Approved **Recovery Plan**

Thick-billed Grasswren
(eastern subspecies)

(*Amytornis textilis modestus*)
(North, 1902)

Recovery Plan

July 2002

NSW
NATIONAL
PARKS AND
WILDLIFE
SERVICE

NSW National Parks and Wildlife Service
43 Bridge Street
(PO Box 1967)
Hurstville NSW 2220
Tel: 02 95856444
www.npws.nsw.gov.au

For further information contact:
Threatened Species Unit, Western Directorate.
NSW National Parks and Wildlife Service
P.O. Box 2111
Dubbo NSW 2830
Tel (02) 6883 5330

This Plan should be cited as follows;

NPWS (2002). Thick-billed Grasswren (eastern subspecies) *Amytornis textilis modestus* (North, 1902) Recovery Plan. NSW National Parks and Wildlife Service, Hurstville NSW.

ISBN: 0 7313 65143

NSW National Parks and Wildlife Service Recovery Planning Program

Thick-billed Grasswren (eastern subspecies)

(*Amytornis textilis modestus*) (North, 1902)

Recovery Plan

Prepared in accordance with the New South Wales
Threatened Species Conservation Act 1995

July 2002

Acknowledgements

Most of the information on the species biology contained within this Recovery Plan is based on information collated by J.M. Peter, W.K. Steele, M.A. Weston, K. Al-Dabbagh, R.N. Astley, J.R. Starks, A. Williamson and A.M. Dunn of Birds Australia under contract for the NSW NPWS.

Foreword

The conservation of threatened species, populations and ecological communities is crucial for the maintenance of this State's unique biodiversity. In NSW, the *Threatened Species Conservation Act* 1995 (TSC Act) provides the framework to conserve and recover threatened species, populations and ecological communities through the preparation and implementation of recovery plans.

The preparation and implementation of Recovery Plans is identified by both the National Strategy for the Conservation of Australia's Biological Diversity and the approved NSW Biodiversity Strategy as a key strategy for the conservation of threatened flora, fauna and invertebrates. The object of a Recovery Plan is to document the research and management actions required to promote the recovery of a threatened species, population or ecological community and to ensure its ongoing viability in nature.

This Plan describes our current understanding of the Thick-billed Grasswren, documents research and management actions undertaken to date and identifies actions required and parties responsible to ensure ongoing viability of the species in the wild.

NSW National Parks and Wildlife Service has prepared the Thick-billed Grasswren Recovery Plan with the assistance of a number of people. I thank these people for their efforts to date and look forward to their continued contribution to the recovery of the species.

BOB DEBUS MP
Minister for the Environment

Executive Summary

Introduction

Legislative context

The *Threatened Species Conservation Act* 1995 (TSC Act) is NSW's most comprehensive attempt at establishing a legislative framework to protect and encourage the recovery of threatened species, populations and communities. Under the TSC Act, the Director-General of National Parks and Wildlife has certain responsibilities including the preparation of Recovery Plans for threatened species, populations and ecological communities. This Recovery Plan has been prepared in accordance with the provisions of the TSC Act.

Preparation of Plan

This Recovery Plan has been prepared by staff from the Threatened Species Unit, NSW National Parks and Wildlife Service, Western Directorate. The information in this Recovery Plan was accurate to the best of the NPWS' knowledge on the date it was approved.

Current Species Status

The Thick-billed Grasswren (*Amytornis textilis*) is listed as Endangered on Schedule 1 of the NSW *Threatened Species Conservation Act* 1995. The species was once distributed across much of western NSW but has not been recorded in this state since 1956 (McAllan 2000). The IUCN Red List of Threatened Species (1996) lists this species as Vulnerable, the species being at high risk of extinction in the wild in the medium to long term future, and having a continual decline in population structure or individuals. The species is also listed as Vulnerable on the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999.

Recovery Objectives

The primary objective of this Recovery Plan is to identify and conserve any extant populations of Thick-billed Grasswren in NSW.

Specific objectives of the Thick-billed Grasswren Recovery Plan are:

1. targeted surveys to determine the species conservation status in NSW are undertaken in areas most likely to maintain extant populations;

2. establish a community awareness and survey program;

3. monitoring the results of future fauna surveys in NSW for records of the Thick-billed Grasswren; and

4. develop a “Poorly Known Status and Distribution Register” in NSW which lists Thick-billed Grasswren as well as other appropriate species in order to increase awareness and increase the likelihood of a record of the species being gained by interest groups or researchers.

Recovery performance criteria

Recovery criteria for the Thick-billed Grasswren are that:

1. the current status of the species in NSW is determined;

2. community awareness of the species and knowledge of its present status is increased; and

3. efforts are made to increase the likelihood of a record of the species in NSW being obtained from any source during the life of the recovery plan.

Recovery Actions

Recovery actions for the Thick-billed Grasswren will be directed towards:

1. identifying extant populations of the Thick-billed Grasswren in NSW;

2. increasing public awareness and community participation in the species conservation;

3. monitoring results of future fauna surveys in NSW;

4. developing a future records reporting program; and

5. Recovery Plan co-ordination.

BRIAN GILLIGAN
Director-General

Table of Contents

List of figures

List of tables

1 Current Conservation Status

The Thick-billed Grasswren was once a widespread species in arid Australia and occurred across much of western New South Wales. The species has undergone a dramatic contraction of range since European settlement and is now only considered locally common in the Lake Eyre and Lake Frome basins in South Australia (Garnett & Crowley 2000). The last confirmed record of the species in New South Wales was in 1956 (McAllan 2000).

The Thick-billed Grasswren (eastern subspecies), hereafter referred to as the Thick-billed Grasswren, is listed as Endangered on Schedule 1 of the NSW *Threatened Species Conservation Act* 1995. Where *Amytornis textilis* occurs in other states it is also considered to be threatened. In South Australia the species is listed as Vulnerable *(National Parks and Wildlife Act* 1972). In the Northern Territory, *A. t. modestus* is listed as Endangered (*Territory Parks and Wildlife Act* 1998) and in Western Australia, *A. t. textilis* is listed as "rare or is likely to become extinct" under the *Wildlife Conservation (Specially Protected Fauna) Notice* 1999. All three subspecies are listed as Vulnerable on the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999.

2 Description

2.1 Taxonomy

Scientific Nomenclature:	*Amytornis textilis modestus* (North, 1902)
Family:	Maluridae
Common Name:	Thick-billed Grasswren (eastern subspecies)
Recent Synonyms:	*A. modestus, Diaphorillas modestus*
Other Common Names:	None

The Thick-billed Grasswren is a passerine of the family Maluridae (Christidis & Boles 1994). Grasswrens are the largest genus in the family Maluridae, with ten species currently recognised (Rowley & Russell 1997; Christidis 1999, Higgins *et al.* 2001). Species in the genus are distributed across much of arid and tropical Australia.

