estimates:** Working with MCM, or with any of the above personnel if MCM do not go ashore, Mr. McClelland will count sheathbills on PEI. He will also capture and ring 100 sheathbills (maximum) with metal and plastic darvic rings, and collect a 400 microlitre blood sample, and two secondary feathers (S9 and S10) from each of 50 of these birds for genetic and stable isotope analyses. For additional isotope analyses, 10-5 [illegible]

Penguins, 10 5 ml samples of King Penguin excreta, and 10 samples of porphyra algae will be collected. All of the collected material will be held in ethanol or frozen and taken to South Africa for investigation. Ethics clearance for sheathbill work was obtained for the project on Marion Island. The data collected here will not only be used for understanding sheathbill dynamics on the islands, but will also contribute to the biodiversity management plan for terrestrial species at the islands.

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details)

Prince Edward Island

Special Entry Permit for all staff personnel above.

Research Permits to undertake the above investigations.

Collection Permits:

1. to remove any excessively deteriorating historical artefacts for off-site curation;

2. for less than 400 specimens of all macroinvertebrate species. Typically 10 specimens will be sufficient for identification, but for weevils and springtails, material is required for size and genetic work owing to the recent discovery of two new weevil species on Marion Island and one on Prince Edward Island. These are all cryptic species discovered via genetic analysis. Based on population size estimates for Marion (Gabriel et al. 2001; Barendse et al. 2002; Chown et al. 2002) and Prince Edward Island (Hugo et al. 2006), the numbers (even the maximum of 400) will not represent more than 0.01 to 0.0001% of the population of any of the species. Mites and springtails are often found in numbers exceeding 1000 per m^2.

3. For 200 core samples (70 mm diameter) for invertebrate extraction. The leaf material will be collected separately and used for isotope analyses, and soil will be used for soil nutrient investigations to maximize use of the samples.

4. Sheathbill blood + feather samples. Albatross samples + King Penguin.

7. NAME OF COMPILER – SIGNATURE – DATE

Prof. Steven L. Chown ..... **28 January 2010**

DOC 3.2.9

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

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1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Professor SL Chown, Centre for Invasion Biology (CIB), Stellenbosch University
slchown@sun.ac.za

2. AFFILIATION/INSTITUTION/GROUP

Centre for Invasion Biology, Stellenbosch University

3. NAME OF RESEARCH PROJECT/PROGRAMME

Promoting South Africa's Antarctic Legacy

4. FULL NAME(S) OF PARTICIPANTS

(Including overwintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group)

Relief voyage (takeover) personnel:

John Cooper (Group Leader), Research Associate, C·I·B, University of Stellenbosch (Male) (John.Cooper61@gmail.com, 021-685-1357 / 082-701-3379)

Jaco Boshoff, Curator: Colonial Archaeology, Iziko Museums of Cape Town Maritime Centre (Male)

Dora Scott, SANAP Antarctic Legacy Project Archivist, C·I·B, University of Stellenbosch (Female)

Overwintering expedition members (if any):

Nil

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Marion Island

1. Issue of SANAP protective clothing for three persons.

2. Shared use of desk space with internet connection in a general-purpose laboratory on Marion Island for three persons.

3. Field hut accommodation for a three-person party on separate (anti-clockwise) round-island (coastal) and inland field trips. Consecutive single nights are required at all huts except for Katedraalkrans, Cape Davis, Mixed Pickle Cove and Grey-headed Albatross Ridge Huts (two consecutive nights at each). A minimum of two nights should be spent in the base between coastal and interior trips. These field trips should only commence a minimum of two nights after the Prince Edward Island party is transferred to Marion Island.

4. Visits to named geographical features on Marion Island to record GPS positions and make a photographic record for the Historical Gazetteer of the Prince Edward Islands.

5. Access to all buildings in the current (old) base, including adjacent and nearby historical structures (e.g. "La Grange Villa" on Boulder Beach, Crawford survey beacons, 1948 Stevenson Screen posts, etc.) and middens to undertake a descriptive and photographic archaeological record.

6. Making a descriptive and photographic record of objects and items within the current base, including wall-mounted team and other photographs, artefacts and curiosities in the bar, paintings, inscriptions, posters, etc. This will be commenced by Dora Scott while John Cooper and Jaco Boshoff are on Prince Edward Island.

7. Site investigation and preliminary/partial excavation of the Governor's House midden (suspected to date from the 1940-1950s) in the gully immediately south of the Invertebrate/Physiology Lab.

8. Access to the new base construction site to describe and photograph remnants and sites of old structures, including both wooden helipads, Kapua Bridge, wooden catwalks, etc.

9. Description, sketching and/or photography of all post-1947 historical items previously collected and currently stored in a locked cupboard in the Lower General Purpose

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details)

Marion Island

1. Standard Entry Permit for three persons (John Cooper, Jaco Boshoff, Dora Scott) to enter Marion Island, and to enter Zones One to Three.
2. Special Entry Permit for three persons to enter all known Zone-Four historical and suspected historical sites on Marion Island and photograph artefacts *in situ*.
3. Research Permit to undertake a preliminary investigation by partial excavation of the contents of the Governor's House midden and to undertake a mensural and photographic record of La Grange Villa and associated artefacts (old crane booms, original(?) ladder, etc,).
4. Collection Permit to remove for documentation and preservation any artefacts excavated from the Governor's House midden. Any artefacts removed from the island will be accessioned and curated at the Iziko Museums Maritime Centre. Some artefacts may be stored on the island.

7. NAME OF COMPILER – SIGNATURE – DATE

Prof. Steven L. Chown ..... **28 January 2010**

Doc 3.2.10

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

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1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Prof. Steven L. Chown
Director: DST-NRF Centre of Excellence for Invasion Biology
Stellenbosch University
Private Bag X1
Matieland
7602
South Africa

Tel: +27 (0)21 808 2385
Fax: +27 (0)21 808 2995
Email: slchown@sun.ac.za

2. AFFILIATION/INSTITUTION/GROUP

DST-NRF Centre of Excellence for Invasion Biology, Stellenbosch University

3. NAME OF RESEARCH PROJECT/PROGRAMME

Albatrosses as Ecosystem Engineers
Final work on Sheathbills for USAID grant
BAS-SU collaborative project
Completion of alien survey work

4. FULL NAME(S) OF PARTICIPANTS

(Including overwintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group)

Relief voyage (takeover) personnel:

1. Dr. Jennifer E. Lee (F) (UK) (**Group Leader – contact 082 718 5176**)
2. Dr. Susana Clusella-Trullas (F) (Spain)
3. Mr. Greg McClelland (M) (Canada)
4. Ms. Anne Treasure (F)
5. Ms. Tanya Haupt (F)
6. Ms. Katelyn Faulkner (F)

Overwintering expedition members (if any):

1. Mr. Matt Lachenicht (M)
2. Mr. Allen Tshautshau (M)

Returning expedition members from previous team

1. Mr. James Wilshere (M)
2. Ms. Asanda Phiri (F)

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Work to be undertaken

The current group has several major aims for the relief:

1. Completion of the alien survey work to assess the extent to which alien isopods (*Porcellio scaber*) and wasps (*Aphidius matricariae*), and the springtail *Pogonognathellus flavescens* might have spread. All three species have restricted distributions (one to the base and the other two to the south and east coasts of the island). Personnel: Dr. Lee, Ms. Treasure. Mr. Tshautshau, Ms. Phiri.

2. Continuation of Albatrosses as Ecosystem Engineers project. The aim of the present study is to undertake work to continue to address the key questions posed. Specifically, Q1. Nutrient content of nests differs from surrounding sites. This work will involve collection of many, small (10g or thereabouts) soil samples from around nests and generally along the nutrient gradient in four quadrants on Marion Island. Q2. Further logging of albatross nest temperatures in collaboration with bird researchers at Marion Island. This will involve inserting i-button loggers (four) into nests, and their removal at quarterly intervals over the year during inspections by bird researchers. Q3. Behavioural choice work on caterpillars to determine whether they cue on nest or bird odours. Q4. Continue ecophysiological work on *Pringleophaga marioni* in the laboratory. Q6. Phylogeography (via microsatellite work) of individuals both from nests and the surroundings. This work is set out in Prof. van Vuuren's SANAP 3 proposal. Personnel: Dr. Lee, Ms. Treasure, Ms. Haupt, Mr. Tshautshau, Ms. Phiri.

3. Sheathbill demographics. The USAID/DEAT/SU programme had as its final goal an assessment of demographics of the Lesser (Black-faced) Sheathbill on Marion and Prince Edward Island. This work was never completed owing to a lack of appropriate staff. This

Ryan providing additional advice and input. The work will continue over the relief and Mr. Wilshere will handover to Mr. Lachenicht who will be trained to resight birds and to replace tags where necessary as part of his duties. Mr. McClelland will be supervising this part of the work. Personelle: Mr. McClelleand, Mr. Wilshere, Mr. Lachenicht.

4. Intertidal invertebrate physiology. The BAS-SU collaborative project aims to study the upper temperature limits of intertidal and nearshore invertebrates on Marion Island. The research aims at determining the extent to which Marion's marine invertebrates are able to acclimate to short and long-term changes in temperature as well as estimating the likely impact of ocean warming on these marine assemblages. The work will involve field collection of invertebrate species from the intertidal zone of rocky shores that are relatively close to the research station (Ship's cove, Duiker's point, Transvaal Cove, Macaroni Bay). Individuals will be collected from intertidal pools, underneath boulders and kelp holdfasts. The latter will involve detaching the kelp from the rock and removing the invertebrates that live in the inner folds and fissures of the base of the kelp. Invertebrates will be taken to the laboratory for physiological trials: acclimations, heating rate treatments and determination of upper thermal limits. Personnel: Dr. Clusella-Trullas, Dr. Lee, Ms. Faulkner.

Shipping Requirements:
Berths for six relief personnel (**Females:** Dr. Lee, Dr. Clusella-Trullas, Ms. Haupt, Ms. Treasure, Ms. Faulkner; **Male:** Mr. McClelland) and two overwintering expeditioners (**Males:** Mr. Lachenicht, Mr. Tshautshau) from Cape Town to Marion Island. Return berths for six relief personnel and two returning expeditioners (**Female:** Ms. Phiri, **Male:** Mr. Wilshere). Four orange containers for scientific equipment. Space in a laboratory on the ship for two small chest freezers for samples that require dedicated conditions (front lab worked well in the past), as well as for two temperature regulated tanks for transport of marine invertebrates. Either the front lab or possibly more appropriately a wet lab that has power access would be required for the freezers. This can be worked out with the oceanography complement and/or ship's complement.

Air-Transport Requirements:
Transport to Marion Island from the mv *SA Agulhas* for six (6) relief personnel and two (2) expeditioners; and from the Island to the mv *SA Agulhas* for (6) relief personnel and two (2) returning expeditioners. Slinging of orange containers to and from the island.

