NSW GOVERNMENT

SAVING OUR SPECIES

Plains-wanderer Habitat Management Guide

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In association with:

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TRUST FOR NATURE
Habitat forever

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Contents

We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work.

Riverina grasslands in focus

The Riverina supports the largest expanse of native grassland in New South Wales, with grasslands dominating the area bounded by the southern towns of Narrandera, Jerilderie, Hay and Deniliquin. These riverine grasslands extend south, onto Victoria's Northern Plains between the towns of Echuca, Wycheproof and Swan Hill. In large part, these grasslands are derived from low open woodlands and shrublands, with high stocking rates and rabbit plagues in the late 1800's preventing the regeneration of trees and shrubs, but leaving the grassy, herb-rich ground layer intact. Excellent examples of Riverina grasslands can be experienced on public lands, including Oolambeyan National Park in NSW and Terrick Terrick National Park in Victoria and along the many Travelling Stock Reserves that border major roads in NSW.

At first glance, Riverina grasslands appear uniform over vast areas. In fact, paddocks can contain a mosaic of different grassland types, each having a distinct structure and unique combination of plant and animal species. Heavy grey clays occupy low-lying areas, and these support relatively tall, dense grasslands dominated by species such as plains grass and windmill grass. Areas of hard red loam occur as slightly elevated islands among the grey clays, and support short, sparse grasslands characterised by species such as rough spear grass, ringed wallaby grass, and yellow buttons.

The grasslands that have developed on the hard red to red-brown loams have lots of bare ground between grass tussocks and support a wide variety of herbs. These grasslands provide homes for many rare or threatened plants and animals and represent important habitat for the iconic Plains-wanderer. The open structure of the red soil grasslands allows Plains-wanderers to forage efficiently for seeds and insects, and to detect and slip away from approaching predators. Plains-wanderers will disappear from sites where the grassland structure becomes too dense or too sparse.

The condition of Riverina grasslands at any one time depends on prevailing weather patterns and the grazing pressure exerted by stock, kangaroos and rabbits. Long droughts mean conditions can deteriorate over large areas, though grasslands have the capacity for rapid recovery once rain falls. Lots of rain can result in the grasses crowding out the smaller plants and the habitat becoming unsuitable for specialists like the Plains-wanderer. In these situations, strategic grazing for ecological outcomes is an important tool for controlling grass growth and maintaining biodiversity.

Paddocks for Plains-wanderers Program

Paddocks for Plains-wanderers is a program for landholders who want to help secure a long-term future for Plains-wanderers in the NSW Riverina. Participants have Plains-wanderer habitat on their property and have made a voluntary long-term commitment to manage one or more of their paddocks for livestock production and Plains-wanderer conservation.

The goal of the program is to have around a third of all primary Plains-wanderer habitat in the Riverina managed for the twin purposes of livestock grazing and Plains-wanderer conservation. This managed habitat will provide a refuge during years when, for example, a combination of drought and overgrazing mean that much of the habitat elsewhere may be unsuitable for the birds.

Paddocks for Plains-wanderers aims to support landholders make long-term changes to the management of selected paddocks on their property such that Plains-wanderer habitat is always suitable for the birds. This might entail reducing grazing pressure in dry years, or increasing grazing pressure in wet years. The most critical times are during drought, when paddocks may need to be destocked completely for extended periods.

Female Plains-wanderer

Plains-wanderers and Trust for Nature

Trust for Nature (Victoria) aim to assist farmers in securing a long-term future for Plains-wanderers in the Victorian Riverina. Landholders who have Plains-wanderer habitat on their property, can make a voluntary permanent commitment to manage one or more of their paddocks for Plains-wanderer conservation with sensitive livestock grazing, under Trust for Nature conservation covenants. Conservation covenants are voluntary agreements on property titles that enable private landholders to protect nature forever, even after the property changes hands. They are a way to leave a legacy for future generations and are one of the most important contributions a landowner can make to protect nature.

