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BANDING PROJECT REPORT No.3

New Chums Road, Brindabella Ranges, Australian Capital Territory

(Abridged version – full paper can be obtained from: www.absa.asn.au)

Aim: To compare species presence, recapture rates and frequency of capture, utilising two data sets (1961–1963 and 2007–2009) from a long-term bird banding study at New Chums Road, Brindabella Ranges, Australian Capital Territory (ACT).

Location: 35˚23'14"S; 148˚49'58"E, elevation approximately 1050 m asl. New Chums Road is a short (less than 3 km) management-only access track, now classed as *dormant*, within Namadgi National Park (Fig. 1).

Description: New Chums Road is situated on the eastern side of the Brindabella Range (Fig. 1). The vegetation at the site has been described in Lamm and Wilson (1966) and is classified as 'Southern Escarpment Wet Sclerophyll Forest' (Keith 2004). Since the wildfire of 2003 considerable regrowth has occurred, resulting in extremely dense understorey and mid-storey vegetation.

Status: Namadgi National Park was gazetted in 1984 with extensions added in 1991.

Duration of Project: The project is ongoing. The scope of this paper is from November 2007 to June 2009**.** Previous banding was carried out from 1961 to 1982 but only data from 1961 to 1963 are used for comparison in this paper.

Previous Records: Data relating to species presence and persistence at the site, along with detailed records relating to arrival and departure dates for migrants in addition to the effect of fire on the avifauna of the region have been published in Horey and Wilson (1971), Lamm and Wilson (1966), Stokes (1975 a,b), Tidemann *et al.*(1988) and Wilson (1965a,b; 1967;1994 a,b; 1995).

METHODS

During the previous phase of the study (1961 to 1982 but particularly 1961–1963) an average of 18 nets (totalling 219 m) were set at fixed locations from dawn until midday once a month. The total number of banding trips was 33 (Tidemann 1988; Lamm and Wilson 1966; Horey and Wilson 1971).

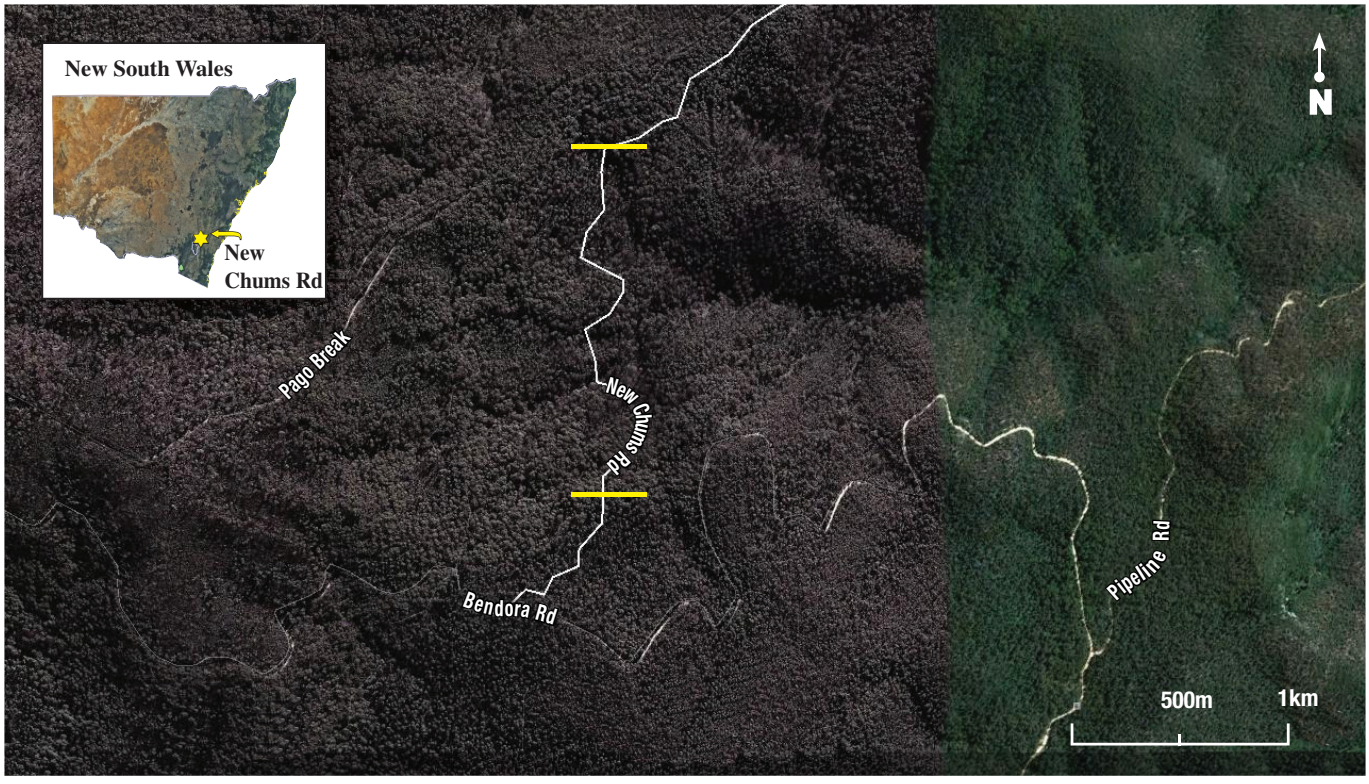

Figure 1. *New Chums Road, Brindabella Ranges, Australian Capital Territory. Bars across road indicate the northern and southernmost extent of net positions.*
Satellite Image courtesy of Google Earth

From November 2007 to June 2009 considerable effort was made to position mist nets at fixed locations, as close as possible to the original net lanes used between 1961 and 1963.

