RABBIT MANAGEMENT STRATEGY 2021-2031

GOLDEN PLAINS SHIRE

ACKNOWLEDGEMENT OF COUNTRY

Golden Plains Shire spans the Traditional lands of the Wadawurrung and Eastern Maar people. We acknowledge them as the Traditional Owners and Custodians.

Council pays its respects to Wadawurrung Elders past, present and emerging. Council also respects Eastern Maar Elders past, present and emerging.

Council extends that respect to all Aboriginal and Torres Strait Islander People who are part of the Golden Plains Shire.

Image: Sunset over Bunjil's Lookout in Maude.
Artwork: 'Wabdallah' by Shu Brown

Document control

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Schedule of adoption

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Rabbit Management Strategy 2021-2031 Version 1		

This Rabbit Management Strategy is owned and managed by :

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Golden Plains Shire Council recognises that wild European Rabbits (*Oryctolagus cuniculus*) are a widespread and destructive agricultural and environmental pest. The species negatively impacts on agriculture, soil, native flora and fauna, residential amenity and built infrastructure through grazing and the development of warrens.

Under State legislation, Council has a responsibility to control rabbits on land that it owns or manages and; where possible, to eradicate them.

This Strategy sets out our vision and goals regarding the management of rabbits on Council owned and managed land.

The Strategy is based on industry best practice and research as well as the practical experience of Council officers in the field.

The basis upon which our Strategy is built is provided through a historical context, supporting plans and legislation and research into rabbit biology and ecology.

The Strategy is enacted through the separate Golden Plains Shire Rabbit Management Action Plan 2021-2031.

Figure 1: The European Rabbit - an attractive but destructive introduction to Australia

Vision

Rabbits are effectively controlled on Council land and across the municipality to minimise their impact on agriculture, community and the environment.

Goals

To provide long term reduction in rabbit numbers on Council managed land.

To improve rabbit control outcomes on Council managed land by engaging with adjacent landholders to conduct rabbit control

To raise community awareness regarding the rabbit problem, increase community knowledge and enable the community to undertake effective rabbit control.

To advocate for and support State Government rabbit control compliance and enforcement

2. Introduction

Golden Plains Shire Council recognises that wild European Rabbits (*Oryctolagus cuniculus*) are a widespread and destructive agricultural and environmental pest. The species impacts on agriculture, soil, native flora and fauna, residential amenity and built infrastructure through grazing and the development of warrens.

The State Legislation: the *Catchment and Land Protection Act 1994,* requires landholders to take reasonable steps to prevent the spread of rabbits and as far as possible, eradicate them.

Council generally only hears from residents about the pest when rabbit numbers are high and they're having a noticeable impact on landholder's properties.

Council has a long history of controlling rabbits on land that it owns or manages. This program; supported by a consistent budget allocation, has resulted in significant reductions in rabbits across Council's reserves.

While this Strategy focuses on rabbits on Council owned or managed land (Council public reserves, roadsides), it also contains actions to assist with the control of rabbits on private land within townships and adjacent to Council reserves.

Figure 2: Effective Rabbit resistant fencing at the Old Batesford Cemetery Council Reserve.

3. History

Domesticated rabbits arrived in Australia with the First Fleet but seemed to have failed to become established. There were various other importations of rabbits in the early years of the colony, but none seemed to become strongly established as these introductions may have come from domesticated stock (Stodart & Parer 1988). The first feral rabbit population was reported in Tasmania as early as 1827 (DSEWPC 2011).

The Geelong area has the unfortunate distinction of being the recognised epicentre of the introduction of the European Rabbit to Australia. Wild caught rabbits from England were imported into Geelong and deliberately released into the wild at Barwon Park near Winchelsea; just south of the Golden Plains Shire boundary, by Thomas Austin in late 1859.

The Argus reported on Saturday the 31st of December 1859 that 26 rabbits along with hares and partridges arrived in Geelong for Thomas Austin of Barwon Park.

Our Geelong correspondent informs us that the game shipped by the Lightning for Mr. Thomas Austin, of Barwon Park, was landed on Wednesday evening on the wharf. One partridge died on the way from Melbourne. There are now left 56 partridges, four hares, and 26 wild rabbits, all apparently in good health. They were forwarded on Thursday morning to their destination.