Introduction

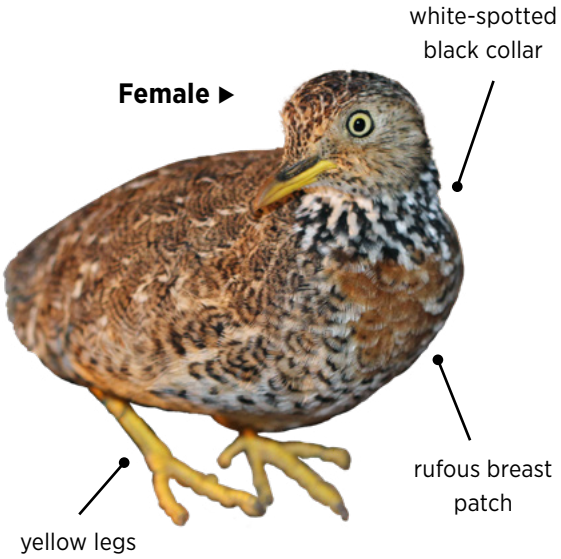
The conservation and recovery of the critically endangered Plains-wanderer depends on the protection and management of its native grassland habitat. Managing habitat so that it is in optimal condition is a critical first step in ensuring the long-term survival of the species in the wild.

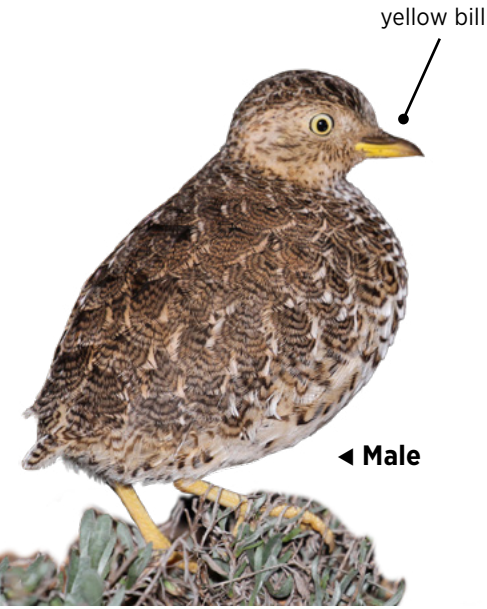
This guide provides an easy-to-use tool for managers of native grasslands on both public and private land who are interested in managing and maintaining Plains-wanderer habitat. Photographs in this guide indicate the value to Plains-wanderer of grasslands in different condition, with birds responding to the amount of vegetation cover, the amount of bare ground, and vegetation height.

Ideal habitat structure for the Plains-wanderer is based on more than 30 years of detailed investigations particularly across the species' two strongholds: the New South Wales Riverina and the Victorian Northern Plains. This habitat guide will also be useful for land managers in other states in which the species occur, including western Queensland, and north-eastern South Australia.

Plains-wanderer

The Plains-wanderer is a small quail-like bird standing about 15cm tall and weighing between 40—95 grams. Both sexes have straw-yellow legs and bills, and their plumage is mainly fawn with fine black rosettes. The female Plains-wanderer is larger and more brightly coloured than the male and is easily distinguished by her prominent white-spotted black collar above a rich rufous breast patch.





