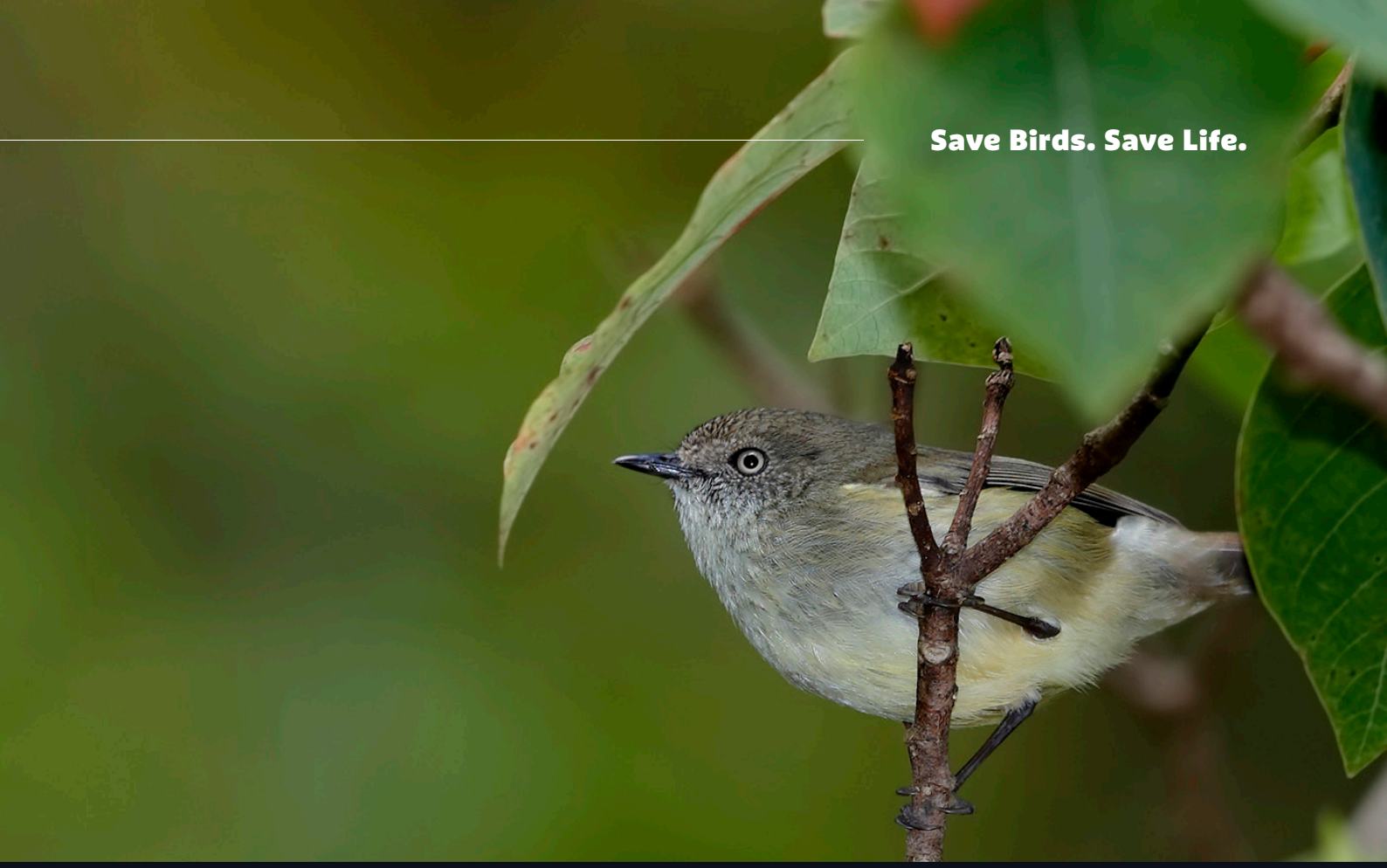

Save Birds. Save Life.

Birds With Altitude Project Report 2026

Citizen science monitoring of climate change impacts on Wet Tropics rainforest birds

Ceri Pearce

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birdlife Northern Queensland

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By Ceri Pearce

Acknowledgements

We acknowledge the Traditional Owners of the Wet Tropics and pay our respects to Elders past and present. We are grateful for the opportunity to undertake monitoring on Country and recognise the enduring cultural and ecological knowledge of First Nations peoples.

BirdLife Northern Queensland sincerely thanks the many volunteers who have contributed their time, expertise and enthusiasm to the Birds With Altitude Project. Every bird survey contributes to a growing body of knowledge that is improving our understanding of Wet Tropics rainforest birds and their responses to climate change. Your commitment and dedication are the foundation of this project.

We gratefully acknowledge the ongoing support of our project partners, including BirdLife Australia, BirdLife Townsville and the Queensland Parks and Wildlife Service. We also thank the Wet Tropics Management Authority, Wren McLean for coordinating the Paluma Citizen Science Weekend, local councils, Traditional Owners, conservation organisations, researchers and all others who have contributed to the success of the project.

We extend our sincere appreciation to the individuals and organisations that have generously supported the annual Birds With Altitude Challenge Competition by donating prizes. Their support has helped encourage participation and recognise the outstanding contributions of project volunteers. We thank Mamu Tropical Skywalk, Skyrail Rainforest Cableway, Murray Hunt (Daintree Boatman Wildlife Cruises), the CaPTA Group (Wildlife Habitat Port Douglas), Phil Gregory and Jun Matsui (Sicklebill Safaris/Cassowary Tours), and Alan Gillanders (Wildlife Tour Guide) for their generous support.

We also extend our sincere thanks to Dominic Chaplin, whose dedication to birding on mountaintops delivered the majority of surveys above 1,100 m above sea level (asl), and to Sally Sheldon (BirdLife Australia, Birdata) for her ongoing technical support and expertise.

The Birds With Altitude Project is built on collaboration, generosity and a shared commitment to conserving the unique birds of the Australian Wet Tropics. Together, we are creating a lasting legacy of knowledge that will help inform conservation for years to come.

Contents

1. Executive summary

The Australian Wet Tropics World Heritage Area (the *Wet Tropics*) is internationally recognised for its exceptional biodiversity, ancient evolutionary heritage, and unique rainforest ecosystems, and supports many bird species found nowhere else on Earth. Long-term research has demonstrated that climate change is already altering the distribution and abundance of many rainforest birds, highlighting the need for continued monitoring. In response, BirdLife Northern Queensland established the Birds With Altitude (BWA) Project in 2022.

Birds With Altitude is a citizen science monitoring program that uses BirdLife Australia's standardised survey methods and Birdata platform to build a long-term dataset for monitoring how rainforest bird communities are responding to climate change. Surveys across the Wet Tropics elevational gradient can provide an early-warning system for detecting changes in species occurrence and abundance before widespread distributional shifts become apparent.

This report summarises project activities and survey results collected between 2022 and 2025 across five internationally recognised Key Biodiversity Areas (KBAs): Atherton Tablelands, Coastal Wet Tropics, Daintree, Paluma and Wooroonooran, within the Wet Tropics.

Between 2022 - 2025, 82 Birdata contributors completed 1,226 standardised bird surveys, recording 256 bird species across an elevational range of 1 - 1,605 m above sea level (asl). Annual survey effort increased steadily, reaching a record 475 surveys in 2025.

Since its inception, the Birds With Altitude project has substantially improved monitoring coverage across the Wet Tropics. Standardised survey methods, volunteer training and support resources, together with data quality assurance, have produced a robust dataset suitable for examining survey effort, species occurrence and elevational distribution. Although Birds With Altitude focuses on climate-sensitive rainforest birds, surveys record all bird species encountered, creating an increasingly valuable resource for monitoring the broader Wet Tropics bird community.

This report also presents species accounts for 17 rainforest bird taxa, including the Wet Tropics endemic species and subspecies identified as threatened or near-threatened in *The Action Plan for Australian Birds 2020* (Garnett & Baker, 2021), together with the Southern Cassowary, Blue-faced Parrotfinch and Spectacled Monarch. The analyses document elevational distributions, spatial occurrence and, where available, breeding activity, providing a valuable baseline for future comparison.

Birds With Altitude continues to benefit from increasing volunteer participation and strong partnerships with BirdLife Australia, the Queensland Parks and Wildlife Service, James Cook University, Griffith University and other organisations. In 2024, BirdLife Northern Queensland received the Wet Tropics Management Authority Chair's Award in recognition of the group's exceptional level of commitment to the conservation of the Wet Tropics World Heritage Area.

Future project priorities include establishing a formal long-term monitoring network based on historical James Cook University survey sites, evaluating the use of acoustic monitoring, and strengthening research partnerships.

By combining community participation with scientifically rigorous survey methods, Birds With Altitude is creating a long-term dataset that will improve understanding of climate change impacts on the unique birds of the Australian Wet Tropics and provide an increasingly valuable resource for conservation planning and adaptive management.

2. Introduction

The Australian Wet Tropics World Heritage Area is a global biodiversity hotspot and one of Australia's most climate-sensitive ecosystems. Covering approximately 894,000 hectares between Townsville and Cooktown in north-eastern Queensland, it supports an exceptional diversity of rainforest plants and animals, including many species found nowhere else on Earth (UNESCO 2024; Williams & de la Fuente 2021).

The region's rainforest birds are of particular conservation significance. At least thirteen species are endemic to the Wet Tropics, while a number of other more widespread Australian birds are represented by subspecies confined to the region, such as the Wet Tropics Australian King-Parrot (*Alisterus scapularis minor*). Many of these taxa occupy relatively small geographic and elevational ranges, making them particularly vulnerable to changes in temperature, rainfall and habitat suitability.

Between the mid-1990s and 2016, Professor Steve Williams and colleagues from James Cook University conducted one of the world's longest-running studies of tropical montane bird communities. Early research identified climate change as a major threat to the biodiversity of the Australian Wet Tropics (Williams et al. 2003), while subsequent modelling predicted that increasing temperatures would force many rainforest bird species to shift upslope, reducing the extent of suitable habitat for upland endemics (Shoo et al. 2005). Long-term monitoring later confirmed these predictions, documenting declines in many mid- and high-elevation species at the lower limits of their ranges, while lowland species expanded upslope (Williams & de la Fuente 2021). Together, these studies provided some of the first empirical evidence of climate-driven elevational shifts in Australian tropical rainforest birds and highlighted the risk of an "escalator to extinction" for species confined to mountain-top habitats.

Reflecting these findings, *The Action Plan for Australian Birds 2020* identified 14 threatened or near-threatened Wet Tropics endemic bird taxa at risk from climate-driven habitat change, recognising climate change as the primary long-term threat for many of these species (Garnett & Baker 2021). These assessments drew on multiple lines of evidence, including the long-term James Cook University monitoring program, BirdLife Australia's Birdata database, and observations contributed by citizen scientists, demonstrating the important role that long-term community-collected data can play in threatened species assessment and conservation planning.

More recently, de la Fuente et al. (2026) argued that mountain ecosystems are among the world's most powerful natural laboratories for understanding climate change. Their steep elevational gradients compress large climatic differences into relatively short distances, allowing changes in species abundance, behaviour and distribution to be detected earlier than in many other ecosystems. The authors further proposed that long-term monitoring along mountain gradients can reveal climate-driven population changes before obvious range shifts become apparent, providing valuable early-warning information for conservation management.

Recognising the need for continued monitoring, BirdLife Northern Queensland established the Birds With Altitude (BWA) Project in 2022. The project engages citizen scientists in undertaking standardised bird surveys across the Wet Tropics to continue monitoring rainforest bird communities. By collecting repeat survey data across a broad geographic and elevational range, the project is building a long-term dataset to improve understanding of how rainforest birds are responding to climate change and to provide information that supports future conservation planning and management.

3. Project purpose

The Birds With Altitude Project is a citizen science monitoring program led by BirdLife Northern Queensland in partnership with BirdLife Australia, BirdLife Townsville and the Queensland Parks and Wildlife Service.

The project has four primary objectives:

1. Engage and support citizen scientists to monitor climate-sensitive rainforest birds and bird communities across the Wet Tropics.
2. Increase survey coverage across key elevational gradients and rainforest habitats.
3. Collect long-term data to detect changes in bird occurrence, abundance and elevational distribution, providing early warning of climate-driven ecological change.
4. Support conservation planning and climate adaptation through reliable monitoring data.

By combining community participation with standardised monitoring methods, Birds With Altitude contributes valuable information on one of Australia's most distinctive and climate-sensitive bird communities.

4. Study area and Key Biodiversity Areas

The project focuses on five Key Biodiversity Areas (KBAs) within the Wet Tropics Bioregion of north Queensland: Atherton Tablelands, Coastal Wet Tropics, Daintree, Paluma and Wooroonooran (Table 1 and Figure 1).

Table 1. Key Biodiversity Areas of the Wet Tropics Bioregion / Queensland's Wet Tropics World Heritage Area.

Key Biodiversity Area	Area (km^2)	Elevational range (m asl)
Atherton Tablelands	352	620 - 875
Coastal Wet Tropics	519	0 – 860
Daintree	2713	0 – 1,330
Paluma	580	10 – 1,063
Wooroonooran	5117	0 - 1,611

Key Biodiversity Areas are internationally recognised sites of global importance for biodiversity conservation. They are identified using standardised criteria based on the presence, abundance and persistence of species and ecosystems of conservation significance. KBAs provide a practical framework for prioritising and coordinating conservation activities in areas critical to biodiversity (Key Biodiversity Area Partnership 2024).

For the Birds With Altitude Project, the use of KBA boundaries also provides important advantages for data management and analysis. KBA spatial layers are incorporated within the Birdata platform, enabling efficient extraction, filtering and analysis of survey data (BirdLife Australia 2025).

Descriptions of the five Key Biodiversity Areas below are summarised from information published by the KBA Partnership, BirdLife Australia and the Wet Tropics Management Authority (KBA Partnership 2024; Wet Tropics Management Authority 2024).

Atherton Tablelands KBA

On the fertile volcanic soils of the Atherton Tablelands, this KBA covers approximately 605,000 hectares and encompasses a diverse mosaic of agricultural land, wetlands, remnant rainforest, open eucalypt forest and wet sclerophyll habitats. The KBA contains the largest remaining fragments of the Critically Endangered Mabi Forest ecological community and supports a rich assemblage of Wet Tropics rainforest birds and other wildlife. Habitat restoration and the establishment of wildlife corridors are helping reconnect isolated rainforest remnants, improving landscape connectivity and enhancing the region's potential to function as a climate change refugium.

Coastal Wet Tropics KBA

The Coastal Wet Tropics KBA covers approximately 312,000 hectares and encompasses a diverse range of lowland rainforest, coastal forest and wetland habitats. The KBA supports important populations of Southern Cassowary and provides critical connectivity between coastal and upland rainforest environments. Monitoring within this KBA helps improve understanding of bird communities occupying lower-elevation habitats that may also be affected by climate change and habitat fragmentation.

Daintree KBA

The Daintree KBA covers approximately 268,000 hectares and contains some of the oldest continuously surviving tropical rainforest on Earth. Extending from the coast to upland rainforest environments, the area supports exceptional biodiversity and numerous Wet Tropics endemic bird species. The Daintree KBA is an important stronghold for many rainforest birds at the northern end of the Wet Tropics.

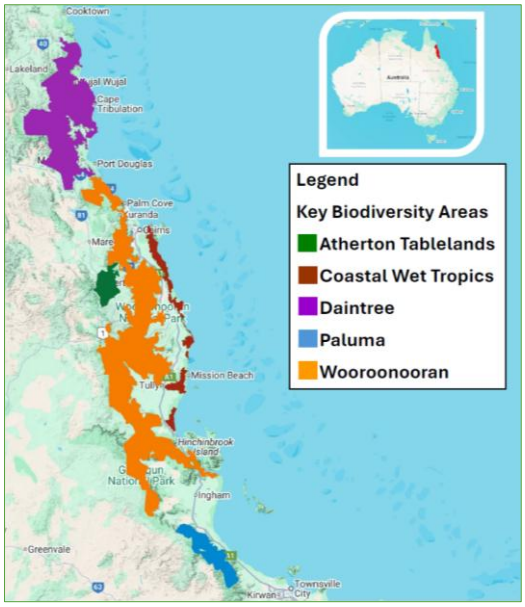
Paluma KBA

The Paluma KBA covers approximately 217,000 hectares at the southern extent of the Wet Tropics. The area contains upland rainforest, wet sclerophyll forest and associated habitats that support several Wet Tropics endemic bird species near the limits of their southern distribution. Monitoring within the Paluma KBA provides important information on the status of southern populations and potential range shifts associated with climate change.

Wooroonooran KBA

Wooroonooran KBA contains the largest continuous expanse of rainforest in the Wet Tropics and includes two of Queensland's highest mountains; Mount Bartle Frere (1,611 m) and Mount Bellenden Ker (1,593 m). The KBA encompasses an exceptional elevational gradient from near sea level to mountain summits, supporting a diverse range of rainforest habitats and many climate-sensitive endemic bird species. As the original focus area of the Birds With Altitude pilot program, Wooroonooran remains a key monitoring landscape for understanding how Wet Tropics rainforest birds are responding to climate change across both lowland and upland environments.

Figure 1. Key Biodiversity Areas included in the Birds With Altitude Project.



5. Survey methods

Birds With Altitude uses BirdLife Australia's standardised survey methods to ensure data are collected consistently and can be compared across locations, elevations and years. Survey records are submitted to BirdLife Australia's Birdata platform, where they contribute to a national database used by researchers, conservation managers and citizen scientists (BirdLife Australia 2025; Freeman & Pearce 2025).

Rainforest bird surveys present unique challenges. Dense vegetation limits visibility, many species are more readily detected by their calls than by sight, and detectability can vary between species, habitats and seasons. In Wet Tropics rainforests, up to 80% of bird records may be based on vocalisations rather than visual observations (Anderson et al. 2015). Consequently, survey methods must balance standardisation with sufficient flexibility to detect uncommon and cryptic species.

2 ha, 20-minute search

The 2 ha, 20-minute search is the primary survey method used by Birds With Altitude. Observers record all bird species seen or heard within a two-hectare area during a standardised 20-minute survey period.

This method was selected because it is constrained by both area and time, making results highly comparable between sites and years. The defined survey area also enables records to be assigned accurately to a particular elevation, an essential requirement for monitoring climate-driven changes across elevational gradients. Repeated surveys at the same locations provide a more robust framework for detecting long-term changes in bird occurrence, abundance and climate-driven ecological change.

Where practical, surveys are undertaken along approximately 200 m sections of walking track, road or management trail, with all birds detected within 50 m on either side of the survey route, providing a repeatable survey area that is well suited to rainforest environments. Research in the Wet Tropics has shown that the effective detection distance for most rainforest birds is

typically 30–60 m, making a 50 m survey width on either side of the survey route appropriate for monitoring rainforest bird communities (Anderson et al. 2015).

500 m area search

The 500 m area search complements the 2 ha, 20-minute survey method and provides greater flexibility in complex rainforest environments. Observers record all bird species detected within 500 m of a central point. The duration of surveys is flexible with this method. Surveys can last anywhere from 20 minutes to one week. The Birds With Altitude Project promotes 30-60 minutes as an optimal time period, and preferably at sites where elevation change is minor.

Although less tightly standardised than the 2 ha, 20-minute search, the 500 m area search allows a larger area to be surveyed and provides additional time to detect uncommon, cryptic or low-density species. This is particularly valuable in Wet Tropics rainforests where visibility is often poor, bird diversity is high, and many target species occur at low densities. Longer survey periods also provide greater opportunity to confirm identifications based on calls, an important consideration when surveying rainforest birds.

The 500 m area search increases survey coverage and complements the more structured 2 ha monitoring data.

Combined survey approach

Where time and site conditions permit, Birds With Altitude participants are encouraged to undertake both survey methods at the same location. The 2 ha, 20-minute search provides a highly standardised measure of bird occurrence and abundance, while the 500 m area search increases the likelihood of detecting uncommon species and recording a more complete species list.

The combined use of these complementary methods balances scientific rigour with practical field conditions, providing a robust framework for long-term monitoring of rainforest bird communities by citizen scientists. Further information on survey methods is provided in the Birds With Altitude: Guide to Monitoring Bird Life in Queensland's Wet Tropics (Freeman & Pearce 2025). A companion guide to birding locations within the Wet Tropics Key Biodiversity Areas has also been developed to assist with survey site selection (Pearce & Freeman 2025).

Survey timing

Surveys by citizen scientists are often undertaken at a time and place that is convenient to the volunteer. For a proportion of volunteers though, surveys are generally undertaken during the early morning or late afternoon when bird activity and detectability are highest. Additionally, surveys are generally conducted under suitable weather conditions and generally avoid periods of heavy rain, strong winds or other conditions likely to reduce bird activity or observer detectability.

Repeat surveys at established monitoring locations are encouraged to improve the project's ability to detect long-term changes in species distributions and abundance.

Data management

Survey records are entered into Birdata, BirdLife Australia's national bird monitoring database. Birdata provides secure storage of survey data and enables records to be analysed across a range of spatial and temporal scales (BirdLife Australia 2025).

6. Data quality and limitations

Birds With Altitude is a citizen science monitoring program designed to collect standardised bird survey data across broad geographic areas and over many years. As with all ecological monitoring programs, interpretation of the results requires an understanding of both the strengths and limitations of the dataset. The following considerations should be taken into account when interpreting the data and findings presented in this report.

Data extraction

For this report, survey data were extracted from BirdLife Australia's Birdata database using the boundaries of the five Wet Tropics Key Biodiversity Areas. Only BirdLife Australia's standardised 2 ha, 20-minute searches and 500 m area searches undertaken between 2022 and 2025 were included in the analyses.

Before analysis, the extracted data underwent a quality assurance review. Records assigned a queried status through BirdLife Australia's vetting process were examined and excluded where they appeared unreliable. Additional checks identified data entry errors, duplicate records, anomalous observations and surveys outside the scope of the analyses. Surveys that did not comply with BirdLife Australia's published survey protocols or the preferred Birds With Altitude survey standards (Freeman & Pearce 2025) were also excluded. This included incomplete surveys and those that did not meet the minimum requirements for standardised monitoring.

The validated dataset was then analysed to examine patterns of survey effort, species occurrence, elevational distribution and breeding activity.

Data interpretation

The analyses presented in this report are descriptive and summarise patterns of survey effort, species occurrence, elevational distribution and breeding activity rather than infer population trends. As repeated surveys accumulate over time, the dataset will increasingly enable changes in abundance, occupancy and elevational distribution to be distinguished from short-term natural variation, potentially providing early indications of climate change impacts before major shifts in species' geographic ranges become apparent.

Survey effort varied between locations, habitats and elevations, and large areas of the Wet Tropics remained unsurveyed during the reporting period. Consequently, the absence of records at a particular location or elevation should not be interpreted as evidence that a species is absent.

The elevation recorded for a species represents the altitude at which it was detected during an individual survey and should not be interpreted as defining its full elevational range. As survey coverage expands across additional locations and elevations, understanding of species distributions and responses to climate change will continue to improve.

Altitude estimation

The Birdata app does not record altitude automatically for individual surveys. For this report, survey elevations were estimated from the latitude and longitude recorded at the survey commencement point using digital elevation data. Estimated elevations are considered accurate to approximately ±5-15 m, which is sufficient for the broad elevational analyses presented in this report. Minor inaccuracies are unlikely to influence the overall interpretation of species' elevational distributions.

Dataset limitations

As with all citizen science programs, survey accuracy is influenced by observer experience. Participants vary in their bird identification skills and familiarity with bird vocalisations, particularly for cryptic rainforest species. Consequently, occasional identification errors or omissions are likely, especially for similar species such as the Wet Tropics Large-billed Scrubwren and Atherton Scrubwren.