Figure 4: The Argus Saturday 31st December 1859 (1859 'GEELONG')

By December of 1862; only 3 short years later, The Argus newspaper reported that *"As for the rabbits, they are becoming a pest".*

Our Geelong correspondent writes:—"The game at Barwon Park is reported to be thriving well, if I except the unfortunate death of the only female hare on the estate. The pheasants have bred outside, and some of the old birds have been seen with as many as ten, eleven, and twelve young ones with them. The partridges also seem to be rapidly increasing, and have bred well this season. As for the rabbits, they are becoming a pest."

Figure 3: The Argus, Tuesday 30th December 1862 (1862)

By 1865, Thomas Austin was reporting that he had killed 20,000 rabbits on his estate and estimated that there were 10,000 more in the neighbourhood. There were so many rabbits being harvested off the property that the market for them in Geelong was flooded and they were being shipped to Melbourne. Live rabbits were also being shipped off to establish the species in other locations around the country.

By 1878 a Rabbit Nuisance Suppression Bill was introduced to the Victorian Parliament in an effort to reduce the pest which was now widespread. Vigorous debate ensured both in favour of and against the Bill before it was finally passed but quickly modified in response to a savage public response (Rolls E, 1969).

Rabbits spread in Australia at the fastest rate recorded for any introduced mammal anywhere in the world (Stodart & Parer, 1988) and plagues of rabbits now started to occur at various locations across the country due to deliberate introductions, natural spread and in response to favourable breeding conditions. These plagues caused extensive agricultural losses and drove

further efforts to control the pest species.

While the introduction of rabbits is often viewed in a negative light; in 1929, the rabbit industry was reported to be the largest employer of labour in Australia with approximately 20,000 trappers and multitudes of others employed in the processing works turning millions of rabbits into meat, fur and hide products both for domestic and export markets. It is estimated that between 1870 and 1970, 20 billion rabbits were killed for commercial purposes. The rabbit industry was also lucrative, and trappers could earn considerably more than other manual workers of the time (Eather W & Cottle D, 2015).

> *"the rabbits are increasing daily and spreading alarmingly. For miles and miles the country is laid bare of feed, and as unsmiling as a desert, and runs that a couple of years ago carried 30,000 and 40,000 sheep are either without stock or have so few on that it hardly pays to give the Government the appraised rental"*
> The Rabbit Scourge – No 1 (15 February 1892)

The humble rabbit formed the backbone of meat consumption for many families until the introduction of the myxomatosis virus in the 1950's when rabbit numbers steeply declined and the price for rabbit increased rapidly. By the 1960's rabbit consumption had been mostly replaced by chicken.

There was a tension between the successful rabbit industry and the cost of rabbits to the agricultural community. In 1942, the rabbit industry in skins and flesh was worth £3,000,000. The estimated yearly losses to agriculture were £30,000,000 (Pick 1942).

> *This [rabbiting] is the best ticket I ever struck. I consider I have the life of a gentleman. I make from £4 to £5 [a week] all the year round. I am never short of a 'tenner,' and I went down to the Burns-Squires and Burns-Johnson fights [staged in Sydney on 24 August 1908 and 26 December 1908]. The rabbits paid for these trips. Talk about exterminating them! I say preserve them – they are a Godsend to many a poor man and his family.*
> Eather W & Cottle D, 2015

After extensive testing and several failed releases, in 1951 the Myxomatosis virus was released and became established and resulted in a spectacular reduction in rabbit numbers (Ward 2011). Since the release, resistance to the virus has increased and rabbit numbers have risen again but not back to their pre-myxomatosis levels.

Figure 5: Rabbit trapper, Cowra, undated

(Photographic Collection from Australia, CC BY 2.0 <https://creativecommons.org/licenses/by/2.0>, via Wikimedia Commons)

Subsequent release of Rabbit Haemorrhagic Disease (RHD); also known as calicivirus in 1995 saw further reductions in rabbit numbers. Additional strains of the disease have been released in subsequent years to maintain the efficacy of the virus as a control method.

4. Rabbit Biology

The biology of the rabbit is the key to its rapid and widespread colonisation of much of the country.

A single pair of rabbits in good conditions can increase to 184 rabbits within 18 months. In good conditions a rabbit doe can produce a litter every month.