Fitting in with other scientific and logistic programmes: Drop off and collect:

Hut Requirements
Fitting in with other scientific and logistic programmes:

Group 1 (McClelland, Wilshere, Lachenicht)
Round island, Kildalkey-first direction, 3 pax, 1 night Kildalkey, 1 night Grey-headed, 1 night Swartkops, 2 nights Mixed Pickle, 1 night Cape Davis, 1 night Repettos. Departure date: 21 April or thereafter but not after 25 April.

Group 2 (Treasure, Lee, Tshautshau, Phiri)
1. 2 consecutive nights at Cape Davis, 3 pax.
2. 2 consecutive nights at Kildalkey, 3 pax.
3. 2 consecutive night at Katedraal, 4 pax.
4. 2 consecutive nights at Katedraal (different time to 3 above), 4 pax.

Group 3 (Lee, Haupt)
1. 2 consecutive nights at Repettos, 2 pax

Laboratory requirements

Space in entomology/microbiology/botany laboratory for six relief and four overwintering personnel (returning and new). Space for physiology equipment for thermal work.

Clothing requirements:

SANAP issue gear for either relief or overwintering personnel for all staff in keeping with SANAP policies. Herewith a request that personnel be allowed to use non-issue outer garments. These garments will be inspected prior to departure and will be made available for inspection as requested by the conservation officer(s). The motivation is that the gear is put to very heavy field use by all personnel and the issue gear often does not hold up to the rigours of use, necessitating purchase of supplementary gear (which often does not hold up to the use either so second and third sets are sometimes needed).

Field rations:

For staff that has reasonable to substantial field work commitments the field rations (especially chocolate, energy bars, etc) made available at Marion Island are insufficient. To prevent field safety from being compromised the group will source and bring along field rations. It will also bring along several items to ensure the health and morale of the group active in the laboratory, especially given the very stringent use regulations applied to food at the base. The material will not compromise the provisions of the current management plan, will be repacked into transparent containers and will be available for inspection at any time by the conservation officers.

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details)

Research Permits for work above.

Entry Permits for Zones 1-3. The work proposed above cannot be completed in Zones 1 and 2 for the following reasons: Alien plants and animals occur in all zones. Albatrosses and their nests occur mostly outside Zones 1 and 2. Several arthropod species found only in Zone 3, and it is not possible to sample from high elevations or the intertidal inside Zones 1 and 2. Sheathbills largely occur in Zone 3. In consequence, access to Zones 1-3 is required for all relief project personnel, and for the two overwintering team members (Lachenicht, Tshautshau).

Lesser Sheathbills are very abundant in the Scaler's Beach and Goney Plain (Log Beach, Prinsloo Meer) areas of Marion Island owing to large penguin colonies in these areas. To undertake the sheathbill demographic work properly, access to these areas is required. Both areas are included within Zone 4 wandering albatross study colony areas. Excluding work in these areas would mean that substantial portions of the sheathbill population would be excluded (see Burger's 1977 work). In consequence, Zone 4 permits will be required for Mr. Lachenicht and Mr. Tshautshau for the relief period, and for a full year up to and including their departure from Marion Island in May 2011.

Collection Permits

Collection permits are required for the following –

Collembola: < 5000 individuals of each species. Abundances on Marion are typically 10 000 – 38 000.m^{-2} (Gabriel et al. 2001). The collections are for studying the diet and

specimens to South Africa to our DoA-approved quarantine lab will be sought from the Department of Agriculture. Relief (all personnel).

Mites: < 100 specimens of any species. Densities of mites are high and we will be impacting on < 0.001% of the local population (Barendse et al. 2002). The purpose is to ensure that any new species are submitted to appropriate systematists for identification (e.g. D.J. Marshall, L. Coetzee). Relief (all personnel).

Moths: 700 individuals of *Pringleophaga marioni*. From around the island both during the relief and over the full year. Impact less than 0.1% of total population. Purpose is to further knowledge of life histories, for stable isotope analysis, for olfaction choice experiments, and for physiological research as indicated in the albatrosses as ecosystem engineers project. Relief (all personnel) and year-long permits (Mr. Lachenicht, Mr. Tshautshau).

Wasps: Collection of 1 000 individuals of the alien *Aphidius matricariae* to undertake life history and physiology work. Collection of 100 *Kleidotoma icarus* for food web analysis. The *K. icarus* population size is unknown. If the species appears to be rare we will reduce collections to 15% of the proposed number. Relief (all personnel).

Spiders: 500 individuals each of all three spider species at Marion Island (*Myro kerguelensis, Myro paucispinosus, Prinerigone vagans*) for food-web studies and stable isotope analysis. Population data from C. Hänel 1998, M.Sc. Thesis, Univ. Pretoria suggest that the impact will be smaller than 0.1% of the population. Relief (all personnel).

Beetles: 300 specimens of each species (*Bothrometopus randi*, *Palirhoeus eatoni*, *B. parvulus*, *B. elongatus*, *Ectemnorhinus marioni*, *E. similis*, *Halmaeusa atriceps*, *Meropathus chuni*) for determination of body size, diet and performance. The estimated impact is less than 0.1% of population based on data from Hänel (1998) and Chown et al. (2002). Relief (all personnel).

Isopod: Collection of 100 individuals of the alien isopod, *Porcellio scaber*, that has recently been introduced to the island. The purpose is to try to eradicate the species. Relief (all personnel) and year-long permits (Mr. Lachenicht, Mr. Tshautshau).

Plants and soil: 100 core samples (70 mm diameter) for springtail extraction. Species such as *Megalothorax* and *Katianna* sp. can only be obtained in this way. 500 tillas of *Poa cookii* for extraction of *Embryonopsis halticella*. All plant samples will be dried and used for stable isotope analysis after extraction. 500 small (40 mm diameter, 20 mm depth) soil samples for stable isotope analysis and nutrient analysis as per the albatrosses as ecosystem engineers proposal. 200 small leaf specimens of each of the common vascular plant species on Marion Island (excluding Kerguelen Cabbage, *Limosella australis*, *Elaphoglossum randi*, *Polystichum marionense*, *Grammitis poepeggiana*) for stable isotope analysis. In addition, 200 g of wet weight propagules of *Acaena magellanica*, *Agrostis magellanica*, *Agrostis stolonifera*, *Poa cookii*, *Poa annua*, *Sagina procumbens*, *Cerastium fontanum*, *Pringlea antiscorbutica*, *Azorella selago*, *Leptinella plumosa*. 50 small (40 mm diameter, 20 mm depth) samples of material from occupied and recently abandoned albatross nests for stable isotope analysis and nutrient analysis as per the albatrosses as ecosystem engineers proposal. Material from occupied nests will be obtained using a small 'biopsy' rod and the hole closed afterwards during inspections of birds on nests by bird researchers so adding no additional stress to birds. Sampling will be done by bird researchers or we will assist researchers in their usual fashion to limit approach numbers. 3 kg of old wandering albatross nest material as food for caterpillars. Relief (all personnel) and year-long permits (Mr. Tshautshau and Mr. Lachenicht).

Marine organisms: Representative samples of marine invertebrates for thermal work. Specifically, 300 individuals of each of the following species will be collected: *Hyale sp.* (amphipod); *Exosphaeroma gigas* (isopod), 200 individuals of: *Parawaldeckia kidderi* (amphipod); *Dynamenella eatoni* (isopod), *Laevilitorina caliginosa* (gastropod), *Nacella delesserti* (gastropod); *Eatoniella sp.* (gastropod); 100 individuals of *Anosterias rupicola* (echinoderm). The collections are for studying the physiology of the species both at the island and in South Africa. Permission to return specimens to South Africa to our DoA-approved quarantine lab will be sought from the Department of Agriculture. All species are considered abundant by de Villiers (1976). Small (10 g samples) of the following seaweeds for a SCAR-supported (Circum-Antarctic Census of Marine Life) project to be undertaken by Ceridwen Fraser from New Zealand): *Desmarestia, Adenocystis, Bostrychia, Codium, Gigartina, Lessonia, Enteromorpha, Ulva, Porphyra, Lithothamnia, Corallina, Cystophora.*

Permit for Dr. Clusella-Trullas, Dr. Lee and Ms. Faulkner only. In keeping with legislative requirements, separate permit applications have also been submitted to Marine and Coastal Management.

House mice: Snap trapping of c. 3500. house mice for gut content analyses (impacts on *Pringleophaga marioni* and other invertebrates). Ear tagging of c. 2000 mice for capture mark-recapture studies following Sherman trapping. Ethics clearance has been obtained from Stellenbosch University for this work and has served previously at the PEIMC. The methods will be identical. Permit for relief for Mr. McClelland, Mr. Wilshere, Ms. Phiri, Mr. Lachenicht, Mr. Tshautshau and for full year for Mr. Lachenicht and Mr. Tshautshau only.

Lesser (Black-faced) Sheathbill: Banding and mass/age measurements of total population following capture with hand nests and noose carpet. Once-off measurements of each bird over 2008/9 year (see Appendices where all protocols are described). Stringent precautions (such as alcohol cleaning of ringing pliers, and replacement of latex gloves between each bird captured) will be used. Traps will be washed and cleaned with ethanol on a daily basis. Samples of blood and feathers from 60 birds will be taken and 60 birds will be used for doubly-labelled water studies of field metabolic rates (requiring two capture bouts – new techniques do not require a lengthy resampling period). Ethics clearance has been obtained from Stellenbosch University for this work and has served previously at the PEIMC. Permit for relief for Mr. McClelland, Mr. Lachenicht and Mr. Wilshere only and for Mr. Lachenicht and Mr. Tshautshau for full year.

7. **NAME OF COMPILER – SIGNATURE – DATE**

Prof. Steven L. Chown ..... **28 January 2010**

Marine organisms: Representative samples of marine invertebrates for thermal work. Specifically, 300 individuals of each of the following species will be collected: *Hyale sp.* (amphipod); *Exosphaeroma gigas* (isopod), 200 individuals of: *Parawaldeckia kidderi* (amphipod); *Dynamenella eatoni* (isopod), *Laevilitorina caliginosa* (gastropod), *Nacella delesserti* (gastropod); *Eatoniella sp.* (gastropod); 100 individuals of *Anosterias rupicola* (echinoderm). The collections are for studying the physiology of the species both at the island and in South Africa. Permission to return specimens to South Africa to our DoA-approved quarantine lab will be sought from the Department of Agriculture. All species are considered abundant by de Villiers (1976). Small (10 g samples) of the following seaweeds for a SCAR-supported (Circum-Antarctic Census of Marine Life) project to be undertaken by Ceridwen Fraser from New Zealand): *Desmarestia, Adenocystis, Bostrychia, Codium, Gigartina, Lessonia, Enteromorpha, Ulva, Porphyra, Lithothamnia, Corallina, Cystophora.*

Permit for Dr. Clusella-Trullas, Dr. Lee and Ms. Faulkner only. In keeping with legislative requirements, separate permit applications have also been submitted to Marine and Coastal Management.

