

# Flora & Fauna Guarantee Action Statement

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This Action Statement was first published in 1995 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

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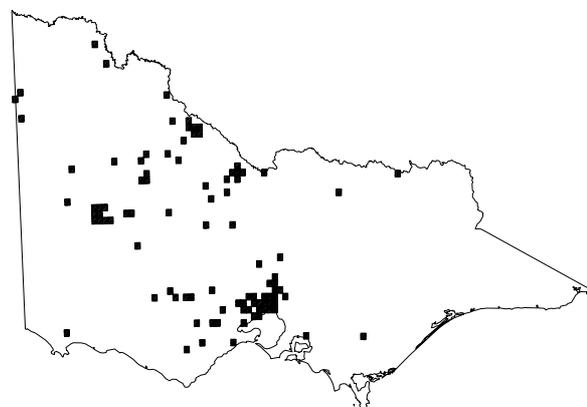
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## Plains Wanderer

### *Pedionomus torquatus*



Plains Wanderer (*Pedionomus torquatus*)  
(Illustration by Alexis Beckett)



Distribution in Victoria (DSE 2002)

### Description and Distribution

The Plains-wanderer (*Pedionomus torquatus* Gould 1840) is a small (about 10 cm tall) ground-dwelling bird of sparse native grassland and similar vegetation. It superficially resembles button-quail (Turnix species). The female being larger (80 g) and more brightly coloured than the male (50 g). Both sexes have longer straw-yellow legs and bills than button-quail, and their plumage is mainly fawn with fine black rosettes. The female is distinguished by her prominent white-spotted black collar above a rich rufous breast patch. The Plains-wanderer has always been of great scientific interest as the sole member of a family of birds found only in eastern Australia. This interest was heightened when the species was reclassified as a shorebird most closely related to seedsnipe (Thinocorus species), a group of South American inland shorebirds (Olsen and Steadman 1981, Sibley et al. 1988). This relationship gave rise to speculation that the Plains-wanderer is a very ancient

member of Australia's avifauna, with its origins tracing back over 60 million years to when Australia was part of the Gondwana supercontinent and connected to South America via the Antarctic land bridge (Olsen and Steadman 1981).

The historical distribution of the Plains-wanderer included the sparse native grasslands of eastern Australia, and mainly those of the south-east. Areas where they were formerly common and are now rare include south-western Victoria, south-eastern South Australia and eastern New South Wales (Bennett 1983). Their remaining strongholds include north-central Victoria, the Riverine Plain of New South Wales and south-western Queensland (Bennett 1983, Baker-Gabb et al. 1990). A viable population of Plains-wanderers is not known to occur in any reserve. Most Plains-wanderers occur on private land (Baker-Gabb 1990a, Maher and Baker-Gabb 1993).

Nowadays, grasslands occupied by Plains-wanderers are often those where the topsoil has been eroded to expose a red clay subsoil

which does not support dense pasture growth under any seasonal conditions. Such areas contain about 50% bare ground with litter comprising a further 10%. The more robust plants in the flora are generally spaced 10 to 20 cm apart and rarely exceed 30 centimetres high. Most (94%) of the vegetation is below five centimetres, but the small amount above this height is important for concealment. Plains-wanderers are about 15 cm tall when on tip-toes. It follows that in sparse, but not dense, grass they can see over the vegetation, move freely when foraging and running away from predators in a hunched posture, while also being able to avoid detection by aerial predators. In the Riverina, pairs of Plains-wanderers occupy home ranges of 18 ha in sparse native grasslands (Baker-Gabb et al 1990). These sparse areas numbered fewer than six on any property surveyed, extended over 50 to 600 ha each, comprised less than three per cent of any property, and had the lowest productivity for grazing. Plains-wanderers often occur in the same paddocks as threatened grassland plants (Maher and Baker-Gabb 1993).

