

**A management plan to help
protect the Bush curlew
(*Burhinus grallarius*) in the
Redland Shire, south-east
Queensland**

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Acknowledgement

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Overview

The Bush curlew is a species that is appreciated by many in the Redland Shire. A large number of residents have taken a direct interest in the bird's protection and management. Their concern is justified.

Globally, the family *burhinus* is in decline. So is the Australian member of the *burhinus* family, *Burhinus grallarius*. We have perhaps been oblivious to these trends and become complacent because the species appears relatively common in the Redlands (Redland Shire) and Queensland, and is listed as common by legislation. However, the trends indicate otherwise. We need to be vigilant and proactive. **This places an onus upon the Redland Shire Council (RSC) to take appropriate action to ensure the species' long-term survival in this region.** This situation is also an opportunity for the RSC to provide guidance on best practice on wildlife management, particularly curlews. This information might prove valuable in a number of ways.

The Bush curlew is culturally significant and worthy of our special protection and assistance. This management plan is designed to achieve this goal.

Management plan for the Bush curlew

Family	Burhinidae
Scientific name	<i>Burhinus grallarius</i> (Latham, 1801)
Common name	Bush curlew, Bush stone-curlew, Bush thicknee
Conservation status	Near threatened (IUCN criteria) Victoria – Threatened on Schedule 2 of the <i>Flora and Fauna Guarantee Act 1988</i> New South Wales – Endangered on Schedule 1 of the <i>NSW Threatened Species Conservation Act 1995</i> Queensland – Listed as common, Queensland Nature Conservation Act.

Reason for listing

IUCN *near-threatened* classification refers to species that are close to qualifying as **vulnerable**. *Vulnerable* refers to a species that is facing a high risk of extinction in the wild, in the medium term.

The entire world population of Bush curlews (*Burhinus grallarius*) occurs in Australia. Unfortunately there has been a significant reduction in population density in southern parts of Australia. In Victoria it is listed as *threatened* and in New South Wales as *endangered*.

Infraspecific taxa

Although Bush curlews are still common in northern Australia and its islands, these birds are a rufous morph as distinct from the grey morph found in SEQ and southern states.

In the Redlands and Bayside regions of SEQ, the Bush curlew is the grey morph. It is more common in the southern regions of the Redland Shire than its northern regions. The southern Moreton Bay islands support good numbers.

Past range and abundance

It is interesting to note how in other areas of world the family *Burhinidae* fares and behaves. This knowledge can provide insight into our local species, for example, did you know the genus *Burhinus* is classified as a wader. In addition, overseas experience may guide us on how we may need to manage our daily activities to help with the protection of the curlew.

The Stone curlew (*Burhinus oedicephalus*) breeds in the UK from March to September and migrates to winter in Spain and North Africa. Radio-tracking studies showed that breeding Stone curlews were most active at night and traveled up to 3 km from the nest to forage. Individuals used fragmented home ranges comprising an average of 30 ha of short semi-natural grassland, short improved pasture and spring-sown crops for foraging. Sparse vegetation and bare ground were the most obvious characteristics of preferred habitats.

The Australian bush curlew (*B. grallarius*) is recorded all over the Australian mainland except the most arid of habitats and some offshore islands.

The historical distribution of the Bush curlew in the Redlands and Bayside region is unknown and is worth investigation.

Present range and abundance

Global distribution

The global distribution and number of the genus *Burhinus* (Stone curlew) is believed to be poor and declining. Although widespread, the Stone curlew is generally scarce across the region. Reported as absent as a breeding bird from much of central Europe, it still breeds in southern and eastern England, north and central France and throughout Iberia, in parts of Italy, and east and south-east Europe to the Caspian Sea. Breeding birds are also found on the Canary Islands and Balearics, Corsica, Sardinia, Sicily and Cyprus. Breeding is reported as occurring across North Africa and the near east, in Turkey and much of Iraq.

The Stone curlew's range is now very patchy in England and France, Italy and eastern Europe. Iberian, North African, Iranian and Iraqi populations are largely

resident. In the United Kingdom (UK), the birds arrive in late March in the north and leave again in late August.

Vagrants have been recorded in Iceland, Ireland, Norway, Estonia, the Azores and Madeira.