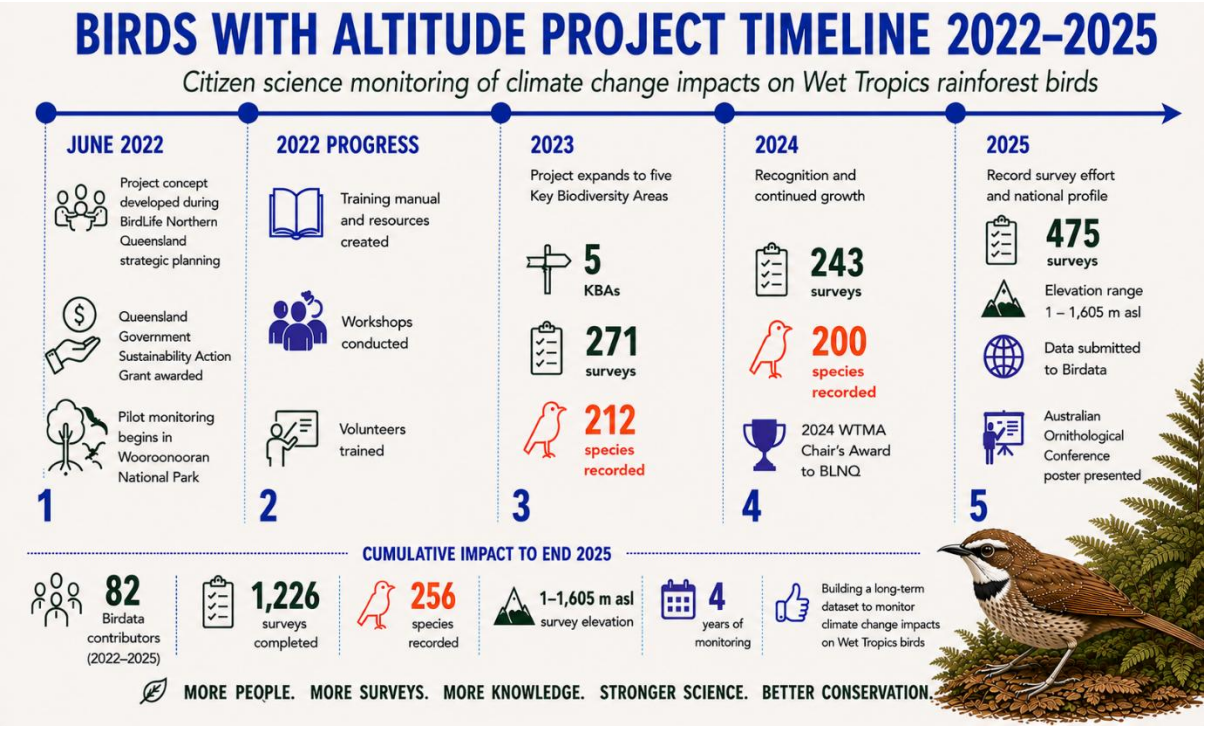
Bird detectability also varies between species, habitats and environmental conditions. Birds high in the rainforest canopy, secretive ground-dwelling species, or individuals that remain silent during surveys may be overlooked. Similarly, unfamiliar or poorly heard vocalisations may result in some species being under-recorded.

Despite these limitations, the use of BirdLife Australia's standardised survey methods, together with repeated surveys undertaken across multiple years by numerous observers, provides a robust dataset for describing patterns of survey effort, species occurrence and abundance, elevational distribution and breeding activity. As the Birds With Altitude monitoring program continues and the dataset grows, its scientific value and capacity to detect long-term changes associated with climate change and other environmental pressures will continue to increase.

7. Project growth and participation

Since its establishment in 2022, Birds With Altitude has evolved from a pilot citizen science program in Wooroonooran National Park into a region-wide initiative monitoring rainforest birds across Queensland's Wet Tropics World Heritage Area.

Figure 2. Growth and major milestones of the Birds With Altitude Project, 2022 - 2025.

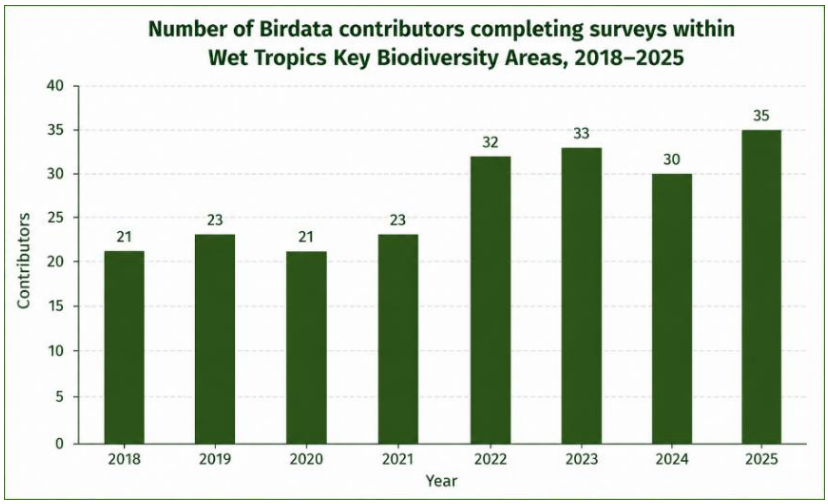


Between 2022 and 2025, the project contributed more than 1,200 standardised bird surveys, recorded 256 bird species, and engaged 82 Birdata contributors. It has also strengthened volunteer capacity through training, established valuable partnerships, and gained increasing recognition for its contribution to biodiversity monitoring and climate change research. This progress has been underpinned by the commitment of volunteers, strong partnerships and BirdLife Australia's standardised survey methods.

Growth in citizen scientist contributors

As can be seen in Figure 3, compared with the four years preceding commencement of the Birds With Altitude Project, the number of Birdata contributors increased by approximately 50% between 2022 - 2025. Although this increase cannot be attributed solely to Birds With Altitude, the timing strongly suggests that project promotion, organised survey activities, volunteer training and increased awareness of climate change monitoring opportunities have encouraged greater participation.

Figure 3. Number of Birdata contributors submitting surveys within the five Key Biodiversity Areas between 2018 and 2025.

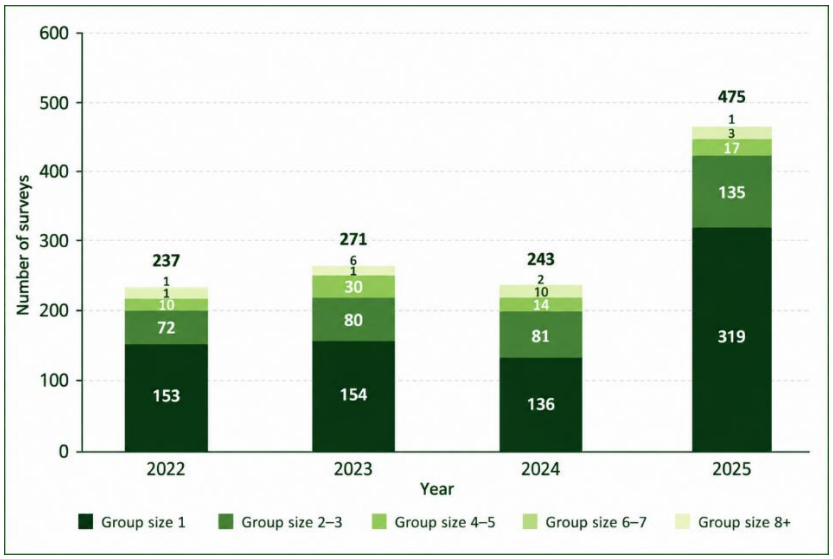


The number of Birdata contributors undertaking surveys within the Wet Tropics KBAs increased from 21–23 contributors per year before the project commenced to a record 35 contributors in 2025.

Survey participation

Although Birdata only registers the name of the individual who submits each survey, many surveys are undertaken by small groups of volunteers. Analysis of the 2025 survey data showed that 319 surveys (67%) were completed by a single observer, while the remaining 156 surveys (33%) involved two or more participants. Groups of two or three observers completed 134 surveys (28%), while groups of four or five completed 17 surveys (4%). Three surveys involved six or seven participants, and one survey involved more than eight participants.

Figure 4. Variation in participant group size completing surveys 2022 - 2025.



These results demonstrate that volunteer participation extends well beyond the number of registered Birdata contributors and highlight the important role of group-based survey activities in mentoring new participants, sharing field skills and building a knowledgeable volunteer network.

One-third of all surveys completed in 2025 involved two or more participants, demonstrating the importance of group-based survey activities for volunteer engagement, mentoring and skills development.

Misty Mountains campouts

The annual Misty Mountains campouts have become an important component of the Birds With Altitude Project. Supported by the Queensland Parks and Wildlife Service through the provision of the campground, forestry hut and access to closed national park research reserves, the campouts enable volunteers to undertake surveys across a broad elevational range between approximately 400 and 850 m above sea level within the Wooroonooran Key Biodiversity Area.

Beyond increasing survey effort, the campouts provide valuable opportunities for mentoring, knowledge sharing and social engagement, and have become a popular annual event for project participants.

Birds With Altitude Challenge Competition

Introduced in 2023, the annual Birds With Altitude Challenge Competition encourages volunteers to increase survey effort across the Wet Tropics through friendly competition. During the four-month competition in 2025, 25 participants completed 290 surveys across multiple Key Biodiversity Areas, recording 186 bird species. The competition made a substantial contribution to the record survey effort achieved during 2025 and continues to demonstrate the value of targeted engagement activities in supporting citizen science.

The Birds With Altitude Challenge Competition contributed to the record survey effort achieved in 2025.

Table 2. Prize supporters for the Birds With Altitude Challenge Competition, 2023–2025.

Year	Prize Supporters
2023	Mamu Tropical Skywalk; Skyrail Rainforest Cableway
2024	Murray Hunt, Daintree Boatman Wildlife Cruises
2025	Wildlife Habitat Port Douglas; Phil Gregory and Jun Matsui, Sicklebill Safaris / Cassowary Tours
2025	Alan Gillanders, Wildlife Nature Guide

Australian Ornithological Conference 2025

In November 2025, Birds With Altitude volunteers presented a project poster at the Australian Ornithological Conference in Perth. The presentation highlighted the project's objectives, monitoring approach and achievements, increasing national awareness of the contribution that citizen scientists can make to long-term biodiversity monitoring and climate change research.

Partnerships and collaboration

The success of Birds With Altitude is founded on strong partnerships between volunteers, conservation organisations, researchers and land managers. During the reporting period the project continued to benefit from support provided by BirdLife Australia, BirdLife Townsville, Queensland Parks and Wildlife Service, the Wet Tropics Management Authority, local councils, Wren McLean (organiser of the Paluma Cassowary Citizen Science Weekend), conservation organisations and Traditional Owners.

During 2026 the project also strengthened links with researchers from James Cook University and Griffith University, creating opportunities for collaborative analysis of the growing monitoring dataset and conservation planning.

Recognition

As the project has expanded, Birds With Altitude has received increasing recognition for its contribution to biodiversity monitoring within the Wet Tropics. In 2024, BirdLife Northern Queensland received the Wet Tropics Management Authority Chair's Award in recognition of the group’s exceptional level of commitment to the conservation of Queensland’s Wet Tropics World Heritage Area. The project was also nominated for a Cassowary Award for its contribution to citizen science, research and community engagement.

Birds With Altitude has evolved from a pilot monitoring project into a region-wide citizen science program providing valuable information to support biodiversity monitoring, research and conservation in Queensland's Wet Tropics World Heritage Area.

8. Survey coverage and effort

Since the project commenced in 2022, survey effort has increased substantially, providing improved geographic and elevational coverage of Wet Tropics rainforest habitats.

Annual survey effort

A total of 1,226 BirdLife Australia standard 2 ha 20-minute searches and 500 m area searches were completed within the five project Key Biodiversity Areas between 2022 and 2025. Survey effort increased markedly over the four years, reaching a record 475 surveys in 2025.

Figure 5. Total number of surveys completed in the five Key Biodiversity Areas since 2018, illustrating the increase in surveys completed since the Bird With Altitude Project began in 2022.

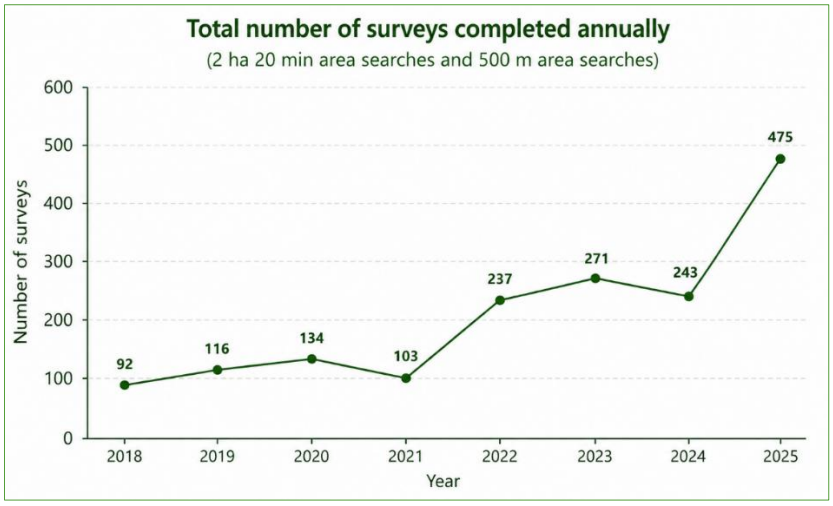
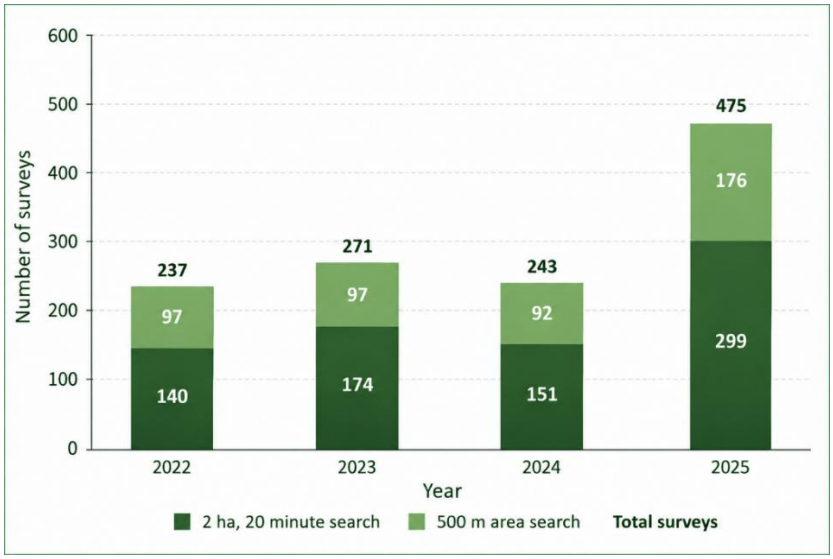
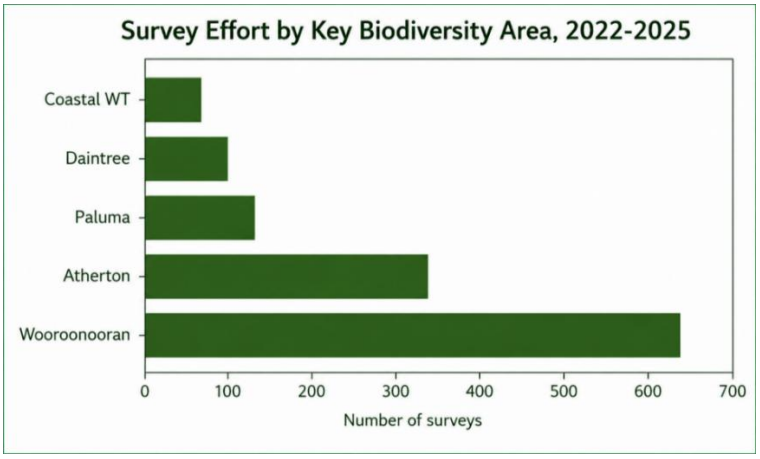


Figure 6. Number of 2 ha 20-min searches and 500 m area searches completed annually since the Bird With Altitude Project began in 2022.



Survey coverage across Key Biodiversity Areas

Figure 7. Number of surveys completed (survey effort) in each Key Biodiversity Area since the Bird With Altitude Project began in 2022.



Elevational coverage

Monitoring climate change impacts on Wet Tropics rainforest birds requires surveys across the full elevational range occupied by rainforest species. Since 2022, habitats from near sea level to upland rainforest have been surveyed, and in some years surveys have been completed on the highest accessible rainforest peaks. Lowland survey effort has remained relatively consistent, although fewer surveys have been undertaken there than at mid elevations.

Surveys above 1,100 m asl present significant logistical challenges. Many sites are remote and accessible only via long, steep walking tracks requiring a full day or more of fieldwork. Consequently, monitoring at the highest elevations depends on the commitment of experienced volunteers willing to undertake these demanding surveys.

Despite these challenges, the project achieved its greatest elevational extent in 2025, with surveys ranging from 6 m above sea level to 1,605 m on the summit of Mount Bartle Frere. This broad coverage provides a strong foundation for detecting future changes in species distributions and population health associated with climate change.

Figure 8. Elevational range of surveys undertaken between 2022 and 2025.

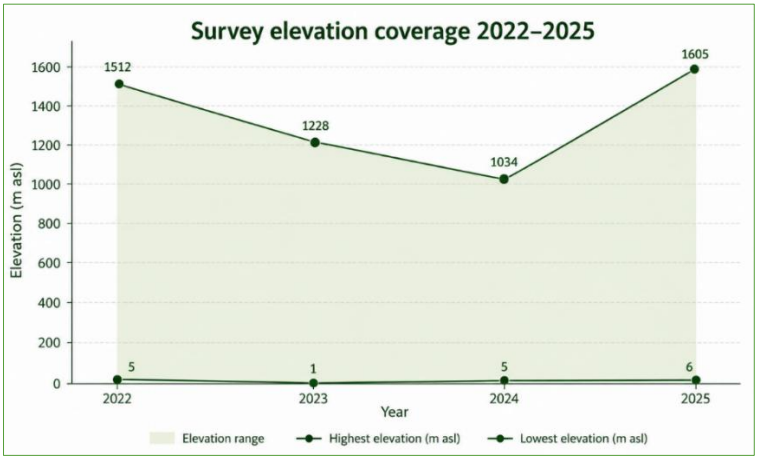
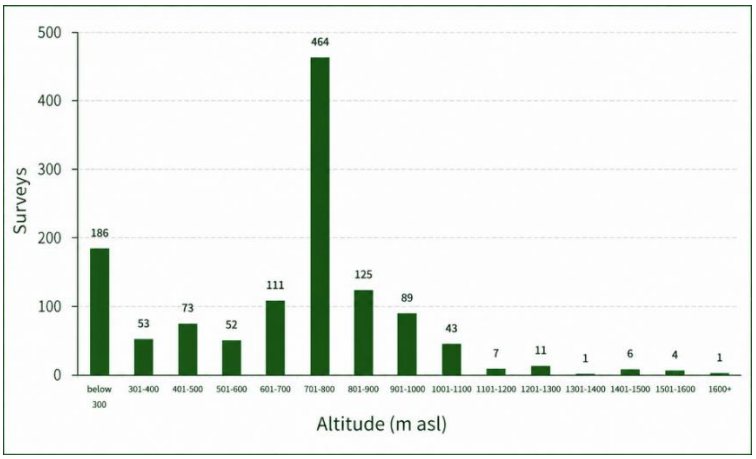
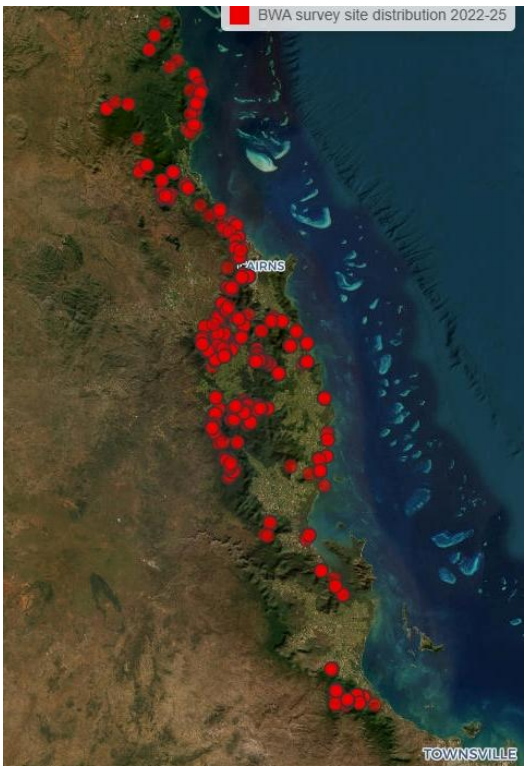


Figure 9. Number of survey records at various altitudes based on four years data (2022 - 2025).



Survey site distribution

Figure 10. Distribution of survey sites (2022 and 2025).



Access challenges

Extreme weather, flooding and landslides affected access to many survey locations between 2023 and 2025. Highways, range roads and National Parks were closed for extended periods due to road, track and infrastructure damage. The Mount Lewis Road in the Daintree Key Biodiversity Area, for example, remained closed for approximately 20 months before reopening in late 2025. Despite these constraints, volunteers maintained strong survey effort across accessible areas and achieved a record number of surveys in 2025.

Species recorded

Two hundred and fifty-six bird species were recorded (see Appendix 1 for the complete list of birds detected).

In summary, between 2022 and 2025:

1,226 surveys completed across five Key Biodiversity Areas
82 Birdata contributors
256 bird species recorded
surveys undertaken from 6 - 1,605 m asl

9. Species accounts

The following species accounts summarise survey record results for selected Wet Tropics rainforest birds between 2022 and 2025. The accounts focus primarily on threatened, near-threatened and climate-sensitive endemic taxa identified in *The Action Plan for Australian Birds 2020* (Garnett & Baker 2021), together with the Southern Cassowary and Blue-faced Parrotfinch, two additional rainforest species of high conservation interest. The Spectacled Monarch, a non-endemic, widespread rainforest generalist that is not currently considered threatened, has also been included to provide a comparison with the more climate-sensitive endemic taxa.

Each account provides a brief overview of the species' ecology and conservation status, followed by a summary of survey results, including elevational and spatial distributions, breeding related records where available, and a comparison with published information. Together, these accounts establish an important baseline for long-term monitoring and will assist in detecting future changes in species presence, abundance, distribution and breeding activity associated with climate change and other environmental pressures across the Wet Tropics.

9.1 Fernwren (*Oreoscopus gutturalis*)

Fernwren image courtesy of Dominic Chaplin.

Background

The Fernwren is a Wet Tropics endemic species restricted to rainforest habitats of north Queensland, from the Paluma Range near Townsville, to the Big Tableland near Cooktown. It is most strongly associated with cool, wet rainforest, particularly gullies, gorges and forests with dense fern and ground-layer vegetation. The species forages primarily on small invertebrates extracted from leaf litter. Its plain plumage, secretive behaviour and preference for the ground layer can make it difficult to detect (BirdLife Australia 2023; Freeland & Gregory 2023).

The elevational distribution of the Fernwren varies geographically in response to rainfall patterns. In wetter areas, such as Mossman Gorge, the species has been recorded historically as low as 100 m asl, whereas in drier areas it is rarely recorded below 900 m asl. The core elevational distribution is generally considered to be between 450 and 1,500 m asl (Freeland & Gregory 2023).

The species was uplisted from Least Concern to Endangered in *The Action Plan for Australian Birds* 2020 due to evidence of a substantial population decline over three generations and its high vulnerability to climate change. Long-term monitoring identified Fernwren as one of several upland rainforest species that had experienced declines as predicted in climate change modelling. Because the species is largely confined to cooler upland environments, continued warming temperatures are expected to reduce the extent of suitable habitat and resource availability, while also increasing the risk of direct mortality during heatwaves and other extreme weather events (Williams et al 2021).

As one of the Wet Tropics bird species considered most vulnerable to climate change, the Fernwren is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 126 Fernwren survey records were obtained between 2022 and 2025. The species was recorded between 496 and 1,530 m asl during the reporting period, although most detections occurred above 700 m asl.

Fernwrens were recorded in the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs, with most records originating from Wooroonooran, where survey effort was greatest.

Breeding records

Evidence of breeding was recorded in 2022, when two adults and a juvenile were observed together.

As breeding behaviour is not consistently recorded in Birdata, the absence of breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 11. Elevational distribution of Fernwren records each year, 2022 - 2025.

