

# THICK-BILLED GRASSWREN

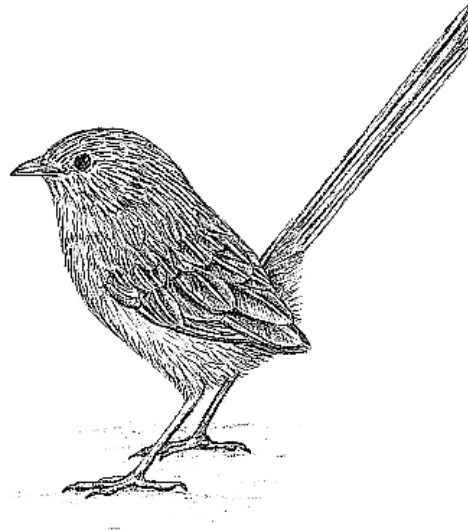
(WESTERN SUBSPECIES)

(*AMYTORNIS TEXTILIS TEXTILIS*)

## INTERIM RECOVERY PLAN

**2003-2008**

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June 2003

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World Heritage



## **FOREWORD**

Interim Recovery Plans (IRPs) are developed within the framework laid down in Department of Conservation and Land Management (DCLM) 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.

DCLM is committed to ensuring that Critically Endangered taxa are conserved through the preparation and implementation of Recovery Plans or Interim Recovery Plans and by ensuring that conservation action commences as soon as possible and always within one year of endorsement of that rank by the Minister.

This Interim Recovery Plan replaces number 55. It incorporates current information on factors such as population, land tenure plant numbers and threats that, if changed from the previous plan, may affect appropriate recovery actions. In addition, it provides an update of which recovery actions have occurred. This IRP will operate from June 2003 to May 2008, but will remain in force until withdrawn or replaced.

This IRP was approved by the Director of Nature Conservation on 21 September 2003. The provision of funds identified in this Interim Recovery Plan is dependent on budgetary and other constraints affecting DCLM, as well as the need to address other priorities.

Information in this IRP was accurate at June 2003.

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**SUMMARY**

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

**Dept Region:** Midwest  
**Dept District:** Shark Bay

**Current status:** The western subspecies of the Thick-billed Grasswren is listed as Vulnerable under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*. It is listed as Near Threatened in the Action Plan for Australian Birds (Garnett and Crowley 2000), and as Priority 4 in Western Australia. The main threats include vegetation changes induced by introduced herbivores or wildfire, and predation by feral cats and foxes.

An Interim Recovery Plan was developed for this taxon in 2000 (Cale 2000). This plan is based on, and replaces, that document and includes updated and additional information compiled since 2000.

**Habitat critical to the survival of the species**

The critical habitat for the Thick-billed Grasswren (western subspecies) comprises, in order of priority:

- the core area of occupancy of the known Peron Peninsula population;
- the core area of occupancy of the known Woodleigh Station population;
- similar habitat existing on Woodleigh Station and Hamelin Station, which allows for natural expansion of the subspecies distribution, particularly in good seasons;
- similar habitat existing on Carbla and Nanga Stations which could provide a link between the two core populations above; and
- additional occurrences of similar habitat in Western Australia that do not currently contain the western subspecies, but may have done so in the past (these represent possible translocation sites).

**Benefits to other species/ecological communities**

Part of the Thick-billed Grasswren's distribution occurs on Peron Peninsula, an area that already has habitat management strategies in place that seek to promote the conservation of re-introduced native mammals and the Malleefowl (see section on Recovery Actions). As well as favouring the Thick-billed Grasswren, these habitat management strategies will promote the biodiversity of the Shark Bay World Heritage Property.

**International Obligations**

This plan is fully consistent with the aims and recommendations of the Convention on Biological Diversity, ratified by Australia in June 1993, and will assist in implementing Australia's responsibilities under that Convention. The Thick-billed Grasswren occurs within the Shark Bay World Heritage Property, and protection and management of this Property by the Western Australian Government is in accordance with Australia's obligations under the World Heritage Convention. However, as the Thick-billed Grasswren is not listed under any international agreement, the implementation of other international environmental responsibilities is not affected by this plan.

