Banding Snippet

Unusual weight loss in recaptured Bell Miners

Our banding site at Camden Airport, NSW (34^{0}02'53"S 150^{0}40'48"E) is adjacent to the Nepean River in a broad depression/swale with steep levee banks on either side. The terrain consists of sandy alluvium which has been highly modified by sand and soil mining. Native canopy vegetation consists of Broad-leaved Apple *Angophora subvelutina*, Rough-barked Apple *A. floribunda,* River Peppermint *Eucalyptus elata*, Cabbage Gum *E. amplifolia*, Forest Red Gum *E. tereticornis,* Camden White Gum *E. benthamii,* Ribbon Gum *E. viminalis* and River Oak, *Casuarina cunninghamiana.* Native understorey includes Tick Bush *Kunzia ambigua* and Blackthorn *Bursaria spinosa*. Introduced plant species include African Olive *Olea europaea* ssp *cuspidata,* Large-leaf Privet *Ligustrum lucidum* and, Small-leaf Privet *L. sinense,* which dominate the understorey.

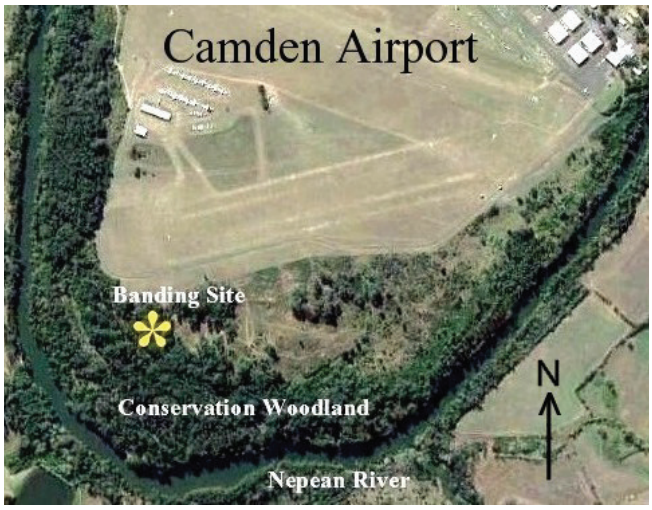
During a banding visit on 20 January 2017 we recorded unusual weight loss in the four Bell Miners *Manorina melanophrys* that we recaptured. This weight loss ranged from 8.3 to 20.0% (mean 14.0%) of their previously recorded weight. Over the nine years of our study no similar significant weight loss had been recorded in groups of recaptured Bell Miners. Three of the birds had been banded as 1st year birds and the fourth banded as a 2nd year bird. Time between banding and final recapture for the four birds ranged from 2 months to 5 years 2 months (mean 2 years 8 months).

We recorded no weight loss in two insectivorous birds retrapped on the same day; one Golden Whistler *Pachycephala pectoralis* and one Eastern Yellow Robin *Eopsaltria australis*. In fact, they both had similar weights to that previously recorded. All the birds were weighed using a 50g Pesola spring balance to an accuracy of 0.5 grams.

From December to February 2016 – 2017, the Sydney region experienced extreme heat, along with lower than normal humidity. Maximum temperatures at Camden Airport exceeded 35°C on six days in December 2016, twelve days in January 2017 and ten days in February 2017. Maximum temperatures recorded at Camden Airport were 39.7ºC (mean 30.9ºC) in December, 44.6ºC (mean 33.1ºC) in January and 45.6ºC (mean 31.4ºC) in February (BOM Weather Station, 068192, Camden Airport).

One of the most notable features of summer 2016 – 2017 was the prolonged period of above average ambient temperatures. In January and February, even between heatwave periods, the temperature across southeast Australia remained relatively high, and almost continuously above average. The result was that, on average, January and February 2017 to-date rank amongst the hottest months on record for southeast Australia. (BOM 2017 *Special Climate Statement 61 – exceptional heat in southeast Australia in early 2017, p. 7.*)

Whilst several papers have demonstrated that psyllids of various species respond positively to mild winters and dry warm summers (Collett 2001), it may be that under these severe, long-term, extreme temperatures with low humidity the psyllids are either reduced in numbers or unable to maintain their sugary lerps. Moore (1962) reported that temperatures of 97ºF (36.1ºC) associated with low relative humidity over five days in the field have almost eliminated large populations of *Glycaspis* spp. for several months during summer and autumn. Laboratory experiments by this author using high temperature and low humidity supported the field observations. As psyllids and lerps form a major component of the Bell Miner's food resources, (Campbell and Moore 1955), a reduction in psyllid numbers would have a detrimental effect on the Bell Miners' health and could contribute to the weight reduction recorded. Drinking water from the nearby river is readily accessible, so this weight reduction could not be attributed to water loss in the birds.



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