Devanny N, VRAN (2021)

Rabbits have a very high reproductive rate and can breed at any time when there is sufficient food available. A rabbit doe can breed as long as there is green pick with a protein content of 12-14%. They can commence breeding at 4 months of age and with a short gestation period of around 30 days, may produce 5 or more litters of up to 7 young (kittens) per litter (DEE 2016a). Therefore, a single female rabbit can produce up to 50 young per year but average around 28 kittens per year (PPWCMA 2014). In good conditions rabbit numbers can explode rapidly.

Rabbits in the wild usually live only 1-2 years but can survive up to 6 years of age. Young rabbits have very high mortality with almost 80% of kittens not making it to 3 months of age (DEE 2016a).

Rabbits can take advantage of a wide variety of landscapes and habitats. While the rabbit warren is widely recognised as the 'home' of the species, they can use fallen logs or dense vegetation such as Gorse (*Ulex europaeous*) or Boxthorn (*Lycium ferocissimum*) as harbour. Where there is an abundance of surface cover, rabbits can live above ground but require a warren to breed. Warrens can be extensive and deep, particularly where the soil; such as sandy loams, is conducive for warren development. Warrens provide protection from predation as well as providing stable and safe locations for breeding.

While rabbits prefer open country with good sandy loam soils with adequate vegetative cover, they can utilise a wide variety of landscapes and vegetation types. They tend to avoid heavier clay soils, cropped and forested areas but make good use of land in and around settled and agricultural areas (DEE 2016a). They can also utilise man made environments and live under sheds and houses or in home gardens.

Rabbits are herbivores and eat a wide range of plants. While pasture grass is their primary food source, they will consume crops and the roots of plants and chew on young trees and shrubs often causing ringbarking and the death of the plant. They can eat up to one third of their body weight in a day, consuming around 100-500 grams of food per day and rapidly denude an area of vegetation. It is estimated that 12 rabbits equal one Dry Sheep Equivalent in terms of vegetation consumed (DEE 2016, PPWCMA 2014). Their ability to gain moisture from their food limits their dependence on water sources and this has allowed the species to colonise dry areas and to survive prolonged drought (DEE 2016).

5. Rabbit Behaviour

Rabbits are generally territorial and form social groupings around the warren. Territorial boundaries are often marked with dung heaps. These territories break down when food is scarce.

Social groups have a dominant male (buck) and female (doe). The dominant male will defend a territory to protect access to breeding females. Females will defend access to nesting sites. A territory may range in size from 0.2 to 2 hectares depending on a variety of social and resource factors.

Adult rabbits rarely disperse from their established home range while young rabbits (20-60 day old) are more likely to disperse to find new less occupied areas to establish in.

Rabbits are neophobic; wary of new items and changes in their environment and will take time to adapt to new things. This must be considered when planning control methods, particularly baiting.

Rabbit feeding patterns are characterised by shy and brave feeders. Shy feeders will remain in close proximity to the warren or harbour to feed. Brave feeders will range further afield. This pattern results in the denuding of vegetation around harbour or warrens.

Rabbits are mostly active in the late afternoon and early evening when the emerge from the warren or harbour to feed and socialize near cover. At night they range further for food and will stay above ground unless disturbed.

Rabbits can be a highly visible in open grassy country and are generally seen in the late afternoon through to the early morning but can be active at any time if conditions are conducive to this behaviour or their numbers are high. They mostly stay within the vicinity of the warren (approximately 150-200m) so that they can rapidly return to safety if threatened (DEE 2016). Surface rabbits are often startled out of their cover when walking though long grass.

6. Rabbit Distribution

Rabbits are widely distributed across the country and occupy all ecological zones with the exception of the tropics. It is estimated that rabbits occupied 70% of Australia within 70 years of being released (DEE 2016b). Southern Australia provides many areas of ideal habitat where the species is widespread and abundant. Rabbits can disperse up to 20km when seeking new warrens or safe harbour. This dispersal usually occurs immediately after the breeding season. A second dispersal often occurs just prior to breeding as young males seek new territories and breeding opportunities.

Dispersing rabbits will seek old warrens to recolonise rather than building new warrens.

Within Golden Plains Shire, the pest is widespread and locally abundant with a greater prevalence in the habitats of the south and east of the municipality.