**Role and interests of indigenous people**

The Indigenous Community in the Shark Bay Area has a strong interest and history of participating in environmental management. They have previously been actively involved in assisting with projects associated with other threatened species in the area. They are also part owners of the Monkey Mia Dolphin Resort (where TBGW are present) and it is therefore felt that they have the ability to play an active role in the protection and management of this species. DCLM will maintain close liaison with the Yadgalah Aboriginal Corporation during implementation of this plan.

**Social and economic impacts**

The implementation of this recovery plan is unlikely to cause significant adverse social and economic impacts. There are pastoral leases over the area where the eastern population of the Thick-billed Grasswren occurs. Recovery actions refer to continued liaison with relevant land managers to discuss strategies for desirable habitat management.

**Evaluation of the Plan's Performance**

The Department of conservation and Land Management (DCLM) will evaluate the performance of this IRP. In addition to annual reporting on progress with listed actions and comparison against the criteria for success and failure, the plan is to be reviewed within five years of its implementation. Any changes to management / recovery actions made in response to monitoring results will be documented accordingly.

**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

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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 or are ongoing:

1. 'Project Eden' was established in 1994 on land managed by, or proposed to be managed by DCLM 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 provided a baseline for further monitoring of this subspecies.
3. Sites on Peron Peninsula, Hamelin and Woodleigh Stations were resurveyed in April 2003. Using GPS coordinates as reference, 53 of the 56 sites at which Thick-billed Grasswrens were previously found in 1998 were revisited. Grasswrens were heard and/or seen at 23 of 30 sites (77%) on Peron Peninsula, 11 of 16 sites (69%) on Woodleigh Station and 1 of 7 sites (14%) on Hamelin Station. Results of this survey confirmed the importance of the core areas of occupancy on Peron Peninsula and Woodleigh Station.
4. All relevant land managers have been informed of the presence of Thick-billed Grasswrens in their area, and liaison with these stakeholders is ongoing.

**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 François 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. Include actions within this plan in operational plans for Shark Bay District.
2. Continue habitat management on areas for which DCLM 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.

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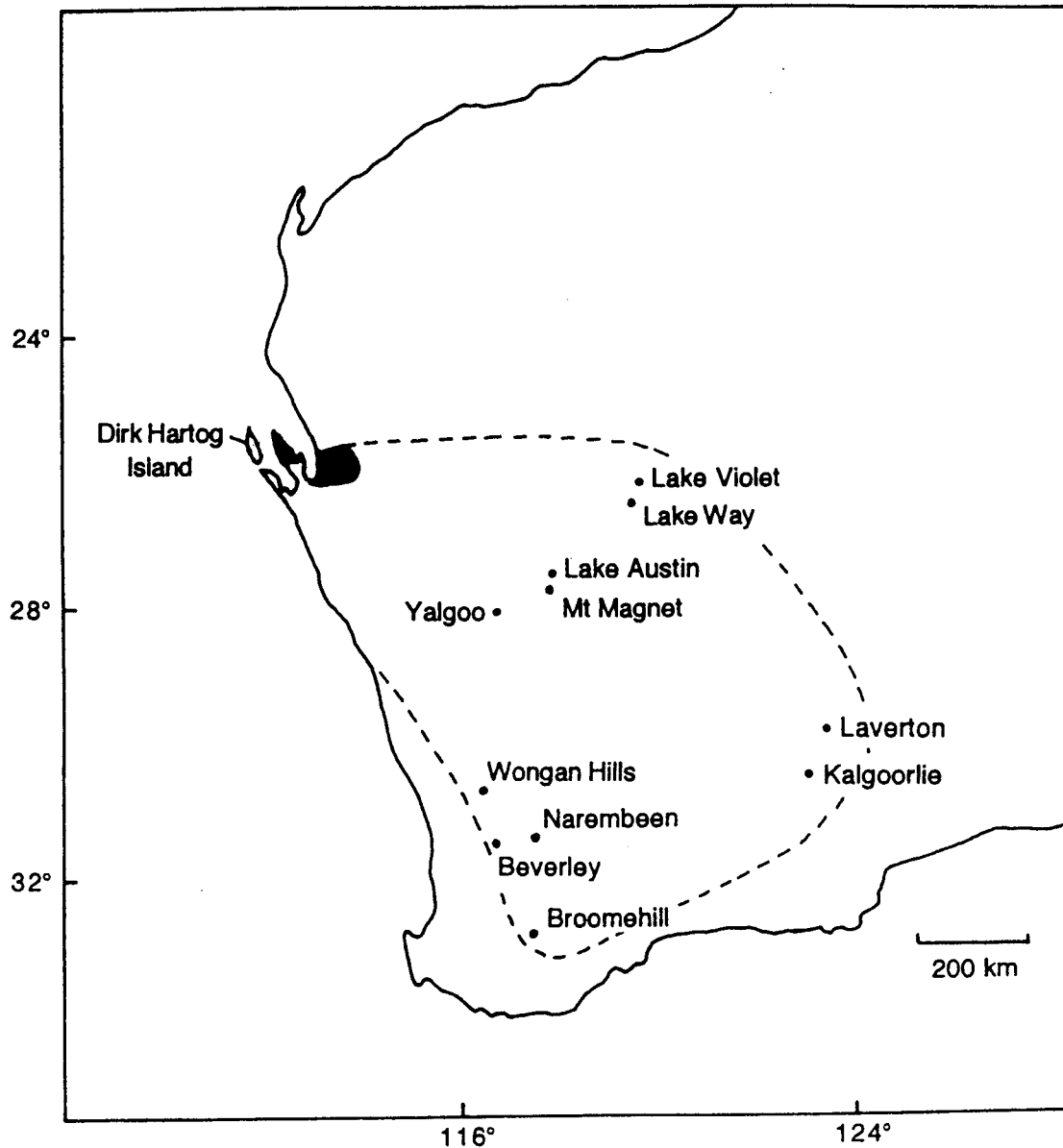
## 1. BACKGROUND