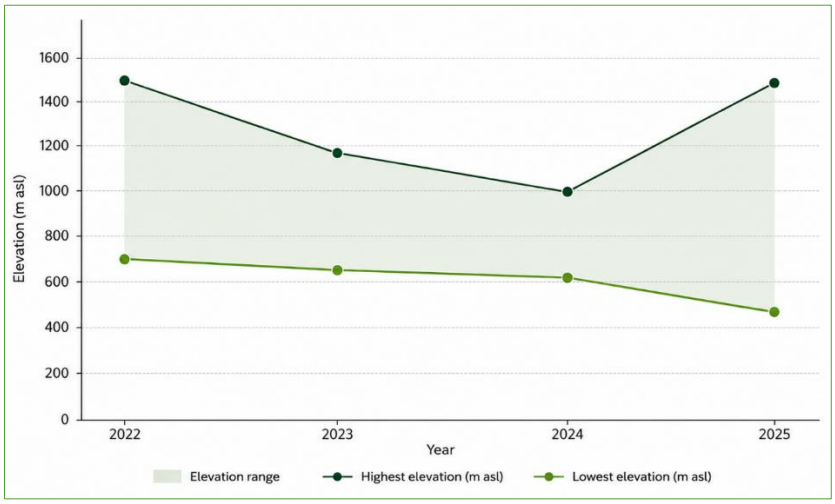
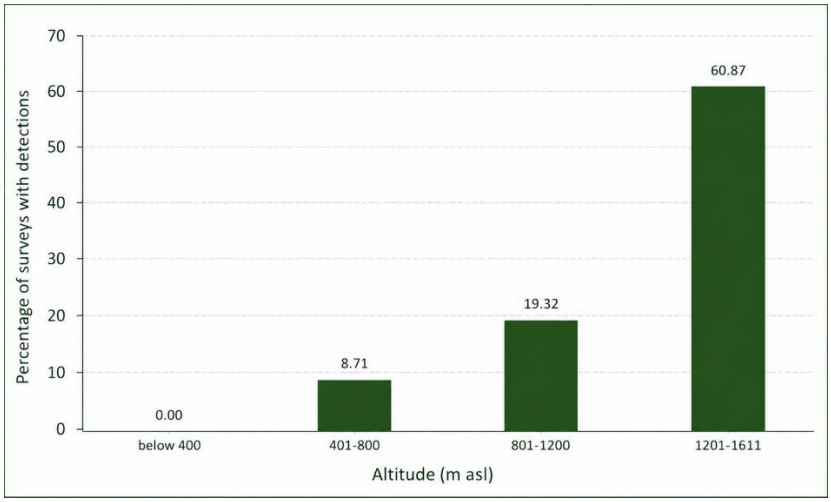


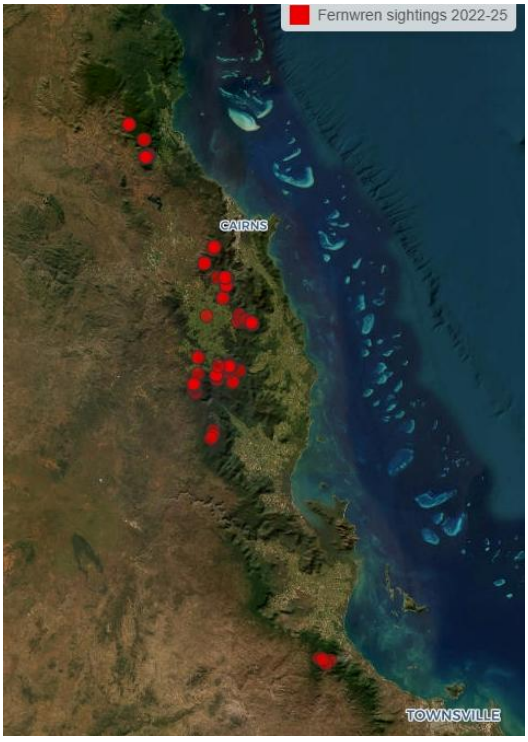
Figure 12. Percentage of surveys with Fernwren detections at various altitudes based on four years data (2022 - 2025).



Fernwren detection rates increased strongly with elevation, from no detections below 400 m asl to 8.7% at 401–800 m, 19.3% at 801–1,200 m and 60.9% above 1,200 m asl. This reflects the species' strong association with upland rainforest, although the highest detection rate should be interpreted cautiously due to limited survey effort above 1,200 m asl.

Spatial distribution

Figure 13. Distribution of Fernwren records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The results closely align with the published elevational distribution of the Fernwren. The species was recorded within the expected elevational range reported by Freeland & Gregory (2023), with more than 92% of observations occurring above 700 m asl.

The absence of records below 496 m asl is consistent with the species' preference for cool, wet rainforest environments and may reflect both habitat requirements and the limited availability of suitable lowland habitat. The concentration of records at elevations above 700 m asl highlights the importance of upland rainforest refugia for the species and reinforces concerns regarding its vulnerability to climate change.

Continued monitoring across the elevational gradient in Fernwren suitable habitat will help determine whether future changes first occur through shifts in abundance or occupancy before measurable changes in elevational distribution become evident.

With 92% of records above 700 m asl, the Fernwren remains strongly associated with mid-elevation and upland rainforest, reinforcing its status as one of the Wet Tropics bird species most vulnerable to climate-driven habitat change

9.2 Wet Tropics Australian King Parrot (*Alisterus scapularis minor*)

Wet Tropics Australian King Parrot image courtesy of © Keith Fisher 2025 birdlifephotography.org.au.

Background

The Wet Tropics Australian King-Parrot is an endemic subspecies of the Australian King-Parrot restricted to the rainforests of north Queensland, occurring from Mount Amos, south of Cooktown, to Paluma near Townsville. It inhabits a range of rainforest types and adjacent wet sclerophyll forests, where it feeds primarily on fruits, seeds, flowers and other plant material. The species is typically encountered singly, in pairs or small groups and is often detected by its distinctive calls as it moves through the forest canopy (BirdLife Australia 2023; Collar & Boesman 2020).

The subspecies was listed as Endangered in *The Action Plan for Australian Birds 2020* due to evidence of a substantial population decline of 50-80% over the last three generations (28 years) as was predicted for upland Wet Tropics birds by climate change modelling. Climate change is likely to affect the Wet Tropics King-Parrot through both direct and indirect mechanisms. Increasingly frequent and intense heatwaves may cause direct mortality, while longer, hotter and drier dry seasons are expected to reduce the availability of food resources and suitable habitat, potentially affecting survival and breeding success (Williams et al 2021).

As one of the Wet Tropics bird taxa considered most vulnerable to climate change, the Wet Tropics Australian King-Parrot is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

Wet Tropics Australian King-Parrots were recorded in all years of the reporting period. A total of 79 survey records were obtained between 2022 and 2025.

The species was recorded between 128 m asl at Josephine Falls (2023) and 1,529 m asl near the summit of Mount Bartle Frere (2025). Records were obtained from the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs, with most records originating from Wooroonooran and the Atherton Tablelands, where survey effort was greatest.

The findings presented here are based on a relatively small dataset (79 records over four years) and should therefore be interpreted with caution. Additional survey effort across the species' elevational range would improve confidence in the observed patterns.

Breeding records

No breeding activity was recorded during the reporting period.

As breeding behaviour is not consistently recorded in Birdata, the absence of breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 14. Elevational distribution of Wet Tropics Australian King-Parrot records each year, 2022 - 2025.

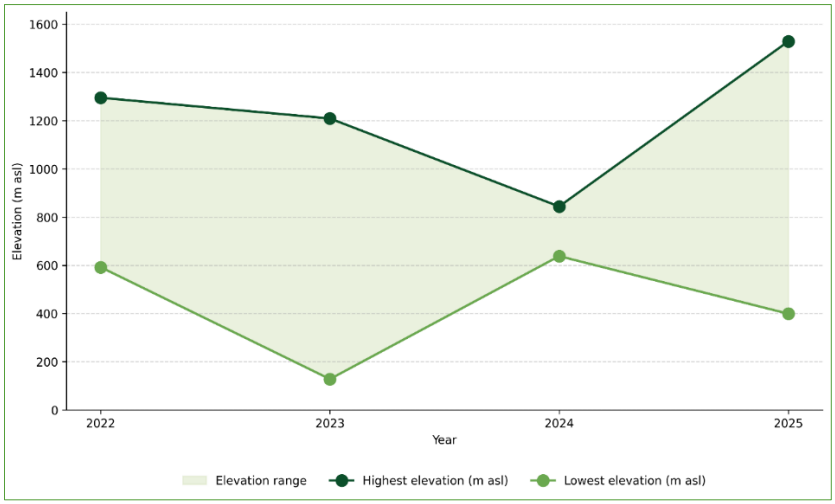
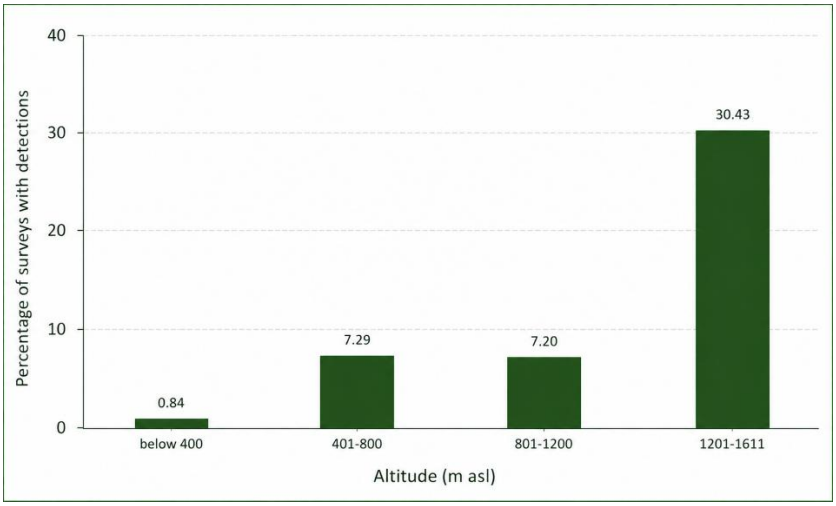


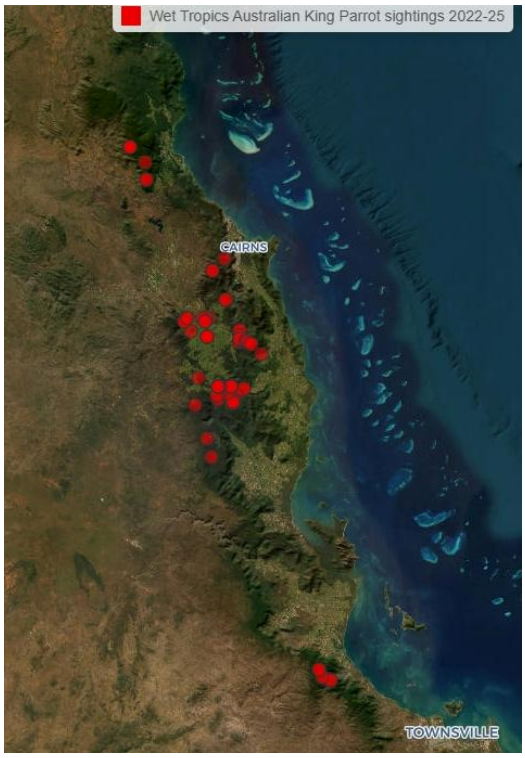
Figure 15. Percentage of surveys with Wet Tropics Australian King Parrot detections at various altitudes based on four years data (2022 - 2025).



Wet Tropics Australian King-Parrot detection rates were low below 400 m asl (0.8%) and similar between 401–800 m (7.3%) and 801–1,200 m asl (7.2%), before increasing to 30.4% above 1,200 m asl, indicating a stronger concentration in the mid-elevation and upland zones. However, the relatively small sample size warrants caution in interpreting this pattern.

Spatial distribution

Figure 16. Distribution of Wet Tropics Australian King-Parrot records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The results indicate that the Wet Tropics Australian King-Parrot occupies a broad elevational range, extending from lowland rainforest to near the summit of Mount Bartle Frere. The recorded elevational range of 128 - 1,529 m asl is consistent with that reported for the Australian King-Parrot as a whole, which occurs from sea level to approximately 1,600 m asl across a range of forest and woodland habitats (BirdLife Australia 2023; Collar & Boesman 2020; Menkhorst et al. 2023).

Despite this broad elevational range, only a small proportion of records were obtained below 400 m asl, while 90% of records were concentrated above 600 m asl. This suggests that the subspecies may be more strongly associated with the upper part of the mid-elevation zone and upland habitats than is currently documented. Additional survey effort, particularly in lowland rainforest areas, would help clarify this pattern.

Continued monitoring of the Wet Tropics Australian King-Parrot across its elevational range will assist in detecting future changes in occurrence, abundance, distribution and habitat use associated with climate change.

Only 79 records reported the presence of the endangered Wet Tropics Australian King Parrot. The subspecies was recorded across a broad elevational range, but 90% of records were obtained above 600 m asl, suggesting a strong association with the upper part of the mid-elevation zone and upland rainforest habitats.

9.3 Wet Tropics Brown Gerygone (*Gerygone mouki mouki*)

Wet Tropics Brown Gerygone image courtesy of Alan Sweet

Background

The Brown Gerygone is a polytypic species comprising three recognised subspecies. The Wet Tropics subspecies, *Gerygone mouki mouki*, occurs in north-eastern Queensland from the Big Tableland and Mount Amos near Cooktown south to the Paluma area near Townsville (BirdLife Australia 2023; Gregory 2020).

The Wet Tropics Brown Gerygone occupies a range of habitats, principally rainforest and regrowth forest, but also occurs in wet sclerophyll forest, riparian vegetation and, less commonly, mangroves and dry sclerophyll woodland. It feeds mainly on small invertebrates gleaned from foliage and bark, typically within the mid and upper canopy. Within the Wet Tropics, it is most frequently associated with gullies and elevations above 250 m asl, although the species as a whole ranges from sea level to higher elevations along the Great Dividing Range (BirdLife Australia 2023; Gregory 2020).

The subspecies was listed as Endangered in *The Action Plan for Australian Birds 2020* due to evidence of substantial population decline. Monitoring identified a 53.9% decline in the total population over three generations (10 years), with the strongest declines occurring at elevations below 450 m asl. This was supported by analysis of Birdata records which also mirrored significant population declines between 2000-2007 and 2013-2019. Similar to previous taxa, the direct and indirect impacts of climate change were the main identified threats (Williams et al 2021).

As one of the Wet Tropics bird taxa considered most vulnerable to climate change, the Wet Tropics Brown Gerygone is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 496 Wet Tropics Brown Gerygone survey records were obtained between 2022 and 2025, making it one of the most frequently recorded threatened Wet Tropics taxa monitored by the project. The species was recorded between 1 and 1,180 m asl across the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs. Although the subspecies occupied a broad elevational range, records from lowland habitats were uncommon.

Only 12 records (2.4%) were obtained below 400 m asl, including records from Daintree KBA: Daintree National Park (1 - 21 m asl), Paluma KBA: Jourama Falls (58 m asl), Big Crystal Creek (49 - 54 m asl), Little Crystal Creek (347 m asl), and Wooroonooran KBA: Josephine Falls (112 m asl) and K Tree Road (394 m asl).

Where group size was recorded, observations ranged from one to four birds.

Breeding records

Evidence of breeding was recorded throughout the reporting period and across multiple stages of the breeding cycle in the Atherton Tablelands and Wooroonooran KBAs.

A record of birds collecting cobwebs and undertaking nest-building forays was reported in August 2022. In 2023, an adult was recorded on a nest in August, and young out of the nest being fed in October. In 2024, an adult carrying nesting material was observed in September. During 2025, a recently fledged young bird was recorded begging for food in February, and an adult was observed on a nest in October.

These observations span much of the published breeding season (June-February; Gregory 2020) and confirm that breeding activity continues to occur within the population.

Elevation distribution

Figure 17. Elevational distribution of Wet Tropics Brown Gerygone records each year, 2022 - 2025.

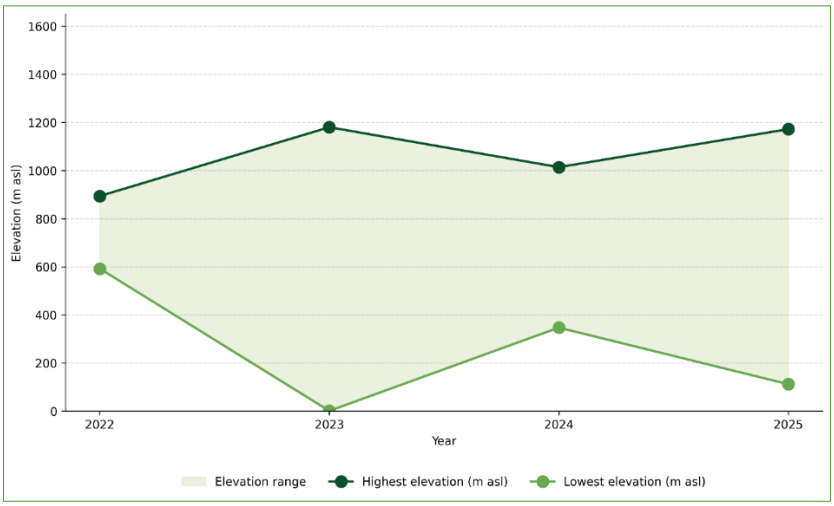
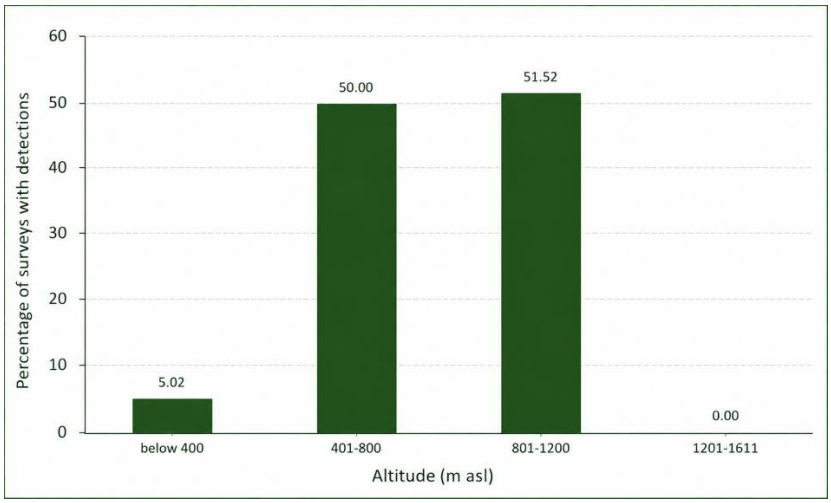


Figure 18. Percentage of surveys with Wet Tropics Brown Gerygone detections at various altitudes based on four years data (2022 - 2025).

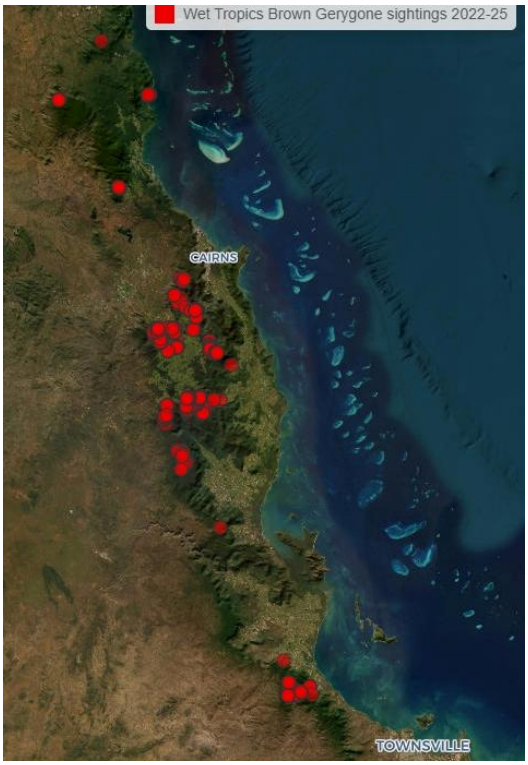


Wet Tropics Brown Gerygone detection rates were substantially higher at mid and upland elevations, increasing from 5.0% of surveys below 400 m asl to 50.0% between 401–800 m and 51.5% between 801–1,200 m asl. No detections were recorded above 1,200 m asl.

Additional survey effort would improve understanding of the subspecies' distribution in lowland rainforest and better define its upper elevational limits.

Spatial distribution

Figure 19. Distribution of Wet Tropics Brown Gerygone records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The results closely align with published accounts of the subspecies' elevational distribution. Although recorded from near sea level to 1,180 m asl, the subspecies was detected in only 5.0% of lowland surveys, indicating that it is most strongly associated with cooler mid-elevation and lower upland rainforest. Survey effort above 1,200 m asl was extremely limited and may have influenced the apparent upper elevational distribution.

Regular breeding observations between 2022 and 2025 in the Atherton Tablelands and Wooroonooran KBAs indicate that the subspecies remains reproductively active in these areas. The absence of breeding records from the Daintree and Paluma KBAs should not be interpreted as evidence that breeding is not occurring there.

Continued monitoring across the species' elevational range will improve understanding of long-term population trends and responses to climate change.

Wet Tropics Brown Gerygones were recorded across a broad elevational range, but only 5.0% of surveys recorded the subspecies from lowland habitats below 400 m asl, indicating a strong association with mid-elevation and lower upland rainforest habitats.

9.4 Atherton Scrubwren (*Sericornis keri*)

Atherton Scrubwren image courtesy of Peter Valentine.

Background

The Atherton Scrubwren is endemic to north-eastern Australia, occurring from Mount Finnegan near Cooktown south to Kirrama National Park near Cardwell. The species is closely associated with upland rainforest within the Wet Tropics (BirdLife Australia 2023; Gregory 2020).

In the northern Wet Tropics, Atherton Scrubwrens are largely restricted to upland rainforest, typically between 600 and 1,600 m asl, although they may occasionally occur as low as 420 m asl. In contrast, Wet Tropics Large-billed Scrubwrens (*Sericornis maculatus viridior*) generally occupy lower elevations. However, in the southern Wet Tropics, where Atherton Scrubwrens are rare or absent, Wet Tropics Large-billed Scrubwrens occur at higher elevations than they do in the north (BirdLife Australia 2023; Gregory 2020).

The species was listed as Vulnerable in *The Action Plan for Australian Birds 2020* due to evidence of substantial population decline identified in two independent studies, particularly at lower elevations. Long-term monitoring identified the Atherton Scrubwren as one of several upland Wet Tropics bird species experiencing declines consistent with climate-driven change projections. As a high-elevation rainforest specialist, the species may be particularly vulnerable to future warming temperatures, increased frequency and duration of heatwaves and droughts, and the contraction of suitable upland habitat (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Atherton Scrubwren is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

Atherton Scrubwrens were recorded in all years of the reporting period. Only 65 survey records were obtained between 2022 and 2025.

The species was recorded between 592 m asl on the Windin Falls Track in Wooroonooran National Park (2022) and 1,529 m asl on Mount Bartle Frere (2025). Records were obtained from the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs.

Of the 65 survey records, 71% were obtained above 800 m asl.

The findings presented here are based on a small dataset and should therefore be interpreted with caution. Atherton Scrubwrens can be difficult to distinguish from Wet Tropics Large-billed Scrubwrens, particularly at mid-elevations where their distributions overlap. Both species inhabit dense rainforest understorey and are often detected only briefly or by call, increasing the potential for misidentification.

Breeding records

Breeding activity was recorded on only two occasions during the reporting period, both in Koombaloomba National Park within the Wooroonooran KBA in October 2025.

One observation involved an individual carrying vegetative material in its bill, likely for nest construction. The second record documented at least two dependent young out of the nest, including one individual observed being fed by an adult.

As breeding behaviour is not consistently recorded in Birdata, the absence of breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 20. Elevational distribution of Atherton Scrubwren records each year, 2022 - 2025.

