

**ANNUAL ENVIRONMENTAL INSPECTION REPORT,  
GOUGH ISLAND NATURE RESERVE,  
SEPTEMBER-OCTOBER 2008**

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**SUMMARY OF MAIN RECOMMENDATIONS**

In South Africa

*For Action: Antarctica & Islands, DEAT*

1. The SANAP “Environmental Information about Gough Island” document should be distributed to all voyage participants planning to go ashore on Gough Island prior to sailing.
2. Required improvements to the quarantine/biosecurity capability at the DEAT Antarctica & Islands stores at East Pier include provision of rodent poison bait stations in the food-packing section, flying and crawling invertebrate traps, and windows kept permanently closed or fitted with screens.
3. Plants growing on East Pier should be removed on a regular basis and their sites treated with herbicides.
4. Dock-side waste skips should have well-fitting lids that are kept closed when not in active use, especially overnight.
5. The dock and gangplank area should be kept well lit at night to deter rodents.
6. Over-trousers with Velcro ankle cuffs should no longer be issued.

*For Action: NDPW, with DEAT oversight*

7. The quarantine/biosecurity capability of the NDPW facilities in Customs House needs to be improved by the presence of regularly serviced rodent bait stations, flying and crawling invertebrate traps, rubbish bins with tightly-fitting lids and regular cleaning and tidying.

Aboard the S. A. Agulhas

*For Action: Smit Marine South Africa via Antarctica & Islands, DEAT*

1. All non-freezer store rooms containing food should have both flying and crawling invertebrate traps installed.
2. Spaces where food is stored, prepared and consumed and living spaces (including cabins) should have crawling invertebrate traps installed and regularly serviced.

### On Gough Island

*For Action: Antarctica & Islands, DEAT, with NDPW support*

1. All remaining redundant structures should be dismantled and removed to South Africa, including the disused incinerator platform, catwalk lights and cabling and the damaged fuel-pumping hut, its contents (other than the flexible hose) and the adjacent concrete platform.
2. Accumulated items (rotten wooden planks, rusting metal piping, etc.) behind the NDPW store and next to the power shed should be removed to South Africa.
3. The fuel tanks which are shedding large amounts of flaking paint need to be scraped down and repainted.
4. The condition of the old wooden helipad should be assessed annually with a view to its eventual removal.

*For Action: Tristan da Cunha*

1. Alien plant eradication efforts should continue in Transvaal Bay, concentrating on *Sagina*, but also removing all *Verbena* and potato plants found.
2. Registers of field aids and markers should be kept up to date and any unregistered markers regularly removed by Environmental Inspectors.

## **Introduction and itinerary**

We were jointly appointed Environmental Inspectors for the 2008 annual relief of the Gough meteorological station by the Administrator of Tristan da Cunha. The *S.A. Agulhas* left Cape Town on 4 September and arrived at Gough via Tristan (where TG joined the relief, although he had travelled on the ship from Cape Town as a Tristan passenger) on 14 September, sailing for home, again via Tristan (where TG left the ship), on 4 October and docking in Cape Town on 13 October. JC went ashore for the day on both Tristan visits.

## **Pre-sailing inspections and activities**

On 1 August JC attended the Gough Takeover Planning Meeting in the Antarctic Directorate's premises at East Pier. At this meeting I emphasized the need to continue to follow the various "environmentally-friendly" procedures adopted by SANAP over the years. Following a request at the meeting, I updated the SANAP "Environmental Information about Gough Island" document (Appendix 1) with the understanding this would be distributed to all Gough relief participants in advance of sailing. In the event, it appears this document was only given to the new team members, although a copy was inserted in the takeover manual that is supplied to project leaders on the voyage. Since it includes, *inter alia*, information on packing of personal possessions for quarantine purposes it is recommended that the document be supplied to all Gough Takeover participants (not just team members) via their project leaders at least two weeks in advance of sailing.

On 1 September JC gave an illustrated conservation lecture was given to the new (54th) meteorological team as part of their team-training period.

On 28 August the pre-voyage inspections were carried out by JC and TG, accompanied by Richard Cuthbert and Norman Glass. We visited and inspected the DEAT storage and packing facilities at East Pier, the dock side at East Pier, the *S.A. Agulhas* and the NDPW facilities in Customs House as reported below.