The species is not well suited to the heavier clay soils and colder, wetter conditions of the northern and north-eastern parts of the Shire but still persists and can thrive in times of good conditions or in small pockets where local soils, geology or vegetation provide suitable conditions.

The pest struggles on the heavy black volcanic soils of the Victorian Volcanic Plains in the south and west of the municipality with the exception being along rivers and watercourses where

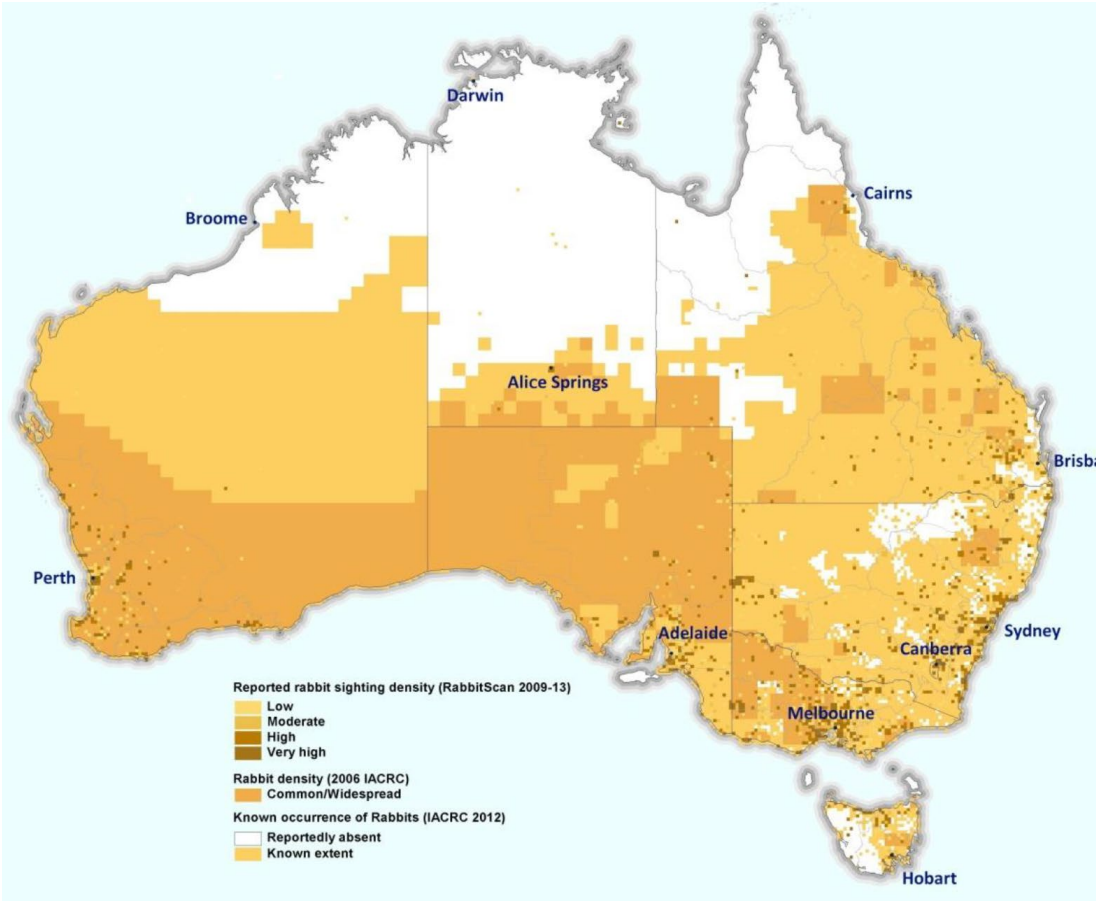

Figure 6: Reported abundance and distribution of rabbits across Australia (DEE 2016a)

riverbanks and floodplains provide suitable habitat.

The species is notable for its abundance and prevalence in the loams and sandy loams of the south-east of the Shire. In particular, rabbits are widespread and problematic around Inverleigh, Teesdale, Bannockburn and Batesford where they enjoy the open agricultural and settled environment with suitable soils and vegetation.

The species is also problematic on the rises fringing the Victorian Volcanic Plain where older Ordovician derived soils and younger Quaternary deposits around Rokewood, Kuruc-a-Ruc Creek, Moonlight/Misery Creek, Illabarook provide suitable soils and landscapes for well-established and problematic rabbit populations.

