the inaccessible petrel

The Spectacled Petrel or Ringeye breeds only on the cloud-draped summit of Inaccessible Island. In 1999 the population was estimated to be around 4 000 pairs, but with some 700 killed each year by long-line fisheries, there was real concern that it might be on the brink of extinction.

In 2004 Peter Ryan and Cliff Dorse went to Inaccessible to see how the Ringeyes were faring.

TEXT & PHOTOGRAPHS BY PETER RYAN

The lure of Inaccessible Island is irresistible. I first visited for three hours in 1984, barely long enough to see the island's famous flightless rail, but returned for three weeks in 1987 to study the rail's physiology. I was so enamoured with the place that I have been back five times, spending almost a year studying the island's enigmatic buntings. And I couldn't resist the chance to go back there in November–December 2004 to count Ringeyes.

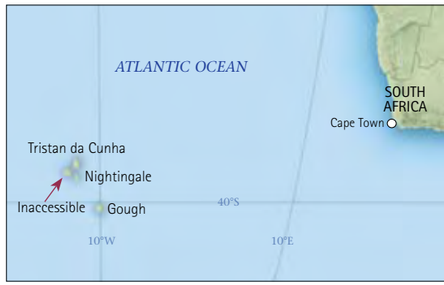
The island's appeal is subtle. Second largest in the Tristan archipelago, Inaccessible rises sheer out of the restless South Atlantic, with towering cliffs around most of the coast. Indeed, the island was named not so much for the difficulty of landing there, but because it's almost impossible to go anywhere once you scramble ashore. Only on the exposed western side, where the cliffs are highest, at around 500 metres, is there relatively easy access to the island's plateau. Landing in a small boat at Blenden Hall, the bay named after the East Indiaman wrecked there in 1823, requires a blend of patience and daring. And once ashore, conditions are spartan, as one lives in either a small wooden hut or a tent, and washes in the decidedly chilly streams.

Tristan can only be reached by sea. We sailed from Cape Town on the *Edinburgh*, one of two fishing vessels that catch rock lobster around the islands, and arrived off Tristan after seven days. With its peak reaching over 2 000 metres, the island is visible from miles away on a clear day, but with a cold front fast approaching we were almost on top of the island before it appeared as a darker grey wall under gloomy grey skies. After a brief visit ashore to meet up with old friends and borrow a small boat for landing at Blenden Hall, we went back aboard the *Edinburgh* and on to Inaccessible.

Any thoughts of getting ashore were soon dashed by gale-force north-westers, and so began the waiting game. For Cliff this brought the added bonus of a trip to Gough Island, 350 kilometres south-south-east, to deliver spares to the other fishing vessel, the *Kelso*. We took advantage of this opportunity to conduct a complete census of Rockhopper Penguins *Eudyptes chrysocome* breeding in colonies around the coast of Gough, repeating a count last made in 1984. Worryingly, in 20 years the population has fallen from an estimated 150 000 pairs to just over 30 000 pairs, mirroring dramatic decreases in other populations of this species. The reasons for its almost world-wide collapse are unknown, but are thought to be linked to changes in their food supply, possibly as a result of global climate change.

From Gough Island we returned to Inaccessible, to find the weather greatly improved and the wind swinging to the south, ideal for a landing at Blenden Hall. The next morning we went ashore and despite a few rogue waves, everything was landed safely. It took only 12 days from leaving Cape Town to get ashore – a personal record. Previously it has taken me up to five weeks just to get from Tristan to Inaccessible!

Once ashore, the contrast to a ship-based existence is striking. Gone are the restless rocking motion, medley of ship smells and continuous assault of engine noise and vibration. The calm is broken only by the surf crashing onto the boulder beaches, and the querulous '*sweep*' calls of the irrepressibly curious Starchies (Tristan Thrush) which ▷



Opposite *Northern Rockhopper Penguins on the boulder shore between the Waterfall and Salt Beach on Inaccessible Island's eastern shore. Landing is often quite easy along this stretch of coast, which is sheltered from the prevailing westerlies, but the sheer cliffs prevent access to the plateau.*

Below *A Spectacled Petrel sweeps low over the sea behind the fishing vessel. Like the closely-related White-chinned Petrel, Ringeyes follow vessels persistently, but tend to remain in warmer oceanic waters than their more southerly cousins.*

converge from all points to inspect the strange new flotsam stranded on the beach. With Tristan Buntings flitting past and Inaccessible Island Rails calling from the adjacent tussock grass, it was hard to get Cliff moving, but all our equipment and food had to be hauled over the boulder beach to the hut. Fortunately he soon saw his first rail, so could focus on the task at hand.

The Spectacled Petrel *Procellaria conspicillata* breeds only on this island's plateau. Recently split from the more widespread White-chinned Petrel *P. aequinoctialis*, it is characterised by having an incomplete white ring around its eyes, giving rise to its local Tristan name of Ringeye. The type specimen was collected off Australia, and bones of an extinct *Procellaria* petrel found on Amsterdam Island suggest that the species may have bred at temperate islands in the south Indian Ocean before predators such as pigs were introduced. But as far as we know, Ringeyes currently breed only on Inaccessible Island. From there, they forage across the South Atlantic Ocean, reaching the waters off southern Africa in small numbers, but the majority head west to feed off the coast of South America.

