



Tyto novaehollandiae novaehollandiae Masked Owl

Taxonomy

Tyto novaehollandiae (Stephens, 1826)

The Victorian records are subsp. *novaehollandiae*.

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 1991).

Categorised as Endangered in the 2013 Advisory list of threatened vertebrate fauna in Victoria (DSE 2013).

Proposed conservation status

Critically Endangered in Victoria

Criterion C2a(ii)

Species Information

Description and Life History

The Masked Owl is Australia's second largest owl, weighing up to 1260 g, with a wingspan of up to 129 cm. Females are larger (43-57 cm), than males (35- 42 cm) and considerably darker. The upperparts are dark brown to light chestnut with white speckling. The prominent facial disc is buff to chestnut coloured with a darker margin and chestnut shading around the eyes. The legs are fully feathered and the feet are powerful with long talons (Higgins 1999). The taxon occurs in New Guinea and Australia. In Australia, there are three main colour morphs. The Victorian race is an intermediate morph between light or white morph in the north and the darky or tawny morph of Tasmania. The intermediate morph has an off-white facial disc, upper parts blackish brown but washed yellow and densely speckled white, and coarsely dark-spotted, off-white underparts (Schedvin et al. 2003).

Generation Length

The generation length of the Masked Owl is estimated to be 6 years. This is based on congeners (Tasmanian Masked Owl) in (Garnett et al. 2011) and the figure given in BirdLife International (2019). Schedvin et al. (2003) suggest a conservative estimate of 10 years' lifespan and indicate many birds may be long-lived.

Distribution

In Victoria, the strongholds of the Masked Owl appear to be in East Gippsland, the Otway Ranges and, to a lesser extent, in the Central Highlands, Midlands and Portland areas (Peake et al. 1993). There is a great deal of variation in the density of records between regions. Owl expert Dr Rohan Bilney believes the coastal forests of East Gippsland are the stronghold of the Masked Owl in the state (Bilney and L'Hotellier 2013).

Habitat

The Masked Owl inhabits a wide variety of lowland forests and woodlands that provide mature trees with hollows suitable for nesting and roosting, and nearby open areas for foraging. Victorian Masked Owls occur along partially forested river flats near the coast and may require open areas for foraging, such as clearings or forest edges, as well as hollows, dense vegetation or caves for roosting (Schedvin et al. 2003).

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Peake et al. (1993) analysed the Victorian records to the early 1990s and found that ‘...nearly all birds were recorded within 300 metres of the boundary of two vegetation types, indicating the strong preference of Masked Owls for ecotones.’ However, in East Gippsland they are most often recorded from contiguous forest (Bilney and L’Hotellier, 2013).

Threats

Secondary poisoning, tree decline, competition for tree hollows, habitat loss due to vegetation clearing and degradation by Sambar Deer are the key threats to the species. In addition, planned burning in East Gippsland, especially in large areas of coastal forest, may pose a threat to large forest owls such as Masked Owl in the absence of adequate ecological planning, monitoring and research.

Masked Owls also seem to be over-represented as roadkill species in Australia (Peake et al. 1993, WIRES 2018) with many of the observations in the VBA data being such records (DSE 2011).

More than 50% of the likely habitat for the Masked Owl across Victoria falls within the extent of the 2019-20 bushfires and 26% was estimated to have been severely burnt (DELWP 2020). These areas comprise the best habitat in Victoria and encompass most of the recent records of this taxon.

Spatial analysis of likely habitat for Masked Owl on all land tenures indicates that 46% occurs within the CAR reserve system, including parks, reserves and special protection zones in State forest. Species-specific protections for the Masked Owl are included in the Victorian Code of Practice for Timber Production 2014 (the Code). Other more general prescriptions such as protection and buffering of rainforest, old growth and waterways also provide protection from timber harvesting. In recent years, modified harvesting and forest regeneration practices have been implemented in native forest to further mitigate the potential threat from forestry operations to threatened species and their habitats.

