

# USE OF THE JOLLY-SEBER MODEL TO DETECT VARIATION IN SURVIVAL, POPULATION SIZE AND RECRUITMENT OF BRIDLED HONEYEATERS AT PALUMA, QUEENSLAND

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Attention is drawn to deficiencies in some methods of estimating survival, including 'known to be alive' or 'calendar of captures' methods. The Jolly-Seber model is recommended for estimation of survival, population size and recruitment from capture-recapture data.

The Jolly-Seber model is described and used to analyse banding data collected from 184 Bridled Honeyeaters at Paluma, Queensland between 1982 and 1987. The average population size was 191 ( $\pm 90$ ) but population varied markedly with season. A large influx of birds was detected in the April/June quarter in 1984 and 1986 when populations were estimated at 750 and 322 birds respectively. The local population in non-influx seasons averaged 80 birds. Annual survival (interpreted as proportion of birds remaining in the population) averaged 0.751 ( $\pm 0.256$ ) overall with an expectation of further life of 3 years 6 months but survival also varied seasonally. In 1982–84 when most data were available annual survival averaged 0.672 during the period July–March (expectation of further life of 2 years 4 months) but dropped to 0.077 during the April–June influx period (expectation of further life of 4 months). Recruitment to the local population averaged 12 birds per quarter throughout the year but received a boost of several hundred birds during the April–June quarter in some years.