The rise and rise of the Rainbow Lorikeet in the Hunter Region

Alan Stuart

133 Barrenjoey Road, Ettalong Beach NSW 2257, Australia. alanstuart400@gmail.com

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The recent note in *The Whistler* describing remarkably high counts of Rainbow Lorikeets *Trichoglossus moluccanus* coming to a night roost at Raymond Terrace (Slack 2025) struck a chord with me. In 1983 when I arrived in Newcastle, Rainbow Lorikeets were an uncommon species in the Hunter Region, especially south of Port Stephens. That is no longer the case – now they are common and widespread throughout the eastern half of the region, and usually present in large numbers.

In this note, I demonstrate the remarkable rise of this species within the Hunter Region over approximately the past 40 years.

METHODS

To assess the status of the Rainbow Lorikeet in the Hunter Region, I used records available in Birdata (https://birdata.birdlife.org.au/home) to examine temporal changes to the species' Reporting Rates and regional distribution, spanning forty years from 1985. The launch of the second Atlas of Australian Birds in 1998 (Barrett *et al*. 2003) heralds the official start of the Birdata archive; the bulk of surveys in Birdata date from 1998 onwards. However, some people (including me) have entered records from surveys they did in years prior to 1998. Thus, there are 563 surveys within the Hunter Region in Birdata spanning the years 1985-1997, which includes 58 surveys with records of Rainbow Lorikeets. There are sufficient early records to paint an informative picture.

For trends in annual Reporting Rate, I used the combined results from each year's 500 m-radius and 5 km-radius area surveys. Prior to the second Atlas, the 2 ha-20-minute survey method was not in common use, hence I excluded the results from such surveys. I calculated the annual Reporting Rates from 1985 to 2024 (2025 being an incomplete year at the time of writing). Reporting Rates are the number of records divided by the number of surveys, expressed as a percentage.

To examine distribution changes, I generated maps from Birdata for successive five-year periods from 1985 to 2025, with each map showing all locations within that period for which there was a Rainbow Lorikeet record.

RESULTS

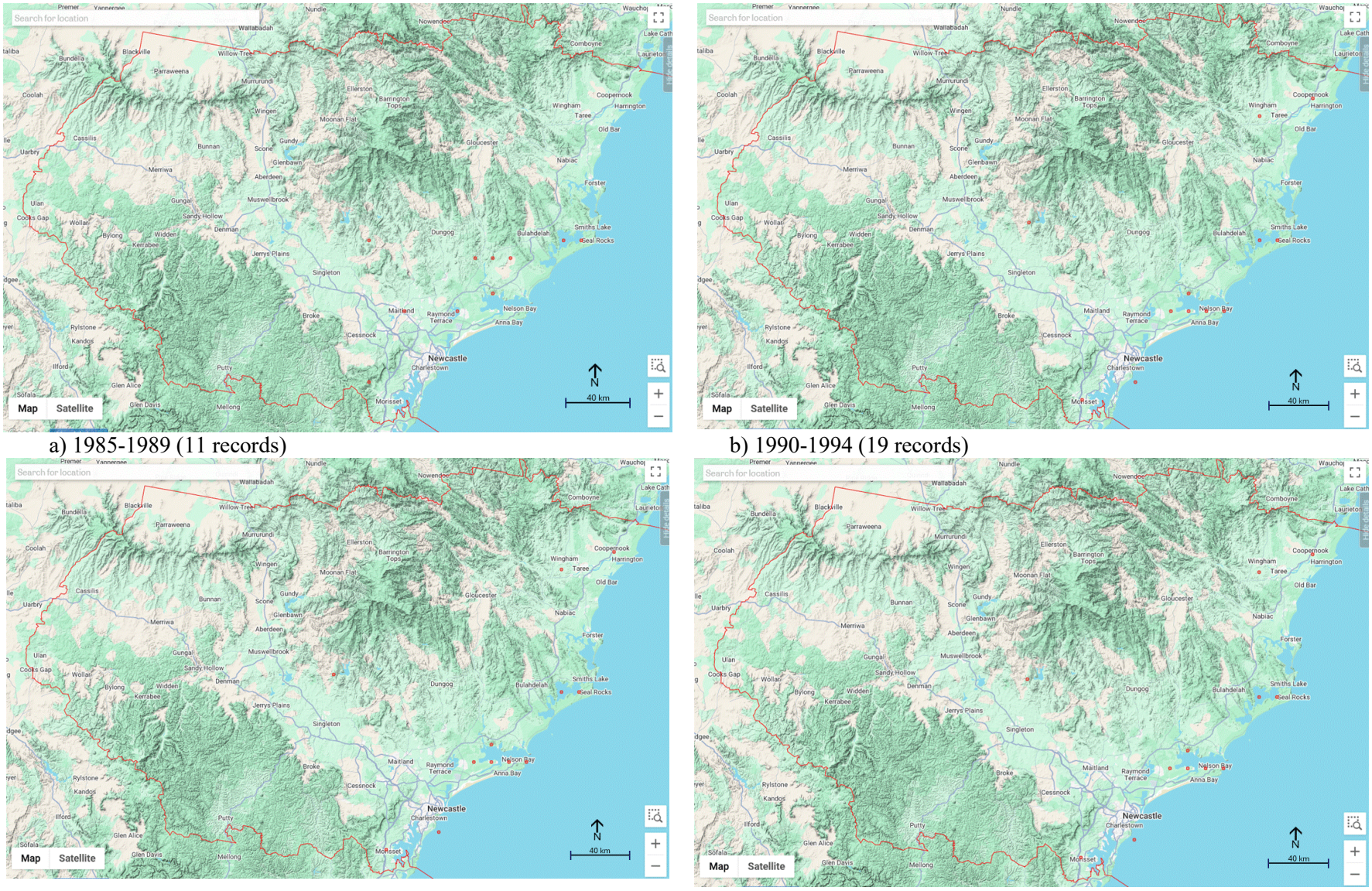
Figure 1 a) to h) shows the location of Rainbow Lorikeet records in five-year time periods spanning 1985-2024. The number of records in each five-year period is also indicated.

