

Brush Bronzewing at Belmont, NSW: recent field notes

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Brush Bronzewing *Phaps elegans* is a shy species of ground pigeon seen in coastal parts of the Hunter Region, notably in dense scrub near Belmont, NSW. These field notes report recent survey findings at two locations, which indicate a population in the Belmont area of at least 20 pairs. Further research into the distribution of this intriguing species appears warranted.

INTRODUCTION

Brush Bronzewing *Phaps elegans* is an endemic ground-feeding pigeon which was frequently recorded in consecutive spring-summer seasons (2015–16, 2016–17) at Belmont Wetlands State Park (BW) (33°02'05"S, 151°40'41"E) and Belmont Lagoon (BL) (33°02'38"S, 151°39'48"E) at Lake Macquarie, NSW. Records of this species in the Hunter Region are scarce (Stuart 2016); Birddata (2017) cites only 106 records there from 1998 to 2015 (RR = 0.8%). Its regional population size, distribution, seasonal movements and social behaviour are largely unknown (Higgins & Davies 1996). Despite its scarcity in the Hunter Region the conservation status of the Brush Bronzewing is considered to be of "least concern" in NSW (IUCN Red List of Threatened Species 2016).

There are two recognized sub-species; *Phaps elegans occidentalis* in south-western Australia, and *Phaps elegans elegans* dotted across its south-eastern coastline and islands. It is a robust, medium-sized, ground pigeon (length 25-33 cm; weight 170-260 g). On average, the adult male is slightly larger than the female, with a characteristic rufous - light brown forehead. The species is usually seen singly or in pairs (**Figures 1 and 2**).

Brush Bronzewing have a similar call and appearance to the Common Bronzewing *Phaps chalcoptera*, and their territories may overlap. The Common Bronzewing is more prevalent in western areas of the Hunter Region (Stuart 2016), and has not been reported in the vicinity of the study area (BW and BL). Hence all records of bronzewings were by default assumed to be Brush Bronzewings.

Brush Bronzewing was recorded by Laverick (LMCC 2001) in a 3-year study at Belmont Swamp (BS) which is now part of Belmont Wetlands State

Park (BW). More recently it has been observed on regular surveys at BW and the adjacent Belmont Lagoon (BL), as reported below.

BL (50 ha) and BW (514 ha) are part of coastal hind-dunes being rehabilitated after a century of mining and commercial degradation. Scrub in these wetlands include thick stands of Broad-leaved Paperbark *Melaleuca quinquenervia*, Swamp Paperbark *M. ericifolia*, Coastal Wattle *Acacia sophorae*, Golden Wreath Wattle *A. saligna*, Coast Banksia *Banksia integrifolia*, Old Man Banksia *B. serrata*, and Coast Teatree *Leptospermum laevigatum* beside public walkways and dirt fire trails (BWSP Trust 2010).



Figure 1. Male Brush Bronzewing. Photo: Darryl Luck



Figure 2. Female Brush Bronzewing on powerline at Belmont Wetlands State Park on 2 November 2016. Photo: Grahame Feletti

METHODS

Regular (2-hour) bird surveys were usually conducted three times a month at each site (BL, BW) between 6.00 and 9.00am between 4 July 2015 and 11 April 2017 (Feletti in prep.). Details of all birds seen or heard were collated on a digital tape-recorder, along with details of the location of each record.

Brush Bronzewings were typically observed: ground-feeding or perched on powerlines; hidden but calling from nearby scrub; or seen briefly in flight after they flushed. Any bronzewings not positively identified were assumed by default to be Brush Bronzewing because there are no previous records of the similarly sized Common Bronzewing in the study area (Birddata 2017; Cooper *et al.* 2014; Stuart 2016). Tape-recordings of birds calling in this study were confirmed as Brush Bronzewing by checking against reference audio recordings and with local experts. Digital images obtained in this study were of Brush Bronzewing.

RESULTS

There were no observations of Brush Bronzewing at BL or BW on regular surveys between May and July in 2015 or in 2016. From late August male and female bronzewings were seen at both locations early in the morning. Sometimes Brush Bronzewing foraged in the company of Spotted Dove *Streptopelia chinensis* or Bar-shouldered Dove *Geopelia humeralis*. Brush Bronzewing was also seen resting under Coastal Wattle. On 12 November 2016 a male bird was seen courting a female at the end of a track at BL. He followed her closely (within a metre), bowed several times fanning his tail before mounting her for copulation. Both birds flew off within 5 minutes.

Brush Bronzewing seem to prefer dense coastal scrub and trees (melaleuca, acacia, banksia and leptospermum species) for nesting, foraging and resting. Several times in January, either one, or two birds were seen ground-feeding on dirt tracks or perched on powerlines, but for most of the spring-summer period individual Brush Bronzewing called from 4-5 m high thickets of Broad-leaved Paperbark or Coast Teatree scrub nearby. These birds were seldom visible. With regular surveys based on a 5 km perimeter walk, locating a calling bird's approximate position became fairly easy. It was also noted that when calling, (male) birds seemed to space themselves territorially at least 30 m apart. These two clues made it possible to estimate Brush Bronzewing numbers based on a combination of vocal and visual records. Seasonal variations in the number of bronzewings for the

successive spring/summer periods 2015–16 and 2016–17 are shown in **Figure 3**.

