Interim Recovery Plan 55

THICK-BILLED GRASSWREN

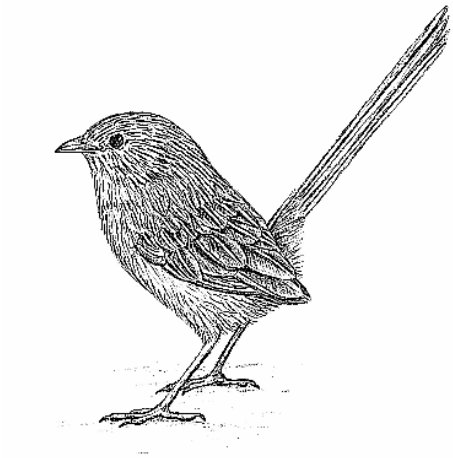
(WESTERN SUBSPECIES)

(*AMYTORNIS TEXTILIS TEXTILIS*)

INTERIM RECOVERY PLAN

2000-2002

Belinda Cale (neé Brooker)



February 2000

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Western Australian Threatened Species and Communities Unit
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FOREWORD

Interim Recovery Plans (IRPs) are developed within the framework laid down in Department of Conservation and Land Management (CALM) Policy Statements Nos 44 and 50.

IRPs outline the recovery actions that are required to urgently address those threatening processes most affecting the ongoing survival of threatened taxa or ecological communities, and begin the recovery process.

CALM is committed to ensuring that Critically Endangered, and where appropriate and feasible, other threatened species and ecological communities are conserved through the preparation and implementation of Recovery Plans or Interim Recovery Plans. CALM will also ensure that conservation action commences as soon as possible and always within one year of endorsement of Critically Endangered rank by CALM's Director of Nature Conservation.

This Interim Recovery Plan will operate from 13 February 2000 but will remain in force until withdrawn or replaced.

The provision of funds identified in this Interim Recovery Plan is dependent on budgetary and other constraints affecting CALM, as well as the need to address other priorities.

Information in this IRP was accurate at February 2000**.**

SUMMARY

Common Name: Thick-billed Grasswren
Scientific Name: *Amytornis textilis textilis*
Family: Maluridae

CALM Region: Midwest
CALM District: Gascoyne

Current status: The western subspecies of the Thick-billed Grasswren is listed as 'rare or likely to become extinct' pursuant to the WA *Wildlife Conservation Act 1950*. It currently meets IUCN (1994) Red List Category 'Vulnerable' under criterion D2 as it has a restricted distribution of < 5 locations and these populations are susceptible. The main threats include vegetation changes induced by introduced herbivores, and predation by feral cats and foxes.

Habitat requirements: Currently restricted to the Shark Bay region. Occurs in acacia-dominated shrublands, dense shrub associations in drainage depressions, and *Triodia* spinifex with acacia shrubland components. All these habitats feature recumbent shrubs where the foliage extends to the ground. In acacia-dominated shrublands, shrub clumps of high foliage density appear important determinants of Thick-billed Grasswren presence. These shrub clumps may provide the Thick-billed Grasswren with ideal nesting sites.

Existing Recovery Actions: The following recovery actions have been implemented:
1. 'Project Eden' was established in 1994 on CALM and proposed CALM-managed land on Peron Peninsula. This program includes feral predator control, stock removal and fire management to reduce the risk of extensive wildfire. These strategies should benefit this subspecies.
2. A survey of the range and habitat characteristics of the Thick-billed Grasswren in the Shark Bay region was conducted in October 1998. Methods used and results of this survey will provide a baseline for further monitoring of this subspecies.
3. All relevant land managers have been informed of the subspecies locations.

IRP Objectives: Specific objectives are to improve protection of known populations through habitat management and advice to relevant land managers; establish standard monitoring methods for estimating the distribution and sizes of populations; and clarify the long-term actions needed to continue the recovery of the subspecies.

Recovery Criteria
Criteria for success:
1. Continuation of favourable habitat management in Francois Peron National Park and 'South Peron'.
2. Implementation of agreed strategies for habitat management with relevant land managers.
3. Documentation of a standard monitoring method to determine population sizes and distribution.
4. Delineation of all known populations and estimates of their size.
5. Evidence that the status of the Thick-billed Grasswren has not declined since 1998.
6. Implementation of long-term actions needed to complete the recovery of the subspecies.

Criterion for failure: A measured consistent decline in overall numbers of birds or loss of any populations.

