

# Northern range limits of Plumed Frogmouth *Podargus ocellatus plumiferus* with notes on other species in Bulburin National Park, Queensland

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**Abstract.** We report observations of the Plumed Frogmouth *Podargus ocellatus plumiferus* from Bulburin National Park, the largest subtropical rainforest remnant in central Queensland located at the northern limit of the Southeast Queensland bioregion. By documenting the currently understood northern limits of this subspecies of the Marbled Frogmouth *Podargus ocellatus*, we briefly discuss the broader biogeographical significance of Bulburin National Park in understanding the distribution of other rainforest-inhabiting species that occur in naturally and anthropogenically fragmented ranges along Australia's eastern seaboard. Among species we discuss are Russet-tailed Thrush *Zoothra heinei* and Satin Bowerbird *Ptilonorhynchus violaceus*.

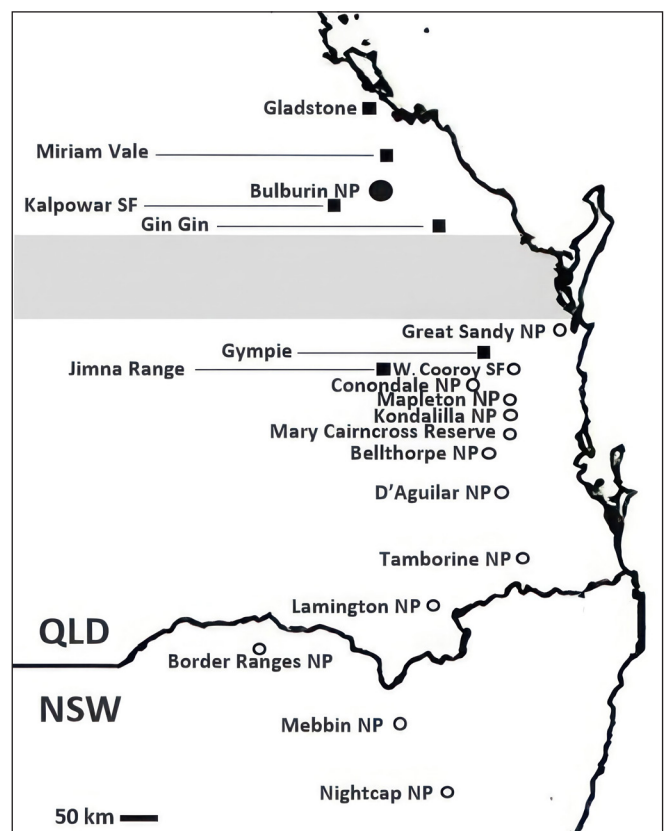
## Introduction

The Marbled Frogmouth *Podargus ocellatus* is widespread in New Guinea (Beehler & Pratt 2016) but in Australia occurs in two widely separated regions (e.g. Schodde & Mason 1980; Schodde 1997; Higgins 1999; Menkhorst *et al.* 2017). Australia's northern populations are recognised as *P. o. marmoratus* and are confined to the far north of Cape York Peninsula. They closely resemble the New Guinean populations in plumage and their relatively small physical size (e.g. wing-lengths in both sexes ranging from 173 to 191 mm: Schodde & Mason 1980). In contrast, Australia's southern populations, which occur in south-eastern Queensland and north-eastern New South Wales, are recognised as *P. o. plumiferus* and comprise substantially larger birds (e.g. wing-lengths in both sexes from 226 to 245 mm: Schodde & Mason 1980). *P. o. plumiferus* is often referred to as Plumed Frogmouth. This note is focused on what is known of the northern range limits of the Plumed Frogmouth. For details of home range, food, vocalisations and a general synthesis of known biological data see Smith *et al.* (1994a,b), Smith & Jones (1997), Hollands (2008), Smith & Hamley (2009) and Smith & Mathieson (2012).

The full range of the Plumed Frogmouth was reviewed by Corben & Roberts (1993). They affirmed that it is confined at least to far south-eastern Queensland and a very small part of far north-eastern New South Wales (see also McGill 1978; Roberts & Ingram 1978; Schodde & Mason 1980; Holmes 1981; Milledge 1983; Schodde 1997). Its published northern range limits were first recognised as the Conondale and Jimna Ranges (e.g. Schodde & Mason 1980; Schodde 1997), and later near Gladstone, Bulburin National Park (Corben & Roberts 1993). Recent sightings on eBird (ebird.org, accessed 28 November 2022), and supported by photographs, indicate its presence between the Conondale Range and Bulburin National Park: north-eastwards to West Cooroy State Forest and the Great Sandy National Park (Figure 1). Considering how cryptic this bird is and given concerns about range declines in Australian fauna generally (e.g. Ward *et al.* 2022), we report

observations confirming that the Plumed Frogmouth is still present at the northern range limit recorded by Corben & Roberts (1993), at Bulburin National Park, ~30 km south-west of Miriam Vale and ~120 km south of Gladstone.