House mice: Snap trapping of c. 3500. house mice for gut content analyses (impacts on *Pringleophaga marioni* and other invertebrates). Ear tagging of c. 2000 mice for capture mark-recapture studies following Sherman trapping. Ethics clearance has been obtained from Stellenbosch University for this work and has served previously at the PEIMC. The methods will be identical. Permit for relief for Mr. McClelland, Mr. Wilshere, Ms. Phiri, Mr. Lachenicht, Mr. Tshautshau and for full year for Mr. Lachenicht and Mr. Tshautshau only.

Lesser (Black-faced) Sheathbill: Banding and mass/age measurements of total population following capture with hand nests and noose carpet. Once-off measurements of each bird over 2008/9 year (see Appendices where all protocols are described). Stringent precautions (such as alcohol cleaning of ringing pliers, and replacement of latex gloves between each bird captured) will be used. Traps will be washed and cleaned with ethanol on a daily basis. Samples of blood and feathers from 60 birds will be taken and 60 birds will be used for doubly-labelled water studies of field metabolic rates (requiring two capture bouts – new techniques do not require a lengthy resampling period). Ethics clearance has been obtained from Stellenbosch University for this work and has served previously at the PEIMC. Permit for relief for Mr. McClelland, Mr. Lachenicht and Mr. Wilshere only and for Mr. Lachenicht and Mr. Tshautshau for full year.

7. NAME OF COMPILER – SIGNATURE – DATE

Prof. Steven L. Chown ..... **28 January 2010**

Doc 3.2.11

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the SANAP 2010 Marion Island relief voyage should describe their plans in detail on this form and submit it to Ms Kusi Ngxabani-Tikana for approval to e-mail: kngxabani-tikana@deat.gov.za. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed). Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Prof. Steven L. Chown
Director: DST-NRF Centre of Excellence for Invasion Biology
Stellenbosch University
Private Bag X1
Matieland 7602
South Africa

Tel: +27 (0)21 808 2385
Fax: +27 (0)21 808 2995
Email: slchown@sun.ac.za

2. AFFILIATION/INSTITUTION/GROUP

DST-NRF Centre of Excellence for Invasion Biology, Stellenbosch University

3. NAME OF RESEARCH PROJECT/PROGRAMME

Drivers of sub-Antarctic terrestrial ecosystems

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

1. Dr. Peter C. le Roux (M) (Group Leader – contact 072 385 1428)
2. Mr. Martin Slabber (M)

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Work to be undertaken

The current group has several major aims for the relief:

1. Resurveying long-term *Azorella selago* monitoring plots. Half of the twelve long-term monitoring plots established by Mawethu Nyakatya in 2001 will be revisited. All *A. selago* plants within the plots will be re-photographed to estimate the growth and survival rates of this species. All other plant species in the plots will be noted, testing if changes in species composition have occurred over the last 8 years (as expected based on recent research indicating an upslope expansion of most of the island's indigenous vascular plants). The long-term monitoring plots are currently marked by four PVC marker poles. To facilitate more accurate future re-surveying of the plots we will place additional metal markers (extending < 0.1m above the ground) around the edge of the plots. We will take precautions to minimize disturbance to the plots. Our methodology was tested during the 2009 relief voyage, and has subsequently been refined.

2. Maintenance and electronic servicing of automatic weather stations. Batteries and dataloggers will be replaced on the two automatic weather stations (situated next to the mid-altitude long-term monitoring plots at Tafelberg and above Mixed Pickle), and their electronics tested and where necessary repaired. Similarly, iButton temperature and humidity dataloggers will be replaced at another four of the long-term monitoring sites. This equipment has been in place since April 2007 and contributes to our understanding of spatial variation in climate across the island. Because half of the automatic weather stations are on the western side of the island, we will require time at the Mixed Pickle hut.

3. Altitudinal range limits of the vascular flora. The upper altitudinal limit of all the indigenous and alien vascular plants will be surveyed along multiple altitudinal transects (extending from >900 m a.s.l. to sea-level). The first occurrence of each species in association with *Azorella selago* will also be noted to test if facilitative interactions with this keystone plant species extend species elevational ranges.

Shipping Requirements:

Berths for two relief personnel from Cape Town to Marion Island, and for the return voyage. One orange container for scientific equipment.

Air-Transport Requirements:

Transport to Marion Island from the mv *SA Agulhas* for two (2) relief personnel; and from the Island to the mv *SA Agulhas* for two (2) relief personnel. Slinging of orange container to and from the island.

Fitting in with other scientific and logistic programmes:

Hut Requirements

Due to altitudinal transects starting > 900 m a.s.l. and surveying requiring at least one day, we are requesting six nights at Katedraal hut. Additionally, due to the very physical nature of the work, each set of hut nights (i.e. A, B, C and D) should please be separated by at least one night in base. All hut requirements for 2 pax only.

A. Round island:
1 night at Grey-headed hut
3 nights at Rook's hut
3 nights at Swartkop's hut
3 nights at Mixed Pickle hut
1 night at Cape Davis hut
[These requirements are slightly flexible and we can gain or lose a hut night if necessary. This round island should not to start within four days of arrival at the island if possible]

B. 1 night at Katedraal hut, followed by 1 night at Repetto's hut

C. 1 night at Katedraal hut, followed by 1 night at Kildalkey hut

D. Four non-consecutive nights at Katedraal hut

Laboratory requirements
Space in entomology/microbiology/botany laboratory for two relief personnel.

Special diets:
None.

Clothing requirements:
Herewith a request that personnel be allowed to use non-issue outer garments. These garments will be inspected prior to departure and will be made available for inspection as requested by the conservation officer(s).

Field rations:
For staff that has reasonable to substantial field work commitments the field rations (especially chocolate, energy bars, etc) made available at Marion Island are insufficient. To prevent field safety from being compromised the group will source and bring along field rations. It will also bring along several items to ensure the health and morale of the group active in the laboratory, especially given the very stringent use regulations applied to food at the base. The material will not compromise the provisions of the current management plan, will be repacked into transparent containers and will be available for inspection at any time by the conservation officers.

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details). Detail motivation for zones 3 & 4 are required.

Permits for Zones 1-3. The work proposed above cannot be completed in Zones 1 and 2 because five of the long-term monitoring plots that we want to re-photograph this year are located in Zone 3 and there is insufficient altitudinal variation within Zone 2 for long enough altitudinal transects to be surveyed.

7. NAME OF COMPILER – SIGNATURE – DATE

Peter C. le Roux..... 28 January 2010

Doc 3.2.12

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the March 2008 SANAP Marion relief voyage (voyage 142) should describe their plans in detail on this form and submit it by no later than 11 February 2008 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Prof. Bettine van Vuuren
DST-NRF Centre of Excellence for Invasion Biology and Evolutionary Genomics Group
Department of Botany and Zoology
Stellenbosch University
Private Bag X1
Matieland
7602
South Africa

Tel: +27 (0)21 808 4862
Fax: +27 (0)21 808 2405
Email: bjvv@sun.ac.za

2. AFFILIATION/INSTITUTION/GROUP

Stellenbosch University

3. NAME OF RESEARCH PROJECT/PROGRAMME

Understanding the history of variability
Albatrosses as Ecosystem Engineers (Prof Steven Chown)

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

Relief voyage (takeover) personnel:

1. Ms Rina Groenewald (female)

Please note that Ms Groenewald will work within Dr Jennifer Lee's team (Prof Steven Chown)

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

- **Work to be undertaken**

The current group has two main aims for the relief:

1. As part of the ongoing project **Albatrosses as Ecosystem Engineers** (Principal Investigator: Prof Steven Chown, please also refer to Prof Chown's SANAP 3 form), Ms Groenewald will complete the sampling of *Pringleophaga marioni* caterpillars for genetic testing (more details are provided below). These caterpillars will be collected from selected localities and brought back to my laboratory at Stellenbosch University for analyses.

2. As part of the ongoing project **Understanding the history of variability** (Principal Investigator: Prof Bettine van Vuuren), leave samples from *Azorella selago* will be collected from altitudinal transects conducted by Dr Peter le Roux (please refer to Dr le Roux's SANAP 3 form). These samples will be dried in silica gel and brought back to my laboratory at Stellenbosch University for analyses.

- **Shipping requirements**

Berth for one relief personl (**Female:** Ms Rina Groenewald)
Return berth for one relief person (**Female:** Ms Rina Groenewald)

- **Laboratory space requirements**

Laboratory and desk space on Marion Island (in the Gogga/Botany lab) will be required for 1 relief person.

- **Hut Requirements**

Ms Groenewald will do a round-island to collect material. She will slot in with one of the other groups that will require hut space and time.

- **Other requirements**

One orange container will be needed to transport research material to and from Marion Island.

- **Fieldwork**

Fieldwork for genetic analyses will include the sampling of *Azorella selago* and the Marion flightless moth *Pringleophaga marioni* (< 0.0001% of species populations will be removed). Two or three younger leaves from the plant species will be removed and dried in silica gel for analyses in the laboratory at Stellenbosch University. This method of sampling causes minimal damage to the plant itself. Twenty sites (positions not yet determined) will be selected along altitudinal transects. For the Marion flightless moth, caterpillars will be collected on the North Western (around Cape Davis) and Southern parts (near Cape Hooker) of Marion Island.

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of

Management Plan for details). Detail motivation for zones 3 & 4 are required.

1. A permit for Zone 3 is needed for 1 relief person (listed above) for the duration of relief voyage.
2. Collection permits are required to collect *Azorella selago* as well as Marion flightless moth caterpillars from localities across the island (see above). These localities will be determined when on the island, but will present good coverage of the island. Less than 0.0001% of individuals in populations will be removed or sampled destructively.

7. NAME OF COMPILER – SIGNATURE – DATE

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DOC 3.2.13

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the March 2008 SANAP Marion relief voyage (voyage 142) should describe their plans in detail on this form and submit it by no later than 11 February 2009 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Valdon Smith

2. AFFILIATION/INSTITUTION/GROUP

Stellenbosch University

3. NAME OF RESEARCH PROJECT/PROGRAMME

A vegetation biomass and nutrient budget of Marion Island

4. FULL NAME(S) OF PARTICIPANTS

(Including overwintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group)

Relief voyage (takeover) personnel:

Prof. V.R. Smith
Mr. M. Rossouw
Mr C. Conradie
Ms. Wilma van Staden

Overwintering expedition members (if any):

None

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey

routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Use of chemical analysis/microbiology laboratory on Marion Island
Helicopter support to visit high altitude regions of the island.
Helicopter support to visit west side and south side of island.
Use of field huts.

