

special issue:
Advances in tools for bird population
monitoring in New Zealand



Introduction to the special issue on advances in tools for bird population monitoring in New Zealand

The ability to measure and monitor biodiversity in meaningful ways has never been more important than it is now. In this Rio +20 era of broken promises and failed targets (from the Convention on Biological Diversity signed by 168 countries including New Zealand in 1992-93), a variety of pressures continue to drive rates of species extinction that greatly outpace background rates in the fossil record, with recent syntheses showing how biodiversity loss is a driver of ecosystem change on par with ozone, acidification, elevated CO₂ and nutrient pollution.

To those who already acknowledge the need to halt and reverse biodiversity declines, using resources from the relatively small pool available for conservation for measuring status and monitoring change is often viewed as fiddling while Rome burns. However, the evidence is clear that the current quantum of investment available (monetary or otherwise) is insufficient for the desired purpose. If such investment is to be effectively grown to the level necessary to even halt biodiversity loss, in a global socio-economic environment where long-term environmental sustainability (and human quality of life dependent on the environment) continues to be obscured by short-term economic gain, robust arguments need to be made based on defensible evidence. Such evidence depends on transparent and objective methods for measuring and monitoring. Furthermore, for the resources that are currently available for conservation management actions, such capacity is essential for maximising the benefit that can be obtained now.

This special issue of the *New Zealand Journal of Ecology* aims to inform the debate around the pros and cons of implementing different bird monitoring techniques within New Zealand. Birds are frequently employed taxa for environmental monitoring programmes, with their high profile among society in general, and increasing evidence that they can be good indicators of wider ecosystem health and functioning. As a result, methods and approaches for monitoring birds have proliferated within recent years, both locally and globally, as has the debate over their applicability to different circumstances and for different purposes. In tandem, this proliferation has led to a degree of confusion and uncertainty, both for practitioners

wanting to implement such methods and for policy makers wanting to use the data obtained by such methods, at a time when an increasing number of end-user groups (including the Department of Conservation, Regional Councils, and the Ornithological Society of New Zealand) are investing substantial effort and resources into such schemes.

The issue comprises a set of 17 papers received after an open call was made on the topic across New Zealand in 2010, capped by an overview article aiming to provide guidance on the context under which different approaches are likely more applicable, and directions for on-going methods development. It is hoped that this resulting collation will provide both existing practitioners, and those wanting to use such approaches for the first time, with a resource that they can use to assess and identify relevant methods for their needs. Of the 17 papers received, five report on existing and new monitoring schemes (pages 268 – 323), two report usage of a long-established 5-minute bird count methodology (pages 324 – 399), one reports a comparison of different monitoring methods (pages 340-352), seven report the application of analytical methods to control detectability issues (pages 353 – 415), and two report on novel tools (pages 416 – 432). Even at first glance, the structure of the collation is of interest. A clear bias towards the monitoring of terrestrial bird populations indicates that the development and application of methods for other groups (such as seabirds) may be lagging behind, while the absence of reports using new acoustic monitoring technology suggests that these approaches are still some time away from being reliably applicable. Advances in these (and other) areas will hopefully soon be adding to the toolkit available for providing the defensible evidence needed to improve our conservation of biodiversity.

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