

# Environmental Officer's report on the 52<sup>nd</sup> Gough Island relief voyage

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## Recommendations

1. A single company be made responsible for the pest management at all stores and the *SA Agulhas*. This would include responsibility for points 2-4. **Action: DEA&T**
2. Where food is handled and packed for shipping, institute a policy of cleaning any spilled edible material from the store and removing the waste from the premises or leaving in a rodent-proof bin. **Action: DEA&T**
3. CHC hanger be required to obtain a rodent-free certificate and have armed bait stations. **Action: DEA&T/CHC**
4. CHC hanger be required to place insect traps in the hangars and regularly clean areas where spiders occur. **Action: CHC**
5. Lack of complete rodent-proofing of the *SA Agulhas* be brought to the attention of Sam Oosthuizen, to follow up with the responsible company. **Action: DEA&T**
6. Electric light flying insect traps should be installed in all areas where food is stored. **Action: DEA&T**
7. Walking insect traps be purchased and installed in each cabin, all galleys and all areas where food is stored. **Action: DEA&T**
8. The efficacy of the DEA&T stores' washing procedure in destroying *S. procumbens* seeds be tested. **Action: DEA&T**
9. All outer clothing (water-proofs, shirts, trousers and socks), either new or re-issued, should be issued in a protective plastic bag as a means of verifying that it is either new or has been washed, to prevent accidental issue of unwashed gear. All island-based take-over personnel should be required to present all issued gear in its original, sealed plastic bags at the boot washing ceremony, to verify that it is clean and also that it has not been used between being issued and boarding in Cape Town. **Action: DEA&T**
10. An aluminium ladder (or two) should be installed on the steep cliff section of the route to Seal Beach to ameliorate severe erosion. **Action: DEA&T/NDPW**
11. The use of DEA&T containers as highland depots for researchers does not appear to have any lasting negative impacts and should be continued if required.
12. The exterior light between the Upper Air building and the main base building should either be permanently removed or have timer-switches installed that allow it to be switched on for 15 seconds at a time. **Action: NDPW**
13. Smokers using the landing outside the bar at night should be made aware of the problem of light pollution and night strikes and pay particular attention on misty nights. **Action: DEA&T**
14. Several obsolete structures are in varying states of disrepair, visually displeasing and constitute litter in the environment and should be removed. **Action: DEA&T/NDPW**
15. The practice of sending raw hens eggs should be discontinued. **Action: DEA&T**

## **Executive summary**

The places inspected were:

1. Table Bay Marine (cargo handlers for Tristan) stores in Maitland
2. DEA&T Island Centre stores in Paarden Eiland
3. CHC Helicopter hangar in Airport Industria
4. NDPW store on the Foreshore.
5. *SA Agulhas*

I discovered fresh rodent faeces in two of the five areas checked prior to departure. Of particular concern was the NDPW store, which has apparently not had its bait stations properly serviced. This is where I found rodent faeces of a size that effectively rules out mice as being responsible. This makes it probable that a rat or rats are visiting the stores and poses very serious risks of accidental rat introductions to islands. Rodent faeces in the CHC hangar were small enough to have been made by a mouse. Nevertheless, the lack of any pest control measures, including requirement of a rodent-free certificate, is a serious oversight and should be addressed as a priority.

The efforts that have been put in place to safeguard the *SA Agulhas* against rodents and invertebrate pests are commended. All hawsers had rodent guards in place, most areas of the vessel had recently-serviced, armed bait stations and flying insect traps were in several locations. However, the protection is not completely effective and requires more attention. Of particular concern is the inappropriate positioning of glue-boards, designed to stop rodents from moving up mooring ropes. An even bigger concern is the gangplank, which is permanently lowered and serves as the most obvious and completely unprotected route for rodents to access the vessel. A third problem was the laying of hawsers from another vessel across those of the *SA Agulhas*, above the glue-boards; this effectively connected the vessels and circumvented rodent protection. Finally, crawling insect traps should be installed in cabins, galleys and all areas where food is stored, to increase the chances of catching hitchhiking species.

