

NSW Threatened Species Scientific Committee

Notice of Preliminary Determination

The NSW Threatened Species Scientific Committee, established under the *Biodiversity Conservation Act 2016* (the Act), has made a Preliminary Determination to support a proposal to list the black-breasted button-quail *Turnix melanogaster* (Gould, 1837) as a VULNERABLE SPECIES in Part 3 of Schedule 1 of the Act and, as a consequence, to omit reference to the black-breasted button-quail *Turnix melanogaster* (Gould, 1837) from Part 1 of Schedule 1 (Critically Endangered species) of the Act. Listing of Vulnerable species is provided for by Part 4 of the Act.

How to make a submission

The NSW TSSC welcomes public involvement in the assessment process and places preliminary determinations on public exhibition on the NSW TSSC pages on the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) website. This public exhibition provides an opportunity for the public to comment on this preliminary determination as well as provide any additional information that is relevant to the assessment.

Postal submissions regarding this Preliminary Determination may be sent to:
Secretariat
NSW Threatened Species Scientific Committee
Locked Bag 5022
Parramatta NSW 2124.

Email submissions in Microsoft Word or PDF formats to:
scientific.committee@environment.nsw.gov.au

Submissions close 2 October 2026

What happens next?

After considering any submissions received during the public exhibition period the NSW TSSC will make a Final Determination and a notice will be placed on the NSW DCCEEW website to announce the outcome of the assessment. If the Final Determination is to support a listing, then it will be added to the Schedules of the Act when the Final Determination is published on the legislation website. www.legislation.nsw.gov.au.

Privacy information

The information you provide in your submission may be used by the NSW TSSC in the assessment to determine the conservation status and listing or delisting of threatened or extinct species, threatened populations and threatened or collapsed ecological communities or to assess key threatening processes.

The NSW TSSC may be asked to share information on assessments with NSW Government agencies, the Commonwealth Government and other State and Territory governments to collaborate on national threatened species assessments using a

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common assessment method and to assist in the management of species and ecological communities.

If your submission contains information relevant to the assessment it may be provided to state and territory government agencies and scientific committees as part of this collaboration.

If you wish your identity and personal information in your submission to be treated as confidential you must:

- *request your name be treated as confidential, and*
- *not include any of your personal information in the main text of the submission or attachments so that it can be easily removed.*

Professor Angela Moles, FRSN
Chairperson
NSW Threatened Species Scientific Committee

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Public Exhibition period: 10/07/2026 – 02/10/2026

Preliminary Determination

The NSW Threatened Species Scientific Committee, established under the *Biodiversity Conservation Act 2016* (the Act), has made a Preliminary Determination to support a proposal to list the black-breasted button-quail *Turnix melanogaster* (Gould, 1837) as a VULNERABLE SPECIES in Part 3 of Schedule 1 of the Act and, as a consequence, to omit reference to the black-breasted button-quail *Turnix melanogaster* (Gould, 1837) from Part 1 of Schedule 1 (Critically Endangered species) of the Act. Listing of Vulnerable species is provided for by Part 4 of the Act.

Summary of Conservation Assessment

The black-breasted button-quail *Turnix melanogaster* (Gould, 1837) was found to be Vulnerable on the basis of extinction risk in Australia in accordance with the following provisions in the *Biodiversity Conservation Regulation 2017*: Clause 4.3(c)(d)(e i,ii,iii) and Clause 4.4(c)(e i,ii B). The main reasons for this species being eligible are: 1) it has a moderately restricted area of occupancy of 1,644 km²; 2) the population occurs in one threat-defined location; 3) it has a low total number of mature individuals (estimated at 3,000); 4) all mature individuals occur within one subpopulation; and 5) there is an inferred continuing decline in the number of mature individuals, the area of occupancy, and the area, extent, and quality of habitat due to the effects of drought, adverse fire regimes, habitat loss and encroachment by weeds, and predation from feral cats and foxes.