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details)

1. To enter zones 1, 2, 3 and 4 on Marion Island (motivation submitted to the Prince Edward Island Management Committee on 14 October 2008).
2. To collect about 200 g of each vascular plant species on the island, excepting *Elaphoglossum randii* and *Ranunculus moseleyi*, neither of which will be collected (details of samples to be collected was submitted to the Prince Edward Island Management Committee on 14 October 2008)..
3. To collect 200 soil samples, approx. 100 ml each.
4. To collect 100 moss samples (about 20g each).
5. To collect 6 leaves of the unknown species inland of Kildalkey Bay

Permits for activities 1 to 4 to be made out to all four persons listed in section 4. For activity 5, permit only for V.R. Smith

7. NAME OF COMPILER – SIGNATURE – DATE

Prof V.R. Smith 1 Feb 2010

DOC 3.2.14

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the March 2008 SANAP Marion relief voyage (voyage 142) should describe their plans in detail on this form and submit it by no later than 11 February 2008 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Dr Andrew Collier
Phone: 083 3813655
E-mail: collier@ukzn.ac.za

2. AFFILIATION/INSTITUTION/GROUP

Space Physics Research Institute
University of KwaZulu-Natal, Durban

and

Hermanus Magnetic Observatory
Hermanus

3. NAME OF RESEARCH PROJECT/PROGRAMME

Studies of the Magnetosphere and Ionosphere

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

Relief voyage (takeover) personnel:

Mr Etienne Koen [team leader]
Hermanus Magnetic Observatory
Hospital Street
Hermanus
phone: 076 6610170
email: koenej@gmail.com; ekoen@hmo.ac.za

Mr Steve Meyer
Hermanus Magnetic Observatory
Hospital Street
Hermanus
phone: 083 4603369

email: 14621622@sun.ac.za

Dr Pierre Cilliers
Hermanus Magnetic Observatory
Hospital Street
Hermanus
phone: 028-312-1196
email: pjcilliers@hmo.ac.za

Overwintering personnel:

Ms Kari Schoonbee
Hermanus Magnetic Observatory
Hospital Street
Hermanus
phone: 083 4883025
email: skoembs@gmail.com

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

We request provision of the following:

- berths and passage for four persons to and from Marion Island on the SA Agulhas;
- flights for four persons and a limited amount of cargo (approximately 60 kg, electronic equipment) to island
- accommodation for four persons at the Marion Island base (it would be preferable if the takeover personnel could be accommodated in the emergency base since this is the location of our instruments);
- return flight for three persons from the island.

The objectives for the takeover are the following:

VLF-project

- maintenance of the magnetic loop antenna and pre-amplifier;
- maintenance of the whip antenna;
- retrieve data from broadband VLF system, ultraMSK and Doppler receiver;
- replace old Doppler receiver with new unit;
- replace GPS antenna.

Agulhas GPS project

- supervision of HMO dual frequency GPS receiver on board the SA Agulhas (located in Lab D);
- retrieve data from HMO GPS receiver on board the SA Agulhas.

Ionospheric Scintillation project

- maintenance of the GPS Ionospheric Scintillation Monitor (GISTM);
- inspection and maintenance of GISTM antenna
- retrieve data from GISTM;
- upgrade of computer and software on the GISTM system;
- implement software for daily upload of GISTM data from Marion Island;
- tests to determine the cause of anomalous GISTM observations
- feasibility study of moving GISTM receiver to a more stable location and/or to a location nearer to the new base.

Magnetometer project

- magnetometer measurements at the base on the Island during the take-over period
- magnetic survey of potential sites for locating a magnetometer
- feasibility study of installing a magnetometer system during a subsequent expedition.

HartRAO GPS project

- inspection of the HartRAO geodetic GPS receiver and its antennas
- upgrading of the battery backup for the power supply for the HartRAO GPS receiver.

General

- inspection and maintenance of wireless network;
- identification of working space in new base;
- formulation of strategy for possible relocation of VLF, GISTM and GPS antennas from present locations to vicinity of new base.

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details). Detail motivation for zones 3 & 4 are required.

Relief voyage (takeover) personnel:
Zones 1 and 2 with permission for entry and research. No specimens will be collected.

Overwintering expedition members (if any):
All appropriate zones.

7. NAME OF COMPILER – SIGNATURE – DATE

....

Doc 3.2.15

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the SANAP 2009 Marion relief voyage should describe their plans in detail on this form and submit it to Ms Kusi Ngxabani-Tikana by no later than 6 February 2009 for approval to e-mail: kngxabani-tikana@deat.gov.za. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed). Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Dr Pedro M.S. Monteiro
Tel: +27218882437
Mobile: +27824488822
pmonteir@csir.co.za

2. AFFILIATION/INSTITUTION/GROUP

CSIR
Jan Cilliers St,
Stellenbosch 7599

3. NAME OF RESEARCH PROJECT/PROGRAMME

NRF – SANAP Southern Ocean CO2 Observatory

4. FULL NAME(S) OF PARTICIPANTS

(Including overwintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group)

Relief voyage (takeover) personnel:

Ship Based: Mr Warren Joubert Scientist in Charge of underway pCO2 system in the Aft Lab of the SA Agulhas

Overwintering expedition members (if any):

N/A

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

As previously:

Instrument will be in the aft lab where the main requirements will be

Scientific sea water supply (please could the pump be serviced or at least checked)

Please could you allow Mr Joubert to go ashore at a convenient time and for a convenient period

Special Request: if it can be fitted into the schedule I would request that the ship undertakes a special trip from Marion to 55oS and back to provide pCO2 data across the polar front. It does not have to stop and can undertake the whole trip at normal cruising speed. It is expected that this would add 4 – 5 days depending on the weather.

6. TYPE OF PERMIT/S REQUIRED

No Permit Required

Relief voyage (takeover) personnel:

N/A

Overwintering expedition members (if any):

N/A

7. NAME OF COMPILER – SIGNATURE – DATE

Dr Pedro MS Monteiro 29 January 2010 .... 29/01/2010 .....

DOC 3.2.16

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the SANAP 2010 Marion relief voyage should describe their plans in detail on this form and submit it to Mr Adriaan Dreyer by no later than 29 February 2010 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed). Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Prof. Ian Meiklejohn
Department of Geography
Rhodes University
PO Box 94
GRAHAMSTOWN
6140
Tel:
E-Mail: i.meiklejohn@ru.ac.za

2. AFFILIATION/INSTITUTION/GROUP

Rhodes University

3. NAME OF RESEARCH PROJECT/PROGRAMME

Geomorphology and Climate Change

4. FULL NAME(S) OF PARTICIPANTS

(Including overwintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group)

Relief voyage (takeover) personnel:

Team Leader:
Mr Barend Jacobus van der Merwe (University of Pretoria – Overwintering, Marion 67 Team)
Team Members:
Ms Jacqueline Karen Davis (University of Pretoria – Overwintering, Marion 67 Team)
Ms Pumelela Mabeka (Rhodes University)
Mr Gareth Dennis Isenegger (University of Pretoria)

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey

routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Accommodation and meals on SA Agulhas:
2 Pax to Marion Island for takeover and 2 Pax from Marion Island after takeover.

Accommodation and meals on Marion Island:
2 Pax to be housed on Marion Island for the duration of the takeover.

Laboratory Space:
Space for 4 Pax (includes Marion 67 overwintering personnel) and for undertaking soil property tests; normally we are housed in Lower General Purpose Laboratory (Bird Lab).

Flights:

The dates requested for flights are not fixed and can be shifted to fit in with other teams' programmes and weather conditions.

- 1 x Flight into the interior of the island to drop off and repair logging equipment (4 Pax); it is requested that the pax are dropped off on the saddle between Mascarin (State President Swart) and Resolution (Jan Smuts) Peaks, or the closest safe landing spot to that. Additionally, it is requested that this flight also be used to photograph the Ice-Plateau as part of long-term monitoring. The Pax will walk back to Katedraalkrans Hut to overnight (2 nights, depending on the status of the logger at Katedraalkrans and then to return to base. This flight is requested for early in the take-over. However, given that flights to the interior of the Island are so weather dependant, any suitable conditions should be utilised for them.
- 1x Flight to the lower part of the Feldmark Plateau to download (or retrieve) a data logger - 2 Pax (JK Davis and 1 other). To be collected after 4 hours.
- 1x Flight to Repetto's to download (or retrieve) a data logger - 2 Pax (JK Davis and 1 other). To be collected after 4 hours.

Hut Bookings:

The dates requested for these bookings are flexible and can be shifted to fit in with other teams' programmes and weather conditions.

- 2 nights at Katedraalkerans hut, linked to the first flight above (4 Pax) to set up and repair logging equipment and to monitor/photograph the Ice Plateau.
- 3 nights at Katedraalkrans Hut to set-up and repair logging equipment and study sites (3/4 Pax).
- 4 Nights at Kildalkey to investigate Quaternary glacial and peat deposits and to map the boundaries of the deposits penguin colony (4 Pax).
- 1 Round Island (4 Pax), with the with the following itinerary:
    - Night 1: Repetto's Hut
    - Night 2: Mixed Pickle Hut
    - Night 3: Swartkops Hut
    - Night 4: Watertunnel Hut

Other:

- The following study sites are to be visited from Base during the take-over:
  Tates, Freds, Long Ridge, Juniors Kop, Tafelberg, Ships Cove, Bullard Beach, Archway Bay, Macaroni Bay, Piew Craggs, Repetto's Region. The work conducted involves:
    - Monitoring and recording environmental parameters, and downloading data loggers.
    - Monitoring environmental conditions for weathering studies
    - Sediment analyses as part of studies into the Quaternary glaciation of the Island.
    - Collection of rock and soil samples for chemical and textural analysis.

Special diets:
None

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details)

Relief voyage (takeover) personnel:

- Zone 3 permits for the entire takeover for:
  JK Davis (Overwintering), GD Isenegger, P Mabeka and BJ van der Merwe (Overwintering).
- Zone 4 permits for:
  JK Davis (Overwintering), GD Isenegger, P Mabeka and BJ van der Merwe (Overwintering).
  To enter areas on the edge of breeding colonies at Albatross Lakes, Kildalkey and Bullard Beach, and the lava tunnel at Fred's (46°54'25"S; 37°50'26"E). In all cases, our study sites are away from nesting birds and due care will be taken to maintain a safe distance from them.
- Sampling Permits for:
  JK Davis (Overwintering), GD Isenegger, P Mabeka and BJ van der Merwe (Overwintering).
  A maximum of 30kg rock samples, 40kg ground/soil, and 20l water for analysis at Rhodes University and the University of Pretoria.

