Threatened Species Assessment

Ardea alba modesta
Eastern Great Egret

Taxonomy

Ardea alba modesta J.E. Gray, 1831

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* as *Ardea alba* (SAC 1994).

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

Proposed conservation status

Vulnerable in Victoria

Criterion: D1

There has been a decline in breeding sites and number of young, without a parallel increase in numbers in NSW. Therefore, a regional assessment does not merit a downgrade.

Species Information

Description and Life History

Eastern Great Egrets are tall white waterbirds and the largest of the three egrets (including Intermediate and Little) recorded in Victoria, attaining a height of up to one metre. The colour of the bare parts (especially around the face) change during the breeding season (Marchant and Higgins 1990). Eastern Great Egrets often occur solitarily, or in small groups when feeding, but roost in flocks. In SE Australia, the taxon generally (almost always) nests in colonies. Colonies may be mono-specific or commonly mixed with other egrets, herons, ibises, spoonbills, darters and/or cormorants. Breeding colonies in south-eastern Australia typically comprise up to several hundred pairs. However, the Victorian colonies (Murray and Goulburn Rivers) are known to be much larger, with birds numbering in the thousands. Although considered 'common' within Australia in suitable wetland habitat (Marchant and Higgins 1990), limited survey data indicates that breeding colony sites tend to be small (especially in SE Australia) with 59% of colonies in WA, Victoria and NSW having less than 50 nests, while only 6% had more than 200 nests (Kushlan and Hafner 2000, VBA data, M. O'Brien pers. comm. 2018).

Generation Length

The generation length of the Eastern Great Egret is estimated to be 7 to 10 years. This is based on a figure provided in the IUCN global assessment (BirdLife International 2016).

Distribution

Eastern Great Egrets are cosmopolitan in distribution, being found on most continents. In Australia they have been recorded from all states. The taxon has been recorded in most types of Victorian wetlands, from tidal flats in estuaries and bays to the margins of inland lakes, swamps and rivers (Emison et. al. 1987).

Habitat

In Victoria, Eastern Great Egrets occur in most wetland types from tidal flats to the margins of inland swamps and rivers (Emison et. al. 1987). The preferred habitat is mainly freshwater wetlands, especially where prey items can be found.

Threats

A number of threats are common to all egret species in Victoria. The main impacts are manipulation of water regimes, drainage, modification and clearing of waterways, pollution and salinisation which may destroy nest trees (Leslie 2001). Disturbance associated with recreational activities may also potentially threaten the breeding and feeding habitat of egrets.

Many natural wetlands used for feeding and breeding have been destroyed since European settlement and habitat degradation is continuing. Birds may be disturbed by duck shooting activities if the breeding extends into the duck season.

The loss of wetlands in Victoria since 1900 has been significant: it is estimated that ~27% have been lost (Spiers 1999). Other estimates include the loss of ~4,000 natural wetlands covering more than 190,000 hectares since European settlement, attributed primarily to drainage for agricultural purposes (DCE 1992).

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%

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

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.

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*]

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.

based on any of the following:

(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

There is insufficient evidence to determine whether there has been or will be a reduction in population sufficient to meet any threshold for Criterion A.

Any declines are unknown over this time period, as no species-specific surveys were undertaken for any egret species in Victoria. The known population reductions (recorded in literature, VBA data, expert opinion) mainly precede the time frame indicated (which post-dates the historic loss of wetlands in early 1960s - 1980s) and the introduction of river and water regulation (mainly the Murray River). Historic populations (pre ~1940) are likely to have been in the thousands and the number of breeding colonies more numerous. Historic colonies (e.g. in

Gunbower) were known to contain a far greater number of breeding individuals than any of the current-day colonies (M. O'Brien pers. comm. 2019, colonially bird breeding data in the VBA).

The known population reductions (recorded in literature, VBA data, expert opinion) mainly precede the time frame indicated (which post-dates the historic loss of wetlands in early 1960s - 1980s) and the introduction of river and water regulation (mainly the Murray River). Historic populations (pre ~1940) are likely to have been in the thousands and the number of breeding colonies more numerous. Historic colonies (e.g. in Gunbower) were known to contain a far greater number of breeding individuals than any of the current-day colonies (M. O'Brien pers. comm. 2019, colonially bird breeding data in the VBA).

Nevertheless, national waterbird datasets consolidated and analysed for BirdLife Australia's Australian Bird Index (Clemens et al. 2019) demonstrated national long-term and short term (5 years) declines in the species nationally. Although data from inland wetlands was insufficient to establish trends, populations at coastal sites underwent a clear and steep downturn after the waterbird boom of 2010/11. Results from the Eastern Australian Waterbird Survey's wetland area index has remained below long-term averages for the period 2013-19 and overall waterbird indices across river basins reflect declines in available habitat with particularly sharp declines in the Murray-Darling Basin observed between 2018 and 19. These results suggest that many waterbird species including Great Egret may be increasingly concentrated in coastal areas during dry years and therefore trends observed for coastal habitats may act as a useful minimum surrogate for overall trends.

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 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
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:

Ineligible under Criterion B

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 224,595 km² and the Area of Occupancy (AoO) is estimated to be 11,061 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:

Ineligible under Criterion C

It is suspected that there are 900 to 1,000 mature individuals, but other thresholds under this criterion have not been met.

Criterion D. Very small or restricted population			
	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: AoO < 20 km2 or number of locations ≤ 5

Evidence:

Eligible under Criterion D1 as Vulnerable

It is estimated that there are 900 to 1,000 mature individuals. The number of individuals is unknown precisely, as no species-specific surveys have been undertaken in Victoria. However, the Great Egret population is estimated to be no more than 1000 adult birds in Victoria at any time (M.O'Brien pers. comm. 2019, VBA data, expert opinion).

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

References

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