

# FIRST GROUND VISIT TO THE EMPEROR PENGUIN *APTENODYTES FORSTERI* COLONY AT SNOW HILL ISLAND, WEDDELL SEA, ANTARCTICA

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During its first tourist cruise of the 2004/05 austral summer season, the Russian icebreaker *Kapitan Khlebnikov* visited the Antarctic Peninsula and Weddell Sea. On 9 November 2004, the ship encountered fast ice on the east side of Snow Hill Island (64°28'S, 57°15'W), with no leads or openings observed to the south. Emperor Penguins *Aptenodytes forsteri* have been observed for many years by staff on tourist vessels and occupants of scientific stations in the northern Antarctic Peninsula. Hence, it had been suspected that a colony existed to the south within the Weddell Sea (Coria & Montalti 2000). On 2 January 1990, for example, at least 35 Emperor Penguins (mostly adults) were observed at various times on ice floes east of Seymour Island, c. 40 km to the north of Snow Hill Island (JS & FST pers. obs.). Some 50 adult Emperor Penguins were seen on 9 November 2004 making their way from the open water around the ship onto the fast ice in a southerly direction.

A helicopter reconnaissance was then conducted the same day farther south to search for the Emperor Penguin colony immediately south of Snow Hill Island that had been discovered on an overflight on 20 July 1997 (Coria & Montalti 2000). As far as we are aware, no one had subsequently visited the colony by air, and no ground visit had ever been made. Our objective was to relocate the colony, to conduct a ground census of chicks and to obtain any other relevant information.

The colony was located by GPS at 64°31.401'S, 57°27.465'W—a position similar to that of 64°32'S, 57°26'W reported by Coria &

Montalti (2000). The colony was on fast ice about 350–400 m from the low ice cliffs of the south coast of Snow Hill Island (Fig. 1). Icebergs provided protection from the prevailing wind, a feature common to many Emperor Penguin colonies. The colony was composed of about six sub-groups, which appeared to have moved short distances as evidenced by guano deposits.

All helicopter flights to transport 65 passengers plus seven expedition staff to and from the colony area were closely monitored by qualified staff to ensure that the penguins showed no adverse reactions. The landing site (about 1.5 km from the colony) was chosen so that an iceberg provided a sound and visual barrier to the birds. No flights were made over or near the colony, and no more than 25 people were at the colony at any one time. No changes in behaviour by the penguins were observed by us, and the curiosity of some adults actually resulted in them coming toward the helicopter landing site.

A six-hour census conducted by FST yielded 3885 downy chicks, mostly guarded by parents (Fig. 2), counted individually from elevated areas of the fast ice. The sub-groups were mostly stationary for the duration of the visit, had about equal numbers of chicks, and were separated from each other by between 50 m and 150 m. Most chicks appeared healthy, but a small percentage of unattended “runts” was observed. At least 100 dead chicks were noted, as was one abandoned egg. Adult birds present were not counted. The colony size was conservatively estimated at about



**Fig. 1.** Aerial view of the Emperor Penguin colony at Snow Hill Island looking south, 9 November 2004. Photograph by Jennifer Clement.



**Fig. 2.** Chicks and adults in the Emperor Penguin colony at Snow Hill Island, 9 November 2004. Photograph by Jennifer Clement.

4000–4200 breeding pairs, which compares with the estimate of 1200 pairs by Coria & Montalti (2000), which was based on counts of incubating birds on aerial photographs.

On 6 December 1893, C.A. Larsen, Norwegian whaling captain on the ship *Jason*, reached a “farthest south” of 68°10'S off what is now the Larsen Ice Shelf, about 240 nautical miles (445 km) south of Snow Hill Island, farther south than anyone has since been along that coast. On 4 December 1893, as *Jason* headed south, Larsen reported an Emperor Penguin colony on fast ice in a “fjord” (inlet) of the ice shelf at 67°S, 60°W, about 160 nautical miles (295 km) south of Snow Hill Island (Aagaard 1944, p. 178). Larsen reported (in Norwegian) that the penguins were “very numerous,” but without including an estimate of colony size. An annotated chart at the back of Aagaard (1944) provides some details of the voyage of *Jason*, including mention of the penguin colony. The chart is dated 1895 and comes from an earlier source.

It is possible that the Emperor Penguin colony presently just south of Snow Hill Island was forced to relocate from the front of the Larsen Ice Shelf as that shelf began to disintegrate within the last decade (e.g. Vaughan & Doake 1996), and that the Snow Hill Island penguins of 2004 are descendents of the birds of Larsen’s colony of 1893. However, satellite imagery from 2002 shows two sheltered bays on the south coast of Jason Peninsula (at 66°04'S and 66°10'S) that were still ice shelf at that time (C. Swithinbank pers. comm.). It is possible that either of those, as well as others to the south, might have existed in 1893—one of them being the site that Larsen reported, possibly still with an Emperor Penguin colony today. The location is difficult to reach by icebreaker, although an overflight at the right time of the year might determine whether the “Larsen colony” is still there.

The only other known Emperor Penguin colony on the Antarctic Peninsula—at the Dion Islands (67°52'S, 68°43'W), Marguerite Bay—has a relatively small population [85 breeding pairs in 1978 (Woehler 1993)], and is known to be decreasing in size (E.J. Woehler pers. comm.). That colony is nearly four degrees of latitude south of the Snow Hill Island colony, thus making the latter the northernmost known Emperor Penguin colony in the Antarctic Peninsula and Weddell Sea regions, and also in the whole of Antarctica (Woehler 1993, Woehler & Croxall 1997). The current minimum breeding population in all of Antarctica of this species is of the order of 200 000 pairs in at least 45 colonies (Woehler 1993, Woehler & Croxall 1997, Messick *et al.* 1999, Coria & Montalti 2000, Spletstoesser *et al.* 2000).

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## REFERENCES

- AAGAARD, B. 1944. Antarktis 1502–1944: Oppdagelser, Naturforhold og Suverenitetsforhold. *Norges Svalbard—og Ishavs-Undersøkelser, Meddelelser Nr. 60* (Oslo, i Kommisjon hos Jacob Dybwad).
- CORIA, N.R. & MONTALTI, D. 2000. A newly discovered breeding colony of Emperor Penguins *Aptenodytes forsteri*. *Marine Ornithology* 28: 119–120.
- MESSICK, M., SPLETTSTOESSER, J.F., HARRISON, P. & GAVRILO, M. 1999. New breeding site for Emperor Penguins (*Aptenodytes forsteri*) on Princess Martha Coast, Queen Maud Land, East Antarctica. *Polar Record* 35: 156–157.
- SPLETTSTOESSER, J.F., GAVRILO, M., FIELD, C., FIELD, C., HARRISON, P., MESSICK, M., OXFORD, P. & TODD, F.S. 2000. Notes on Antarctic wildlife: Ross Seals *Ommatophoca rossii* and Emperor Penguins *Aptenodytes forsteri*. *New Zealand Journal of Zoology* 27: 137–142.
- VAUGHAN, D.G. & DOAKE, C.S.M. 1996. Recent atmospheric warming and retreat of ice shelves on the Antarctic Peninsula. *Nature* 379: 328–331.
- WOEHLER, E.J. 1993. The distribution and abundance of Antarctic and Subantarctic penguins. Cambridge: Scientific Committee on Antarctic Research.
- WOEHLER, E.J. & CROXALL, J.P. 1997. The status and trends of Antarctic and sub-Antarctic seabirds. *Marine Ornithology* 25: 43–66.