### History

An Interim Recovery Plan was developed for this species in 2000 (Cale 2000). This plan is based on, and replaces, that document and includes updated and additional information compiled since 2000.

### 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 Ranges in South Australia and *A. textilis modestus* from the Lake Eyre and Lake Frome basins in South Australia and southern Northern Territory (Schodde 1982, Rowley and Russell 1997, Schodde and Mason 1999). This recovery plan focuses on the western subspecies, *A. textilis textilis*.



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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).

### **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.). In a re-assessment of the former distribution of *A. t. textilis*, Schodde and Mason (1999) considerably expanded the range of this subspecies to the eastern end of the Nullarbor Plain.

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.* 2000, Brooker 2000). 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 2000) (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, Brooker 1998a, Brooker 2000). 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 and Chapman 1975, I. Rowley and E. Russell pers. comm.).

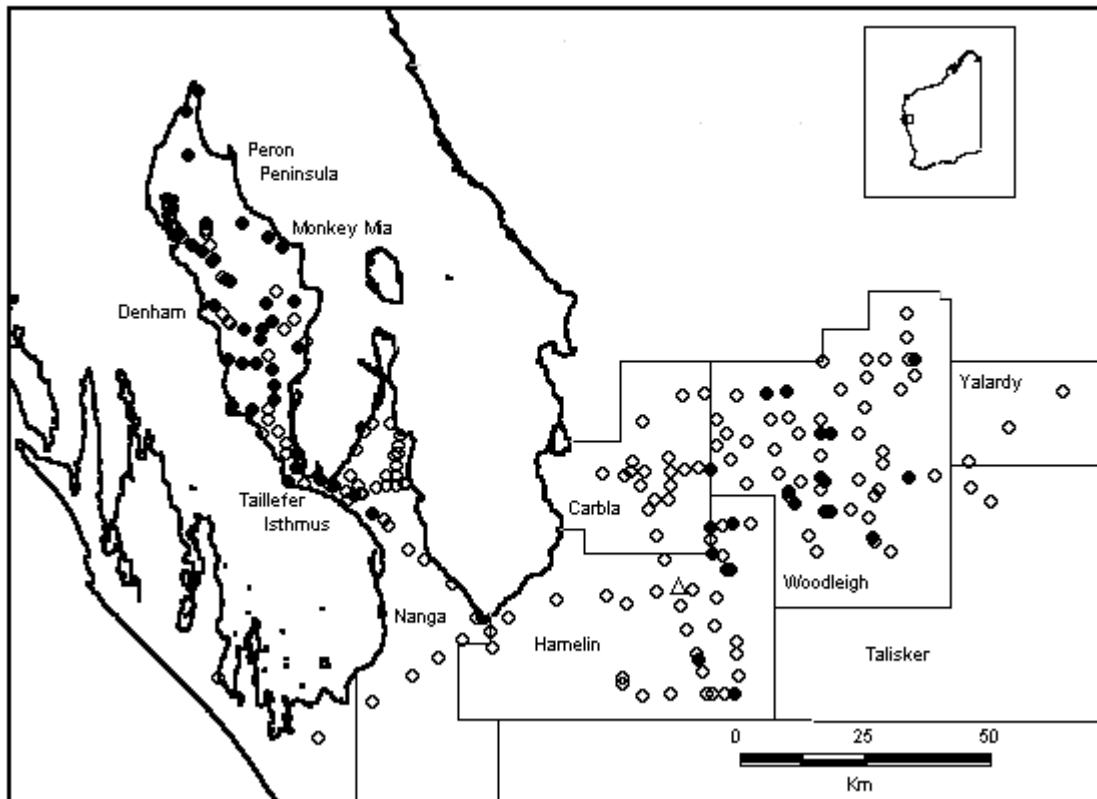


Figure 2. The location of the 212 survey sites on Peron Peninsula and nearby pastoral leases. Grasswren presence is denoted with black circles, while grasswren absence is denoted with open circles. Overlander roadhouse is indicated with an open triangle.

### 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 2000). 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 2000). 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

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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 2000). Further research would be needed to clarify the influence of fire on the shrub structure of acacia shrubland.

**Habitat critical to the survival of the species**

This plan is for the recovery of the western subspecies of the Thick-billed Grasswren occurring within the Shark Bay region of Western Australia. It does not cover the full range of the species. The species also occurs in the Gawler Ranges of South Australia (*A. t. myall*) and the Lake Eyre and Lake Frome basins in South Australia and southern Northern Territory (*A. t. modestus*). The habitat critical to the survival of the species described in this plan is critical habitat occurring within the region covered by this plan. It should be noted that additional critical habitat for this species may occur in other parts of its range.