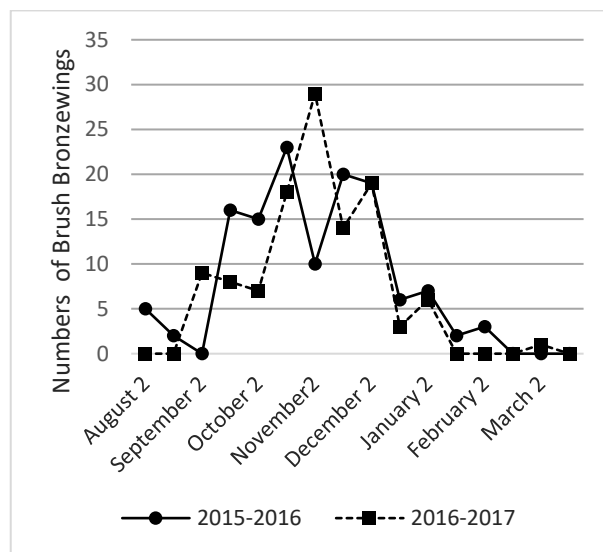


Figure 3. Combined numbers of Brush Bronzewing recorded at Belmont Lagoon and Belmont Wetlands for the spring/summer period of 2015–16 and 2016–17. The estimates are based on maximum number recorded during 15 or 16-day intervals (e.g. August 2 corresponds to the period 16-31 August).

The results for 2015–16 and 2016–17 are similar with numbers rising sharply to a peak in November for 4-6 weeks, before declining rapidly during January. The absence of calls cannot be taken to indicate that the birds moved elsewhere after breeding; one (female) bird was seen on powerlines at BW at the end of February 2016 and another at BL at the end of March 2017; but all calling at either location had ceased one month before.

During this study 30% (72/242) of all bronzewing records were visual and 70% (169/242) were heard calling. There was no obvious seasonal pattern to when the species was seen as opposed to heard. Laverick's results (2001) were almost the opposite: 72% (23/32) visual records and 28% (9/32) heard.

DISCUSSION

Many of the current observations gel with research findings summarized in Higgins & Davies (1996). Some are contrary. For example Gould's original notes indicated males called more often at evening, this study reported advertising calls in the morning. Ground-feeding and resting behaviour (under Coastal Wattle) are consistent with reports that it feeds mainly on native seeds and grit (to aid digestion). It is wary on open ground, flying off or walking quickly away when disturbed.

The results presented in **Figure 3** indicate that the Brush Bronzewing is an abundant species at both study areas between August and March. The observation of copulation and the apparent advertisement of territories suggest that birds recorded in this study were breeding, which is consistent with the August - February timing of breeding records in NSW (Cooper *et al.* 2014). The similarity in the number of records for the two breeding seasons (**Figure 3**) demonstrates a high level of site fidelity and, at least in the short term, a stable local population. However, Cooper *et al.* (2014) provide evidence of a long-term decline at the regional scale, which they suggested was associated with the increasing urbanization of coastal regions and the loss of heathland habitat.

There are two possible explanations for the dearth of records between March and July. One possibility is that the birds have moved away from the BL and BW. However, in general Brush Bronzewing are considered to exhibit limited seasonal movement (Griffieon & Clarke 2002) although there is some evidence of movement to the NSW coast in winter (Cooper *et al.* 2014; Marchant *in* Higgins & Davis 1996). An alternative explanation is more likely; the absence of records outside the breeding season is primarily associated with the low detectability of Brush Bronzewing other than when they are advertising territories.

The peak annual numbers (**Figure 3**) suggest that in combination BL and BW support a minimum of 20 to 30 pairs of Brush Bronzewing, assuming that the birds detected are primarily advertising males. Observed instances of advertising males in close proximity (30 m) suggests a high population density in suitable habitat.

The results provided in this note demonstrate the importance of BL and BW as prime habitat for Brush Bronzewing. The relatively undisturbed environment of these passive recreation areas and their management programs ensure that remnant coastal scrub continues to thrive alongside substantial re-planting of key native flora (BWSP Trust 2010). This is clearly conducive to the survival of the species. Many questions remain about its population size, movements, breeding and social behaviour. This study offers some guidelines on survey methods which will determine whether the species is present in other areas of apparently suitable coastal habitat during the breeding season. In the Hunter Region, breeding records are scarce; there is a single breeding record at Dudley in 1983 (Cooper *et al.* 2014). Unfortunately, there is no

supporting information on the habitat, but Dudley is only 4 km north of Belmont. Neither nests nor fledglings have been reported at the Belmont location.

CONCLUSIONS

Surveys at BL and BW have demonstrated the presence of an apparently stable and relatively numerous population of Brush Bronzewing. It would be surprising if the distribution of this species is not more widespread than indicated by existing distribution data. This study provides survey protocols which should allow the presence/absence of Brush Bronzewing to be determined definitively in other coastal areas of the Hunter Region.

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