Bulburin National Park (34,355 hectares) contains the headwaters of the Boyne River, Baffle Creek and Kolan



**Figure 1.** Map showing locations of sightings of Plumed Frogmouth. ○ = locality of sightings reported here. ● = main localities of sightings reported between 2017 and 2022 in eBird, Atlas of Living Australia and iNaturalist (all accessed 27 November 2022). ■ = other localities mentioned in text. The shaded area highlights a region of particular uncertainty on the range of the Plumed Frogmouth. NP = National Park, SF = State Forest.



**Figure 2.** Plumed Frogmouths, Bulburin National Park, Queensland. Left: 2 August 2021, 2102 h; coordinates -24.525359, 151.469323. Right: 3 August 2021, 1950 h; coordinates -24.525407, 151.469407. Photos: Cecile Espigole

River. Most of it is mountainous, with elevations ranging from 110 m in the Granite Creek Valley to 720 m in the Dawes Range. The area was logged for soft- and hardwood, in particular Hoop Pine *Araucaria cunninghamii*, until 2006, when it was designated a national park. About half of Bulburin National Park is covered in subtropical rainforest and dense patches of dry rainforest, and the other half is made up of tall open forests and woodland with rainforest understorey (Melzer *et al.* 2020).

## Observations

On 2 and 3 August 2021, we photographed at least two individuals (Figure 2), easily identifiable as Plumed Frogmouth by their extensive frontal (forehead) tuft feathering protruding well beyond the bill, and long, graduated tail. We recorded vocalisations of at least one bird and have lodged the recording at the Australian National Wildlife Collection, CSIRO, Canberra (registration number ANWC X49238). The recording contains two distinct calls, suggesting the presence of a pair of birds: the diagnostically harsh vocalisation that has been rendered phonetically in earlier literature as *whoor-loo* or *whoor-loop* and the soft and mellow ‘gobble’ call that is followed by a bill clap; the latter is thought to be associated with breeding (Holmes 1981; Menkhorst *et al.* 2017; see also Jones & Smith 1997; Smith & Jones 1997).

Another more recent record from a few kilometres further north at Bororen (~25 km north of Miriam Vale) was on eBird when we accessed the site on 30 April 2022; this record has evidently been withdrawn (not present when eBird was accessed on 28 November 2022).

## Discussion

As with any species, distribution of any infrequently reported bird, such as the Plumed Frogmouth, it is worth questioning whether its range has changed since last assessed and whether it is continuously distributed or fragmented in its range. If currently fragmented, for example, has the range

always been fragmented or might anthropogenic change have driven range fragmentation? Our records confirm that the Plumed Frogmouth still occurs around its northern range limits as formerly reported (Corben & Roberts 1993). We suggest that present data are equivocal with regard to determining whether the Bulburin National Park population of Plumed Frogmouths is isolated from those further south. We have found some older reports not mentioned by Corben & Roberts (1993), however, to suggest that at least historically the range of the Plumed Frogmouth might have been more extensive and possibly more continuous between Bulburin National Park, the region under discussion here, and the rest of the Southeast Queensland bioregion. We refer to compelling reports by Zillmann (1984; here reproduced in Appendix 1) from the late 1950s and 1960s of the same *kooloo-kooloo* vocalisations, and his sightings that he attributed to Plumed Frogmouth. The exact localities of his records are unclear but the localities that he listed (Granite Creek near Booyal, and 3 miles from Gin Gin) are clearly all within a few kilometres south-west of Gin Gin (see Figure 1). Searches for the Plumed Frogmouth in this area to determine whether it is still present in patches of suitable habitat are clearly warranted. Documented records of infrequently reported birds such as the Plumed Frogmouth are essential to refine species distribution, habitat and, to some extent, numbers, and we hereby encourage readers to register any records they have to consolidate the data currently available for this subspecies (and any other infrequently reported species).