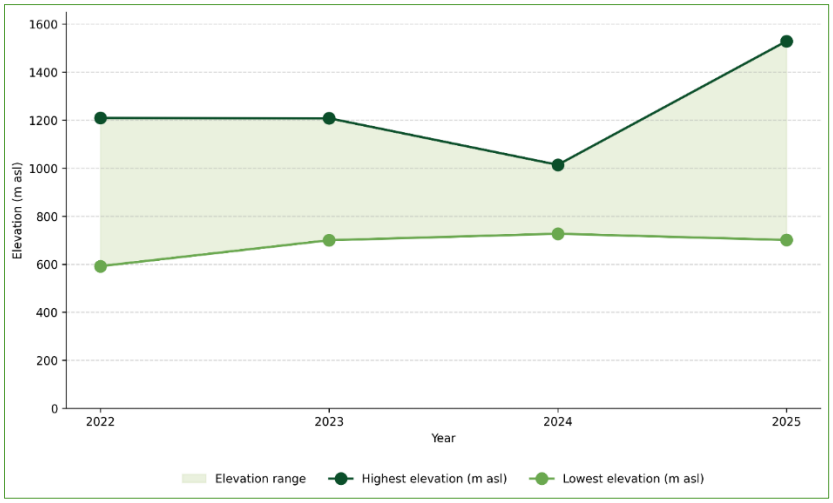
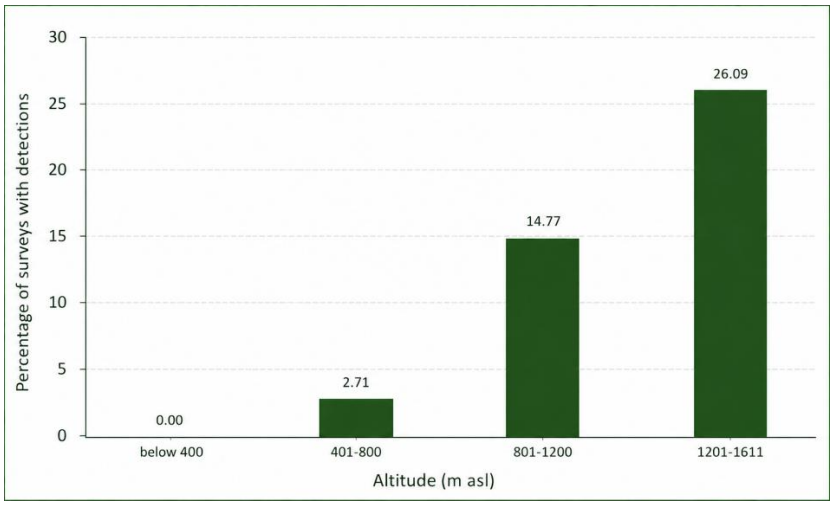


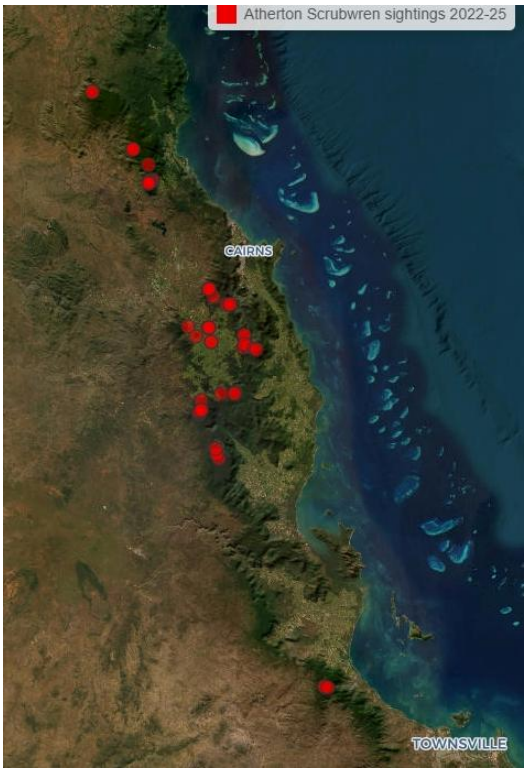
Figure 21. Percentage of surveys with Atherton Scrubwren detections at various altitudes based on four years data (2022 - 2025).



All Atherton Scrubwren records were obtained above 592 m asl. Detection rates increased strongly with elevation, from no detections below 400 m asl to 2.7% of surveys between 401–800 m, 14.8% between 801–1,200 m, and 26.1% above 1,200 m asl. The increasing detection rate, particularly above 800 m asl, supports published descriptions of the species as an upland rainforest specialist.

Spatial distribution

Figure 22. Distribution of Atherton Scrubwren records within Wet Tropics KBAs, 2022 - 2025.



Discussion

Despite the relatively small dataset, the results closely align with published descriptions of the Atherton Scrubwren as an upland rainforest specialist. The recorded elevational range of 592-1,529 m asl is consistent with published accounts.

The predominance of records (71%) from upland habitats above 800 m asl is one of the strongest elevational patterns observed amongst the species assessed in this report. This reinforces concerns regarding the species' vulnerability to climate change, as warming temperatures may reduce the extent of suitable upland habitat and limit opportunities for further upslope movement.

The limited number of breeding records most likely reflects under-reporting rather than an absence of breeding activity. Continued monitoring across the species' elevational range will help identify future changes in occurrence, abundance, distribution, and breeding activity.

Atherton Scrubwren detection rates increased markedly above 800 m asl, reinforcing the species' strong association with upland rainforest and highlighting its vulnerability to climate-driven habitat change.

9.5 Mountain Thornbill (*Acanthiza katherina*)

Mountain Thornbill image courtesy of Doug Herrington.

Background

The Mountain Thornbill is a Wet Tropics endemic species restricted to upland rainforests of north-eastern Queensland, occurring between Cooktown and Townsville. It inhabits rainforest and adjacent wet sclerophyll forest, where it predominantly forages in the foliage of the mid-storey and canopy, often joining mixed-species feeding flocks. (BirdLife Australia 2023; Freeland 2024).

The core elevational distribution of the Mountain Thornbill is generally considered to be between 600 and 1,600 m asl, with highest concentrations typically occurring above 1,200 m asl. Although it has occasionally been recorded at much lower elevations in wetter parts of the Wet Tropics, it is generally scarce below 600 m asl (Freeland 2024).

The species was listed as Vulnerable in *The Action Plan for Australian Birds 2020* due to evidence of an estimated 30-50% population decline over three generations (10 years). Long-term monitoring identified the Mountain Thornbill as one of several upland Wet Tropics bird species experiencing declines consistent with climate-driven change projections. As a small species strongly associated with cooler upland rainforest habitats, it may be particularly vulnerable to increasing temperatures, more frequent heatwaves, longer dry seasons and the contraction of suitable upland habitat (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Mountain Thornbill is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 76 Mountain Thornbill survey records were obtained between 2022 and 2025.

The species was recorded between 697 m asl at Yungaburra (2025) and 1,530 m asl on Mount Bartle Frere (2025). Records were obtained from the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs.

The findings presented here are based on a relatively small dataset (76 records over four years) and should therefore be interpreted with caution.

One observation from Tully Falls Road recorded two Mountain Thornbills participating in a mixed-species feeding flock, behaviour consistent with published accounts of the species.

Breeding records

No breeding records were reported during the reporting period.

As breeding behaviour is not consistently recorded in Birdata, the absence of breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 23. Elevational distribution of Mountain Thornbill records each year, 2022 - 2025.

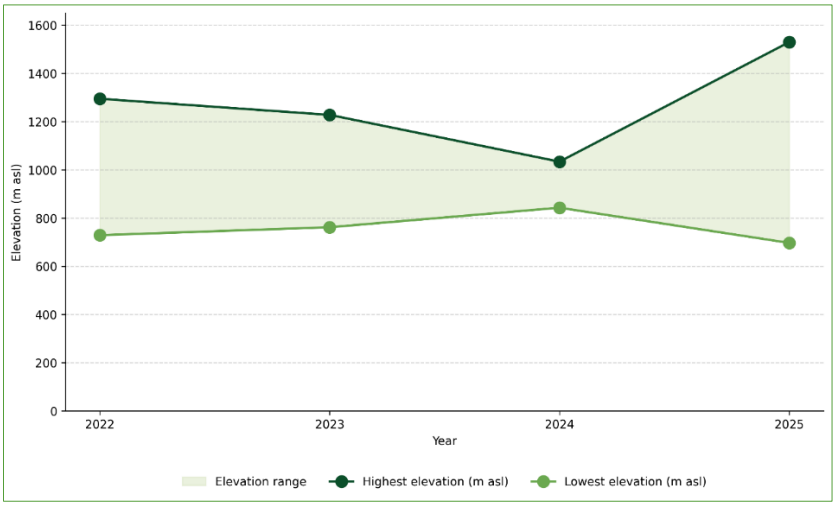
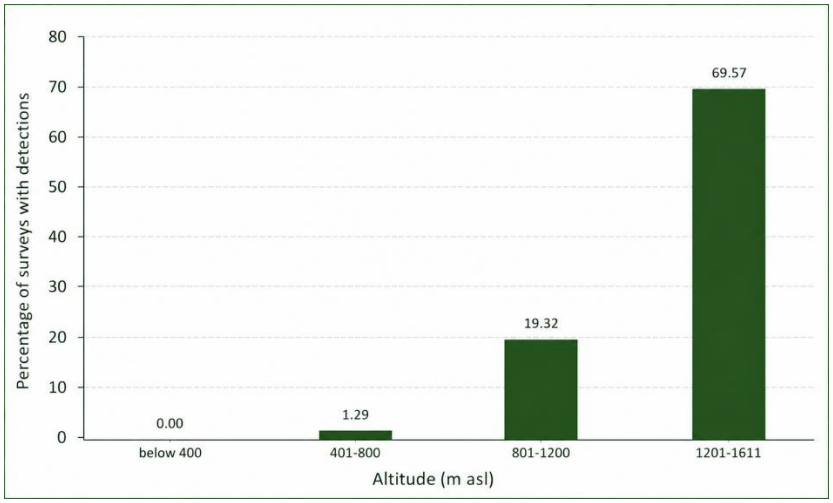


Figure 24. Percentage of surveys with Mountain Thornbill detections at various altitudes based on four years data (2022 - 2025).

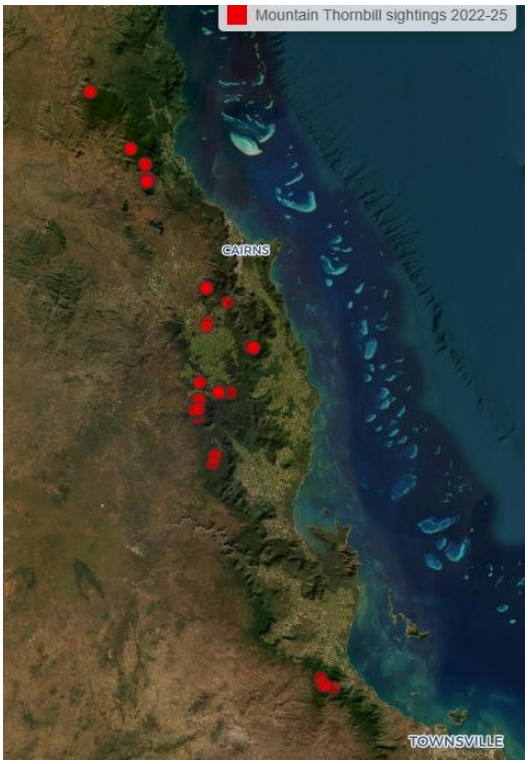


Mountain Thornbill detection rates increased markedly with elevation, from no detections below 400 m asl to 1.3% of surveys between 401–800 m, 19.3% between 801–1,200 m, and 69.6% above 1,200 m asl. The sharp increase above 800 m asl demonstrates the species' strong association with upland and high-elevation rainforest and supports published descriptions of the Mountain Thornbill as an upland rainforest specialist.

Continued monitoring across mid altitude and upland rainforest will improve understanding of presence, abundance or occupancy before measurable changes in elevational distribution may become evident.

Spatial distribution

Figure 25. Distribution of Mountain Thornbill records within Wet Tropics KBAs, 2022–2025.



Discussion

Although based on a relatively small dataset and therefore requiring cautious interpretation, the results closely align with published descriptions of the Mountain Thornbill as an upland rainforest specialist. The recorded elevational range of 697-1,530 m asl falls within the core elevational range of 600-1,600 m asl reported by Freeland (2024).

The predominance of records from upland habitats represents one of the strongest elevational patterns observed among the species assessed in this report. This reinforces concerns about the species' vulnerability to climate change, as future warming may reduce the extent of suitable upland habitat and limit opportunities for further upslope movement.

Although the Mountain Thornbill has occasionally been recorded at lower elevations, no records below 697 m asl were obtained during the reporting period.

The absence of breeding records during the reporting period most likely reflects under-reporting rather than an absence of breeding activity. Continued monitoring across the Wet Tropics Key Biodiversity Areas will help identify future changes in occurrence, abundance, distribution, and breeding activity.

Mountain Thornbill detection rates rose dramatically with elevation, increasing from just 1.3% of surveys between 401 and 800 m asl to nearly 70% above 1,200 m asl, illustrating its strong dependence on high-elevation rainforest.

9.6 Bower's Shrikethrush (*Colluricincla boweri*)

Bower's Shrikethrush image courtesy of Peter Valentine.

Background

Bower's Shrikethrush is a Wet Tropics endemic species restricted to north-eastern Queensland between Cooktown and Townsville (Boles 2020). It inhabits tropical rainforest and rainforest regrowth, and is only rarely recorded in adjacent wet sclerophyll forest, feeding on invertebrates and occasionally vertebrates, caught in various canopy layers, rarely on the ground. The species is generally associated with upland rainforest environments and typically occurs above 400 m asl (Boles 2020; BirdLife Australia 2023).

The species was listed as Vulnerable in *The Action Plan for Australian Birds 2020* due to evidence of population decline. Although trends were not consistent across all monitoring datasets, a substantial population decline was considered likely. Declines were most pronounced at mid-elevations (450-850 m asl), while upland populations showed slower and less consistent declines, a pattern consistent with climate change projections for the Wet Tropics. As with several other Wet Tropics endemic birds, climate change is considered the primary long-term threat to the species (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, Bower's Shrikethrush is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 143 Bower's Shrikethrush survey records were obtained between 2022 and 2025.

The species was recorded between 346 m asl at Mamu Rainforest Skywalk in the Wooroonooran KBA (2023) and 1,295 m asl at Mount Fisher in the Wooroonooran KBA (2025). Records were obtained from the Atherton Tablelands (18 records), Daintree (12 records), Paluma (17 records) and Wooroonooran (96 records) KBAs.

Although the species was recorded across a broad elevational range, most detections were above 700 m asl.

Breeding records

Breeding activity was recorded on one occasion during the reporting period. In September 2025, a pair of birds was observed constructing a nest approximately 3 m above the ground in the Wooroonooran KBA. This observation is consistent with the published breeding season of September to December (Boles 2020).

As breeding behaviour is not consistently recorded in Birdata, the absence of breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 26. Elevational distribution of Bower's Shrikethrush records, 2022 - 2025.

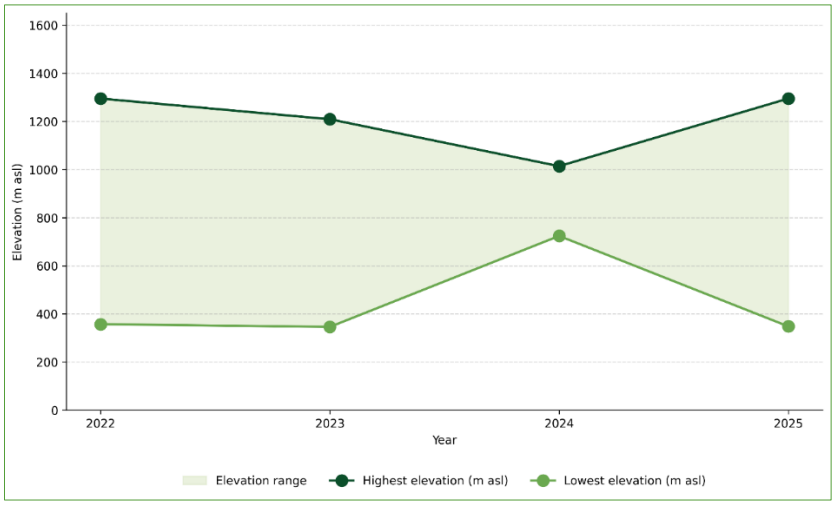
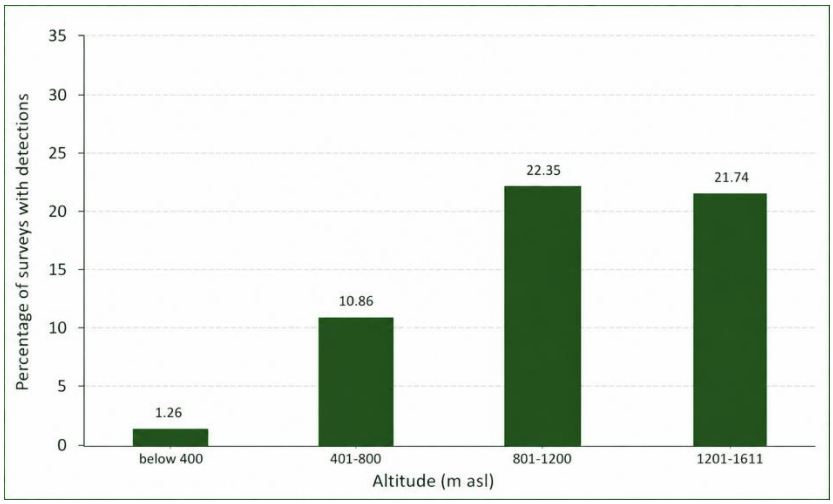


Figure 27. Percentage of surveys with Bower's Shrikethrush detections at various altitudes based on four years data (2022 - 2025).

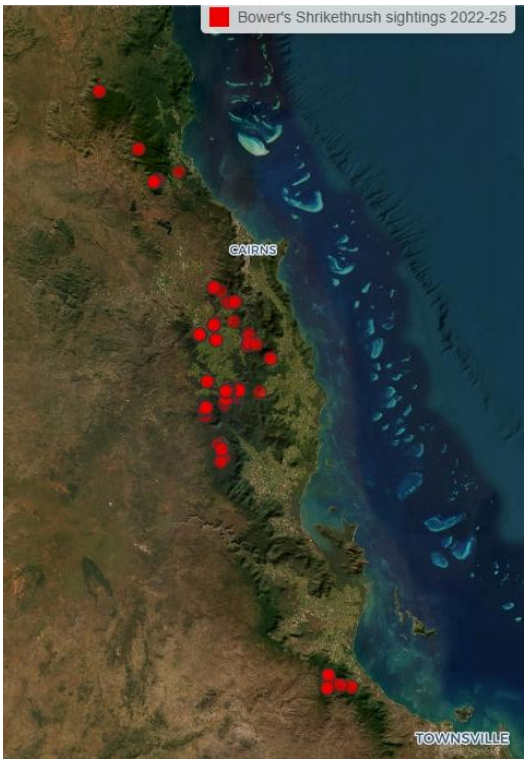


Bower's Shrikethrush detection rates increased with elevation, from 1.3% of surveys below 400 m asl to around 22% above 800 m asl. This pattern supports published descriptions of the species as an upland rainforest bird and provides a valuable baseline for detecting future climate-driven changes in its elevational distribution.

Additional surveys in the Wet Tropics, across a broad elevational gradient would assist in refining understanding of the species' distribution.

Spatial distribution

Figure 28. Distribution of Bower's Shrikethrush records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The results closely align with published descriptions of Bower's Shrikethrush as a species primarily associated with rainforest habitats above 400 m asl. Although the species was recorded as low as 346 m asl, most records were obtained from the mid-elevation and upland rainforest.

The predominance of records from the Wooroonooran KBA likely reflects the greater survey effort undertaken in that area rather than a true concentration of the population.

The records support concerns regarding the species' vulnerability to climate change. Previous studies identified the greatest declines at mid-elevations, suggesting that climate-driven changes may already be affecting parts of the species' range.

Continued monitoring will help determine whether future changes in presence, abundance, distribution, and breeding activity occur across the Wet Tropics.

Bower's Shrikethrush was consistently detected throughout the upland zone, with around one in five surveys above 800 m asl recording the species.

9.7 Victoria's Riflebird (*Ptiloris victoriae*)

Victoria's Riflebird image courtesy of ©Mark Horvath 2025 birdlifephotography.org.au

Background

Victoria's Riflebird is a Wet Tropics endemic species occurring from Mount Amos and the Big Tableland near Cooktown south to Mount Elliot near Townsville. It is most commonly associated with tropical rainforest but also occurs in adjacent wet sclerophyll forest, swamp woodland and adjacent moist habitats. Unlike many Wet Tropics endemic birds, it occupies a broad elevational range, from near sea level to at least 1,500 m asl. The species has a varied diet, feeding primarily in the mid and upper canopy on fruit, invertebrates and, occasionally, nectar (BirdLife Australia 2023; Frith & Frith 2020).

The species was listed as Vulnerable in *The Action Plan for Australian Birds 2020* due to evidence of an estimated 34.9% population decline over three generations (13 years). Long-term monitoring identified population declines consistent with climate change projections for the Wet Tropics. Climate change is considered the principal long-term threat to the species. Increasingly frequent and intense heatwaves may result in direct mortality, while longer, hotter and drier dry seasons are likely to reduce food availability and habitat suitability (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, Victoria's Riflebird is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 502 Victoria's Riflebird survey records were obtained between 2022 and 2025, making it one of the most frequently recorded threatened Wet Tropics taxa monitored by the project.

The species was recorded between 20 m asl at Cape Tribulation (2025) in the Daintree KBA and 1,295 m asl at Mount Fisher in the Wooroonooran KBA (2022 and 2025). Records were obtained from all five Wet Tropics KBAs: Atherton Tablelands, Coastal Wet Tropics, Daintree, Paluma and Wooroonooran.

Between 2022 and 2025, 13 records below 300 m asl were obtained from the Daintree KBA: Cape Tribulation - Noah Creek area (20 - 30 m asl) and Mossman Gorge (100 m asl); the Coastal Wet Tropics KBA: Tower Road near Bramston Beach (95 m asl) and Djiru National Park near Mission Beach (40 m asl); and the Wooroonooran KBA: Behana Gorge (73 m asl) and Josephine Falls (77 m asl). These records were all obtained from KBAs containing lowland rainforest habitat and were recorded between June and September.

One observation in 2023 recorded Victoria's Riflebirds feeding in a fruiting *Polyscias* tree, a food source previously reported in the literature (BirdLife Australia 2023).

Breeding records

Breeding activity was recorded on one occasion during the reporting period.

In 2023, a young bird out of the nest was observed in the Misty Mountains area of the Wooroonooran KBA. This observation is consistent with the published breeding season, which extends from at least August to February (Frith & Frith 2020).

As breeding behaviour is not consistently recorded in Birdata, the absence of breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 29. Elevational distribution of Victoria's Riflebird records each year, 2022 - 2025.

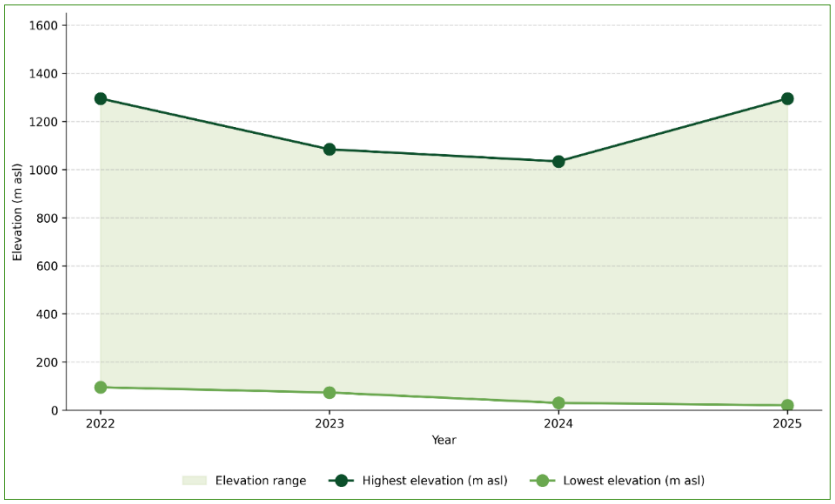
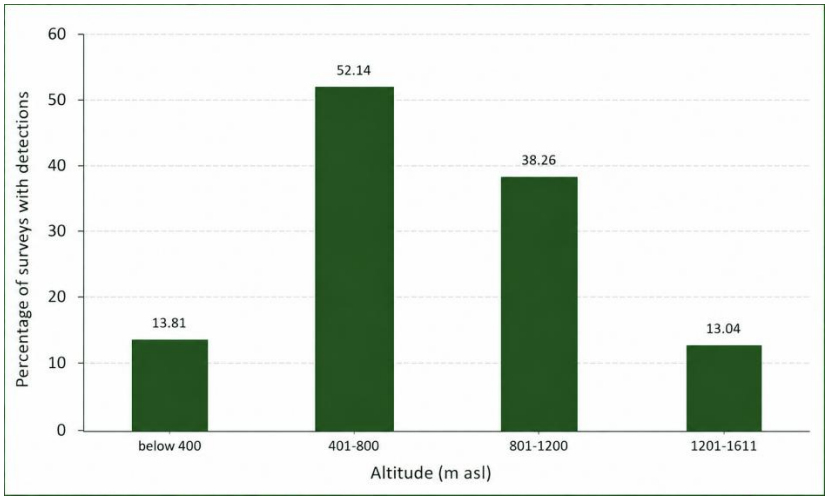


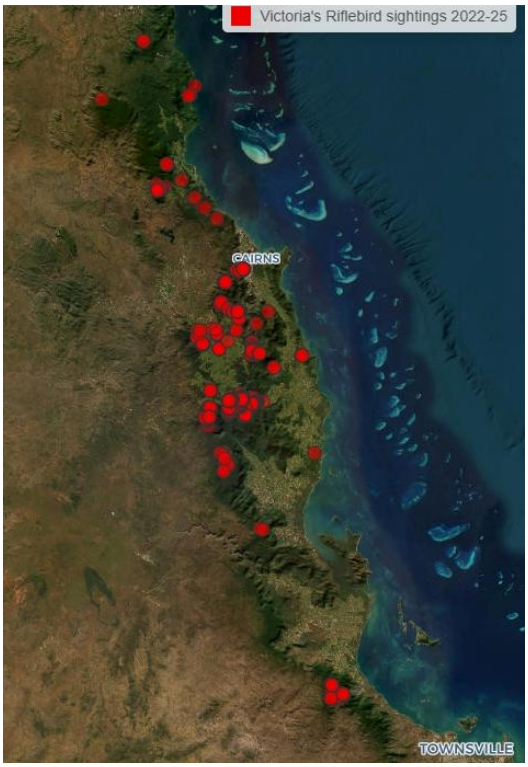
Figure 30. Percentage of surveys with Victoria's Riflebird detections at various altitudes based on four years data (2022 - 2025).