The take-over on Gough proceeded in an exemplary manner, with one significant exception. The fuel pumping was conducted without any spills. Waste management procedures were adhered to and the general level of awareness of environmental matters and cooperation with procedures was good. The exception to the good practices was the uncontrolled and unauthorised use of raw eggs outdoors during an “initiation ceremony”. Raw poultry products are a pathway for, *inter alia*, potentially catastrophic avian diseases. The need for raw eggs on the island, which have a very limited shelf life anyway, is questioned in the light of this breach of regulations. I recommend that the practice be discontinued, but suggest comments be solicited from GIRWAC and other experts.

## **Pre-departure inspections**

### **Inspection of Table Bay Marine**

Stores were generally clean. No signs of rodents or invertebrates, besides spider webs, were noted. Bait stations were in good densities and well stocked. I was provided with a copy of an up-to-date rodent-free certificate.

Other observations

1. An old roll of fly-paper was found. It had lots of insects, but needed replacement.  
**Recommendations:** Install an electric light insect trap
2. Animal-feed pellets had spilled during packing. This had been cleaned, but the sweepings had been left in an open cardboard box. This serves both as an attractant to rodents and invertebrates and provides an alternative to the poison bait. I recommended that it be removed.  
**Recommendation:** institute a policy of cleaning any edible material from the store and removing it from the premises or discarding in a rodent-proof bin.

### **Inspection of DEA&T Island Centre stores**

The stores were generally clean and free of any signs of pests, with the exception of spiders (cobwebs found in the clothes store and the main store) and a single dead beetle in the clothes store. The electric light insect trap was working and appeared to be effective at controlling flying insects. Lots of bait stations have been installed and these had all been recently serviced. .

**Recommendation:** old bait and any spilled bait be removed by the contracted company responsible for servicing the bait stations

Valid rodent-free certificate

DEA&T Island Centre, Paarden Eiland

Date issued: 5 September 2006

Period of validity: 3 months

### **Inspection of CHC Helicopter hangar**

The hangar was generally very clean. However there are no rodent control measures in place and several points of concern were noted:

1. As has been noted for every inspection of CHC premises for the past few years, live spiders abound in the corners created by the steel supports in the walls of the hangar. The spiders live less than 1 m from the boxes used by CHC to store their tools and spare parts. Despite numerous requests, it is clear that this matter is not being given the attention it deserves.  
**Recommendation:** weekly cleaning away of cobwebs and actively destroying any living spiders.
2. Small flying insects were found in the hangar. There are no control measures in place to prevent these from stowing away in the helicopter or in CHC boxes.  
**Recommendation:** Install an electric light insect trap.

3. Fresh rodent faeces were found in the hangar.

**Recommendation:** CHC should contract a professional company to install and maintain rodent bait stations.

No rodent-free certificate was provided. This is apparently not a requirement, but should be made so.

### **Inspection of NDPW store**

The store was generally free of food and well maintained. Several armed bait stations are in place. However, only one had a recent service date inscription, and several stations no longer had any bait inside. No insect traps are installed, and although no insects were observed, electric light insect traps should be installed as a precautionary measure. The only point of concern is a very significant one: large, fresh rodent faeces were discovered in the store, next to an empty bait station. The faeces were too large to have been made by mice. This discovery is very serious, especially because the majority of the containers from this store had already been packed and transported to the ship.

No rodent-free certificate was provided

### **Inspection of SA Agulhas**

*Rodent control systems*

Valid rodent-free certificate

Date issued: 6 September 2006

Period of validity: 3 months

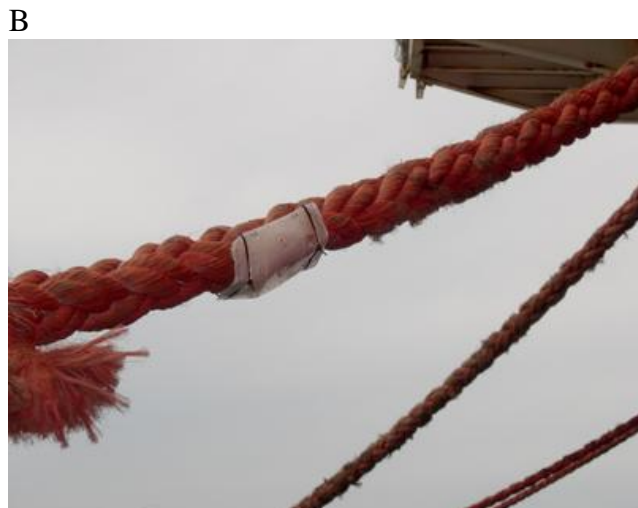


Figure 1. Glue-board inappropriately attached to a hawser, probably due to the rope twisting while under strain.