### Antarctic Directorate facilities

All the facilities inspected were clean and tidy with no signs of plant material or invertebrates (but note that the visit was made after the main food-packing exercise had been completed). Based on our inspection, the following recommendations are made:

1. Rodent poison bait stations and flying and crawling invertebrate traps should be placed in the clothing store and food-packing room.
2. Flying and crawling invertebrate traps should be placed in the container packing and storage spaces.
3. All windows should either be kept permanently closed or fitted with fine screens to keep out flying insects.

4. Personal meals and food (e.g. packed lunches) and drinks taken into the SANAP stores should be kept in sealed containers and should be consumed elsewhere.
5. Any food spilled during packing operations should be cleaned up immediately, and definitely not left overnight.
6. All roller doors should be kept closed when movements in and out of the building are not taking place.
7. Gaps should be kept between containers, etc. and internal walls, so as to reduce the number of hiding places for pests and to allow for regular inspections.
8. Closed roller doors should be regularly checked to see that their rubber flanges continue to afford an adequate seal against rodents and crawling invertebrates.
9. Over-trousers with Velcro ankle cuffs should no longer be issued.

### East Pier

The pier was generally clean and tidy. However, a few common weeds (*Poa annua*, *Conyza* sp.) were observed growing in cracks. The prolific plants seen growing on the dock wall the previous relief were absent. The following recommendations are made:

1. Plants growing on the edge of the dock and on the dock wall adjacent to the ship's berth should be removed regularly and their sites treated with herbicides, repeated as necessary once any new or re-growth is observed.
2. Dock-side waste skips should have well-fitting lids that are kept closed when not in active use, especially overnight.
3. The dock and gangplank area should be kept well lit at night to deter rodents.

### S.A. Agulhas

The ship was inspected following the issue of an access permit (Appendix 2) by Sam Oosthuizen, DEAT Ship Operations Manager. As in previous years, the ship was found to be generally clean and tidy, including the holds inspected. All the flying invertebrate traps were inspected and found to be in good order. Poison-bait stations were present in the helicopter hangar. However, fewer rodent bait stations appeared to be in place elsewhere than in previous years. Rat guards were in place on the ship's hawsers and "glue boards" were being fitted at the time. Based on our inspection, the following recommendations are made:

1. More crawling invertebrate "sticky" traps should be placed strategically around the ship, especially in areas where food and drinks are stored, prepared and/or consumed and in passenger, officer and crew cabins.
2. VIPER sticky traps for flying invertebrates should be placed in the two store rooms where fresh vegetables, including pockets of potatoes, are kept.

### NDPW facilities, Customs House

The NDPW Antarctic storage and packing facility in Customs House was not in a good condition. Accumulated materials (some of which seemed to be rubbish) along walls and

in corners made a proper inspection difficult. Containers used for rubbish had no lids. Weeds, including *Conyza* sp., were growing outside the entrance to the facility. The following recommendations are made, largely repeated from the 2007 Gough relief environmental report as it appears action has not been taken:

1. A professional audit should be undertaken and a written set of procedures put in place to make certain that sufficient filled poison-bait stations are present at all times and are regularly serviced (and then dated), that cobwebs are removed, that fumigation takes place from time to time, and that the facilities are kept clean and tidy, with suitable rubbish bins with fitted lids in place and used, especially prior to sailing when packing is being undertaken.
2. A designated senior member of the NDPW who is stationed at Customs House should be made responsible for seeing that the facility remains at the required quarantine/biosecurity standard throughout the year. Such a responsibility should be seen as part of the person's job description.
3. Staff of DEAT's Environmental Impact Evaluation (Antarctica & Islands) section should make unannounced inspection visits throughout the year to confirm that adequate practices are being followed, and are not restricted to shortly before sailing dates.

#### Table Bay Marine

The Table Bay Marine packing store was not visited due to lack of time.

#### **Activities aboard ship**

An illustrated environmental talk was given in the passenger lounge during the voyage to Tristan.. All persons planning to go ashore on Gough, including helicopter crew and day visitors, were required to attend.

The obligatory boot-washing ceremony for all personnel intending to go ashore on Gough (including prospective day visitors) was held in the aft wet laboratory and on the poop deck during the Tristan-Gough leg on 13 September. All those planning to go ashore attended and signed the register. SANAP-issued kit was clean of propagules, as were nearly all of the personal camera/video bags and packs presented. However, and as in previous years, several re-issued (and therefore ostensibly cleaned) SANAP items continued to have plant material on their Velcro sections. It is strongly recommended that the issuing of over-trousers with Velcro ankle cuffs be halted.