The Thick-billed Grasswren is polytypic with three subspecies currently recognised: a western subspecies, *A. t. textilis*, an eastern subspecies, *A. t. modestus*, and a subspecies occurring in the Gawler Ranges of SA, *A. t. myall* (Schodde 1982a; Rowley & Russell 1997). Only *A. t. modestus* is found in western NSW. This subspecies is also found in north-eastern SA and southern NT.

2.2 General

Grasswrens are a cryptic species, well camouflaged for survival in the sparsely vegetated habitats in which they are so often difficult to locate. Grasswrens are similar in appearance to Fairywrens being small with long cocked tails. Their wings are short and rounded. Flight, although rare, is similar to other Malurids with the tail drooped downward. Grasswrens spend most of their time on the ground, running and hopping in search of seeds and insects (Rowley & Russell 1997). The genus occupies remote areas of spinifex, mallee, lignum, canegrass and saltbush.

The Thick-billed Grasswren has a short thick bill and is paler overall than the other thin-billed species. It is grey-brown above with a darker crown and fawn brown below, dully marked over head, back, throat and breast with off-white streaks (Rowley & Russell 1997; Schodde & Mason 2001). The sexes differ slightly in plumage, with the female having chestnut flanks. The other subspecies are more boldly streaked and have a longer tail that is sexually disproportionate (McDonald 1988; Schodde & Mason 2001). Adult birds have a total length of 15–20 cm, wings length is 59-63 mm and tail length is 70-80 mm (Rowley & Russell 1997; Schodde & Mason 2001). Adult birds weigh 19–24 g (Rowley & Russell 1997).

Thick-billed Grasswrens are thought to vocalize less frequently than any other grasswren (Carter 1917; Whitlock 1924; Rowley & Russell 1997). Morcombe (2000) described the calls of *A. t. modestus* as an extremely high, soft 'see-see-see' and a brief squeaky trill 'see-see, tsewit-tsewit'. Schodde (1982a) describes several calls including a clear silvery song; a low pitched chirping 'teck-teck'; and high pitched alarm squeaks. Males sometimes break into short, reedy, metallic whistles from vantage perches during the peak of the breeding season (Schodde 1982a).

3 Distribution

3.1 Current and historical distribution

The Thick-billed Grasswren is endemic to inland Australia, with three isolated subspecies, all occurring in arid environments (Curry 1986; Ford 1987; Brooker 1988; Rowley & Russell 1997). The western subspecies, *A. t. textilis*, and the eastern subspecies, *A. t. modestus*, have undergone a substantial reduction in distribution since European settlement (Figure 1).

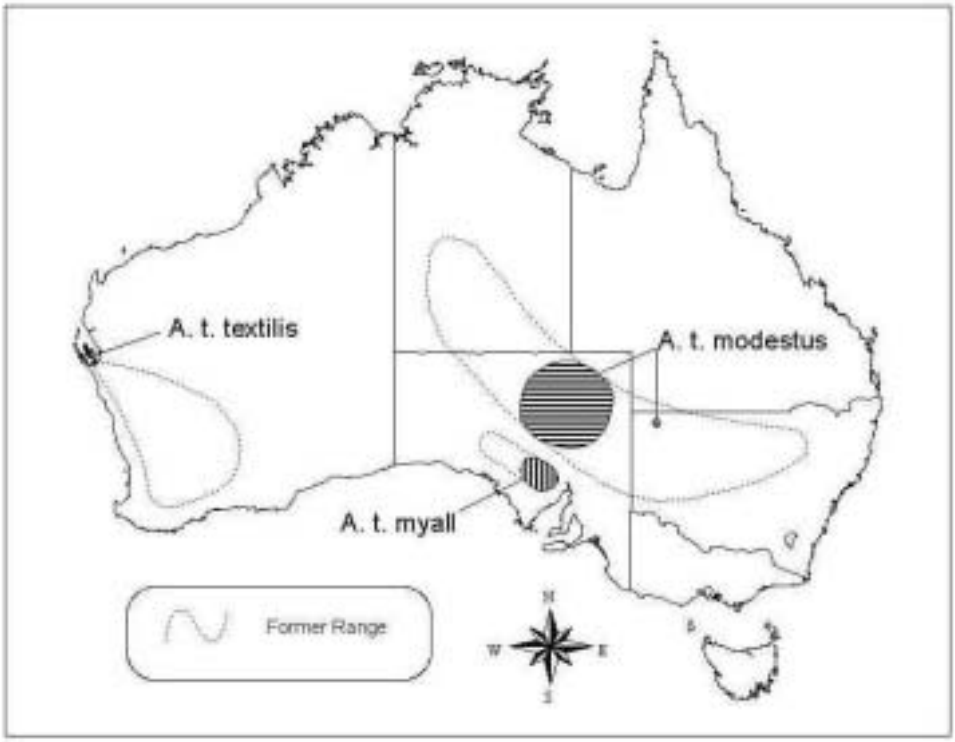

Figure 1. Current and former distribution of Thick-billed Grasswren *(Amytornis textilis*) in Australia (adapted from Rowley & Russell 1997 and Simpson & Day 1993). This map is indicative only.

In NSW, the Thick-billed Grasswren was collected on the lower Namoi River in 1847 (Gould), near Mossgiel in 1886 (Bennett) and south of Tibooburra in 1912 (MacGillivrey), indicating it had a widespread distribution in the state (Parker 1972; Morris *et al.* 1981; Ford 1987; McAllan 1987) (see Figure 2). A grasswren recorded in the Bulloorine in 1921 may have been this species, but it is thought more likely to have been a Grey Grasswren (*Amytornis barbatus*) (Chenery 1922; McAllan & Cooper 1995). The last documented record of a Thick-billed Grasswren in NSW was from a specimen acquired by the egg collector, Len Harvey, in 1956 near Tibooburra (McAllan 2000).

The Thick-billed Grasswren was once regarded as common around Mossgiel and Ivanhoe, but had "almost entirely disappeared" by the 1880–90s (North 1901–14). Severe drought and land degradation caused by overstocking and Rabbit plagues around the turn of the century appear to be the main cause of the decline (Schodde 1982a; Ford 1987; McAllan 1987; Garnett 1993).