Finally, our record has some bearing on the significance of the Bulburin National Park area to broader-scale biogeography of eastern Australian birds (see Table 1 and below) and other vertebrates. For example, similar clarifications might be made of the northern limits of other south-eastern Queensland and north-eastern New South Wales endemics, such as Black-breasted Button-quail *Turnix melanogaster*. Zillmann (1984; see Appendix 1) referred to Black-breasted Button-quail and Painted Button-quail *T. varius*, noting the former at Saint Agnes Creek ~100 km south-east of Bulburin. Only the latter has been recorded at Bulburin (e.g. several locations reported in eBird from 2021; accessed 8 August 2022). Black-breasted

**Table 1.** Rainforest birds historically and currently occurring in Bulburin National Park, Queensland, as well as south and north of this area. ✓ indicates presence; a name following the tick indicates a change in subspecies. Scientific names follow Menkhurst *et al.* (2017) and McAllan *et al.* (1988). NP = National Park.

Species	Currently present in rainforests south of Bulburin NP (e.g. Conondale NP)	Historically present in Bulburin NP	Currently present in Bulburin NP	Currently present in rainforests north of Bulburin NP to Eungella
Australian Brush-turkey <i>Alectura lathami lathami</i>	✓	✓	✓	
Australian King-Parrot <i>Alisterus scapularis scapularis</i>	✓	✓	✓	✓
Black-breasted Button-quail <i>Turnix melanogaster</i>	✓			
Brown Cuckoo-Dove <i>Macropygia phasianella</i>	✓ <i>M. p. phasianella</i>	✓ <i>M. p. phasianella</i>	✓ <i>M. p. phasianella</i>	✓ <i>M. p. robinsoni</i>
Brown Gerygone <i>Gerygone mouki</i>	✓ <i>G. m. richmondi</i>	✓ <i>G. m. richmondi</i>	✓ <i>G. m. richmondi</i>	✓ <i>G. m. amalia</i>
Crimson Rosella <i>Platycercus elegans</i>	✓ <i>P. e. elegans</i>			✓ <i>P. e. filewoodi</i>
Eastern Whipbird <i>Psophodes olivaceus olivaceus</i>	✓	✓	✓	✓
Eungella Honeyeater <i>Bolemoreus hindwoodi</i>				✓
Golden Whistler <i>Pachycephala pectoralis pectoralis</i>	✓	✓	✓	✓
Green Catbird <i>Ailuroedus crassirostris</i>	✓	✓	✓	✓
Large-billed Scrubwren <i>Sericornis magnirostris magnirostris</i>	✓	✓	✓	✓
Noisy Pitta <i>Pitta versicolor</i>	✓ <i>P. v. versicolor</i>	✓	✓	✓ <i>P. v. intermedia</i>
Pacific Emerald-Dove <i>Chalcophaps longirostris rogersi</i>	✓	✓	✓	✓
Painted Button-quail <i>Turnix varius varius</i>	✓	✓	✓	✓
Paradise Riflebird <i>Ptiloris paradiseus</i>	✓	✓	✓	✓
Pied Currawong <i>Strepera graculina graculina</i>	✓	✓	✓	✓
<b>Plumed Frogmouth</b> <b><i>Podargus ocellatus plumiferus</i></b>	✓	✓	✓	✓
Regent Bowerbird <i>Sericulus chrysocephalus</i>	✓	✓	✓	✓
Rose-crowned Fruit-Dove <i>Ptilinopus regina regina</i>	✓	✓	✓	✓
Rufous Fantail <i>Rhipidura rufifrons</i>	✓	✓	✓	✓
Rufous Shrike-thrush <i>Colluricincla rufogaster</i>	✓	✓	✓	✓
Russet-tailed Thrush <i>Zoothera heinei</i>	✓	✓	✓	✓
Satin Bowerbird <i>Ptilonorhynchus violaceus</i>	✓	✓		
Spectacled Monarch <i>Symposiachrus trivirgatus</i>	✓	✓	✓	✓
Topknot Pigeon <i>Lopholaimus antarcticus</i>	✓	✓	✓	✓
White-eared Monarch <i>Carterornis leucotis</i>	✓	✓	✓	✓
Wompoo Fruit-Dove <i>Ptilinopus magnificus</i>	✓ <i>P. m. magnificus</i>	✓ <i>P. m. magnificus</i>	✓ <i>P. m. magnificus</i>	✓ <i>P. m. keri</i>