The NSW Threatened Species Scientific Committee has found that:

1. The black-breasted button-quail *Turnix melanogaster* (Gould, 1837) (family Turnicidae) is described by Marchant and Higgins (2006) as “c. 18 cm; wingspan male 32–35 cm; weight: male 65 g, female 100 g. Large plump pale-eyed button-quail; similar in size to painted button-quail *Turnix varius*. Sexes differ in plumage and size; female slightly larger. No seasonal variation. Juveniles separable. Immatures not separable”. The adult male has “forehead, and sides of head and neck, white, finely speckled blackish, heaviest on sides of neck; darker patch on ear-coverts; crown and nape, brownish grey, with black stripe each side, scalloped rufous-brown. Hindneck and upper mantle, rufous, mottled brownish grey and boldly spotted white. Mantle, upper back and all but outermost scapulars, brownish grey, barred rufous-brown and black, with narrow grey-brown fringes and bold white streaks; subscapulars and outermost scapulars, brownish grey, forming uniform pale stripe above folded wing. Lower back, rump, upper tail-coverts and tail, similar to rest of upperparts but more uniform brownish grey, with finer barring and inconspicuous white streaks. Central inner wing-coverts, rufous-brown with black submarginal streak and prominent white edges and elongate spots; form brownish panel (streaked and spotted white) that contrasts with dark grey-brown rest of upperwing. Chin and centre of throat, white. Foreneck and breast coarsely spotted and barred black and white; mottled rufous-brown on sides of foreneck and breast. Rest of underbody, ashy grey with indistinct fine dark barring. Underwing,

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ashy grey. Bill, mid-grey with dark-grey culmen. Iris, cream-white. Legs and feet, dull yellow". The adult female is "as male except whole head, black, washed chestnut on rear-crown and nape, with fine white spots forming supercilium and weak moustachial stripe. Hindneck and sides of neck, black, boldly spotted white. Foreneck and breast, black, with profuse white spotting on sides of foreneck changing to broader barring on sides of breast, white markings becoming more sparse toward midline of breast. Rest of underbody as male except darker ashy grey. Central inner wing-coverts tend to appear spotted rather than streaked white. Juvenile at first, much smaller, without tail, and with downy head. When older, similar to adult male but inner wing-coverts, duller brown, with broader white streaks and thicker hook-shaped black submarginal streak extending round tip; upperparts also duller brownish-grey, with bolder black blotches on outer back and central scapulars and pale streaking less prominent generally; iris, duller, light bluish-grey" (Marchant and Higgins 2006).

2. *Turnix melanogaster* is a cryptic, shy species that is largely restricted to northern New South Wales (NSW) and southern Queensland (Qld) (Hamley *et al.* 1997; Milledge and McKinley 1998). In NSW, sightings range from the Border Ranges National Park (NP) in the north and extend south into the Nightcap Range at Rocky Creek in Whian Whian State Conservation Area (Milledge and McKinley 1998). In Queensland, the current distribution of *Turnix melanogaster* occurs across varying land tenures including state forests, national parks, council, and private land (Flower *et al.* 1995), ranging from Byfield north of Rockhampton in central Queensland, west to Palmgrove NP, south to the Bunya Mountains and the NSW border, and east onto K'gari (Fraser Island) (Milledge and McKinley 1998; BirdLife International 2022; Webster *et al.* 2022).
3. The extent of occurrence (EOO) for *Turnix melanogaster* is estimated to be 163,969 km² based on a minimum convex polygon enclosing all mapped occurrences of the species, the method of assessment recommended by the IUCN (2024). The area of occupancy (AOO) was estimated to be 1,644 km² based on 2 x 2 km grid cells, the scale recommended by the IUCN (2024).
4. The total population size of *Turnix melanogaster* is estimated to be approximately 4,800 mature individuals (range 3,000–6,500). The population is considered likely to comprise one subpopulation (Webster *et al.* 2021) in accordance with the IUCN (2024) definition.
5. *Turnix melanogaster* inhabits dry rainforest, Brigalow vine scrub or Brigalow-Belah closed forest (Bennet 1985; Smith *et al.* 1998; Smyth *et al.* 2001; Houston *et al.* 2011), bottle scrub (Hamley *et al.* 1997), and littoral forest (Garnett *et al.* 2011; Webster *et al.* 2022). The species is largely restricted to rainforests with an annual rainfall of around 770–1,400 mm and a distinct dry season (Bennet 1985; Milledge and McKinley 1988; Marchant and Higgins 2006). *Turnix melanogaster* can also be found in *Araucaria cunninghamii* plantations and lantana (*Lantana camara*) thickets (Smyth *et al.* 2001) connected to, or within dry rainforests or vine thickets (Bennet 1985; Houston *et al.* 2011). The species feeds on invertebrates, seeds, and fruit (Hughes and Hughes 1991; Marchant and Higgins 2006) and is primarily insectivorous (McConnell and Hobson 1995; Webster *et al.* 2019).