Overwintering expedition members (if any):

JK Davis and BJ van der Merwe (Marion 67)

7. NAME OF COMPILER – SIGNATURE – DATE

KI Meiklejohn ..... 29 January 2010

DOC 3.2.17

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the March 2010 SANAP Marion relief voyage (voyage 142) should describe their plans in detail on this form and submit it by no later than 29 January 2010 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

DR. MAËLLE CONNAN

m.connan@ru.ac.za

Phone: 046 603 8579
Cell phone: 076 593 0868
Fax: 046 622 8959

2. AFFILIATION/INSTITUTION/GROUP

Southern Ocean Group, Department of Zoology and Entomology
Rhodes University, Grahamstown 6140

3. NAME OF RESEARCH PROJECT/PROGRAMME

'SOOTY AND LIGHT-MANTLED ALBATROSS STUDIES AT MARION ISLAND'

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

Relief voyage (takeover) personnel:

Dr. Maëlle Connan (Group leader) – Female - WILL BE ISLAND BASED
Mr. Bo Bonnevie – Male - WILL BE ISLAND BASED

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

Objectives: During the **2010 relief voyage**, our **fieldwork will be focused on Sooty and Light-mantled albatrosses**. In addition to our **diet project** (continuation of last year), we would like to initiate a **genetic study** of these two species at the island scale.

Regarding the diet project, the main goal is to **investigate at different time scales, the diet of two closely related sympatric albatross species breeding on Marion Island**. This investigation will be carried out using direct (conventional stomach content analysis) and indirect methods (using stable isotopes, and fatty acids and fatty alcohols as dietary tracers). As far as the genetic project is concerned, we aim to **study the genetic population structure at the scale of Marion Island** a first step before **extending this genetic study at the species level by obtaining samples from the other breeding colonies**.

Data collection: We would like to sample 45 birds (30 adults + 15 chicks) for both species; Light-mantled and Sooty albatrosses (Table 1). The same birds will be sampled for the diet and the genetic project.

Table 1. Sampling plan.

	Light-mantled albatross	Sooty albatross
Breeding Adults		
Short foraging trips		
Stomach contents	15	15
Blood samples	15	15
Feathers	15	15
Long foraging trips		
Stomach contents[a]	15	15
Blood samples	15	15
Feathers	15	15
Chicks		
Stomach contents[b]	15	15
Blood samples	15	15
Feathers	15	15
Total of bird sampled	45	45

[a]prey remains + stomach oils; [b]mix of short and long trip samples

Sampling Strategy/Hut booking:

For our genetic project, we would need to sample both species all around the island, especially in the Swartkop and Mixed Pickle areas, in order to maximise the distance between the colonies sampled. Most of the time, we will be based at Marion Base to sample birds at Ship's Cove, Long Ridge, Macaroni Bay, Skua Ridge. According to the availability of the huts, we would like to undertake those two trips:

- *One trip to Swartkop ('southern road'):*
  - Marion Base to Kildalkey hut by walking, 1 night at Kildalkey hut,
  - Kildalkey hut to Watertunnel hut by walking, 1 night at Watertunnel hut,

- Watertunnel hut to Rook's hut by walking, 2 nights at Rook's hut as we will start to sample birds,
- Rook's hut to Swartkop hut by walking, 3 nights at Swartkop hut to sample birds around (La Grange) and have time to prospect to find nests for both species.
- If possible, we would like air support for the way back to Base as we will have samples which need to be frozen as quickly as possible, and we also will have to carry bird stomach contents. However, if the air support is not possible, we will speak to people on the island to know the shorter way to come back to Base from Swartkop.

• *One trip to Mixed Pickled ('northern road'):*

- Marion base to Repetto's hut by walking, 1 night at Repetto's hut,
- Repetto's hut to Mixed Pickled hut by walking, 2 nights at Mixed Pickled hut to sample birds around (Mixed Pickle cove, Azorella kop),
- Mixed Pickled hut to Cape Davis hut by walking, 2 nights at Cape Davis hut to sample birds around,
- Cape Davis to Marion Base by walking.

Collecting methods:

• *Stomach contents*: Obtained by spontaneous regurgitation (or gentle stomach massaging).

- Adult short trip samples: stomach contents will be directly placed in plastic bags and frozen at –20℃. ==> *Identification and measurements of prey remains.*
- Chick and adult long trip samples: stomach oil will be removed from the mix of prey remains with a sieve, placed in glass vials with 2mL of chloroform + 0.01% butylated-hydroxytoluene (BHT) (anti-oxidant) under a nitrogen atmosphere, and stored at -20℃. Prey remains will be placed in plastic bags and frozen at –20℃. ==> *Lipid analysis of stomach oils = lipids of the prey of birds, Identification and measurements prey remains.*

• *Blood samples*: 2-3mL of blood will be collected by a heparinized syringe by venipuncture in the tarsus.

- 10 drops of total blood: will be complemented with ethanol 70 % in an eppendorf, and stored at -20℃. ==> *Molecular sexing, Genetic analysis*
- <1mL of total blood will be complemented with ethanol 70 % in an eppendorf, and frozen at –20℃. ==> *Stable isotope studies.*
- 2mL of total blood will be centrifuged in order to separate blood cells from plasma. Plasma will be placed in glass vials with 2mL of chloroform + 0.01% butylated-hydroxytoluene, under a nitrogen atmosphere, and stored at -20℃. ==> *Lipid analysis of the plasma = lipids assimilated by birds.*

• *Feather samples*: 6 to 8 feathers from the back (between the wings) will be plucked and stored dry in a plastic bag. ==> *Stable isotope studies.*

LOGISTICAL REQUIREMENTS ON THE ISLAND

- ✓ **Ad hoc transport (air support) between base and seabird colonies non accessible by walking.**
- ✓ **Some space in an island lab to process the samples (small electric centrifuge provided by Rhodes).**
- ✓ **Some space in an island lab freezer (-20℃) to store the samples which must never be defrosted.**
- ✓ **Camping equipment if the huts are already occupied.**

LOGISTICAL REQUIREMENTS ON THE SHIP ON THE WAY BACK

- ✓ **Some space in a -20℃ freezer for our samples as th ey must never be defrosted; very important especially for the samples dedicated to fatty acid analyses.**

6. TYPE OF PERMIT/S REQUIRED

*(**Zones 1, 2, 3** and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details). Detail motivation for zones 3 & 4 are required.*

Zone 1-3 required for **Dr. Maëlle Connan** and **Mr Bo Bonnevie** during the entire take over period to reach the seabird colonies and **collect samples** (number of samples: see Table 1) from **Light-mantled and Sooty albatrosses**.

Light-mantled and Sooty albatrosses breed on cliffs in small groups so we need to cover a lot of coastline to get enough samples.

7. NAME OF COMPILER – SIGNATURE – DATE

Connan Maëlle M Connan 26/01/2009

2010 MARION RELIEF VOYAGE

Principal investigator: Dr. Maëlle Connan (post-doctoral researcher)

Contacts: *Rhodes University, Dept. Zoology and Entomology, Southern Ocean Group, P.O. Box 94, Grahamstown 6140, South Africa.*

Tel office: 046 603 8579 Cell phone: 076 593 0868

Title of research:

'Sooty and Light-mantled albatross studies at Marion Island'

Co-investigators/Assistant researchers: Mr. Bo Bonnevie (Rhodes University, Information Technology Division), Prof. Christopher McQuaid (Rhodes University, Dept. Zoology and Entomology).

An application will be sent in mid-February to the Ethical Committee of Rhodes University for approval.

1. Project

1.1. Background

As part of the programme 'Spatial variability in Southern Ocean ecosystems', funded by the National Research Foundation (2007-2011) and allocated to Prof. Christopher McQuaid, researchers of the Southern Ocean Group (SOG) from Rhodes University (Department of Zoology and Entomology) are involved in an extensive study of the Prince Edward Island ecosystem. During the 2009 relief voyage, a team from Rhodes University went to Marion Island: 8 researchers and students were ship-based and 3 researchers (Maëlle Connan, Bo Bonnevie, Christopher McQuaid) were island-based. The ship-based team extensively sampled benthic and pelagic species for further stable isotope and fatty acid analyses to identify the carbon flow within the benthic and pelagic food webs around the Prince Edward islands, and to determine the level of benthic-pelagic coupling (part of Louise Allan's PhD). In addition, they investigated regional gradients of organic matter and microbial metabolism, to determine the relation between changes in the organic matter pool and the activity of heterotrophic bacteria (Post-doctoral research of Mathilde Schapira). The island-based team sampled Grey-headed (GHA), Light-mantled (LMSA) and Sooty (SA) albatrosses as part of a study investigating the resource partitioning in the albatross community during the breeding season (stomach contents, stable isotope analysis of blood, fatty acid analysis of blood and stomach oil) as well as during the moulting period (stable isotope analysis of feathers).

During the three and half weeks on the island, 109 adults and chicks were sampled: 45 GHA, 38 SA, and 26 LMSA (Table 1). The difference in the number of birds sampled between the three species reflects how difficult some species are to access. For example, GHA typically breed in dense colonies whereas LMSA and SA breed on cliffs in small groups. GHA was studied at Grey-headed Ridge, while most of the LMSA and SA were sampled on the East and South coasts (from Ship's Cove to Killerwhale Cove) however seven birds were also sampled at Bill Briggs. With regards to the laboratory work for the three albatross species all the sexing and stable isotope analyses have been completed, and fatty acid analyses are currently being processed.

Table 1. Samples collected during the relief voyage to Marion Island by species, age and sex.

	Grey-headed albatross		Light-mantled albatross		Sooty albatross		White-chinned petrel
	Female	Male	Female	Male	Female	Male	
Breeding Adults	11	13	2	6	8	7	
Short foraging trips							
Stomach contents	5	5	-	2	1	2	
Blood samples	5	5	-	2	1	2	
Feathers	5	5	-	2	1	2	
Long foraging trips							
Stomach contents	2	3	1	-	1	-	
Blood samples	2	3	1	-	1	-	
Feathers	2	3	1	-	1	-	
Unknown duration trips							
Stomach contents	-	-	-	-	-	-	
Blood samples	4	5	1	4	6	5	
Feathers	4	5	1	4	6	5	
Chicks	12	9	9	9	11	12	
Stomach contents	3	3	3	5	2	3	
Blood samples	12	9	9	9	10	12	
Feathers	12	9	9	9	11	12	
Adults - carcasses							
Feathers							26

1.2. Objectives

During the **2010 relief voyage**, our **fieldwork would be focused on SA and LMSA**. In addition to our **diet project** (continuation of last year), we would like to initiate a **genetic study** of these two species at the island scale.

Regarding our diet project, the main goal is to **investigate at different time scales, the diet of two closely related sympatric albatross species breeding on Marion Island**. This investigation will be carried out using direct (conventional stomach content analysis) and indirect methods (using stable isotopes, and fatty acids and fatty alcohols as dietary tracers).

