

A NOTE ON BIRD SURVEYS AT VARIOUS NESTING SITES

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Monitoring selected sites and Rookery survey

An emperor penguin rookery/moulting site and seal resting site was surveyed to collect data on the age structure and breeding success. One visit was made to an emperor penguin rookery/moulting aggregation in the Russian bay on 23.1.96 (70° 02' S & 11° 35' E). Over 500 Emperors were present in 4 different groups near two stranded icebergs. In the two groups closely surveyed, 293 individuals were present, of which, 234 adults and 59 juveniles and chicks i.e. 25 young to every 100 adults of both sexes were present. Twenty four Adelie penguins and 12 Weddell seals were also present near a crack in the fast ice. The site was in an area where the fast ice broke up late, around 26.1.96 and afforded protection against wind because of the stranded ice bergs. This may be the reason for the selection of the site by the moulting emperor penguins. No Adelie penguins used the Lazarev Russian dump rookery (69°56' S & 11° 57" E) whereas in 1995 ca 9 pairs were using it (Sathyakumar, 1995).

Bird survey in Orvin mountains

The Geological Survey of India team identified some nesting sites of the Snow petrels in the Orvin mountains, more than 180 km from the sea and ca. 90 km south-west of Maitri. Two such sites were surveyed. A total of two and six snow petrels, and one skua each, in both areas, were observed. From the site near the GSI camp, mummified remains of one adult and two snow petrel hatchlings were collected by members of the GSI team.

Bird survey in Schirmacher Oasis

Schirmacher area (ca. 17 km x 2 km) was surveyed for birds. During the seven days spent at Maitri and surrounding areas, south polar skua was seen most often. An aggregation of 13 adult skuas was observed on two occasions at the Maitri station. A large group of ca. 80 snow petrels was seen once, south

of Maitri and the Wilson's storm petrel was seen twice in the crags north of Maitri. Three mummified remains and over 20 skulls and bones of snow petrel were spotted within an approx. area of 4 km². Two mummified skulls of skua were also found from the same area. The mummified remains from these areas suggest death probably due to bad weather but the many bones spotted may be the remains of birds preyed upon by the skua.

Secondary data on the Adelie penguin 'straying' into Schirmacher Oasis was also collected by interviewing some members of the 14th expedition's wintering team. Adelie penguins were seen on 18.10.95 (3 individuals), 25.10.95 (1), 27.10.95 (1) and 2.1.96 (11), totalling to 16 within two km of Maitri. Courtship, pair bond and aggregation were observed on all occasions. It has been widely accepted by most members of the Indian Expeditions that these occurrences of penguins so far off inland are 'strayings,' possibly due to their losing direction in bad weather. There is however, a strong possibility that these are actually breeding pairs, out to prospect for nesting areas. Adelie penguins are known to regularly travel 30 to 300 km to their nesting areas, which are usually on land as they require pebbles for making their nests (Watson, 1975). Schirmacher oasis can fit this criterion. However, the breeding success of the individuals may not be high due to the distance of travel involved after hatching in December and the probably increasing skua numbers (see below) resulting in increased predation on nests. Skuas are important predators of Adelie penguin eggs and chicks and cause considerable harassment to the parents at an isolated nest (Young, 1994). Snow petrels were found nesting ca. 180 km inland, in the Orvin mountains, but none were observed or reported to be nesting in the much closer, Schirmacher oasis (90 km) where similar nesting sites were available. This also may be a result of increasing skua numbers and subsequent predation on the nests. Studies have also shown that Adelie penguin breeding success can be severely reduced by human activities, especially so, in the smaller colonies (Giese, 1996).

Approximately four nesting pairs of skuas were recorded in ca. 4 km² around Maitri (Mitra, B.) and a single days intensive total count in roughly the same region yielded 14 skua adults and young. Earlier, during the 14th expedition, a total of 12 skuas were estimated in and around Maitri (Sathyakumar, 1995). This indicates a density of roughly 3 skua/km², which does seem to be a high density figure. It is hypothesised that the skua population at the Oasis is increasing or may have increased since abundant food was made available from the waste of the three stations (since 1996, two stations) for the adult and young skuas, whereas, before the stations came up the only food available for them would have been nestlings and adults of some bird species. The increase in population may have been prompted due to immigration as well as improved

breeding success due to a better food supply. If this is true, the present rarity of other breeding birds in the Oasis, but evidence of their breeding earlier, may be due to increased skua predation.

Based on the ongoing skua experiments of the Z.S.I., skua population estimates can be drawn based on the 'mark-recapture' technique (Caughley, 1980; Seber, 1982), extensive searches (total block counts) (Caughley, 1980) and counts of the nesting pairs (skuas actively defend their nests against any intrusion, and hence are very conspicuous) in early January. Further, it would be useful to study the distribution of skua foraging and nesting sites and abundance with reference to the distance to the various stations and monitor the breeding success of ringed birds.