Victoria's Riflebird was most frequently detected in mid-elevation rainforest, with detection rates peaking at 52.1% of surveys between 401 and 800 m asl. Lower detection rates in lowland (13.8%) and high-elevation rainforest (13.0%) indicate that, despite its broad elevational range, the species is most commonly encountered at mid elevations.

Spatial distribution

Figure 31. Distribution of Victoria's Riflebird records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The recorded elevational range of 20-1,295 m asl supports published descriptions of Victoria's Riflebird as a widespread Wet Tropics species occurring from sea level to at least 1,500 m asl (BirdLife Australia 2023). Despite this broad distribution, detection rates peaked at mid elevations (52% of surveys between 401 and 800 m asl), declined to 38% between 801 and 1,200 m asl, and were much lower in both lowland and higher-elevation rainforest (13%). As survey effort was lower below 400 m asl and above 1,100 m asl, these patterns should be interpreted with some caution.

The concentration of lowland records between June and September suggests possible seasonal altitudinal movements, although additional surveys throughout the year are needed to distinguish seasonal movements from survey effects.

Continued monitoring across the species' broad elevational range will improve understanding of future changes in distribution, abundance and breeding activity associated with climate change.

Victoria's Riflebird occurred across a wide range of rainforest habitats, from near sea level to the uplands, indicating greater elevational flexibility than more climate-sensitive rainforest species.

9.8 Wet Tropics Large-billed Scrubwren (*Sericornis maculatus viridior*)

Wet Tropics Large-billed Scrubwren image courtesy of © Ian Wilson birdlifephotography.org.au

Background

The Wet Tropics Large-billed Scrubwren (*Sericornis maculatus viridior*) is an endemic subspecies confined to the Wet Tropics of north-eastern Queensland, ranging from Mount Amos near Cooktown south to the Paluma Range near Townsville. It inhabits tropical rainforest, including regrowth rainforest, and occasionally occurs in adjacent wet sclerophyll forest, particularly along riparian corridors and densely vegetated gullies. The subspecies feeds primarily on arthropods, gleaning prey from foliage and branches in the lower and mid-canopy, although it occasionally forages on the ground (BirdLife Australia 2023; Gregory 2020).

Unlike the similar looking Atherton Scrubwren, which is largely confined to upland rainforest, the Wet Tropics Large-billed Scrubwren is more commonly associated with lowland and mid-elevation rainforest habitats, although the distributions of the two taxa overlap at intermediate elevations (BirdLife Australia 2023).

The subspecies was listed as Vulnerable in *The Action Plan for Australian Birds 2020* following evidence of an estimated 31.4% population decline, consistent with predicted climate change impacts. This decline was supported by additional unpublished monitoring undertaken by the School for Field Studies and by changes in reporting rates within Birdata. Climate change is considered the principal long-term threat to the subspecies. Increasingly frequent and intense heatwaves may cause direct mortality, while longer, hotter and drier dry seasons are expected to reduce food availability and habitat quality (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Wet Tropics Large-billed Scrubwren is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 348 Wet Tropics Large-billed Scrubwren survey records were obtained between 2022 and 2025.

Records were obtained from all five Wet Tropics KBAs: Atherton Tablelands, Coastal Wet Tropics, Daintree, Paluma and Wooroonooran. The subspecies was recorded between 30 m asl and 1,088 m asl, with lowland records occurring in all KBAs containing lowland rainforest. The highest record (1,088 m asl) was obtained at Mount Gibson in the Daintree KBA.

Where group size was reported, observations ranged from one to four birds.

Breeding records

No breeding records were reported during the reporting period.

As breeding behaviour is not consistently recorded in Birdata, the absence of breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 32. Elevational distribution of Wet Tropics Large-billed Scrubwren records each year, 2022 - 2025.

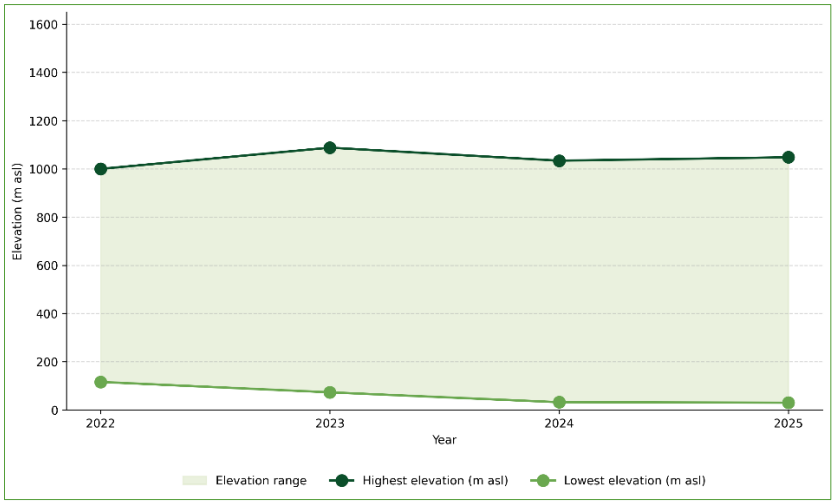
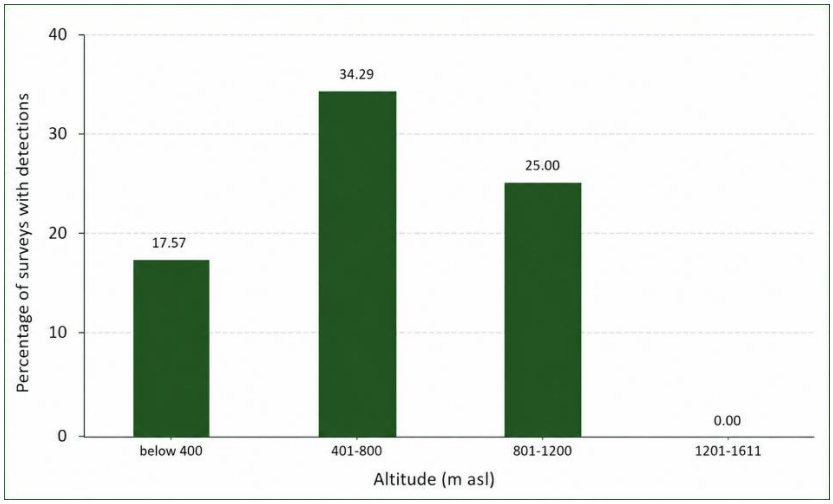


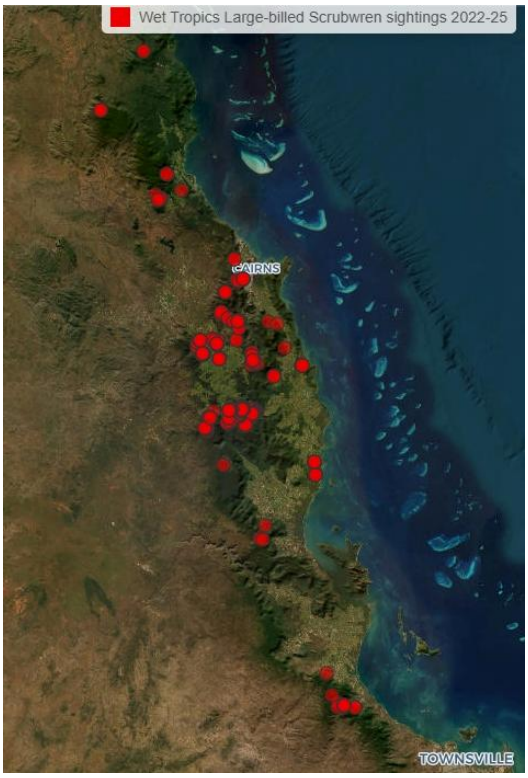
Figure 33. Percentage of surveys with Wet Tropics Large-billed Scrubwren detections at various altitudes based on four years data (2022 - 2025).



Detection rates were highest at mid elevations, with the subspecies recorded in 34.3% of surveys between 401 and 800 m asl. Detection rates declined to 25.0% between 801 and 1,200 m asl and 17.6% below 400 m asl. No detections were recorded above 1,200 m asl, with the highest record at 1,088 m asl. This pattern supports published descriptions of the subspecies as being primarily associated with lowland and mid-elevation rainforest, with relatively few records from higher elevations.

Spatial distribution

Figure 34. Distribution of Wet Tropics Large-billed Scrubwren records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The findings closely align with published descriptions of the Wet Tropics Large-billed Scrubwren as occurring mainly in lowland and mid-elevation rainforest (BirdLife Australia 2023; Gregory 2020). The recorded range of 30 - 1,088 m asl is consistent with accounts describing the subspecies across a broad range of rainforest habitats, but generally below the elevations occupied by Atherton Scrubwren.

The predominance of mid-elevation records, together with regular lowland records and no detections above 1,088 m asl, distinguishes the Wet Tropics Large-billed Scrubwren from several other climate-sensitive taxa that are more strongly associated with upland habitats.

Continued monitoring across its elevational range will help determine whether future changes in abundance, distribution, and breeding activity occur in response to climate change.

The absence of records above 1,088 m asl highlights the Wet Tropics Large-billed Scrubwren's close association with lowland and mid-elevation rainforest, contrasting with other threatened Wet Tropics birds that are concentrated in upland habitats.

9.9 Wet Tropics Eastern Whipbird (*Psophodes olivaceus lateralis*)

Wet Tropics Eastern Whipbird image courtesy of © Peter Owen birdlifephotography.org.au.

Background

The Wet Tropics Eastern Whipbird is an endemic subspecies restricted to the Wet Tropics of north-eastern Queensland, occurring from the Big Tableland (Mount Amos) near Cooktown south to the Paluma Range near Townsville (BirdLife Australia 2023). It inhabits the dense understorey of rainforest, wet sclerophyll forest and regrowth vegetation, particularly in gullies. It forages mainly on the ground in leaf litter, soil and low vegetation, but also feeds on tree trunks, branches and foliage, taking a varied diet of small invertebrates, small vertebrates, seeds, shoots and fruits (BirdLife Australia 2023; Boles 2020).

The subspecies has been recorded from near sea level to approximately 1,500 m asl, although its highest population densities occur between 600 and 1,000 m asl (BirdLife Australia 2023; Williams et al 2021).

The subspecies was listed as Vulnerable in *The Action Plan for Australian Birds 2020* following evidence of an estimated 42% decline in the total population over three generations. Climate change is considered the principal long-term threat to the subspecies (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Wet Tropics Eastern Whipbird is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 512 Wet Tropics Eastern Whipbird survey records were obtained between 2022 and 2025.

The subspecies was recorded in all five Wet Tropics KBAs: Atherton Tablelands, Coastal Wet Tropics, Daintree, Paluma and Wooroonooran. It occurred between 95 m asl at Mount Peter and 1,605 m asl near the summit of Mount Bartle Frere. Only three records were from below 100 m asl, all at Mount Peter near Bramston Beach in 2022, 2024 and 2025.

Most records were from the mid-elevation zone (400-800 m asl) and upland habitats above 800 m asl.

Breeding records

Breeding activity was recorded on one occasion during the reporting period.

In September 2024, a recently fledged young bird was observed near Malanda in the Atherton Tablelands KBA. This observation is consistent with the published breeding season of July to February (BirdLife Australia 2023; Boles 2020).

The absence of additional breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 35. Elevational distribution of Wet Tropics Eastern Whipbird records each year, 2022 - 2025.

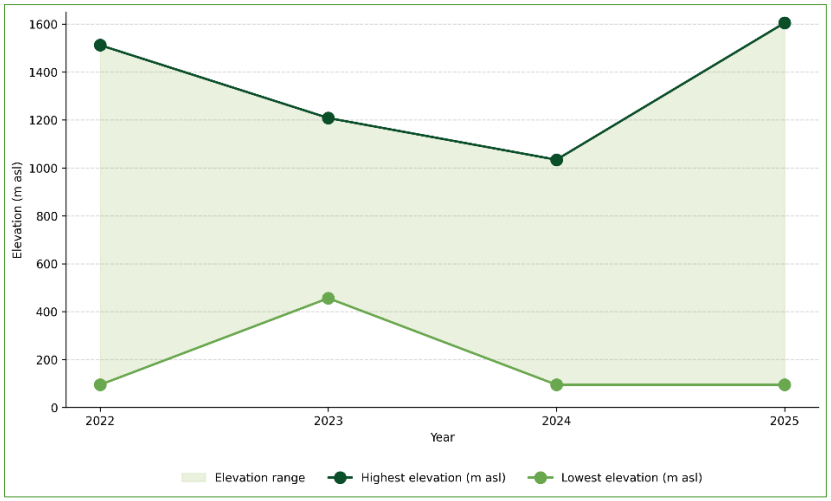
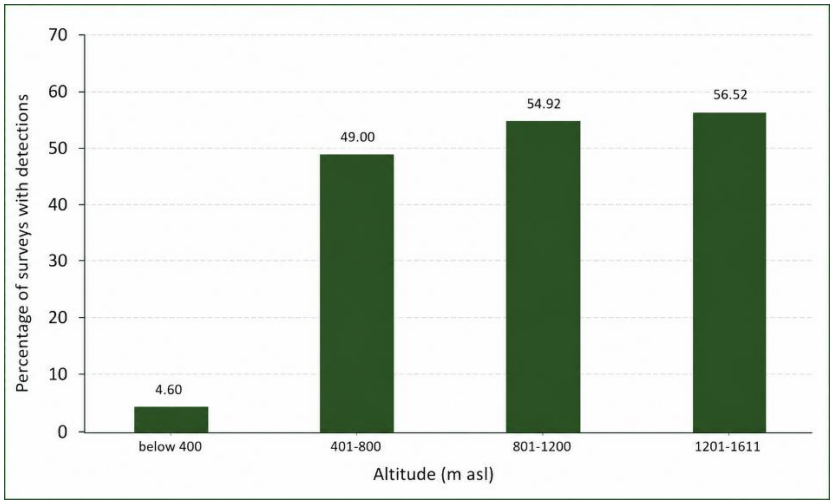


Figure 36. Percentage of surveys with Wet Tropics Eastern Whipbird detections at various altitudes based on four years data (2022 - 2025).



Wet Tropics Eastern Whipbird detection rates increased sharply above 400 m asl, from 4.6% of surveys below 400 m asl to 49.0% between 401 and 800 m asl, 54.9% between 801 and 1,200 m asl, and 56.5% above 1,200 m asl. This pattern indicates that the subspecies is uncommon in lowland rainforest but widespread and consistently abundant from mid-elevation to the highest rainforest habitats surveyed.

Spatial distribution

Figure 37. Distribution of Wet Tropics Eastern Whipbird records within Wet Tropics KBAs, 2022 - 2025.

Discussion

The results closely align with published descriptions of the Wet Tropics Eastern Whipbird distribution. The recorded elevational range of 95 - 1,605 m asl slightly exceeds the published upper limit of approximately 1,500 m asl, reflecting observations near the summit of Mount Bartle Frere during 2025.

Although the subspecies was uncommon in lowland rainforest, where detection rates were low, it was frequently recorded above 400 m asl and remained relatively common at the highest elevations surveyed. Williams et al. (2021) reported the highest population densities between 600 and 1,000 m asl; however, the consistent detection rates recorded above 1,000 m asl suggest the subspecies may occupy a broader elevational range than previously recognised. As relatively few surveys were undertaken above 1,100 m asl, additional survey effort is needed to confirm this pattern.

Continued monitoring will improve understanding of how the abundance, distribution and breeding of this climate-sensitive subspecies respond to climate change.

Wet Tropics Eastern Whipbird was detected in approximately 50% of surveys above 400 m asl, confirming its close association with mid-elevation and upland rainforest and providing a valuable baseline for future climate change monitoring.

9.10 Golden Bowerbird (*Prionodura newtoniana*)

Golden Bowerbird image courtesy of Dominic Chaplin.

Background

The Golden Bowerbird is a Wet Tropics endemic species restricted to the upland rainforests of north-eastern Queensland, occurring from the Thornton Range and Mount Windsor Tableland south to the Paluma Range (BirdLife Australia 2023; Frith & Frith 2023). It inhabits cool upland rainforest where it feeds primarily on fruits and invertebrates. Although the species has been recorded between approximately 350 and 1,530 m asl, it is most commonly associated with elevations between 700 and 1,500 m asl and is largely confined to the highest rainforest habitats of the Wet Tropics (BirdLife Australia 2023; Frith & Frith 2023).

The species was listed as Near Threatened in *The Action Plan for Australian Birds 2020*. Although available monitoring data suggested a population decline at higher elevations, this trend was not statistically significant and may have been influenced by the persistent effects of tropical cyclones across parts of its core range. The species was therefore identified as Near Threatened on a precautionary basis because it is largely confined to the highest elevations of the Wet Tropics, where many other rainforest specialists are experiencing climate-related declines. Climate change is considered the only known long-term threat (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Golden Bowerbird is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 51 Golden Bowerbird survey records were obtained between 2022 and 2025. Given the relatively small dataset, the following results should be interpreted with appropriate caution.

Records were obtained from the Daintree, Paluma and Wooroonooran KBAs. The species was recorded between 708 m asl on the western slope of Mount Bartle Frere in the Wooroonooran KBA and 1,605 m asl near the summit of Mount Bartle Frere.

There were no detections below 700 m asl, with the majority of records occurring above 800 m asl.

One observation recorded a female or immature bird feeding in a fruiting *Polyscias* tree, a food source previously reported in the literature (BirdLife Australia 2023).

Breeding records

Breeding behaviour was recorded on six occasions during the reporting period.

Two records documented diagnostic or suggestive breeding behaviour during September 2024, while four records from July 2025 reported active maintenance of display bowers. These observations are consistent with the published breeding season of September to February (BirdLife Australia 2023; Frith & Frith 2023).

Well maintained bowerbird bowers indicate that males were in breeding condition but do not provide evidence of nesting or successful breeding.

As breeding behaviour is not consistently recorded in Birdata, the absence of additional breeding records should not be interpreted as evidence that breeding did not occur. More detailed information on Golden Bowerbird bower monitoring is provided in the Bowerbird Monitoring Project Report 2025.

Elevation distribution

Figure 38. Elevational distribution of Golden Bowerbird records each year, 2022 - 2025.

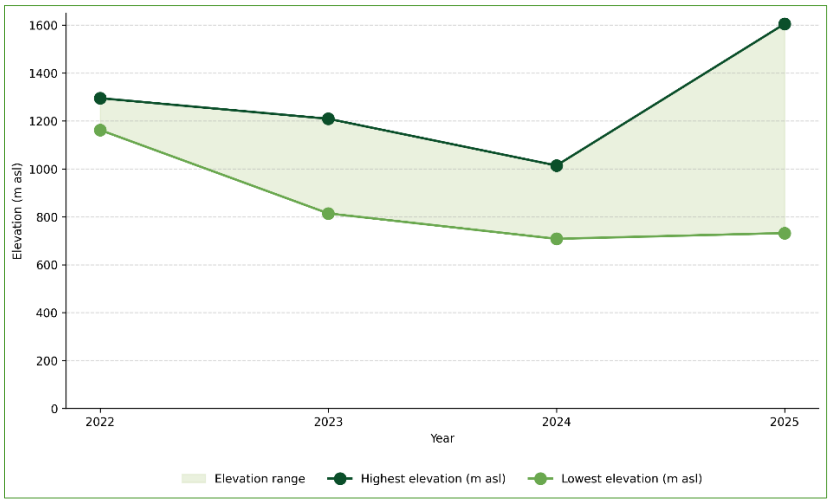
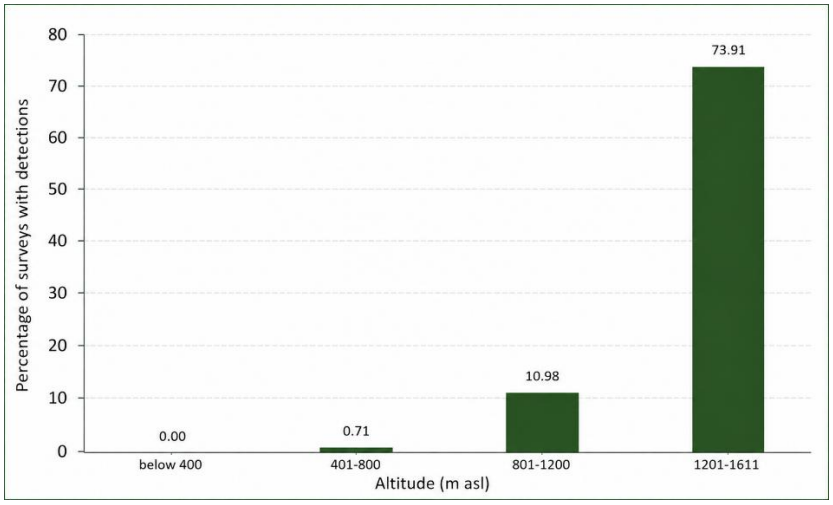


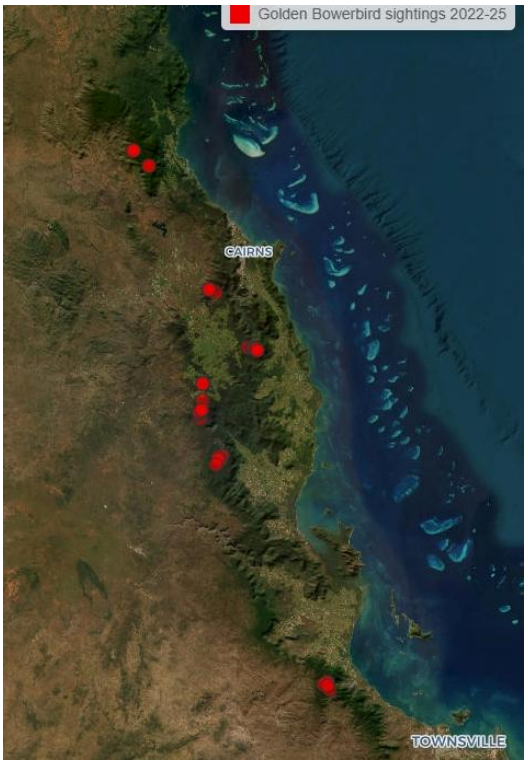
Figure 39. Percentage of surveys with Golden Bowerbird detections at various altitudes based on four years data (2022 - 2025).



No detections were recorded in lowland rainforest (below 400 m asl), while detection rates increased from 0.7% of surveys between 401 and 800 m asl to 11.0% between 801 and 1,200 m asl, reaching 73.9% above 1,200 m asl. This pattern demonstrates the Golden Bowerbird's strong dependence on cool, high-elevation rainforest and confirms it as one of the most elevation-restricted bird species in the Wet Tropics. As relatively few surveys were undertaken above 1,100 m asl, additional survey effort is needed to confirm this pattern.

Spatial distribution

Figure 40. Distribution of Golden Bowerbird records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The results closely align with published descriptions of the Golden Bowerbird as a predominantly upland rainforest species. The recorded elevational range of 708 - 1,605 m asl is consistent with published accounts describing the species as largely confined to the highest elevations of the Wet Tropics, although the record from near the summit of Mount Bartle Frere slightly exceeds the previously published upper elevational limit (1,500 m asl).

The predominance of records from upland habitats reinforces the species' dependence on cool mountain rainforest and supports its recognition as one of the Wet Tropics bird taxa vulnerable to climate change. Although a small number of records were obtained from the mid-elevation zone (above 700 m asl), no records were obtained from lowland rainforest during the reporting period.

Continued long-term monitoring will help determine whether future changes first occur through shifts in abundance or occupancy before measurable changes in elevational distribution become evident.

Golden Bowerbird detection rates increased sharply with elevation, from 700 m asl to Queensland's highest mountain peak (1,605 m asl), reinforcing the species' strong dependence on cool mountain rainforest.
Together, Birds With Altitude elevational surveys and annual monitoring of bowers provide a valuable baseline for detecting future climate-driven changes in abundance and distribution.