Plains-wanderers' nests consist of a shallow grass-lined scrape in the same sparse grasslands where they forage (Harrington et al. 1988). In the southern part of their range they lay first clutches mainly between late August and early November, and then second clutches in January if summer rains fall (Harrington et al. 1988). In south-western Queensland they breed in autumn and early winter (Baker-Gabb et al. 1990). Plains-wanderers have the ability to recover quickly from low population levels following droughts (Harrington et al. 1988). They can breed in their first year (Ridley 1986, Baker-Gabb et al. 1990), lay two to five eggs (Bennett 1983) which hatch in 23 days (Rushton 1976), and raise broods of two to four young to independence. Males do most of the incubation and all of the brooding and guarding of chicks, leaving the female free to pair with another male (Rushton 1976, Baker-Gabb et al. 1990). This reversal of the roles of the sexes during breeding is unusual among birds. Chicks achieve independence about two months after hatching. Adults may nest in the same areas in consecutive years (Baker-Gabb et al. 1990). Plains-wanderers breed readily in captivity. It is not known how long Plains-wanderers survive in the wild, but they can live for at least eight years in captivity (Ridley 1986).

Plains-wanderers forage during the day for a wide variety of seeds and ground-dwelling insects (Baker-Gabb 1988). Grass and saltbush seeds are more important than those of other types of plants. Beetles, ants, sucking bugs and caterpillars are the most frequently taken insects. In all seasons insects comprise about 40% of the diet, except in spring when their contribution is slightly higher.

## Conservation Status

### Current Status

ESP Act 1992	Vulnerable in Australia
CNR (1995)	Vulnerable in Victoria
SAC (1991)	Threatened

The Plains-wanderer has been listed as a threatened taxon on Schedule 2 of the Flora and Fauna Guarantee Act 1988.

### Reasons for Conservation Status

The Plains-wanderer has declined greatly in numbers and distribution since European settlement (Llewellyn 1975, Bennett 1983, Blakers et al. 1984). As early as 1886, overgrazing by sheep had temporarily eliminated Plains-wanderers from part of the northern Riverina, New South Wales (North 1913). Soon afterwards, it was noted in southern Victoria that Plains-wanderers were seen when seasonal conditions were good, but disappeared when overgrazing occurred during droughts (D'Ombra 1926). Cultivation and resowing of native grasslands with introduced dense pasture plants resulted in permanent local extinctions in several parts of coastal and subcoastal south-western Victoria earlier this century (Bennett 1983). This trend has continued to the point where the species is now listed as vulnerable Australia-wide (Garnett 1992). There will be further declines in the Plains-wanderer population in Victoria if the few remaining native grasslands are cultivated, fertilised and sown to dense new pastures or invaded by weeds.

In its final recommendations, the Scientific Advisory Committee (1991) determined that the Plains-wanderer is:

- in a demonstrable state of decline which is likely to result in extinction; and
- significantly prone to future threats which are likely to result in extinction; and
- very rare in terms of abundance and distribution.

### Major Conservation Objective

The major conservation objective is to halt the decline of the species by ensuring that significant Plains-wanderer habitat is identified and that, subsequently, means are found to ensure that native pastures supporting Plains-wanderers are neither cultivated nor overgrazed.

There are about 500 Plains-wanderers on the Northern Plains (Maher and Baker-Gabb 1993), and probably fewer in south-western Victoria. The aim is to attain a total population in Victoria of at least 1000 Plains-wanderers. A population of this size is likely to be secure in the long term (Shaffer 1981), particularly given the availability of immigrants from other populations in south-eastern South Australia and the Riverina of New South Wales.

## Management Issues

### Ecological Issues Specific to the Taxon

In descending order of priority, cultivation, overgrazing, dense pasture growth, weeds and wildfires render sparse native grasslands unsuitable for Plains-wanderers. The birds then either die or disperse for individuals do not return should conditions become suitable again (Baker-Gabb et al. 1990). Some of the birds may be taken by aerial predators because they are much more vulnerable on bare ground (Baker-Gabb 1987, 1988). Birds of prey and foxes are known to eat Plains-wanderers (Bennett 1983, Baker-Gabb 1990). Introduced predators have been claimed to have a major impact on the

species (D'Ombrain 1926, Llewellyn 1975), but in the Riverina no supporting evidence could be found for this idea (Harrington et al. 1988). Quail shooters kill Plains-wanderers occasionally (Bennett 1983, Baker-Gabb 1987), but their impact on Plains-wanderer populations is likely to be small. A potentially important threat about which little is known is the use of pesticides such as fenitrothion which are periodically sprayed from the air onto plague locusts in a large portion of the Plains-wanderer's range outside Victoria (Baker-Gabb 1987, Symmons 1985).