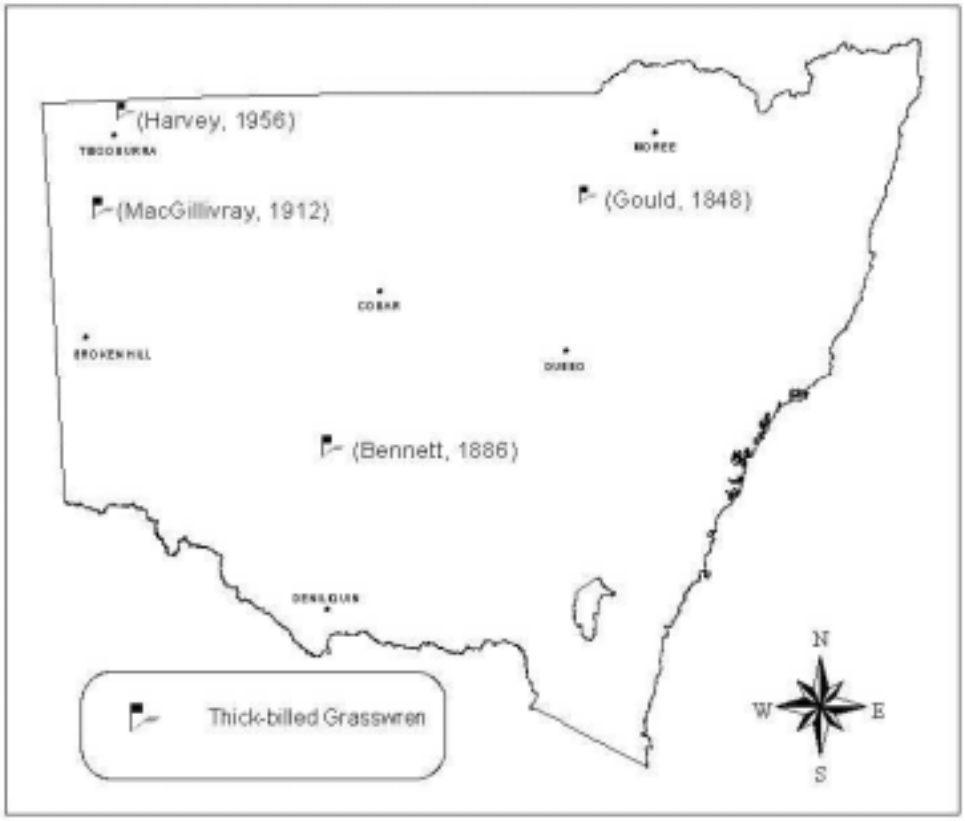

Figure 2. Records of the Thick-billed Grasswren *(Amytornis textilis ssp. modestus*) in NSW (NSW NPWS Wildlife Atlas). This map is intended to be indicative only.

Given the lack of records of the species in NSW over the last half century, it could be suggested that the Thick-billed Grasswren is already extinct in this state. However, no targeted surveys have been undertaken in NSW in recent times. Accordingly, there remains conjecture as to its status in NSW (Morris *et al.* 1981; Blakers *et al*. 1984; McAllan 1987; Cooper & McAllan 1995, McAllan 2000) and it is still possible that the species remains extant within NSW.

3.2 Movements

The Thick-billed Grasswren is sedentary or resident (Schodde 1982a; Brooker 1988; Gee *et al.* 1996; Rowley & Russell 1997) and has been recorded in all seasons (Hall 1910; Morgan 1923; Sutton 1923, 1927; Cox 1974; Badman 1979; Joseph & Black 1983; Matthew & Carpenter 1993; Coate 1994; SA Bird Repts). Pairs may remain in the same 4–5 ha throughout the year, whereas other grasswrens tend to congregate into locally nomadic parties after breeding (Schodde 1982a). Sedentary birds may during particularly dry periods undertake some nomadic movements (Serventy *et al.* 1982).

4 Ecology

4.1 Breeding and Life Cycle

The breeding biology of this species is poorly known. Most of the information available on the life cycle of the Thick-billed Grasswren is from studies of the western subspecies, *A. t. textilis*, in particular a limited study of a marked population at Monkey Mia, WA (Brooker 1988). Pairs are probably monogamous, but this is not known for certain. Observations of groups of more than two adults, and of an additional adult feeding young and performing a distraction display (Brooker 1988), suggest that cooperative breeding may occur. Schodde (1982a) 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. During one season at Monkey Mia four nests were found within 100 m of another nest, suggesting that breeding pairs, or groups, may occupy territories of about 1 ha during "good" seasons (Brooker 1988). The Thick-billed Grasswren probably breeds throughout its range (Blakers *et al*. 1984; Birds Australia Nest Record Scheme [BANRS]).

4.1.1 Breeding Season

Active nests have been recorded from late June to September (n = 28), with most clutches reported during August (Whitlock 1910, 1924; Schodde 1982a; Storr 1985a, 1985b; Brooker 1988; BANRS). Among central Australian populations, breeding is said to also occur between January and April in response to sufficient rainfall (North 1901–14; Schodde 1982a; Rowley & Russell 1997). At Monkey Mia fewer than usual nesting attempts were recorded during a dry year (Brooker 1988). Adequate rainfall may allow pairs to raise a second brood during a year (Schodde 1982a).

4.1.2 Nest and Eggs

Nests are usually found in low shrubs. In western populations nests are found in a wide variety of shrubs. At Monkey Mia, 25 nests were found in at least eight species of plants, often built amongst more than one species of plant. The eastern population tends to nest in either saltbush or bluebush (Jackson 1910; Whitlock 1924; Chapman 1996; BANRS) with one record of a nest being found in Sandhill Canegrass (Whitlock 1924). Nests have also been reported amongst flood debris (Whitlock 1924). The Monkey Mia population were found to have nests that were situated in the centre of a plant, at a median height of 0.3 m above the ground, and with 0.15–1.10 m of foliage above them (Brooker 1988). Nest structure varied from an open cup to a full dome, entrances usually faced south (17 of 24 nests faced between 90–270°), and invariably faced towards the densest and tallest part of the bush (Brooker 1988). Nests are usually solid structures with thick walls composed of dry grass, twigs of saltbush, and narrow strips of bark. They are usually lined with fine grass, stems and downy plant material, but occasionally also

fur and feathers (Jackson 1910; Whitlock 1910, 1924; Gibson 1911; Brooker 1988). It is thought that only the female constructs the nest, but the male may escort her during this period (Rowley & Russell 1997). It is said that nests may be complete for a week or more before laying occurs (Schodde 1982a). Nests are 90–150 mm tall and 80–120 mm wide, with openings 40–70 mm wide at the top (Schodde 1982a).

There are one to three eggs per clutch, although two is average (Campbell 1900; North 1901–14; Whitlock 1910; 1924; Storr 1985b, 1986; Brooker 1988) and they may be laid on either consecutive (Schodde 1982a) or alternate days (Rowley & Russell 1997; Brooker 1998). In WA, recorded egg dimensions are 22–25 mm × 16–17 mm (n = 8) (Brooker 1988). In central and eastern Australia, dimensions are 20–22.5 mm × 14.5–16 mm (n = 32), and on the Eyre Peninsula, SA, 21–23 mm × 15–16.5 mm (n = 15) (Schodde 1982a). Reports on the length of the incubation period vary from 13–14 days (Schodde 1982a) to 15–17 days (Rowley & Russell 1997). Males are thought to share incubation and brooding (Whitlock, 1910, 1924; Brooker 1988). Nesting frequency is generally once per year, although a second attempt may be made during good seasons (Beruldsen 1980).