IUCN Criteria

| Criterion A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4 | | | |
|--|-----------------------|------------|------------|
| | Critically Endangered | Endangered | Vulnerable |
| A1 | ≥ 90% | ≥ 70% | ≥ 50% |
| A2, A3, A4 | ≥ 80% | ≥ 50% | ≥ 30% |
| <p>A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p>A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.</p> <p>A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3]</p> <p>A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.</p> | | | |
| <p>based on any of the following:</p> <ul style="list-style-type: none"> (a) direct observation [except A3] (b) an index of abundance appropriate to the taxon (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat (d) actual or potential levels of exploitation (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites | | | |

Evidence:

Ineligible under Criterion A

The past population reduction does not meet the threshold for eligibility under criterion A2, and the future population reduction does not meet the threshold for eligibility under criterion A3.

| Criterion B. Geographic range in the form of either B1 (extent of occurrence) and/or B2 (area of occupancy) | | | |
|---|--|--------------------------|--------------------------|
| | Critically Endangered Very restricted | Endangered Restricted | Vulnerable Limited |
| B1. Extent of occurrence (EOO) | < 100 km ² | < 5,000 km ² | < 20,000 km ² |
| B2. Area of occupancy (AOO) | < 10 km ² | < 500 km ² | < 2,000 km ² |
| AND at least 2 of the following 3 conditions: | | | |
| (a) Severely fragmented OR Number of locations | = 1 | ≤ 5 | ≤ 10 |
| (b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals | | | |
| (c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals | | | |

Evidence:

Eligible under Criterion B as Vulnerable

The Area of Occupancy (AoO) is estimated to be 1,085 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

Any two of (a), (b) or (c) above are also satisfied.

| Criterion C. Small Population size and decline | | | | |
|--|---|--|---|--|
| | | Critically Endangered | Endangered | Vulnerable |
| Number of mature individuals | | < 250 | < 2,500 | < 10,000 |
| AND at least one of C1 or C2 | | | | |
| C1 | An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future): | 25% in 3 years or 1 generation (whichever is longer) | 20% in 5 years or 2 generations (whichever is longer) | 10% in 10 years or 3 generations (whichever is longer) |
| C2 | An observed, estimated, projected or inferred continuing decline AND least 1 of the following 3 conditions: | | | |
| (a) | (i) Number of mature individuals in each subpopulation | ≤ 50 | ≤ 250 | ≤ 1,000 |
| | (ii) % of mature individuals in one subpopulation = | 90 – 100% | 95 – 100% | 100% |
| (b) | Extreme fluctuations in the number of mature individuals | | | |

Evidence:

Eligible under Criterion C2 as Critically Endangered

It is estimated that there are 100 to 600 mature individuals. An early 1990s estimate of the Victorian population of Masked Owls was 300-400 breeding pairs (Peake et al. 1993). There is currently no reason to think there has been much change in 18 years. For comparison, NSW is estimated to have 1500 pairs based on 2006 information (DEC 2006). The present day population is most likely to be well below that prior to European settlement.

The number of mature individuals is inferred to continue to decline and the percentage of mature individuals in one subpopulation is 90-100 %.

A continuing decline in numbers and loss of large hollow-bearing trees is expected on public land due to inappropriate fire regimes (especially in East Gippsland) and habitat degradation by Sambar Deer. Continuing loss of hollow-bearing trees in farmland due to clearing, senescence and lack of recruitment is also anticipated.

| Criterion D. Very small or restricted populations | | | | |
|--|--|-----------------------|------------|--|
| | | Critically Endangered | Endangered | Vulnerable |
| Number of mature individuals (observed or estimated) | | < 50 | < 250 | < 1,000 |
| D2. Only applies to the VU category Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time. | | - | - | D2. Typically: A.O. < 20 km ² or number of locations ≤ 5 |

Evidence:

Eligible under Criterion D as Endangered

It is estimated that there are 100 to 600 mature individuals.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

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- SAC (1991). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 73 *Tyto novaehollandiae*