Figure 2 shows the annual Reporting Rate for Rainbow Lorikeets in the Hunter Region between 1985 and 2024, using the data from 500 m-radius and 5 km-radius surveys.

DISCUSSION

In the 1980s, Rainbow Lorikeets were infrequently recorded, and it was not until around 1993 that records of them began to become more frequent. From then, there was a steady increase in number of records. For example, there are only 30 records in Birdata for the ten years spanning 1995-2004, but there were 14,736 records for the five years 2019-2024. The magnitude of the change in frequency of records is even more dramatic when we consider that during that latter period, many birdwatchers had begun using eBird for their records, rather than Birdata – i.e. Birdata was no longer the sole repository for records of Rainbow Lorikeets.

The Reporting Rates from combined 500 m-radius and 5 km-radius surveys now exceed 40%. It should be noted that Reporting Rates are based upon presence/absence data and thus they offer no direct indication of the numbers of Rainbow Lorikeets present. A flock of ten birds and a flock of 100 birds have the same weighting in a Reporting Rate calculation. However, Reporting Rates do provide an indirect indication of numbers in the region, on



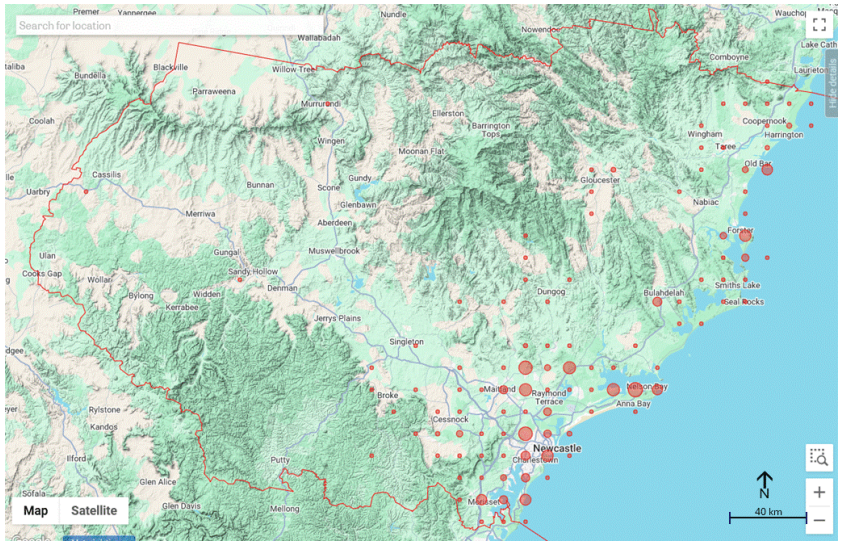
a) 1985-1989 (11 records)

b) 1990-1994 (19 records)