Prior to arrival at Gough and after the first Tristan visit the hangar and the outsides of the helicopters (especially their wheels and skids) were inspected and found to be clean.

#### **Inspections on arrival and subsequently**

The buildings of the meteorological station and its immediate surrounds were inspected by JC and TG on 14 September, immediately following the first flight ashore. It was evident that the South African weather team (the 53rd) had kept the facilities in a tidy and clean condition. No evidence of recently deposited litter was seen around the buildings.

### **Off-loading**

All landed containers were inspected on opening from the top (with very few exceptions) and no propagules were found, save a single isopod/amphipod in a NDPW container that was collected and killed. It is likely that this had created into the container while on the island.. All containers inspected were clean outside and within. Containers were landed on either structures (wooden helipad, crane platform) or at three sites on mainly alien vegetation adjacent to buildings.

No fresh produce, including potatoes, was taken ashore. All eggs sent ashore had been irradiated. Only de-boned poultry meat was sent ashore.

### **Flying operations**

No-fly zones were followed as set out in previous years.

Food caches were placed by air at the Gonydale (orange container) and Waterfall Camp (plastic “tote” boxes) camping sites for field work planned for the coming 12 months. Previously placed food caches containing old food were removed on the same flight from the former locality.

Back-loading of all other containers (including those containing accumulated wastes and boxed *Sagina* plants) and relief personnel proceeded without incident.

### **Waste management and clean-up of rubble and redundant structures**

During the 2008 relief (and during the year by the weather team) most solid wastes generated were separated into four categories (metals, glass, plastics, and wood, cardboard and paper) and placed into dedicated containers for return to South Africa in a satisfactory manner. Sewage, kitchen and wash-room grey water and food wastes (with the exception of meat bones, dried fruit/olive pips and poultry and egg wastes, which were kept deep-frozen for return to South Africa), were continued to be disposed of in Skivvy Gat without further treatment. An exception was the limited quantities of grey water and sewage from the emergency base in the food store which were piped over the adjacent cliff into the open sea.

As in recent years no incineration of wastes occurred and the only open fires lit were in the quadrangle barbecue/braai facility, using charcoal briquettes.

A concerted effort was made to remove from the island to South Africa redundant and disused structures and other objects from around the meteorological station. Items dismantled (if necessary) and removed included the partially collapsed crane lookout platform and adjacent wooden steps, the no-longer used incinerator (cut off its platform and taken to Tristan da Cunha), partially buried and no-longer-used cabling from underneath Gough House and accumulated building rubble and other material from around and underneath buildings (e.g. broken trolleys, rusted loose piping, rotten wooden planking, discarded fire-hose boxes, old aerial supports, etc.) that had been accumulated on the crane platform during JC's stay on the island over the 2007/08 summer. Six orange containers were filled with the above material, and with two bundles of wooden planks, flown to the ship. The total mass of rubble removed was estimated as 4.5 tonnes.

Items remaining for removal in 2009 include dilapidated light stands and associated cabling alongside the cat walk to the helipad and from Gough House to the crane platform, the disused sewage pipe between Gough House and Skivvy Gat and the damaged pump hut in Diesel Cove and its associated pump, electric cabling and piping and adjacent concrete platform. Accumulated items (rotten wooden planks, rusting metal piping, etc. still present behind the NDPW store and next to the power shed should be removed to South Africa.

It was noted that the old wooden helipad was continuing to rot, causing a hazard to foot and trolley traffic and exposing polystyrene blocks that are crumbling. This structure should be removed in its entirety before it falls apart. Care should be taken to avoid the polystyrene blocks breaking down further during removal, perhaps by placing them individually into large heavy-duty plastic bags. Alternatively, it may be feasible to melt them down to a more manageable volume on site (but without causing pollution by burning them). The major rotted area was once again patched with metal sheeting during the relief, but this represents only a temporary solution to a steadily worsening problem that has been referred to in a number of previous annual environmental reports in the last decade.

A "chicken run" clean-up was held on the day before departure. As in 2007, a quantity of rusted metal, rotten wood and disintegrating plastic bags (containing spilling sand and stone chips) was then collected from immediately seaward of the crane platform. However, much of this material still remains, representing a considerable eye-sore. How this can be removed in its entirety without causing any further collapse of the already cracking and slumping concrete platform still requires attention.