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6. *Turnix melanogaster* are ground dwelling birds, however, their presence on islands (e.g., K'gari) and isolated habitat patches throughout the Lockyer Valley suggests that they are competent flyers (P. Webster pers. comm. May 2024). Females are polyandrous and are likely territorial (Bennett 1985; Hughes and Hughes 1991). Territory size has been observed at c. 1.5 ha (Hughes and Hughes 1991) to 2.2–6.1 ha (Smith *et al.* 1998). Females lay 3–4 eggs, and breeding occurs between October to April (Bennett 1985; Hughes and Hughes 1991), and is associated with wet periods of >100 mm of rain (Flower *et al.* 1995). Males incubate the eggs (~12–16 days) and provide care to the hatchlings (Bennett 1985; Flower *et al.* 1995; Smith *et al.* 1998). The young can feed independently at two weeks of age and become sexually mature in less than six months (Flower *et al.* 1995). The generation time in *Turnix melanogaster* is estimated as 3.2 years, age at first reproduction as 1.12 years, maximum longevity as 8.9 years, and mean annual adult survival as 69% (Bird *et al.* 2020; Webster *et al.* 2021).
7. *Turnix melanogaster* is primarily threatened by increased drought frequency, length and severity due to climate change, adverse fire regimes, loss of habitat due to land clearing, and encroachment of habitat by weeds. 'Anthropogenic Climate Change', 'High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition', 'Clearing of native vegetation', 'Invasion and establishment of exotic vines and scramblers', 'Invasion, establishment and spread of Lantana, *Lantana camara*', 'Invasion of native plant communities by exotic perennial grasses', and 'Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants', are listed as Key Threatening Processes under the Act.
8. *Turnix melanogaster* is considered to occur across one threat-defined location. Drought is the most serious plausible threat that results in the lowest number of threat-defined locations (in accordance with the IUCN 2024 definition) for this species.
9. Continuing decline is inferred in the AOO, in the area, extent and quality of habitat, and the number of mature individuals of *Turnix melanogaster* due to the effects of drought, adverse fire regimes, habitat loss and encroachment by weeds, and predation from feral cats and foxes. Prolonged drought can negatively affect *Turnix melanogaster* breeding, resulting in reductions in population size and the vacation of affected habitats (Flower *et al.* 1995). Canopy cover is also reduced during drought as well as desiccation of the leaf litter (affecting sheltering and foraging), posing an increased risk of fire (Webster *et al.* 2021). Almost the entire range of *Turnix melanogaster* has been affected by the last four prolonged droughts (BOM 2024), and modelling shows that areas of northern NSW and SE Qld are predicted to experience higher temperatures and lower rainfall in the coming years (Steffen *et al.* 2019). In the 2019–20,20 wildfires, almost 50,000 ha of potential habitat for *Turnix melanogaster* was burnt, including large areas of dry rainforest and complex notophyll vine forest (DPIE 2021; A. Meiklejohn *in litt.* February 2025; Queensland Government 2025a). Fire adversely affects the species through direct loss of individuals, loss of habitat and loss of invertebrate prey.
10. Continuing decline in the habitat of *Turnix melanogaster* is also caused by invasion of the climbing cat's claw creeper (*Dolichandra unguis-cati*), which smothers

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vegetation and reduces feeding and roosting habitat, forcing *Turnix melanogaster* to vacate known strongholds for the species (BirdLife International 2022). Lantana infestations can also increase the negative effects of fire, facilitating spread in dry rainforest which usually has an open understorey by providing horizontal and vertical ladder fuels that reach into the canopy increasing the risk of crown fires (Berry *et al.* 2011). The invasion of these weeds results in *Turnix melanogaster* relocating to intact habitat patches, which often entails traversing large areas of cleared land, increasing predation risk for a species considered highly susceptible to predation by feral cats (Woinarski *et al.* 2017). In a southeast Qld study on the species, a cached button-quail carcass provided evidence of predation by a cat (or possibly a fox), while in a further study, two of nine tracked *Turnix melanogaster* were killed by feral cats (Smyth and Pavey 2001). In addition, grazing by domestic stock and feral pigs is inferred to be contributing to the continuing decline of the species' habitat quality (Webster *et al.* 2021; BirdLife International 2022).

11. The black-breasted button-quail *Turnix melanogaster* (Gould, 1837) is not eligible to be listed as an Endangered or Critically Endangered species.
12. The black-breasted button-quail *Turnix melanogaster* (Gould, 1837) is eligible to be listed as a Vulnerable species as, in the opinion of the NSW Threatened Species Scientific Committee, it is facing a high risk of extinction in Australia in the medium-term future as determined in accordance with the following criteria as prescribed by the *Biodiversity Conservation Regulation 2017*:

Assessment against *Biodiversity Conservation Regulation 2017* criteria

The Clauses used for assessment are listed below for reference.