Glue boards were in place on mooring ropes, and although the old-style rope-guards were attached, they were not all properly attached and thus an unreliable back-up to the glue-boards. On 5, 6, 7 and 8 September I found some problems with the positioning of the glue-boards. When ropes come under tension they sometimes twist, causing glue boards to lie on the sides of or underneath the hawsers, thereby rendering them ineffective (Figure 1).



Figure 2. Glue board inappropriately attached, allowing rodents access.

A second glue board was improperly attached (Figure 2) and created a tunnel under which a rodent could move. Both issues were raised with the personnel from SWAT pest control, the appointed agents responsible for keeping the vessel rodent free.

While the use of glue boards on mooring ropes is integral to keeping rodents off the vessel, there is an unguarded gangplank, which connects the ship to the quayside 24 hours a day. This amounts to a highway for rodents to use as an access route to the ship – why would they struggle up a rope when there is a broad, stable walkway? This is a serious flaw in the rodent-guarding system and renders the use of glue boards somewhat irrelevant. This was pointed out to the SWAT pest control personnel and they undertook to investigate options to remedy the situation.

**Recommendation:** this be brought to the attention of Sam Oosthuizen and he be requested to follow-up with SWAT.

A second short-coming in rodent-proofing the SA Agulhas when alongside is the shared use of mooring bollards with other vessels. On the evening of 8 September the tugboat *Smit Amandla* was also alongside, and the hawsers for this vessel (which did not have any rodent proofing devices) were lying across those of the SA Agulhas, above the glue boards (Figure 3). This rendered the glue-boards on the SA Agulhas's hawsers useless and provided direct access for rodents to move from the Smit Amandla to the SA Agulhas.

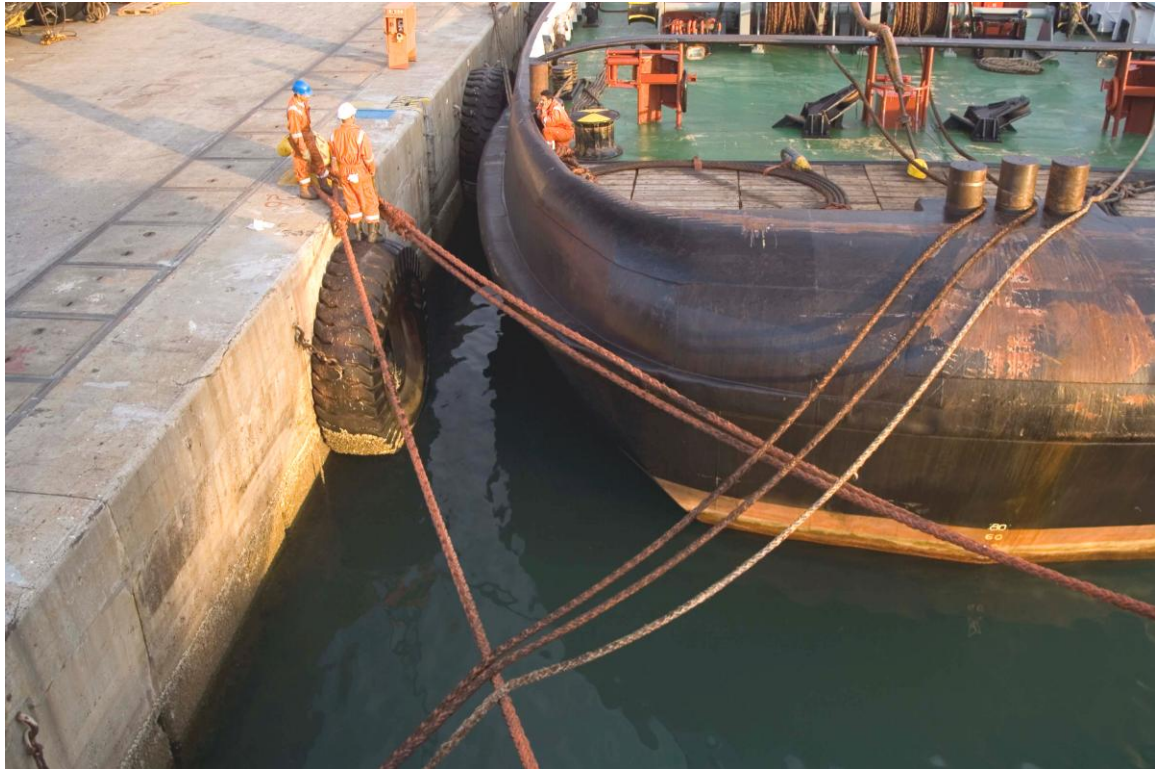


Figure 3. Hawsers from the *Smit Amandla* lying across those from the *SA Agulhas*, above the glue boards, providing an access route for hitchhiking species.

