

# THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

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The Minister's delegate approved this Conservation Advice on 15/07/2016.

## Conservation Advice

### *Amytornis modestus*

thick-billed grasswren

#### Conservation Status

*Amytornis modestus* (thick-billed grasswren) is listed as Vulnerable at the species level under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act). The species is eligible for listing as prior to the commencement of the EPBC Act, it was listed as Vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The main factors that were the cause of the species being eligible for listing in the Vulnerable category were declines in the number of mature individuals and declines in the species area of occupancy.

Recent taxonomic work identified six subspecies of thick-billed grasswrens in the *Amytornis modestus* family (Black 2011): four subspecies are extant (*A. m. curnamona*, *A. m. indulkanna*; *A. m. raglessi* and *A. m. obscurior*); and the remaining two subspecies are presumed extinct (*A. m. inexpectatus* and *A. m. modestus*) (Garnett et al., 2011). Of the four extant subspecies, *A. m. obscurior* is listed as Critically Endangered under the EPBC Act and a separate conservation advice is available for that subspecies (TSSC 2014). The remaining three subspecies - *A. m. curnamona*, *A. m. indulkanna*; *A. m. raglessi* – are not included as separate subspecies in the List of Threatened Species under the EPBC Act.

#### Description

Thick-billed grasswrens are small in size with cocked tails. The species is 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 (Black 2011); females have chestnut flanks (Pizzey & Knight 1999).

#### Distribution

Thick-billed grasswrens are endemic to inland Australia, with the remaining four extant subspecies occurring as isolated populations following substantial reductions in distribution since European settlement (NPWS 2002).

The north-west New South Wales (NSW) subspecies (*A. m. obscurior*) exists at a single location near Packsaddle, in northern NSW (Parker et al., 2010). The Flinders Ranges subspecies (*A. m. raglessi*) occurs across watercourses draining the northern Flinders Ranges towards southern Lake Eyre, Lake Blanche and Lake Callabonna in South Australia (Black 2011). The Lake Frome Basin subspecies (*A. m. curnamona*) occurs in the south-western Lake Frome Basin in South Australia (Black 2011). The north-western subspecies (*A. m. indulkanna*) occurs west of Lake Eyre and Lake Torrens near the border of South Australia and the Northern Territory (Black 2011).

#### Relevant Biology/Ecology

Thick-billed grasswrens were formerly recorded in dry, sandy watercourses strewn with flood debris, amongst sandhill canegrass (*Zygochloa paradoxa*) on sand dunes and in areas of tall, dense saltbush (*Atriplex* spp.) and bluebush (*Maireana* spp.), on gibber plains with chenopod shrubs growing along watercourses, and possibly also occurred in areas of nitre bush (*Nitraria schoberi*) (NPWS 2002). The species is now restricted to chenopod shrublands, especially those dominated by saltbush and bluebush, and may favour areas along drainage lines where their preferred vegetation is taller and thicker (NPWS 2002). The north-west NSW subspecies has

also been recorded on low ridgelines covered with gibber and scattered with blackbush (*Maireana pyramidata*) and thorny saltbush (*Rhagodia spinescens*) (Parker et al., 2010).

Thick-billed grasswrens predominantly forage on the ground below shrubs but sometimes also forage in open areas (Rowley & Russell 1997). Their diet consists of seeds (from grasses, herbs and occasionally acacias), insects and occasionally fruits (NPWS 2002). Their insect prey mostly consists of small beetles, bugs, grasshoppers, ants and termites (NPWS 2002).

The breeding biology of the thick-billed grasswren is poorly known, with most information derived from a study of the closely related western grasswren (*Amytornis textilis*) (Brooker 1988). Thick-billed grasswrens predominantly occur in pairs but may occasionally form small groups. Schodde (1982) suspects that pairs remain in the same 4-5 ha of scrubland throughout the year, and suggests that territories may be contiguous in 20-40 ha pockets that are separated by many kilometres of seemingly suitable habitat. Active nests have been recorded from late June to September (NPWS 2002) and are usually found in low shrubs, with their structure varying from an open cup to a full dome and entrances usually facing south or towards the densest and tallest part of the bush (Brooker 1988). Clutch size ranges from one to three eggs and averages two eggs (Brooker 1988). Young grasswrens remain in the nest for 10-12 days after hatching, with males assisting females in the feeding of young (Brooker 1988; Rowley & Russell 1997).

### Threats

Major contractions in the historic range of thick-billed grasswrens are associated with degradation of habitat through overstocking of sheep (*Ovis aries*) and possibly cattle (*Bos taurus*), grazing by feral goats (*Capra hircus*) and rabbits (*Oryctolagus cuniculus*) (Schodde 1982; McAllan 1987), and potential impacts associated with feral camels (*Camelus dromedarius*). Ongoing overgrazing by domestic livestock and feral herbivores is a key threat to the species (Garnett et al., 2011). The species is adversely affected by damage to soil and the loss of understorey vegetation caused by overstocking, and is especially vulnerable during droughts (Schodde 1982; Brooker 1988; Chapman 1996).

Introduced predators are a threat to the species and are likely to have caused its disappearance from many areas (McAllan 1987; Garnett 1993). Predation by foxes (*Vulpes vulpes*) may be significant and intensive fox baiting may underlie recent increases in the Lake Frome Basin subspecies on the north Olary Plains (Pedler et al., 2007). Thick-billed grasswrens may also be at risk of predation by feral cats (*Felis catus*). The species has been adversely affected by wildfires in the past (Brooker 1988), however the potential impact on thick-billed grasswrens from increased fire frequency or intensity is not known.

