

NSW SCIENTIFIC COMMITTEE

Thick-billed Grasswren *Amytornis textilis*

Review of Current Information in NSW

April 2008

Current status

The relevant subspecies of the Thick-billed Grasswren (*Amytornis textilis modestus* of NSW, South Australia and Northern Territory) is currently listed as Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act). The NSW Scientific Committee recently determined that the Thick-billed Grasswren *Amytornis textilis* meets criteria for listing as Critically Endangered in NSW under the *Threatened Species Conservation Act* 1995 (TSC Act), based on information contained in this report and other information available for the species.

Species description:

The Thick-billed Grasswren is a small (16 cm), furtive, terrestrial, rusty brown songbird with fine white streaks on the head and body, short wings, and a long cocked tail like a fairy-wren. It is similar to other grasswrens in NSW, but lacks the facial patterns of the paler Grey Grasswren *Amytornis barbatus* and Striated Grasswren *A. striatus*.

Taxonomy:

Amytornis textilis (Dumont 1824) is an endemic species in the endemic Australasian family Maluridae, which extends to New Guinea. The taxon in NSW is currently classified as subspecies *A. t. modestus* (North 1902), which also occurs in north-east South Australia and southern Northern Territory; it may be a full species separate from the western forms *A. t. myall* (Mathews 1916) of western South Australia and nominate *A. t. textilis* of Western Australia (Black 2004; Christidis & Boles 2008). Recent unpublished studies and genetic data are expected to elevate the form *modestus* to full species rank, as *A. modestus* (North 1902), in the near future (Black 2008; expert advice).

Distribution and number of populations:

In NSW, the Thick-billed Grasswren formerly occurred on the lower Namoi River and in the Mossgiel-Ivanhoe area north-west to at least Milparinka and the Grey Range (McAllan 2000; Higgins *et al.* 2001; Black & Longmore 2009). The species was erroneously reported in Sturt National Park in August 2008; the species concerned was apparently a previously undocumented population of the Striated Grasswren (expert advice 2008). The Thick-billed Grasswren population on the lower Namoi River may have been isolated, but range limits and connectivity between populations are uncertain and distribution was patchy. Any extant western NSW population(s) may be contiguous or near-contiguous with the isolated population of *modestus* near Yunta in adjoining South Australia (*e.g.* Black & Baxter 2003). The second, and larger, population is widespread in north-east South Australia.

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Figure 1: Records of the Thick-billed Grasswren (NSW Wildlife Atlas). The historical record from the lower Namoi River (presumably between Narrabri and Walgett) is not shown, because the location is imprecise. The far north-western record is for 1936, not 1956 as given in the Atlas database (Black & Longmore 2009).

Ecology:

The knowledge on general ecology of this species (especially the western subspecies) is considered good. Knowledge on population size and trend of the eastern subspecies is considered good in South Australia, but poor for NSW (Garnett & Crowley 2000; Higgins *et al.* 2001; Black & Baxter 2003).

Key habitat requirements

The Thick-billed Grasswren inhabits chenopod shrubland (including on gibber, but particularly in drainage lines where shrubs are larger and thicker), canegrass on sand, and flood debris in watercourses. Its habitat has been degraded through overgrazing by livestock, rabbits and feral goats.

Breeding biology

The Thick-billed Grasswren builds a cup or domed nest of plant fibres in cover (*e.g.* low shrubs, flood debris, canegrass) within a metre of the ground. A clutch of one to three eggs (usually two) is laid from late winter to summer. The incubation period is two weeks and the nestling period 10-12 days. Low nests are vulnerable to predation by cats and foxes, and to disturbance by livestock and feral goats.

Diet

The Thick-billed Grasswren feeds on insects, berries and seeds, gleaned on the ground around shrubs.

Social biology

The Thick-billed Grasswren occurs solitarily, in pairs, or in family groups of adults and dependent young during the post-fledging period.

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Territoriality/home range

Sedentary pairs of Thick-billed Grasswrens maintain exclusive breeding territories of about 1 ha, in a home range 4-5 ha (Western Australia data: Higgins *et al.* 2001).

Generation length

The generation length of the Thick-billed Grasswren is estimated as four years (Garnett & Crowley 2000).

Ability to disperse/susceptibility to population fragmentation

The Thick-billed Grasswren is a poor flyer, with poor dispersal capability, and is highly susceptible to population fragmentation (Garnett & Crowley 2000; Higgins *et al.* 2001).

