Conservation Advice

Amytornis modestus obscurior

thick-billed grasswren (north-west New South Wales)

Taxonomy

Conventionally accepted as *Amytornis modestus obscurior* (thick-billed grasswren (north-west New South Wales))(Black, 2011). Thick-billed grasswrens *(A. modestus),* previously known as *A. textilis modestus,* are comprised of several discrete populations including six subspecies: *A. m. modestus* (presumed extinct); *A. m. indulkanna; A. m. raglessi; A. m. curnamona; A. m. inexpectatus* (presumed extinct)*;* and *A. m. obscurior* (Black, 2011)*.*

Conservation status

Critically Endangered: Criterion 2 B1,B2,(a),(b)(iii); Criterion 3 B,(a),(b)(iii); Criterion 4 (a).

Species can also be listed as threatened under state and territory legislation. For information on the listing status of this subspecies under relevant state or territory legislation, see http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

Reason for conservation assessment by the Threatened Species Scientific Committee

This advice follows assessment of information provided by a Committee nomination based on information provided in the *Action Plan for Australian Birds 2010,* as developed by Birdlife Australia (Garnett et al., 2011).

Description

All thick-billed grasswrens *(A. modestus)* are characterised by cryptic plumage patterns with body colouration generally mid to pale brown above, paler below, with a moderately streaked appearance above, moderately to barely streaked below; tail varying from moderately long to short, slightly longer or of the same length in males; and, a deep bill (Black, 2011). The north-west New South Wales subspecies *(A. m. obscurior)* is paler than *A. m. curnamona* and *A. m. inexpectatus* (Black, 2011)*.*

Distribution

Thick-billed grasswrens were once widely but patchily distributed across New South Wales, the Northern Territory and South Australia. However, widespread change in land use and overgrazing caused substantial declines across their range, with the result being that two of the subspecies *A. m. modestus* and *A. m. inexpectatus* are now presumed extinct and the north-west New South Wales subspecies was, until recently, considered extinct as it had not been confirmed in the state since 1956 (Black et al., 2010; McAllan 2000). However, a small population was rediscovered in 2008 (Parker et al., 2010)

Formerly, the subspecies was known to occur near Milparinka, north of Broken Hill, where it was collected in 1912 (McAllan, 1987) and north-east of Tibooburra near the Queensland border, where a clutch of eggs were collected in 1936 (Black & Longmore 2009). The population rediscovered in 2008 was located near Packsaddle, east of the historic Milparinka record (Parker et al., 2010). To date, the population near Packsaddle is the only known population of thick-billed grasswrens (north-west New South Wales) and repeated observations from 2008 to 2011 detected no more than 10 adult birds distributed in pairs across a maximum of five sites (Black, 2011; Black, pers comm., 2013). Site visits in May 2011 detected birds in four of the five previously identified sites and in August of that year

observers only made brief sightings of single birds in, and near, just one of the previously identified sites (Black, pers comm., 2013).

Relevant Biology/Ecology

The extant, Packsaddle, population of thick-billed grasswrens (north-west New South Wales subspecies) were recorded on low ridgelines covered with gibber and scattered with blackbush *(Maireana pyramidata)* and thorny saltbush *(Rhagodia spinescens),* which form the dominant vegetation alongside scattered trees and taller shrubs (Parker et al*.,* 2010). Other thick-billed grasswren subspecies inhabit chenopod shrublands, particularly those dominated by saltbush *(Atriplex* spp.) and bluebush *(Maireana* spp.) They forage on the ground for berries, seeds and insects (Rowley & Russell 1997). They lay 2–3 eggs in domed nests or cup nests built in shrubs (Rowley & Russell 1997). A generation time of 9.7 years (BirdLife International, 2011) is derived from an age at first breeding of 2.3 years and a maximum longevity of 17.0 years, both values extrapolated from fairy-wrens *(Malurus* spp.).

Threats

Overgrazing by sheep *(Ovis aries)*, cattle *(Bos taurus)*, feral goats *(Capra hircus)* and rabbits *(Oryctolagus cuniculus)*, particularly in combination with drought which reduces available vegetation, is thought to be the main threat to thick-billed grasswrens, and is already believed to have caused the extinction of *A. m. inexpectatus* (Garnett et al., 2011). Although blackbush and similar shrubs which provide habitat for thick-billed grasswrens are resilient and long-lived, recruitment is infrequent and their seedlings are highly palatable to stock (Crisp, 1978; Tiver & Andrew 1997). Introduced predators may also be playing a role in the subspecies decline (McAllan, 1987). Predation by foxes *(Vulpes vulpes)* may be significant and intensive fox baiting may underlie recent increases in *A. m. curnamona* on the north Olary Plains (Pedler et al*.*, 2007).