4.1.3 Young

Young are remain in the nest after hatching (Brooker & Brooker 1987). Males have been reported assisting females in the brooding and feeding of young (Whitlock 1910; Schodde 1982a; Brooker 1988; Rowley & Russell 1997). Young are said to fledge from the nest after 10–12 days (Rowley & Russell 1997). For the first 1–2 weeks after fledging the young are thought to remain huddled together in dense cover for much of the time (Schodde 1982a; Rowley & Russell 1997). Nestlings produce high-pitched alarm notes when removed from a nest (Whitlock 1924) and adults perform “rodent-run distraction displays” when nests or young are threatened (Carter 1917; Brooker 1988). It is said that juveniles remain with their parents until they attain foraging independence, but disperse soon thereafter (Schodde 1982a).

4.1.4 Breeding Success

There are no measures of breeding success available. Nests are parasitised by Horsfield’s Bronze-cuckoo (*Chrysococcyx basalis*) (Brooker & Brooker 1988). Potential predators include goannas and snakes, Little Crows (*Corvus bennetti*), feral Cats (*Felis catus*) and Foxes (*Vulpes vulpes*) (Carter 1917; Storr 1985a; Brooker 1988).

4.1.5 Social Organisation and Behaviour

The social organisation of this species is not well known, although there is some information from the study of marked individuals at Monkey Mia, WA (Brooker 1988). Birds occur singly, in pairs, or in small groups of up to six (Gould 1865; Whitlock 1910, 1924; Carter 1917, 1924; Brooker 1988; Rowley & Russell 1997, NPWS Wildlife Atlas). Schodde (1982a) suggests that family groups do not stay together for long after the breeding season. Unlike other members of the genus, such as the Grey Grasswren, individuals do not appear to band together in groups during the non-breeding season, but this requires confirmation (Schodde 1882a).

Like other members of the genus, the Thick-billed Grasswren's behaviour is poorly known as they are secretive and elusive (Whitlock 1910; Morgan *et al*. 1926; Badman 1979; Schodde 1982a; Brooker 1988). Thick-billed Grasswrens have several calls but are thought to vocalize less frequently than any other species in the genus. When alarmed, birds produce a high-pitched alarm note (Whitlock 1924), and they may perch on exposed branches as intruders approach (Carter 1917; Brooker 1988). When disturbed they run to cover at speed, with the head hunched low and the tail erect. Only rarely do they fly above the shrubs (Gould 1865; Campbell 1900; North 1901–14; Carter 1910; Morgan *et al*. 1926; Schodde 1982a). Once in cover the birds are reluctant to leave and have been known to remain hidden in a bush until the bush was kicked by an observer (Ragless 1998). When an observer remains silent and motionless they may become inquisitive and approach (Carter 1917; Whitlock 1924). In response to a "chirping" call by an observer, birds may run from, turn to face, or even approach an observer with outspread wings and tail, the head inclined forward, body feathers puffed up, and sometimes issuing a low note (Carter 1917). The function of such behaviour is unclear. Both juveniles and adults may retreat into Rabbit or similar burrows to hide (Carter 1924; Whitlock 1924; Morgan *et al*. 1926; Coate 1994).

4.2 Habitat

A. t. modestus was 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 and bluebush (Carter 1908, 1910, 1924; Gibson 1909; Serventy & Whittell 1976; Storr 1985b, 1987; Saunders & Ingram 1995; Ragless 1998). This subspecies also inhabited gibber plains with chenopod shrubs growing along watercourses (McAllan 1987, 2000). Furthermore, this subspecies possibly occurred in areas of Nitre Bush (*Nitraria schoberi*) (Parker 1972), although this historical record could also have been obtained in areas of Grey Saltbush (*Atriplex cinerea*) or Prickly Glasswort (*Salsola kali*) (McAllan 1987).

A. t. modestus is now restricted to chenopod shrublands, especially those supporting saltbush and bluebush (Morgan *et al.* 1961; Parker 1972; Ford 1974, 1987; Badman 1979; Schodde 1982a, 1982b; Garnett 1993; Coate 1994; Gee *et al.* 1996; Rowley & Russell 1997). It may favour areas along drainage lines where saltbush and bluebush shrubs are taller and thicker (Chapman 1996).

4.2.1 Critical Habitat Components

Nesting: Both *A. t. modestus* and *A. t. myall* nest in clumps of Sandhill Canegrass growing on sand dunes, and in saltbush and bluebush. *A. t. textilis* is known to nest in at least eight species of shrub (Whitlock 1910, 1924; Bryant 1937; Parker 1972; Serventy & Whittell 1976; Brooker 1988; Garstone 1990; Chapman 1996; Schodde 1982a; Rowley & Russell 1997), and will sometimes nest near heavily disturbed areas (Brooker 1989).
Foraging: Birds forage on the ground below shrubs but sometimes in open areas (Whitlock 1910; Schodde 1982a; Chapman 1996; Rowley & Russell 1997). *A. t. textilis* was once recorded foraging on a beach (Brooker 1989).
Shelter: Thick-billed Grasswrens shelter at ground level within the bases of large, dense shrubs (White 1913; Nicholls 1924; Whitlock 1924; Parker 1972; Schodde 1982a; Blakers *et al.* 1984; Garstone 1990; Coate 1994). *A. t. modestus* also shelters in goanna and Rabbit (*Oryctolagus cuniculus*) burrows, and other natural crevices, or amongst flood debris within dry creekbeds (Whitlock 1924; Parker 1972; Schodde 1982a; Coate 1994).

4.3 Diet and Foraging Ecology

To date, there have been no detailed studies of the Thick-billed Grasswren diet. Their diet is known to consist of seeds (from grasses, herbs and occasionally acacias), insects and occasionally fruits (Hall 1910; Hill 1913; Lea 1915; Carter 1917; Whitlock 1924; Lea & Gray 1935; Barker & Vestjens 1991). Insect food mostly consists of small beetles, bugs, grasshoppers, ants and termites (Gould 1865; Keartland 1904; Hall 1910; Hill 1913; Lea 1915; Whitlock 1924; Lea & Gray 1935; Barker & Vestjens 1991; Chapman 1996).

