The Effect of Moonlight on Short-tailed Shearwaters at a Breeding Island

For over ten years I have banded Short-tailed Shearwaters *Puffinus tenuirostris* on Griffiths Island off Port Fairy, Victoria. These notes record the effect of bright moonlight on the adults when returning to feed chicks in the burrows.

Hatching commences about 7 January and banding of adults is done when they are still feeding the nestlings. Banding usually commences about 22 March and continues until mid April when the adults depart. The banding of nestlings continues until their departure early in May.

It was not until 1969 that I realised that bright moonlight considerably reduced the numbers of adult shearwaters returning at night to the breeding island, nor would large chicks leave their burrows on such nights, although this is their normal habit.

The adults returned early in the night between 19:30 and 20:00 hours but did not do so if bright moonlight occurred during this period; even if the night became overcast later, they did not return that night. But when moonlight occurred after 20:00 hours the birds came in normally.

From 29 March to 2 April 1969, bright moonlight occurred during the time the adults normally return. On the first two nights only 25 adults were banded. On the nights of 31 March and 1 April some 25 were seen to fly over the Island but none was observed on 2 April. The moon rose at 21:30 hours on 3 April but the adults had returned in good numbers prior to that time. The large-scale return continued until 20 April which was the latest departure date for the adults during the ten years of recording.

Similarly it was bright moonlight from 22 to 26 March 1970. No adults were banded on these nights and only about 20 were seen to fly in, all on the first two nights. The next night, 27 March, the moon did not rise until 21:30 hours and some 200 birds were banded. Adults returned nightly in large numbers until 16 April when they departed.

A similar effect was recorded with White-faced Storm-Petrels *Pelagodroma marina* on Mud Island, Port Phillip, Victoria, also in 1969 and 1970. Unlike the shearwaters, the storm-petrels return throughout the night except that none returned on bright moonlight nights. Mist netting on a bright but overcast night resulted in a "rush" of birds when the moon was obscured by cloud, but none when it was shining brightly.

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This subject has been discussed by other students of shearwaters as pointed out by Dr D. L. Serventy (per. com.) who wrote as follows:

"The effects of moonlight on the activity of shearwaters at their island rookeries have been recognised by naturalists working intensively on these birds. R. M. Lockley, one of the pioneers of modern studies on shearwaters, deals with the subject in his book, *Shearwaters* (Dent: London, 1942). On page 42 he refers to the low number of adults visiting the rookeries in bright moonlight, but they will do so if the moon is obscured by heavy cloud and rain 'leaving the earth in darkness, then the shearwaters behaved accordingly and arrived to make bedlam.' He refers, of course, to the Manx Shearwater *Puffinus puffinus* at Skokholm."

In the Handbook of Australian Sea-birds* *by D. L. Serventy, V. N. Serventy and J. Warham (A. H. & A. W. Reed: Sydney and Auckland, 1971), for the Short-tailed Shearwater the authors state "On land it is shy and is easily disturbed by torchlight or movement. There is less activity on moonlight nights, but the regular breeding time-table, including incubation shifts, is not affected in the slightest by the phases of the moon."*—Hon. Editor.

* To be published shortly.