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Bird Casualties in Fences in Diamantina National Park, Queensland, 1996–2008

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Summary: Twenty-seven individuals of 18 bird species were recorded as casualties of collisions with fences in Diamantina National Park, western Queensland, between 1996 and 2008. Nine of the 18 species were nocturnal or mainly so. Included in this list is the record of a recent (September 2006) specimen of the nationally endangered Night Parrot *Pezoporus occidentalis*.

Because most wildlife casualties in fences go unobserved and unreported, it is difficult to assess the extent of the problem (Allen & Ramirez 1990; Booth 2006). Nevertheless, Booth (2006), mainly following van der Ree (1999), listed 44 bird species (and numerous mammal species, particularly bats) recorded as fence casualties in Australia.

We report bird remains or, in a few cases, living animals found caught up in fences or on the ground under fences in Diamantina National Park in the Channel Country of western Queensland (23°45′S, 141°8′E) between 1996 and 2008. Inspection of fences was not systematic, but was incidental to other activities in the Park. Specimens were identified on the spot or sent for identification to the Australian Museum, Sydney.

We recorded 18 bird species as casualties of three-strand barbed-wire fences at Diamantina (Table 1). Of these, nine are nocturnal or mainly so (Marchant & Higgins 1990, 1993; Higgins 1999; Table 1). Included in this list is the first record of the nationally endangered Night Parrot *Pezoporus occidentalis* to be supported by a specimen since one was found dead at Boulia in western Queensland in 1990 (Boles *et al.* 1994; Stafford 2007; Cupitt & Cupitt 2008).

The species composition of our list supports the suggestion (e.g. Booth 2006) that most entanglements occur at night because the victims do not see the wire. Our list also contains several fast-flying diurnal species, and it is likely that under some topographical circumstances a fence may present a hazard to birds at any hour of the day (Booth 2007).

Although some specimens were only fragments of carcasses and some may have been killed long before we found the remains, it is likely that bodies of birds killed in fences are usually quickly removed by scavengers, making it difficult to assess the full impact of fence-related mortality (Allen & Ramirez 1990; Booth 2006). This list of fatalities was compiled mostly in visits of less than two weeks per year, suggesting that the yearly toll in the Park may be high.

Most of the species in our list are additions to the lists published by van der Ree (1999) and Booth (2006), no doubt because our observations come from a relatively remote and arid area where observers are few. Of particular note is the presence of the Night Parrot, which highlights the possible risk to this endangered species posed by the many kilometres of unnecessary internal fencing in national parks and other reserves throughout the arid zone.

Table 1

Species, dates and locations of bird casualties in fences in Diamantina National Park, Queensland, 1996–2008. The date given is the date of discovery of the specimen(s) and may vary by days or possibly months from the date of death. Co-ordinates for latitude (S) and longitude (E) are accurate to one minute.

Species	*Nocturnal/ diurnal*	*Date*	*Number of individuals*	*Location lat. S/long. E*
Common Bronzewing *Phaps chalcoptera*	D	16 Jun. 07 19 Jun. 07	1 1	23°33′/141°24′ 23°40′/140°29′
Flock Bronzewing *Phaps histrionica*	D	5 Oct. 03	2	24°1′/141°16′
Crested Pigeon *Ocyphaps lophotes*	D	28 Mar. 08	1	24°00′/141°11′
Tawny Frogmouth *Podargus strigoides*	N	21 Sept. 00	1	23°44′/141°39′
Spotted Nightjar *Eurostopodus argus*	N	21 Sept. 00 31 Mar. 08	1 1	23°44′/141°38′ 23°44′/141°23′
Australian Owlet-nightjar *Aegotheles cristatus*	N	18 Aug. 05	1	23°58′/141°42′
Nankeen Night-Heron *Nycticorax caledonicus*	N	21 Aug. 04	1	23°41′/141°22′
Australian Bustard *Ardeotis australis*	D	17 Aug. 05	1	23°41′/141°22′
Inland Dotterel *Charadrius australis*	N	16 Sept. 00	1	23°41′/141°23′
Galah *Eolophus roseicapillus*	D	31 Mar. 08	1	23°42′/141°23′
Australian Ringneck *Barnadius zonarius*	D	2 Oct. 02	1	23°39′/141°30′
Budgerigar *Melopsittacus undulatus*	D	21 Aug. 04	1	23°40′/141°28′
Bourke's Parrot *Neopsephotus bourkii*	N	1 Oct. 02 30 Sept. 03 24 Aug. 06* 14 Jun. 07	2 2 1 1	24°2′/141°33′ 24°2′/141°33′ 23°59′/141°4′ 23°43′/141°23′
Night Parrot *Pezoporus occidentalis*	N	17 Sept. 06**	1	Not available
Southern Boobook *Ninox novaeseelandiae*	N	28 May 96	1	23°40′/141°30′
Eastern Barn Owl *Tyto javanica*	N	7 Oct. 03	1	23°42′/141°23′
Chestnut-breasted Quail-thrush *Cinclosoma castaneothorax*	D	18 Aug. 05 17 Jun. 07	1 1	23°59′/141°37′ 24°1′/141°25′
Zebra Finch *Taeniopygia guttata*	D	18 Aug. 05	1	23°58′/141°41′

*S. Cupitt pers. comm.
**Cupitt & Cupitt (2008)

There is a significant animal-welfare issue involved when wildlife becomes trapped by barbed wire, often to die a lingering and cruel death. The Southern Boobook *Ninox novaeseelandiae* was found alive hanging with the skin of one wing wound tightly around a barb, where it had no doubt been hanging since sometime the previous night; it subsequently died. Several of the specimens

consisted only of the section of wing beyond the carpal joint. One Chestnut-breasted Quail-thrush *Cinclosoma castaneothorax* record was of a fresh carcass found several metres from a fence, under which was the section of one wing distal to the carpal joint; it is likely that the bird became entangled, twisted until its wing became detached, then struggled to where it died and was found.

Although Cornwell & Hochbaum (1971), Edeburn (1973) and van der Ree (1999) documented many casualties involving barbed-wire fences, Cornwell & Hochbaum (1971) also gave examples of birds killed in collisions with plain-wire strands in fences and power-lines. Nevertheless, one way of mitigating the impact of collisions with fences on wildlife may be to use plain wire in fences where possible. The best solution is to remove fences where feasible. Some of the casualties that we documented were entangled in the National Park boundary fences, which are required to exclude stock, but many were in internal fencing. Park authorities intend to remove internal fences, but this task must take its place in the queue for resources. Another mitigating measure may be to increase the detectability of fences by adding visible and/or audible objects to them (Booth 2006, 2007). Although this strategy may appear impractical at a place as large as Diamantina National Park, it could be possible to treat particularly hazardous sections of fence if these could be identified.

Given that fence entanglements present both a welfare and a conservation issue, and given the paucity of data on the subject especially from remote areas, we recommend that Queensland Parks and Wildlife Service provides the facility and encourages visitors to record observations of entanglements observed in the Park. In addition, birders are able to contribute data to a national database on a downloadable form at www.wildlifefriendly.com.

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