As with the earlier phase of the study, mist nets of either 9, 12 or 18 metres in length, with a mesh size of 32 millimetres were erected. Our banding schedule involved six trips to the site each year (a banding trip every two months). During a trip up to four mistnetting sessions (depending on available resources and weather) were undertaken over three days; two 'pm' (afternoon) and two 'am' (morning) sessions. On Day 1, nets were opened in the afternoon and closed just before dusk (Session 1). On Day 2, nets were opened before dawn and closed just before dusk (Sessions 2 and 3). On Day 3, nets were opened just before dawn and closed at approximately noon when all nets were removed from the site (Session 4). There could possibly be a slight reduction in the capture rate over the 3-day period due to net familiarity and thus avoidance. Length and opening and closing times for all nets on all trips were recorded. Incidental observational records were compiled of all birds seen and/or heard at the site during each trip.

Each bird captured was banded on the right leg with a metal band provided by the Australian Bird and Bat Banding Scheme (ABBBS). Data were recorded on band number, species, sex, age, breeding condition (e.g. presence or absence of a brood patch), tail length, wing length, total head-bill length and moult status of wing and tail feathers. The taking of morphometric measurements followed that described in Lowe (1989) and Rogers *et al.* (1986).

Capture rates were calculated as the number of birds captured per 100 metres of net per hour. Recapture rates (presented as a percentage) were calculated by dividing the number of individuals recaptured, excluding individuals caught more than once within the same trip (i.e. within trip recapture events), by the total number banded.

RESULTS AND DISCUSSION

During the 3-year period covered in the previous study (1961–1963), 1720 birds were captured (in addition to 426 recaptures) from 35 species (Lamm and Wilson 1966).

During the current investigation (2007–2009) 844 birds were banded representing 29 species, with 264 individuals recaptured. However, no bird banded during the original study has been recaptured since banding recommenced. A total of 54 species was recorded as present at the site.

Changes to avian fauna

A majority of bird species banded during the earlier study were still present at the site. However, seven species banded between 1961 and 1963 were not captured during the period 2007 to 2009 – Wonga Pigeon *Leucosarcia picata*, Australian Owlet-nightjar *Aegotheles cristatus*, Crimson Rosella *Platycercus elegans*, Fan-tailed Cuckoo *Cacomantis flabelliformis*, Laughing Kookaburra *Dacelo novaeguineae*, Brown-headed Honeyeater and Eastern Whipbird *Psophodes olivaceus*, although six were sighted. The Brown-headed Honeyeater *Melithreptus brevirostris* was not recorded at all. One species, the Superb Fairy-wren *Malurus cyaneus,* captured during the 2007–2009 study, was not recorded during the 1961–1963 study, either during observational surveys or mistnetting.

Capture rates

Consistent with findings in Lamm and Wilson (1966), our capture data indicate a high degree of seasonality in the bird community present at the study site. The Pink Robin *Petroica rodinogaster* remains the only winter visitor to the site (data pooled for observational and banding results), whilst several species are only present during the summer months. The Golden Whistler *Pachycephala pectoralis* however, appears to be only a partial migrant, with some birds remaining at the site during winter.

During the period November 2007 to June 2009, Brown Thornbills *Acanthiza pusilla* (21 %) were the most commonly banded species, followed by the Striated Thornbill *A. lineata* (20 %), White-browed Scrubwren *Sericornis frontalis* (18 %), White-naped Honeyeater *Melithreptus lunatus* (5 %) and Rufous Fantail *Rhipidura rufifrons* (5 %). Changes to the most commonly captured species are apparent between the two data sets. The Eastern Yellow Robin *Eopsaltria australis* is no longer among the ten most frequently encountered species, replaced by an arboreal specialist, the Rufous Fantail *Rhipidura rufifrons*. The White-browed Scrubwren *Sericornis frontalis* has dropped from most common to third most common. It is probable that the change in vegetation structure, as a consequence of wildfires, has led to a decrease in the abundance of ground foraging specialists at the site. All robin species found at the site, along with species such as the Bassian Thrush *Zoothera lunulata*, Eastern Whipbird *Psophodes olivaceus*, Pilotbird *Pycnoptilus floccosus* and Wonga Pigeon *Leucosarcia picata* have decreased in capture rates.

Recapture rates

Recapture rates for resident species range from 58 percent for White-browed Scrubwren to seven percent for Golden Whistler. Recapture rates for three migratory species range from 15 percent for Rufous Fantail, to 3 percent for Yellow-faced Honeyeater. For three species, White-eared Honeyeater, White-naped Honeyeater and Grey Fantail, no bird was recaptured after being banded, despite having between 26 and 45 individuals banded.

Despite changes to the rate with which species were captured, the recapture rate of commonly encountered species has remained relatively constant between the two time periods. This result suggests that for these species, changes to capture rates are reflecting real changes in species abundance and not due to changes in 'capture likelihood'.

Given the nature of the site and the dramatic changes that have occurred to the vegetation since the fires of 2003, changes to species abundance are not unexpected. It is likely that these changes are due to a combination of effects resulting from population recovery and vegetation change post-fire, although this deserves further monitoring.

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