In the UK, the Stone curlew (*Burhinus oedicanus*) has declined by 85 per cent in the last 50 years, and 50 per cent since 1960. In the early 1990s, an estimated 150–160 breeding pairs remained in the UK. Concerted conservation efforts have increased this to 300 breeding pairs.

Subspecies

In the northern hemisphere over most of the range, the race is the nominate *oedicanus*, replaced on the smaller Mediterranean islands, Greece, Turkey and North Africa east to Iraq by the paler, less heavily streaked race *saharae* and in southern Russia by the greyer *harterti*. However, there is much intergradation so subspecific identification is not always possible. Race *distinctus* from the western Canary Islands is paler with heavier streaks and *insularum* from the eastern Canaries is pinkish and heavily streaked. (Eurobirding, 2003).

Australian distribution

In mainland Australia, the species is almost absent south and east of the Great Dividing Range between Port Fairy Victoria and Brisbane (Blakers et al. 1984). Numbers decreased in south-western Australia from the 1920s (Johnstone & Storr, 1998). In northern Australia, the species remains common but decreases in Rockhampton and SEQ have been observed. The genetic status of some island birds is unknown; they are possibly isolated subpopulations because there is no evidence of the species moving across major water bodies. The Australian population is estimated at 15 000 individuals (Watkins 1993).

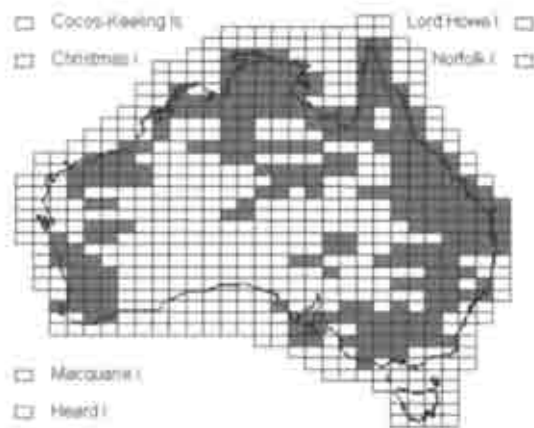


Figure 1. Distribution of Bush curlews in mainland Australia and islands

Table 1. Australian populations of Bush curlew

Australian population	Estimate	Reliability of data
Extent of occurrence	6 million km ²	high
Trend	decreasing	medium
Area of occupancy	100 000 km ²	low
Trend	decreasing	medium
Number of breeding birds	150 000	low
Trend	decreasing	low
Number of subpopulations	1	low
Generation time	5 years	low
Global population share	99 per cent	high
Level of genetic exchange	low	high

Redlands distribution

In the Redland Shire, the islands in Moreton Bay appear to be the stronghold of the species, particularly Coochiemudlo Island, Peel Island, Russell Island, Macleay Island, Lamb Island, Karragarra Island and North Stradbroke Island. Peel Island appears to have the highest density and it is also the least populated by humans and free from feral animals and general human disturbance. The southern region of the Redland Shire has greater numbers than the northern region. Redland Bay, Victoria Point and Mount Cotton are recognised as supporting good numbers. However, Capalaba, Cleveland and Alexandra Hills also support a number of birds.

Out of the Australia total Bush curlew population, the Redlands may support at least 1% (150 breeding pairs) of the total Australian population (based on Watkins, 1993). Interestingly, though the English Stone curlew is a different species (Stone curlew, *Burhinus oedicephalus*) to our Bush curlew. There are only 300 breeding Stone curlew pairs in England.



Figure 2. Bush curlew and Beach curlew distribution in Redlands and Bayside regions SEQ. The Beach curlew (*Esacus neglectus*) is the only other sedentary bird of the family *Burhididae* found in Australia.

Ecology

Curlews stand about 54–59 cm high. An adult weighs between 625g (female) and 670g (male). They are ground feeding and nesting birds. They live to 25–30 years. They are generally nocturnal but, when raising young, have been seen to be active during the day. They rely heavily upon their cryptic camouflage for protection but

as devoted parents they are very defensive of their young and will make an impressive stand to defend them if threatened. Young birds are particularly well camouflaged, extremely difficult to see and they rarely move if a threat is present.

