

cauta salvini) up to 17, Black-browed Mollymawk (*D. melanophrys*) up to 10, Flesh-footed Shearwater (*Puffinus carneipes*) 20-100, Buller's Shearwater (*P. bulleri*) up to 100.

Irregular - species present on fewer than 6 of the 13 days

White-capped Mollymawk (*D. cauta cauta*) 3-20, Buller's Mollymawk (*D. bulleri*) 1, Northern Giant Petrel (*Macronectes halli*) 1, White-chinned Petrel (*Procellaria aequinoctialis*) up to 5, Grey-faced Petrel (*Pterodroma macroptera*) up to 20, prions (*Pachyptila* spp.) 5-10.

The species present were, in the main, regular followers of fishing boats that one would expect to see in the Mernoo Bank/Chatham Rise area. However, the Buller's Shearwaters are interesting in two respects. First, they were regular followers, feeding on small pieces of offal or resting behind the boat on 8 out of the 13 days that observations were made. This is in contrast to a study by Wahl & Heinemann (1979), in which Buller's Shearwaters were not attracted to fishing vessels and were not seen to feed on discarded matter. Recent publications (Warham 1990, p.166; Marchant & Higgins 1990, p.603) also report that Buller's Shearwaters only occasionally attend fishing vessels.

Also of interest is the occurrence of Buller's Shearwaters on the Chatham Rise during January and February. Some of my observations of Buller's Shearwaters (for example at 42°55' S, 178°40' E and 43°36' S, 178°35' E; the furthest east that the vessel travelled) are further east than the known January and February distributions mapped by Jenkins (1988). The records of Tennyson & Taylor (1989) near the Chatham Islands during November to March support Jenkins's suggestion that some Buller's Shearwaters feed out toward the Chatham Islands from November until they leave on migration. My observations of Buller's Shearwaters about half-way between mainland New Zealand and the Chatham Islands further support this suggestion.

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AMANDA FREEMAN, 2/527 Cashel St, Christchurch 1



An Erect-crested Penguin in the southern Indian Ocean

On 2 March 1983, crew members on a ship saw a penguin swimming close to the ship in mid-ocean (47°50' S, 96°01' E) between Heard Island and Albany, Western Australia. The ship was travelling slowly and the penguin

appeared to be trying to scramble onto the lower deck of the ship as the deck awashed with waves.

The penguin was scooped on board with a hand net and remained standing on the deck, sleeping and preening, for about 24 hours. It seemed to be in good condition and was released into the sea one day later.

I identified the penguin in the field from the descriptions in Watson (1975) and Tuck & Heinzel (1980) as an immature (probably first or second year) Erect-crested Penguin (*Eudyptes sclateri*).

The standing height of the penguin, from top of bill to feet, was 55 cm, and it weighed 4.5 kg. The bill was stout, brownish orange and 60 mm in length. The edge of the lower mandible was bordered with a thin line of flesh colour, which extended into the gape and became pinkish at the proximal end of the beak. The feet were fleshy pink with black soles. The iris was brown. The dorsal body surface of the penguin was black-grey. It had a white chest and a grey throat, which was paler just under the chin and had a well-defined throat border. The length of the flipper from shoulder to tip was 200 mm. The upper side of the flipper was black with white along both leading and trailing edges. Along the trailing edge, the white thickened at the centre of the flipper and then narrowed to a point about 30 mm from the tip. The pattern on the underside of the flipper was distinctive of *E. sclateri* with large areas of black on the distal end and base of the flipper, and a thick anterior border. The underwing pattern of *E. sclateri* is diagnostic of the species (Warham 1975) and is therefore useful for separating immature penguins in this genus.

The penguin had broad, pale yellow eyebrows, beginning just behind the bill, and a short pale yellow upturned crest. The tail was long, about 65 mm. Its sex was determined from cloacal examination as female.

The Erect-crested Penguin breeds in large numbers on the Antipodes and Bounty Islands and in smaller numbers on Auckland Island, south-west of New Zealand. It is a rare vagrant to Australia (Marchant & Higgins 1990). A report by Napier (1968) of an Erect-crested Penguin interbreeding with a Rockhopper Penguin on the Falkland Islands (over 5500 km from New Zealand) indicates that individuals may wander widely.

The penguin I observed must have travelled at least 4500 km, the distance from Campbell Island, the most westerly of the breeding colonies.

The breeding season of *E. sclateri* is from September to mid-January, followed by a post-nuptial feeding period at sea until the end of February. During March the adult birds return to their breeding sites to moult (Warham 1975).

Most Australian records of vagrant *E. sclateri* are in February - March, including three records of moulting penguins. Immature Little Penguins (*Eudyptula minor*) are known to disperse considerable distances from their breeding grounds (Reilly & Cullen 1982). Second-year birds occasionally have been recorded moulting away from their natal colonies (Dann, pers. comm.). It is possible that the immature Erect-crested Penguin I recorded at sea in early March was dispersing before moult.

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CLAIRE SPEEDIE *c/o Max Downes, Wildlife Management Consultancy, Bridge Street, Foster, Victoria 3960, Australia*
Present address: Penguin Reserve Committee of Management, Phillip Island Penguin Reserve, PO Box 97, Cowes, Victoria 3922, Australia



Weka predation on eggs and chicks of Fiordland Crested Penguins

Between July and October 1989, we studied the breeding biology of Fiordland Crested Penguins (*Eudyptes pachyrhynchus*) on Taumaka, the larger of the Open Bay Islands (43° 52' S, 168° 53' E), 5 km west of Haast. The Fiordland Crested Penguin is the rarest of the six crested penguin species, breeding only on the rugged coasts of South Westland and Fiordland, and on Solander and Stewart Islands and offshore islands. Like its congeners, it lays a clutch of two different-sized eggs and only one of these, usually the larger, results in a fledged chick (Warham 1975). Displacement and desertion account for most of the natural egg mortality, whereas chick mortality most often results from starvation or exposure to bad weather. These penguins appear to have no native, naturally occurring land predators (Warham 1974), but introduced rats, cats and stoats may take eggs and chicks in some areas.

The Open Bay Islands have no introduced mammalian predators and so are an important breeding place for several species of seabird. Although no formal census has been made, the breeding population of Fiordland Crested Penguins may be in the order of 300 - 400 birds on the island of Taumaka. Among the nests watched in our study, predation by the introduced Weka (*Gallirallus australis*) was the greatest single cause of egg mortality and contributed significantly to chick loss.

We monitored the contents of 61 nests daily and determined the cause of egg loss by the nature and location of shell remains and by the presence