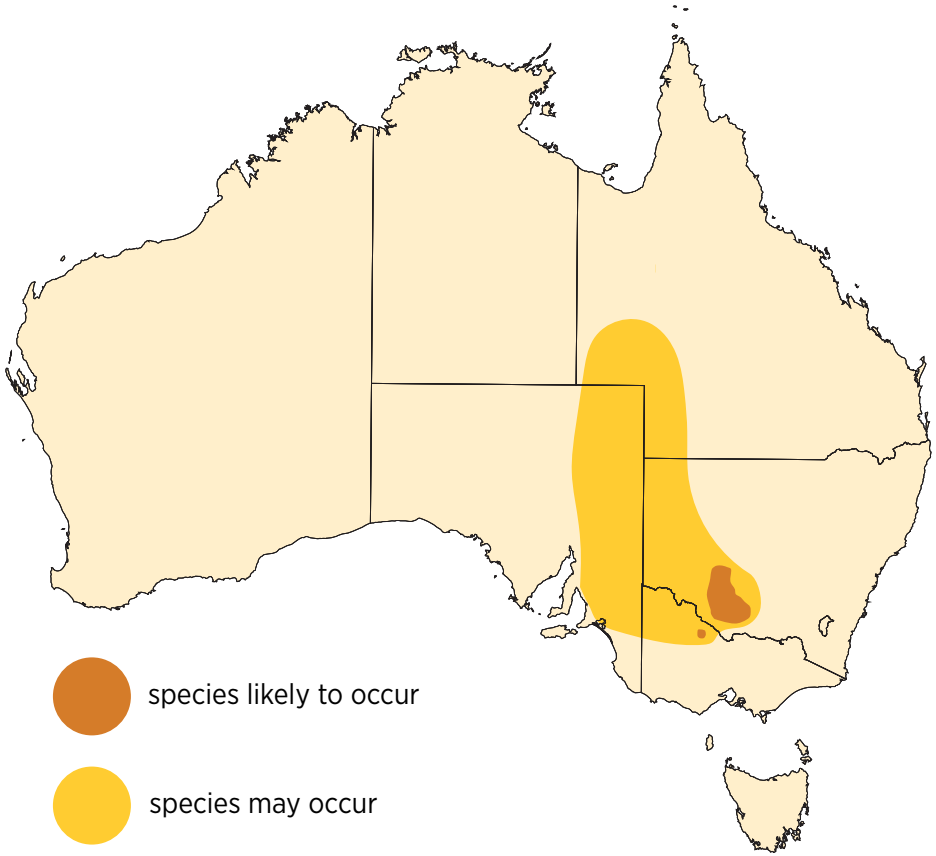
The Plains-wanderer can be confused with other small ground-dwelling birds that occur in native grasslands such as Stubble Quail or Little Button-quail. The Plains-wanderer can be distinguished from these similar species by its finer bill, much longer legs and lankier appearance.

The Plains-wanderer is of great taxonomic and scientific interest being the sole member of a family of birds found only in eastern Australia. In terms of their evolutionary distinctiveness and extinction risk, the Plains-wanderer is ranked first among the world's birds.

Distribution

Plains-wanderers occur at scattered sites across New South Wales, Victoria, Queensland and South Australia. The New South Wales Riverine Plain and the Victorian Northern Plains area the Plains-wanderer's strongholds, with other areas providing more marginal habitat.

Areas where the species was formerly common and is now so reduced in numbers that it is effectively extinct include eastern New South Wales on the Slopes and Tablelands, south-western Victoria in areas such as the Basalt Plains, and south-eastern South Australia.



Native grassland habitat

Plains-wanderer live in low sparse native grasslands on hard red-brown loams containing about 50% bare ground and 10% fallen litter, with the remaining 40% made up of grasses, herbs and forbs. Grass tussocks are spaced 10—20 cm apart. Most of the vegetation is below 5 cm high, but some vegetation up to around 30 cm is important for concealment.

Extensive surveys across the species range show that Plains-wanderers avoid being in close proximity to stands of trees, with no records of birds from within 200 metres of trees. This avoidance of trees and tall shrubs appears to be a defence strategy to limit the potential for attack by predatory birds that may perch in these trees.

Plains-wanderers do not use habitat that is too dense with limited space between grass tussocks, often a result of above average rainfall and limited grazing. At the other end of the scale, Plains-wanderer don't use habitat which is too bare, generally caused by over-grazing or severe drought.

Grassland structure is the most important and consistent predictor of their use of habitat. An open grassland structure allows birds to forage efficiently for seeds and insects, and to detect and slip away from approaching predators. Some cover is required to ensure adequate food resources, the availability of nest sites, and to hide from predators.

Female Plains-wanderer amongst yellow buttons

Sparse native grasslands favoured by Plains-wanderers typically occur on hard, red-brown soils. These areas support a wide variety of plants, with some of the most common being: ringed wallaby grass or white top, pale beauty heads, windmill grass, slender bluebush and speargrass. The highest quality Plains-wanderer habitat often has lichens on areas of bare ground, and numerous perennial plants such as yellow buttons.

Yellow buttons (above) and native grasslands (below)

Nest sites

The Plains-wanderer forms its nest in a hollow that is scratched into the ground and often lined with grass. Nests may be constructed within a clump of perennial tussock grasses such as wallaby grasses or spear grasses or in an area of low herb cover with the nest close to the base of a large tussock of grass, such as a spear grass. The male Plains-wanderer does most of the incubation and all the chick rearing, leaving the female to pair with another nearby male in the same season.