Thick-billed grasswrens (north-west New South Wales) have also been identified as one of 20 terrestrial Australian bird species rated most sensitive to climate change and one of 39 Australian bird species, occupying terrestrial and inland waters, most exposed to either a loss of climate space or a reduction in climatic suitability (Garnett et al*.*, 2013).

How judged by the Committee in relation to the EPBC Act Criteria and Regulations

Criterion 1: Reduction in numbers (based on any of A1 – A4)

A1. An observed, estimated, inferred or suspected population very severe ≥90%, severe ≥70% or substantial ≥50% size reduction over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
   (a) direct observation
   (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.

A2. An observed, estimated, inferred or suspected population very severe ≥80%, severe ≥50% or substantial ≥30% size reduction over the last 10 years or three generations, whichever is the longer**,** where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible**,** based on (and specifying) any of (a) to (e) under A1.

A3. A population size reduction very severe ≥80%, severe ≥50% or substantial ≥30%, projected or suspected to be met within the next 10 years or three generations (up to a maximum of 100 years), whichever is the longer, based on (and specifying) any of (b) to (e) under A1.

A4. An observed, estimated, inferred, projected or suspected population size reduction very severe ≥80%, severe ≥50% or substantial ≥30% over any 10 year or three generation period (up to a maximum of 100 years into the future), whichever is longer, where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

Evidence
Not applicable: There is no information available to judge whether the subspecies has undergone, is suspected to have undergone or is likely to undergo a reduction in numbers within a period of 10 years or three generations. The current number of mature individuals is estimated to be no more than 10 (Garnett et al., 2011; Black, pers comm., 2013). Considering the low numbers, small variations in numbers could have a significant impact on the viability of the population. However, there is no data available on the rate of past, or potential future, population declines within a period of 10 years or three generations.

Criterion 2: Geographic distribution (based on either of B1 or B2)

B1. Extent of occurrence estimated to be very restricted <100 km^2, restricted <5000 km^2 or limited <20 000 km^2

B2. Area of occupancy estimated to be very restricted <10 km^2, restricted <500 km^2 or limited <2000 km^2

AND

Geographic distribution is precarious for the survival of the species,
(based on at least two of a–c)

a. Severely fragmented or known to exist at a limited location.
b. Continuing decline, observed, inferred or projected, in any of the following:
    (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 the following:
    (i) extent of occurrence
    (ii) area of occupancy
    (iii) number of locations or subpopulations
    (iv) number of mature individuals.

Evidence
Eligible for listing as Critically Endangered: subspecies extent of occurrence and area of occupancy are very restricted, it is known to exist at a limited location and the extent, area and quality of habitat are suspected to be declining. The predicted extent of occurrence for the subspecies is thought to be less than a 100 km^2 and the area of occupancy around 10 km^2 (Garnett et al., 2011), both of which are very restricted. Furthermore, the subspecies is known to exist at a limited location (Parker et al., 2010). Observations from 2008 to 2010 detected no more than 10 adult birds distributed in pairs across a maximum of five sites (Black, 2011). However, site visits in May 2011 only detected birds in four of the five previously identified sites and in August 2011 observers only made brief sightings of single birds in, and near, one of the previously identified sites (Black, pers comm., 2013). Overgrazing by sheep, cattle, feral goats and rabbits is thought to pose a significant threat to the grasswren habitats, and is believed to have caused the extinction of the closely related *A. m. inexpectatus* (Garnett et al., 2011).

Criterion 3: The estimated total number of mature individuals is very low <250, low <2500 or limited <10 000; **and** either of (A) or (B) is true

(A) evidence suggests that the number will continue to decline at a very high (25% in 3 years or 1 generation (up to 100 years), whichever is longer), high (20% in 5 years or 2 generations (up to 100 years), whichever is longer) or substantial (10% in 10 years or 3 generations (up to 100), whichever is longer) rate; or

(B) the number is likely to continue to decline and its geographic distribution is precarious for its survival (based on at least two of a – c):
   a. Severely fragmented or known to exist at a limited location.
   b. Continuing decline, observed, inferred or projected, in any of the following:
      (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 the following:
      (i) extent of occurrence
      (ii) area of occupancy
      (iii) number of locations or subpopulations
      (iv) number of mature individuals.