Recovery actions
1. Establish and maintain a Recovery Team.
2. Continue habitat management on areas for which CALM is responsible.
3. Liaise with other relevant land managers to bring about desirable habitat management.
4. Develop and implement an education and communication strategy.
5. Monitor the number, distribution and sizes of all known Thick-billed Grasswren populations.
6. Survey areas adjoining the known current distribution of the Thick-billed Grasswren.
7. Assess the long-term needs of this subspecies.

1. INTRODUCTION

1.1 Description of species

The Thick-billed Grasswren *Amytornis textilis* is one of eight species of grasswren that occur in the semi-arid and arid regions of Australia. Three subspecies of the Thick-billed Grasswren are recognised: *A. textilis textilis* from Western Australia, *A. textilis myall* from the Gawler Range in South Australia and *A. textilis modestus* from inland eastern Australia (Schodde 1982). This recovery plan focuses on the western subspecies, *A. textilis textilis*.

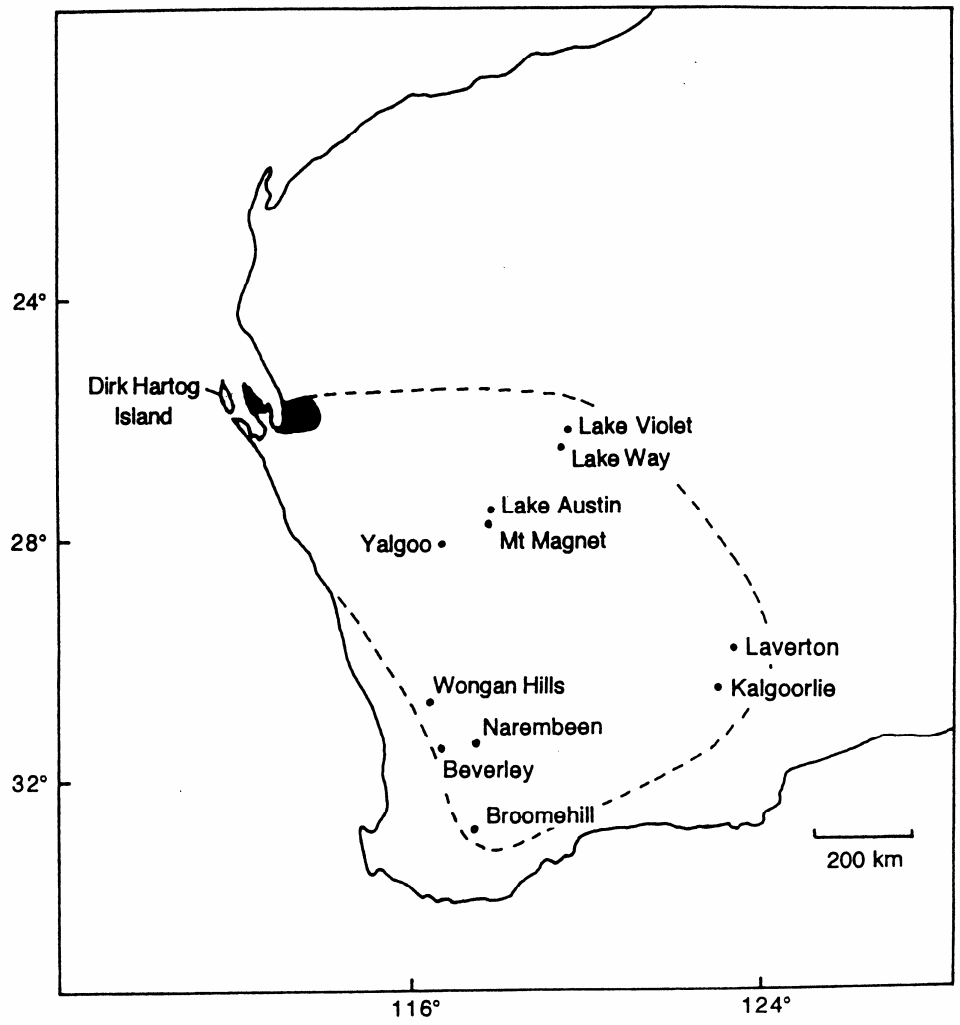

Figure 1. Present and former localities of the Thick-billed Grasswren in Western Australia. Solid shading denotes the present distribution of the grasswren on Peron Peninsula and nearby pastoral stations. The dashed line denotes former distribution.