The Bush curlew requires sparsely grassed, lightly timbered open forest or woodland. The birds are sedentary, though they have been seen to fly during the mating season, before the eggs are laid. A pair remains in the same territory all their lives together until one partner dies (Marchant & Higgins 1996). They have been known to occupy a territory for 10–30 years (McGilp 1947; Johnson & Baker-Gabb 1994).

In the Redlands, curlews generally lay two eggs on the ground in an open area. Contrary to some research, the nests of Redlands curlews are often close to a large tree. There are two nestings per year starting in August/September with a second following directly after the first and finishing early in the following year. In some instances, there are 3 nestings per year. The curlews feed on a range of invertebrates, small vertebrates, seeds and shoots (Marchant & Higgins 1993). During the breeding season, they are territorial and notably more vocal, but in winter, during the non-breeding season, they are quieter and in some areas gather in loose small flocks. This habit is obvious among curlews on Coochiemudlo Island.

Threats

Several identified threats are listed below in order of severity and impact.

1. **Human population growth** and its consequential problems, such as habitat destruction, predation by domestic pets, human disturbance to breeding birds and road kills.

- Habitat destruction due to extensive residential development occurring within the Redland Shire i.e. loss of feeding areas and nest sites.
- Predation and disturbance by domestic pets. While it has been hard to quantify the losses to domestic animals in the Redlands, on Magnetic Island 150 Bush curlews were processed by local wildlife carers in one year as a result of domestic dog attacks and hits by cars (Ryan 1996).
- Road kill. Cars are a major cause of fatality among Bush curlews.

2. **Foxes.** There is anecdotal evidence that the fox may be having a major impact on the Bush curlew. Areas such as Wellington Point and Birkdale should have higher numbers of Bush curlews than have been reported given the amount of available suitable habitat. These low populations might be due to the correspondingly large fox populations of these areas. Large reserves and bushland areas such as Jeff Skinner Reserve and adjacent large properties, and the aviation land at Birkdale are known to support foxes; Bush curlews are notably rare or absent from these areas. A fox was also seen to take a curlew at Victoria Point near the egret colony reserve so fox predation is a real known threat.

3. **Park and footpath maintenance.** Due to the natural tendency for young birds to remain still and rely upon their natural camouflage for protection, it is believed

many are lost to park maintenance activities, such as mowing and slashing operations.

4. **Ticks.** In the Redlands a number of tick-infested birds have been handed to wildlife carers. More research is required on this issue.

5. **Spring bushfires,** particularly on North Stradbroke Island, can destroy the eggs or kill hatched young. If the burnt area is large, there might be significant loss of feeding habitat for surviving curlews .

Management issues

There are six key management issues to be considered to protect Bush curlews.

- Redressing habitat destruction
- Maintenance of public parks and footpaths
- Education about curlew-friendly activities for Council maintenance managers, dog owners, and for property owners living near reserves and parks.
- Road kill
- Backburning
- Predation by domestic pets and foxes.

Redressing habitat destruction

Because Bush curlews are nocturnal they require day roost sites to rest in. [Local](#) authorities could consider setting aside parts of selected public parks for the regeneration of day roost sites, much in the same way areas are now closed for regeneration.

To avoid predation problems and to provide shelter, a suitable day roost site should contain 10–20 mature trees. Size is important because the smaller the size of the site, the more readily a predator can find a nest. For the same reasons, a day roost site should be circular or square shaped and not long and narrow. Smaller day roost sites can be useful but it is critical that other roost sites are nearby for the birds to escape a predator or other threat. A day roost site should provide shelter so a healthy canopy is needed, as are other nearby day roost sites. Day roost sites ideally provide food such as insects, small lizards or spiders because such sites can become nesting sites containing young chicks that need to be fed during the day.

Natural cover for the curlew is paramount during the day. The birds' reliance on remaining still and using camouflage means stick, brush, and leaf litter must be maintained. This is particularly important around nesting sites and day roost sites.

Ground cover too is crucial. Most curlews stand 55 cm high, and are 30 cm high when lying down, so they will not use a site with high grass or dense grass that prevents the birds seeing predators approach.

Wildlife groups could monitor the maintenance of these areas, much as bushcare groups now monitor selected bits of bush for vegetation management. Bushcare groups could perhaps incorporate such a task into their current activities.