As far as the genetic project is concerned, we aim to **study the genetic population structure at the island scale of Marion Island**. SA *Phoebetria fusca* and LMSA *P. palpebrata* are philopatric and breed sympatrically only at Prince Edward and Crozet Islands. In addition, SA breeds at Gough, Tristan da Cunha, Kerguelen and Amsterdam Islands, whereas LMSA breeds at South Georgia, Auckland/Campbell/Antipodes Islands, Amsterdam-St Paul, Kerguelen, Heard, and Macquarie Islands (and recently South Shetland Islands; Lisovski et al. 2009). This genetic project at the island level would therefore be a first step before developing **a collaborative project which would extend this genetic study at the species level by obtaining samples from the other breeding colonies**. With the samples collected last year for our diet project, we already have DNA extracts for 8 LMSA adult samples (7 collected north of Marion Base and 1 south), and 15 SA adult samples (2 north of Marion Base and 13 south). Both species are

classified as Endangered (SA) and Near-threatened (LMSA) (BirdLife International 2009), and world populations are decreasing because of several threats such as introduced predators on breeding islands, fisheries, and/or diseases. Therefore data about the genetic structure of a species is crucial for conservation purposes.

2. Study design

We planned to sample 45 birds (30 adults + 15 chicks) for each of the two albatross species (Light-mantled Albatross *Phoebetria palpebrata*, Sooty Albatross *Phoebetria fusca*) (Table 2). We cannot reduce the number of samples because we need a minimum number to accurately determine the diet and foraging strategy of each species (short and long foraging trips of adults). We would like to sample those 45 birds of both species all around the island for the genetic project, as the genetic project will be done on the same 45 birds sampled for the diet study (see Appendix A).

Table 2. Sampling plan.

	Light-mantled Albatross	Sooty Albatross
Breeding Adults		
Short foraging trips		
Stomach contents	15	15
Blood samples	15	15
Feathers	15	15
Long foraging trips		
Stomach contents[a]	15	15
Blood samples	15	15
Feathers	15	15
Chicks		
Stomach contents[b]	15	15
Blood samples	15	15
Feathers	15	15
Total of bird sampled	45	45

[a]prey remains + stomach oils; [b]mix of short and long trip samples

Diet project

Three complementary and non-destructive methods will be employed to investigate the diet of seabirds at different time scales (Table 3). Firstly, the conventional technique of collecting and analysing stomach contents will be used. Secondly, the stable isotope method will be applied to tissues with different protein turnover rates (blood and feathers). In the marine environment, the ratio of the stable isotopes of carbon ($^{13}C/^{12}C$, $\delta^{13}C$) and nitrogen ($^{15}N/^{14}N$, $\delta^{15}N$) in proteins are indicators of the foraging areas and trophic levels of consumers, respectively (*e.g.* Hobson 1993, Cherel *et al.* 2005, Jaeger *et al.* 2009). Thirdly, lipid analyses of

classified as Endangered (SA) and Near-threatened (LMSA) (BirdLife International 2009), and world populations are decreasing because of several threats such as introduced predators on breeding islands, fisheries, and/or diseases. Therefore data about the genetic structure of a species is crucial for conservation purposes.

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Table 2. Sampling plan.

	Light-mantled Albatross	Sooty Albatross
Breeding Adults		
Short foraging trips		
Stomach contents	15	15
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Stomach contents[a]	15	15
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Total of bird sampled	45	45

[a]prey remains + stomach oils; [b]mix of short and long trip samples

Diet project

Three complementary and non-destructive methods will be employed to investigate the diet of seabirds at different time scales (Table 3). Firstly, the conventional technique of collecting and analysing stomach contents will be used. Secondly, the stable isotope method will be applied to tissues with different protein turnover rates (blood and feathers). In the marine environment, the ratio of the stable isotopes of carbon ($^{13}C/^{12}C$, $\delta^{13}C$) and nitrogen ($^{15}N/^{14}N$, $\delta^{15}N$) in proteins are indicators of the foraging areas and trophic levels of consumers, respectively (*e.g.* Hobson 1993, Cherel *et al.* 2005, Jaeger *et al.* 2009). Thirdly, lipid analyses of

stomach oils and of blood will be undertaken. By comparing the signatures of marine species (crustaceans, fish and squids; dataset Connan *et al.* unpubl.) fatty acid and fatty alcohol signatures of stomach oils will indicate the main prey species eaten by adult birds during long foraging trips. Lipid composition of blood will inform us of the lipids effectively assimilated by birds (*e.g.* Horgan & Barrett 1985, Connan *et al.* 2007, Tierney *et al.* 2008).

Table 3. Time scale and description of the three methodologies that will be applied.

Analysis	Time scale	Description
Stomach content	"Snap-shot"	Prey species and size - quantitative analysis
Stable isotopes		
Blood	1-2 months	Foraging areas and trophic level
Feather	Moulting period	Foraging areas and trophic level
Lipids		
Stomach oil	Long foraging trips (≈ 10 days depending on species)	Prey species - qualitative analysis
Blood	1 week to months	Prey species - qualitative analysis

Genetic project

The project will be conducted in collaboration with Prof. Nigel Barker (Dept. of Botany, Rhodes University). This genetic project at the island scale is a first step **before obtaining samples from the other breeding colonies in order to apprehend the population genetic structure of these two species of albatrosses**. We will start by analyzing the mitochondrial DNA and more specifically the cytochrome *b*, and the Domain I of the mitochondrial control region as first approximations (*e.g.* Techow *et al.* 2009). The advantage of the cyt*b* is that the primers are already available (Nunn *et al.* 1996). However, slow rates of mitochondrial DNA evolution have been reported in albatrosses (Nunn & Stanley 1998), so we might use a second approach with amplified fragments length polymorphisms (AFLPs) and/or microsatellites depending on the results of the mitochondrial DNA analyses (*e.g.* Bried *et al.* 2007, Milot *et al.* 2008).

3. Anticipated research outputs

The main research outputs will be:

- *Seabird ecology:*
  - Description of feeding of the Light-mantled and Sooty albatrosses at different time scale (breeding season [short and long foraging trips] but also during the moulting period),
  - Sex-specific foraging behavior of adults of Light-mantled and Sooty albatrosses,

- Interannual variation of the diet by comparing our results with previous data that used conventional stomach content method (top predators used as proxy to detect changes in the marine environment),
- Interaction with long-line fisheries (proportion of baits in their diet compared with their natural prey, similarities between lipid signature of stomach oils of albatrosses and of baits),
- Genetic diversity of the two species at the island scale *vs* world scale, crucial information for conservation purposes.

- *Fatty acid and fatty alcohol analyses:*
  - Description of the fatty acid and fatty alcohol composition of stomach oils of Light-mantled and Sooty Albatrosses.

4. Protocol

Protocol is summarised in Appendix A.

4.1. Capture of birds

Adult birds will be captured using a crook when they return from their foraging trips to feed their chicks. Chicks will be captured by hand on their nests.

4.2. Stomach contents

These will be obtained by spontaneous regurgitation (or gentle stomach massaging).

- Adult short foraging trip samples: stomach contents will be placed in plastic bags and frozen at -20°C as soon as possible.

  ==> *Identification and measurements of prey remains*

- Chick samples and adult long foraging trip samples: stomach oil will be removed from the mix of prey remains, placed in glass vials with 2mL of chloroform + 0.01% butylated-hydroxytoluene (anti-oxidant) under a nitrogen atmosphere, and stored at -20°C. Prey remains will be placed in plastic bags and frozen at -20°C as soon as possible.

  ==> *Identification and measurements of prey remains*

  ==> *Lipid analysis of stomach oils = lipids of the prey of birds*

4.3. Blood samples

Two to three millilitres of blood will be collected by a heparinised syringe by venipuncture in the tarsus.

These blood samples will be divided into three sub-samples:

- 10 drops of total blood: will be complemented with ethanol 70 % in an eppendorf, and stored at -20°C as soon as possible.

  ==> *Molecular sexing*

  ==> *Genetic analysis*

- < 1mL of total blood: will be complemented with ethanol 70 % in an eppendorf, and stored at -20°C as soon as possible.

  ==> *Stable isotope studies of carbon and nitrogen = geographic area visited and trophic level during breeding season*

- 2mL of total blood will be centrifuged in order to separate blood cells from plasma. Plasma will be placed in a glass vial with 2mL of chloroform + 0.01% butylated-hydroxytoluene under a nitrogen atmosphere, and stored at -20°C.

  ==> *Lipid analysis of plasma = lipids assimilated by birds*

4.4. Ring & Measurements

All manipulated birds will be ringed to avoid them being sampled twice and measured for SAFRING and MCM data; standard measurements, culmen, bill depth at gonys, minimal bill depth, wing and mass, will be taken.

4.5. Feather samples

Six to eight feathers will be plucked from the back (between the wings) from chicks and adults, and they will be stored dry in a plastic bag.

==> *Stable isotope analyses of carbon and nitrogen = geographic area visited and trophic level during moulting period*

4.6. Release of birds

Chicks will be replaced on their nests, and adults near their nests.

