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Designing a National Bird Monitoring Scheme for New Zealand

The development of Birds New Zealand's new *National Bird Monitoring Scheme* has taken a major step forward recently, with Birds New Zealand engaging Wildlife Management International Ltd to assist with the design and delivery of this exciting new project.

Over the past few years, there has been a growing demand among Birds New Zealand members for the creation of a new national bird monitoring scheme, to create an opportunity for members to contribute to a scheme aimed at monitoring long-term trends in the distribution and abundance of birds on a national scale. Recent reports of major declines of previously common farmland birds in Europe, detected by similar national-scale, volunteer-driven schemes have underscored the importance of such schemes for detecting and responding to new and widespread threats to bird populations. Closer to home, data from Birds New Zealand's two previous *Atlas of Bird Distribution in New Zealand* projects contributed to a major report on the state of New Zealand's birds, published in 2017 by the Parliamentary Commissioner for the Environment.

With the 20-year anniversary of the second *Atlas of Bird Distribution in New Zealand* fast approaching, early investigations by Birds New Zealand's Council and the Scientific Committee have focussed on options for designing a third *Atlas* project, with the aim of measuring bird abundance in addition to bird distribution. These investigations have also identified a number of recent developments both in New Zealand and overseas that present both opportunities and challenges when it comes to designing the Society's new scheme.

Up until recently, Birds New Zealand's *Atlas* schemes represented the only significant effort that has been made to measure trends in bird distribution on a New Zealand-wide scale. In recent years however, the Department of Conservation, Auckland Council and Greater Wellington Regional Council have all embarked on national and regional-scale bird monitoring schemes of their own, all designed to monitor trends in the abundance and occupancy of relatively common and widespread bird species on public conservation land, and across non DoC-administered land in the Auckland and Wellington regions respectively. The creation of these schemes poses both a challenge and an opportunity to Birds New Zealand. The challenge will be to avoid designing a scheme that duplicates the monitoring efforts now underway by these other agencies, and to instead design a scheme that complements, or adds value to these efforts. By doing this, the *National Bird Monitoring Scheme* will substantially improve our ability to detect changes in the health of bird populations nationwide, which will in turn help improve conservation decision-making by those agencies tasked with maintaining New Zealand's indigenous biodiversity.

Another change that has occurred since the completion of the second *Atlas* scheme is that significant technological and theoretical advances have been made in the fields of both citizen science and statistics, advances which need to be taken into account when designing a new scheme. The introduction of the online New Zealand eBird database (<http://ebird.org/content/newzealand/>) has created a powerful new tool that allows birders to submit, store and share their bird observations with each other, and with researchers and conservation managers. Since its launch in 2008, over 3 000 birders have contributed almost 100 000 bird checklists to the New Zealand eBird database, exceeding the survey effort achieved in either of the two

previous *Atlas* schemes. Atlas projects now underway in several US states are using the eBird database as a key tool for submitting and storing data, as well as providing volunteer observers with real-time updates on survey coverage. Recent advances in statistical modelling have also created powerful new techniques for analysing these data to examine patterns in bird occupancy, overcoming problems caused by observer variation and imperfect, or inconsistent spatial and temporal survey coverage. One further challenge for Birds New Zealand therefore, is to examine how our new *National Bird Monitoring Scheme* can harness these new technologies to both maximise members' participation in the scheme, and to produce results that will be as useful as possible to researchers and conservation agencies.

Given the complexity that these developments add to the job of designing a new *National Bird Monitoring Scheme*, Birds New Zealand, with generous financial support from Fruzio, have engaged Wildlife Management International Ltd (WMIL) to assist with designing and planning the scheme. WMIL is a Blenheim-based ecological consultancy whose staff all have strong links to Birds New Zealand, including being enthusiastic and active participants in previous *Atlas* projects and many of the Society's other national surveys and schemes. Members of the WMIL team also feature prominently in the list of the 'top 100' eBird contributors for New Zealand, and have had previous experience helping to deliver both Greater Wellington Regional Council's regional bird monitoring scheme, and DoC's national 'Tier 1' bird monitoring scheme.

Over the next 14 months, WMIL will be working with Birds New Zealand to finalise the design of the *National Bird Monitoring Scheme* with the aim of having the scheme ready for launch at the Society's 80th Anniversary New Zealand Birds conference in June 2019. This work will involve engaging with agencies including the Department of Conservation, Landcare Research and regional councils to create a scientifically-robust survey design, and liaising with the Cornell Lab of Ornithology in the United States, to design data capture and storage infrastructure linked to the New Zealand eBird database. Most importantly, over the next 12 months, WMIL will also be engaging with Birds NZ members either directly, or via Regional Representatives, the Birds NZ Council or Scientific Committee, to ensure that the resulting scheme meets the needs and expectations of the Society's membership, and all those interested in bird watching, and bird conservation in New Zealand.

For questions, comments or more information, contact: Nikki McArthur (Nikki@wmil.co.nz)