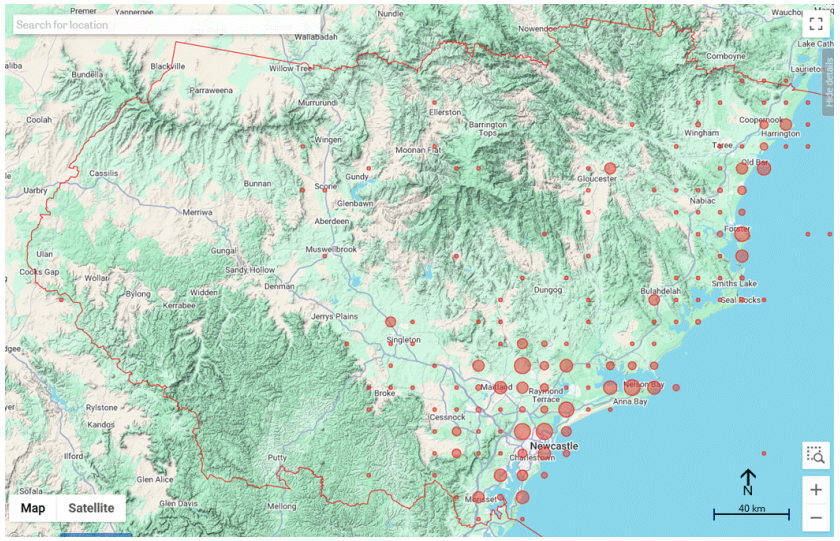
c) 1995-1999 (432 records)

d) 2000-2004 (835 records)

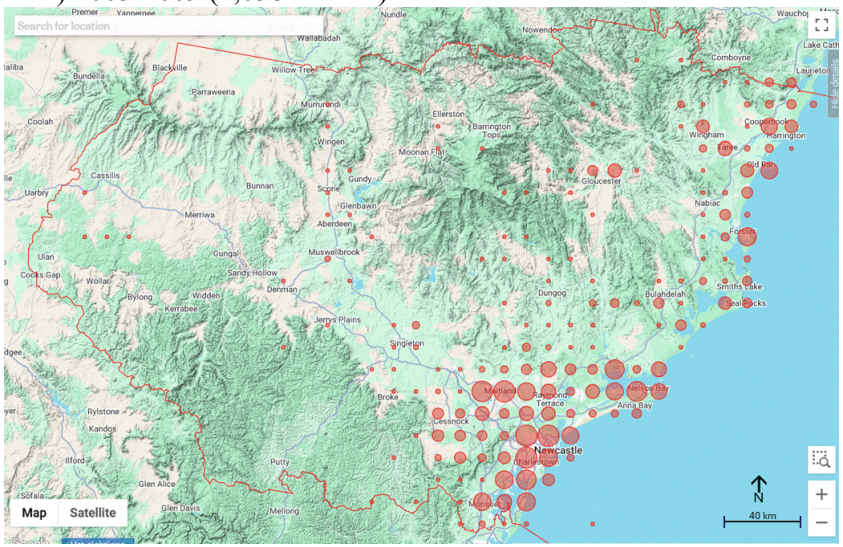
Figure 1 a) to d). Locations for Rainbow Lorikeet records in the Hunter Region spanning 1985-2004, in five-year periods. The size of each red dot indicates the number of records in a size category (1-14, 15-50, 51-100, 101-500, >500) in each 10' grid square. NB some Birdata records have erroneous coordinates (e.g. the records at sea)