The birds forage throughout early and mid-morning, and sometimes in late afternoon (Schodde 1982a). They forage singly, in pairs, or small groups with individuals usually keeping within 5–20 m of each other (Rowley & Russell 1997). Birds move with rapid zigzagging runs from one bush to another, slowing to search amongst accumulated litter on the ground beneath and around each shrub (Schodde 1982a; Rowley & Russell 1997). There are occasional reports of birds having been observed foraging in the open (Keartland 1904), with one bird seen turning over stones in search of prey (Chapman 1996).

5 Relevant Legislation

5.1 Threatened Species Conservation Act 1995

The Thick-billed Grasswren (eastern subspecies) is listed on Schedule 1 of the *Threatened Species Conservation Act* (TSC Act) as an 'Endangered' species. It is an offence to harm, pick or damage a threatened species or its habitat unless the damage is the result of activities which have been licensed under section 91 of the TSC Act, or have otherwise gained approval under the *Environmental Planning and Assessment Act* 1979.

5.2 National Parks and Wildlife Act 1974

The Thick-billed Grasswren is not known to occur in any area in NSW that is gazetted under the *National Parks and Wildlife Act 1974* (NPWS Act) and is under the care and management of the NSW National Parks and Wildlife Service.

5.3 Environmental Planning and Assessment Act 1979

Land use and development on leasehold land in NSW is subject to evaluation in accordance with the *Environmental Planning and Assessment Act 1979* (EP&A Act). Threatened species are to be taken into account by consent authorities when they are considering development applications under Part 4, and by determining authorities undertaking or approving activities under Part 5, of the Act. Under the *Western Lands Act 1901* the Department of Land and Water Conservation is the consent authority for activities on Western Lands leases which invokes the EP&A Act.

The TSC Act amendments to the environmental assessment provisions of the EP&A Act require that consent and determining authorities in NSW consider relevant recovery plans when exercising a decision making function under Parts 4 & 5 of the EP&A Act. When considering any activity that may affect the Thick-billed Grasswren these authorities must consider the conservation strategy outlined in this plan.

5.4 Native Vegetation Conservation Act 1997

The clearing of vegetation in NSW is subject to consent from the Department of Land and Water Conservation in accordance with the *Native Vegetation Conservation Act 1997.* The Act is integrated with the *Environmental Planning and Assessment Act 1979,* and requires that threatened species are taken into account by the consent authority when considering clearing applications under Part 4 of the EP&A Act.

5.5 Environment Protection and Biodiversity Conservation Act 1999

All three subspecies of the Thick-billed Grasswren are listed as Vulnerable on the Commonwealth *Environment Protection and Biodiversity Conservation Act (EPBC Act) 1999*. The EPBC Act regulates actions that may result in a significant impact on nationally listed threatened species and ecological communities. It is an offence to undertake any such actions in areas under State or Territory jurisdiction, as well as on Commonwealth-owned areas, without obtaining prior approval from the Commonwealth Environment Minister. As the Thick-billed Grasswren is listed nationally under the EPBC Act, any person proposing to undertake actions likely to have a significant impact on Thick-billed Grasswren should refer the action to the Commonwealth Minister for the Environment for consideration. The Minister will then decide whether the action requires EPBC Act approval.

6 Management Issues

6.1 Threats and reasons for decline

Major contractions of range have been recorded for *A. textilis*, and these are thought mostly to have been associated with degradation of habitat through overstocking of sheep (and possibly cattle), and by further damage caused by Rabbits and Goats (Schodde 1982a; Ford 1987; McAllan 1987; Garnett 1993). The species is adversely affected by damage to soil and the loss of understorey vegetation caused by overstocking, and thought to be especially vulnerable during times of drought (Davies & Chapman 1975; Schodde 1982a; Blakers *et al.* 1984; Storr 1986, 1987; Ford 1987; McAllan 1987; Brooker 1988; Garnett 1993; Coate 1994; Saunders & Ingram 1995; Chapman 1996).

In Western Australia, *A .t. textilis* occupies successional habitats at least a few years after fire, and possibly benefits from infrequent, widespread wildfires following heavy initial grazing (Curry 1983, 1986). However, *A. t. textilis* may be threatened by repeated burning, and the subspecies *A. t. modestus* is also thought to have been adversely affected in the past by wildfires (Storr 1985a; McAllan 1987; Brooker 1988).

Introduced predators are considered a threat to the species, and to have caused its disappearance from many areas (Schodde 1982a; McAllan 1987; Garnett 1993). Feral Cats are thought to have been responsible for the local extinction of the population of *A. t. textilis* on Dirk Hartog Island, WA (Garnett 1993).

6.2 Social and Economic Considerations

The Thick-billed Grasswren in NSW has undergone a dramatic reduction of its former distribution because of past land management practices and the impacts of feral animals. For almost half a century there has been no authenticated record of the species in NSW and it may well be extinct in this state. The primary aim of this Recovery Plan is to determine its status within NSW through targeted surveys and by increasing community and interest groups' awareness in a hope that future records may be forthcoming. The Recovery Plan does not propose any regulation of current land use. However, should future populations of the species be discovered and changes to current land use practices are thought necessary for the conservation of the species then a cooperative approach to management is advocated. Accordingly, no significant social or economic impacts are likely to arise from actions in this Recovery Plan.

The maintenance of biodiversity is increasingly becoming a significant social issue as today's society places a greater value on species, ecological communities and ecosystem function. Because of this change in priorities, environmental considerations now have equal standing to social and economic issues in the decision-making process of Government. From these changes society aims to reach certain goals from which they obtain benefits. Social benefits associated with the recovery of the threatened Thick-billed Grasswren include the sense of well being derived from the knowledge that the species is conserved for both current and future generations.

6.3 Biodiversity benefits

The plight of the Thick-billed Grasswren highlights the fate of many western New South Wales species whose populations have severely declined or become extinct since European settlement. The role the species plays in the ecology of the arid zone is unknown. A greater understanding of the pressures that resulted in the Thick-billed Grasswren's decline in New South Wales may be of considerable value in the future management of populations and of other species in the west that occupied a similar habitat or niche.

A greater understanding of the exact mechanisms that caused the decline of the species would be of great assistance in the management of biodiversity and threatened species in western New South Wales in general. The halting of this trend through the recovery of threatened species will have significant biodiversity benefits that reach further than individual species in western NSW. The impacts associated with the decline of the Thick-billed Grasswren may be similar to those influencing the decline of other species. Through an understanding of these impacts, actions can be taken that may be of benefit to many species suffering a similar fate. Active management undertaken through the recovery process will have indirect benefits for species such as the Redthroat (*Pyrrholaemus brunneus*) and the Rufous Fieldwren (*Calamanthus campestris*) that occupy the same habitat.

7 Previous Actions Undertaken

NSW National Parks and Wildlife Service is unaware of any previous actions to conserve or manage the species. The lack of action by any party is most probably result of the general belief that the species is extremely rare if not extinct within NSW. However, this attitude is self perpetuating as a lack of action will do little to improve our knowledge of the species which further promotes the belief the species is rare or extinct in NSW.