Table 1 – Threats impacting the thick-billed grasswren in approximate order of severity of risk, based on available evidence

Threat factor	Threat type and status	Evidence base
Overgrazing		
Overgrazing by domestic livestock	known ongoing	Overstocking of sheep, and potentially cattle, has caused the degradation of thick-billed grasswren habitat and has been implicated in the contraction of the species historic range (Schodde 1982; McAllan 1987; Garnett et al., 2011).
Overgrazing by feral herbivores	known ongoing	Grazing by feral goats and rabbits has also been implicated in the past degradation of the grasswrens' habitat and is recognised as a key threat to the species (Schodde 1982; McAllan 1987; Garnett et al., 2011).

Invasive species		
Predation by foxes	suspected current	Foxes have been suspected of preying upon the species in the past and may have caused its disappearance from some areas (McAllan 1987; Garnett 1993). In the absence of fox control programs, predation by foxes may continue to impact grasswrens in the future (Pedler et al., 2007).
Predation by feral cats	suspected current	While the impacts of feral cats on thick-billed grasswrens have not been studied, cats may pose a predation risk.
Fire		
High frequency, extent or intensity wildfires	suspected current	The species has been adversely affected by wildfires in the past (Brooker 1988), however the potential impact to thick-billed grasswrens from increased fire frequency, extent and/or intensity is not known.

## **Conservation Actions**

### **Conservation and Management priorities**

- When livestock grazing occurs in a known location for thick-billed grasswrens, work with land owners/managers to encourage the use of appropriate grazing regimes that do not detrimentally affect the species' habitat. This may include reducing grazing pressure and/or using exclusion fencing or other barriers, with a focus on protecting tall grasses along creek lines during the June to September breeding season.
- If appropriate, implement feral predator control programs in key areas for each subspecies.
- Establish a community awareness program to inform landholders and the public of management and conservation activities that will benefit thick-billed grasswrens.

### **Survey and Monitoring priorities**

- Undertake targeted surveys in historical habitat and suitable habitat to locate all remaining, and any additional, populations of thick-billed grasswrens.
- Undertake regular monitoring of existing populations, and newly discovered populations, of thick-billed grasswrens.

### **Information and research priorities**

- Review and analyse monitoring data to more precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes.
- Review the effectiveness of management actions in contributing to species recovery, and adapt management actions if necessary.
- Determine what levels of grazing, by livestock and feral mammals, can be sustained without impacting on the species' survival.
- Evaluate the impacts of predation by foxes and feral cats and assess the affect of predator control programs on thick-billed grasswren populations.
- Identify optimal fire regimes for regeneration (vegetative regrowth and/or seed germination) of important habitat.

## **References cited in the advice**

- Black, A. B. (2011). Subspecies of the Thick-billed Grasswren *Amytornis modestus* (Aves-Maluridae). *Transactions of the Royal Society of South Australia* 135, 26–38.
- Brooker, M.G. (1988). Some aspects of the biology and conservation of the Thick-billed Grasswren *Amytornis textilis* in the Shark Bay area, Western Australia. *Corella* 12, 101–108.
- Chapman, G. (1996). The Grasswrens—a brief pictorial. *Wingspan* 6 (1), 20–28.
- Garnett, S. (ed.). (1993). Threatened and extinct birds of Australia. *Royal Australasian Ornithologists Union Report* 82.
- Garnett, S. T., Szabo, J. K., & Dutton, G. (2011). *The Action Plan for Australian Birds 2010*. Collingwood, Australia: CSIRO Publishing.
- McAllan, I. A. W. (1987). Early records of the Thick-billed Grasswren *Amytornis textilis* and Striated Grasswren *Amytornis striatus* in New South Wales. *Australian Birds* 28, 65–70.
- New South Wales National Parks and Wildlife Service (NPWS) (2002). Thick-billed Grasswren (eastern subspecies) *Amytornis textilis modestus* (North, 1902) Recovery Plan. Hurstville, Australia: NSW National Parks and Wildlife Service.
- Parker, D.G., Egan, D., & Ballestrin, M. (2010). Recent observations of the Thick-billed Grasswren *Amytornis textilis modestus* in New South Wales. *Australian Field Ornithology* 27, 159–164.
- Pedler, L.P., Watson, M., Langdon, P., & Pedler, R. (2007). Rare bird surveys, Mt Lyndhurst Station March 2007. Report prepared for South Australian Arid Lands Natural Resources Management Board.
- Pizzey, G., & Knight, F. (1999). *The Field Guide to the Birds of Australia*. Sydney, Australia: Angus and Robertson.
- Rowley, I. & Russell, E. (1997). *Fairy-wrens and Grasswrens: Maluridae*, 102. Oxford, United Kingdom: Oxford University Press.
- Schodde, R. (1982). *The Fairy-wrens*. Melbourne, Australia: Lansdowne Editions.
- Threatened Species Scientific Committee (TSSC) (2014). Conservation Advice for *Amytornis modestus obscurior* thick-billed grasswren (north-west New South Wales). Canberra, Australia: Department of the Environment. Available on the internet at: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/86183-conservation-advice.pdf>