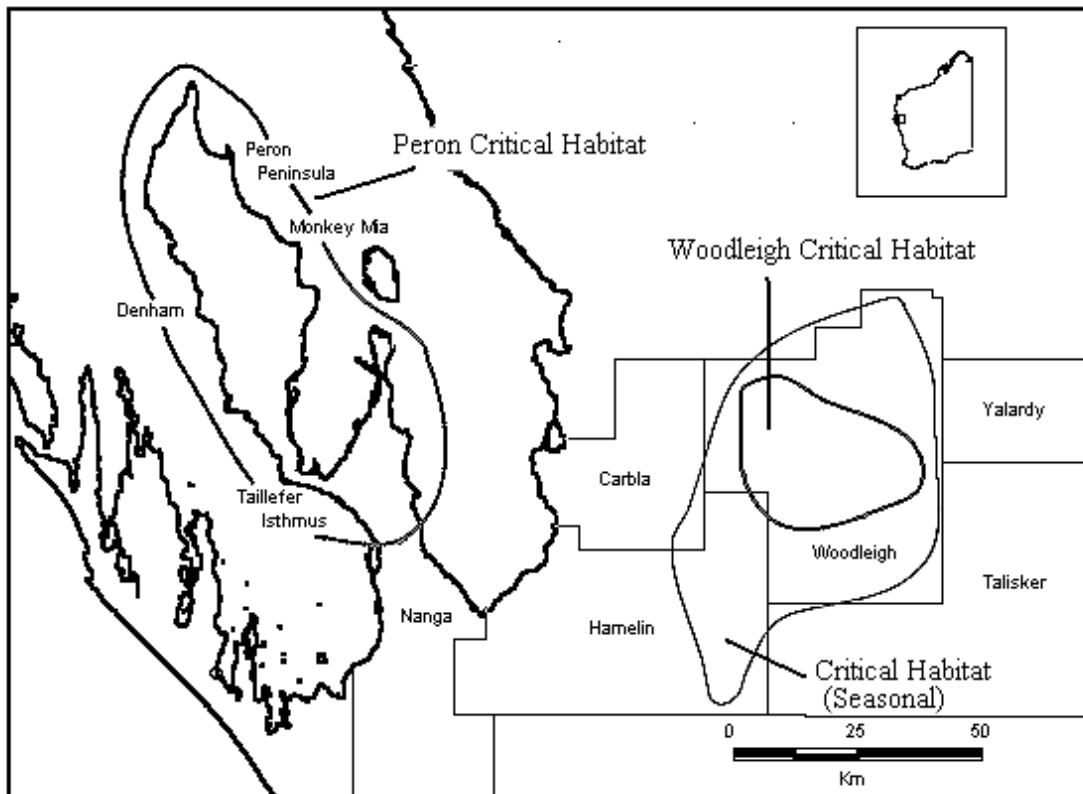


Figure 3 Critical Habitat for the Thick-billed Grasswren (see text for details)

The critical habitat for the Thick-billed Grasswren (western subspecies) comprises, in order of priority:

- the core area of occupancy of the known Peron Peninsula population (see Figure 3);
- the core area of occupancy of the known Woodleigh Station population (see Figure 3);
- similar habitat existing on Woodleigh Station and Hamelin Station, which allows for natural expansion of the subspecies distribution, particularly in good seasons (see Figure 3);



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- similar habitat existing on Carbla and Nanga Stations which could provide a link between the two core populations above; and
- additional occurrences of similar habitat in Western Australia that do not currently contain the western subspecies, but may have done so in the past (these represent possible translocation sites). Details of the last two areas of critical habitat remain to be clarified. This will be dealt with under action 3.6.

### **International Obligations**

This plan is fully consistent with the aims and recommendations of the Convention on Biological Diversity, ratified by Australia in June 1993, and will assist in implementing Australia's responsibilities under that Convention. The Thick-billed Grasswren occurs within the Shark Bay World Heritage Property, and protection and management of this Property by the Western Australian Government is in accordance with Australia's obligations under the World Heritage Convention. However, as the Thick-billed Grasswren is not listed under any international agreement, the implementation of other international environmental responsibilities is not affected by this plan.

### **Role and interests of indigenous people**

The Indigenous Community in the Shark Bay Area has a strong interest and history of participating in environmental management. They have previously been actively involved in assisting with projects associated with other threatened species in the area. They are also part owners of the Monkey Mia Dolphin Resort (where Thick-billed Grasswren are present) and it is therefore felt that they have the ability to play an active role in the protection and management of this species. DCLM will maintain close liaison with the Yadgalah Aboriginal Corporation during implementation of this plan.

