The Effect of a Bushfire on the Banding of Flame Robins in the Brindabella Ranges

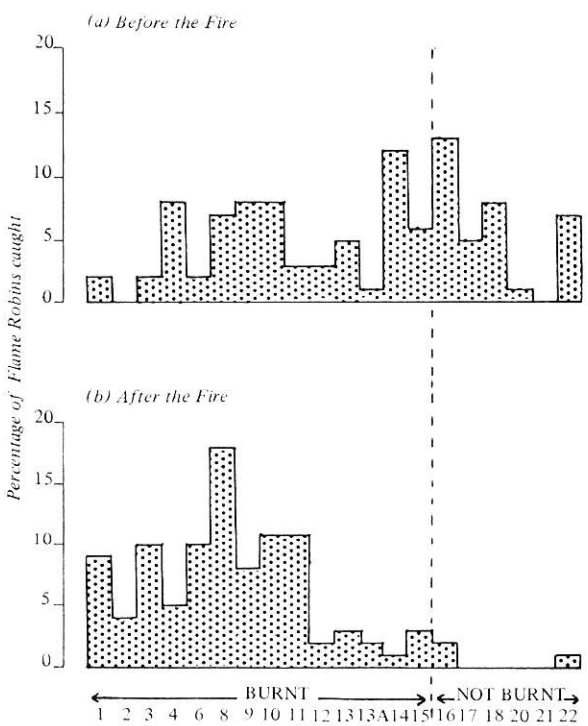
TONY STOKES

A banding study* of the birds of New Chums Road, in the higher altitudes of the Brindabella Ranges, Australian Capital Territory, has been in progress since April 1961. It was initiated by S. J. Wilson and in 1974 was taken over by the Brindabella Banding Group (Stokes 1975).

New Chums Road is a forestry access road, about 1100 metres above sea level, in an area of tall open forest. It has not been logged since 1962 but had been extensively logged prior to that year. The vegetation of the area and the methods used in the study have been described by Horey and Wilson (1971) and Lamm and Wilson (1966).

The methods used in this study have been directed, as far as possible, towards maintaining a consistent sampling technique. Up to the end of 1971, the aim was, on about 16 occasions each year, to band birds caught in mist nets, using bands provided by the Australian Bird-banding Scheme. This has now been reduced to at least one banding visit each calendar month. There are 25 sites along a 1.7 kilometre length of New Chums Road at which mist nets are erected; the same size net is used at each site on each visit and 20 sites have been used on each visit since October 1963. The results obtained from banding at these 20 sites since that date are the only results considered in this paper.

On 21 December 1972 a high-intensity—10 000 to 12 000 kW/m (Cheney 1975, pers. comm.)—bushfire burnt approximately 70 per cent of the netting line (14 of the 20 sites) and



● Figure 1. *Histogram showing percentage of Flame Robins caught at each net site before and after the fire.*

* *Publication No. 1 of the Brindabella Banding Group; bands used were provided by the Australian Bird-banding Scheme, Division of Wildlife Research, CSIRO.*

caused severe to complete defoliation of all layers of vegetation in most areas. Altogether, in a two-day period, it burnt 190 hectares (470 acres) of the forest. Probably the area had not been burnt since 1926 and certainly not since 1942.

This event provided an opportunity to examine some of the effects of a bushfire on a population of birds. This paper considers two changes which the bushfire brought about in the number of Flame Robins *Petroica phoenicea* caught at New Chums Road.

The Flame Robin is an altitudinal migrant which leaves New Chums Road during the winter. Although the dates of their departure and return vary from year to year, they have never been caught at the road between mid-April and the end of July.

Prior to the fire, 130 Flame Robins were caught from October 1963 to December 1972 at the 20 sites being considered. After the bushfire, in the 28 months to April 1975, 93 Robins were taken at these sites. A comparison of the percentages of Flame Robins caught at each net site before and after the fire (Figure 1) indicates an apparent change in their distribution along New Chums Road. Before the fire they appear to have been randomly distributed along the road with regard to the boundary of the future fire: 66 per cent of them were caught at the 14 sites within the area of forest which was subsequently burnt. After the fire 97 per cent of the Flame Robins were caught at these sites, thus suggesting that there was a preference for the burnt areas.

There was also a marked increase in the number of Flame Robins caught after the fire (Table 1). Because the fire occurred at the end of December, in the middle of the period when Flame Robins are found in the area, only those which were caught between the period 1 January-15 April of the year are included in Table 1. This is also the period when they are caught in their largest numbers at New Chums Road. The Table indicates that the increase in the numbers caught was greatest in the first year after the fire. The numbers caught in subsequent years were not much higher than those caught in the years prior to the fire.

These results suggest that the changes to the habitat in the parts of New Chums Road which were burnt by the bushfire have been, at least initially, to the advantage of the Flame Robins. This is perhaps not unexpected as Flame Robins are found to inhabit open spaces, particularly following breeding (Wilson 1969).

TABLE 1

The number of Flame Robins caught each year during the period 1 January to 15 April.

Year	Number of Visits	Number Caught
1964	3	0
1965	4	2
1966	3	10
1967	6	14
1968	4	14
1969	5	19
1970	8	17
1971	4	15
1972	3	2
	Fire, 21 December 1972	
1973	3	43
1974	5	21
1975	4	19

Acknowledgments

I would like to thank Messrs N. Cheney, B. Fennessy, J. Hoare and D. Purchase for their advice and assistance.

References

Cheney, N. P. (1975), 'The Pago Fire', unpublished manuscript; Fire Control Sub-section, CSIRO, Division of Forest Research, A.C.T.

Horey, G.M., and S. J. Wilson (1971), 'A Banding Project in the Brindabella Ranges, Australian Capital Territory', *Aust. Bird Bander* 9:27-33.

Lamm, D.W., and S. J. Wilson (1966), 'Seasonal Fluctuations of Birds in the Brindibella Range, Australian Capital Territory', *Emu* 65:183-207.

Stokes, T. (1975), 'A Report on Banding Activities at New Chums Road, A.C.T.' *Canberra Bird Notes* 3(2):2-5.

Wilson, S.J. (1969), Flame Robin *in* H. J. Frith (Ed.), Birds in the Australian High Country, pp. 343-345. Sydney: A. H. & A. W. Reed.

A. Stokes,
16 Badgery Street,
Macquarie, A.C.T.