9.11 Tooth-billed Bowerbird (*Scenopoeetes dentirostris*)

Tooth-billed Bowerbird image courtesy of © Gary King 2017 birdlifephotography.org.au

Background

The Tooth-billed Bowerbird is a Wet Tropics endemic species restricted to north-eastern Queensland, occurring from Mount Amos near Cooktown south to the Paluma Range near Townsville. It inhabits tropical rainforest, including regrowth rainforest and smaller remnant patches, and is occasionally recorded in orchards and pasture adjacent to rainforest. It forages mainly in the canopy, feeding primarily on fruits, flowers, stems and leaves, supplemented by small invertebrates (BirdLife Australia 2023; Frith & Frith 2020).

Although the species has been recorded from approximately 350 to 1,600 m asl, it is most commonly associated with upland rainforest between 500 and 900 m asl (BirdLife Australia 2023; Frith & Frith 2020).

The species was listed as Near Threatened in *The Action Plan for Australian Birds 2020*. Long-term monitoring between 2000 and 2016 indicated a population decline consistent with climate change projections. However, it was noted that these trends may also reflect the prolonged impacts of Cyclones Larry (2006) and Yasi (2011), which caused extensive damage to Wet Tropics rainforest and may have reduced both bird numbers and attendance at display courts for several years. Consequently, the Near Threatened classification was identified as precautionary, with further monitoring required to clarify long-term population trends. Climate change is considered the only known long-term threat (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Tooth-billed Bowerbird is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 231 Tooth-billed Bowerbird survey records were obtained between 2022 and 2025.

Records were obtained from the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs. The species was recorded between 345 m asl at the Mamu Rainforest Skywalk in the Wooroonooran KBA and 1,295 m asl at Mount Fisher, also within the Wooroonooran KBA.

The majority of records were from elevations above 400 m asl, with detection rates peaking above 800 m asl.

Tooth-billed Bowerbirds can be difficult to detect because they typically forage in the rainforest canopy and are generally silent outside the breeding season (Menkhorst et al. 2023). Consequently, detection rates are likely to be lower outside the breeding period.

Breeding records

The breeding activity information presented here from Birdata includes some survey data associated with the Bowerbird Monitoring Project.

Male Tooth-billed Bowerbirds were recorded attending display courts on 25 occasions between September and December, consistent with the published breeding season of September to January (BirdLife Australia 2023; Frith & Frith 2020).

Display courts indicate that males were in breeding condition but do not provide evidence of nesting or successful breeding.

As breeding behaviour is not consistently recorded in Birdata, the absence of additional breeding records should not be interpreted as evidence that breeding did not occur. More detailed information on display court monitoring is provided in the Bowerbird Monitoring Project Report 2025.

Elevation distribution

Figure 41. Elevational distribution of Tooth-billed Bowerbird records each year, 2022 - 2025.

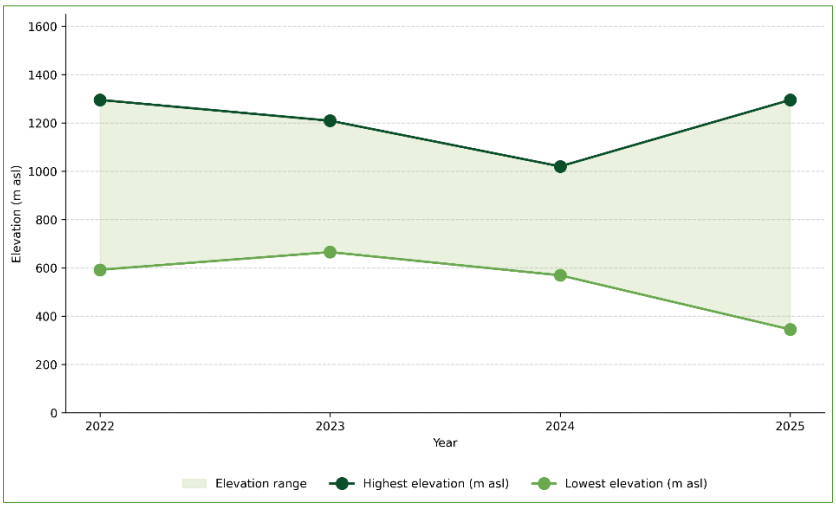
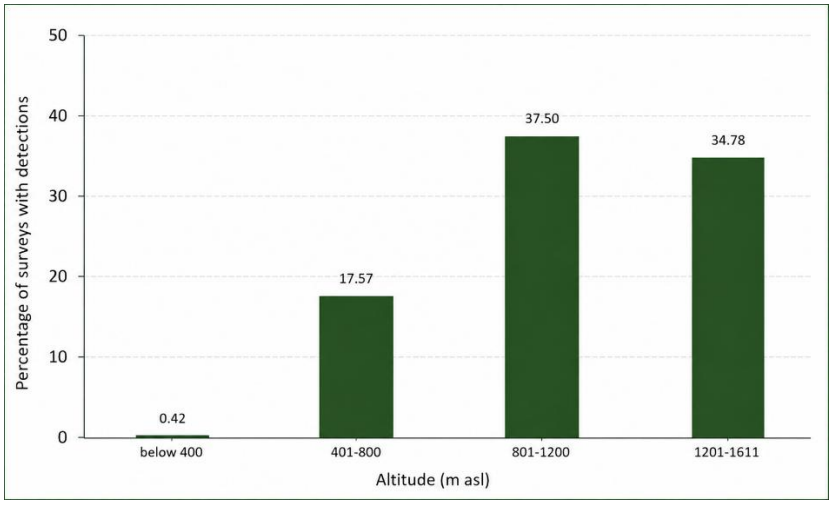


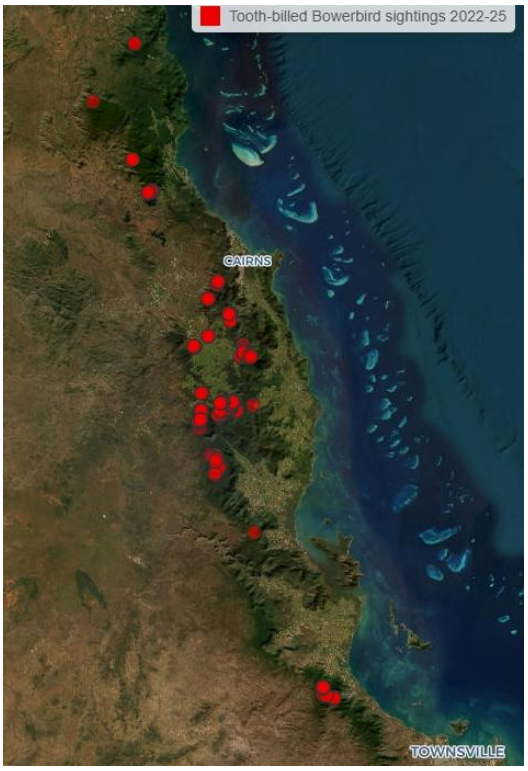
Figure 42. Percentage of surveys with Tooth-billed Bowerbird detections at various altitudes based on four years data (2022 - 2025).



Detection rates increased markedly with elevation, from just 0.4% of surveys below 400 m asl to 17.6% between 401 and 800 m asl and 37.5% between 801 and 1,200 m asl, remaining similarly high (34.8%) above 1,200 m asl.

Spatial distribution

Figure 43. Distribution of Tooth-billed Bowerbird records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The recorded elevational range of 345 - 1,295 m asl supports published descriptions of the Tooth-billed Bowerbird as an upland rainforest species, with detection rates increasing sharply above 800 m asl and remaining high at higher elevations.

The relatively large number of display court records reflects targeted surveys undertaken through the Bowerbird Monitoring Project, together with increased observer awareness of display courts. Continued monitoring across the species' elevational range, including established display courts, will improve understanding of long-term population trends and responses to climate change.

Tooth-billed Bowerbird was regularly detected from mid-elevation rainforest upwards, with detection rates more than doubling above 800 m asl. Together, Birds With Altitude elevational surveys and annual monitoring of display courts provide a strong foundation for long-term monitoring of the species.

9.12 Wet Tropics Satin Bowerbird (*Ptilonorhynchus violaceus minor*)

Wet Tropics Satin Bowerbird image courtesy of © Diana Womersley 2021 birdlifephotography.org.au.

Background

The Wet Tropics Satin Bowerbird is an endemic subspecies occurring from Mount Amos and Mount Finnegan near Cooktown south to the Paluma Range in north-eastern Queensland. It inhabits rainforest, particularly forest edges and ecotones adjoining tall wet sclerophyll forest and woodland, but also occurs in orchards, farmland, parks and gardens (BirdLife Australia 2023; Menkhorst et al. 2023). It forages in all levels, from the canopy to the ground, feeding mainly on fruit, supplemented by flowers, leaves, seeds and small animals, particularly arthropods (BirdLife Australia 2023; Frith & Frith 2020).

The Wet Tropics subspecies is generally considered an upland rainforest specialist, occurring predominantly between 600 and approximately 1,220 m asl (BirdLife Australia 2023). While BirdLife Australia (2023) reports that the subspecies is most commonly encountered between 700 and 900 m asl, Williams et al. (2021) report that the highest population densities are between 1,200 and 1,400 m asl.

The Wet Tropics Satin Bowerbird was listed as Near Threatened in *The Action Plan for Australian Birds 2020*. Although a population decline is considered possible, available evidence was insufficient to confirm a significant decline. The precautionary listing reflects the restricted distribution of this Wet Tropics endemic subspecies and the widespread declines observed in many other upland rainforest birds. Climate change is considered the only known long-term threat (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Wet Tropics Satin Bowerbird is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 40 Wet Tropics Satin Bowerbird survey records were obtained between 2022 and 2025. Given the very small dataset, the following results should be interpreted with appropriate caution.

Records were obtained from the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs. The subspecies was recorded between 701 m asl along the Maalan Track in Wooroonooran National Park and 1,295 m asl at Mount Fisher.

The species was recorded exclusively within the upper mid-elevation and upland zones.

One observation recorded a Wet Tropics Satin Bowerbird feeding on fruit in a *Polyscias* tree, a food source previously reported in the literature (BirdLife Australia 2023).

Breeding records

No breeding records were reported during the reporting period.

As breeding behaviour is not consistently recorded in Birdata, the absence of breeding records should not be interpreted as evidence that breeding did not occur.

Elevation distribution

Figure 44. Elevational distribution of Wet Tropics Satin Bowerbird records each year, 2022 - 2025.

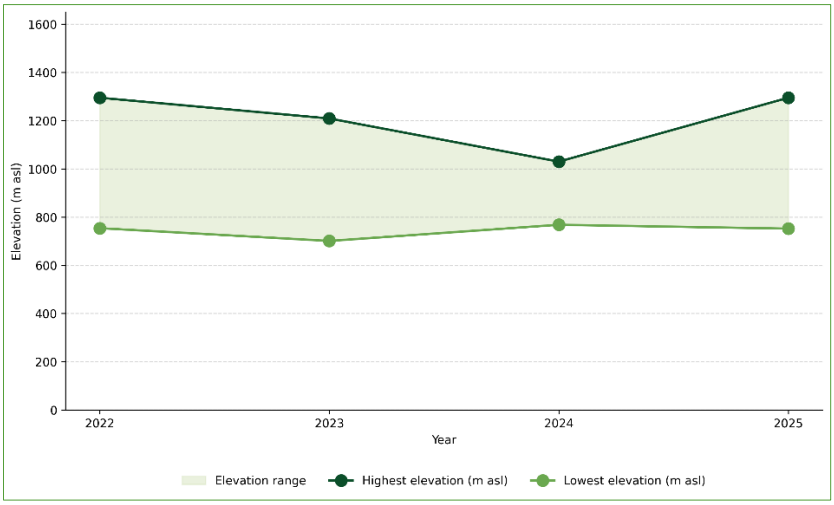
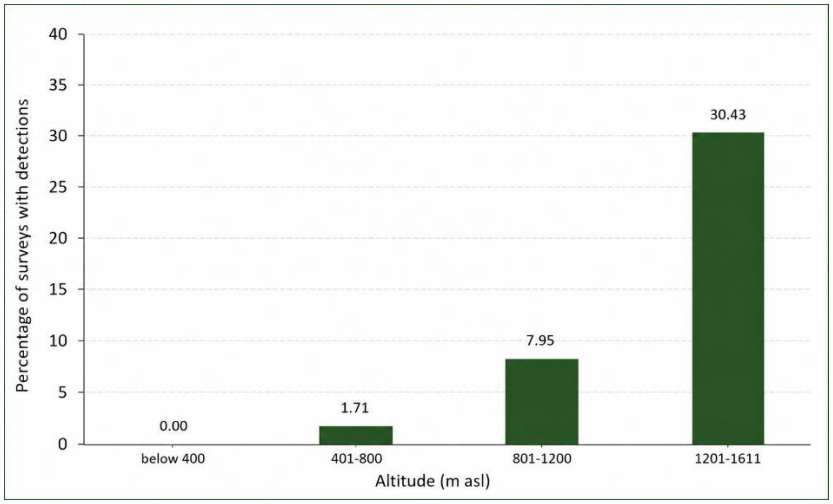


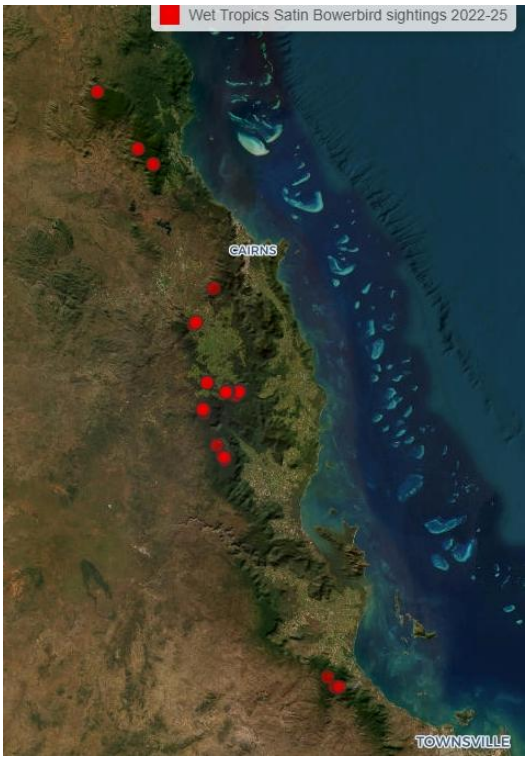
Figure 45. Percentage of surveys with Wet Tropics Satin Bowerbird detections at various altitudes based on four years data (2022 - 2025).



No detections were recorded in lowland rainforest (below 400 m asl). Noting the lowest detection was at 701 m asl, detection rates increased with elevation, from 1.7% of surveys between 401 and 800 m asl to 8.0% between 801 and 1,200 m asl, reaching 30.4% above 1,200 m asl. This pattern demonstrates a strong association with upland rainforest, particularly the highest elevations.

Spatial distribution

Figure 46. Distribution of Wet Tropics Satin Bowerbird records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The results closely align with published descriptions of the Wet Tropics Satin Bowerbird as an upland rainforest specialist. The recorded elevational range of 701-1,295 m asl falls within the published range for the subspecies and confirms that it is largely absent from lowland rainforest.

Detection rates increased progressively with elevation, reaching 30.4% of surveys above 1,200 m asl. Although this pattern supports published descriptions of the species as an upland rainforest specialist, the relatively small number of surveys undertaken above 1,200 m asl limits direct comparison with previous studies. Williams et al. (2021) reported the highest population densities between 1,200 and 1,400 m asl, whereas BirdLife Australia (2023) describe the species as being most commonly encountered between 700 and 900 m asl. Additional surveys at higher elevations would improve understanding of the species' elevational distribution and provide greater confidence in detecting future climate-driven changes.

The highest detection rates for Wet Tropics Satin Bowerbird occurred in upland rainforest, confirming the importance of higher-elevation habitats for this endemic subspecies. Additional surveys across the elevational gradient, particularly at the highest elevations, will improve understanding of its distribution and strengthen future assessments of climate-driven change.

9.13 Grey-headed Robin (*Heteromyias cinereifrons*)

Grey-headed Robin image courtesy of Peter Valentine.

Background

The Grey-headed Robin is a Wet Tropics endemic species restricted to north-eastern Queensland, occurring from Mount Amos near Cooktown south to the Paluma Range, with an isolated population at Mount Elliott. It inhabits tropical rainforest and occasionally occurs in adjacent wet eucalypt forest, gardens and lawns bordering rainforest. The species forages mainly on the ground, feeding on small invertebrates and vertebrates. Although it has occasionally been recorded at lower elevations where rainforest extends continuously to the coast, it is primarily associated with rainforest above 200 m asl, with the highest population densities occurring at approximately 1,000 m asl (BirdLife Australia 2023; Boles 2020; Williams et al. 2021).

The species was listed as Near Threatened in *The Action Plan for Australian Birds 2020* following evidence of an estimated 26.6% population decline over three generations. Population declines were recorded across low, mid and high elevations, consistent with climate change projections for the Wet Tropics. Similar trends have also been identified through monitoring by the School for Field Studies and changes in Birdata reporting rates. Climate change is considered the only known long-term threat, with increasing temperatures, more frequent heatwaves and longer, hotter dry seasons likely to reduce habitat suitability and resource availability. Climate modelling suggests that increasing temperatures may have a greater influence on the species than changes in rainfall (Williams et al 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Grey-headed Robin is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 446 Grey-headed Robin survey records were obtained between 2022 and 2025.

The species was recorded in the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs between 438 m asl on K Tree Road in the Misty Mountains (Wooroonooran KBA) and 1,605 m asl near the summit of Mount Bartle Frere (Wooroonooran KBA).

No detections were recorded below 400 m asl. While over a third of surveys detected Grey-headed Robin in the mid elevation zone, detection rates increased markedly above 800 m asl and remained high across the upland zone.

Breeding records

Breeding activity was recorded on four occasions during the reporting period.

A young bird being fed by an adult was recorded in the Paluma KBA during November 2023. Two further records from the Malanda area in the Atherton Tablelands KBA documented recently fledged young in January 2024 and December 2025, with one observation also recording an adult feeding dependent young. In November 2025, a nest containing two chicks was recorded in the Paluma KBA.

These observations are consistent with the published breeding season extending from approximately July or August through to January or February (BirdLife Australia 2023).

Elevation distribution

Figure 47. Elevational distribution of Grey-headed Robin records each year, 2022 - 2025.

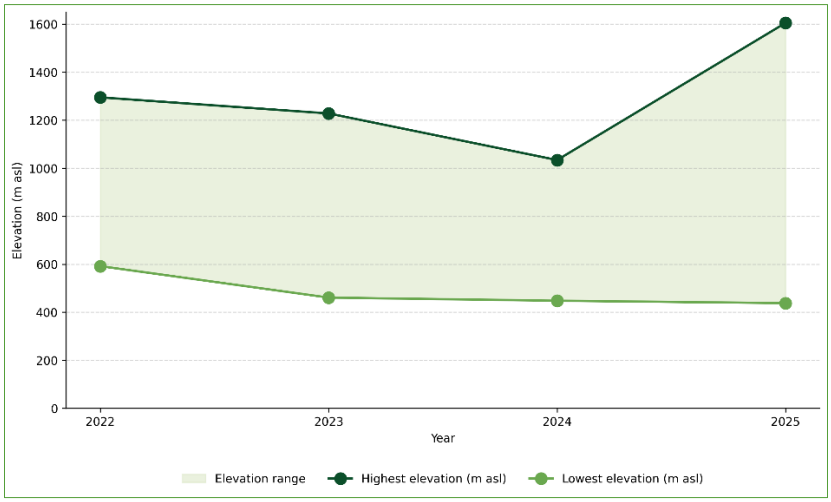
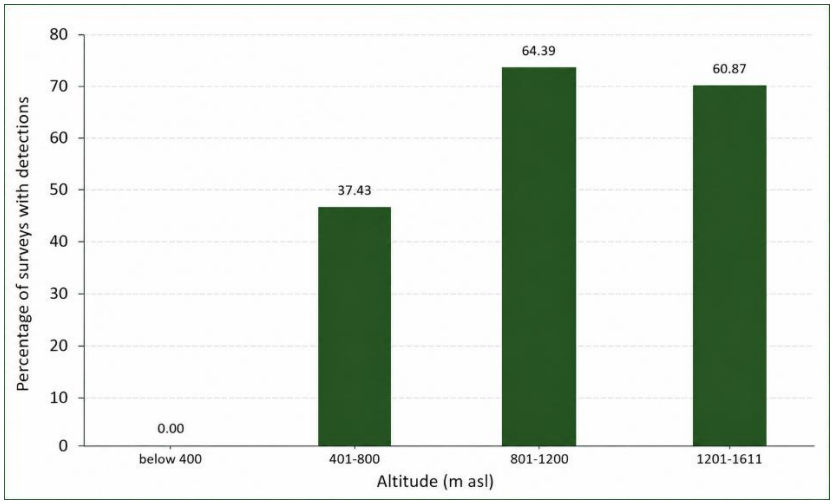


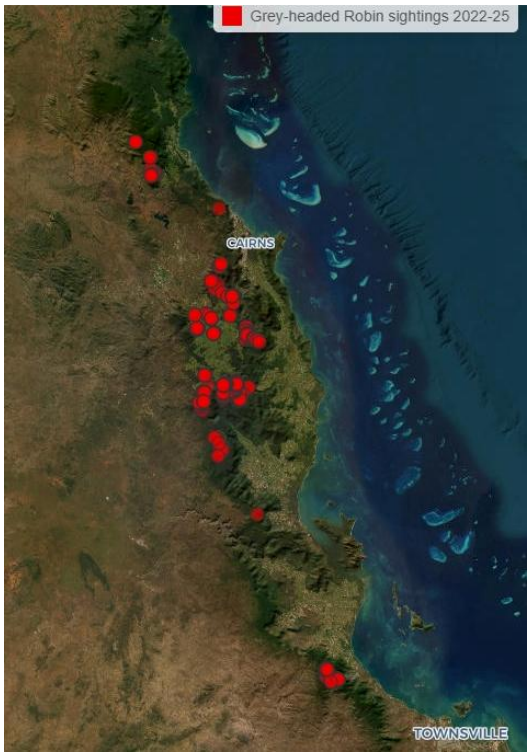
Figure 48. Percentage of surveys with Grey-headed Robin detections at various altitudes based on four years data (2022 - 2025).



No Grey-headed Robin detections were recorded below 400 m asl. Detection rates increased markedly with elevation, from 37.4% of surveys between 401 and 800 m asl to 64.4% between 801 and 1,200 m asl, remaining high (60.9%) above 1,200 m asl. This pattern indicates a strong association with upland rainforest, with the species becoming increasingly common above 800 m asl. However, as survey effort above 1,200 m asl was lower than at mid elevations, additional surveys at the highest elevations would provide greater confidence in this pattern.

Spatial distribution

Figure 49. Distribution of Grey-headed Robin records within Wet Tropics KBAs, 2022–2025.



Discussion

The results closely align with published descriptions of the Grey-headed Robin as a mid-elevation and upland rainforest species. The recorded elevational range of 438 - 1,065 m asl falls within the known range for the species, with all records obtained above 400 m asl.

Detection rates increased markedly above 800 m asl and remained high across the upland zone. As survey effort was lower above 1,200 m asl, the highest-elevation results should be interpreted with some caution. Nevertheless, the observed pattern is broadly consistent with Williams et al. (2021), who reported the highest population densities at approximately 1,000 m asl.

Breeding records from both the Atherton Tablelands and Paluma KBAs confirm that the species continues to breed across its range. Continued monitoring will improve understanding of future changes in abundance, distribution and breeding associated with climate change.

Grey-headed Robin was not detected below 400 m asl, with detection rates increasing from one-third of surveys at mid elevations to almost two-thirds above 800 m asl, highlighting its strong affinity for upland rainforest.

9.14 Little Treecreeper (*Cormobates leucophaea minor*)

Little Treecreeper image courtesy of © Keith Fisher 2009 birdlifephotography.org.au.

Background

The Little Treecreeper, the smallest subspecies of the White-throated Treecreeper, is endemic to the Wet Tropics of north-eastern Queensland, occurring from the Endeavour River and Mount Amos region near Cooktown south to the Paluma Range near Townsville (BirdLife Australia 2023). It is largely sedentary and inhabits rainforest, rainforest with emergent eucalypts, and wet sclerophyll forest, where it feeds primarily on invertebrates extracted from fissures in the bark of trees. Published accounts indicate that it typically occurs between 300 and 1,200 m asl, with the highest population densities between 600 and 1,000 m asl (BirdLife Australia 2023; Noske 2020; Williams et al. 2021).

The subspecies was listed as Near Threatened in *The Action Plan for Australian Birds 2020* following an estimated 26.5% population decline over three generations. Long-term monitoring documented declines at mid elevations (450-850 m asl), while populations above 850 m asl increased after 2008. These trends were considered consistent with climate change projections for the Wet Tropics, with climate change identified as the principal long-term threat (Williams et al. 2021).