### **Benefits to other species/ecological communities**

Part of the Thick-billed Grasswren's distribution occurs on Peron Peninsula, an area which already has habitat management strategies in place to promote the conservation of re-introduced native mammals and the Malleefowl (see section on Recovery Actions). As well as favouring the Thick-billed Grasswren, these habitat management strategies will promote the biodiversity of the Shark Bay World Heritage Property.

### **Social and economic impacts**

The implementation of the recovery plan is unlikely to cause significant adverse social and economic impacts. There are pastoral leases over the area that contains the eastern population of the Thick-billed Grasswren. Recovery actions refer to continued liaison with relevant land managers to discuss strategies for desirable habitat management.

### **Evaluation of the Plan's Performance**

The Department of Conservation and Land Management will evaluate the performance of this IRP. In addition to annual reporting on progress with listed actions and comparison against the criteria for success and failure, the plan is to be reviewed within five years of its implementation. Any changes to management/recovery actions made in response to monitoring results will be documented accordingly.

**Biology and ecology****a) Diet and foraging ecology**

Thick-billed Grasswrens glean most of their food 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 and Vestjens 1990, Brooker 1998a). The subspecies does not appear to be highly specialised in its dietary requirements (Brooker 1998a).

**b) 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).

**c) 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 and 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 2000). At the Monkey Mia sites the 'nesting' plant species used most frequently were climbing plants and/or recumbent shrubs with interwoven

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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).

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 François Peron National Park (DCLM 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).

