

The status of Bassian and Russet-tailed Thrushes in the Hunter Region

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Both species of Australian ground thrush occur within the Hunter Region. Being species that are both cryptic and secretive they often go unrecorded. Although there is a generally accepted view of their distribution and movements within the Hunter Region, to date no formal analysis has been undertaken. Within this study thrush records from three different sources have been combined and a simple analysis of the spatial distribution of records undertaken. The analysis indicates probable seasonal movements, albeit with some bias of observer preference for lower altitude areas during the winter months. Although there appears to be a general trend for Bassian Thrush to move to lower elevations during winter, there are a number of sites with records year-round, highlighting more complex movements than a simple altitudinal migration. There are too few records of Russet-tailed Thrush, which has a limited distribution in the Hunter Region, for meaningful conclusions regarding seasonal movements to be drawn. More research and targeted systematic surveys are required to better understand the movements of the ground thrush species within the Hunter Region.

INTRODUCTION

The Bassian Thrush *Zoothera lunulata* and Russet-tailed Thrush *Z. heinei* are the only two species of thrush native to Australia. They are secretive, ground-dwelling birds that feed on moist ground, typically in areas of substantial leaf litter. Both have a rich brown plumage with cryptic scaled patterning and their voice is serene and melodious. They occur in the Hunter Region, but their distribution and movements are not well known. Neither species is frequently recorded due to a combination of the following factors:

- they are typically secretive in nature and can be difficult to observe;
- they usually call at dawn but remain quiet for most of the day;
- the rainforest habitat in which they predominantly reside is often remote and difficult to access;
- they can be difficult to identify from each other and so observations are recorded as 'ground thrush sp.'; and
- until as recently as the early 1980s they were regarded as a single species and so records prior to their splitting could relate to either species.

The Handbook of Australian, New Zealand and Antarctic Birds (HANZAB) indicates that Bassian Thrush occurs along the east coast of Australia and

throughout the Great Dividing Range from south-east Queensland to Tasmania (Higgins *et al.* 2006: 1823-1825). Separate populations also exist around Adelaide in South Australia and the Atherton region of Queensland. The distribution of Russet-tailed Thrush is more coastal (Higgins *et al.* 2006: 1838-1839) than that of Bassian Thrush. It occurs from the Atherton region of Queensland, south to the Hunter Valley of NSW. Where the ranges of the two species overlap, the Bassian Thrush typically occupies habitats of higher altitude than the Russet-tailed, although they are known to co-exist in some areas. Little is understood of the movements of either species, but they are generally regarded as being sedentary with some seasonal altitudinal movements being observed. Much of the information regarding the occurrence of the two species in the region of overlap and their seasonal movements, relates to populations in Queensland and northern NSW. The HBOC Annual Bird Report describes the status of both species in the Hunter Region as 'resident'.

METHOD

Available records of both species in the Hunter Region were obtained from the following sources:

- BirdLife Australia Bird Atlas records from 1998 to the present, courtesy of Andrew Silcocks;

- NSW Government Office of Environment and Heritage Atlas of NSW Wildlife records from 1952 to 2010; and
- Hunter Bird Observers Club Annual Bird Report records from 1993 to 2010.

This data collation exercise yielded a total of 663 records of ground thrushes in the Hunter Region. This is a relatively small dataset, especially for Russet-tailed Thrush for which there were only 141 records. There are also a number of issues relating to data quality that compromise analysis, including:

- many records are duplicated within the three data sources;
- the relatively recent splitting of the ground thrush species and the difficulty in positively identifying them creates a bias to recording Bassian Thrush; and
- the Russet-tailed Thrush is typically only recorded when heard around dawn and dusk – times when observers are rarely located at high altitude and thus introducing a bias towards its observation at lower altitude locations.

Taking into account the limitations of the data I restricted my analysis to simple approaches.

Firstly I conducted a spatial analysis which allowed possible differences in distribution of the two species to be identified. Multiple records from a single location were mapped as a single point, giving an indication of distribution rather than abundance. While this approach does not address the bias of survey effort in remote areas and misidentification, it does eliminate the issue of duplication of records between databases.

Secondly I conducted a qualitative analysis of thrush records, to test the belief that they are seasonal altitudinal migrants. For example, Bassian Thrushes are observed in Newcastle and lowland areas of the Lower Hunter in winter, but rarely in summer. To assess the validity of this generally accepted movement, Bassian Thrush records were separated into summer (December - February) and winter (June - August) classifications and mapped to identify spatial differences in seasonal distribution. A similar analysis was undertaken for Russet-tailed Thrush records.