As one of the Wet Tropics bird taxa considered vulnerable to climate change, the Little Treecreeper is an important indicator species for the Birds With Altitude Project.

Survey results 2022 - 2025

A total of 348 Little Treecreeper survey records were obtained between 2022 and 2025.

The subspecies was recorded in the Atherton Tablelands, Daintree, Paluma and Wooroonooran KBAs between 58 m asl at Jourama Falls (Paluma KBA) and 1,485 m asl on Mount Bartle Frere (Wooroonooran KBA).

Detection rates increased steadily with elevation, indicating a clear preference for mid- and upland rainforest, where the species became progressively more common.

Breeding records

No breeding records were reported during the reporting period.

Elevation distribution

Figure 50. Elevational distribution of Little Treecreeper records each year, 2022 - 2025.

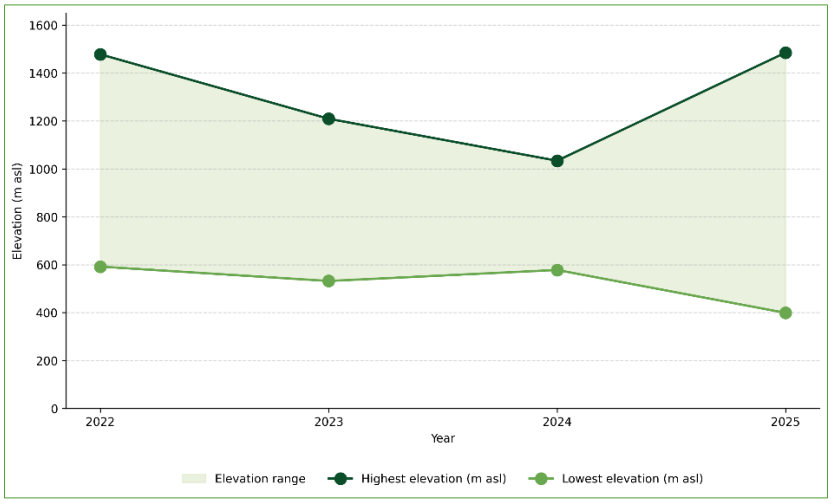
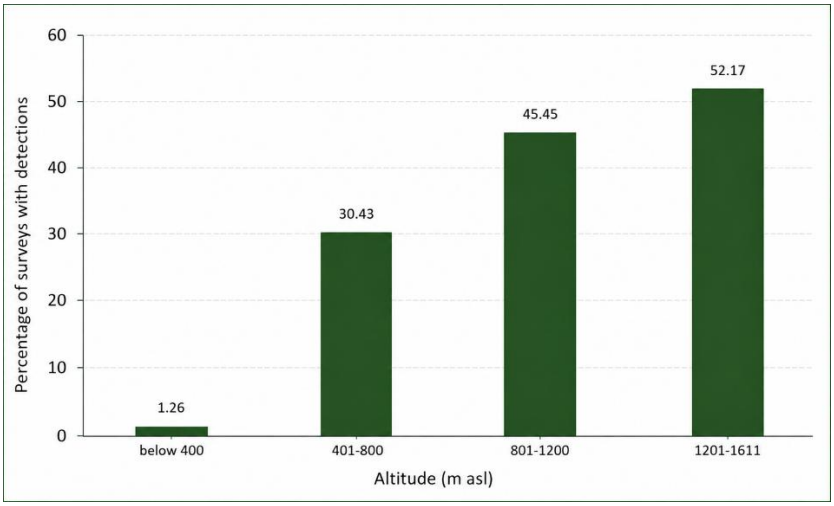


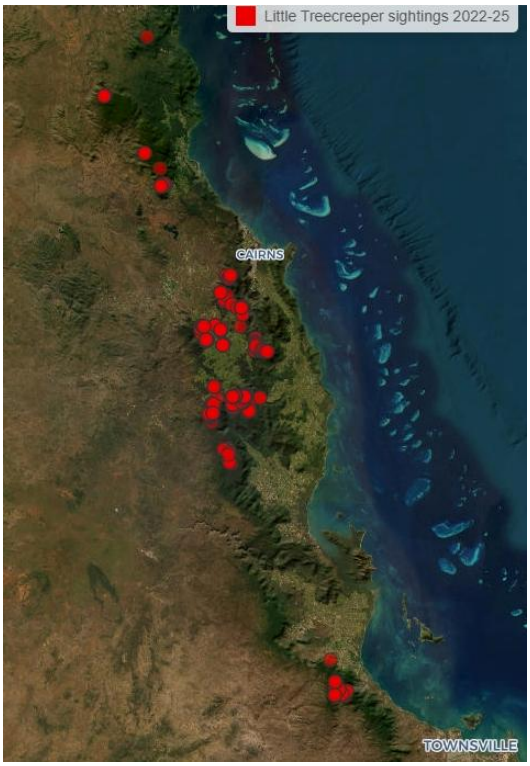
Figure 51. Percentage of surveys with Little Treecreeper detections at various altitudes based on four years data (2022 - 2025).



Little Treecreeper detection rates increased steadily with elevation, from just 1.3% of surveys below 400 m asl to 30.4% between 401 and 800 m asl, 45.5% between 801 and 1,200 m asl, and 52.2% above 1,200 m asl. This pattern indicates a clear preference for mid- and upland rainforest, with the species becoming progressively more common at higher elevations.

Spatial distribution

Figure 52. Distribution of Little Treecreeper records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The results support published descriptions of the Little Treecreeper as a species primarily associated with mid-elevation and upland rainforest. Detection rates increased steadily with elevation and were highest above 800 m asl, broadly consistent with Williams et al. (2021), who reported the greatest population densities between 600 and 1,000 m asl. Although survey effort was lower above 1,200 m asl, consistently high detection rates suggest the subspecies remains common throughout the upland zone.

Published accounts generally report the subspecies to approximately 1,200 m asl; however, surveys in this study recorded it as high as 1,485 m asl. This suggests the subspecies may occur at higher elevations than previously recognised and highlights the value of continued monitoring across the full elevational gradient. Additional surveys at both low and high elevations would improve understanding of its distribution and strengthen assessments of climate-driven change.

Little Treecreeper remained common throughout mid- and upland rainforest and was recorded to 1,485 m asl, extending the commonly reported upper elevational limit.

9.15 Southern Cassowary (*Casuarius casuarius johnsonii*)

Southern Cassowary image courtesy of Dominic Chaplin.

Background

The Southern Cassowary is Australia's largest rainforest bird and is endemic to the tropical rainforests of New Guinea and north-eastern Australia. In Australia it is restricted to north-eastern Queensland, where isolated populations occur in the Wet Tropics between Townsville and Cooktown and in Cape York Peninsula (BirdLife Australia 2023; Healy 2022). Throughout its Australian range the species inhabits dense tropical rainforest at all elevations, occasionally occurring in eucalypt woodland, palm scrub and along beaches in coastal areas (BirdLife Australia 2023; Healy 2022).

The Wet Tropics population of Southern Cassowary is listed as Endangered in the Queensland Nature Conservation Act 1992 and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The species is recognised as a keystone rainforest frugivore because of its critical role in dispersing the seeds of many rainforest plants. Although habitat loss, fragmentation, vehicle strikes and dog attacks remain important threats, climate change is expected to increasingly influence rainforest composition, fruit availability and habitat quality across the Wet Tropics.

Although not one of the Wet Tropics endemic bird taxa listed a threatened in *The Action Plan for Australian Birds 2020*, the Southern Cassowary is included in this report because of its ecological importance and its value as an indicator of rainforest ecosystem health.

Survey results 2022 - 2025

A total of 52 Southern Cassowary survey records were obtained between 2022 and 2025. Given the relatively small dataset, the following results should be interpreted with appropriate caution.

Records were obtained from the Coastal Wet Tropics, Daintree and Wooroonooran KBAs. The species was recorded from near sea level to 1,295 m asl, demonstrating use of rainforest habitats across a broad elevational range.

The absence of records above 1,295 m asl is most likely explained by limited survey effort at the highest elevations rather than indicating an upper elevational limit for the species.

Breeding records

No breeding records were reported in the limited dataset during the reporting period.

Elevation distribution

Figure 53. Elevational distribution of Southern Cassowary records each year, 2022 - 2025.

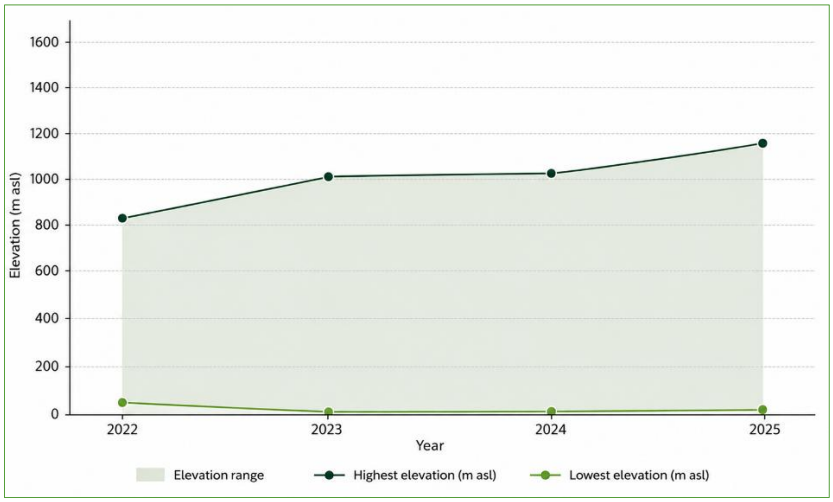
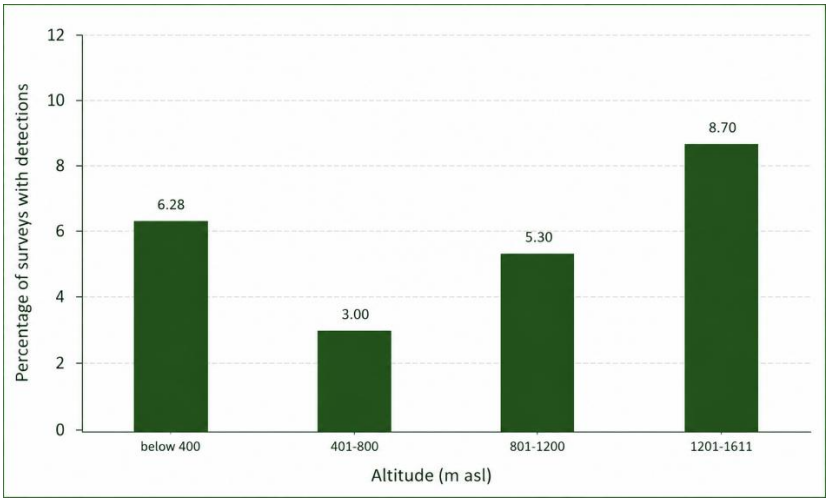


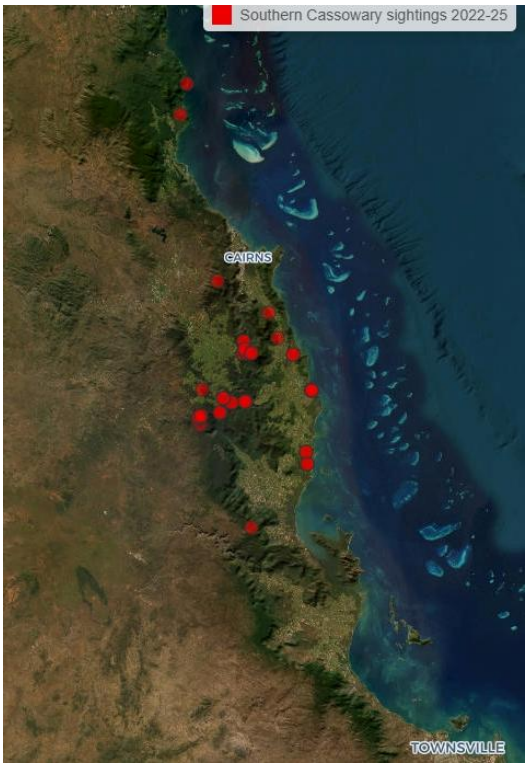
Figure 54. Percentage of surveys with Southern Cassowary detections at various altitudes based on four years data (2022 - 2025).



Southern Cassowaries were recorded from near sea level to 1,295 m asl, reflecting their broad use of rainforest habitats across the Wet Tropics. The higher detection rates above 1,200 m asl likely reflect the small number of surveys undertaken at these remote, difficult-to-access elevations.

Spatial distribution

Figure 55. Distribution of Southern Cassowary records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The Birdata records examined closely align with published descriptions of the Southern Cassowary as a species occupying rainforest across a broad elevational range. The recorded elevational range of near sea level to 1,295 m asl is consistent with published accounts describing the species as occurring from the lowlands to at least 1,100 m asl in Australia (BirdLife Australia 2023; Healy 2022).

Unlike many of the threatened Wet Tropics endemic birds assessed in this report, the Southern Cassowary was not strongly associated with a particular elevational zone. Instead, records demonstrate that the species uses rainforest habitats across an elevational gradient. The absence of records from the highest elevations most likely reflects limited survey effort rather than ecological constraints.

Further repeated standardised surveys across the full elevational gradient can provide valuable supplementary information on the species' distribution across the Wet Tropics. Continued monitoring will also help identify any future changes in abundance and distribution.

Southern Cassowaries were recorded from near sea level to 1,295 m asl across the Coastal Wet Tropics, Daintree and Wooroonooran KBAs, demonstrating their use of rainforest habitats across a broad elevational gradient and highlighting the value of Birds With Altitude surveys as supplementary monitoring for this iconic rainforest species.

9.16 Blue-faced Parrotfinch (*Erythrura trichroa macgillivrayi*)

Blue-faced Parrotfinch image courtesy of © Murray Chambers 2015 birdlifephotography.org.au.

Background

The Australian subspecies of the Blue-faced Parrotfinch (*Erythrura trichroa macgillivrayi*) remains surprisingly poorly known. It is confined to the Wet Tropics of north-eastern Queensland, where published records indicate that it occurs up to approximately 1,000 m asl. The species is thought to breed in upland areas before moving into adjacent foothills during winter (BirdLife Australia 2023; Payne 2020).

Blue-faced Parrotfinches typically inhabit dense grass and grassy secondary regrowth adjacent to rainforest, as well as clearings within rainforest where woody vegetation emerges above the grass layer. They also occur within tropical rainforest and are occasionally recorded in adjacent sclerophyll forest and other vegetation bordering rainforest. BirdLife Australia (2023) notes that the species is generally easier to observe in grassy habitats than within rainforest foliage, which may bias current understanding of its habitat preferences.

Although not included in *The Action Plan for Australian Birds 2020,* the Blue-faced Parrotfinch is included in this report because it is listed as Near Threatened under the Queensland Nature Conservation Act 1992, and because the Australian population remains poorly known. Additional distribution records collected through the Birds With Altitude Project may help improve understanding of its ecology and conservation.

Survey results 2022 - 2025

Only three Blue-faced Parrotfinch survey records were obtained between 2022 and 2025. Given the extremely small dataset, analysis in this report is limited and the following results should be interpreted with considerable caution.

Records were obtained from the Daintree and Wooroonooran KBAs. The species was recorded between 737 m asl and 1,138 m asl, with one record occurring within Daintree KBA in 2022, and two records from Wooroonooran KBA in 2025.

All records were obtained during 500 m area searches.

Breeding records

No breeding records were reported during the reporting period.

Spatial distribution

Figure 56. Distribution of Blue-faced Parrotfinch records within Wet Tropics KBAs, 2022 - 2025.

Discussion

The very small number of Birdata records may reflect the difficulty of detecting Blue-faced Parrotfinch using the standard survey methods used by the Birds With Altitude project. The species is highly mobile, inconspicuous and often occurs at low densities. Furthermore, published accounts suggest that its apparent habitat preferences may be influenced by greater detectability in grassy habitats compared with rainforest (BirdLife Australia 2023).

Despite the limited dataset, the records provide valuable contemporary information on the distribution of this poorly known Australian subspecies. The record from 1,138 m asl extends beyond the commonly reported elevational range for the Australian population and suggests that the species may occur at higher elevations, or occupy upland rainforest habitats more frequently, than is currently reflected in the published literature.

Targeted surveys focusing on suitable habitats and rainforest clearings across a wider elevational gradient and throughout the year are required to improve understanding of the species' distribution, habitat use, and seasonal movements within the Wet Tropics.

Only three Blue-faced Parrotfinch records were obtained during the reporting period, highlighting both the difficulty of detecting this poorly known species and the need for targeted monitoring using a more specific survey strategy. The record from 1,138 m asl extends beyond the commonly reported elevational range for the Australian population and warrants further investigation.

9.17 Spectacled Monarch (*Symposiachrus trivirgatus*)

Background

The Spectacled Monarch is a widespread insectivorous bird occurring across northern and eastern Australia, New Guinea and parts of eastern Indonesia (Clement et al 2025). Within the Wet Tropics it inhabits both lowland and upland rainforest, as well as moist and wet sclerophyll forests and other densely vegetated habitats (BirdLife Australia 2023). It feeds primarily on insects, foraging below the canopy by gleaning prey from foliage, tree trunks and vines (Birds in Backyards 2026).

Spectacled Monarch image courtesy of © Ian Wilson 2017 birdlifephotography.org.au.

The species breeds during the warmer months, although the breeding season is not well defined. Breeding has been recorded from September to April (BirdLife Australia 2023; Clement et al. 2025). It constructs a small cup-shaped nest from fine bark, plant fibres, moss and spider web, typically placed 1–6 m above the ground in a tree fork or amongst hanging vines, often close to streams or other watercourses (Birds in Backyards 2026).

The Spectacled Monarch is currently listed as Least Concern by the IUCN and is not identified as being at risk in *The Action Plan for Australian Birds 2020*. It has been included in this report as a widespread rainforest generalist to provide a comparison with the threatened and climate-sensitive species featured in the preceding accounts.

Survey results 2022 - 2025

A total of 507 Spectacled Monarch survey records were obtained between 2022 and 2025, making it one of the most frequently recorded rainforest birds during the reporting period.

The species was recorded in all five Wet Tropics Key Biodiversity Areas, ranging from 1 m asl at Noah Beach in the Daintree KBA to 1,295 m asl on Mount Fisher in the Wooroonooran KBA.

The large number of records and broad geographic coverage provide a useful baseline for monitoring future changes in the abundance and distribution of a common rainforest insectivore.

Breeding records

Four breeding records were reported during the reporting period. Two records of recently fledged young were recorded at Big Crystal Creek and Jourama Falls in the Paluma KBA during February 2023. A nest containing eggs was recorded at Hasties Swamp in the Atherton Tablelands KBA in January 2024, followed by a separate record of recently fledged young at the same locality in February 2025.

These observations are consistent with published information indicating that breeding occurs primarily between September and April (BirdLife Australia 2023; Clement et al. 2025).

Elevation distribution

Figure 57. Elevational distribution of Spectacled Monarch records each year, 2022 - 2025.

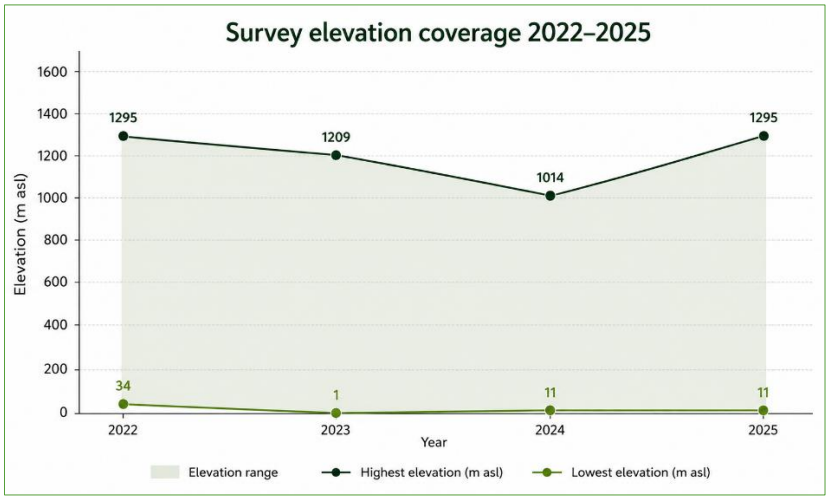
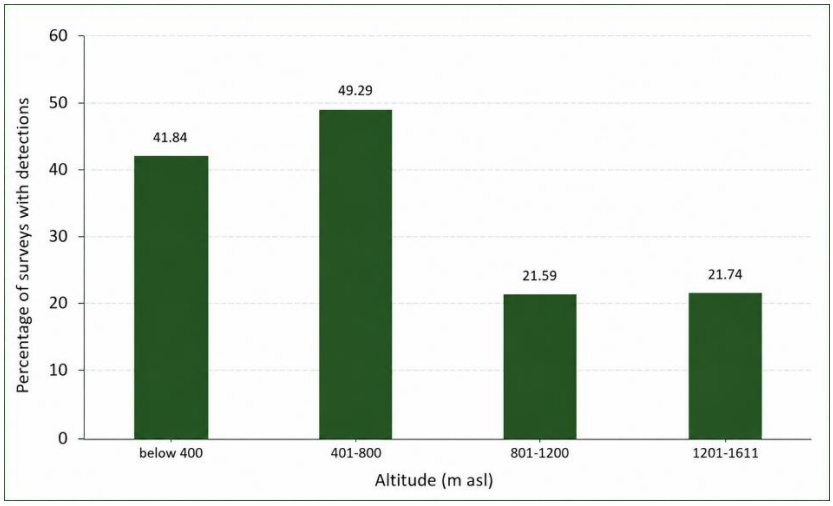


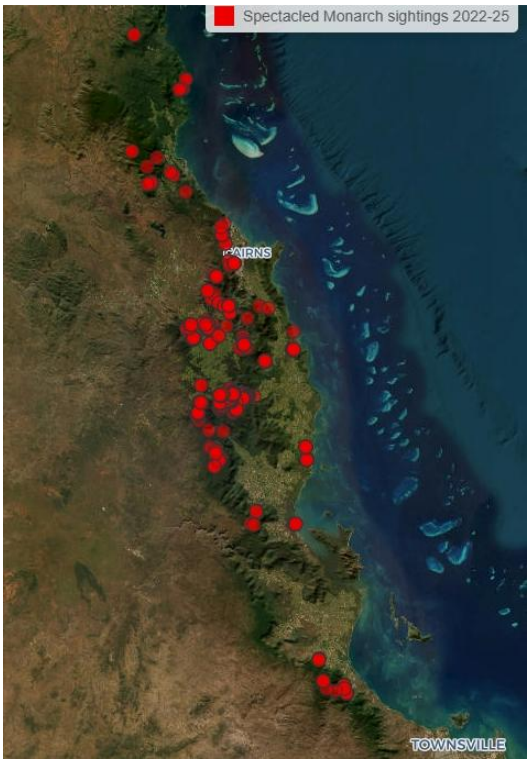
Figure 58. Percentage of surveys with Spectacled Monarch detections at various altitudes based on four years data (2022 - 2025).



Spectacled Monarch was detected across the full elevational gradient, but detection rates were highest in lowland and mid-elevation rainforest. Detection rates increased slightly from 41.8% of surveys below 400 m asl to 49.3% between 401 and 800 m asl, before declining to around 22% of surveys above 800 m asl. This pattern supports published descriptions of the species as a widespread rainforest bird that is most strongly associated with lowland and mid-elevation habitats. Although Spectacled Monarch was detected up to 1,295 m asl, it was substantially less common in upland rainforest.

Spatial distribution

Figure 59. Distribution of Spectacled Monarch records within Wet Tropics KBAs, 2022 - 2025.



Discussion

The results closely align with published descriptions of the Spectacled Monarch as a widespread rainforest species occupying habitats from lowland to upland rainforest (BirdLife Australia 2023; Clement et al. 2025). Although recorded across a broad elevational range from 1 to 1,295 m asl and throughout all five Key Biodiversity Areas, detection rates were highest in lowland and mid-elevation rainforest and declined above 800 m asl. This broad distribution contrasts with the much narrower elevational ranges of many climate-sensitive Wet Tropics endemic birds assessed in this report.

The species' broad distribution and high detection rates demonstrate the value of Birds With Altitude's standardised survey methods for monitoring common as well as threatened rainforest birds. As the monitoring dataset grows, it will provide an increasingly valuable benchmark for detecting changes in the distribution and abundance of the broader Wet Tropics bird community in response to climate change.

The Spectacled Monarch was recorded across a broad elevational range and throughout all five Key Biodiversity Areas, demonstrating the value of the standardised survey methods favoured by the Birds With Altitude Project. These methods can be used to monitor common rainforest birds as well as threatened taxa, creating a valuable long-term dataset for the broader rainforest bird community.

