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Sunda scops-owl density estimation via distance sampling and call playback

ABSTRACT

Nocturnal birds in the tropics remain little studied primarily due to the logistical difficulties of surveying these birds at night. While call playback has been widely employed in the temperate regions, its practicality has not been adequately demonstrated on tropical owl species. This study aimed to test the feasibility of estimating the density of the Sunda scops-owl (Otus lempiji) in a lowland forest in Peninsular Malaysia based on call playback and distance sampling. From a total of 58 detections of the owl species from October 2012 to May 2013, 72.41% (42 detections) were made when the birds were breeding. The densities of the owl were estimated at 1.6 individuals and 2.6 individuals per 10 ha based on spontaneous and provoked calls (i.e. before and after call playback), respectively. Broadcasting of the calls significantly increased the numbers of detections ($G2 = 16.038$, $p<0.001$) during both breeding and non-breeding seasons of the birds. The combination of call playback and distance sampling improved the detectability as well as precision of the owlôs density estimation and can be potentially applied on other little known owl species in Southeast Asia.

Keyword: Call playback; Density estimation; Distance sampling; Otus lempiji; Vocalisation