*Invertebrate pest prevention systems*

*Galley* – clean, flying insect traps working.

*Cold rooms* - fresh supplies were inspected and no signs of any pests were found

*Dry food store* – fruit flies present, no flying insect traps. **Recommendation:** flying insect traps be installed in all food store areas

*Cargo holds* – no bait stations were in place in any of the holds, including the hold with containers that came from the rodent-contaminated NDPW stores. I requested that rodent stations be put in place, and the SWAT personnel duly installed > 20 stations.

Seeds were found in a corner amongst sweepings. Chief Mate ordered the area to be swept clean and the seeds disposed-of.

There are no active controls in place to catch crawling insects. This is a particular concern for cabins as well as other more obvious areas, because cockroaches and other hitchhiking species are easily carried on board in cabin luggage. While no pests were noted on this voyage, they have been detected on previous trips

**Recommendation:** walking insect traps be purchased and installed in each cabin, all galleys and all areas where food is stored. A suitable example of a crawling insect trap can be found at the following website:

[http://www.agralan.co.uk/acatalog/Online\\_Catalogue\\_HOUSEHOLD\\_PESTS\\_8.html](http://www.agralan.co.uk/acatalog/Online_Catalogue_HOUSEHOLD_PESTS_8.html)

## Activities en route to Gough Islands

### Conservation lecture en route to Tristan and Gough

This was given to all passengers on Wednesday 13 September; all passengers were urged to check their personal kit for seeds and other hitchhiking species and to present high-risk items (camera bags, water-proof clothing with Velcro, etc) for checking at the bootwashing. Dr Niek Gremmen gave a lecture on the *Sagina* programme on 16 September.

### Boot washing

A voluntary boot washing was done, together with kit inspection, on Wednesday 13 September, prior to arrival at Tristan. Although no Tristanians chose to participate, all DEA&T, CHC and research teams attended. A second, compulsory boot washing and kit inspection was done on 16 September, prior to arrival at Gough. Significant seed loads were discovered at both sessions. Principal concerns come from waterproof jackets and trousers that have Velcro. This is a major concern as clothing from Marion is re-issued for use on Gough (and vice versa). This practice facilitates the spread of alien plants between the islands. For example, many dangerous plants, such as *Sagina procumbens*, have seeds that are too small to be detected by visual examination. Clothing coming from Marion Island, which is heavily infested with *S. procumbens*, will almost certainly contain its seeds. There is as yet no evidence that the washing process is 100% destructive towards *S. procumbens* seeds. Furthermore, during kit inspection I discovered that someone had been issued with a jacket that appeared not to have been washed, and was labelled "JCII". In all likelihood this was the jacket that John Cooper (aka JCII) had recently been issued for Marion Island. It is likely to have contained viable *S. procumbens* seeds. The matter was brought to the attention of the DCO, who agreed to issue a replacement jacket. This incident, however, could easily have resulted in a contaminated jacket being taken to the highlands of Gough and the accidental introduction of *S. procumbens* outside of its present range.

### Recommendations:

1. The efficacy of the DEA&T stores' washing procedure in destroying *S. procumbens* seeds be tested
2. All outer clothing (water-proofs, shirts, trousers and socks), either new or re-issued, should be issued in a protective plastic bag as a means of verifying that it is either new or has been washed, to prevent accidental issue of unwashed gear. All issued gear should be presented in its original, sealed plastic bags at the boot washing ceremony, to verify that it is clean and also that it has not been used between being issued and boarding in Cape Town.