10. Key findings

Since its establishment in 2022, Birds With Altitude has grown in volunteer participation, survey effort and geographic coverage, strengthening its capacity to monitor climate-sensitive rainforest birds across the Australian Wet Tropics World Heritage Area. The project has expanded from a pilot program in Wooroonooran National Park to a region-wide monitoring program operating across all five Wet Tropics Key Biodiversity Areas, establishing a standardised and repeatable framework for long-term bird monitoring.

Between 2022 and 2025, surveys were undertaken across a broad range of rainforest habitats and elevations, extending from near sea level to 1,605 m asl on the summit of Mount Bartle Frere, Queensland's tallest mountain. This extensive geographic and elevational coverage provides a strong foundation for investigating changes in species occurrence, abundance and elevational distribution in response to climate change. As repeat surveys continue, the dataset will become increasingly valuable for detecting gradual ecological change and identifying emerging climate-related trends.

The project has also demonstrated that citizen scientists can collect high-quality ecological data using BirdLife Australia's standardised survey methods and Birdata. Volunteer training, support resources and data quality assurance have produced a robust dataset suitable for long-term monitoring, while simultaneously building community knowledge, engagement and capacity for rainforest bird conservation.

Although Birds With Altitude focuses on climate-sensitive rainforest birds, the use of standardised survey methods means that every survey contributes information on the broader Wet Tropics bird community. The resulting dataset extends well beyond the project's priority species, providing opportunities to investigate changes in the distribution, abundance and breeding of both threatened and more widespread species, and to assess the effects of climate change and other environmental pressures across the rainforest bird community.

The greatest value of Birds With Altitude lies in the long-term dataset being established. While the results presented in this report provide an important baseline for future comparison, the scientific and conservation value of the project will continue to increase as monitoring continues. Over time, the dataset will provide increasingly robust evidence to support research, adaptive management and conservation planning for the unique rainforest birds of the Australian Wet Tropics.

11. Future directions

As the Birds With Altitude Project continues to develop, priorities include strengthening the monitoring network, expanding survey coverage, evaluating emerging technologies, increasing the ecological information collected, and strengthening collaboration with researchers and conservation partners.

Maintaining consistent long-term monitoring remains the project's highest priority. Detecting climate-driven changes in rainforest bird populations requires repeat surveys over many years. A key focus will be the development of a more formal monitoring network based on selected sites spanning the Wet Tropics elevational gradient. Where possible, this network will incorporate historical survey sites established by Professor Steve Williams and colleagues between the 2000 and 2016, enabling comparisons with earlier monitoring and improving the

capacity to detect long-term changes in species abundance, distribution, and community composition.

Although survey coverage has increased substantially, some regions and elevations remain under-surveyed. Where possible, increasing repeat surveys in these areas will strengthen the project's ability to assess changes in species occupancy, distribution and population health associated with climate change.

In partnership with the Queensland Parks and Wildlife Service, Birds With Altitude commenced a pilot acoustic monitoring project in 2026 using autonomous recorders at two historical monitoring sites near the summit of Mount Bellenden Ker. The project will evaluate whether passive acoustic monitoring can complement observer-based surveys, particularly in remote or difficult-to-access locations.

As the dataset continues to grow, opportunities for collaboration with universities, government agencies and research organisations will expand. Strengthening these partnerships will support more sophisticated analyses of long-term population trends and improve the application of project data to conservation planning and climate adaptation.

Future surveys will also place greater emphasis on recording breeding activity, habitat use and other ecological observations to improve understanding of the ecology of Wet Tropics rainforest birds.

Citizen scientists remain central to the project's success. Continued recruitment, training and mentoring of volunteers, together with annual campouts, field days and the Birds With Altitude Challenge Competition, will help maintain a skilled and engaged monitoring network.

By maintaining a consistent long-term monitoring program, Birds With Altitude will provide an increasingly valuable evidence base to support research, conservation planning and adaptive management of the unique rainforest birds of the Australian Wet Tropics.

12. Conclusion

The Birds With Altitude Project has established a strong foundation for monitoring Wet Tropics rainforest birds. Through the commitment of citizen scientists and the support of project partners, the project is creating a robust long-term dataset spanning the full elevational range of the Wet Tropics.

As monitoring continues, this dataset will become an increasingly valuable resource for detecting climate-driven ecological change, supporting conservation planning and informing the management of one of Australia's most climate-sensitive ecosystems. By building on the legacy of earlier Wet Tropics monitoring, Birds With Altitude is helping ensure that future conservation of the region's unique rainforest birds is guided by strong science and long-term community participation.

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14. Appendices

Appendix 1	List of birds recorded in five Key Biodiversity Areas in the Wet Tropics (Birdata surveys 2022 - 2025)

Appendix 1: List of birds recorded in five Key Biodiversity Areas in the Wet Tropics (based on 2 ha 20 min area search and 500 m area search Birdata surveys 2022 - 2025).

NOTE: the taxonomy used in this list is BirdLife Australia's Working List of Australian Birds (Version 4.3)

Common.Name	Scientific.Name	Subspecies.Common.Name
Atherton Scrubwren	*Sericornis keri*	
Australasian Darter	*Anhinga novaehollandiae*	
Australasian Figbird	*Sphecotheres vieilloti*	Cape York Australasian Figbird
Australasian Grebe	*Tachybaptus novaehollandiae*	
Australasian Pipit	*Anthus novaeseelandiae*	Central Australian Pipit
Australian Brush-turkey	*Alectura lathami*	Southern Australian Brush-turkey
Australian Hobby	*Falco longipennis*	Southern Australian Hobby
Australian King-Parrot	*Alisterus scapularis*	Wet Tropics Australian King-Parrot
Australian Magpie	*Gymnorhina tibicen*	Eastern Australian Magpie
Australian Painted-Snipe	*Rostratula australis*	
Australian Pelican	*Pelecanus conspicillatus*	
Australian Pied Oystercatcher	*Haematopus longirostris*	
Australian Reed-Warbler	*Acrocephalus australis*	Eastern Australian Reed-Warbler
Australian Swiftlet	*Aerodramus terraereginae*	Coastal Australian Swiftlet
Australian White Ibis	*Threskiornis moluccus*	
Australian Wood Duck	*Chenonetta jubata*	
Azure Kingfisher	*Ceyx azureus*	Southern Azure Kingfisher
Baillon's Crake	*Zapornia pusilla*	
Barking Owl	*Ninox connivens*	Southern Barking Owl, Northern Barking Owl
Barred Cuckoo-shrike	*Coracina lineata*	
Bar-shouldered Dove	*Geopelia humeralis*	Eastern Bar-shouldered Dove, Northern Bar-shouldered Dove
Bassian Thrush	*Zoothera lunulata*	Wet Tropics Bassian Thrush
Beach Stone-curlew	*Esacus magnirostris*	
Black Butcherbird	*Melloria quoyi*	North-eastern Black Butcherbird
Black Duck-Mallard hybrid		
Black Kite	*Milvus migrans*	
Black Swan	*Cygnus atratus*	
Black-backed Butcherbird	*Cracticus mentalis*	
Black-chinned Honeyeater	*Melithreptus gularis*	South-eastern Black-chinned Honeyeater, Golden-backed Honeyeater
Black-eared Catbird	*Ailuroedus melanotis*	Wet Tropics Black-eared Catbird
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Mainland Black-faced Cuckoo-shrike
Black-faced Monarch	*Monarcha melanopsis*	
Black-fronted Dotterel	*Elseyornis melanops*	
Black-necked Stork	*Ephippiorhynchus asiaticus*	
Black-shouldered Kite	*Elanus axillaris*	

Common.Name	Scientific.Name	Subspecies.Common.Name
Blue-faced Honeyeater	*Entomyzon cyanotis*	Eastern Blue-faced Honeyeater, Cape York Blue-faced Honeyeater
Blue-faced Parrot-Finch	*Erythrura trichroa*	
Blue-winged Kookaburra	*Dacelo leachii*	Northern Blue-winged Kookaburra
Bower's Shrike-thrush	*Colluricincla boweri*	
Brahminy Kite	*Haliastur indus*	
Bridled Honeyeater	*Bolemoreus frenatus*	
Brolga	*Grus rubicunda*	
Brown Cuckoo-Dove	*Macropygia phasianella*	Wet Tropics Brown Cuckoo-Dove
Brown Falcon	*Falco berigora*	
Brown Gerygone	*Gerygone mouki*	Wet Tropics Brown Gerygone
Brown Goshawk	*Accipiter fasciatus*	Northern Brown Goshawk, Southern Brown Goshawk
Brown Honeyeater	*Lichmera indistincta*	Eastern Brown Honeyeater
Brown Quail	*Synoicus ypsilophorus*	Mainland Brown Quail
Brown Treecreeper	*Climacteris picumnus*	Cape York Brown Treecreeper, North-eastern Brown Treecreeper
Brown-backed Honeyeater	*Ramsayornis modestus*	
Brown-capped Emerald-Dove	*Chalcophaps longirostris*	Eastern Brown-capped Emerald-Dove
Brush Cuckoo	*Cacomantis variolosus*	Northern Brush Cuckoo, Southern Brush Cuckoo
Buff-banded Rail	*Hypotaenidia philippensis*	Australian Buff-banded Rail
Buff-breasted Paradise-Kingfisher	*Tanysiptera sylvia*	
Buff-rumped Thornbill	*Acanthiza reguloides*	Northern Buff-rumped Thornbill
Bush Stone-curlew	*Burhinus grallarius*	
Cattle Egret	*Bubulcus ibis*	
Channel-billed Cuckoo	*Scythrops novaehollandiae*	
Chestnut Teal	*Anas castanea*	
Chestnut-breasted Mannikin	*Lonchura castaneothorax*	
Chowchilla	*Orthonyx spaldingii*	Southern Chowchilla
Comb-crested Jacana	*Irediparra gallinacea*	
Common Cicadabird	*Edolisoma tenuirostre*	Eastern Common Cicadabird
Common Myna	*Acridotheres tristis*	
Common Sandpiper	*Actitis hypoleucos*	
Cotton Pygmy-goose	*Nettapus coromandelianus*	
Crested Pigeon	*Ocyphaps lophotes*	Eastern Crested Pigeon
Crimson Rosella	*Platycercus elegans*	
Double-barred Finch	*Taeniopygia bichenovii*	Eastern Double-barred Finch
Double-eyed Fig-Parrot	*Cyclopsitta diophthalma*	Macleay's Fig-Parrot
Dusky Honeyeater	*Myzomela obscura*	Eastern Dusky Honeyeater
Dusky Moorhen	*Gallinula tenebrosa*	
Dusky Woodswallow	*Artamus cyanopterus*	Eastern Dusky Woodswallow
Eastern Koel	*Eudynamys orientalis*	Torresian Eastern Koel
Eastern Reef Egret	*Egretta sacra*	
Eastern Spinebill	*Acanthorhynchus tenuirostris*	Wet Tropics Eastern Spinebill

Common.Name	Scientific.Name	Subspecies.Common.Name
Eastern Whipbird	*Psophodes olivaceus*	Wet Tropics Eastern Whipbird
Eastern Yellow Robin	*Eopsaltria australis*	North-eastern Yellow Robin
Eurasian Coot	*Fulica atra*	
Fairy Gerygone	*Gerygone palpebrosa*	Southern Fairy Gerygone, Cape York Fairy Gerygone
Fairy Martin	*Petrochelidon ariel*	
Fan-tailed Cuckoo	*Cacomantis flabelliformis*	
Fernwren	*Oreoscopus gutturalis*	
Forest Kingfisher	*Todiramphus macleayii*	Eastern Forest Kingfisher
Fuscous Honeyeater	*Ptilotula fusca*	Northern Fuscous Honeyeater
Glossy Ibis	*Plegadis falcinellus*	
Golden Bowerbird	*Prionodura newtoniana*	
Golden Whistler	*Pachycephala pectoralis*	Eastern Golden Whistler
Golden-headed Cisticola	*Cisticola exilis*	North-eastern Golden-headed Cisticola
Graceful Honeyeater	*Microptilotis gracilis*	Wet Tropics Graceful Honeyeater
Great Bowerbird	*Chlamydera nuchalis*	Eastern Great Bowerbird
Great Cormorant	*Phalacrocorax carbo*	
Great Crested Grebe	*Podiceps cristatus*	
Great Egret	*Ardea alba*	
Great Pied Cormorant	*Phalacrocorax varius*	
Greater Crested Tern	*Thalasseus bergii*	
Green Oriole	*Oriolus flavocinctus*	Wet Tropics Green Oriole
Grey Butcherbird	*Cracticus torquatus*	Inland Grey Butcherbird
Grey Fantail	*Rhipidura albiscapa*	North-eastern Grey Fantail
Grey Goshawk	*Accipiter novaehollandiae*	
Grey Shrike-thrush	*Colluricincla harmonica*	Eastern Grey Shrike-thrush
Grey Teal	*Anas gracilis*	
Grey Whistler	*Pachycephala simplex*	Eastern Grey Whistler
Grey-headed Robin	*Heteromyias albispecularis*	
Hardhead	*Aythya australis*	
Helmeted Friarbird	*Philemon buceroides*	Hornbill Helmeted Friarbird
Helmeted Guineafowl	*Numida meleagris*	
Hoary-headed Grebe	*Poliocephalus poliocephalus*	
Horsfield's Bronze-Cuckoo	*Chalcites basalis*	
Horsfield's Bushlark	*Mirafra javanica*	Wet Tropics Horsfield's Bushlark
House Sparrow	*Passer domesticus*	
Intermediate Egret	*Ardea intermedia*	
Jacky Winter	*Microeca fascinans*	Eastern Jacky Winter
Large-billed Gerygone	*Gerygone magnirostris*	North Queensland Large-billed Gerygone
Large-billed Scrubwren	*Sericornis magnirostra*	Wet Tropics Large-billed Scrubwren
Large-tailed Nightjar	*Caprimulgus macrurus*	
Latham's Snipe	*Gallinago hardwickii*	
Laughing Kookaburra	*Dacelo novaeguineae*	Southern Laughing Kookaburra

Common.Name	Scientific.Name	Subspecies.Common.Name
Leaden Flycatcher	*Myiagra rubecula*	Cape York Leaden Flycatcher, Eastern Leaden Flycatcher
Lemon-bellied Flycatcher	*Microeca flavigaster*	South-eastern Lemon-bellied Flycatcher
Lesser Sand Plover	*Charadrius mongolus*	
Lesser Sooty Owl	*Tyto multipunctata*	
Lewin's Honeyeater	*Meliphaga lewinii*	Central Queensland Coast Lewin's Honeyeater
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Little Bronze-Cuckoo	*Chalcites minutillus*	Gould's Bronze-Cuckoo
Little Button-quail	*Turnix velox*	
Little Corella	*Cacatua sanguinea*	Eastern Little Corella, Cape York Little Corella
Little Eagle	*Hieraaetus morphnoides*	
Little Egret	*Egretta garzetta*	Australasian Little Egret
Little Friarbird	*Philemon citreogularis*	Eastern Little Friarbird
Little Kingfisher	*Ceyx pusillus*	Eastern Little Kingfisher
Little Lorikeet	*Glossopsitta pusilla*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Little Shrike-thrush	*Colluricincla megarhyncha*	Wet Tropics Little Shrike-thrush
Lovely Fairy-wren	*Malurus amabilis*	
Macleay's Honeyeater	*Xanthotis macleayanus*	
Magpie Goose	*Anseranas semipalmata*	
Magpie-lark	*Grallina cyanoleuca*	Southern Magpie-lark
Mangrove Gerygone	*Gerygone levigaster*	Eastern Mangrove Gerygone
Masked Lapwing	*Vanellus miles*	Northern Masked Lapwing
Metallic Starling	*Aplonis metallica*	
Mistletoebird	*Dicaeum hirundinaceum*	
Mountain Thornbill	*Acanthiza katherina*	
Muscovy Duck	*Cairina moschata*	
Nankeen Kestrel	*Falco cenchroides*	
Nankeen Night-Heron	*Nycticorax caledonicus*	
Noisy Friarbird	*Philemon corniculatus*	Northern Noisy Friarbird
Noisy Miner	*Manorina melanocephala*	Eastern Noisy Miner, Cape York Noisy Miner
Noisy Pitta	*Pitta versicolor*	Central Queensland Noisy Pitta
Northern Fantail	*Rhipidura isura*	Australian Northern Fantail
Nutmeg Mannikin	*Lonchura punctulata*	
Olive-backed Oriole	*Oriolus sagittatus*	Cape York Olive-backed Oriole, Eastern Olive-backed Oriole
Olive-backed Sunbird	*Cinnyris jugularis*	
Orange-footed Scrubfowl	*Megapodius reinwardt*	Southern Queensland Orange-footed Scrubfowl
Oriental Dollarbird	*Eurystomus orientalis*	
Osprey	*Pandion haliaetus*	Eastern Osprey
Pacific Baza	*Aviceda subcristata*	
Pacific Black Duck	*Anas superciliosa*	

Common.Name	Scientific.Name	Subspecies.Common.Name
Pale-headed Rosella	*Platycercus adscitus*	Cape York Pale-headed Rosella
Pale-vented Bush-hen	*Amaurornis moluccana*	
Pale-yellow Robin	*Tregellasia capito*	Northern Pale-yellow Robin
Papuan Frogmouth	*Podargus papuensis*	Southern Papuan Frogmouth
Peaceful Dove	*Geopelia placida*	Eastern Peaceful Dove
Peregrine Falcon	*Falco peregrinus*	Australian Peregrine Falcon
Pheasant Coucal	*Centropus phasianinus*	Northern Pheasant Coucal
Pied Butcherbird	*Cracticus nigrogularis*	Eastern Pied Butcherbird
Pied Currawong	*Strepera graculina*	Wet Tropics Pied Currawong
Pied Monarch	*Arses kaupi*	Southern Pied Monarch
Pied Stilt	*Himantopus leucocephalus*	
Pink-eared Duck	*Malacorhynchus membranaceus*	
Plumed Egret	*Ardea plumifera*	
Plumed Whistling-Duck	*Dendrocygna eytoni*	
Purple Swamphen	*Porphyrio porphyrio*	Australasian Purple Swamphen
Radjah Shelduck	*Radjah radjah*	
Rainbow Bee-eater	*Merops ornatus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	Eastern Rainbow Lorikeet
Red-backed Fairy-wren	*Malurus melanocephalus*	Northern Red-backed Fairy-wren, Eastern Red-backed Fairy-wren
Red-browed Finch	*Neochmia temporalis*	Southern Red-browed Finch
Red-browed Pardalote	*Pardalotus rubricatus*	Inland Red-browed Pardalote, Cape York Red-browed Pardalote
Red-capped Plover	*Charadrius ruficapillus*	
Red-necked Crake	*Rallina tricolor*	
Red-tailed Black-Cockatoo	*Calyptorhynchus banksii*	Northern Red-tailed Black-Cockatoo
Red-winged Parrot	*Aprosmictus erythropterus*	
Rose-crowned Fruit-Dove	*Ptilinopus regina*	
Royal Spoonbill	*Platalea regia*	
Rufous Fantail	*Rhipidura rufifrons*	North-eastern Rufous Fantail
Rufous Owl	*Ninox rufa*	Cape York Rufous Owl, Eastern Rufous Owl
Rufous Whistler	*Pachycephala rufiventris*	Southern Rufous Whistler
Rufous-throated Honeyeater	*Conopophila rufogularis*	
Sacred Kingfisher	*Todiramphus sanctus*	Australian Sacred Kingfisher
Sarus Crane	*Grus antigone*	
Satin Bowerbird	*Ptilonorhynchus violaceus*	Wet Tropics Satin Bowerbird
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Scarlet Honeyeater	*Myzomela sanguinolenta*	
Sharp-tailed Sandpiper	*Calidris acuminata*	
Shining Bronze-Cuckoo	*Chalcites lucidus*	New Zealand Shining Bronze-Cuckoo, Australian Shining Bronze-Cuckoo
Shining Flycatcher	*Myiagra alecto*	Eastern Shining Flycatcher
Silvereye	*Zosterops lateralis*	North-eastern Silvereye

Common.Name	Scientific.Name	Subspecies.Common.Name
Southern Boobook	*Ninox boobook*	Wet Tropics Boobook
Southern Cassowary	*Casuarius casuarius*	
Spangled Drongo	*Dicrurus bracteatus*	North-eastern Spangled Drongo
Spectacled Monarch	*Symposiachrus trivirgatus*	Wet Tropics Spectacled Monarch
Spotless Crake	*Zapornia tabuensis*	
Spotted Dove	*Spilopelia chinensis*	Eastern Asian Spotted Dove, Southern Asian Spotted Dove
Spotted Harrier	*Circus assimilis*	
Spotted Pardalote	*Pardalotus punctatus*	Wet Tropics Spotted Pardalote
Square-tailed Kite	*Lophoictinia isura*	
Straw-necked Ibis	*Threskiornis spinicollis*	
Striated Heron	*Butorides striata*	Eastern Striated Heron
Striated Pardalote	*Pardalotus striatus*	Black-headed Pardalote,Western Striated Pardalote, Northern Striated Pardalote
Sulphur-crested Cockatoo	*Cacatua galerita*	Eastern Sulphur-crested Cockatoo
Superb Fruit-Dove	*Ptilinopus superbus*	
Swamp Harrier	*Circus approximans*	
Tawny Frogmouth	*Podargus strigoides*	Eastern Tawny Frogmouth
Tawny Grassbird	*Cincloramphus timoriensis*	
Tooth-billed Bowerbird	*Scenopoeetes dentirostris*	
Topknot Pigeon	*Lopholaimus antarcticus*	
Torresian Crow	*Corvus orru*	Australian Torresian Crow
Torresian Imperial-Pigeon	*Ducula spilorrhoa*	
Tree Martin	*Petrochelidon nigricans*	Mainland Tree Martin, Tasmanian Tree Martin
Varied Sittella	*Daphoenositta chrysoptera*	White-headed Sitella, Striated Sitella
Varied Triller	*Lalage leucomela*	Eastern Varied Triller, Cape York Varied Triller
Victoria's Riflebird	*Lophorina victoriae*	
Wandering Whistling-Duck	*Dendrocygna arcuata*	
Wedge-tailed Eagle	*Aquila audax*	Mainland Wedge-tailed Eagle
Welcome Swallow	*Hirundo neoxena*	Eastern Welcome Swallow
Whimbrel	*Numenius phaeopus*	
Whistling Kite	*Haliastur sphenurus*	
White-bellied Cuckoo-shrike	*Coracina papuensis*	Eastern White-bellied Cuckoo-shrike, Cape York White-bellied Cuckoo-shrike
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	
White-breasted Woodswallow	*Artamus leucorynchus*	
White-browed Crake	*Amaurornis cinerea*	
White-browed Robin	*Poecilodryas superciliosa*	
White-browed Scrubwren	*Sericornis frontalis*	Buff-breasted Scrubwren
White-cheeked Honeyeater	*Phylidonyris niger*	Eastern White-cheeked Honeyeater
White-eared Monarch	*Carterornis leucotis*	

Common.Name	Scientific.Name	Subspecies.Common.Name
White-faced Heron	*Egretta novaehollandiae*	
White-gaped Honeyeater	*Stomiopera unicolor*	
White-headed Pigeon	*Columba leucomela*	
White-naped Honeyeater	*Melithreptus lunatus*	Eastern White-naped Honeyeater
White-necked Heron	*Ardea pacifica*	
White-throated Gerygone	*Gerygone olivacea*	Eastern White-throated Gerygone
White-throated Honeyeater	*Melithreptus albogularis*	Eastern White-throated Honeyeater
White-throated Needletail	*Hirundapus caudacutus*	
White-throated Nightjar	*Eurostopodus mystacalis*	
White-throated Treecreeper	*Cormobates leucophaea*	Little Treecreeper
White-winged Triller	*Lalage tricolor*	
Willie Wagtail	*Rhipidura leucophrys*	Southern Willie Wagtail, Northern Willie Wagtail
Wompoo Fruit-Dove	*Megaloprepia magnifica*	Wet Tropics Wompoo Fruit-Dove
Wood Sandpiper	*Tringa glareola*	
Yellow Honeyeater	*Stomiopera flava*	Southern Yellow Honeyeater, Cape York Yellow Honeyeater
Yellow-breasted Boatbill	*Machaerirhynchus flaviventer*	Wet Tropics Yellow-breasted Boatbill
Yellow-faced Honeyeater	*Caligavis chrysops*	Wet Tropics Yellow-faced Honeyeater
Yellow-spotted Honeyeater	*Meliphaga notata*	Wet Tropics Yellow-spotted Honeyeater
Yellow-throated Scrubwren	*Sericornis citreogularis*	Wet Tropics Yellow-throated Scrubwren

Birds With Altitude

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