The Action Plan for Australian Birds (Garnett 1992; Garnett & Crowley 2000) reviewed existing information on the Thick-billed Grasswren and proposed a four-part recovery program for the eastern form (*A .t. modestus*). This program included a survey to establish the subspecies present distribution, a detailed study of its ecological requirements and the impacts of grazing, development of management guidelines and an education program.

8 Species ability to Recover

The species ability to recover in the state is considered low given the lack of any confirmed records of the Thick-billed Grasswren in NSW for almost half a century. The species decline appears to be attributed to a combination of factors relative to a broad scale change in vegetation structure that continues today. Should a population be found, active management would most likely be necessary to guarantee the population's continued viability. If no further record of the species in NSW is found before 2007 the Thick-billed Grasswren will have met the criteria under the TSC Act for nomination as 'Presumed Extinct'.

9 Recovery objectives and performance criteria

9.1 Objectives of the Recovery Plan

The primary objective of this Recovery Plan is to identify and conserve any extant populations of Thick-billed Grasswren in NSW.

Specific objectives of the Thick-billed Grasswren Recovery Plan are:

1. targeted surveys to determine the species conservation status in NSW are undertaken in areas most likely to maintain extant populations;

2. establish a community awareness and survey program;

3. monitoring the results of future fauna surveys in NSW for records of the Thick-billed Grasswren; and

4. develop a "Poorly Known Status and Distribution Register" in NSW which lists Thick-billed Grasswren as well as other appropriate species in order to increase awareness and increase the likelihood of a record of the species being gained by interest groups or researchers.

9.2 Recovery performance criteria

Recovery criteria for the Thick-billed Grasswren are that:

1. the current status of the species in NSW is determined;

2. community awareness of the species and knowledge of its present status is increased; and

3. efforts are made to increase the likelihood of a record of the species in NSW being obtained from any source during the life of the Recovery Plan.

10 Recovery Actions

10.1 Action 1 – Identify extant populations of the Thick-billed Grasswren

Areas in NSW where a population of the Thick-billed Grasswren may still be extant should be identified and a targeted survey undertaken by persons suitably experienced with grasswrens. Potential areas of survey are those where suitable habitat exists and the known threatening process have had the least impact.

Outcome
A targeted survey may produce a present day record which would greatly assist in determining the status of the species in NSW. Location of an extant population may allow for the insight into the species requirements that will assist in management and guide any future surveys for other populations.

Action 1	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Survey	$4 900	$4 900	$4 900	Nil	Nil
TOTAL					$14 700

Agency responsible for implementation
NSW National Parks and Wildlife Service.

Funding Source
NSW National Parks and Wildlife Service.

10.2 Action 2 – Increase awareness and community participation

Produce information on the Thick-billed Grasswren for distribution to interest groups or members of the public. This material should provide a brief description of the species, its ecological requirements, known records and the proposed conservation actions in the Recovery Plan. The information material and the need for future records to be established via NPWS and interest group surveys should be actively promoted.

Outcome
The information material will increase awareness of the Thick-billed Grasswren and may promote surveys for the species to be undertaken by interest groups or members of the public. This will increase the potential for a future record of the species in NSW being obtained.

Action 2	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Information	$2000	Nil	$500	Nil	$500
TOTAL					$3000

Agency responsible for implementation
NSW National Parks and Wildlife Service.

Funding Source
NSW National Parks and Wildlife Service.

10.3 Action 3 – Monitoring the results of future fauna surveys in NSW

The results of future fauna surveys should be monitored for any record of the Thick-billed Grasswren. Were any population of the species to be located then they would have a high priority for conservation action when such action were found to be required following a review of the status and threats to the population.

Outcome
The outcome of this action is to identify any future records of the Thick-billed Grasswren in NSW, which will assist in conservation efforts.

Action 3	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Survey Monitoring	Nil	Nil	Nil	Nil	Nil
TOTAL					Nil

Agency responsible for implementation
NSW National Parks and Wildlife Service.

Funding Source
Not required.

10.4 Action 4 - Development of an extended records reporting system

This action aims to develop a program to aid in the identification of past and future records of threatened species for which the status and distribution is poorly known. Included within this group would be those species in NSW with very limited records or for which there have been few or no records from recent times.

The need for such a program arises from the fact that identification of such records can often be fraught with difficulty given the diffuse collection of databases and record sources associated with botanical, invertebrate and vertebrate species. NPWS operates an extensive wildlife record dataset called Wildlife Atlas and also monitors a variety of major, reputable datasets from CSIRO, Australian Museum and Birds Australia. Records of rare species are by their very nature uncommon and may come from a more unusual source not actively monitored by conservation agencies. Subsequently, conservation efforts can be hindered when such records are not brought to the attention of conservation agencies. This is especially important when swift identification of records can be critical to the conservation of a species.

The action requires the development of a "Poorly Known Status and Distribution Register". The register can then be promoted to a variety of government and non-government organisations that may obtain or have access to biological records. Recipients would be actively encouraged to immediately report to NSW NPWS records of any species listed on the register.

Outcome
Increase the reporting rate of selected threatened species to assist in the conservation efforts.

Action 4	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Reporting System	Nil	Nil	Nil	Nil	Nil
TOTAL					Nil

Agency responsible for implementation
NSW National Parks and Wildlife Service.

Funding Source
Not required.

10.5 Action 5 – Recovery Plan Co-ordination

Ensure the Actions contained within this Plan are properly implemented and that relevant government agencies, organisations, stakeholders and individuals are sufficiently informed about the process.

Outcomes
Efficient and co-ordinated implementation of Recovery Plan actions.

Action 5	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
Co-ordinate Plan	$1000	$1000	$1000	$1000	$1000
TOTAL					$5000

Responsibilities for Implementation
NSW National Parks and Wildlife

Funding Source
NSW National Parks and Wildlife

11 Alternative management strategies

11.1 Option 1 - Nominate the species as "Presumed Extinct"

The Thick-billed Grasswren underwent a dramatic contraction of its distribution in NSW at the end of the 19th century. The most recent record was from an egg collector in 1956 and was only recently reported in scientific literature (McAllan 2000). There has been some discussion as to the accuracy of the collector's identification and the subsequent validity of the record. Should the record be discounted the Thick-billed Grasswren would no longer meet the criteria for an Endangered species under the TSC Act and should be removed from Part 1 of Schedule 1 and listed under Part 4, "Presumed Extinct".

This strategy is not considered appropriate as the NSW Scientific Committee has indicated in correspondence that the record is acceptable and that the Thick-billed Grasswren should remain as Endangered until its status in NSW is officially reviewed in 2007. The actions in this Plan seek to determine the status of the species in NSW prior to any official review.