### Fishing

Two permits were issued for fishing by the Tristan Natural Resources Department, collectively permitting SA Agulhas crew, CHC staff and NDPW members to fish. The TAC could not be accurately monitored but the permits between them allowed for 500 kg of fish to be caught, and this is unlikely to have been exceeded. Limited fishing was conducted by the year team and some fishing



## **Meeting with Tristan Administrator**

I was taken ashore upon arrival at Tristan, and was able to meet with the administrator to discuss environmental issues. I was also able to facilitate the purchase of a second fishing licence on behalf of the captain and crew of the *SA Agulhas*.

## **Activities on Gough Island**

### **State of footpaths and peat slips and other impacts**

I assessed the state of paths to Tafelkop (Golden Highway path), Gonydale, Seal Beach, Tumbledown Beach and Admirals. The presence of two biologists on the island for a year meant that many of the paths had been reasonably heavily used; no attempt was made to quantify the number of trips made on each path for the year. In general, no serious path erosion or spread of alien species was noted, and there was certainly no discernable deterioration compared to the end of 2004. Several paths (e.g. Prion Cave, Tumbledown and Admirals Beach) were surprisingly overgrown, suggesting little recreational walking activity during the past year. However, the route down to Seal Beach is heavily eroded, with clumps of vegetation coming loose on almost every descent and several “mini-slips” noted. The rope that assists the ascent and descent provides insufficient protection to the steepest sections.

**Recommendation:** An aluminium ladder be installed

No new peat slips of significant size were reported during the year or seen during takeover.

The site where a DEA&T orange cargo container was placed for the year in 2003/2004 was revisited and photographs taken. These were compared to photographs taken when the container was removed, two years earlier in September 2004 (Figures 4 and 5). The “footprint” of the container was still discernable, but the vegetation had recovered almost completely. The medium-term environmental impacts of this practice appear to be negligible.

### **Beach litter and invasive plant survey**

This was conducted, as part of a Rockhopper Penguin colony count, on 1 October. I visited Sophora Glen, The Glen, Capsize Sands and Long beaches, all on the east coast. With the exception of fishing gear and floats from the lobster boats, the beaches were largely free of anthropogenic debris. No unexpected invasive plants or levels of infestation were noted. *Rumex obtusifolia*, *Sonchus sp* and the usual suite of invasive grasses were present in all locations. No *Sagina procumbens* was observed.

During this trip the party counted breeding Elephant Seals on Long Beach. There was a single beach master with a harem of 8 females, four of which had already pupped. At least 12 other elephant seals were on beaches. We confirmed the presence of two pairs of Southern Giant-Petrels nesting at the northern end of Long Beach.





Figure 4: Site in Gonydale after removal of a DEA&T orange container that was in use from October 2003 to September 2004



Figure 5. Same site as in Fig. 4 (from different perspective) two years later. Note the visible outline of the container site, but completely re-vegetated

### **Off-loading**

A Sub-Antarctic Skua nest was being incubated less than four metres from the upper-air unloading zone. I cordoned off an area of 2 m x 2 m around the incubating birds to prevent accidental trampling during offloading. Despite some close encounters with a container, no harm came to the remarkably phlegmatic birds and eggs were still being incubated at departure.

Three containers were placed 20–30 metres from catwalks or offloading areas, in the middle of natural vegetation and midst active nests of Atlantic Petrels. Two of the containers were moved to official offloading sites before being unpacked and the third was not affecting active nests and was left where it was. The placing of containers in natural vegetation has potential to collapse burrows or to block burrow entrances and kill chicks and is strongly discouraged.

I granted permission for containers and a load of pipes to be deposited on vegetation near the fuel tanks, after I had confirmed that there were no visibly active bird burrows in the area. Localised trampling of the vegetation occurred but no lasting effects are anticipated.

### **Fuel pumping**

This was performed without incident on 30 September. No leaks occurred and approximately 70 000 l were pumped ashore.

### **Night strikes**

Several birds came aboard while at Tristan and Gough, and at least four birds died as a result. Deck lights should be kept to a minimum, with only those needed for safe operations kept on, especially on nights with mist or rain.

Base personnel were conscientious in closing blinds at night while on Gough, and no significant strikes were noted. However, two areas of concern were noted that will cause significant strikes under the wrong conditions. First, the exterior light between the main base and the Upper Air building was frequently left on. Second, the exterior door to the bar area was frequently left open at night, as people used the landing outside as a smoking area.