In 1982 the population was crudely reckoned to number about 1 000 pairs. During the 1990s, observers on long-line boats fishing off Brazil estimated some 700 Spectacled Petrels were being killed annually, with more dying off Uruguay and South Africa. Such high levels of mortality did not seem sustainable by a small population of a bird that takes four to five years to reach maturity and lays only a single egg. As a result, a detailed count was made in 1999, covering the entire island summit. This suggested the population was larger than initially thought, perhaps some 4 000 pairs, but still worryingly small given the known long-line mortality. Now, five years later, we were back to see how the population was faring.

Our first order of business was to re-establish the path up to the island summit. With no one having used it since we were last there in 1999/2000, the route through the head-high tussock grass was largely overgrown. A sweaty afternoon ensued, as we crashed around, trying to force our way through the thicker stands of the inimitable tussock. But by the first evening, we were ready to start our work on the summit.

From the hut, the West Road appears to be a daunting climb. The coastal scarp is more than 500 metres high, with no obvious route up the final, near-vertical section. When we set off the following morning, Cliff was a tad apprehensive, especially as the summit was wreathed in orographic cloud. But an hour or so later we reached the top and stumbled into the top end of Ringeye Valley, one of the main breeding areas for Spectacled Petrels. Our first goal was to set up a small study of marked burrows to ascertain the proportion of occupied burrows.

Spectacled and White-chinned petrels are the largest burrow-nesting petrels in the world. Like most smaller petrels and shearwaters breeding in the sub-Antarctic, they nest underground and visit the islands mainly at night to avoid the attentions of the predatory Subantarctic Skuas. Fortunately, Ringeye burrows are distinctive and most are easily located. They are larger than most other petrels' burrows, and usually have a characteristic entrance pool or moat. Most are too long for a human to reach into the breeding chamber, so it is not easy to know whether a given nest is occupied or not. We used playback of taped calls at the entrance to each tunnel, then inserted an arm into the burrow to try and elicit a response from the occupants. Our visit was timed to coincide with the early incubation period, when the highest proportion of nests should be occupied, and when incubating adults usually respond well to playback.

We marked out 100 nests for repeated checks of occupancy, then systematically counted burrows across the plateau. Although the island is only 14 square kilometres in extent and only about half of this is occupied by Ringeyes, a complete census is not a trivial exercise. The plateau is dissected by a series of river valleys and clothed in dense vegetation, dominated by cycad-like bogferns *Blechnum palmiforme* and thickets of island trees *Phylica arborea*. With the commute from sea level, it means long ▷

Opposite, above *A newly-fledged Tristan Thrush, or Starchy, showing the richly coloured primary coverts and apricot-streaked scapulars typical of juvenile plumage.*

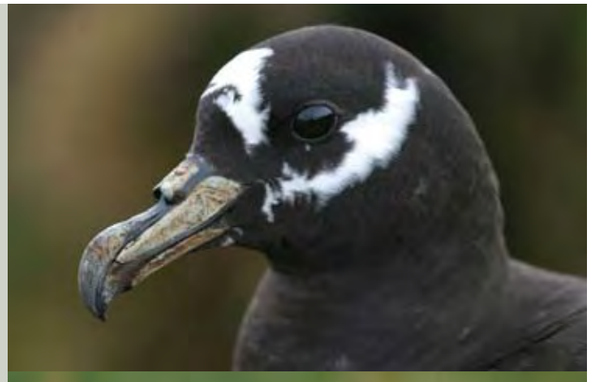
Opposite, below *Arm-probing Spectacled Petrel burrows is a dirty business, especially in the wetter areas. After doing it in 1999, I was more than happy to let Cliff do all the probing in 2004!*

Customised spectacles

The Ringeye's distinctive spectacles vary considerably in size and shape, not only among the birds themselves, but even on either side of the head of some individuals. The basic shape is consistent, with a white 'U' framing each eye and meeting on the forehead, but the width of the spectacle varies. Most birds have fairly broad, well-formed spectacles (*right*), but in some individuals they are narrow and incomplete (*right, below*). The darkest birds have little more than a white forehead, usually with a few isolated white feathers around the eye. In some birds the spectacle links with the white chin, but in others it is distinct from the chin.

At sea, Spectacled Petrels are sometimes confused with White-chinned Petrels (*below*) that have white patches on their heads. A small proportion of White-chinned Petrels exhibit partial leucism, with white areas on the belly, head, wings or tail. On the head, apart from exaggerated white chins, the most common area for a white patch is on the hind crown or nape, and these birds can be confused with Spectacled Petrels. However, once you know the structure of the characteristic Ringeye spectacle it is quite distinctive. From a distance, it is usually most pronounced as the bird flies directly towards you, displaying the prominent white forehead. At close range, the darker bill tip of a Spectacled Petrel also is distinctive.