5. References

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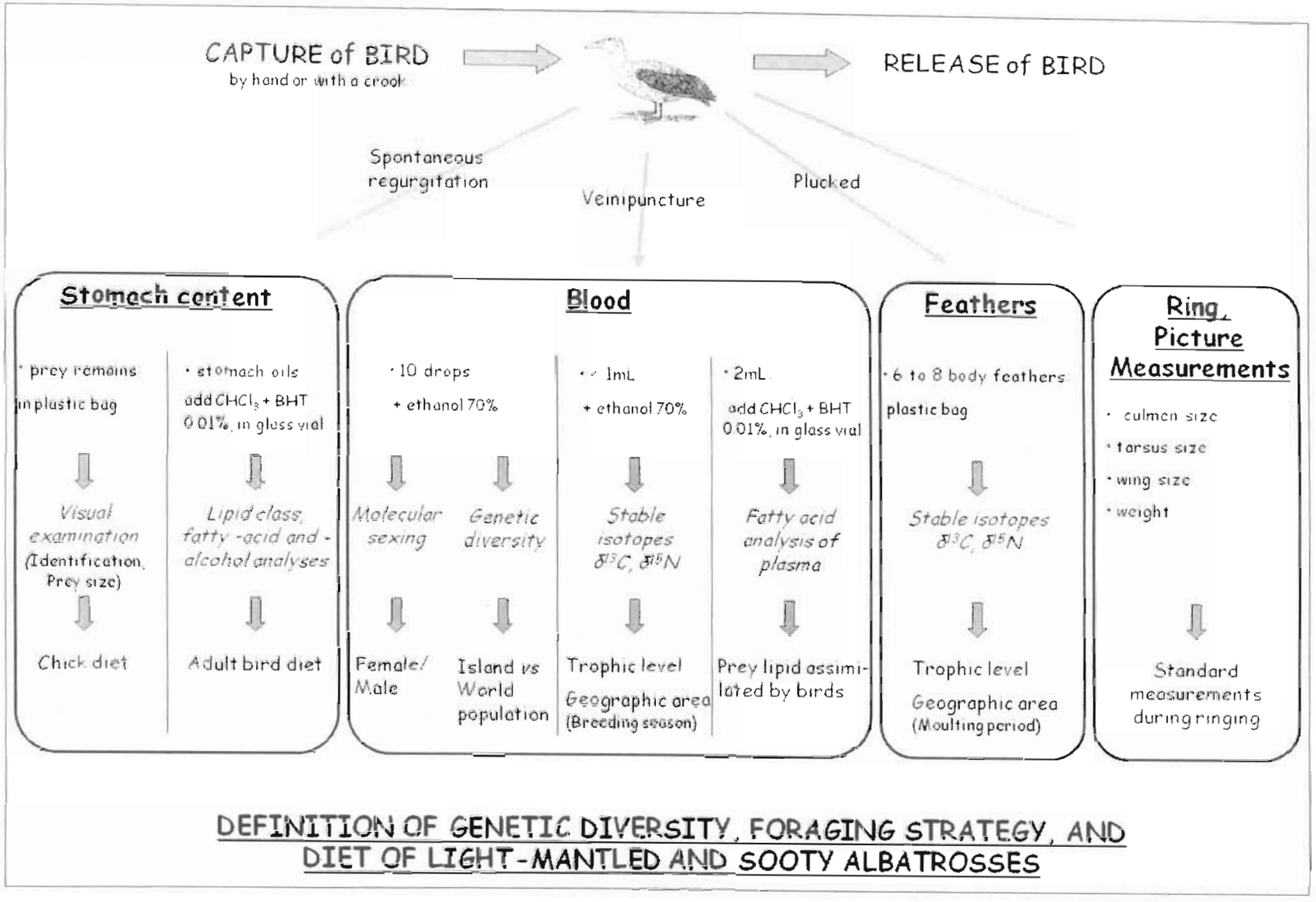

DEFINITION OF GENETIC DIVERSITY, FORAGING STRATEGY, AND DIET OF LIGHT-MANTLED AND SOOTY ALBATROSSES

APPENDIX A

DOC 3.2.18

SANAP 3
MARION

SOUTH AFRICAN NATIONAL ANTARCTIC PROGRAMME (SANAP) VOYAGE PARTICIPATION DETAILS

Applicants wishing to participate in the April 2010 SANAP Marion relief voyage (Voyage 149) should describe their plans in detail on this form and submit it by no later than 12 February 2010 for approval. A copy of the completed form will be attached to the Sailing Instructions for the voyage. Please complete this form carefully and legibly (typed) and mail to Adriaan Dreyer. Add additional sheets if necessary.

1. PRINCIPAL INVESTIGATOR & CONTACT DETAILS

Prof M.N. Bester, MRI, UP (mnbester@zoology.up.ac.za) (Tel. 012-4202067)

2. AFFILIATION/INSTITUTION/GROUP

MAMMAL RESEARCH INSTITUTE, DEPARTMENT OF ZOOLOGY & ENTOMOLOGY, UNIVERSITY OF PRETORIA

3. NAME OF RESEARCH PROJECT/PROGRAMME

PINNIPED MONITORING PROGRAMME

(a) ELEPHANT SEALS AS OCEANOGRAPHIC PLATFORMS / EXPLORATION OF THE OCEANS: POLE TO POLE (2007-2010)

(b) POPULATION ECOLOGY OF PINNIPEDS AT THE PRINCE EDWARD ISLANDS (2009-2013)

4. FULL NAME(S) OF PARTICIPANTS

(Including over-wintering expedition members (for permitting purposes ONLY), and indicating who the group leader for the whole group will be when there are two or more persons in the group. Also indicate male/female)

Relief voyage (takeover) personnel:

Prof MARTHÁN N. BESTER	(GROUP LEADER - MRI)
Mr TREVOR McINTYRE	(SANAP PHD STUDENT – MRI)

Overwintering expedition members (if any):

Mr LOURENS DE LANGE	(MRI)
Mr TRISTAN SCOTT	(MRI)
Miss JEAN PURDON	(MRI)
Mr DONOVAN WILLIS	(MRI)

5. LOGISTIC REQUIREMENTS & OTHER DETAILS

(Please provide details of location and number of visits to each area, special support required such as air support, dinghy support, camping equipment, specific food

requirements etc., laboratory/work space required ashore or aboard, and details of any other important factors/requirements which the Departmental Coordinating Officer should be aware of. For ship-based activities, please also provide survey routes and/or station positions and attach a diagrammatic representation of these. Logistical support and maintenance/construction personnel should describe their activities (attach work schedule), areas of work etc.)

(i) Deployment of SMRU CTD (n = 2) and TEMP (n = 2) SLDRs on large, tagged elephant seal males/females; Geolocators (n = 5) on overwintering underyearlings.

(ii) Training and orientation of four new field assistants for the 2010/2011 field season of marking, resighting and censusing of elephant seals; determination of the diet (from scat analyses) of fur seals and early growth of fur seal pups; further instruction in recovery and re-deployment of instrumentation during the 2010 breeding and moulting season.

(iii) Debriefing of the 2009/2010 field assistants, and consolidating all data sets.

(iv) Restraining, marking and instrumenting (Sirtrack PTT and Wildlife Computers TDR combinations) of Subantarctic fur seal mother/pup pairs at the Rockhopper Bay breeding site (n =5), SPLASH Tags at Mixed Pickle Cove (n = 5) in support of the attendance pattern and at-sea tracking study.

(v) Restraining, marking and instrumenting (GLS = 30, GPS trackers = 2) of Antarctic fur seal females at their Trypot and Landfall breeding sites. Deployment of SPLASH tags and retrieval of Sirtrack PTTs at Watertunnel Beach breeding site.

(vi) In tandem with deployment of transmitters [(i), (iv) & (v) above] and photogrammetry [(vii) & (x) below], blood and whisker sampling of fur seals (n = 50) and blood & whisker sampling of elephant seals (n = 20).

(vii) Pup/underyearling weighing of fur seals (n = 100) & immobilized ≥ yearling elephant seals (n = 20).

(viii) Processing of fur seal scat samples (n = 100).

(ix) Collection (non-invasive) of samples of moulted skin from both tagged and untagged, moulting elephant seals (~ 50) (Genetics project dealing with kinship of elephant seal population).

(x) Digital photogrammetry of immobilized [see (i), (vi) & (vii) above] and tagged (free-ranging) elephant seals.

(xi) Setting up of Automated Active Tag Readers (ATRs) and deployment of Active Tags (ATs) on Subantarctic fur seal females (n = 20) at Rockhopper Bay and Mixed Pickle Cove (n = 20).

Trevor McIntyre (**TM**, ex-Marion 62 Team member) will be responsible for data management and technical support, and deployment of GLS and GPS transmitters & weighing of elephant seals (in support of his PhD study into the '*Southern Elephant Seals as Oceanographic Explorers*'), and together with **Marthán Bester** (**MB,** Group Leader), responsible for seal blood sampling, debriefing of the returning (Marion 66) field biologists **Derek v.d. Merwe (DvM), Mia Wege (MW)** and **Martin Postma (MP)**, and briefing of the new field biologists of Marion 67 (**JP**, **TS**, **LdL** and **DW** above). **TM** will be responsible for training the new field biologists in handling and analyses of satellite tracking and time-depth recording data of fur seals after Bonadonna *et al.* (2000), Lea & Dubroca (2003) and Lea *et al.* (2006, 2008), and assisting with deployment of the ARGOS-linked PTTs, GPSs, TDRs and Geolocators on fur seals and whisker and blood sampling. **MB** will be responsible for the care of the seals during the deployment of GLS and GPS transmitters, the geolocators, and the day-to-day running of the overall Pinniped Monitoring Project. The work continues the ongoing collaborative research programme between the **MRI /AWI /AAD** and University of Tasmania (**UTAS**) Antarctic Wildlife Research Unit (**AWRU**).

Target Areas & Special Support:

(i) Intensive searching for Antarctic fur seal females at Trypot, Landfall and Watertunnel breeding beaches (3 x 3 person teams) during Marion **Week 1** before

their final departure after weaning their pups, for deployment of GPS and Argos PTTs, TDR and GLS loggers, Splash Tags and blood & whisker sampling. Clearing/collection of *A. gazella* scats at Watertunnel study site. Overnight at Watertunnel (14 & 15 April = 3 persons) and Kildalkey (16 April = 3 persons).

(ii) Clearing/collection of *A. tropicalis* scats at Cape Davis study site; weighing of Subantarctic fur seal pups (2 evenings at Cape Davis, 14th & 15th = 4 persons) and 2 evenings at Mixed Pickle, 16th & 17th = 4 persons to weigh pups, deploy Splash Tags (n = 5) and start deploying Active Tags (ultimately 20 by the end of takeover). (**Week 1**)

(iii) Searching for marked elephant seals along east coast sites especially between Sealer's Beaches and Archway Bay (3 x 3 person teams) throughout Marion **Weeks 1 – 5** in Zones 1-3. Geolocators and satellite transmitters will be deployed on selected, tagged elephant seals, a time consuming exercise involving searching, up to Kildalkey in the South, and King Penguin Bay Beaches in the North. Deployment of instrumentation is absolutely dependent upon good (dry) weather, and absence of helicopter noise/overflights.

(iv) Intensive searching for Antarctic fur seal females at Landfall breeding beach (1 x 3 person team) during Marion **Week 2** before their final departure after weaning their pups, for deployment of GLS loggers and blood & whisker sampling (overnight at Kildalkey on 20th & 21st April).

(v) The main elephant seal breeding & moulting sites from Cape Davis to Goodhope Bay West along the eastern aspect of the island - two traverses on foot (4 persons during Marion **Weeks 2 & 4**), on each occasion spending a night each at various field huts [see next sentence and (vi) below. Will involve **two round island trips**, the **first round island** in **Week 2** to orientate new team members - one night each at Repetto's (19th), Cape Davis (20th), Mixed Pickle (21st & 22nd), Swartkop (none), Rook's (23rd), Watertunnel (24th) and Kildalkey (none). The **second round island** to orientate new team members (4 persons) with nights at Kildalkey (2rd), Greyheaded (3rd), Swartkop (4th), Mixed Pickle (5th & 6th) and Cape Davis (7th); recover/deploy balance of geolocators, and Active Tags at Mixed Pickle.

(vi) Deployment of geolocators on elephant seal underyearlings on east coast beaches to Kildalkey and Satellite transmitters/Time-Depth recorders on fur seals in Rockhopper Bay (**Week 3**).