The fuel tanks which are shedding large amounts of flaking paint need to be scraped down and repainted.

### **Alien plant eradication**

Alien plant eradication continued under the auspices of the Tristan Agriculture and Natural Resources Department with funding provided by the Overseas Territories Environment Programme. A seven-person team was involved at times, made up of John Cooper as Team Leader, Didi Heikl (a Level-three rope-access technician/trainer), Trevor Glass (who repaired and/or replaced the hot-water boiler, piping and safety ropes) and Richard Cuthbert, Norman Glass and the two RSPB field assistants, Henk Louw and Paul Visser, the last four of whom have a Level 1 rope-access qualification.

### Sagina

No further spread of *Sagina* was found outside its known distribution from “Beach Rocks” (between the Archway rock and Seal Beach) and the northern bowl of Snoek Gat. Small quantities of small plants (without exception) were found and removed from through-out the known distribution. In comparison to previous efforts more soil/peat was removed with individual plants in an effort to reduce seed load.

Rope-assisted descents were made between Beach Rocks and Snoek Gat, covering all sections of the cliffs within the known distribution, including the outlying “pinnacles” at Snoek Gat that have never been previously checked for *Sagina*.

As in the previous annual relief, all plants found were removed mechanically using paint scrapers and the sites treated with a herbicide mixture (5% each of Glyphosate and Outpace Flowable), using mainly 1.5-l hand-held pressure sprayers. At a minority of sites that could be scraped down to bed rock, heat treatment with a hand-held blow torch was used prior to the application of herbicide. In addition the repaired boiler and piping were used to commence stripping infested areas down to bed rock with high-pressure jets of heated water. *Sagina* Gulch was largely cleared in this way, and a start commenced in Diesel Cove, to be continued over the year.

Eighteen 55-l “tote” boxes were filled with bagged *Sagina* and adhering soil during the relief. Boxes were back-loaded to the ship in an orange container, thus avoiding the cracking of boxes that had happened using nets in previous years. The contents of these boxes were dumped overboard (without their plastic bags) at 35° 00.52’S; 07° 27.28’E on 10 October.

A one-day training course was given by Didi Heikl to the new team members so that they would be able to undertake an upward cliff rescue of an incapacitated climber, using the *Sagina* project safety equipment supplied and the base rescue stretcher. Two upward rescues were undertaken, one with a stretcher and one without.

### Potatoes

All known sites around the base where potato *Solanum tuberosum* plants had been found in previous years were checked. One plant was found growing beside the food disposal site at Skivvy Gat.

### Other alien plants

No signs of *Senecio* or *Conyza* were found at the now well-overgrown site of the upper magnetometer hut. It is certain these two species have now been eradicated and checks are no longer necessary. No *Verbena* was found at Skivvy Gat (where several plants were found and removed on 22 April 2008 by Kholekile Cita).

As in the previous year, no traces of the alien grass *Arrhenatherum elatius* could be found at the single known site in front of the outside door to the laboratory and it seems likely this alien has now been eradicated from the island, following herbicide treatment in 2005/06. This grass was first identified in 1998/99. The treated site shows signs of re-vegetating, mainly with grasses and sedges.

### **Fuel pumping**

Diesel fuel was pumped ashore on 23 September. The removable metal drip box was in place, along with 20-l containers for any leaked fuel. No leaks occurred and 69 190 litres were transferred to the island

### **Light pollution**

No outside lights were left on and all window blinds at the station were closed prior to dusk each evening. As a consequence no evidence of birds colliding with buildings was noted.

No incidents of “bird strikes” on base buildings during the relief or year were observed or reported.

### **Paths and erosion issues**

A day excursion was made to Gonydale and Tafelkop up the Gonydale River route and down via the Golden Highway. The paths did not seem to have eroded further from my previous visits since 2003, although the down route used is unpleasantly muddy. I inspected the usual camp site in Gonydale and noted that the trampled area seen in previous years was recovering well with natural vegetation.

Paths in the vicinity of the base at Transvaal Bay appeared much as in previous years: overgrown on arrival but becoming more obvious during the takeover period with the increased level of foot traffic.

A new rope ladder was placed at Diesel Cove and the single knotted rope into Sagina Gulch replaced and refastened. The rope ladders at Admiral’s are now unsafe with many missing planks and a fixed rope and a climbing harness should be used in addition for

safety purposes. All *Sagina* climbing attachment posts were checked. Unsafe aids should be removed and replaced as necessary.

