

Operation King Penguin

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Sealers virtually exterminated king penguins from Heard Island between 1855 and 1880. Fortunately, over the last few decades, these beautiful birds have made a remarkable come-back. In the summer of 2003–04, three of us set out to study the birds, to find out where they foraged and what they did while at sea.

The original plan was to camp near Doppler Hill, at the island's eastern end, and find a few volunteers, among the thousands of penguins there, on which to attach a satellite tracker and dive recorder. But the colony had expanded so much that there was no space to catch individuals without placing ourselves amongst the breeding and incubating birds. It was imperative to keep our distance as eggs and chicks may be abandoned permanently, if the adult caring for them is disturbed.

We quit the camp site and moved to 'tent city' at Spit Bay, close to a colony of about 1800 pairs of king penguins. Here we were able to watch the penguins, chose our candidates and deploy the instruments when the birds left their breeding grounds and headed for the sea.

It sounds easy, but king penguins have a rather unusual life cycle. It takes them up to 14 months to rear a chick and because of this extended breeding season, the time a pair attempts to breed varies each year. When we started our project in December, everything appeared to be happening at once. There were penguins still feeding chicks from the previous season; penguins incubating eggs; penguins engaged in courtship; penguins moulting; and others just hanging around.

We wanted to study genuine breeders and the challenge was to distinguish them from non-breeding penguins. The only way to do that was by watching the colony for penguins that returned to their partners and then intercept the partner, now relieved of its incubation duties, as it was leaving the island. This changeover could take up to four hours, so we had to wait until a potential volunteer made up its mind to leave.

At first we wondered whether we would ever get all 21 tracking and recording units out. On our best day we deployed four sets of instruments (all animal handling and deployment procedures were in accordance with approved animal ethic guidelines). Throughout the season we managed to track penguins during incubation and after the chicks had hatched. At the end of our stint on Heard Island we had information on 50 individuals who were tracked over 307 days – a pleasing result.

Sending out the units was one thing; trying to get them back was another. From our daily data downloads we could

see whether the birds were still at sea or returning to the island. As we needed to redeploy the instruments we had to catch the returning penguins before they reached the colony. To our surprise we found that many of our penguins returned to the sand flats at the Spit (some even went to the Doppler colony) and walked several kilometres back to the colony along a pebbly beach. So we had to go walking too.

Equipped with receivers and binoculars, we spent hours looking for penguins sporting big, painted numbers on their chests and carrying the latest in electronic fashion on their backs. Wind, rain and tens of thousands of moulting penguins made this task challenging and on a few occasions we returned to Spit Camp unsuccessful. A number of penguins also managed to sneak past us and enter the colony before we could retrieve the equipment. We then had to wait for their partners to return and recapture the instrument-bearers on their way back to sea.

We received data on the whereabouts of the penguins sometimes several times a day and it was exciting to see how far the birds ventured out to sea. On average they swam about 100 km a day, reached distances of 166–466 km from the island and travelled up to 2550 km on a single foraging trip that lasted from 6–23 days. The penguins travelled in many directions but there was one area (about 74–76°S) where they concentrated their efforts. It will be fascinating to link our data to the marine science data collected on the *Aurora Australis*. This information will improve our understanding of the complex Southern Ocean ecosystem and help us to secure a future for these magnificent birds.

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King penguin number 34 is home.



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