(vii) Capture, restraint and marking of Subantarctic fur seal mother/pup pairs (at Rockhopper Bay) at intervals throughout **Weeks 1-5**, for attendance patterns (Active Tags) and deployment of instrumentation (Satellite Transmitters/TDR combinations).

(viii) All other work will be done opportunistically during abovementioned periods and in **Week 5** from the Main Base. The days in Marion **Week 5** will be used to (a) consolidate and collate all data, (b) scat collections at Repettos (11th May) and Cape Davis (12th May) and (c) complete scat processing for packing and backloading to the S.A. Agulhas.

[**Week 1** = 12-17 April ; **Week 2** = 18-24 April; **Week 3** = 25 April-01 May; **Week 4** = 02–08 May; **Week 5** = 9-15 May]

We need the exclusive use of the Mammal Laboratory during the takeover [2 takeover personnel, 4 new and 3 returning team members = 9 persons].

Special support is limited to:

(i) Airdrop a party of 3 sealers at Watertunnel **early in Week 1**.

(ii) Airdrop Automatic Active Tag Readers and batteries at Mixed Pickle Cove Hut **early in Week 1**.

(iii) Retrieval by air from Mixed Pickle Cove the Seal party (n=2) at the beginning **Week 2** = 19 April; if not possible, they will walk-out.

Special diets: Chicken Breyani only!

6. TYPE OF PERMIT/S REQUIRED

(Zones 1, 2, 3 and 4 - Standard Entry/Research, Collection and/or Special Entry Permits - including names of permit holders, location of work (zone), number of samples/specimens to be collected, etc. – please refer to the Prince Edward Islands Management Plan for details). Detail motivation for zones 3 & 4 are required.

Relief voyage (takeover) personnel:

(i) Entry Permit to Zones 1 - 3 (MB, TM)

Overwintering expedition members (if any):

(i) Entry Permit to Zones 1 – 3 (**JP**, **TS**, **LdL** and **DW**). All actions mentioned below (ii-v) will continue past the takeover period, as set out in the relevant SACAR1 and 2010/2011 **Sealer Workplan**, and therefore numbers of animals handled / weighed / sampled will be increased.

(ii) Collection Permit for Fur seal Scats (~ 100) and monthly thereafter (MB & overwinterers).

(iv) Permit to handle (weigh) Fur seal (n = 100) & Elephant seal underyearlings (n = 10) (all participants) and monthly thereafter (expeditioners).

(v) Permit to chemically immobilize Elephant Seals (n = 10) [JP, LdL, MB, TM], deploy instrumentation (n = 10), draw blood [from hindflipper]] and weigh a representative sample after photographing them digitally (All participants) and monthly thereafter (overwinterers).

(vi) Permit to restrain, mark and draw blood from Subantarctic fur seal mothers (n = 40) and mark their pups (n = 40); restrain, mark and draw blood from Antarctic fur seal females (n = 40), mark their pups (n = 40) and deploy GPS/GLS/PTTs/TDRs/SPLASH Tags on all of these fur seal mothers (all participants), and again in October/November 2010, and January-February 2011 (overwinterers).

Fur Seals will be physically restrained by hand and/or hoopnet (Bester 1988; Erickson & Bester 1993, Bonadonna *et al.* 2000), adult females tagged in the trailing edge of the front flippers, tracking instruments deployed (Bonadonna *et al.* 2000, de Bruyn *et al.* 2009a), 10ml blood drawn from hindflippers (Geraci & Sweeny 1978), pups paint-marked/fur clipped (Erickson *et al.* 1993) and released. Elephant seals will be immobilized chemically using a remote injection technique (Bester 1988) and appropriate dosages of ketamine (Bester 1988; Erickson & Bester 1993) and weighed (de Bruyn *et al.* 2009b). Satellite transmitters, Time-depth recorders and Geolocators will be affixed using a quick setting epoxy resin following standard procedure, retrieved during the spring breeding and summer moulting season (Jonker & Bester 1998, Bonadonna *et al.* 2000), and redeployed thereafter. This time, at the time of chemical immobilization, 5 ml of blood will be routinely collected from the hindflippers, and not the extradural-intravertebral vein (vide Woods *et al.* 1994) through the use of standard needles (not the 90mm x 18 gauge spinal tap needles following the procedure described in Geraci & Sweeney 1978). The procedures employed is considered safe with no lasting detrimental effect, and have been used successfully on Marion Island since 1986, and moulted skin will simply be picked off (Salwicka 2000). Currently all the above procedures have ethics clearance from the Animal Use and Care Committee (AUCC) of the Faculty of Veterinary Science, University of Pretoria, under AUCC 040827-022, AUCC 040827-023, AUCC 040827-024 and EC030602-016 (for confirmation, please contact Elmarie.Mostert@up.ac.za and ethics@up.ac.za).

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7. NAME OF COMPILER – SIGNATURE – DATE

Prof M.N. BESTER		08 February 2010
.....	.....	.....

Doc 4-1

From: "Nico de Bruyn" <pjndebruyn@zoology.up.ac.za>
To: "Jasmine Arnold" <Jarnold@deat.gov.za>
Date: 2010/02/19 03:33 PM
Subject: Add to minutes of 28th PEIMC meeting

CC: "Adriaan Dreyer" <adreyer@deat.gov.za>, "Carol Jacobs" <cjacobs@deat.gov...

Dear Jasmine,

It would appear as if the team leader and deputy leader of the current (M66) Marion Island overwintering team has issued orders to their team to submit copious amounts of forms and other documentation for "permission" to leave the base and do their work in the field. I have recieved information from at least two sources (from different field programmes) on the island, that work plans and schedules are being requested by the leader before people can head into the field to do their work. I was dubious about the authenticity of earlier such assertions and therefore reticent to raise the issue, but now feel that the situation requires clarification.

According to these rumours, this ruling was passed down from Henry Valentine and Richard Skinner at DEA. I am doubtful that Henry or Richard would bypass the PI's and PEIMC with such an important bit of ruling. As such, and based on further information from the island over the past while, am concerned that the leaders of the M66 team are infact abusing their authority. In so doing, causing significant inconvenience and problems for the remainder of the team in terms of their work programmes.

As such I would appreciate this matter to be minuted for the comming PEIMC meeting in order for clarity to be reached.

Thank you,
Nico

--
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Department of Zoology & Entomology
University of Pretoria
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*** "I try to make everyone's day a little more surreal." ***

*** "I've been visualizing the conceptualization process. That's the hard part." ***

(Calvin; Calvin & Hobbes by Bill Watterson)

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environment & tourism

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

Ref: C10/14/2
Enquiries: Ms J. Arnold
Tel: 021 405-9425 **Fax:** 021 405-9424 **E-mail:** jarnold@deat.gov.za

Prof Steven Chown
DST-NRF Centre of Excellence for Invasion Biology
Department of Botany and Zoology
University of Stellenbosch
Private Bag X1
MATIELAND
7602

084 2062285

12 February 2010

Dear Prof Chown

PRINCE EDWARD ISLANDS MANAGEMENT COMMITTEE (PEIMC) MEETING:
26 FEBRUARY 2010 (09:45)

1. Enclosed for your information, please find the documentation (including agenda, time and venue) for the above-mentioned meeting. It would be much appreciated if you could kindly go through these documents in detail prior to the meeting.

2. Should you have any queries, you are welcome to contact me.

Kind regards

Jasmine Arnold
for DIRECTOR-GENERAL

Chown, SL, Prof <slchown@sun.ac.za>

From: Patricia van Heerden [patvanheerden@gmail.com]
Sent: 19 February 2010 17:12
To: Chown, SL, Prof <slchown@sun.ac.za>
Subject: Re: Issues around Filming on Marion Island

Dear Steven,
Thanks. I will not apply again. I have tried a couple of times. I only meant by the term invasive that the crew are not touching animals, like regurgitating birds for instance, they are merely observing. I do not think anyone has acted inappropriately. Thanks for your reply.
Kind Regards,
Pat

On 19 February 2010 15:44, Chown, SL, Prof <slchown@sun.ac.za> <SLCHOWN@sun.ac.za> wrote:

Dear Patricia

The Zone 4 issues really are ones that have to be taken up with the Department. We are all subject to the policies and procedures they have in place, which, as you might know, are to a large extent dictated by the National legislation encompassed by the National Environmental Management Act and its subsidiaries.

I am not sure what is meant by 'invasive' when it comes to research work. My experience is that the researchers do their work with as little disturbance as possible, given the tasks they have. I have infrequently experienced anything otherwise. Indeed, everyone seems to comply as specified in their permits, and where needed researchers apply for changes to permit conditions where the requests can be justified. This is something everybody working at the island has become used to.

This may, of course, make your filming more complicated, but I am not privy to the arrangement you made with DEAT for content and access. I would recommend you apply to DEAT via Mr. Henry Valentine's office for the appropriate permits. It has always been my experience that these requests are carefully considered in the context of their motivation and the management plan provisions.

If you have concerns about the environmental impacts of certain research activities, then I would write to Mr. Valentine's office with the details requesting that the matter be given attention.

I hope this helps.

Regards

Steven

Steven L. Chown

Professor and Director

Centre for Invasion Biology

Stellenbosch University

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Matieland 7602

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E-mail: slchown@sun.ac.za

PA: Anel Garthwaite

Tel: +2721 808-2705

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From: Patricia van Heerden [mailto:patvanheerden@gmail.com]
Sent: 19 February 2010 13:39
To: Chown, SL, Prof <slchown@sun.ac.za>
Subject: Issues around Filming on Marion Island

Dear Steven,
I hope you well and have managed to see a few more episodes of Project Marion.
I need to run something by you. I am trying to make the best television property possible but I have encountered many problems along the way. Some of these problems I was landed with and have tried to deal with them as effectively as possible.
One of the most difficult issues we face is around the restrictions of zone 4 on the island for the camera and Innocent.

I do not want to be guilty of environmental damage and I do not want to disturb the archaeological record. But for example we are trying to do a story about the history of the island with footage from the island. It turns out that 4 of the caves with records to film, our film crew cannot go in. When I say crew we often need Innocent as our link to the island and Riaan to be present. In some zone 4 areas like for example the grey-headed albatross ridge one can film from the path that runs through the zone but with the caves it is more difficult.
It is hard for the crew to cover the work of the birders when they have zone restrictions. I want to be completely open and say that to a certain extent there is far more invasive behaviour from the researchers than there is from Riaan the camera person who touches nothing. I know that they have important work to do but I also feel that the series on Marion has done some important work on television audiences not usually watching natural history or science programming. I know that there is a general disdain for the media but I do not feel that this is the run of the mill media.

Can I ask just ask for candid advice? Just do not persist in asking?
Thanks,
Pat

--
Pat van Heerden
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patvanheerden@gmail.com
27 83 258 3226

--
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