Threatened Species Assessment

Planigale gilesi
Giles' Planigale

Taxonomy

Planigale gilesi Aitken,1972

The taxon is also known as the Paucident Planigale.

Current conservation status

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

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

Proposed conservation status

Vulnerable in Victoria

Criteria A4bce; C1; D2

Species Information

Description and Life History

Giles' Planigale is a small carnivorous marsupial. It is distinguished by its flattened triangular head, beady eyes and two premolars on each upper and lower jaw (compared with three for other planigales). It is a brindled cinnamon-grey colour above and olive buff below. The ears are small and rounded and lie against the head. The legs are short in comparison to body length, and so the animal moves low to the ground. The head and body length of adults varies from 60 to 80 mm, tail length from 55 to 70 mm and weight from 5 to 16g (Read 2008).

The animals feed on a range of invertebrates, including spiders, cockroaches, beetles and slaters. They are predominantly nocturnal, but have been known to be active during the day as well, especially during winter when animals have been observed basking in the sun. In western New South Wales, individuals were found to be highly mobile and occupied shifting home ranges (Read 1984). The taxon has an extended breeding season from late winter to mid-summer, during which females may have one or two litters of three to 10 young after a gestation period of 16 days. Surveys undertaken in north-west Victoria have indicated that the Victorian population may adopt a similar approach to reproduction, with juveniles being captured during trapping programs from December to March.

Generation Length

The generation length of Giles' Planigale is estimated to be 1 to 2 years. In the wild, less than 20% of individuals survive for more than 2 years (Read 2008).

Distribution

The taxon occurs in arid and semi-arid regions of central and eastern Australia. It was first recorded in Victoria in 1985, which extended its range 200 km further south from the most southern records in NSW (Lumsden et al. 1988). It is known in Victoria only from the far north western region, in an area adjacent to the Murray River downstream from the Darling River, west of Mildura. Since its discovery it has been recorded in a few locations within an approximately 70 km band along the Murray River.

Habitat

In Victoria the taxon is primarily found in areas with deep cracking clay soils on the floodplain of the Murray River and associated streams in the far north west. Most records are from areas with dense, understorey of Tangled Lignum (*Muehlenbeckia cunninghamii*), Nitre Goosefoot (*Chenopodium nitrariaceum*) or Old-man Saltbush (*Atriplex nummularia*), with or without an overstorey of Black Box (*Eucalyptus largiflorens*). There are only occasional records from nearby River Red Gum (*E. camaldulensis*) woodlands. Cracks in the soil appear to be an essential component of the habitat, and these and the clumped dense understorey provide protection from temperature extremes and predators.

Threats

Disturbance processes, such as altered flooding regimes, vegetation clearance and fragmentation, inhibition of natural regeneration, elevated grazing pressure (from stock, kangaroos and rabbits), firewood removal, recreational activities and proliferation of vehicle tracks, all have the potential to impose long-term changes to vegetation communities of the alluvial floodplains, and thus to habitats of Giles' Planigale. Predation from foxes and feral cats may also be a threat. Catastrophic events such as bushfire or severe flood may also affect localised populations, especially if they are isolated from adjacent populations by unsuitable 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%

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:

Eligible under Criterion A4 as Vulnerable

The population reduction over any 10 year period, including both past and future, is suspected to be 15 to 30%, based on (b), (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

This is based on the impacts of past and future threats. There is no evidence of declining numbers in Victoria, however in 2019 Neds Corner reported the 'worst drought since the 1940s' so this may have had some impact. Although there are ongoing threats, there is also targeted management of some of these in some areas which may have counter-balanced this to some extent. Increased human usage within habitat may contribute to decline. Ongoing changes due to climate change cannot be mitigated.

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 349 km² and the Area of Occupancy (AoO) is estimated to be 43 km², but other thresholds under this criterion have not been met.

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 C1 as Vulnerable

It is estimated that there are 500 to 3,000 (midpoint 1,500) mature individuals. This taxon is distributed in low densities over a small area and hence the total population numbers are likely to be low. Robertson and Sluiter (2010) summarised all known records between 1985 and 2010 and found that 73 individuals were trapped from 16,680 trapnights (0.44 individuals/100 trapnights). Using the density estimates from Read (1984) who found numbers fluctuated markedly, but the mean was approximately 0.4 individuals/ha, it is possible that numbers in Victoria may be in the vicinity of 1500 although due to the uncertainty, large ranges are provided.

There is estimated to be continuing decline of 10 to 15% within three generations.

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 D2 as Vulnerable

The taxon is suspected to be very restricted. It is thought to be subject to serious threats to the habitat, which could drive it to become Critically Endangered or Extinct in a very short time.

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

References

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