### **Threats**

The Thick-billed Grasswren is listed as Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

At the time of writing the first Interim Recovery Plan (Cale 2000) the western subspecies of the Thick-billed Grasswren was listed as 'rare or likely to become extinct' pursuant to the *Western Australian Wildlife Conservation Act 1950*. It had 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 was endorsed by the Western Australian Minister of the Environment. The Thick-billed Grasswren was believed to meet Criterion D for Vulnerable as it had a restricted distribution of < 5 locations and these populations were susceptible to known threatening processes. Since that time, the taxon's status has been re-assessed; it is now categorised by the Western Australian Threatened Species Scientific Committee as Priority 4 and is no longer listed under the *Wildlife Conservation Act 1950*. Priority 4 taxa are those in need of monitoring. They are taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually

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represented on conservation lands. This re-assessment was made primarily on the basis that the populations are stable, the extent of occurrence is about 20 000 km<sup>2</sup> and the population of breeding adults is estimated to be greater than 10 000 (Garnett and Crowley 2000). The Action Plan for Australian Birds listed the western subspecies of the Thick-billed Grasswren as Near Threatened (a) (Garnett and Crowley 2000).

The western subspecies of the Thick-billed Grasswren has declined markedly in its distribution since the early 1900s, and is now restricted to the Shark Bay region. Although the precise reasons for its massive decline are unknown, it is possible that habitat changes induced by introduced herbivores and fire and/or predation by feral predators, particularly during the early 1900s, contributed to the subspecies' decline. In addition, much of its habitat in the wheatbelt region of Western Australia has been cleared or fragmented. The main threats to the current populations are changes to the shrub structure of their habitat through overgrazing by introduced herbivores or inappropriate fire regimes, and predation by feral cats and foxes. These threats are applicable to all areas of habitat critical to the survival of the species.

- **Overgrazing** by introduced herbivores is a potential threat to the Thick-billed Grasswren as it may reduce the abundance of nesting sites and cover. Vegetation characteristics that appear important determinants of grasswren presence are recumbent acacias and low shrubs, and shrub clumps of high foliage density (Brooker 1988, Brooker 2000). These shrub clumps consist of climbers and low shrubs with interwoven branches. Preferential grazing by introduced herbivores, particularly during drought periods, has the potential to markedly alter the composition and structure of native vegetation, and several of the 'nesting' plant species identified at Monkey Mia are known to be eaten by stock (Brooker 2000). Therefore, it is possible that overgrazing by sheep, feral goats and rabbits, particularly during drought periods, may reduce the abundance and foliage density of plant species favoured by the Thick-billed Grasswren as nesting sites (Schodde 1982, Brooker 2000).
- **Inappropriate fire regimes** also have the potential to alter the composition and structure of native vegetation, thus reducing nesting sites and cover for the Thick-billed Grasswren. De-stocking and increased tourism on Peron Peninsula could increase fire intensity, frequency and extent (Brooker 1988). However, a full understanding of the appropriate fire regime for this species does not currently exist.
- **Predation by feral cats and foxes** is a threat to Thick-billed Grasswrens as the species spends most of its time on the ground. The species would be particularly at risk in areas where habitat quality has declined.

#### **Strategy for recovery**

This Interim Recovery Plan will operate from 2003 to 2008, but will remain in force until withdrawn or replaced. The six primary strategies of this plan are outlined below.

- (i) Include actions within this plan in operational plans for DCLM's Shark Bay District, to be coordinated and implemented in liaison with individuals and groups with relevant knowledge or land management roles.
- ii) Continue habitat management on areas for which DCLM 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.

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- 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 does not fit criteria for any of the IUCN categories of threatened or Near Threatened. Over the time frame of five 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 François 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 (i.e. DCLM, 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 continuing decline in overall numbers of birds or loss of any population.

## 3. RECOVERY ACTIONS

### Recovery actions completed or in train

Most of the Thick-billed Grasswren population on Peron Peninsula now occurs on land managed or proposed to be managed by DCLM. This includes François 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 (DCLM 1998). 'Project Eden', a large scale fauna reconstruction program, was established in 1994 and covers the whole of Peron Peninsula including François 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 François 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

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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 about the Thick-billed Grasswren has been produced by DCLM's Shark Bay 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 2000). 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 Habitat section.