Thick-billed Grasswrens are sedentary, shy and elusive birds that spend most of their time on the ground. The plumage of the Thick-billed Grasswren is highly cryptic with its surroundings, being brown with fine streaks of black

and white. Adult females tend to be smaller in size than males, and differ from males in having a chestnut patch on their flank, just under each wing (Schodde 1982).

1.2 Distribution

The western subspecies of the Thick-billed Grasswren once extended from Shark Bay over much of southern Western Australia (Parker 1972, Storr 1985, 1986, 1991) (Figure 1). Historically, the 'western' Thick-billed Grasswren was found in the Shark Bay area, including Peron Peninsula and Dirk Hartog Island (Carter 1917, Whitlock 1921), at Wongan Hills (Gould 1865), east of Broomehill (Carter 1924), between Beverley and Narembeen (Crossman 1909), Mt Magnet (Milligan 1901), Lake Austin, Lake Way and Lake Violet (Whitlock 1910), Yalgoo (Western Australian Museum collection), Kalgoorlie and Laverton (North 1910). There is some doubt as to the extent of the Thick-billed Grasswren over the Nullarbor Plain. During his trip from Kalgoorlie to Eucla in 1908, Gibson (1909) noted 'odd ones here and there right through, chiefly amongst the bluebush'. Burbidge *et al.* (1987) provide further possible records of the subspecies near Haig, but it has not been recorded there since despite several searches (R. Johnstone pers. comm.). An unconfirmed sighting of *A. t. textilis* near Exmouth (Blakers *et al.* 1984) was within the range of the Striated Grasswren *Amytornis striatus*. Immature Striated Grasswrens have only faint facial markings and a lighter plumage than adults (Hutton 1991), so it is possible that an immature Striated Grasswren was mistaken for an adult *A. t. textilis*.

Since the early 1900s the Thick-billed Grasswren has declined markedly in its distribution and currently is restricted to the Shark Bay region, including Peron Peninsula and the nearby pastoral stations of Nanga, Hamelin, Woodleigh and Carbla (Curry 1986a, Brooker 1988, Brooker 1998a, Garstone 1990, Johnstone *et al.* in press, Brooker in press). A 1998 survey found the Thick-billed Grasswren had a disjunct distribution, with one population throughout Peron Peninsula and the other population further inland, primarily on Woodleigh and Hamelin Stations (Brooker in press) (Figure 2). The decline of the Thick-billed Grasswren is thought to be associated with the habitat changes induced by introduced herbivores, and predation by feral predators (Schodde 1982, Garnett 1992, Brooker 1998a). On Dirk Hartog Island, Whitlock (1921) surmised that feral cats were implicated in the local extinction of the Thick-billed Grasswren, although the additional effects of sheep and feral goats on the native vegetation were not considered. Subsequent visits to the island have failed to locate Thick-billed Grasswrens (Davies & Chapman 1975, I. Rowley & E. Russell pers. comm.).

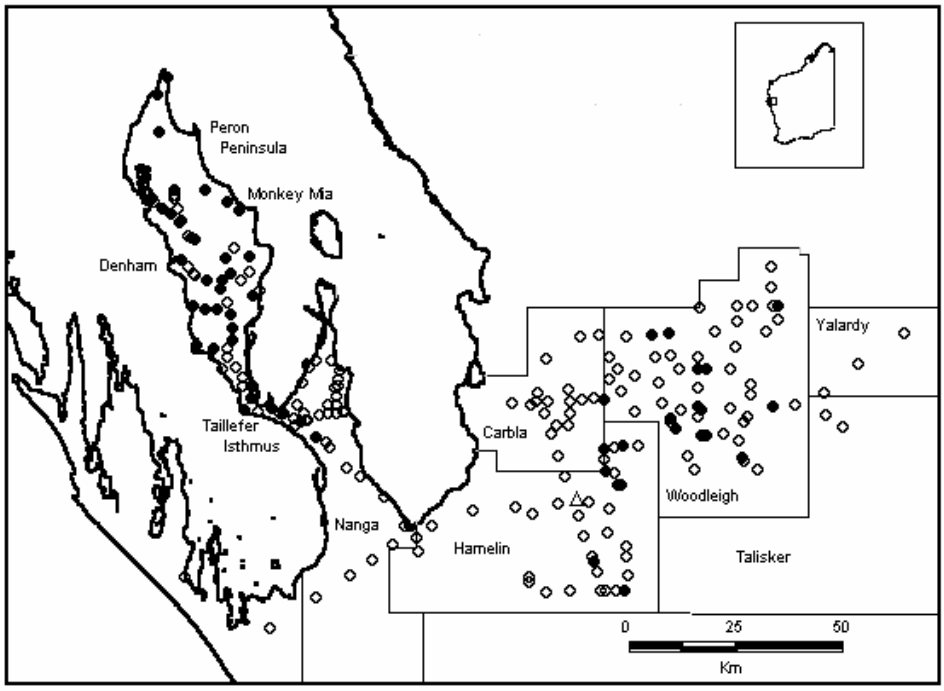

Figure 2. The location of the 212 survey sites on Peron Peninsula and nearby pastoral leases. Grasswren presence is denoted with black circles, while grasswren absence is denoted with open circles. Overlander roadhouse is indicated with an open triangle.