11.2 Option 2 – No management action taken

The cause of the dramatic range contraction of the Thick-billed Grasswren is thought to be the result of severe drought and extraordinarily high stocking rates at the turn of the 20th century. These events may have caused a permanent change in the structure and distribution of the species preferred habitat of chenopod shrublands across the state. Following these events the species apparently persisted

within areas of the far west and north west where the impacts associated with high stocking rates would have been minimal, as indicated by the last known record of the species being obtained in 1956 near Tibooburra. To this day the species may still occur in these areas of NSW and has simply remained undetected. Given this, an option of no active management could be suggested.

This option is not considered appropriate as NSW NPWS has a statutory responsibility under the TSC Act to conserve biodiversity and recover threatened species. Given the documented history of the species in NSW and the fact that certain threatening process are still operating, there is a necessity for active management to ensure the conservation of the species. Failure to do so could result in the species unnoticed extinction in NSW.

11.3 Undertake immediate active management

Active management could be undertaken in those areas likely to contain viable populations based on the existence of suitable habitat. Active management could include regulation of pastoral activities, promotion of Voluntary Conservation Agreements and land acquisitions.

This option is considered inappropriate given the lack of recent records. Further active management would only be considered when a future record of the species is obtained in NSW and there was a demonstrated need for action to be taken. Should further management be considered, a cooperative approach involving all stakeholders is advocated.

12 Implementation

The following table allocates responsibility for the implementation of recovery actions specified in this plan to relevant government agencies for the period of five years from 2002 to 2007.

Table 3: Implementation schedule

Section	Description	Responsibility for implementation	Timeframe	Cost	Priority
10.1	Survey of potential habitat	NPWS	Ongoing	$14 700	High
10.2	Community education and awareness	NPWS	Ongoing	$3 000	High
10.2	Monitor survey results	NPWS	Ongoing	Nil	High
10.4	Develop threatened species of special concern program	NPWS	Ongoing	Nil	High
10.5	Plan Coordination	NPWS	Ongoing	$5000	High

13 Preparation details

This Recovery Plan was prepared by Matthew Chambers, Threatened Species Officer, Western Directorate NPWS. Matt Cameron, Manager, Threatened Species Unit, Western Directorate provided valuable comments on the draft Plan.

13.1 Date of last amendment

This document is the first Recovery Plan for the Thick-billed Grasswren. No amendments to the Plan have been made.

13.2 Review date

This Recovery Plan and the conservation status of the species will be reviewed five years from the date of publication.

References

Anon. 1996. Observations. *Western Australian Bird Notes* 78: 3–6.

Badman, F.J. 1979. Birds of the southern and western Lake Eyre drainage. Part 2. *South Australian Ornithologist* 28: 57–81.

Barker, R.D & Vestjens, W.J.M. 1991. *The Food of Australian Birds. 2. Passeriformes*. Canberra: CSIRO.

Beruldson, G. 1980. *A Field Guide to the Nests and Eggs of Australian Birds*. Rigby, Adelaide.

Blakers, M., Davies, S.J.J.F. & Reilly, P.N. 1984. *The Atlas of Australian Birds*. Melbourne: Melbourne University Press.

Brandle, R. (ed.) 1998. *A Biological Survey of the Stony Deserts, South Australia 1994-1997*. Department for Environment, Heritage and Aboriginal Affairs and National Parks Foundation of South Australia, Adelaide.

Brooker, B. 1998. Evidence of long laying intervals by the Thick-billed Grasswren *Amytornis textilis*. *Emu* 98: 82–83.

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.

Brooker, M.G. 1989. Land birds at Monkey Mia, Peron Peninsula, Western Australia 1985–1987. *Western Australian Naturalist* 18: 29–34.

Brooker, M.G. & Brooker, L.C. 1987. Description of some neonatal passerines in Western Australia. *Corella* 11: 116–118.

Bryant, C.E. 1937. Narrative of the Eyre Peninsula camp-out. *Emu* 36: 229–242.

Campbell, A.G. 1927. The genus *Amytornis*: a review. *Emu* 27: 23–35.

Campbell, A.J. 1900. *Nests and Eggs of Australian Birds*. Sheffield, UK: Privately published.

Carter, T. 1908. Notes on *Amytis* (*Amytornis*) *varia*, or Marlock Grass-wren. *Emu* 8: 103–105.

Carter, T. 1910. *Amytis macura* re-discovered. *Emu* 9: 163.

Carter, T. 1917. The Birds of Dirk Hartog Island and Peron Peninsula, Shark Bay, Western Australia, 1916–17. *Ibis* (Series 10) 5: 564–611.

Carter, T. 1924. Birds of the Broome Hill district. *Emu* 23: 306–318.

Chapman, G. 1996. The Grasswrens—a brief pictorial. *Wingspan*. 6 (1): 20–28.

Chenery, A. 1922. Notes on birds seen during a recent visit to the western Darling, NSW. *South Australian Ornithologist* 6: 110–114, 134–138, 153–155.

Christidis, L. & Boles, W.E. 1994. *The Taxonomy and Species of Birds of Australia and its Territories. Royal Australasian Ornithologists Union Monograph* 2. Melbourne: RAOU.

Christidis, L. 1999. Evolution and biogeography of the Australian grasswrens, *Amytornis* (Aves: Maluridae): bio-chemical perspectives. *Australian Journal of Zoology* 47: 113-24.

Coate, K.H. 1994. Another instance of Thick-billed Grasswrens hiding in burrows. *Australian Bird Watcher* 15: 278–279.

Cooper, R.M. & McAllan, I.A.W. 1995. *The Birds of Western New South Wales: a Preliminary Atlas*. Albury, NSW: NSW Bird Atlassers.

Cox, J.B. 1974. Some birds of north-eastern Eyre Peninsula, SA. *South Australian Ornithologist* 26: 142–144.

Curry, P. 1983. Thick-billed Grasswren in Cottonbush. *Western Australian Bird Notes* 27: 10.

Curry, P.J. 1986. *In* Joff, P.J., *et al.* (Eds). *Rangelands: a Resource Under Siege*. Canberra: Australian Academy of Science: pp 566–570.

Davies, S.J.J.F. & Chapman, G.S. 1975. The status of birds on Peron Peninsula and Dirk Hartog Island, Shark Bay, WA. *Emu* 75: 55–61.

Ford, J. 1974. Speciation in Australian birds adapted to arid habitats. *Emu* 74: 161–168.

Ford, J. 1987. Minor isolates and minor geographical barriers in avian speciation in continental Australia. *Emu* 87: 90–102.

Garnett, S. 1992. *The Action Plan for Australian Birds*. ANPWS, Canberra.

Garnett, S. (ed.). 1993. Threatened and extinct birds of Australia. *Royal Australasian Ornithologists Union Report* 82.