RESULTS

Figure 1 shows the spatial distribution of ground thrush records in the Hunter Region.

It can be seen that the Bassian Thrush has been recorded within most of the extensive 'wet forest' habitat throughout the Hunter Region, often in areas of higher altitude. The lower-lying dry forested areas of the Hunter Valley and coastal region show a much sparser distribution of records. The Russet-tailed Thrush is much more restricted in its range, being recorded predominantly in the Barrington Tops and the forested regions of Great Lakes and Greater Taree. It does not occur as far south as Port Stephens, or west of the Barrington Tops area, where it is recorded predominantly on the eastern slopes. The patterns observed in the spatial distribution of both species match the general descriptions provided by HANZAB.

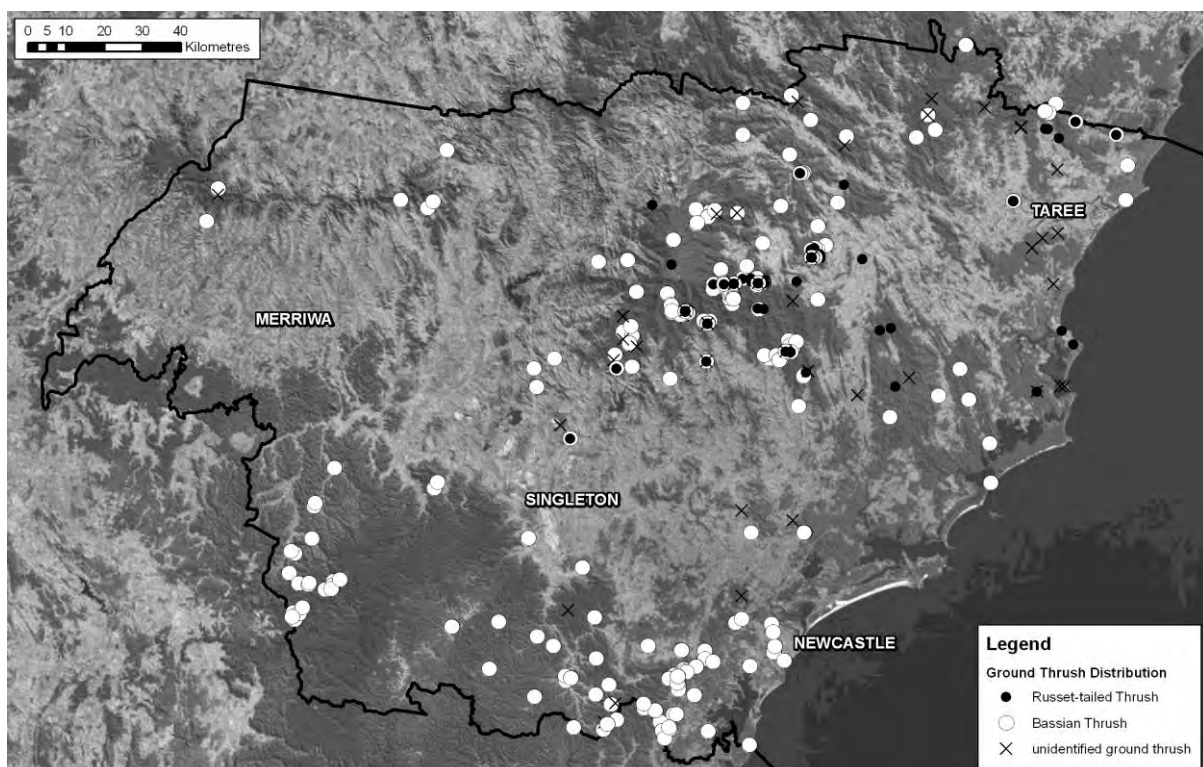


Figure 1. Spatial distribution of ground thrush records in the Hunter Region.