The ecology and management requirements of the Plains-wanderer are reasonably well known (Baker-Gabb et al. 1990), as is the distribution of suitable remnant grassland in northern Victoria (Maher and Baker-Gabb 1993). With the exception of one outstanding property (1400 ha) at Terrick Terrick, and Yassom Flora and Fauna Reserve (330 ha), the remaining 22 paddocks known to be suitable for Plains-wanderers in northern Victoria average 200 ha, comprise less than five per cent of 20 properties, and are concentrated in the Mitiamo district.

These properties have all been grazed for decades and the first management priority is to encourage owners to maintain this status quo rather than to convert to cropping, introduced pastures or fertilising. The second management priority is to avoid overgrazing, particularly during spring when Plains-wanderers and most threatened grassland plants reproduce. This can be achieved by excluding stock in early August and then reintroducing them in February during a wet year, as late as May in a dry year and not at all during a recognised drought, so that ground cover is maintained.

Periodic exclusion of grazing may not be practical in some cases, particularly where an entire paddock contains Plains-wanderers and threatened plants. A useful compromise would then be to keep stocking rates as low as possible during the Plains-wanderers' breeding season which coincides with peak native grassland flowering times. Grazing pressure should never be so severe at any time of the year that all of the grass tussocks are eliminated. Careful monitoring of the structure of any grassland reserves from which grazing is excluded will be necessary to be sure that they do not become too dense for Plains-wanderers and threatened native grassland plants. Where threatened grassland plants co-occur with Plains-wanderers, the safest advice that can be given about grassland management is to maintain the status quo (Scarlett et al. 1992), including intermittent light grazing. In areas that have been managed in this way for decades, the native species are probably able to tolerate the management practices.

### Wider Conservation Issues

Lowland native grasslands are among the most depleted ecosystems in south-eastern Australia. The grassland communities of both the Northern Plains and the Western Basalt Plains are listed under the Flora and Fauna Guarantee Act 1988. Grassland fauna such as the Plains-wanderer have undergone a concomitant decline. Recent surveys (Maher and Baker-Gabb 1993) have shown a strong

positive correlation between areas with the highest numbers of Plains-wanderers and threatened grassland plants. Because their management requirements are similar, managing areas for Plains-wanderers will assist in the conservation of several plant species and so have substantial biodiversity benefits.

### Social and Economic Issues

In summary, the survival of Plains-wanderers in Victoria depends on appropriate land management on a relatively small number of private properties and public land reserves. For private property areas, continuation of previous farming practices will be sufficient. However, considerable attention to farming systems and alternative enterprises will be needed to ensure both habitat protection and flexible responses by farmers to changed conditions. In the case of public land reserves where conservation is the highest priority, attention will be given to maintenance of existing habitat and application of new approaches if grassland management research projects demonstrate appropriate alternative management methods. Sites where Plains-wanderers now occur on private land are generally in the less productive areas of farms and in the less favourable regions of Victoria for cropping (Baker-Gabb et al. 1990, Maher and Baker-Gabb 1993), or are in areas where the land managers have decided not to crop.

In general, the native pastures at the majority of sites where Plains-wanderers occur now have either never been or have rarely been cultivated because the soils are either too rocky, or the rainfall is too low and the soils are unsuitable or marginal for cropping. In some cases, farmers who would otherwise crop these areas have had sufficient area of farmland and not been under pressure to crop it all. This is unlikely to remain the case for all time.

However, some landholders perceive short-term gains in periodically cropping areas of native grassland and have the expectation that the native species will re-colonise in the following years. In spite of the establishment difficulties and risk of failure, others see advantage in sowing introduced pastures, such as lucerne (Ransom & Barr 1994), and may even be encouraged to do so by agricultural advisors (Ransom 1992). There is a possibility that reduced input costs and management requirements may make such action relatively easier in the future. Hence Plains-wanderer conservation is at risk from pressures to upgrade farm productivity, and cooperative management arrangements are necessary.

Major management changes on farms also tends to follow the sale of farms or their transfer to the next generation. Monitoring for such events and anticipatory planning will be needed to ensure that new managers do not unintentionally destroy or degrade habitat. About five years ago, there was another large property with high quality native grasslands on the Northern Plains; as soon as the elderly owner of the land died, the entire property was share-cropped (Maher and Baker-Gabb 1993).

About 20 landowners in northern Victoria have land suitable for Plains-wanderers which generally amounts to one or two scattered paddocks comprising less than five per cent of their properties. An equivalent but probably lesser number of landowners have suitable habitat in south-western Victoria.