### **Recreational fishing**

Fishing took place from the ship in both Tristan and Gough waters and from the shore. As far as it could be to ascertained fishing too place in accordance with issued regulations and issued permits.

### **Appointment of a voluntary Team Conservation Officer**

Henk Louw of the new team took up the voluntary duties of an over-wintering conservation officer for the year.

### **Acknowledgements**

We thank all the participants on the 2008 Gough relief, both aboard ship and ashore, for their willing help and support with environmental matters at Gough Island.

## APPENDIX ONE

### ENVIRONMENTAL INFORMATION ABOUT GOUGH ISLAND AND PRECAUTIONS TO BE TAKEN BY ALL EXPEDITION AND TAKE-OVER MEMBERS

*Gough Island has been described as the most important seabird island in the world. It is a Nature Reserve of the Tristan da Cunha Government, and with Inaccessible Island forms one of the United Kingdom's very few World Heritage Natural Sites. It is also from November 2008 a Ramsar Wetland of International Importance.*

Oceanic islands are very sensitive to human disturbance. This is mainly due to their evolution in the absence of human beings and other terrestrial mammals. The indigenous animals and plants of these islands, many of which occur nowhere else, are thus poorly adapted to direct human disturbance, trampling, pollution or competition from terrestrial predators, hardier plants, insects and diseases that could possibly be brought across from the mainland (referred to as alien species).

The following message is to inform you of some of the precautions you need to take before you reach the islands. The precautions to be taken during your stay on the island will be explained in more detail during the voyage (although some are summarized here). Please comply with the following precautions before boarding the research vessel *S.A. Agulhas*.

#### A. PRECAUTIONS AGAINST INTRODUCING ALIEN SPECIES TO THE ISLAND

##### 1. CHECK ALL PERSONAL CLOTHES AND SHOES

###### 1.1 Personal clothes

Before packing your personal clothes, please give them a thorough wash and iron. Please be especially careful with hiking socks, fleece and outer jackets and any other clothing you might have used previously in the natural environment, in city parks or on farms. These clothing items make excellent vectors for the transport of alien plants, especially of their seeds. Empty all jacket pockets and clean seams that might have trapped plant material, especially seeds. Pay special attention to cleaning Velcro strips.

###### 1.2 Footwear

The soles of all shoes, boots and sandals are to be scrubbed thoroughly and cleaned of soil, stones and other dirt. Careful attention must be paid to cleaning Velcro straps. In addition, a compulsory “Boot-washing Ceremony” will be held on the ship on the outward voyage for all those going ashore, even if only for a day visit.

### **1.3 Walking and hiking equipment**

Rucksacks, day packs, camera/video bags, walking sticks, tripods and protective clothing

Please wash and check these items thoroughly, especially Velcro seams and straps, pockets and below removable stiffeners. All these items will be inspected at the boot-washing ceremony for seeds and insects, etc. along with your issued and personal outer/protective clothing.

2. Take care while packing equipment and personal belongings into trommels (metal trunks) and other containers
  - 2.1 Ensure that the container is absolutely clean inside and outside before packing.
  - 2.2 Pack in a secure environment in a pest- and plant-free closed room preferably during daylight hours
  - 2.3 Keep containers fully closed (preferably sealed) when not actually packing them and once fully packed.
  - 2.4 Store containers inside a building (not in the open), preferably lifted above the ground surface, in a pest/plant-free environment before transport to the SANAP stores and onto the *S.A. Agulhas*.
  - 2.5 Remember that packing at night with a localised light source could attract insects into your containers, so avoid packing at night whenever possible.

## **B. PRECAUTIONS AGAINST POLLUTION**

### **1. STYROFOAM PACKAGING CHIPS ARE BANNED FROM THE ISLAND**

Due to the risk of environmental pollution posed by Styrofoam packaging chips, these are not allowed onto the island.

### **2. NYLON STRAPPING IS STRONGLY DISCOURAGED**

Nylon strapping is lethal to seals and birds, which can become entangled in these straps. Once a young seal has become entangled the strap will slowly cut into the flesh of the seal as it grows, eventually killing it. This is an extremely slow and

painful death.. For this reason the use of nylon strapping for packaging is strongly discouraged. All such straps must be cut before proper disposal.