Male Plains-wanderer sitting on a nest

Ideal nesting habitat

(Below – Mark Antos/Parks Victoria)

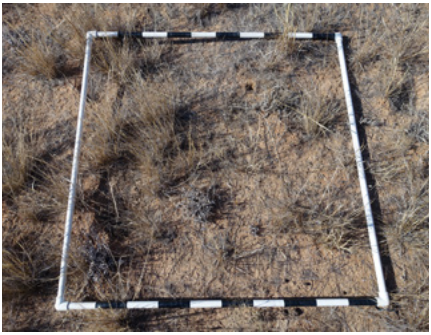
Grassland structure

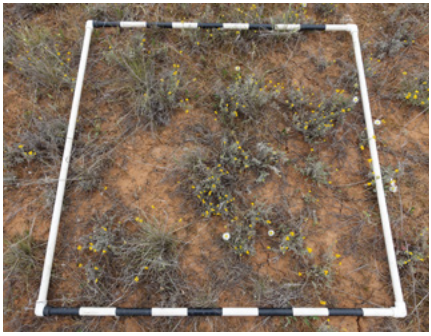
Maintaining grassland structure for Plains-wanderer is the most critical action land managers can undertake if they wish to help secure the species. Long-term monitoring programs in New South Wales and Victoria have demonstrated that the structure of grasslands is the most important factor determining their use by Plains-wanderers.

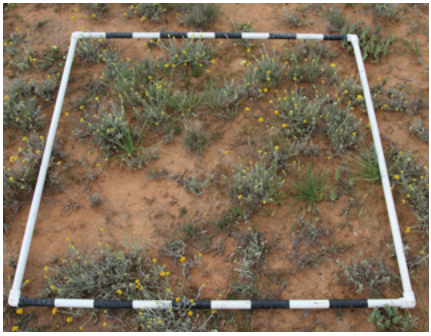
Ideal habitat

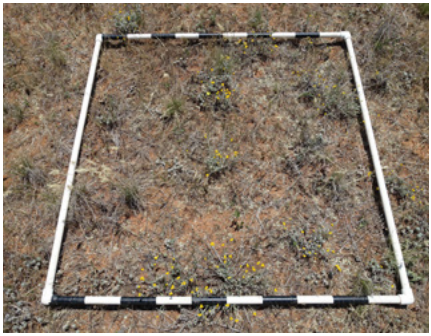
Ideal Plains-wanderer habitat is characterised as having 50% bare ground and 10% fallen litter, with the remaining 40% made up of grasses, herbs and forbs. Grass tussocks are spaced 10—20 cm apart. Most of the vegetation is below 5 cm high, but some vegetation up to around 30 cm is important for concealment. This grassland structure is favoured by Plains-wanderers.

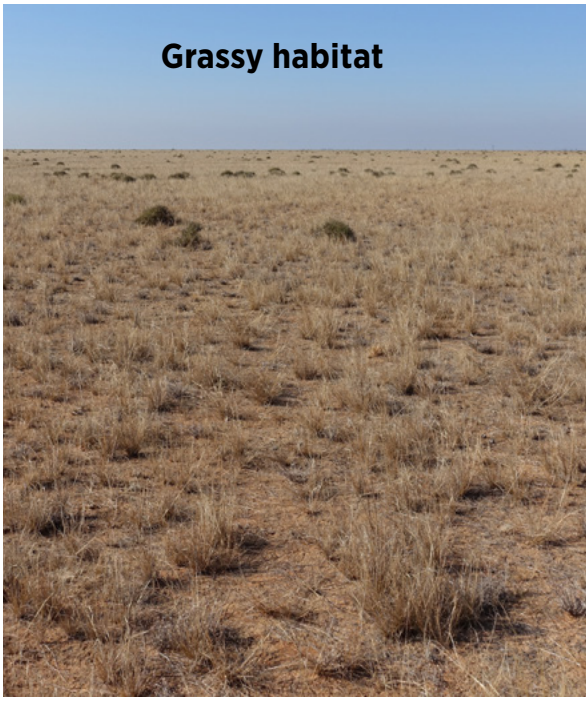
Maintaining this condition is ideal for the Plains-wanderer.