Native grasslands are beginning to be tested for their agricultural benefits. Properties on the Northern Plains with native grasslands may hold useful varieties, or sites for commercial seed collection for rehabilitation of degraded land. Alternative enterprises based on products from native grassland may also be possible; there is already an export trade in Billy Button flower heads collected on the northern plains.

The Plains-wanderer is a very important species for international and local birdwatchers, so much so that one Riverina naturalist who has the Plains-wanderer as his company logo makes a substantial portion of his annual income from taking birdwatchers to see the Plains-wanderer.

In general, landowners will be asked to continue managing the native grassland areas much the same as they have done for the past decades, with minor modifications. Realistically, given the pressures on farmers to expand production, this will be only achieved in the long-term if farmers have feasible ways of integrating the protection of Plains-wanderer habitat into their farming system, which may include more intensive cultivation or pasture improvement on other areas of the farm, or of adopting alternative enterprises based on the native grassland. It will be the task of CNR extension officers to work with landowners and Landcare groups on the land management practices necessary to conserve native grassland, and to negotiate appropriate advice packages with other farm management advisors in the private and public sector. This work is essential if the long-term goal of at least 1000 Plains-wanderers in the wild is to be achieved. The management of public land by the National Parks Service may play a greater role in the long-term if additional Plains-wanderer habitat becomes part of the public estate. Farmers need not and should not be receiving conflicting advice about agricultural production and conservation management. Both Agriculture Victoria's Five Year Sustainable Development Program (1994) and A Place for All: Conserving Biodiversity in Victoria (CNR, in prep.) provide strategic direction enabling protection of biodiversity and enhancement of agricultural productivity, through mechanisms such as Landcare, integrated farming systems and property management.

## Management Action

### Previous Management Action

A major study of the biology and management requirements of the Plains-wanderer across four states was completed in 1987, but only in northern Victoria have the management recommendations arising from this work begun to be implemented systematically.

Birdwatchers, particularly the RAOU, have published information about the decline of the Plains-wanderer for decades (Keartland 1901, D'Ombrain 1926, Hyett 1935, Wheeler 1974, Llewellyn 1975, Bennett 1983, Blakers et al 1984).

Bennett (1983) undertook an Australia-wide survey of several threatened birds funded by the private sector through WWF Australia and the RAOU. His review of the distribution, status and biology of the Plains-wanderer highlighted the need for further study with a management focus on this species.

From 1984 to 1987, a major study of the ecology and management requirements of the Plains-wanderer was undertaken, mainly in the Riverina of New South Wales (Baker-Gabb 1987, 1988, 1990a, 1990b, Harrington et al. 1988, Baker-Gabb et al. 1990). Again this work was funded through the RAOU and WWF Australia.

A local naturalist, La Trobe University botanists and the RAOU combined to produce data which convinced the Land Conservation Council that there were sufficient rare plants and Plains-wanderers present on a 330 ha block of crown land near Swan Hill for it to be proclaimed as the Yassom Flora and Fauna Reserve (LCC 1987).

In the Riverina of New South Wales, irregular monitoring and banding of Plains-wanderers by a local naturalist has continued at the two main 1984-87 study sites for the past six years.

From 1986 to 1991 Beardsell (1991) surveyed the grasslands to the immediate north and west of Melbourne where he identified sites suitable for Plains-wanderers.

In 1992, the whole of Victoria's Northern Plains were surveyed for Plains-wanderers in order to locate and rank in priority order all remaining suitable habitat (Maher and Baker-Gabb 1993). The National Estates Grants Program made funds available to CNR for this work. Sixty Plains-wanderers were found at 23 sites in five districts. One of these districts, Mitiamo, contained 63% of sites and 72 per cent of Plains-wanderers recorded. One outstanding 1400 ha property, comprising four sites near Terrick Terrick in the Mitiamo district contained 28% of the total Plains-wanderers recorded and the only confirmed breeding records, and at least ten species of threatened plant.

The Terrick Terrick property has been listed by CNR as the highest priority grassland site for protection in Victoria and discussions have been held with the owner.

CNR extension officers have held meetings with landowners in the Mitiamo district to explain the importance of the Plains-wanderer and its management requirements. The Mitiamo Landcare group has become involved in grassland conservation efforts.

The RAOU produced in 1993 an educational brochure for general readership explaining the biology and management requirements of the Plains-wanderer.

CNR South West Area has maintained a register of suitable sites and of Plains-wanderer sightings since 1990.