Button-quail has been recorded and photographed in Kalpowar State Forest ~30 km south-west of Bulburin (<https://ebird.org/australia/checklist/S59502344>; accessed 8 August 2022). For other species, it is well known that some have range gaps between their southern populations in rainforests of south-eastern Queensland and their more northern populations in mid-eastern Queensland and the Wet Tropics rainforests still further north (e.g. birds: Table 1; Boles 1983; Boles & Longmore 1983; Joseph *et al.* 1993; Nicholls & Austin 2005; reptiles: Mather 1990; Mather & Hughes 1992). For such species, there is interest in establishing northern limits of the southernmost populations. Satin Bowerbirds *Ptilonorhynchus violaceus* have been recorded from Bulburin (e.g. Storr 1984) but we know of no recent records. Russet-tailed Thrush *Zoothera heinei* has also been recorded in Bulburin recently by CE (see <https://ebird.org/australia/checklist/S94485201>; accessed 5 August 2022) and other observers. The details of its current extent and northern limits in the area are unclear (e.g. Ford 1983; Higgins *et al.* 2006). As with the Plumed Frogmouth at Bulburin, further work is needed to clarify whether the population of Russet-tailed Thrush in Bulburin is isolated from its populations south (in south-eastern Queensland) and, much further north (e.g. Eungella).

## Acknowledgements

We wish to thank Carl Moller and Jenni Watts for providing the Zillmann (1984) article. Cecile Espigole would especially like to thank William Price and Cameron Whaley who assisted with the observations of the Plumed Frogmouth in the field. Grant Palmer and the reviewers offered very helpful editorial advice.

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**Appendix 1.** Extract from *Wambaliman*, the newsletter of the Wildlife Preservation Society of Queensland Fraser Coast Branch, April-June 1984, that includes Eric Zillmann's article on the Plumed Frogmouth.

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Now to two articles from Eric Zillmann, Bundaberg (wellknown naturalist.....and my friend, because Eric always come good to help me out with an interesting article or two !)

#### CALL OF THE BANSHEE

A tape recording of a nocturnal bird call bought back childhood memories of the banshee. We once lived near a creek clothed in Eucalypt forest and scrub in their distinct forms.

~~Across the creek~~ ~~from our home~~ a most unusual nocturnal sound was uttered on occasions. Teddy, a young Irishman who used to visit our home told me stories of the Banshee and that the Banshee lived across the creek. As if on cue, this strange night call broke the night silence, .."There, what did I tell you, that's the Banshee". Scared I ran inside to bed. Teddy, most satisfied he'd frightened me and most likely himself as well.

Leaving the old home, we went to live near the Burnett River and the mysterious call was forgotten -- Not until 1958 was I to hear it again, coincidently, only a mile from our old place of living. "WHAT BIRD IS THAT" had no description of such a call for any nocturnal bird.

My wanderings along a spring-fed creek was a birdo's paradise, just three miles from my home in Gin Gin. Here was one of my earlier sightings of the Oriental Cuckoo, thirty to forty bird species could be found in this particular habitat. It was here I found the Plumed Frogmouth and was interested in its peculiar habit of partly opening its mouth and quivering its head. In 1961 my parents moved to Maleny on the Blackall Range. A nocturnal bird call in the forest jogged my memory - I went to investigate - no luck; but I did find a Plumed Frogmouths.

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#### CALL OF THE BANSHEE...cont/

During the 1960's I camped many times at Granite Creek to hear this remarkable nocturnal call, and not until my nephew played a taped call was the mystery solved. It was indeed the call of the Plumed Frogmouth. A recent campout at Granite Creek and again the nocturnal calls were uttered to be heard by other friends at 2.30a.m. While the Plumed Frogmouth is called the Marbled Frogmouth, there is absolutely no likeness in their calls .... the repeated Kooloo, Koelco of the Marbled Frogmouth (NQ) as against the distant farmyard turkey-like call (for want of a better description - mine), seems to me a distinct species in itself. A long time mystery is solved, but what a remarkable bird call -- possibly the most unusual bird sound I've listened to, both birds got involved and appear to have their own language.

My childhood Banshee is none other than the Plumed Frogmouth. The late, little Irishman, Teddy, will never know the truth or identity of his Banshee which has taken me 50 years to discover its author. E.E. ZILLMANN, 1984.

#### TURNIX MELANOASTER - E.E.Zillmann

Well, Easter 1984 has come and gone for me it's one I'll remember with much satisfaction.

Bird observing in one of my favourite spots along S.Agnes Creek with companion Keith Sarnadsky, turned up a seldom observed bird species. We were rewarded with good observations of the Black Breasted Quail. While I'm not able to ascertain the status of this interesting bird, I feel it is a threatened species.

*Wambaliman April, May, June 1984*