1.3 Habitat

Historical descriptions of the habitat of the Thick-billed Grasswren are scanty, but it appeared to show a preference for areas with dense cover. The Thick-billed Grasswren was found in areas of 'thick bush' or 'thickets' near Kalgoorlie (North 1910); dense saltbush near Lake Violet (Whitlock 1910); in 'marlock' or low mallee scrub east of Broomehill (Carter 1924); and in 'large clumps of bushes which had extremely dense masses of foliage mixed with interlacing twigs' on Dirk Hartog Island (Carter 1917).

In the Shark Bay district the Thick-billed Grasswren inhabits acacia-dominated shrublands that feature chenopod plant species and recumbent shrubs where the foliage extends to the ground (Brooker 1988). In addition, Thick-billed Grasswrens have been found in dense shrub associations in drainage depressions, with plant species such as lignum *Muehlenbeckia cunninghamii* and swamp saltbush *Atriplex amnicola* (Curry 1986a, Brooker 1988) and in *Triodia* spinifex with acacia shrubland components at the southern end of Peron Peninsula (Brooker in press). In acacia-dominated shrublands the vegetation characteristics that appear important determinants of Thick-billed Grasswren presence are recumbent acacias and low shrubs within the 0 to 1 m height category, and shrub clumps of high foliage density (Brooker in press). These shrub clumps are comprised of climbers and recumbent low shrubs with interwoven branches, often in association with other plant species. Habitats with this shrub structure may provide the Thick-billed Grasswren with ideal nesting sites.

In some of the areas in which Thick-billed Grasswrens occur on Woodleigh Station, there is evidence that the recumbent acacia shrubland may have resulted from wildfires in the past. A series of wildfires in the early 1960s led

to the replacement of tall *Acacia ramulosa*-dominated vegetation with seral shrublands of other acacias, such as *A. sclerosperma* and *A. tetragonophylla*, and a recumbent shrub understorey (Curry 1986b). The successional vegetation resulting from these wildfires would have been influenced by the fire intensity, and the rainfall and grazing levels following fire. The resulting vegetation displays characteristics that were identified as important determinants of Thick-billed Grasswren presence elsewhere in the Shark Bay region (Brooker in press). Further research would be needed to clarify the influence of fire on the shrub structure of acacia shrubland.

1.4 Life history and ecology

1.4.1 Diet and foraging ecology

Thick-billed Grasswrens glean most of their prey from litter and sand (Brooker 1998a). They consume a wide variety of invertebrates (including termites, bugs, beetles, ants, centipedes, grasshoppers, caterpillars, spiders), seeds of grasses and various dicotyledons and small berries (Carter 1917, Barker & Vestjens 1990, Brooker 1998a). The subspecies does not appear to be highly specialised in its dietary requirements (Brooker 1998a).

1.4.2 Social organisation

Thick-billed Grasswrens are sedentary birds that occur in pairs and sometimes groups of three. Territories are maintained throughout the year. At a study site 5 km west of Monkey Mia, their territories ranged in size from 1.2 to 2.0 ha, with an average of 1.5 ha (Brooker 1998a). Estimates of the density of Thick-billed Grasswrens vary from 2-3 adults per hectare at Monkey Mia (Brooker 1988) to 0.8 adults per hectare at a site 5 km west of Monkey Mia (Brooker 1998a).

At five nests an extra adult has been observed near the nest of a breeding pair (Brooker 1988, Brooker 1998a) and on one occasion a male additional to the breeding pair was observed to feed nestlings (Brooker 1988). Therefore, it appears this subspecies may breed cooperatively where suitable demographic conditions arise (Rowley and Russell 1997).

Little is known of the dispersal behaviour of Thick-billed Grasswrens after fledging, partly because of the difficulty in re-sighting known individuals. Juveniles remain with their parents for at least four months after fledging (Brooker 1998a). A one-year-old male Thick-billed Grasswren dispersed 400 m from its natal nest, but returned to within 100 m of his natal site the following year and successfully bred there (Brooker 1998a).