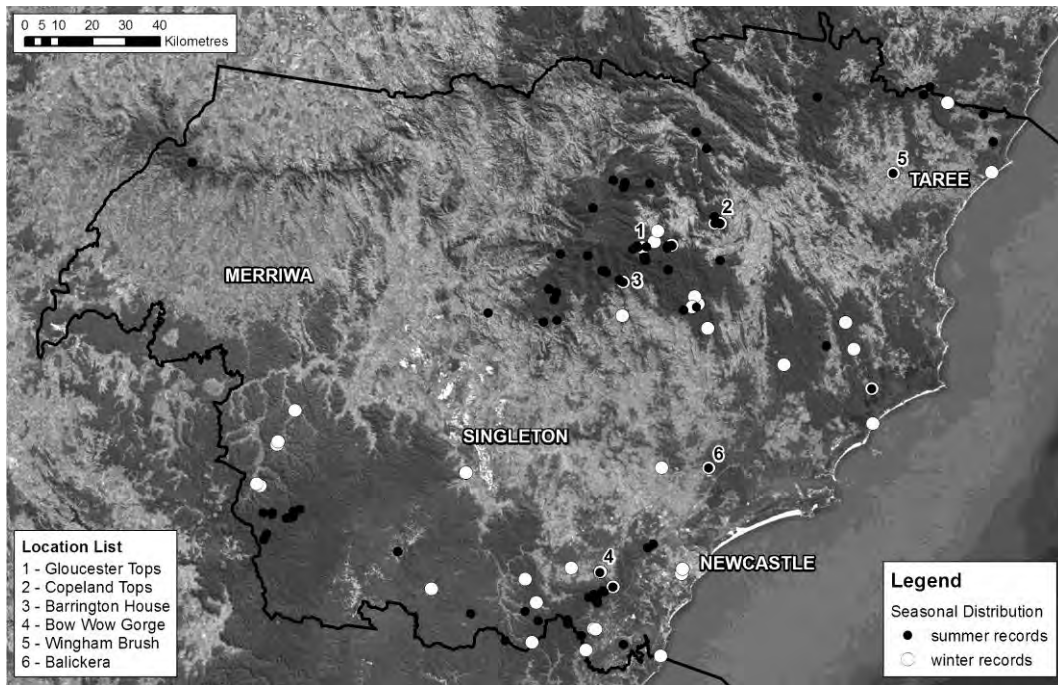


Figure 2. Seasonal analysis of spatial distribution of Bassian Thrush in the Hunter Region.

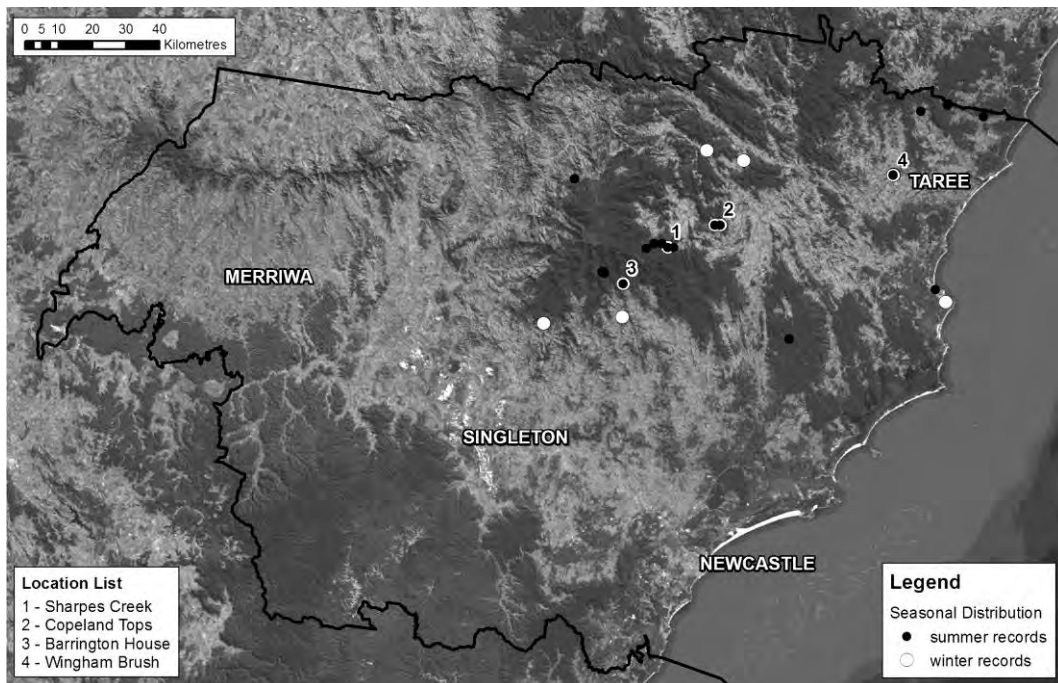


Figure 3. Seasonal analysis of spatial distribution of Russet-tailed Thrush in the Hunter Region.

