

here will help banders to determine moult strategies and more accurately and consistently age owls, nightjars and frogmouths in Australia.

REFERENCES

de Rebeira, P. (2006). 'Banders Guide to the Birds of Western Australia'. (C. P. S. and A. M. de Rebeira, Glen Forrest, Western Australia.)
Gill, F. (2007). 'Ornithology'. 3rd Edn. (W. H. Freeman Co: New York.)

Higgins, P. J. (1999) 'Handbook of Australian, New Zealand and Antarctic birds, vol. 4, parrots to dollarbirds'. (Oxford University Press: Melbourne.)

Rogers, K., Rogers, A. and Rogers, D. (1986). 'Bander's Aid: A guide to ageing and sexing bush birds'. (A. Rogers, St. Andrews.)

Weidensaul, C. S., Colvin, B. A., Brinker, D. F. and Huy, J. S. (2011). Use of ultraviolet light as an aid in age classification of owls. *Wilson Journal of Ornithology* **123**: 373-377.

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Observation of mass road-kill of Superb Parrots *Polytelis swainsonii* feeding on spilt grain

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In August 2014, whilst driving along the Barrier Highway between Nyngan and Cobar, New South Wales, I observed large numbers of the nationally threatened Superb Parrot *Polytelis swainsonii* that had been killed on the road whilst feeding on grain spilt by trucks. Here I give an account of my observations that morning and discuss the previously underestimated threat of road-strike to the survival of the Superb Parrot.

The Superb Parrot is a nationally threatened species, listed as 'vulnerable' under the Environmental Protection and Biodiversity Conservation Act 1999, and restricted in range to inland southeast Australia (Webster 1998). Estimating population trends for the species is difficult, because it is highly mobile and dispersive, but anecdotal reports and records from targeted surveys indicate that its population remains perilously low (Webster 1998; Garnett *et al.* 2011). Although road-strike has been previously identified as a cause of Superb Parrot mortality, it has generally not been considered a major threat to the species' survival (Webster and Ahern 1992; Garnett *et al.* 2011), with habitat destruction for agriculture and reduced availability of nesting hollows generally suspected to be the key causes of its historical decline (Manning *et al.* 2006, 2013).

In August 2014, whilst driving along the Barrier Highway between Nyngan and Cobar (31.4949° S, 145.8402° E), New South Wales (NSW), I stopped to observe a flock of approximately 40 Superb Parrots on the roadside at about 07:00 AEST. The parrots were feeding on large quantities of grain, which had been spilt along the highway by passing trucks. I observed the flock for approximately fifteen minutes, during which time approximately ten vehicles passed by. Each of these vehicles struck and killed one to four Superb Parrots. Each time a vehicle approached, the flock would take off from the roadside and one or more parrots would collide with the passing vehicle. Then the flock would immediately settle on the roadside to

resume feeding on spilt grain. During the time that I observed the flock, 15 Superb Parrots were killed in vehicle collisions and several others were injured. Before I moved on, I carried two stunned parrots off the road and placed them in nearby vegetation.

On the same morning, I also observed two other, larger flocks, each of approximately 80 Superb Parrots, feeding on spilt grain on the same section of the Barrier Highway. Many dead individuals were visible on the road where these large flocks were feeding (I estimated > 30 carcasses in total), but I did not stop or count dead parrots at these sites. At the three sites where members of parrot flocks had been road-killed, the road was straight and the speed limit was 110 km/h. If the three flocks I observed that morning continued feeding on the roadside and the traffic and rate of strikes remained constant, an estimated 180 Superb Parrots per hour (90% of the parrots that I observed) would have been killed by vehicle collisions on that 130 km section of highway.

Large numbers of Superb Parrots are probably lost to road-strikes, given that the species' range is almost entirely within the cereal grain-producing belt of eastern Australia and contains approximately 3000 kilometres of major highway. Consistent with this prediction, Superb Parrot road-strikes often occur in southern NSW (D. Oliver, personal communication), with individuals that have been injured in road collisions being frequently admitted to veterinary clinics across the NSW South West Slopes (W. Cadell, personal communication).

Anecdotal reports provide further evidence that great numbers of Superb Parrots are road-killed in many parts of their range. For example, large numbers were road-killed at a Riverina feedlot before the feedlot reduced the speed limit for grain carriers (R. Webster, personal communication). Road-kill

incidents involving Superb Parrots have also been reported on websites administered by the Office of Environment and Heritage (www.environment.nsw.gov.au/), ABC Rural (www.abc.net.au/news/rural/) and various bird observer groups. Such examples of Superb Parrot road-kills in NSW include at least 18 being road-killed whilst feeding on spilt grain at Cudal on 28 September 2015 (reported by Rosemary Stapleton), “dozens” road-killed near Boorowa on 31 December 2008 (reported by Sarina Locke) and “many” road-killed near Charcoal Tank in October 2011 (reported by Stuart Rae). Despite the public nature of these records, general awareness of the threat of road-strike to Superb Parrots apparently remains low.

Superb Parrots are likely to be at greatest risk of road-strikes during the annual harvest of winter cereal crops (approximately six weeks, August-January), when large quantities of grain are regularly spilt over long stretches of road (Rees, unpublished data). However, grain transport between stockpiles could also lead to grain spills that attract Superb Parrots to feed on roadsides at other times of year. The parrots use vegetated road corridors more frequently than surrounding cleared, agricultural country (Manning *et al.* 2006, 2007), so they are likely to find and feed on any grain spills on local roads and consequently are at high risk of being killed.

Recovery efforts for the Superb Parrot currently focus on habitat restoration, particularly planting favoured nesting trees, but do not address the immediate threat of road-strike to the population (Webster and Ahern 1992). Quantifying this threat to the species would require systematic investigation during the NSW winter cereal grain harvest season. However, recent observations, including the present account, indicate that urgent prevention of grain spillage on NSW roads is

probably necessary to secure the Superb Parrot population. By requiring that carriers are fitted with, and use, high quality tarpaulins and comply with load restrictions, silo operators and NSW Roads and Maritime Services would both improve road safety for motorists and help conserve the Superb Parrot.

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REFERENCES

- Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). ‘The Action Plan for Australian Birds 2010’. (CSIRO Publishing: Melbourne.)
- Manning, A.D., Lindenmayer, D.B., Barry, S.C. and Nix, H.A. (2006). Multi-scale site and landscape effects on the vulnerable Superb Parrot of south-eastern Australia during the breeding season. *Landscape Ecology* **21**, 1119-1133.
- Manning, A.D., Lindenmayer, D.B., Barry, S.C. and Nix, H.A. (2007). Large-scale spatial and temporal dynamics of the vulnerable and highly mobile Superb Parrot. *Journal of Biogeography* **34**, 289-304.
- Manning, A., Gibbons, P., Fischer, J., Oliver, D. and Lindenmayer, D. (2013). Hollow futures? Tree decline, lag effects and hollow-dependent species. *Animal Conservation* **16**, 395-403.
- Webster, R. and Ahern, L. (1992). ‘Management for the Conservation of the Superb Parrot (*Polytelis swainsonii*) in New South Wales and Victoria’. Report to New South Wales National Parks and Wildlife Service, Sydney and Victorian Department of Conservation and Natural Resources, Melbourne.
- Webster, R. (1998). ‘New South Wales Superb Parrot (*Polytelis swainsonii*) Recovery Plan’. (New South Wales National Parks and Wildlife Service: Sydney.)