1.4.3 Reproduction

The breeding biology of the Thick-billed Grasswren was studied at two sites near Monkey Mia on Peron Peninsula by M.G. Brooker from 1985-1987 (Brooker 1988) and by B.M. Brooker from 1994-1996 (Brooker 1998a). This research forms the basis of the following section.

In the Shark Bay region Thick-billed Grasswrens breed from July to October, with the length of the breeding season largely dependent on winter rainfall (Brooker 1998a). Most nesting activity occurs in August and September (Whitlock 1910, Schodde 1982, Brooker 1988, Brooker 1998a). Thick-billed Grasswrens build a deep, cup-shaped nest with varying degrees of hood over the cup. Nests consist of strips of bark and dry grass, being lined with fine

dry grass and occasionally *Ptilotus* flowers or Emu feathers. The female alone builds the nest (Schodde 1982, Rowley & Russell 1997).

Nests are placed in live shrubs of a single plant species or shrub clumps of multiple plant species, and tend to be placed towards the centre of a shrub clump and at least 10 cm above ground level (Brooker 1988, Brooker 1998a). One Thick-billed Grasswren nest was found in a large stack of dead branches (Brooker *in press*). At the Monkey Mia sites the 'nesting' plant species used most frequently were climbing plants and/or recumbent shrubs with interwoven branches. These plant species appear to be important in providing the Thick-billed Grasswren with nesting cover (Brooker 1998a). Climbing species that grow through shrubs may be protected from grazing by large herbivores (Curry 1986a, Brooker 1988). In the Shark Bay region the growth of vegetation, particularly climbing species, is dependent on rainfall, with denser clumps of vegetation forming in the wetter years (Brooker 1998a). Brooker (1998a) found that a higher proportion of nests were successful in years in which there was prolific growth of climber vegetation. In the wetter years, 70% of nests were successful in 1994 (n=10, annual rainfall 210 mm) and 78% in 1996 (n=9, annual rainfall 301 mm), compared to 44% in the drier year of 1995 (n=16, annual rainfall 171 mm) (Bureau of Meteorology records at Denham).

The Thick-billed Grasswren lays a clutch of one to four eggs, with clutches of three being most common (Brooker 1998a). At two nests Thick-billed Grasswrens were observed to lay the eggs of their clutch at 40-48 hour intervals (Brooker 1998b). The incubation period ranges from 15-17 days and the nestling period from 10-14 days (Brooker 1998a). Both the male and female incubate the eggs and feed the young (Whitlock 1910, Brooker 1988, Brooker 1998a). Based on observations of 36 Thick-billed Grasswren nests over three years, the mean hatching success was 84%, defined as the percentage of eggs which hatched of those laid in a full clutch and excluding those nests predated during incubation (Brooker 1998a). Despite this low hatching success, the Thick-billed Grasswren showed a high breeding success, with 61% of all nests producing at least one fledgling (Brooker 1998a).

Comment [BC1]:

Potential nest predators in the Shark Bay region include feral cats *Felis catus* and foxes *Vulpes vulpes*, large avian predators such as crows *Corvus* spp. and the Grey Shrike-thrush *Colluricincla harmonica* and reptilian predators such as the Mulga Snake *Pseudechis australis* and Gould's Monitor *Varanus gouldii*. Since 1995 an intensive baiting program has reduced the number of cats and foxes within Francois Peron National Park (CALM 1998). Another potential predator is *Rattus tunneyi*, which occurs in the Useless Loop area and appears to be increasing in abundance and range following the baiting for foxes and cats (P. Speldewinde pers. comm.). Horsfield's Bronze-Cuckoos *Chrysococcyx basalis* are known to parasitise the nests of Thick-billed Grasswrens (Brooker 1988).

1.5 Reasons for listing

The western subspecies of the Thick-billed Grasswren is listed as 'rare or likely to become extinct' pursuant to the Western Australian *Wildlife Conservation Act 1950*. It has been ranked as Vulnerable by the Western Australian Threatened Species Scientific Committee using IUCN (1994) Red List Categories and Criteria, meeting Criterion D2. This ranking has been endorsed by the Western Australian Minister of the Environment. The Thick-billed Grasswren meets Criterion D for Vulnerable as it has a restricted distribution of < 5 locations and these populations are susceptible to known threatening processes. The Thick-billed Grasswren is listed in Schedule 1, Part 2 - species that are vulnerable, of the Commonwealth *Endangered Species Protection Act 1992*. It is listed as Vulnerable in the

Australian and New Zealand Environment and Conservation Council (ANZECC) list of Threatened Australian Fauna. The Action Plan for Australian Birds listed the western subspecies of the Thick-billed Grasswren as Vulnerable (Garnett 1992).