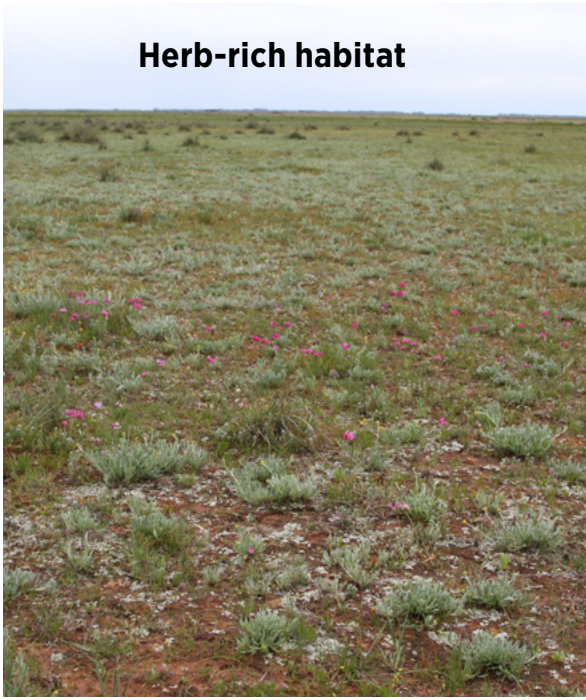








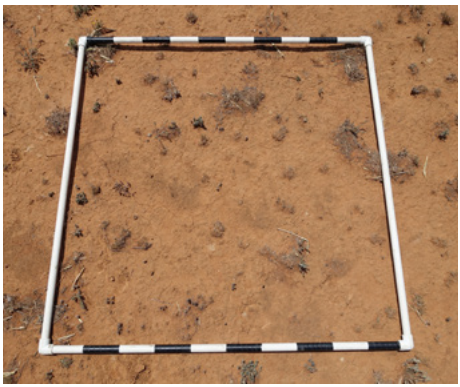

Grassy habitat

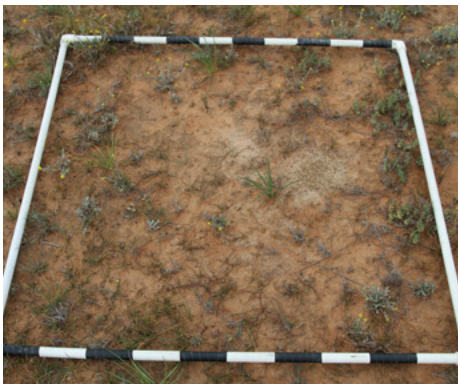

Herb-rich habitat

Too sparse habitat

Plains-wanderer habitat is considered to be too sparse when the grass cover is almost absent, and the site is 85—100% bare ground. Plains-wanderers are absent from these areas due to a lack of cover and adequate food resources. These conditions are the result of short-term dry periods, prolonged drought and over grazing.

Such areas should be destocked until conditions improve.

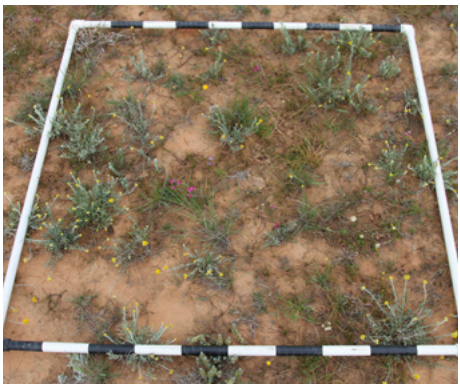




Slightly too sparse habitat

Plains-wanderer habitat is considered to be slightly too sparse when the grass cover is poor and the site is 70—85% bare ground. Plains-wanderers may be found infrequently in habitat with this structure but have typically moved away from the area in search of better conditions. These conditions are the result of short-term dry periods, drought and over grazing.