With federal funding, CNR has appointed four grassland extension officers to promote conservation of grassland flora and fauna.

### Intended Management Action

- Maintain liaison and seek management agreements with the owner of the 1400 ha property at Terrick Terrick with a view to ensuring its outstanding biological values are maintained (North West Area).

- Seek similar management agreements with the owners of other properties with substantial areas of Plains-wanderer habitat at strategic sites across the species' range (North West and South West Areas).
- Survey, map and rank in priority order all Plains-wanderer habitat in south-western Victoria (RAOU; South West Area).
- Define the critical habitat of the Plains-wanderer in Victoria (Flora and Fauna Branch, North West and South West Areas).
- Continue extension work with 20 landowners in northern Victoria and begin similar work in the south-west as soon as the appropriate landowners are identified so that native pastures are neither cultivated nor overgrazed. The elimination of periodic overgrazing has the potential to increase Plains-wanderers numbers (CNR Extension Officers).
- Ensure extension work and other planning takes account of major management changes (CNR Extension Officers).
- Liaise with the Department of Agriculture, Energy and Minerals and other farm management advisors in the public and private sector to ensure that Plains-wanderer conservation requirements are recognised, and to coordinate advice to landowners (CNR Extension Officers).
- Monitor the success of extension work.
- Monitor the density and productivity of Plains-wanderers and other ground-dwelling birds in key districts such as Mitiamo.
- Allocate funds for fencing to control grazing in the two or three cases where this is appropriate (Flora and Fauna, CALM).
- Assess and monitor the impact of excluding grazing and cultivation on native grassland plants and Plains-wanderers using experimental plots.
- Assist landowners who enter voluntary conservation agreements to obtain any rate or tax concessions for which they are eligible.
- Research and promote the agricultural benefits of native grasslands.
- Encourage other state and federal wildlife agencies to undertake similar work (see also Baker-Gabb 1993).

## Other Desirable Management Actions

- Purchase and reserve the 1400 ha Terrick Terrick property if it is offered for voluntary sale.
- Reserve or covenant other native grasslands with Plains-wanderers.
- Study the impact of different grazing and cropping regimes on grassland flora and fauna so that their general suitability for species in addition to the Plains-wanderer can be determined.
- Develop policy and management guidelines for the maintenance of Native Grassland and Grassy Woodlands flora and fauna values on public land reserves particularly in relation to exotic/native grazing regimes and fire (NPS).

## Legislative Powers Operating

### Legislation

Wildlife Act 1975: controls research, management and taking of protected wildlife.

National Parks Act 1975: provides for the reservation, protection and management of natural areas.

Flora and Fauna Guarantee Act 1988: provides for the protection of flora and fauna in Victoria and the declaration of critical habitat.

### Licence/Permit Conditions

No permit will be granted unless a proposal conforms with the broad conservation, research and management strategy proposed in this action statement.

### Consultation and Community Participation

Continuing consultation with landowners must play an integral role in the management of the Plains-wanderer if the aims of this action statement are to be achieved. Birdwatchers have a strong interest in Plains-wanderers and volunteers coordinated by the RAOU could play a useful role in monitoring this species.

### Implementation, Evaluation and Review

The CNR Managers for North-East, North-West and South-West Areas are responsible for implementing this action statement. The success of this action statement can be measured by the number of intended and desirable management actions which have been implemented prior to the revision date in 2000. Another measure of success will be the number of landowners who enter voluntary conservation agreements, while a measure of failure would be the number of identified paddocks of native grassland which are cultivated or overgrazed.

### Contacts

#### Management

Flora and Fauna Planning Officers, Land for Wildlife Officers and Grassland Extension Officers in North-East, North-West and South-West Areas of CNR, Flora and Fauna Branch CNR; National Parks Service in North-West and South-West Areas of CNR.

#### Biology

David Baker-Gabb, Royal Australasian Ornithologists Union  
Philip Maher, Inland Bird Tours, Deniliquin, NSW

#### Community Participation

Volunteer birdwatchers coordinated by the RAOU  
Mitiamo Landcare Group  
La Trobe University Botany Department  
Victorian Conservation Trust  
Victorian National Parks Association

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## Compiler

David Baker-Gabb

## Further information

Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

## Flora and Fauna Guarantee Action

Statements are available from the Department of Sustainability and Environment website:  
<http://www.dse.vic.gov.au>

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