### **Recommendations**

- The exterior light at the Upper Air building is not actually necessary for safe movement between the buildings and should either be permanently removed or have timer-switches installed that allow it to be switched on for 15 seconds at a time.
- Smokers should be made aware of the problem and pay particular attention on misty nights.

### **Pollution management**

The inspection flight was conducted at 9:30 am on 17 September. The base and surrounds were deemed clean to the minimum standards by the Departmental Coordinating Officer (DCO). Fresh mouse droppings and evidence of mouse damage

were evident all through the base; this reflects poorly on the outgoing team's efforts to maintain the base and control mouse numbers in the base.

Johnny Wilson was the voluntary Conservation Officer for the year. He and the team leader are commended for keeping the team alert to environmental practices and ensuring that the procedures in the Management Plan were adhered to. Johnny is also thanks for undertaking *Sagina* control after the two team members responsible for *Sagina* work left, in March 2006.

The new team Conservation Officer, Cyril Thomas, was appointed at the official Takeover Ceremony. Together with Peter Ryan and Richard Cuthbert, I gave him and the team leader detailed instructions about responsibilities and explained the reasons for various activities and requirements.

The G51 team are commended for their waste disposal efforts. All bones and poultry products were frozen and returned to SA. Other rubbish was sorted and containerised for back-loading and returned to SA. The use of the incinerator has apparently been discontinued. A clean-up of the base area was coordinated by the DCO and resulted in a generally tidy, litter-free environment. The area outside the bar and the main entrance require attention, as these are the main areas used by smokers: there were large numbers of butt-ends lying under the landings at each location.

**Recommendation:** wind-proof cigarette bins be located at these two areas (probably only necessary during takeover).

NDPW team replaced the fuel line and the sewerage pipes with minimal impacts to the surrounding areas. All old material was removed. There are, however, significant numbers of defunct structures within the Logistical Zone that should be removed.

These include:

1. the disconnected and badly rusted lamps along catwalks between E-base and Gough House and up to the Helipad.
2. disused sewerage pipes
3. scaffolding and other building debris below the crane at Crane Point
4. a disused black PVC waterpipe that runs several hundred metres from near the Helipad towards the stream that supplies the base with fresh water
5. a network of un-insulated copper cables between Gough House and the Helipad, mostly covered by vegetation
6. various random metal pipes around the base
7. a small cylindrical structure with a conical cover, half-way between Gough House and the Helipad *en route* to the old upper magnetometer hut
8. supports and cable-tensioners for the dismantled antenna across the river from the NW side of the Yellow-nosed Albatross study colony (this is outside the Logistical Zone)

### **Management of invasive species vectors in foodstuffs**

Raw food products are a significant vector for invasive species (including pathogenic microbes). The practice of sending raw potatoes has now been discontinued, closing that as a pathway for invasive species. The only other significant vector is raw poultry products (chicken breast fillets and raw, irradiated chicken eggs). As noted, all poultry waste was apparently frozen during the year and returned to SA.

Regrettably, there was a significant breach of regulations relating to eggs during take-over. As part of an ‘initiation ceremony’, raw eggs were thrown at people while they were outdoors. Broken eggshells were still in evidence (and being eaten by Gough Moorhens) two days later. I was, regrettably, not at base when this occurred. The risk of disease being spread from poultry products to naïve birds, while small, cannot be ruled out; the consequences would be dramatic and probably irreversible. Foolish lapses of protocol such as this require that the whole issue of raw eggs being sent to Gough be revised.

**Recommendation:** the need for raw eggs to be sent to the island should be reviewed. I recommend the practice be discontinued.

### **Other activities**

Other activities, some of which are usually the Environmental Inspector’s responsibility to report, such as *Sagina* work and seabird work, were undertaken by other people or under auspices other than as the Environmental Inspector. These activities are the subject of dedicated reports and are not discussed here.

### **Acknowledgements**

Thanks to Mike Hentley, the Tristan Administrator, as well as John Cooper, Peter Ryan, Richard Cuthbert and Niek Gremmen for advice and assistance. Special thanks to the DCO, Sandra Durant, for her professional and competent handling of all matters. I am grateful to Dave Hendricks, NDPW team leader, for the conduct of his team throughout takeover. Thanks also to the master and crew of the *SA Agulhas*, especially for assisting with the boat-based work on beaches, and all the other team leaders, as well as the Gough 51 and 52 teams for their assistance and cooperation.