TAXON SUMMARY

# Powerful Owl

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|---|---|---|
| 1 | Family | Strigidae |
| 2 | Scientific name | *Ninox strenua* (Gould, 1838) |
| 3 | Common name | Powerful Owl |
| 4 | Conservation status | Least Concern |

## 5 Reasons for listing

Any decline in the range or density of this species has been less than 50% (so not Near Threatened: a or c), and the population size exceeds 3,000 (so not d). Although there are probably only 7,000 mature individuals, numbers are unlikely to be decreasing significantly (so not Vulnerable: C2b).

| | *Estimate* | *Reliability* |
|---|---|---|
| *Extent of occurrence* | *450,000 km²* | *high* |
| *trend* | *stable* | *high* |
| *Area of occupancy* | *50,000 km²* | *low* |
| *trend* | *stable* | *medium* |
| *No. of breeding birds* | *7,000* | *medium* |
| *trend* | *stable* | *medium* |
| *No. of sub-populations* | *1* | *medium* |
| *Generation time* | *10 years* | *low* |

## 6 Infraspecific taxa

None described.

## 7 Past range and abundance

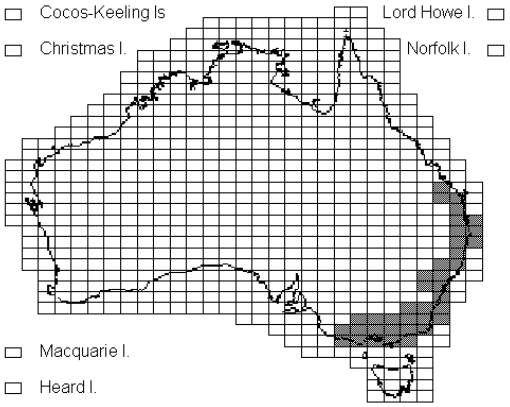
Eastern Australia, from south-western Victoria to at least Eungella, and possibly Bowen, Qld (Schodde and Mason, 1980, Pavey 1993, Eyre and Schulz, 1996). Mostly on the coastal side of the Great Dividing Range and adjacent inland slopes (Schodde and Mason, 1980, Higgins, 1999). Exceptional records further inland are probably non-breeding birds (NSW NPWS, 1998), but indicate an ability of the species to move long distances. Otherwise, breeding throughout range.

## 8 Present range and abundance

Although extensive areas of range now unsuitable, no contraction of range evident and species occupies suburban Brisbane, Sydney and Melbourne (Pavey, 1993, 1995, Silveira, 1997). Population estimates: Victoria, fewer than 500 pairs (C. Silveira); New South Wales, 1,000-1,500 pairs in north-east (Higgins, 1999), and 125 pairs in 3,200 km² of State Forest and National Park in south-east (Kavanagh, 1997).

## 9 Ecology

Powerful Owls are sedentary within home ranges of about 1,000 ha within open eucalypt, casuarina or *Callitris* pine forest and woodlands, though they often roost in denser vegetation, including rainforest or exotic pine plantations (Chafer, 1992, Kavanagh, 1997, Higgins, 1999). Nests, in which two eggs are laid, are in tree hollows, usually within or below the foliage in large living eucalypts that area at least 50 cm (and more commonly over 150 cm) in diameter, with ages estimated to be from 150 to over 500 years (McNabb, 1996). The principal prey are medium-sized mammals, particularly possums and gliders, but birds, flying-foxes, rats and insects are also taken (Higgins, 1999). Most prey are hollow-dwelling, and require a shrub layer (McNabb, 1996), and owls are most common in areas that have more large old trees and more hollows than available on average (Soderquist *et al.*, in press). Hunting may be concentrated in one part of a pair's home range for several years, apparently causing local declines in prey density (Kavanagh, 1988).




## 10 Threats

Although the population size and area occupied by Powerful Owls have declined as a result of widespread clearance for agriculture and pastoralism (Debus and Chafer, 1994, Webster *et al.*, 1999a), over half the habitat remains intact, with population densities probably little different from the pre-European times. Similarly, although intensive forestry practices remove old-growth forest, and owl densities in remaining forest may eventually be affected by a reduction in the availability of suitable nest hollows and den sites for prey (Kavanagh *et al.*, 1995, Gibbons and Lindenmayer, 1997, Webster *et al.*, 1999a), studies in New South Wales suggest Powerful Owls can persist in logging mosaics, by nesting in un-logged patches and hunting in logged areas. There was no difference in frequency of owl detection between heavily logged, lightly logged and un-logged forest (Kavanagh *et al.*,

1995, Kavanagh, 1997). Intense wildfire can result in local loss but, if suitable habitat remains nearby, Powerful Owls may return to forage in 20 year-old regrowth (Kavanagh, 1997). Poisoning, disturbance and predation by foxes on fledglings may cause nest failure and some deaths (NSW NPWS, 1998, Higgins, 1999, Webster *et al.*, 1999b), but are unlikely to be significant causes of increased mortality. Thus, at present, no threat or decline justifies a threatened classification for the species. For the smaller regional populations within each state, a status of Near Threatened or Vulnerable can more easily be justified. Modelling suggests there is a low probability of extinction in Victoria, but as the results are sensitive to changes in the probability of survival of adult birds, there is a need to improve the ability to identify individuals (McCarthy *et al.*, 1999).

## 11 Recommended actions

11.1 Develop techniques for identifying individual adult owls, possibly by computer analysis of calls.

11.2 Conserve adequate areas of suitable nesting habitat by gazettal of conservation reserves, and through native forest management plans, conservation agreements, clearance controls and development mitigation strategies.

11.3 Develop and implement appropriate forestry practices, particularly with regard to preservation of suitable nesting trees, and protection of riparian vegetation.

11.4 Develop appropriate wildfire management strategies on public and private land.

11.5 Enhance community awareness of Powerful Owls, their environmental significance and their conservation requirements.

## 12 Bibliography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## Comments received from

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