### 3. MINIMISE PLASTIC AND CARDBOARD PACKAGING

Plastic cannot be incinerated on Gough due to the emission of PCBs, which have an adverse effect on birds and seals. Cardboard, especially in corrugated form, can harbour invertebrates, such as cockroaches and spiders and their eggs and larvae. This means that all plastic and cardboard (as well as all waste paper and wood) is stored on the island and later returned to South Africa for proper disposal. You are thus requested to minimise the amount of plastic and cardboard packaging used as far as practically possible, since storage space on the island for such wastes is severely limited. Rather use one large refuse bag than many small plastic bags and remove items from unnecessary cardboard boxes and wrapping whenever feasible. Note that incineration of any wastes (including wood) is not allowed on Gough Island. The only open fire that may be lit is in the braai/barbecue facility in the base quadrangle, using the charcoal briquettes provided.

### 4. OLD PLYWOOD IS NOT TO BE USED

Old plywood is not to be used as packing material or brought to the island, since it may be contaminated with fungi, etc..

## C. MINIMISING BIRD STRIKES ON THE ISLAND

Gough Island is the breeding ground for hundreds and thousands of night birds (also referred to as burrowing petrels due to their habit of making their nests in underground burrows). These birds have very acute night vision and only venture onto the island during the hours of darkness in order to avoid the larger predatory birds.

Unfortunately, these birds become blinded by even a dim light and will fly towards the light source. If this light emanates from a building or fixed structure they may collide with the structure and be injured or killed. In a dazed and injured state they become easy prey for predatory skuas, which soon learn that outside lights represent a potential food source.

For this reason no outside lights are permitted to be left on at night. Therefore please bring your own small hand torch for moving around outside the buildings at night.

Blinds on all base windows must be fully closed by dusk and kept closed all night.

**D. FRESH FOOD**

No fresh fruit or vegetables of any sort whatsoever may be taken ashore at Gough Island.

**E. LITTERING**

Absolutely no littering or disposal of rubble, etc. is allowed anywhere on the island, including cigarette butts, matches, sweet wrappers, food remains, etc.

Please immediately clean up any rubble that has been generated as a result of maintenance or other work that has been undertaken outside (e.g. dropped nails and screws, pieces of metal, bits of wood, plastic piping off-cuts, etc.), to prevent loss and dispersal by the wind.

**F. DISTURBANCE**

Birds and seals must be approached slowly and only to a distance that does not result in causing undue alarm (do not approach within 5 m of seabirds or 10 m of fur and elephant seals). If approached animals appear agitated retreat slowly until they calm down. Please remember that albatrosses, penguins and most especially fur seals can give nasty bites. The Tristan Albatrosses breeding in Gonydale and on Tafelkop and the Atlantic Yellow-nosed Albatrosses breeding south of the base towards Seal Beach form part of long-term population studies. Birds on nests in these areas are not to be approached closer than 10 m and the nest markers are to be left undisturbed.

**G. FISHING**

Over-wintering personnel only are granted an open license by the Tristan Government for recreational fishing from the shore only for domestic consumption only throughout their years' stay. Such fish may not be removed from the island.

All other shore-based and ship-based personnel during the relief must purchase a recreational fishing license for GBP 150 that allows a maximum of 250 kg of fish (gutted, filleted or whole) to be caught. Licenses are to be purchased on arrival on Tristan da Cunha from the Agriculture and Natural Resources Department by individuals or groups of named individuals (syndicates) before they will be allowed to fish from the sea or shore. These fish may be removed to South Africa with a legitimate export license issued by the Tristan Government.

All fishers must fish in a responsible manner, throwing back unwanted and under-sized fish alive and uninjured.

We trust you will appreciate that you are among the privileged few to have the opportunity to visit this unique environment and that you will do your part in preserving it for posterity, as well as thoroughly enjoying your stay.

All relief visits to Gough Island are accompanied by Environmental Officer(s) appointed by the Tristan Conservation Department. These officers may be approached for advice, and their requests are to be followed at all times.

Further environmental information may be found in the management plan for Gough Island.

Tristan Conservation Department

Updated 16 August 2009

## APPENDIX TWO

### REGISTER OF FIELD AIDS ON GOUGH ISLAND\*

An updated list of field aids (mainly fixed ropes and ladders) on Gough Island is given, as an aid to improving safety and access to various parts of the island, mainly away from the meteorological station.