Sites on Peron Peninsula, and Hamelin and Woodleigh Stations were resurveyed in April 2003 (Mark True, Ranger in Charge, DCLM Shark Bay District). Using GPS coordinates as reference, 53 of the 56 sites at which Thick-billed Grasswrens were previously found in 1998 were revisited. Each site was searched for 15 – 20 minutes and whistles were used to attract birds. Grasswrens were heard and/or seen at 23 of 30 sites (77%) on Peron Peninsula, 11 of 16 sites (69%) on Woodleigh Station and 1 of 7 sites (14%) on Hamelin Station. This survey confirmed the importance of the core habitat on Peron Peninsula and Woodleigh Station (see distribution map). A relatively high percentage of grasswrens were located in these areas despite the drier conditions than in 1998, and the 2003 survey being conducted outside the breeding season and without a tape-recording of a grasswren territorial call (as used in 1998). The single sighting of a Thick-billed Grasswren on Hamelin Station suggests that the species may only expand into suitable habitat on Hamelin during good seasons. The population on Woodleigh Station would be a critical source for this expansion. The vegetation on Hamelin Station adjacent to the sites surveyed lacked the recumbent layering close to the ground. This appeared to be due to the presence of stock and the previous poor growing season. The vegetation on Woodleigh Station was in good condition overall with many sites having low shrubs in dense clumps. There appeared to be less impact from stock activity, although the majority of sheep and goats had moved to the eastern boundary following significant rain during the month. Although affected by drought, vegetation across Peron Peninsula was in relatively good condition with little impact from the few remaining goats.

All relevant land managers have been informed of the presence of Thick-billed Grasswrens in their area and liaison with these stakeholders is ongoing. The Managers on Hamelin and Woodleigh Stations were interested in the April 2003 survey and keen to assist where possible. Managers on Hamelin Station provided access maps and stock locations and expressed an interest in any new information. Currently on Hamelin Station the priority is for stock management during the drought with logistics for stock agistments off the property. The new Managers on Woodleigh Station bring with them a strong interest in nature. They plan to remove the existing 20 000 goats and reduce the sheep population from 10 000 to 8000. This is to maintain the integrity of the property as a viable sheep station and encourage wildlife to remain in suitable habitat. They also pay for the regular baiting program in their area to reduce the fox population.

#### **Future recovery actions**

Recovery actions for the Thick-billed Grasswren are presented below. Costs have been calculated in 2003dollars. Cost estimates are provided for the five years of the plan's implementation.

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### 3.1 Include actions within this plan in operational plans for Shark Bay District.

<b>Action:</b>	Ensure that operational plans include actions to implement this IRP
<b>Responsibility:</b>	DCLM: Shark Bay District, with assistance from WATSCU and Science Division
<b>Completion:</b>	2003
<b>Cost:</b>	\$1600

### 3.2 Continue habitat management on areas for which DCLM 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.

<b>Action:</b>	Continue habitat management on Peron Peninsula through Project Eden
<b>Responsibility:</b>	DCLM (Midwest Region)
<b>Completion:</b>	Ongoing
<b>Cost:</b>	\$250,000 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 DCLM (e.g. DCLM 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.

<b>Action:</b>	Habitat management on pastoral properties
<b>Responsibility:</b>	DCLM (Midwest Region), relevant land managers
<b>Completion:</b>	Ongoing
<b>Cost:</b>	\$25,000 for fencing , to be sought from funding agencies

<b>Action:</b>	Predator control
<b>Responsibility:</b>	DCLM (Midwest Region) 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.

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<b>Action:</b>	Maintain existing endemic vegetation along roadsides where Thick-billed Grasswrens occur
<b>Responsibility:</b>	DCLM/Main Roads Western Australia/Shark Bay Shire
<b>Completion:</b>	2003
<b>Cost:</b>	Liaison costs will be borne by the agencies involved

### 3.4 Develop and implement an education and communication strategy

Good communication between the DCLM, 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, DCLM's 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

<b>Action:</b>	Develop and implement an education and communication strategy
<b>Responsibility:</b>	DCLM (Midwest Region and others as appropriate)/Shire of Shark Bay/Birds Australia
<b>Completion:</b>	Ongoing
<b>Cost:</b>	\$4000 pa. to be found by member organisations; extra money for specific projects may be sought from appropriate sources.

### 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. Within the period of this plan resurvey those areas visited in 1998 and 2003, so that the recovery or decline of each population can be monitored. Assess how changes in the size and distribution of populations are impacted by climatic variability (e.g. drought), levels of grazing and/or fire regimes.