Number of mature individuals:

The Thick-billed Grasswren's population is unknown for NSW, but presumed to be extremely low and geographically restricted. There have been no records in NSW since 1936 (*i.e.* for over 70 years) and the taxon has been presumed extinct in NSW by some (*e.g.* Garnett & Crowley 2000; Higgins *et al.* 2001). However, McAllan (2000) speculated that the species might still occur in the Grey Range, where its habitat has recovered in Sturt National Park following reservation and the spread of the rabbit calicivirus. The Thick-billed Grasswren is a cryptic species that occurs in remote and arid areas of NSW that are sparsely populated by humans. This may mean that sufficient targeted survey effort has not yet been applied to detect extant populations. The Grasswren population in South Australia is estimated at 20 000 birds and its status there is considered Least Concern, although some populations have disappeared (Garnett & Crowley 2000).

Threats:

The main threat to the Thick-billed Grasswren has been habitat destruction through overgrazing by livestock, rabbits and feral goats, compounded by drought. Other threats include wildfire, and predation by cats and foxes. 'Competition and habitat degradation by Feral Goats *Capra hircus*', 'Competition and grazing by the feral European Rabbit *Oryctolagus cuniculus*', 'High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and competition', 'Predation by the European Red Fox *Vulpes vulpes*' and 'Predation by the Feral Cat *Felis catus*' are listed as Key Threatening Processes under the TSC Act in NSW.

Inland bioregions within the Grasswren's NSW range (Darling Riverine Plain, Riverina) are 33-40% cleared and moderately stressed (landscape stress factor 2-3 out of 6: Barrett *et al.* 2007). Even little-cleared bioregions farther west are moderately stressed (Mulga Lands, Broken Hill Complex stress rating 4; Channel Country stress rating 3: Barrett *et al.* 2007).

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Extreme fluctuations:

There is no evidence of extreme fluctuations in population size or habitat of the Thick-billed Grasswren.

Population reduction and continuing declines:

A severe population reduction is inferred from the large contraction in the Thick-billed Grasswren's geographic range. There have been no records on the lower Namoi since the species' original discovery there. It was formerly common around Ivanhoe and Mossgiel, but disappeared by the early 1900s (Higgins *et al.* 2001). There have been no records from the Grey Range since the species' original discovery there in 1912 and a subsequent breeding record in 1936, and there has been no targeted survey. The population is inferred to have crashed in NSW following very high stocking rates and drought in the early decades of pastoral development (McAllan 1987).

Extent of Occurrence (EOO) & Area of Occupancy (AOO):

The Thick-billed Grasswren's former EOO is uncertain but was potentially the western one-third of NSW. Similarly, the Grasswren's historical AOO for NSW is unknown, but occupied area is a small proportion of available area in Western Australia (perhaps 10%; occupied pockets of 40-50 ha are separated by many kilometres of unoccupied habitat: Higgins *et al.* 2001). EOO in NSW may now be less than 100 km², and AOO may now be less than 10 km², if any birds remain.

Severe fragmentation:

The Thick-billed Grasswren's NSW population and habitat are inferred to have been severely fragmented as a result of: the bird's normally patchy distribution, the great distances between known historical populations (hundreds of kilometres), its poor dispersal ability, and the extent of habitat degradation in the western rangelands.

References:

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Explanatory note

Between 2007 and 2009 the NSW Scientific Committee undertook a systematic review of the conservation status of a selection of plant and animal species listed under the Threatened Species Conservation Act. This species summary report provides a review of the information gathered on this species at the time the Review was undertaken.

The Scientific Committee's report on the Review of Schedules project and final determinations relating to species that were either delisted or had a change in conservation status can be found on the following website: www.environment.nsw.gov.au.

The Committee gratefully acknowledges the past and present Committee members and project officers who ably assisted the Committee in undertaking the Review of Schedules Project. Information on the people involved in the project can be found in the Acknowledgement section of the project report entitled "Review of the Schedules of the *Threatened Species Conservation Act* 1995. A summary report on the review of selected species" which is available on the abovementioned website.

This species summary report may be cited as:

NSW Scientific Committee (2008) Thick-billed Grasswren *Amytornis textilis*. Review of current information in NSW. April 2008. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.