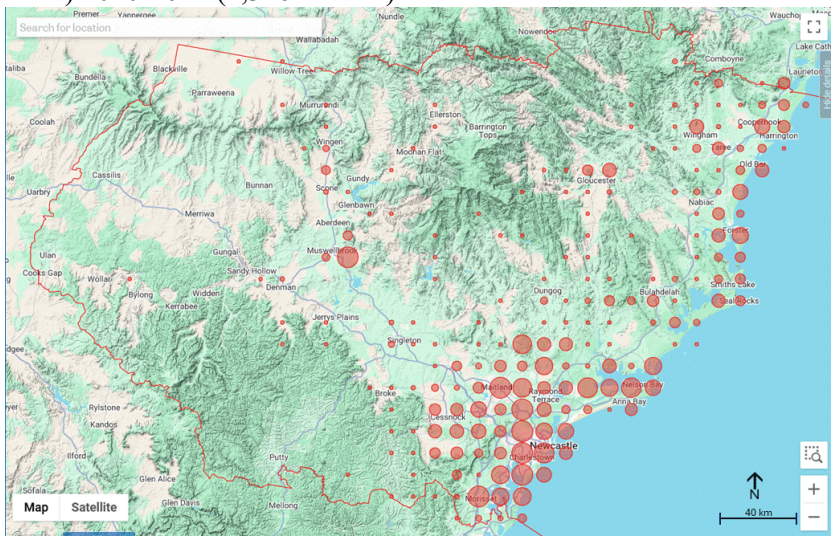
e) 2005-2009 (1,058 records)



f) 2010-2014 (2,326 records)



g) 2015-2019 (8,420 records)



h) 2020-2024 (14,736 records)

Figure 1 e) to h). Locations for Rainbow Lorikeet records in the Hunter Region spanning 2005-2024, in five-year periods. The size of each red dot indicates the number of records in a size category (1-14, 15-50, 51-100, 101-500, >500) in each 10' grid square. NB some Birdata records have erroneous coordinates (e.g. the records at sea)