Maintenance of public parks and footpaths

Local authority maintenance managers need to be alerted to curlew nesting practices, and need to be given the authority to avoid affected sections of park/footpaths for the duration of the nesting period. Maintenance staff need access to information and appropriate contact details to assist with particular circumstances.

Education

A booklet could be prepared for property owners, dog owners, and local authority maintenance staff, including any contractors who might be walking or working in or near bushland.

Road kills

Pictorial warning signs could be designed and erected, particularly where road kills are known to have occurred.

Backburning

Backburning should be discouraged in nesting season. At the very least, the area should be walked by a curlew-knowledgeable person to ensure there are no nesting curlews present.

Predation

Foxes are known to be a problem in southern mainland states and efforts have been undertaken to control them. The problem in the Redland Shire isn't quantifiable but research should be undertaken to understand what the fox diet consists of and to determine the foxes' impact in this region.

Domestic dogs and cats are known to prey upon Bush curlews but the figures are not quantifiable. However, owing to Redland Shire residents' desire to protect the Bush curlew, there does appear to be some efforts made by residents who live near Bush curlews to restrain domestic pets from becoming a problem.

In areas noted for curlews the proposed Curlew Educational Booklet (see *Education* above) could be attached to all building application forms and dog registration forms, so that builders, contractors on building sites, and dog owners in general are made aware of the vulnerability of the sedentary camouflaged curlew, especially in spring and summer.

The benefits of conservation management

By way of example, in the late 1930s there were thought to be 1000–2000 pairs of Stone curlews in the UK. However, by 1993 there were only 150 pairs. A concerted conservation effort by the Royal Society for the Protection of Birds, English Nature and local farmers increased the numbers to 250 pairs.

Recommended actions

1. Develop an effective technique for monitoring Bush curlew abundance.

ACTION: Wildlife Preservation Society of Queensland Bayside Branch (WPSQBB / Redland Shire Council (RSC)

2. Provide education to local residents, landholders and, particularly, those contractors or local authority employees responsible for parkland maintenance. Produce an educational booklet.

ACTION: WPSQBB / RSC

3. Monitor fox numbers, diet and if necessary, implement a control program.

ACTION: RSC / Department of Natural Resources and Mines (NR&M)

4. Implement a management technique that enables mowing contractors to identify Bush curlews when they are operating within close proximity of known Bush curlew nest sites. Ensure tender processes and contracts include the relevant actions from wildlife management plans and that RSC ensure the same are enforced. The potential to improve the nesting success rate of the Bush curlew is highlighted by activities in the UK. In the UK since the mid-1980s wardens employed by the RSPB have located a high proportion of Stone curlew nests on arable land and alerted farmers to them. This has enabled the farmers to avoid damage to eggs and chicks by postponing agricultural operations or avoiding the area around the nest. The breeding success of Stone curlews nesting on arable farmland has been improved by about 35 per cent by these measures.

ACTION: RSC conservation staff and local curlew spotting community groups recognised as a valuable contact for local authority maintenance people.

5. Implement a communication strategy that informs and assists local residents adjacent to Bush curlew habitat or nesting sites, with the aim to improve the nesting success rate of Bush curlews.

ACTION: RSC / WPSQBB

6. Ensure public parklands that are utilised as day roost sites are managed appropriately to ensure such sites remain viable for the Bush curlew.

ACTION: RSC and local community and or bushcare groups maintain recreational parks so to protect day roost sites.

7. Ensure RSC bushcare groups understand the objectives of wildlife management plans and where and how they might apply to their site.

ACTION: RSC

8. Ensure every effort is made to reduce road fatalities among Bush curlews. Warning signs for traffic in accident areas might be useful. Observation of the type and amount of lighting present when a Bush curlew is involved in a road incident may provide some insight to possible changes to lighting provision. A **road kill count** could be undertaken.

ACTION: RSC

9. Implement and enforce domestic pet by-laws that strongly encourage the control of pets after dark. This could be supported by the distribution of educational booklet with the rates notices.

ACTION: RSC

10. Declare a few suitable areas within recreational parks as 'Closed for regeneration of curlew habitat'. (It may take a season or two before the curlews utilise these sites).

ACTION: RSC with WPSQBB to advise

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