The western subspecies of the Thick-billed Grasswren has declined markedly in its distribution since the early 1900s. Although the precise reasons for its massive decline are unknown, it is possible that habitat changes induced by introduced herbivores and predation by feral predators, particularly during the early 1900s, contributed to the subspecies' decline. Preferential grazing by introduced herbivores can markedly alter the composition and structure of native vegetation (Wilson *et al.* 1969, Crisp 1978, Lay 1979, Lange & Graham 1983). Several of the 'nesting' plant species identified at Monkey Mia are known to be eaten by stock. It is possible that preferential grazing by sheep, feral goats and rabbits, particularly during drought periods, reduces the abundance and foliage density of plant species favoured by the Thick-billed Grasswren as nesting sites (Schodde 1982, Garnett 1992, Brooker 1998a). The Thick-billed Grasswren is vulnerable because:

- it has declined dramatically in its distribution since the early 1900s and it now has a restricted distribution,
- much of its habitat in the wheatbelt region of Western Australia has been cleared or fragmented,
- in pastoral regions vegetation changes induced by introduced herbivores, particularly during drought periods, may reduce the abundance of nesting sites and cover, and
- it spends most of its time on the ground and, therefore, is at risk of predation by feral cats and foxes, particularly in areas where habitat quality has declined.

1.6 Existing conservation measures

Most of the Thick-billed Grasswren population on Peron Peninsula now occurs on CALM and proposed CALM managed land. This includes Francois Peron National Park and adjoining unallocated Crown land known as 'South Peron' that is proposed as a Timber Reserve (Ministry for Planning 1997). In 1991, the Western Australian Government purchased Peron Pastoral Station and the northern half of Peron Peninsula was declared a national park in 1993 (CALM 1998). 'Project Eden', a large scale mammal fauna reconstruction program, was established in 1994 and covers the whole of Peron Peninsula including Francois Peron National Park and 'South Peron'. This project aims to reduce the numbers of introduced predators (cats and foxes) and stock (sheep and goats) within this area and to re-establish species of threatened fauna. In 1995, a 3.4 km electrified fence was built across the narrowest section of Peron Peninsula at Taillefer Isthmus to prevent reinvasion of feral animals onto the peninsula. Fire management in Francois Peron National Park and 'South Peron' aims to reduce the risk that wildfire will extend over the whole peninsula. Several burn buffers have been strategically placed across the peninsula to reduce the risk of extensive wildfires. Strategies to reduce the numbers of feral predators and herbivores and reduce the risk of extensive fires should be beneficial to the Thick-billed Grasswren. An A4 brochure for the Thick-billed Grasswren has been produced by CALM Gascoyne District.

A survey of the range and habitat characteristics of the Thick-billed Grasswren in the Shark Bay region was conducted in October 1998, with World Heritage Program Commonwealth funding (Brooker *in press*). Thick-billed Grasswrens were recorded at 60 (28%) of the 212 sites surveyed. Habitat characteristics of the sites in which Thick-billed Grasswrens were recorded are outlined in the section 1.3.

All relevant land managers have been informed of the subspecies locations.

1.7 Strategy for recovery

This Interim Recovery Plan will operate from 2000 to 2002, but will remain in force until withdrawn or replaced. The six primary strategies of this plan are outlined below.

i) Establish and maintain a Recovery Team of individuals with relevant knowledge or land management roles to coordinate and implement the recovery actions outlined in this plan.

ii) Continue habitat management on areas for which CALM is responsible.

iii) Liaise with other land managers to bring about desirable habitat management in areas where Thick-billed Grasswrens are known to occur.

iv) Develop and implement an education and communication strategy.

v) Monitor the number, distribution and sizes of all known Thick-billed Grasswren populations.

vi) Survey areas adjoining the known current distribution of the Thick-billed Grasswren.

vi) Assess the long-term needs of this subspecies.