Garnett, S. & Crowley, G.M. 2000. *The Action Plan for Australian Birds*. Environment Australia, Canberra.

Garstone, R. 1990. Extension of the range of the Thick-billed Grasswren. *Western Australian Bird Notes* 53: 5.

Gee, P., Gee, I. & Read, J. 1996. An annotated list from the Davenport Range, South Australia. *South Australian Ornithologist* 32: 76–81.

Gibson, C.G. 1909. Birds observed between Kalgoorlie and Eucla, WA. *Emu* 9: 71–77.

Gibson, C.G. 1911. *Amytornis gigantura v. A. macura*. *Emu* 10: 341.

Gould, J. 1865. *Handbook of the Birds of Australia*. London: Privately published.

Hall, R. 1910. The Birds of Eyre Peninsula, S.A. *Emu* 9: 123–133.

Higgins, P.J., Peter, J.M. & Steele, W.K. (eds.) 2001. *Handbook of Australian, New Zealand and Antarctic Birds: V Tyrant-flycatchers to Chats*. Oxford Press, Melbourne.

Hill, G.F. 1913. Ornithological notes, Barclay Expedition. *Emu* 12: 238–262.

Jackson, S.W. 1910. Description of two new nests and eggs. *Emu* 9: 136–137.

Joseph, L. & Black, A. 1983. Further notes on birds of the Gawler Ranges. *South Australian Ornithologist* 29: 46–54.

Keartland, G.A. 1904. Ornithological notes: the Grass-Wrens. *Victorian Naturalist* 20: 133–139.

Lea, A.M. 1915. Scientific notes on an expedition into north-western regions of South Australia. (e) Stomach contents of birds. *Transactions of the Royal Society of South Australia* 39: 760–766.

Lea, A.M. & Gray, J.T. 1935. The food of Australian birds. Parts 2–5. *Emu* 35: 63–98; 145–178; 251–280; 335–347.

Matthew, J. & Carpenter, G. 1993. Recent bird records from east of Lake Gairdner, Gawler Ranges, S.A. *South Australian Ornithologist* 31: 127–131.

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* 21: 33–43.

McAllan, I.A.W. & Cooper, R.M. 1995. The distribution of the Grey Grasswren in New South Wales. *Australian Birds* 28: 65–70.

McAllan, I.A.W. 2000. On Some New South Wales Records of the Grey Grasswren and the Thick-billed Grasswren. *Australian Bird Watcher* 18:6 244-6.

Morgan, A.M. 1923. The nest and eggs of *Diaphorilla Textilis* Myal. *South Australian Ornithologist* 7: 159–160.

Morgan, A.M., McGilp, J.N., Parsons, F.E & Sutton, J. 1926. North-east Eyre Peninsula. *South Australian Ornithologist* 8: 171–219.

Morgan, D.G., Morgan, L.R., Robinson, P.A. & Ashton, D.H. 1961. The Eyrean Grass-Wren (*Amytornis goyderi*). *Australian Bird Watcher* 1: 161–171.

Moriarty, T.K. 1972. Birds of Wanjarri (27°25'S, 120°40'E). *Emu* 72: 1–7.

Morris, A.K., McGill, A.R, & Holmes, G. 1981. *Handlist of Birds in New South Wales*. Sydney: NSW Field Ornithologists' Club.

Nicholls, B. 1924. A trip to Mungerainie, Central Australia. *Emu* 24: 45–58.

North, A.J. 1901–14. *Nests and Eggs of Birds Found Breeding in Australia and Tasmania*.

Spec. Cat. 1, Australian Museum, Sydney.

NSW NPWS. 1996. *Threatened Species of Western New South Wales*. Sydney: NSW National Parks & Wildlife Service.

Parker, S.A. 1972. Remarks on the distribution and taxonomy of the Grass Wrens *Amytornis textilis*, *modestus* and *purnelli*. *Emu* 72: 157–166.

Paton, J.B. 1975. Birds of the Gawler Ranges, South Australia. *South Australian Ornithologist* 26: 180–193.

Ragless, G. 1998. Thick-billed Grasswren. *South Australian Ornithological Association Newsletter* 168: 5.

Rowley, I. & Russell, E.M. 1997. *Fairy-wrens and Grasswrens*. Oxford: Oxford University Press.

Saunders, D.A. & Ingram, J.A. 1995. *Birds of Southwestern Australia*. Sydney: Surrey Beatty.

Schodde, R. 1982a. *The Fairy-wrens*. Melbourne: Lansdowne Editions.

Schodde, R. 1982b. *In* Barker, W.R. & Greenslade, P.J.M. *Evolution of the Flora and Fauna of Arid Australia*. Frewville, SA: Peacock Publications: pp 191–224.

Schodde, R. & Mason, I.J. 2001. *The Directory of Australian Birds: Passerines*. CSIRO Publishing Canberra.

Serventy, D.L. & Whittell, H.M. 1976. *Birds of Western Australia*. Perth: University of Western Australia Press.

Serventy, V.N., McGill, A.R., Pringle, J.D. & Lindsey, T.R.. 1982. *The Wrens and Warblers of Australia*. Sydney: Angus & Robertson.

Simpson, K. & Day, N. 1993. *Field Guide to the Birds of Australia*. Penguin Books Australia, Sydney.

Stanger, M., Clayton, M., Schodde, R., Wombey, J. & Mason, I. 1998. *CSIRO List of Australian Vertebrates: a Reference with Conservation Status*. Melbourne: CSIRO Publishing.

Storr, G.M. 1977. Birds of the Northern Territory. *Western Australian Museum Special Publication* 7.

Storr, G.M. 1985a. Birds of the Gascoyne Region, Western Australia. *Records of the Western Australian Museum Supplement* 21.

Storr, G.M. 1985b. Birds of the Mid-eastern Interior of Western Australia. *Records of the Western Australian Museum Supplement* 22.

Storr, G.M. 1986. Birds of the South-eastern Interior of Western Australia. *Records of the Western Australian Museum Supplement* 26.

Storr, G.M. 1987. Birds of the Eucla Division of Western Australia. *Records of the Western Australian Museum Supplement* 27.

Sutton, J. 1923. An ornithological trip around Eyre Peninsula. *South Australian Ornithologist* 7: 118–159.

Sutton, J. 1927. Birds of South Australia. *South Australian Ornithologist* 9: 55–66.

White, S.A. 1913. Field ornithology in South Australia. *Emu* 13: 16–32.

Whitlock, F.L. 1910. On the east Murchinson. *Emu* 9: 181–219.

Whitlock, F.L. 1924. Journey to Central Australia in search of the Night Parrot. *Emu* 23: 248–281.

NSW
NATIONAL
PARKS AND
WILDLIFE
SERVICE

43 Bridge Street
Hurstville 2220
(02) 9585 6444