7. Rabbit Abundance

Estimation of rabbit abundance is problematic due to fluctuations in population sizes in response to favourable/unfavourable conditions, the influence of biocontrol agents and the vast area of the continent that they occupy (DEE 2016b).

In 1920 it was estimated that the rabbit population was 10 billion (Pestsmart 2021).

In 1953, CSIRO estimated the rabbit population at 750 million (1953). The introduction of the myxomatosis virus in the early 1950's significantly reduced this number and their number is estimated at around 200 million today. However, their exact abundance is unknown and cannot be readily quantified as population sizes frequently fluctuate due to factors such as; breeding events, mortality caused by biocontrol agents or drought; and availability of resources; and a lack of consistent and standardised monitoring across the rabbits range.

Rabbit abundance in Golden Plains Shire varies based on season and the availability of harbour and warren sites. Rabbits can be very abundant and highly visible throughout the year in particular localities like along Native Hut Creek in Teesdale where a combination of suitable soils for warren establishment, harbour in the form of dense infestations of Boxthorn and Spiny Rush, lack of rabbit control and residents' gardens with ample feed result in good breeding success.

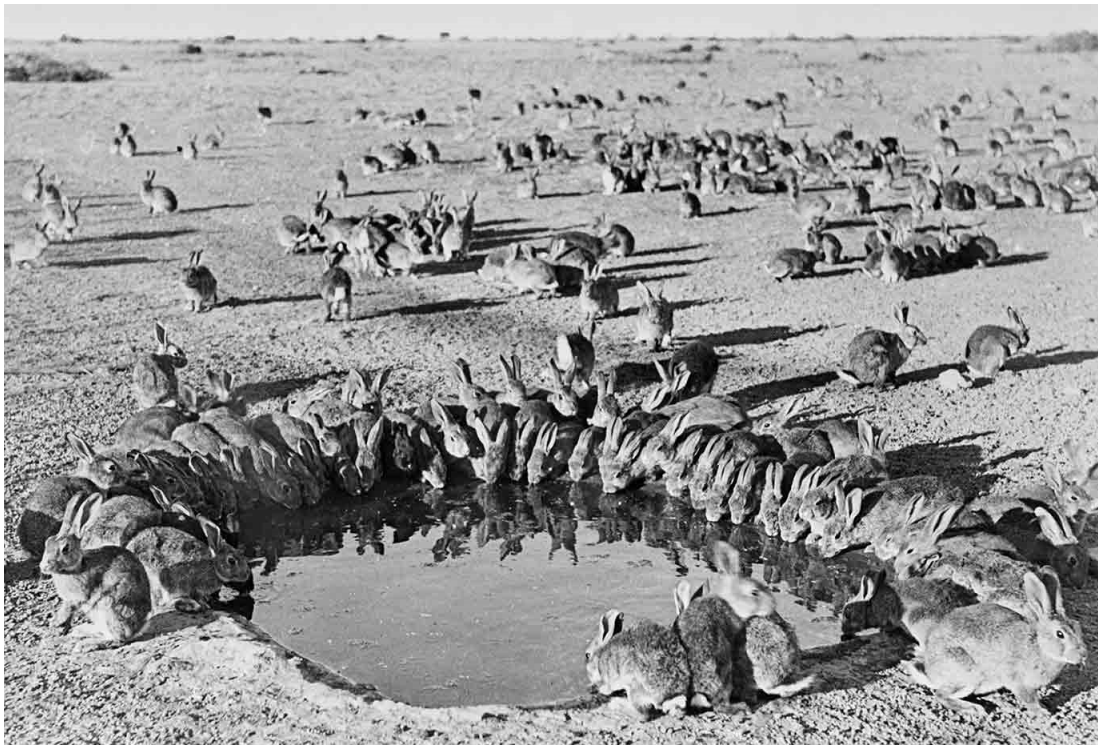

Figure 7: Rabbits around a waterhole during myxomatosis trials, Wardang Island, South Australia, 1938. National Archives of Australia A1200, L44186

8. Rabbit Impacts

Rabbits; which have been described as Australia's most costly vertebrate pest, inflict damage on agricultural and environmental assets. While the economic cost of rabbits on agriculture has been estimated, the value of damage to environmental assets has not been quantified (DEE 2016b).