2. RECOVERY OBJECTIVE AND CRITERIA

The long-term objective is to increase the probability of survival of the Thick-billed Grasswren, so that it can eventually be removed from the threatened species list. Over the time frame of three years, specific objectives of this Interim Recovery Plan are to

- improve the protection of known populations through habitat management, the provision of appropriate information and advice to relevant land managers, and public education,
- establish standard monitoring methods for estimating the distribution and sizes of Thick-billed Grasswren populations, so that the recovery or decline of each population can be monitored,
- clarify the long-term actions needed to continue the recovery of the subspecies.

The criteria for successfully achieving these objectives will be

- continuation of favourable habitat management in Francois Peron National Park and 'South Peron',
- the development and implementation of agreed strategies for the management of Thick-billed Grasswren habitat with relevant land managers (ie. CALM, pastoralists, leaseholders, Shire of Shark Bay and Main Roads Western Australia),
- documentation of a standard monitoring method to determine population sizes and distribution,
- delineation of all known populations and estimates of their size to provide a baseline for future monitoring of population trends,
- evidence that the status of the Thick-billed Grasswren has not declined since 1998,
- the identification of one or more sites suitable for future translocation of the subspecies,
- adoption of a formal recovery plan or other set of recommendations for actions to complete the recovery of the subspecies.

The criterion for failure to achieve the overall objective of this plan will be

- a measured consistent decline in overall numbers of birds or loss of any population.

3. RECOVERY ACTIONS

Recovery actions for the Thick-billed Grasswren are presented below. Costs have been calculated in 1999 dollars. Cost estimates are provided for the three years of the plan's implementation.

3.1 Establish and maintain a Recovery Team

Establish a Recovery Team of individuals with relevant knowledge or land management roles. This Recovery Team will coordinate the surveying and management of the Thick-billed Grasswren as outlined in this Interim Recovery Plan. Likely members of the team include land managers and relevant individuals from organisations such as CALM Midwest Region, the Shark Bay Shire, CALMScience Division, CSIRO Wildlife and Ecology, Birds Australia and Main Roads Western Australia. The Recovery Team will be based in the Shark Bay region with input from those individuals located in Perth. Although travel expenses will be sought for the first Recovery Team meeting, for subsequent meetings it will be expected that members will cover these costs.

Action: Establish and maintain Recovery Team
Responsibility: CALM WATSCU/CALMScience/Birds Australia
Completion: 2000
Cost: $1200

3.2 Continue habitat management on areas for which CALM is responsible

Maintain ongoing fire management, stock (sheep and feral goat) control and predator (fox and feral cat) control strategies established on Peron Peninsula under the Project Eden program. This will include:

- Continued low key fire prevention and suppression methods;
- Removal of feral goats by aerial and ground shooting, and trapping;
- Maintenance of the electric fence at Taillefer Isthmus to prevent reinvasion of stock and introduced predators;
- Annual baiting with 1080 for foxes, and
- Control of feral cat numbers using aerial and ground baiting, trapping and shooting.

Action: Continue habitat management on Peron Peninsula through Project Eden
Responsibility: CALM Gascoyne Region
Completion: Ongoing
Cost: $200,000 per annum (State contribution)

3.3 Liaise with other land managers to bring about desirable habitat management

a) Maintain habitat of known and new populations, on pastoral properties in Shark Bay and further inland. In liaison with relevant land managers, develop appropriate management strategies on their lands to protect known Thick-billed Grasswren populations and habitat. This may take the form of an informal agreement through to a formal written agreement with CALM (e.g. CALM Act Section 16A agreement or covenant). The main issues to work through with land managers include

- grazing management strategies for selected areas and sites,
- management of 'soaks' currently used by Thick-billed Grasswrens,
- rehabilitation of degraded 'soaks' that are adjacent to inhabited 'soaks' to promote the expansion of Thick-billed Grasswren habitat and distribution, and
- predator control.

Action: Habitat management on pastoral properties
Responsibility: CALM Midwest Region, Recovery Team, relevant land managers
Completion: Ongoing
Cost: $20,000 for fencing through NHT

Action: Predator control
Responsibility: Recovery Team will discuss the feasibility of predator control on relevant pastoral properties

b) Maintain and enhance the existing endemic vegetation along the roadside near the entrance road to Nanga Bay Caravan Park, in liaison with the pastoral lessee, Main Roads Western Australia and the Shark Bay Shire. Maintain existing endemic vegetation along the roadside south of the Overlander, in liaison with Main Roads Western Australia, the Shark Bay Shire and pastoral lessees. Develop management plans through the Roadside Conservation Committee to implement Special Environmental Area (SEA) marker systems for each of these areas, and then disseminate these plans to all stakeholders.