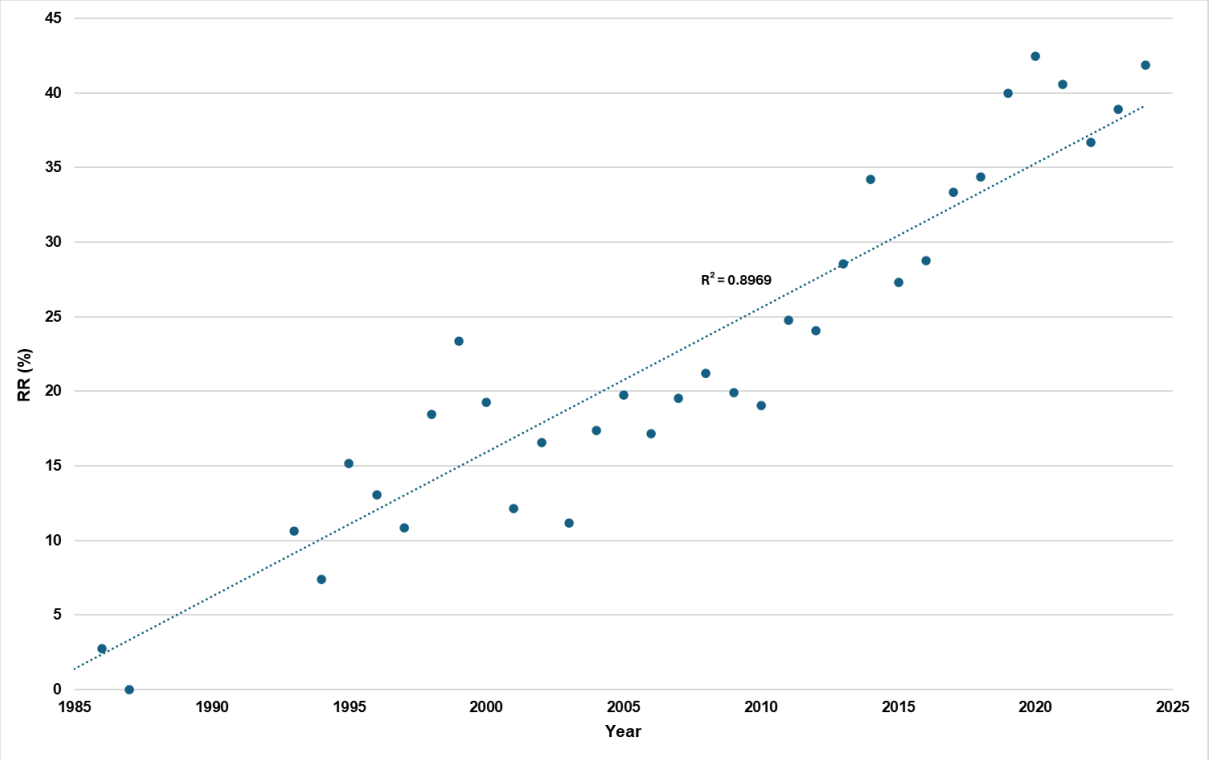


Figure 2. Annual Reporting Rates for Rainbow Lorikeet from combined 500 m-radius and 5 km-radius area surveys, for 1985-2024.

the basis that if there are more birds, then the chances of encountering them increase. The substantial increase in Rainbow Lorikeet Reporting Rates over the past three or so decades is a surrogate for the remarkable rise in their overall numbers in the region in that time.

How many Rainbow Lorikeets are in the Hunter Region? I attempted to identify the night roost sites but there are many! Within the lower Hunter Valley, I have been informed of roosts at Lambton, New Lambton, Kotara, inner Newcastle, Cardiff, Wallsend, Charlestown and Warners Bay. Pickering & Groom (2019), in a study of Rainbow Lorikeets in Perth, found average night roost sizes were 200-300 birds but several of the roosts had more than 1,000 birds. It seems reasonable to estimate that 5,000-10,000 Rainbow Lorikeets are in the lower Hunter Valley alone, and there would be similar numbers in other major towns e.g. Maitland, Forster, Toronto, and Taree.

Some early literature verifies the previously uncommon status of the Rainbow Lorikeet. Hamonet (1986) in his Hunter Region checklist did not give a distribution range (which he did for many other species) but instead, listed ten Hunter Region locations where birds had been recorded during 1976-1986. In a garden birds survey by Hunter Bird Observers Club members conducted during 1992-1993, the average count of Rainbow Lorikeets across 34 sites in the lower Hunter Valley and Lake Macquarie areas was 1.3 birds and the average flock size when present, was 7.6 birds (McLauchlan 1994). The first Hunter Region annual bird report (Stuart 1994) reported that most records of Rainbow Lorikeets in 1993 were from areas north of Newcastle. The annual report listed only four locations around Newcastle and Lake Macquarie where Rainbow Lorikeets had been recorded in 1993.

The reasons for the massive rise in Rainbow Lorikeet numbers are unclear, but there are several potential factors. Because Rainbow Lorikeets are tolerant of humans, they were well-placed to take advantage of the trend to grow native gardens, which began in the 1980s, and which, by the mid-1990s, would have generated abundant and reliable food sources for them, particularly in urban and peri-urban areas (e.g. see Smith & Lill 2008; Lill 2009). Similarly, their tolerance for humans would have allowed them to exploit artificial feeding stations; a study in Brisbane (Jones 2019) found that

38% of households were actively engaged in bird feeding (NB the study was not limited to lorikeets). Waterhouse (1997) commented upon the willingness of Rainbow Lorikeets to use artificial feeding stations and their use of exotic and native plants in parks and gardens. Another factor might have been the rise in the number of areas with artificial lighting at night – such as are found at suburban shopping centres. For example, my investigations identified twelve Rainbow Lorikeet night roost sites in the Hunter Region – there almost certainly are many more – and all of them were located near shopping centres. Trees with nearby artificial lighting have become a common night roost site for Rainbow Lorikeets, with hundreds and often thousands of birds regularly attending individual sites (Daoud-Opit & Jones 2016). Those same authors found that, although Rainbow Lorikeets used a wide variety of tree types for roosting, they demonstrated a clear preference for clumped trees within sparsely treed areas that received significantly more artificial light at night than otherwise suitable sites and trees nearby. They speculated that such roosting sites may enhance the detection of nocturnal predators.

The rise in Rainbow Lorikeet numbers in the Hunter Region has been dramatic. It seems largely to have been driven by their ability to exploit a habitat niche (the built urban environment with ample natural and artificial food sources) that scarcely existed in Australia 40 years ago.

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