

A comparative evaluation of transect, point count and two-hectare search methods for bird abundance estimates in dry sclerophyll forest and rainforest

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Birds were counted with transect, point count and two-hectare search methods at one dry sclerophyll forest site and one subtropical rainforest site in northern New South Wales. Five population density estimators and one reporting rate index were evaluated. True densities were unknown and comparisons focused on variation between methods. Distance sampling line transect and point transect estimates averaged 2.24 and 5.12 times greater than unadjusted strip transect and circular plot densities respectively. Point transects were likely affected by bird movements and densities averaged 2.62 times greater than line transects. Two-hectare search densities were comparable to line transects in dry sclerophyll forest and to strip transects in rainforest. Relative density estimates were more consistent, with strong correlations ($r = 0.71\text{--}0.95$) between all five estimators. Two-hectare search reporting rates correlated strongly with density, although the relationship was curvilinear. Reporting rates confound abundance and occupancy and should be interpreted cautiously. Pilot studies are recommended to test assumptions and expose the strengths and weaknesses of different bird survey methods. Transects were more efficient than point counts and two-hectare searches for estimating relative densities in this study.

The movement and survival of Star Finches *Neochmia ruficauda subclarescens* in the Wyndham Region of Western Australia

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This study uses capture-recapture data from four years of mistnetting in the Wyndham district of Western Australia to investigate the movement, longevity and survival probability of the Star Finch *Neochmia ruficauda subclarescens*. Results show that Star Finches should be described as locally mobile rather than sedentary; juvenile survival during the study period was low and differed between years; and, the maximum time between banding and recapture was 3.4 years. The impact of rainfall and fire on survival are also discussed.

Nightly and seasonal patterns of Barking Owl *Ninox connivens* loud calls at one site in Kakadu National Park, Northern Territory, Australia: 1981–82

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This paper describes the frequency of Barking Owl *Ninox connivens* loud ('barking') calls over one dry and one wet season in 1981–82 at Kapalga within Kakadu National Park in the Northern Territory, Australia. A single recording site was located on the fringe of the treeless seasonally inundated black soil floodplain of the South Alligator River where prey are common, especially Dusky Rats *Rattus colletti*. Up to three pairs of Barking Owls were recorded calling in bouts throughout the year but they called more frequently both hourly and nightly (mean 2 127 loud calls/night) in dry season months (April–December) when they were probably breeding, than in the peak monsoon season months (January–March, mean 212 loud calls/night). Barking Owls are relatively more common and more widely distributed in tropical northern Australia than in temperate eastern and southern Australia where populations are localised, uncommon to rare and declining mainly due to the decline and fragmentation of their habitat. It is therefore vital to leave suitable habitats in the Northern Territory and elsewhere in the Top End of Australia to preserve current populations of Barking Owls and their prey.