

A local scale evaluation of spatial sampling bias in the *Atlas of Australian Birds*

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The consequences of volunteers freely choosing sampling locations in ‘citizen science’ projects need to be recognised. This study examined local (‘patch’) scale spatial sampling patterns in the *Atlas of Australian Birds* and then compared reporting rates (*i.e.* the proportion of sampling units in which a given bird species was present) from a sample of atlas points with those from a regular (systematic) sample. Three sites were surveyed between January–May 2017: Killawarra Forest, Victoria, and Coolah Tops National Park and Pilliga Nature Reserve, New South Wales. Sampling bias in the atlas was evident as clusters at tourist areas and dams and as linear patterns along roads and watercourses. Atlas samples overestimated reporting rates for species with distributions that were concordant with those features and *vice versa*. At least two-fold differences in atlas: regular sample reporting rate ratios were identified for between 13–15% of ‘non-rare’ species (*i.e.* with a reporting rate ≥ 0.08 in either sample). Concerns are raised that spatial sampling bias is common in the atlas and can affect results for a variety of species, that popular sites may not be representative of habitat patches and that many surveys are being filtered out in data analyses.

Keywords: sampling bias; bird atlas; convenience sampling.