

Threatened Species Assessment

Accipiter novaehollandiae Grey Goshawk

Taxonomy

Accipiter novaehollandiae (Gmelin, 1788)

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2003).

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

Proposed conservation status

Endangered in Victoria

Criterion C2a(ii)

Species Information

Description and Life History

The Grey Goshawk is the largest goshawk in Australia of the genus *Accipiter*. It has robust, broad, stubby wings, a short tail, large claws, with thick short tarsus and a heavy, powerful bill (Burton and Alford 1994). The taxon has two colour morphologies, one white and one grey; in Victoria the white morphology predominates (Brereton and Mooney 1994). Grey morphology: grey head with dark red iris; grey back with white underbody with grey barring. Wings are rounded and grey above, white below, and darker at the tips. The tail is grey above and white below, and legs are yellow. White morphology: pure white plumage at all ages (Marchant and Higgins 1993). The species are sexually dimorphic, with males being typically 38-42cm in length and weighing approximately 350 gm, and females are larger, 40-55 cm and weigh about 680 gm (Marchant and Higgins 1993, Burton and Olsen 2000).

Generation Length

The generation length of the Grey Goshawk is estimated to be 7 to 12 years. Typical longevity of most goshawk species in Australia is ~7 to >12 years. In captivity some taxa are known to reach 20+ years (Debus 2017) while BirdLife International (2018) gives an estimated figure of 7.1 years for the generation length of this taxon.

Distribution

In Victoria the Grey Goshawk has most often been reported from the Otway ranges and far East Gippsland. It is found less often in the Otway and Gippsland plains and Strzelecki ranges, with occasional reports from central and north eastern regions. Wimmera and Mallee records are probably vagrants. Most Victorian breeding records have been from the Otways and East Gippsland region (Marchant and Higgins 1993).

Habitat

The Grey Goshawk's morphology is characteristic of forest forms of *Accipiter* (Burton and Alford 1994). It prefers habitats comprising mature forest, with a closed canopy and an open understorey including, tall open forest, tall open woodland and medium to low open woodland (Burton and Olsen 2000). Other habitats used include rainforests, swamp forests and plantations of exotic trees for hunting. In Victoria, the Grey Goshawk usually inhabits forests at lower altitudes dominated by Mountain Grey Gum *Eucalyptus cypellocarpa* and often Blackwood (*Acacia melanoxylon*) (Marchant and Higgins, 1993).



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Breeding habitat is mainly restricted to large areas of wet forest (Mooney and Holdsworth 1988), and closer to coastal areas where rainfall is above 760mm (Marchant and Higgins 1993). There appears to be a preference to nesting along streams, with sites usually eastern facing and sheltered from winds. The species requires undisturbed mature forest and will not nest in stands less than 30 years of age, or in trees with a diameter less than 50cm (Mooney and Holdsworth 1988). They prefer nesting in trees between 15 and 30m high, with an average nest height of 18m (Marchant and Higgins 1993). Nesting is usually confined to large areas (>100 ha) of wet old growth forest (Brereton and Mooney 1994), with nesting occurring no closer than 50m to the forest edge (Mooney 1987).

Threats

A sedentary bird, the Grey Goshawk requires old growth forests. The population is thought to have declined since European arrival, mainly as a result of large-scale habitat clearance and habitat fragmentation. It appears to be threatened by past loss of preferred habitat as a result of forestry operations and land clearing (Brereton and Mooney 1994, Burton et al. 1994, Burton and Alford 1994, Burton and Olsen 1997, 2000).

While strong evidence is lacking, other threats have been implicated in the decline of the Grey Goshawk including deliberate shooting, collisions, direct and secondary poisoning from pest control programs, bioaccumulation of pollutants and egg collection (Threatened Species Section 2021, SWIFFT 2020).

Spatial analysis of likely habitat on all land tenures for the Grey Goshawk indicates that 26% occurs within the CAR reserve system, including parks and reserves, special protection zones and areas excluded from harvesting by prescription under the Victorian Code of Practice for Timber Production 2014 (the Code). Species-specific protections for the Grey Goshawk are included in the Code for most Forest Management Areas. Other more general prescriptions such as protection of old growth forest 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.

A substantial proportion of the likely habitat for this taxon occurs on private land; it should be noted that the Victorian Planning Provisions regulate the clearing of native vegetation on private land in Victoria and include tighter restrictions in cases involving the habitat of threatened species.

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			

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Evidence:

Ineligible under Criterion B

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 216,749 km² and the Area of Occupancy (AoO) is estimated to be 2,251 km², both of which exceed the thresholds for criterion B.

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 Endangered

It is estimated that there are 800 to 1,500 mature individuals. This figure is derived from expert opinion based on VBA data (1134 total records for Victoria since 1800) and additional expert knowledge.

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

The Grey Goshawk population is suspected to be in decline owing to ongoing habitat destruction and human persecution (BirdLife International 2018).

Criterion D. Very small or restricted population ^a		Critically Endangered ^a	Endangered ^a	Vulnerable ^a
Number of mature individuals (observed or estimated) ^a		< 50 ^a	< 250 ^a	< 1,000 ^a
D2. Only applies to the VU category ^b 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. ^a		- ^a	- ^a	D2. Typically: ^b AoO < 20 km ² or number of locations ≤ 5 ^a

Evidence:

Eligible under Criterion D as Vulnerable

It is estimated that there are 800 to 1,500 mature individuals.



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

References

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