

Expansion in the range of the Spiny-cheeked Honeyeater in the Hunter Valley – an example of the use of time-variant distribution maps to study Hunter Region species

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There has been a relatively recent eastward movement in the distribution of the Spiny-cheeked Honeyeater *Acanthagenys rufogularis* into the Hunter River Valley of central New South Wales (McAllan & Lindsay 2016). In recent years, the Hunter Bird Observers Club has been producing maps of species distribution in the Hunter Region within the Annual Bird Reports (ABR). This thematic mapping analyses survey effort and species records within defined areas of the Hunter Region to produce a ‘weighted reporting rate’ (WRR), as documented in the 2018 ABR (Williams 2019). The mapping produces an overall approximation of a species range, using a three-tiered colour gradation to indicate the frequency of reporting.

The Spiny-cheeked Honeyeater has been selected to demonstrate the potential of the mapping methodology to assist in the studies of individual species. The distribution map for the Spiny-cheeked Honeyeater in the Hunter Region using the full period of surveys (1998-2019) is presented in **Figure 1**. An analogous mapping exercise has been undertaken for four subsets of the records database, each representing a period of five years: 2000-2004, 2005-2009, 2010-2014 and 2015-2019. The results of this analysis are presented in **Figure 2**. This time period was selected as the first regular observations of Spiny-cheeked Honeyeater in the Hunter Region began in 2000. There are no records of the species in the 1993-1999 ABRs.

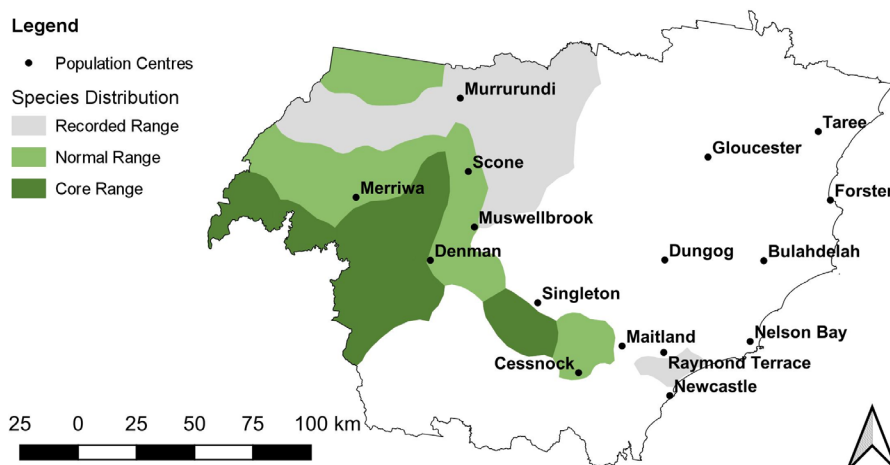


Figure 1 Spiny-cheeked Honeyeater distribution in the Hunter Region (all surveys for 1998-2019).

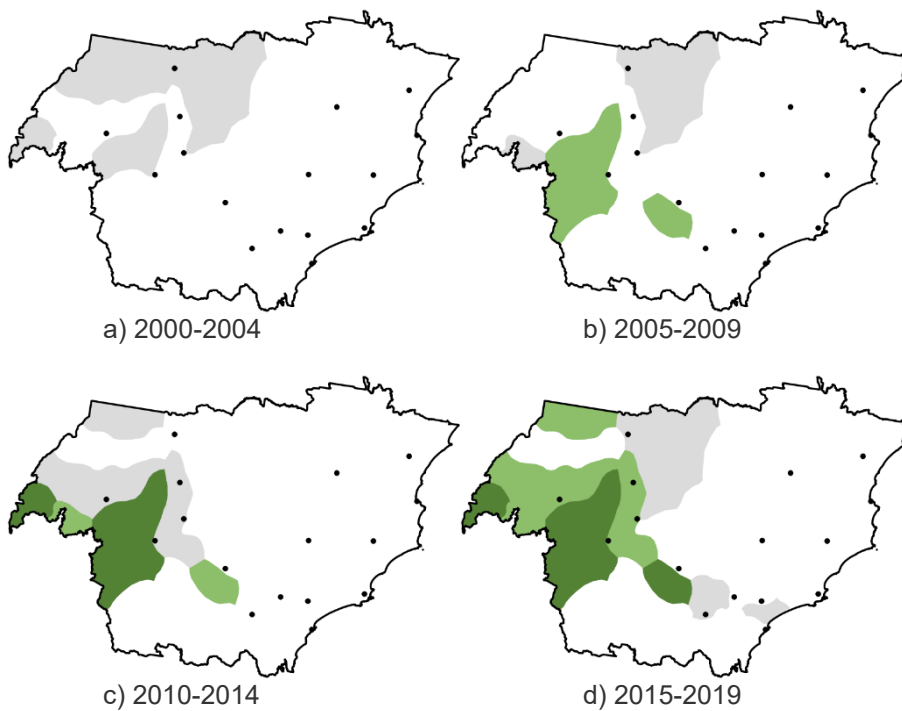


Figure 2 Change in the Spiny-cheeked Honeyeater distribution in the Hunter Region for four 5-year time periods between 2000 and 2019.

The mapping presented in **Figure 2** is strong supportive evidence of the eastward expansion in the range of the Spiny-cheeked Honeyeater in the Hunter Region. In the period 2000-2004 the mapping analysis shows the range of the Spiny-cheeked Honeyeater was largely restricted to the western parts of the Hunter Valley. In 2005-2009 there was an eastern movement into central parts of the Hunter Valley and an overall increase in the WRR, as is evident in the mapping. In 2010-2014 there was a further increase in WRR, with the species taking a firm hold in the western parts of the Hunter Valley. In 2015-2019 the WRR further increased within the western and central parts of the Hunter Valley and the overall range extended to the Hunter Estuary.

The time-varied distribution mapping of the Spiny-cheeked Honeyeater within the Hunter Region provides a strong visual aid in support of the relatively recent eastward movement in the distribution of the Spiny-cheeked Honeyeater

documented by McAllan & Lindsay (2016). It also demonstrates the potential use of the Hunter Region records database and ABR mapping methodology to assist in the study of individual bird species. This method of potential analysis is not only limited to changes in distribution over time but can be used to help understand seasonal movements or sporadic irruption events. It is hoped that such analyses can be used to support future studies published in *The Whistler*.

REFERENCES

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