Agricultural and economic impacts

The initial and strongest drive for the control of rabbits following their introduction and rapid expansion came from the agricultural sector who suffered the greatest impacts from the species with damage to crops and soils and competition for stock pasture. Farmers were reported as leaving their land due to the impact of rabbits as early as 1881.

While agricultural impacts were large, in 1929 the rabbit industry was the largest employer of labour (Eather W & Cottle D, 2015). The industry died out after the release of myxomatosis in the 1950's.

Heavy rabbit infestations can significantly damage crops and pasture and compete with stock. Rabbit grazing patterns and behaviour have a heavy impact on perennial pastures compared to grazing stock. The grazing impact of 12 rabbits is considered the same as 1 dry sheep equivalent (DEE 2016a). Heavy rabbit infestations can significantly reduce agricultural land carrying capacity leading to increased erosion and nutrient loss. A 2009 assessment estimated that agricultural impacts from rabbits cost the economy around $200 million per annum (CISS 2012).

There are no specific data related to agricultural losses as a result of rabbit damage in Golden Plains Shire.

Figure 8: Aerial view of extensive rabbit warrens and damage on Bruces Creek south of Bannockburn

Conversely, industries based on farmed or wild rabbits have been adversely affected by the introduction of biological rabbit controls. A small farmed rabbit and wild rabbit industry still operates but cost pressures for farmed product are seeing this industry struggle.

Rabbits have economic impacts outside of agriculture through damage to lawns, gardens, sports grounds and parklands. They can also impact on built infrastructure such as dams, drainage and buildings leading to costs associated with remediation.

Environmental impacts

Rabbits have had a significant environmental impact. Their introduced presence into native ecosystems has resulted in complex interactional impacts relating to herbivory impacts, effects on native animals and other introduced fauna (i.e., foxes and cats).

Rabbits impact over 300 *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) Act listed threatened species and nine ecological communities. This includes 44 species of fauna (15 birds, 20 mammals, 6 reptiles, 1 invertebrate, 1 fish and 1 amphibian) and 260 listed plant species (DEE, 2016b). This has led to rabbits being listed as a key threatening process under the EPBC Act 1999.

Rabbits selective grazing of plants reduces the ability of native vegetation to regenerate or recruit new plants leading to a progressive decline in native vegetation quality. Density of rabbits as low as 1-2 rabbits per hectare or even as low as 0.5 rabbits per hectare can cause the loss palatable native seedlings thereby encouraging weed invasion (Cooke & McPhee 2007, DELWP 2017).

The rapid reduction in rabbit numbers following the introduction of Myxomatosis in the 1950's saw a recovery in the native timber industry based on White Cypress (*Callitris glaucophylla*) in western New South Wales as rabbit damage to seedlings was significantly reduced and the Cypress flourished (Thompson & Eldridge 2005).

Rabbit grazing also facilitates invasion by introduced weed species that are more adapted to grazing by rabbits or are capable of rapidly colonising areas disturbed and denuded by rabbits.

The presence of rabbits has been implicated as a factor in the loss of similar size herbivorous species such as the Bilby (*Macrotis lagotis*) from the landscape (DEE 2016a)

Rabbits help to sustain populations of predators such a foxes and feral cats by providing them with a readily available source of food. These predators then predate upon the few remaining native fauna.

Through damage to native vegetation and burrowing, rabbits contribute to landscape damage through soil loss and erosion.

Social impacts

The social impact of rabbits is varied. Recreational shooters derive satisfaction from their sport in shooting rabbits and assist landholders with the control of the pest. Some landholders like to see rabbits in the landscape and enjoy their presence as 'wildlife'.

The rabbit's long history in the western cultural norms of childhood tales as soft and cuddly animals has engendered amongst many a love of the species and a lack of desire to undertake control. The

methods of control are perceived by many as being cruel. For many there is no issue with the species as they are not directly financially impacted by the activities of the pest.

New biological controls to reduce the impact of the species can cause considerable cost, loss and distress to domestic rabbit owners and rabbit breeders/farmers who have to immunise to protect their animals.