It is suggested that the list be checked in the field, amended as necessary and kept up-to-date, and that field aids have their positions recorded by GPS as they are visited.

Field aids should be kept in good repair and redundant and unsafe aids (e.g. worn and/or rotten ropes and rope ladders with several missing rungs ) should be removed.

In terms of the island's management plan, placement of new field aids will require prior approval from the Tristan authorities.

#### **Tumbledown**

40° 21.431'S; 09° 53.054'W; 31 m.

Rope fixed to an anchor pole leading down to the shore rocks.

#### **Gonydale River**

Rope(s) in vicinity of waterfall(s) require checking for exact positions and condition. One rope is next to a waterfall about 200 m upstream from the Swem Gat waterfall.

#### **Gonydale River crossing**

Gonydale riverbank; 40° 21.120'S, 09° 50.091'W; 21 m

Five-rung aluminium ladder.

Base riverbank; 40° 21.105'S, 09° 53.089'W; 36 m

Short aluminium ladder fixed with a rope.

#### **Golden Highway River crossing (Base riverbank)**

40° 21. 089'S, 09° 50.058'W; 12 m

Short aluminium ladder fixed with a rope.

### **Swemgat, Gonydale River**

Short aluminium ladder above a rope ladder (most wooden rungs missing) fixed to a tree and to an overly long anchor pole. Rope ladder needs replacement.

### **Seal Beach**

Fixed rope to gain access to the shore down a steep muddy and eroding slope.

### **Crane Lookout Site**

Short fixed rope. Used only for *Sagina* eradication work.

### **Sagina Gully**

40° 21.014, 09° 52.805'W; 34 m

Worn rope replaced with a knotted synthetic rope fixed to a new anchor point in September 2008. Used only for *Sagina* eradication work.

### **Crane cliff**

40° 21.022'S, 09° 52.699'W; 34 m

Fixed rope among tussock adjacent to crane. Not recommended for use as cliff descent exposed.

### **Emergency Base cliff**

40° 21.020'S, 09° 52.767'W; 33 m

Fixed rope among tussock below Emergency Base. Not in use as largely overgrown and should be removed.

### **Diesel Cove**

40° 21.014'S, 09° 52.763'W; 35 m

A new pilot-type wood-runged rope ladder was put in place in September 2008 replacing the old ladder that had become unsafe during the 2007/08 summer. Because this new ladder is not made of synthetic rope it is liable to rot quickly and so is unlikely to last many years. Lower down is an aluminium ladder (fixed to poles and pitons by rope) to gain access to the fuel-pumping coupling site. Two large metal pitons driven into rock cracks (currently unused) in the vicinity.

### **Snoekgat**

Southern approach: three short ladders, the top two aluminium, the lowest rusted steel; 40° 20.883'S, 09° 52.726'W; 44 m.

Northern approach: two short fixed (to a tussock) synthetic ropes at entrance to bowl.

At pond: a synthetic rope was tied to the anchor pole in September 2008 to replace a short aluminium ladder that had disappeared (presumably washed away) since January 2008; 40° 20.878'S, 09° 52.699'W.

### **“Nextgat”**

40° 20.797'S, 09° 52.641'W; 26 m

A knotted synthetic rope (fixed round a rock and to a large steel piton) gains access to the lowest part.

### **Admirals**

A difficult descent and an even harder ascent. From the top there are a fixed knotted rope and a 2006 (but already rotting) pilot-type rope ladder with wooden rungs placed in position in September 2007, a long aluminum ladder and finally two free-hanging rope ladders. One of the lower rope ladders has many rungs missing and should be removed. It is recommended that users proceed with caution and ideally make use of a safety line of static rope, a sit harness and a shunt. Note that the Antarctic Directorate has stated it does not intend to place new aids at this locality.

### **Admirals, northern section**

40° 20.596'S; 09° 52.836'W

Little-known fixed rope above a short aluminium ladder high up below the ridge above the shore reported as present in 2007. Ability to reach the shore from these two aids requires checking.

### **Tafelkop climb**

Two short fixed ropes on path roughly half way up from the Golden Highway

Lower at 40 20.446'S, 09 53.485'W, 303 m.

Higher at 40 20.426'S, 09 53.507'W; 345 m.

### **Waterfall Point**

A fixed rope (marked by a buoy) was placed in 2001 to allow access to the shore at the southern end of the boulder beach stretching north from Waterfall Point. Present condition requires checking. GPS required.