BARRIE ROSE



Above *A Spectacled Petrel in the large moat that is typical of many breeding burrows.*

Below *Most Spectacled Petrels breed in discrete colonies, which are characterised by mats of bright green* Scirpus *sedges among the duller brown bogferns. These Ringeye bogs provide sheltered breeding sites for other species, including Atlantic Yellow-nosed Albatrosses (chick on left).*

days spent scrambling over rugged terrain and through unforgiving vegetation. But the rewards are manifold. Over much of the plateau, counting is only feasible on clear days, and the scenery then is compelling. Each valley is different, and the twin constants of Tristan and Nightingale are visible in the distance. And the count is enlivened by repeated interactions with Yellow-nosed Albatrosses, Subantarctic Skuas, Starchies, Tristan Buntings and Inaccessible Rails.

Given the scale of the count area, only a crude estimate of the total number of burrows is possible. Once the estimate was complete we checked accuracy by carefully exploring small areas to relate our initial estimates to actual burrow numbers. At the same time, we repeatedly checked our 100 marked nests to estimate the proportion of occupied burrows. Even before we had finished the count, it seemed that there were, if anything, more birds than in 1999. Their large size confers Ringeyes some immunity from skua attacks, and many come ashore during the afternoon, well before dark. It was not unusual to see several hundred soaring over a small valley, and tens sitting outside their burrow entrances. During previous visits I had not seen as many birds during the day.

After we had spent two weeks traipsing all over the island, our counts confirmed an increase in the Ringeye population. Almost 9 000 burrows were counted, up 50 per cent from 1999, with an occupancy rate in marked burrows of at least 70 per cent. One-off playback trials at other sites confirmed a high level of occupancy throughout the island. How can we reconcile this increase with the large numbers killed on long-lines?

By November, most Yellow-nosed Albatrosses are reaching the end of incubation, but some non-breeders still hang around, courting and establishing pair-bonds by allopreening.

Although Inaccessible Island is currently free of any introduced mammals, it has suffered from human impacts in the past. At various stages goats, sheep, cows, pigs and even a couple of dogs have been left to run wild on the island. Of these, pigs had probably the greatest impact on breeding seabirds. Wild pigs are formidable predators and have been responsible for wiping out burrow-nesting seabirds on several other islands. Fortunately, at Inaccessible the feral population appears to have died out early in the 20th century, but by this stage they had reduced Ringeyes to a perilously small population. The Tristan islanders only recorded the birds breeding on the island in the 1920s, and when the Norwegian Scientific Expedition visited the island in 1937, Yngvar Hagen estimated that the population stood at less than 50 pairs.

Once the pigs disappeared, the population recovered rapidly: there were a few hundred pairs in the early 1950s, at least 1 000 pairs in 1982, 4 000 pairs in 1999 and 7 000 pairs in 2004. Allowing for differences in count accuracy, this suggests that Ringeye numbers have been growing at around seven per cent per year from a very small initial population in the early 1900s. This is close to the biological maximum for a petrel, given their conservative life history characteristics, but is not unprecedented. Northern Fulmars increased at around seven per cent annually in the north-east Atlantic during much of the 20th century, and Buller's Shearwaters recovered from near-extinction to more than 200 000 pairs in less than 50 years following the removal of feral pigs from Aorangi Island off New Zealand (although in the latter case, growth was assisted by immigration from adjacent Tawhiti Rahi Island).

Does this mean we no longer need worry about Spectacled Petrels? While the situation is certainly less dire than it appeared before the 2004 survey, there is still cause for concern because demographic models suggest that the population is susceptible to small increases in long-line mortality. We may have been lucky that it has done so well to date. However, if we can reduce long-line mortality, numbers should rapidly recover to the original population size, which probably will mean many more Spectacled Petrels reaching African waters. Inaccessible Island was declared a nature reserve in 1997 and, more recently, a World Heritage Site in recognition of its spectacular scenery and unique wildlife. □

Tourism at Tristan

Tourists are allowed to make day-trips to Inaccessible and Nightingale islands, under the supervision of Tristan guides, who ensure that visitors don't introduce any alien plants or animals to the islands, and don't cause undue disturbance to the wildlife. Landings at Inaccessible Island are restricted to the sheltered eastern beaches at the Waterfall and Salt Beach, where visitors are confined to a narrow coastal strip, but this is sufficient to see the Inaccessible Island Rail. Access is easier at Nightingale, with a gentle path up to the Ponds, where large numbers of Atlantic Yellow-nosed Albatrosses breed, and the scarce Wilkins' Bunting is fairly easily located in the groves of island trees *Phylica arborea*.

The main problem is getting to Tristan in the first place. Several cruise ships visit the island annually, usually during repositioning voyages of vessels operating in the Arctic and Antarctic. However, landing at all the islands is weather dependent, and it's not unusual for a vessel to spend four days waiting at the islands and not get ashore even at Tristan. Small numbers of independent tourists may also visit Tristan for longer periods, if they apply to the Administrator for permission, but berths on vessels to the island are limited. Once on Tristan, visitors can usually arrange to join a small boat travelling to the other islands.