Action: Maintain existing endemic vegetation along roadsides where Thick-billed Grasswrens occur
Responsibility: Recovery Team/Main Roads Western Australia/Shark Bay Shire
Completion: 2002
Cost: Liaison costs will be borne by the agencies involved

3.4 Develop and implement an education and communication strategy

Good communication between the Recovery Team, the local community and relevant land managers will be vital for successful management of habitat and monitoring of Thick-billed Grasswren populations. The Thick-billed Grasswren is of interest to the residents of the Shark Bay region, the 100,000 visitors per annum to the area, amateur bird people and the scientific community. Its presence is listed World Heritage value for the Shark Bay World Heritage Property. There are very good opportunities to educate the public on the Thick-billed Grasswren and other bird species in Shark Bay. The World Heritage Interpretation Officer could develop an education and communication plan. Possible strategies may include:

- Interpretive signage and education at visitor centres (ie. Denham, Monkey Mia, Nanga, Hamelin Pool Telegraph Station, Overlander Roadhouse)
- Communication with land managers (ie. pastoral lessees owners, CALM staff and others)
- Brochures – ensure all publications have up-to-date information on the Thick-billed Grasswren and specific information is available through World Heritage Notes for the interested public
- Public Survey – forms and kits for interested public, schools

Action: Develop and implement an education and communication strategy
Responsibility: CALM Midwest Region/Shire of Shark Bay/Birds Australia and other Recovery Team members
Completion: Ongoing
Cost: $3000 pa. to be found by member organisations; extra money for specific projects may be sought from NHT or elsewhere.

3.5 Monitor the sizes and distribution of known Thick-billed Grasswren populations

Develop a standard monitoring method for the Thick-billed Grasswren to determine the sizes and distributions of known populations. In 2001 resurvey those areas visited in 1998, so that the recovery or decline of each population can be monitored.

Action: Develop standard monitoring method, and resurvey in 2001
Responsibility: Recovery Team
Completion: 2001
Cost: $20,000 to be sought from appropriate sources

3.6 Survey for Thick-billed Grasswrens in areas adjoining its known current distribution

Using standard monitoring methods and identified transects conduct further surveys of areas surrounding the known current distribution of the Thick-billed Grasswren (Figure 2) to determine its presence and population size. Priority areas for survey during the course of this plan will include (a) Dirk Hartog Island, (b) Carrarang Station including Edel Land, and (c) at least three areas on adjoining Stations such as Coburn, Tamala, Talisker or Yaringa.

In addition, the Recovery Team will determine whether reintroduction of the Thick-billed Grasswren into other areas is necessary and/or appropriate. If so, the habitats visited in this survey, and potential sites on stations recently acquired by CALM, will be assessed for the possible reintroduction of Thick-billed Grasswrens, using known information on their habitat requirements.

Action: Survey areas adjoining the subspecies known current range
Responsibility: Recovery Team
Completion: 2002
Cost: $25,000 to be sought from appropriate sources

3.7 Assess the long-term needs of this subspecies

At the end of this plan the Recovery Team will assess the need for a full recovery plan, or extension of this Interim Recovery Plan. If the subspecies is in decline it will require a recovery plan. Alternatively, if the population remains stable or increases, but further recovery actions have been identified an extension of this Interim Recovery Plan may be required.

Action: Assess the long-term needs of this subspecies
Responsibility: Recovery Team
Completion: 2002
Cost: Costs will be covered by member organisations

4. ACKNOWLEDGMENTS

The following people have provided assistance and advice in the preparation of this Interim Recovery Plan:

John Blyth	Principal Ecologist, Western Australian Threatened Species and Communities Unit, CALM
Michael Brooker	Research Fellow, CSIRO Division of Wildlife & Ecology
Paul Brown	District Manager, CALM Gascoyne District
Allan Burbidge	Senior Research Scientist, CALMScience Division
Mick Clausen	Woodleigh Pastoral Station
Peter Curry	A/Manager, Catchment Branch, Department of Environment Protection
Ron Johnstone	Assistant Curator, Western Australian Museum
Kelly Gillen	Regional Manager, CALM Midwest Region
Peter Kopke	Carbla Pastoral Station
Ted Sears	Nanga Pastoral Station
Brian and Mary Wake	Hamelin Pastoral Station

Funding for the preparation of this Interim Recovery Plan was provided from 1998/99 Shark Bay World Heritage funding administered by Environment Australia. CALM (Midwest Region, CALMScience Division and WATSCU) provided administrative and logistical support.

5. REFERENCES

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