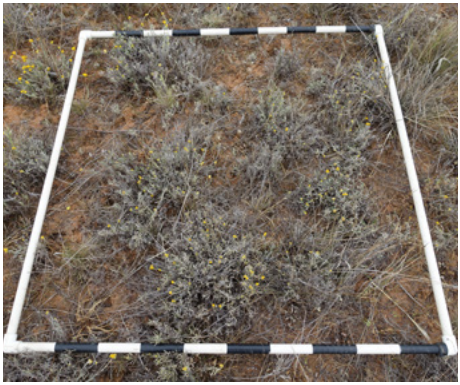
The grazing pressure of these areas should be reduced significantly or destocked until conditions improve.

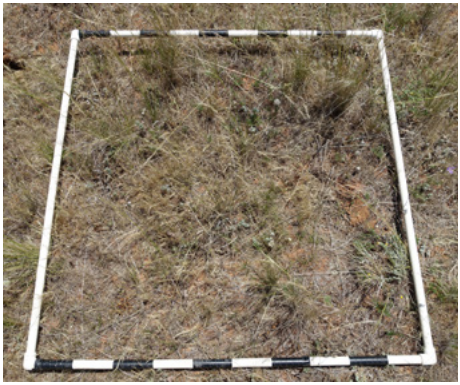


Slightly too dense habitat

Plains-wanderer habitat is considered to be slightly too dense when the grass cover is becoming thick and the bare ground is 25—40%. Plains-wanderers may be less infrequent in habitat with this structure as it is becoming too dense and typically too tall. These conditions can result from a period of good rainfall even with grazing being present.

The grazing pressure of these areas could be maintained or increased for a period of time, depending on seasonal conditions or forecasted rainfall.

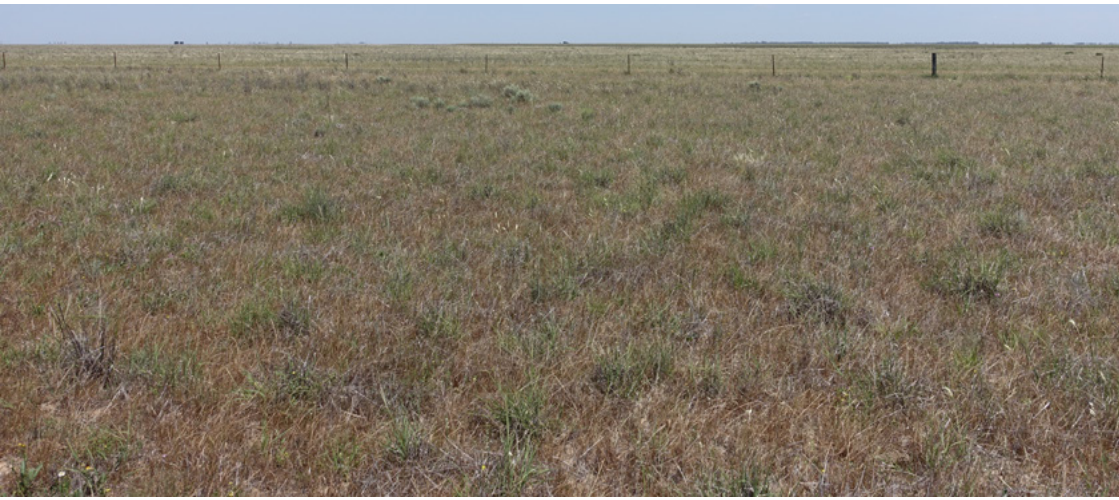


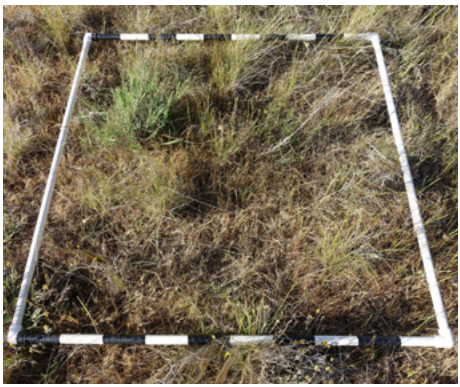


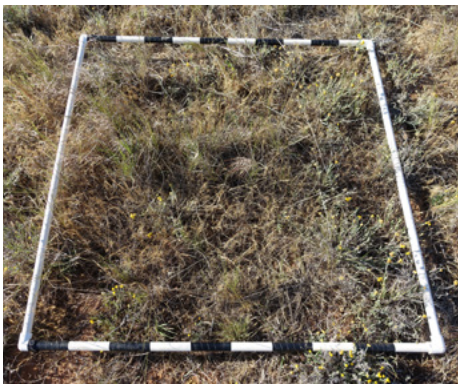
Too dense habitat

Plains-wanderer habitat is considered to be too dense when the grass cover is great, and bare ground has been reduced to around 0—25%. Habitat that is too dense has had a significant growth of grass tussocks and a high level of fallen litter. Plains-wanderers are absent from these areas due to too much cover. These conditions are the result of good to higher than average rainfall, with little to no grazing.

