

## Moult Recording Scheme Report 2021

Since having digitized all the Society's moult cards last year, the number of records found in our moult scheme database has grown dramatically — from nearly 6,000 in 2020 to 17,270. This unprecedented growth was almost exclusively thanks to Adrian Riegen and the New Zealand Wader Study Group, which contributed a trove of primary flight feather moult on Bar-tailed Godwit, Red Knot, South Island Pied Oystercatcher, and Wrybill stretching back to the 1980s. As a result, these select waders have gone from some of our most data deficient to the four most information rich species available (Table 1). This is a great example of how organizations and individuals can help strengthen our scheme while still maintaining ownership over their data and benefitting from the increased exposure of their moult records to like-minded researchers and members of the public.

Table 1. Change in the number of records for four species of waders between 2020 and 2021.

| Species                         | Number of annual records reported |       |
|---------------------------------|-----------------------------------|-------|
|                                 | 2020                              | 2021  |
| Red knot                        | 0                                 | 3,606 |
| Wrybill                         | 43                                | 2,688 |
| South Island Pied Oystercatcher | 5                                 | 2,620 |
| Bar-tailed Godwit               | 85                                | 2,382 |

Another notable contribution came from Graeme Taylor, who provided spread wing photos of birds from the Chatham Islands. From these I was able to estimate primary moult scores for nearly 50 individuals, several of which represent 'species firsts' for the Scheme (i.e., Chatham Warbler and Black Robin). Assigning scores from photos is a promising technique, especially in settings where it may not be possible to collect moult data on the spot for logistical or bird safety reasons. To test the accuracy of this method, I am hoping to have banders send through photos of bird wings with known moult scores for comparison with those derived from photos. If consistent, this may provide an additional tool for gathering moult data. Interested in helping out? Get in touch with me at [moult.record@birdsNZ.org.nz](mailto:moult.record@birdsNZ.org.nz).

Overall, the majority of records are now of birds in active moult (69.1% of records), a change from the previous season and a reflection of the database now consisting mostly of waders captured while undergoing their primary moult. Likewise, nonpasserines now constitute a larger portion of the database at 74.4% of all records. When considering songbirds only, the trends remain similar to those reported in 2020 with half of all records coming from common European introductions (Table 2). Native Silvereye remain the most abundant songbird in the database. Banding projects contributed to the majority of records in the database (90.0%), but beach-patrols, museum specimens, and other reports from deceased birds play an equally important role and continue to account for the most data on pelagic species and those species listed as uncommon, rare, or very rare.

Table 2. Number of records for the five most common species of songbirds reported in the moult scheme database.

| Most common species | Number of records |
|---------------------|-------------------|
| Silvereye           | 1,132             |
| House sparrow       | 689               |

|            |     |
|------------|-----|
| Goldfinch  | 460 |
| Greenfinch | 372 |
| Redpoll    | 320 |

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Over 2021 the moult scheme was approached by researchers from South Africa, Nigeria, the United Kingdom, and the United States interested in utilizing our data for comparative studies. This is exactly what the database is meant for! For example, graduate and post graduate students at the University of Cape Town and the Percy Fitzpatrick Institute are using the data to examine variation in timing and duration of moult between common European introductions in New Zealand and compared with their native ranges. Similarly, researchers from the UK and US are interested in looking for a shift in moult timing associated with climate change drawing on our huge new input of wader data. These collaborations not only further our understanding of the evolution of moult and its underlying mechanism but help to put the international spotlight on the natural history of birds of Aotearoa New Zealand. We anticipate seeing preliminary results from these studies during the course of 2022. Anyone interested in obtaining a copy of the database for research purposes can contact me by email at: [moult.record@birdsnz.org.nz](mailto:moult.record@birdsnz.org.nz). In particular, we are interested in having Society members and researchers within New Zealand benefit from our growing dataset.

Despite some of the advances made within the scheme, 2021 posed a challenge for our ability to deliver in person training on moult. As New Zealand moves forward with its COVID protection framework I hope to be able to engage local branches with more opportunities to learn about how to score primary moult and identify moult limits for frequently captured species. To assist in this goal, I've made wing and tail mounts from deceased non-native birds that illustrate the variation in feather shape, quality, and colour between individuals of different age and sex classes. Next steps include obtaining a permit to work with native and endemic species as well.

As always, to those who have contributed data in the past, thank you! I invite you to continue to add to our understanding of avian moult by keeping those records coming. A reminder that anyone, not just banders, can contribute to our moult scheme. This includes information on both moulting and non-moulting birds, whether alive or dead, captive or wild. Forms used for recording moult data can be downloaded from the website (<http://osnz.org.nz/moult-recording-scheme>) or, alternatively, by contacting me directly.

Looking forward to receiving your moult records,

Micah Scholer

Moult Recording Scheme Convener