<b>Action:</b>	Develop standard monitoring method, and resurvey populations
<b>Responsibility:</b>	DCLM (Midwest Region/WATSCU/Science Division)
<b>Completion:</b>	2008
<b>Cost:</b>	\$25,000 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) coastal areas of Carbla Station, (b) Dirk Hartog Island, (c) Carrarang Station including Edel Land, and (d) at least three areas on adjoining pastoral stations such as Coburn, Tamala, Talisker or Yaringa.

In addition, DCLM 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



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DCLM, 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:** DCLM (Midwest Region/WATSCU/Science Division)  
**Completion:** 2008  
**Cost:** \$30,000 to be sought from appropriate sources

### 3.7 Assess the long-term needs of this subspecies

At the end of this plan DCLM 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:** DCLM (Midwest Region/WATSCU/Science Division)  
**Completion:** 2008  
**Cost:** Costs will be covered by member organisations

## 4. TERM OF PLAN

This Interim Recovery Plan will operate from 2003 to 2008, but will remain in force until withdrawn or replaced.

## 5. ACKNOWLEDGMENTS

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

John Blyth	Acting Manager, Western Australian Threatened Species and Communities Unit
Michael Brooker	Previously Research Fellow, CSIRO Division of Wildlife and Ecology
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Allan Burbidge	Senior Research Scientist, DCLM Science Division
Peter Curry	A/Manager, Catchment Branch, Department of Environment Protection
Ron Johnstone	Assistant Curator, Western Australian Museum
Kelly Gillen	Regional Manager, DCLM Midwest Region
Peter Kopke	Carbla Pastoral Station
Ted Sears	Nanga Pastoral Station
Brian and Mary Wake	Hamelin Pastoral Station
Mick Clausen	Former manager, Woodleigh Pastoral Station
Barry and Elaine Stoney	Woodleigh Pastoral Station
Carl Beck	Parks and Visitor Services Program Leader, DCLM Shark Bay District
Mark True	Ranger in Charge, DCLM Shark Bay District

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**SUMMARY OF RECOVERY ACTIONS AND COSTS**

<b>Recovery Actions</b>	<b>Action:</b>	<b>Responsibility</b>	<b>Completion</b>	<b>Cost</b>
<b>3.1 Include actions within this plan in operational plans for Shark Bay District</b>	Ensure that operational plans include actions to implement this IRP	DCLM: Shark Bay District, with assistance from WATSCU and Science Division	2003	\$1600
<b>3.2 Continue habitat management on areas for which DCLM is responsible</b>	Continue habitat management on Peron Peninsula through Project Eden	DCLM (Midwest Region)	Ongoing	\$250,000 per annum (State contribution)
<b>3.3 Liaise with other land managers to bring about desirable habitat management</b>	Habitat management on pastoral properties	DCLM (Midwest Region), relevant land managers	Ongoing	\$25,000 for fencing, to be sought from funding agencies
	Predator control	DCLM (Midwest Region) will discuss the feasibility of predator control on relevant pastoral properties		
	Maintain existing endemic vegetation along roadsides where Thick-billed Grasswrens occur	DCLM/Main Roads Western Australia/Shark Bay Shire	2003	Liaison costs will be borne by the agencies involved
<b>3.4 Develop and implement an education and communication strategy</b>	Develop and implement an education and communication strategy	DCLM (Midwest Region and others as appropriate)/Shire of Shark Bay/Birds Australia	Ongoing	\$4000 pa. to be found by member organisations; extra money for specific projects may be sought from appropriate sources.
<b>3.5 Monitor the sizes and distribution of known Thick-billed Grasswren populations</b>	Develop standard monitoring method, and resurvey populations	DCLM (Midwest Region/WATSCU/Science Division)	2008	\$25,000 to be sought from appropriate sources
<b>3.6 Survey for Thick-billed Grasswrens in areas adjoining its known current distribution</b>	Survey areas adjoining the subspecies known current range	DCLM (Midwest Region/WATSCU/Science Division)	2008	\$30,000 to be sought from appropriate sources
<b>3.7 Assess the long-term needs of this subspecies</b>	Assess the long-term needs of this subspecies	DCLM (Midwest Region/WATSCU/Science Division)	2008	Costs will be covered by member organisations