### **Archway Rock, The Glen and the Glen River**

Remnants of rope and anchor pole to allow access to the Sophora Glen rocky beach from The Glen over the Archway Rock were found in January 2008. No longer functional.

### **Blechnum Bridge**

A substantial metal and rope structure crossing a small stream on the path towards Tafelkop, about a hundred metres inland from the helipad. Erected in October 1986, now deteriorating due to rust, with one rope trailing loose. The last remnants of an older wooden and rope suspension bridge at the site should be removed. Apparently, these bridges, falling outside the South African-leased area, were put up without Tristan approval.

### **South Peak**

Overgrown rock cairn at top of path marks route to Michael's Col.

### **Gonydale**

A food cache has been placed in recent years in a small cave a few metres above the central camp site. Several 2007 "tote" boxes with old food and camping equipment removed and replaced with an orange container by air in 2008. For non-emergency use by albatross researchers only.

### **Waterfall Camp**

Food cache (two tote boxes) placed under a small overhang on the left bank adjacent to waterfall on 14 September 2007. For non-emergency use by albatross researchers only.

Updated 27 September 2008

## APPENDIX THREE

### REGISTER OF CURRENT FIELD MARKERS ON GOUGH ISLAND

The register of scientific and conservation management markers used on Gough Island should be updated annually. All markers not registered are to be removed only by environmental inspectors. Temporary field markers deployed and removed during the annual relief voyage need not be listed.

The register lists the study being undertaken, the year of initiation, the expected year (if known) of completion, locality name or description, position (GPS co-ordinates), type(s) of marker(s) used, and name, affiliation and e-mail address of the person responsible for the study.

#### **Atlantic Yellow-nosed Albatross Demographic Study**

Commenced: 1983, ongoing, no projected year of completion.

Between Meteorological Base at Transvaal Bay and Gonydale River, bounded by coastal cliffs and inland by the Golden Highway River from Tafelkop.

Markers: one-metre white conduit poles bearing yellow alpha-numeric tags in series A2 to A99 at nest sites. Poles are left in place and are not removed each year.

Contact person: Peter Ryan, FitzPatrick Institute, University of Cape Town; [Peter.Ryan@uct.ac.za](mailto:Peter.Ryan@uct.ac.za).

#### **Tristan Albatross Demographic Study**

*Tafelkop, Memorial Cross Valley and south slopes of South Peak.*

Commenced mid 1980s, ongoing, no projected year of completion.

*Gonydale and Hummocks Path*

Commenced 2007, no projected year of completion.

Markers for all three Tristan Albatross study colonies: 1.33- and 1.5-m white conduit poles bearing yellow alpha-numeric tags in series A2 to A99 and C1 to C99 (not all yet used) at occupied nests. Poles are removed and repositioned annually.

Contact persons: Peter Ryan, FitzPatrick Institute, University of Cape Town; [Peter.Ryan@uct.ac.za](mailto:Peter.Ryan@uct.ac.za) and John Cooper, CORE Initiatives; [John.Cooper61@gmail.com](mailto:John.Cooper61@gmail.com).

**Atlantic Petrel long-term monitoring transects**

*Before Blechnum Bridge to left of path to stream, past Blechnum Bridge on first rise and across Gonydale River to right of path*

Commenced 2001, no projected year of completion.

Ten white conduit poles with aluminium tags punched AP 1 to AP 10 in a straight line at each locality.

Contact person: Richard Cuthbert, Royal Society for the Protection of Birds; [richard.cuthbert@rspb.org.uk](mailto:richard.cuthbert@rspb.org.uk).

**Vegetation transects**

Ruin Ridge, Lower Slip

Markers: red metal poles on Ruin Ridge, top pole labeled “PFIAO vegetation transects, do not remove, C. Moloney, 1990”.

Person responsible: Peter Ryan, FitzPatrick Institute, University of Cape Town; [Peter.Ryan@uct.ac.za](mailto:Peter.Ryan@uct.ac.za).

**Sagina Eradication Programme**

Markers: 2-m white conduit poles labeled SAGINA marking positions of steel scaffolding poles for attachment of ropes on cliff top between Beach Rocks and Snoek Gat.

Person responsible: John Cooper, Animal Demography Unit, University of Cape Town; [John.Cooper@uct.ac.za](mailto:John.Cooper@uct.ac.za).

Updated September 2008