Too dense habitat requires grazing for it to return to a suitable condition.







Threats

Habitat loss

Historically, the loss of native grassland habitat used by Plains-wanderers to cropping, pasture improvement has been the biggest contributing factor to the decline of the species. Cultivation has contributed the most towards the loss of habitat, particularly in South Australia and Victoria. Pasture improvement practices, such as the application of fertilisers and over-sowing with introduced pasture species, has led to denser grasslands and the vigorous growth of exotic annual grasses and environmental weeds. This can temporarily or permanently eliminate Plains-wanderers from an area, depending on the degree and permanency of the change in the structure of the grassland.

Inappropriate grazing

Overgrazing by domestic livestock, particularly during drought conditions, can result in the temporary displacement of Plains-wanderer from areas of habitat on a local or regional scale. During prolonged periods of drought, Plains-wanderers will find refuge on relatively lightly grazed properties or on properties that have been destocked and habitat has been maintained.

Overgrazed paddock

In high rainfall years, insufficient grazing can also render Plains-wanderer habitat unsuitable. Under these conditions, grasslands may become too tall and dense for birds to occupy.

Plains-wanderers have demonstrated their ability to co-exist with a range of grazing regimes, particularly where stocking rates are light to moderate. The use of strategic grazing, including stock containment areas, will optimise Plains-wanderer habitat cover and carrying capacity. This is particularly important during drought conditions.

Small population

Plains-wanderers are exposed to increased extinction risk due to their current historically low population size. When populations are small, chance events like wildfire or floods might eliminate a large proportion of animals. Natural variation in environmental conditions can cause problems for small populations, with several years of high mortality rates and limited reproduction due to drought causing populations to decline to a point from which they cannot recover.

Feral predators

Foxes are important predators of the Plains-wanderer and have been shown to limit Plains-wanderer populations. Long-term monitoring results have shown that where foxes are abundant, Plains-wanderer are rare. The impacts of foxes are likely to be greatest when Plains-wanderer numbers are low.

Feral cats may also take Plains-wanderers, although unlike foxes they are not regularly recorded from sparse native grasslands, favouring timbered habitats with ample cover.

Locust control

There are periodic outbreaks of Australian plague locusts in the Riverina that warrant control to minimise impacts on agriculture. Plains-wanderers may be directly or indirectly impacted by pesticides used to control locusts such as fenitrothion and fipronil. The sensitivity of the Plains-wanderer to these chemicals is largely unknown, however, it is thought that the concentrations of fenitrothion used could potentially kill birds if they encountered the spray. A secondary impact of these pesticides also may exist in the reduction of food items for the Plains-wanderer post spraying.

The potential impact of these insecticides has been mitigated by the Australia Plague Locust Commission by avoiding their use on important areas of Plains-wanderer habitat. Instead, the fungus Green Guard® is applied when control within 1 km of mapped Plains-wanderer habitat is required. This fungus selectively kills locusts only.

Fire

In high rainfall years when Plains-wanderer grassland habitat becomes tall and dense, large-scale and intensive fires can temporarily destroy habitat and may impact local populations. Grasslands may take several years to recover from fire, during which time they may have limited habitat value to Plains-wanderers.

Tree planting

Plains-wanderers are generally not encountered near woodland. This avoidance of trees and tall shrubs appears to be a strategy to limit the potential for attack by birds of prey, such as the black falcon, which may use trees as hunting perches. As a consequence, trees planted within native grasslands as shelter belts or small plantations can impact on the suitability of the grassland for the Plains-wanderer.

Inappropriate tree planting

Find out more about your environment at:

environment.nsw.gov.au/sos