Bassian Thrush

Figure 2 presents the results of the seasonal analysis of Bassian Thrush records.

The summer records are predominantly from the higher forested areas, with winter records located both coastally and along the perimeters of the

upland forested areas. This is particularly noticeable when looking at winter records located in Newcastle, near Harrington on the coast and in the Widden and Baerami valleys of Wollemi National Park.

However, although **Figure 2** portrays an apparent pattern of seasonal movement, variations in

distribution may be distorted by differences in observer effort. Firstly, there are a greater number of surveys from the mountainous areas (>1000m), such as the Barrington Tops, in summer than there are in winter (70 against 19), due to the inclement conditions. This means that records of ground thrushes from the higher altitude areas are far more likely in summer than they are in winter, providing a distorted indication of preference for higher altitude locations in summer. Secondly, there are a number of locations at which Bassian Thrush is recorded in both summer and winter, with no clear pattern of altitude. These locations include: Gloucester Tops (~1000m), Copeland Tops (~500m), Barrington House (~350m), Bow Wow Gorge (<100m), Wingham Brush (<20m) and Balickera (<20m). However, at other low altitude locations (such as Harrington and Blackbutt Reserve) the Bassian Thrush is only recorded in winter. This suggests that Bassian Thrushes are entirely absent neither from high altitude locations in winter nor from more coastal locations in summer.

Russet-tailed Thrush

The evidence for seasonal movement of Russet-tailed Thrushes (**Figure 3**) is less convincing than that for the Bassian Thrush presented in **Figure 2**. This may be due to the more restricted range of Russet-tailed Thrush and the smaller number of records of this species. The records at the southern limits of the greater Barrington Tops area provide an indication of seasonal altitudinal movement, but this is not conclusive. As with Bassian Thrush there are a number of locations at which Russet-tailed Thrush is recorded in both summer and winter. These locations include: Sharpes Creek (~500m), Copeland Tops (~500m), Barrington House (~350m) and Wingham Brush (<20m).

DISCUSSION

The distribution maps suggest a seasonal movement of Bassian Thrush from higher altitude areas in summer to lower altitude areas in winter. This conclusion is supported by records from a number of lowland sites at which Bassian Thrush is recorded in winter but never in summer. Conversely however, there are also a number of sites that support both species throughout the year. This would suggest that the seasonal movement is more complex than a simple altitudinal migration. This could relate to a number of other potential factors, including habitat quality, climate, availability of food source and dispersal of first

year individuals. It is also a possibility that adult birds may hold established territories and immature birds may migrate after the breeding season to establish new territories. The data that is available is not sufficient to draw conclusions about these or other potential hypotheses. More survey data is required in order to better understand the apparent seasonal migration of the Bassian Thrush in the Hunter Region.

Evidence for seasonal movement of Russet-tailed Thrush in the Hunter Region is tenuous and is more likely due to a bias in observer effort during winter and summer than of an actual pattern of seasonal movement. The requirement for more survey data of the Russet-tailed Thrush is even more pronounced than for that of Bassian Thrush, if a better understanding of any potential seasonal movement is to be gained.

CONCLUSION

In summary, the distribution of the ground thrush species in the Hunter Region appears at least superficially to be well understood, with descriptions of species distribution in HANZAB (Higgins *et al.* 2006) being confirmed by the available records. However, the seasonal movements are much less certain, with a lack of data making conclusions difficult to draw. More research into the *Zoothera* genus, for instance, involving systematic surveys targeted at capturing altitudinal movements of the ground thrush species, would provide a suitable dataset from which a robust statistical analysis could be undertaken.

ACKNOWLEDGEMENTS

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REFERENCES

- Higgins, P.J., Peter, J.M. and Cowling, S. J. (Eds). (2006) 'Handbook of Australian, New Zealand and Antarctic Birds. Volume 7: Boatbill to Starlings'. (Oxford University Press: Melbourne.)
- Stuart, A. (Ed.) (1994 – 2011). Hunter Region of New South Wales Annual Bird Report Numbers **1** to **18** (1993 – 2010). (Hunter Bird Observers Club Inc.: New Lambton, NSW.)