Figure 9 : Rabbit grazing damage in a residential garden

9. Plans and Strategies

The management of rabbits across Australia is guided by plans and policies at a Federal, State and Local Government level.

Australian Pest Animal Strategy 2017-2027

The Australian Pest Animal Strategy was developed in 2007 and revised in 2017. The Strategy defines a pest animal as those animals that cause more damage than benefits to human valued resources and social wellbeing.

The Strategy embodies 8 principles to underpin effective pest animal management:

- Prevention and early intervention are more cost effective;
- Pest animal management is a shared responsibility;
- Management of mobile animals requires a coordinated approach across a range of scales and tenures;
- Management of established pest animals should focus on the protection of priority assets;
- Pest animal management should be based on actual rather than perceived impacts;
- Best practice pest animal management balances efficacy, target specificity, safety, humaneness, community perceptions, efficiency, logistics and emergency needs; and
- Best practice pest animal management integrates a range of control techniques (including commercial use where appropriate), considers interactions between species (such as rabbits and foxes) and accounts for seasonal conditions (for example, to take advantage of pest animal congregations during drought) and animal welfare.

These principles should be incorporated into pest animal prevention, eradication and management strategies, plans and actions across all management levels.

Victorian Invasive Plants and Animals Policy Framework

The Victorian Invasive Plant and Animal Policy Framework 2010 presents the overarching Victorian Government approach to the management of existing and potential invasive species within the context of the Whole of Government Biosecurity Strategy for Victoria.

The Policy Framework utilises a strategic biosecurity approach that uses risk management to assess threats and determine the appropriate intervention for greatest public benefit.

The Policy Framework relies on four key actions:

1. Prevention - New infestations are kept out of the state.
2. Eradication - All infestations of new high-risk species in the state are targeted for eradication.
3. Containment - The priority is to target small satellite infestations for eradication. The core infestation is prevented from further spread, which may include reduction within the infestation where appropriate.

4. Asset-based protection - Widespread pests are managed using an asset-based approach where all threats are managed to minimise their impact on the asset.

Rabbits due to their status as an established pest animal are addressed using an asset-based protection approach in Victoria.

Council Plan 2021-2025

The Golden Plains Shire Council Plan 2021-2025 identifies sustainability and the value of ecosystems, nature and cultural heritage as key community priorities. The adopted community vision 2040 "*We want to value and preserve our natural ecosystems, landscapes, features, open spaces, bushland and connection to cultural heritage"* recognises the importance of maintaining and enhancing our environment.

Council's rabbit management program works toward meeting this key community priority as the control of rabbits reduces damage to natural ecosystems and enhances Council's revegetation efforts.

Council Environment Strategy 2019-2027

Under Council's Environment Strategy Strategic Direction 3 Thriving Natural Environments, reduction in the impact of invasive species is recognised as a key target along with the development and implementation of an Invasive Species Program.

This Strategy and the accompanying Rabbit Management Action Plan enacts Council's desire to meet these targets within the Environment Strategy.

Actions within the Rabbit Management Action Plan will address the Environment Strategy's Key Implementation Mechanisms:

1. Manage invasive species and their impacts on Council owned and managed land.
2. Reduce invasive species and their impacts on privately owned land through community engagement and enforcement by the responsible agency.
3. Manage invasive species and their impacts through effective land use planning.
4. Establish and support partnerships with other agencies, community groups and education facilities to facilitate cross-boundary invasive species management.
5. Educate and empower the community, community groups and landholders about the impacts of invasive species and ways to manage them.

10. Legislation and Policy

The impact and control of European Rabbits falls under both Federal and State Legislation.

Federal

European Rabbits are recognised as a Key Threatening Process under the Environment Protection and Biodiversity Conservation Act 1999. A Threat Abatement Plan; Threat abatement plan for competition and land degradation by rabbits, was developed for the species in 2008 and updated in 2016 and provides a national framework to guide and coordinate the response to rabbit impacts on biodiversity.

State

In Victoria feral or wild populations of European rabbits (*Oryctolagus cuniculus*) are declared as established pest animals under the *Catchment and Land Protection Act 1994*.

Under the *Catchment and Land Protection Act 1994* landowners have a responsibility to take all reasonable steps to prevent the spread of — and as far as possible eradicate established pest animals from their land.