Evidence
Eligible for listing as Critically Endangered: the total number of mature individuals is considered very low, it is known to exist at a limited location, and the extent, area and quality of habitat are suspected to be declining. The total number of mature individuals is considered very low, as it is estimated to be only 10 mature individuals (Black, 2011; Garnett et al., 2011). The subspecies is also known to exist at a limited location (Parker et al., 2010). Observations from 2008 to 2010 detected no more than 10 adult birds distributed in pairs across a maximum of five sites (Black, 2011). However, site visits in May 2011 only detected birds in four of five previously identified sites and in August 2011 observers only made brief sightings of single birds in, and near, one previously identified site (Black, pers comm., 2013). Furthermore, overgrazing by sheep, cattle, feral goats and rabbits is thought to pose a significant threat to thick-billed grasswren habitat, and believed to have caused the extinction of the closely related *A. m. inexpectatus* (Garnett et al., 2011).

Criterion 4: Estimated total number of mature individuals:
   (a) Extremely low <50
   (b) Very low <250
   (c) Low <1000

Evidence
Eligible for listing as Critically Endangered: number of mature individuals is extremely low. Until recently the thick-billed grasswren (north-west New South Wales) was presumed extinct; however in 2008 a small population was rediscovered near Packsaddle (Parker et al., 2010). To date, this population is the only known population of the subspecies and repeated observations from 2008 to 2010 detected no more than 10 adult birds distributed in pairs across a maximum of five sites (Black, 2011). Site visits in May 2011 detected birds in four of the five previously identified sites; however in August of that year observers only made brief sightings of single birds in just one of the previously identified sites (Black, pers comm., 2013).

Criterion 5: Probability of extinction in the wild based on quantitative analysis is at least:

(a) 50% in the immediate future, 10 years or three generations (whichever is longer); or
(b) 20% in the near future, 20 years or five generations (whichever is longer); or
(c) 10% in the medium-term future, within 100 years.

Evidence
Not applicable: population viability analysis has not been undertaken.

Public Consultation

Notice of the proposed amendment was made available for public comment for 30 business days between 14 May 2014 and 30 June 2014. Any comments received that are relevant to the survival of the subspecies have been considered by the Committee.

Recovery Plan

There should not be a recovery plan for *Amytornis modestus obscurior*, given the small area in which the species is found and that it is a New South Wales endemic. New South Wales are developing a species level management plan for thick-billed grasswrens under their 'Saving our Species' program. The conservation advice for the subspecies should provide sufficient direction to implement priority actions and mitigate against key threats while further strategies are being developed at the state level.

Recovery and Impact avoidance guidance

Primary Conservation Objectives

1. Establish a population of a viable size for thick-billed grasswrens (north-west New South Wales).
2. Expand the area of occupancy for thick-billed grasswrens (north-west New South Wales).

Important populations

The only population currently known occurs near Packsaddle in north-west New South Wales and is of extremely high conservation value.

Important habitat for the survival of the subspecies

Low ridgelines covered with gibber and scattered with Blackbush *(Maireana pyramidata)* and Thorny Saltbush *(Rhagodia spinescens),* other trees and taller shrubs.

Chenopod shrublands, particularly those dominated by saltbush *(Atriplex* spp.*)* and bluebush *(Maireana* spp.*)*

Information required, research and monitoring priorities

1. Undertake intensive survey work in historical habitat, suitable habitat and potential habitat to locate all remaining, and any additional, populations.
2. More precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes.
3. Determine what levels of grazing, by livestock and feral mammals, can be sustained without impacting on the subspecies' survival.
4. Evaluate the impacts of predation by foxes and potential predation by feral cats.
5. Identify optimal fire regimes for regeneration (vegetative regrowth and/or seed germination) of important habitat.

Management actions required

1. Monitor existing and new populations to identify population trends.
2. If livestock grazing occurs in the area, ensure land owners/managers use an appropriate grazing regime that does not detrimentally affect the subspecies' habitat and that grazing pressure is kept at low levels at important sites through exclusion fencing or other barriers.
3. If appropriate, implement a feral predator control program.
4. Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
5. Following a risk assessment, and after ensuring the quality of existing habitat is stable and available habitat has expanded, consider translocating individuals from another subspecies of *Amytornis modestus* (such as *A. m. indulkanna*) into the Packsaddle population to increase the overall population size.

Recommendations

(i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the critically endangered category:

Amytornis modestus obscurior

(ii) The Committee recommends that there should not be a recovery plan for this subspecies.

Threatened Species Scientific Committee

03/09/2014

References cited in the advice

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