

**ROCKHOPPER *EUDYPTES CHRYSOCOME CHRYSOCOME* × MACARONI  
*E. CHRYSOLOPHUS* PENGUIN HYBRIDS APPARENTLY BREEDING  
IN THE FALKLAND ISLANDS**

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Two species of crested penguins, the nominate subspecies of the Rockhopper Penguin *Eudyptes chrysocome chrysocome* and the Macaroni Penguin *E. chrysolophus*, breed at the Falkland Islands. The Rockhopper Penguin population decreased by about 75% in the last century to its current level of 272 000 pairs (Clausen 2001) but it still far outnumbers the Macaroni Penguin population of about 50 pairs (Woods & Woods 1997). This frequently results in the presence of lone adult Macaroni Penguins in Rockhopper Penguin colonies and mixed pairs have been observed on Kidney Island in 1998/99 and 1999/2000 (pers. obs.). Presumed hybrid adult Rockhopper × Macaroni Penguins have also been reported in the Falkland Islands at Seal Bay (M. & S. Morrison pers. comm.) and on New Island (I. Strange pers. comm.) but never before described. This paper records the occurrence of at least six apparent hybrid adults that were located in the Falkland Islands in the austral summers of 1999/00 and 2000/01. The birds were typically paired with Rockhopper Penguins, and in two cases appeared to be raising chicks. It is likely that higher than usual levels of fieldwork, including a census of all Rockhopper Penguin colonies in the Falkland Islands in 2000/01 (Clausen 2001), resulted in a greater likelihood of detecting these hybrids.

During routine fieldwork around the Falkland Islands in 1999/2000, Falklands Conservation staff located three apparent hybrid penguins in Rockhopper Penguin colonies. Of two of these, seen at Seal Bay on 18 November 1999 (Clausen 2001), one was paired with a Rockhopper Penguin and had one egg and one chick, and the second was also paired with a Rockhopper Penguin but could not be accessed to identify its breeding status and was not relocated on subsequent visits. The third, seen on Saunders Island on 15 January 2000 (Clausen 2001), was paired with a Rockhopper Penguin and had a single chick. During the 2000/01 field season, Falklands Conservation staff located a further three apparent hybrid penguins in Rockhopper Penguin colonies. One bird at Port Stephens seen in November 2000 was paired with a Rockhopper Penguin but no eggs were present at the time of observation. Two birds seen on Beauchêne Island in December 2000 appeared to be non-breeders. All birds, except the second Seal Bay bird, were photographed (Figs 1–5). Subsequent enquiries revealed that apparent hybrid adults had been recorded previously at Seal Bay, where a bird was photographed in 1996 (Fig. 6, M. & S. Morrison pers. comm.) and on New Island (Woods & Woods 1997).

All birds were quite distinctive in their appearance and easy to distinguish from the Rockhopper Penguins with which they were

associating. Their general appearance can best be described as intermediate between nominate Rockhopper and Macaroni Penguins. However, the birds showed individual variations broadly categorized into two types, with the main difference being the presence or absence of yellow crown feathers. It is not known whether these differences are gender related. The Saunders bird and the Beauchêne birds (Figs 1, 2 & 4) all exhibited yellow crown feathering. The Seal Bay and Port Stephens birds (Figs 3, 5 & 6) lacked this feature. All birds were distinguished from nominate Rockhopper Penguins due to the presence of some or all of the following characters: larger size, a prominent pink fleshy gape, pink skin at the bill margins, a golden superciliary crest, shorter plumes behind the eye, limited yellow crown feathering, and a reduced occipital crest.

All the birds showed striking differences from both nominate Rockhopper and Macaroni Penguins with which all observers were familiar. The possibility that the birds were aberrant Rockhopper or Macaroni Penguins cannot be excluded, but seems unlikely. Some of the characters, such as the pink bill margins, are exhibited by the Australasian subspecies of the Rockhopper Penguin *E. c. filholi*. The possibility that the birds from Seal Bay and Stephen's Peak are *filholi* Rockhopper Penguins cannot be completely ruled out. However, other features, such as the yellow crown feathering, are not a feature of this subspecies (Marchant & Higgins 1990, Williams, 1995). Whether considering size, the fleshy pink bill margin, the golden-yellow colour of the superciliary crest, or, perhaps most strikingly, the golden feathers in the crown, all these features can be considered indicative of Macaroni Penguin parentage.

These are the first records of assumed hybrid crested penguins forming pairs and apparently breeding successfully. Breeding appears to have been successful in some cases, at least to the early chick stage, although none of the hybrid birds was proven to be a parent. DNA testing of the chicks might reveal their parentage and shed light on the apparent fertility of the hybrid birds.

Hybrid pairs of crested penguins have been recorded previously from a number of localities and for several species (Table 1). Although relatively infrequent in occurrence, it seems that crested penguins will readily form mixed-species pairs, sometimes even in the presence of conspecifics. There are as yet no records of successful breeding by mixed-species pairs, although the presence of apparent hybrids is evidence that such pairings are, on occasion, successful (Hull & Wiltshire 1999).



**Fig. 1.** Rockhopper × Macaroni Penguin hybrid with chick. Fleshy gape and yellow crown feathers. Saunders Island, January 2000. (S. Mahood)



**Fig. 2.** Rockhopper × Macaroni Penguin hybrid. Fleshy gape and yellow crown feathers. Beauchêne Island, December 2000. (N. Huin)



**Fig. 3.** Rockhopper × Macaroni Penguin hybrid. Fleshy gape. Seal Bay, December 1999. (R.W.White)



**Fig. 4.** Rockhopper × Macaroni Penguin hybrid. Fleshy gape and yellow crown feathers. Beauchêne Island, December 2000. (N. Huin)



**Fig. 5.** Rockhopper × Macaroni Penguin hybrid (right) with nominate Rockhopper Penguin. Fleshy gape. Port Stephens, November 2000. (R.W. White)



**Fig. 6.** Rockhopper × Macaroni Penguin hybrid (left) with nominate Rockhopper Penguin. Fleshy gape. Seal Bay, October 1996. (M. & S. Morrison)

TABLE 1

Locality and species composition of crested penguin *Eudyptes* spp. hybrid pairs

| Locality                 | Penguin species                               | Source                              |
|--------------------------|---|-------------------------------------|
| Falkland Islands         | Rockhopper × Erect-crested <i>E. sclateri</i> | Napier (1968)                       |
| Falkland Islands         | Rockhopper × Macaroni                         | pers. obs. (1999 & 2000)            |
| Campbell Island          | Erect-crested × Rockhopper                    | P. Moore in Hull & Wiltshire (1999) |
| Campbell Island          | Royal <i>E. schlegeli</i> × Rockhopper        | Hull & Wiltshire (1999)             |
| South Georgia            | Macaroni × Royal                              | K. Reid pers. comm.                 |
| Heard and Marion Islands | Macaroni × Rockhopper                         | Woehler & Gilbert (1990)            |
| Macquarie Island         | Royal × Rockhopper                            | Hull & Wiltshire (1999)             |

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