Overall Assessment Outcome: Vulnerable under Clause 4.3(c)(d)(e i,ii,iii) and Clause 4.4(c)(e i,ii B).

Clause 4.2 – Reduction in population size of species

(Equivalent to IUCN criterion A)

Assessment Outcome: Not met

(1) - The species has undergone or is likely to undergo within a time frame appropriate to the life cycle and habitat characteristics of the taxon:			
	(a)	for critically endangered species	a very large reduction in population size, or
	(b)	for endangered species	a large reduction in population size, or
	(c)	for vulnerable species	a moderate reduction in population size.
(2) - The determination of that criteria is to be based on any of the following:			
	(a)	direct observation,	
	(b)	an index of abundance appropriate to the taxon,	
	(c)	a decline in the geographic distribution or habitat quality,	
	(d)	the actual or potential levels of exploitation of the species,	
	(e)	the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.	

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Clause 4.3 – Restricted geographic distribution of species and other conditions (Equivalent to IUCN criterion B)

Assessment Outcome: Vulnerable under Clause 4.3(c)(d)(e i, ii,iii)

The geographic distribution of the species is:			
	(a)	for critically endangered species	very highly restricted, or
	(b)	for endangered species	highly restricted, or
	(c)	for vulnerable species	moderately restricted.
and at least 2 of the following 3 conditions apply:			
	(d)	the population or habitat of the species is severely fragmented or nearly all the mature individuals of the species occur within a small number of locations,	
	(e)	there is a projected or continuing decline in any of the following:	
		(i)	an index of abundance appropriate to the taxon,
		(ii)	the geographic distribution of the species,
		(iii)	habitat area, extent or quality,
		(iv)	the number of locations in which the species occurs or of populations of the species.
	(f)	extreme fluctuations occur in any of the following:	
		(i)	an index of abundance appropriate to the taxon,
		(ii)	the geographic distribution of the species,
		(iii)	the number of locations in which the species occur or of populations of the species.

Clause 4.4 – Low numbers of mature individuals of species and other conditions (Equivalent to IUCN criterion Clause C)

Assessment Outcome: Vulnerable under Clause 4.4(c)(e i,ii B)

The estimated total number of mature individuals of the species is:			
	(a)	for critically endangered species	very low, or
	(b)	for endangered species	low, or
	(c)	for vulnerable species	moderately low.
and either of the following 2 conditions apply:			
	(d)	a continuing decline in the number of mature individuals that is (according to an index of abundance appropriate to the species):	
		(i)	for critically endangered species very large, or
		(ii)	for endangered species large, or
		(iii)	for vulnerable species moderate,
	(e)	both of the following apply:	
		(i)	a continuing decline in the number of mature individuals (according to an index of abundance appropriate to the species), and
		(ii)	at least one of the following applies:
		(A)	the number of individuals in each population of the species is:
		(I)	for critically endangered species extremely low, or
		(II)	for endangered species very low, or
		(III)	for vulnerable species low,

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		(B)	all or nearly all mature individuals of the species occur within one population,
		(C)	extreme fluctuations occur in an index of abundance appropriate to the species.

Clause 4.5 – Low total numbers of mature individuals of species

(Equivalent to IUCN criterion D)

Assessment Outcome: Not met

The total number of mature individuals of the species is:			
	(a)	for critically endangered species	extremely low, or
	(b)	for endangered species	very low, or
	(c)	for vulnerable species	low.

Clause 4.6 – Quantitative analysis of extinction probability

(Equivalent to IUCN criterion E)

Assessment Outcome: Data Deficient

The probability of extinction of the species is estimated to be:			
	(a)	for critically endangered species	extremely high, or
	(b)	for endangered species	very high, or
	(c)	for vulnerable species	high.

Clause 4.7 – Very highly restricted geographic distribution of species–vulnerable species

(Equivalent to IUCN criterion D2)

Assessment Outcome: Not met

For vulnerable species,	the geographic distribution of the species or the number of locations of the species is very highly restricted such that the species is prone to the effects of human activities or stochastic events within a very short time period.
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Professor Angela Moles FRSN
Chairperson
NSW Threatened Species Scientific Committee

Supporting Documentation:

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