The State Government is the body authorised under the Act to undertake enforcement of landholder requirements for rabbit control.

There are a number of legislative instruments that relate directly or indirectly to the management of rabbits.

- *Catchment and Land Protection Act 1994* – declaration of pest plant animals and determination of the statutory landholder pest animal control requirements.
- *Agricultural and Veterinary Chemicals (Control of Use) Act 1992* – imposes controls in relation to the use, application and sale of agricultural chemicals, including rabbit control poisons and chemicals.
- *Water Act 1989* – provides the legal framework for managing Victoria's water resources. Rabbit control works that require excavation/implosion of warrens or heavy machinery for harbour removal will require a Works on a Waterway Permit from the Corangamite Catchment Management Authority.
- *Cultural Heritage Act 2006* and *Cultural Heritage Regulations 2018* – acts to provide for the protection of Aboriginal cultural heritage in Victoria. A Cultural Heritage Management Plan or Cultural Heritage Permit may be required within areas of cultural heritage sensitivity where high impact works such as ripping resulting in significant ground disturbance are to be undertaken.
- *Flora and Fauna Guarantee Act 1988* – legislation to conserve threatened species and communities and manage potentially threatening processes. Rabbit control works should ensure that they do not breach the Act and cause impact on listed species and communities.
- *Planning and Environment Act 1987* – provides the framework for the use, development and protection of land in Victoria. Rabbit control works should ensure they do not breach the statutory requirements of the Act

such as Vegetation Protection Overlays and Environmental Significance Overlays.

- *Prevention of Cruelty to Animals Act 1979* and *Prevention of Cruelty to Animals Regulations 2019* – aims to protect the welfare of animals in Victoria. Rabbit control programs and methods must aim to destroy rabbits and their harbour in the most humane way possible.
- *Land Act 1958* – this act requires holders of agricultural licences and leases to control noxious weeds and vermin.
- *Local Government Act 2020* – this act allows Councils to enact and enforce rabbit control through local laws and planning permit conditions.

Local government

Some municipalities have adopted requirements for control of European Rabbits under their Local Law where enforcement of the *Catchment and Land Protection Act 1994* is not being satisfactorily undertaken by the State or Council wishes to address particular local issues pertaining to the species.

Golden Plains Shire Council Local Law No 2 contains provision for Council Officers to issue a Notice to Comply seeking control of noxious weeds and pest animals within or directly adjacent to township areas where the State Government do not carry out compliance and enforcement activities.

11. Responsibilities

Private land

All landholders and land managers have a responsibility under the *Catchment and Land Protection Act 1994* to take all reasonable steps to prevent the spread of — and as far as possible eradicate established pest animals from their land.

Council

Golden Plains Shire Council; as a landholder, is responsible for meeting the requirements of the *Catchment and Land Protection Act 1994* on land it owns or manages. This includes parks, recreation reserves and roadsides and freehold land under Council ownership, land vested in Council and Crown Land delegated to Council to manage.

Crown land

Within Golden Plains Shire, there are many parcels of Crown Land held under the direct management of the Department of Environment< Land, Water and Planning (DELWP). Additionally, there are many Crown Land parcels that are managed by other bodies under a Crown Land lease or licence or under delegated management to another party (e.g., Council, Parks Victoria).

DELWP hold responsibility for rabbit management for all Crown Land that has not been delegated for management by another party or held under Crown Land lease or licence. Where Crown Land management has been delegated to another party or leased/licenced, then that body is responsible for compliance with rabbit management.

DELWP is significantly underfunded and understaffed given the scale of the land they manage across the State and as a result, works to control pest plants and animals may not always meet community expectations.

Roadsides and road reserves

The road reserve manager is responsible for meeting the requirements of the *Catchment and Land Protection Act 1994* on land it manages.

Council, Vicroads and Regional Roads Victoria (RRV) manage roads and road reserves across the municipality.

Council manages approximately 1800km of roads which is around 2% of the total land in the Shire.

Where a road reserve is held under tenure through a Crown Land licence, the tenure holder is responsible for meeting the requirements of the *Catchment and Land Protection Act 1994* on the land under tenure.

Parks Victoria

Parks Victoria is responsible for meeting the requirements of the *Catchment and Land Protection Act 1994* on land it manages. Within the municipality, Parks Victoria manages significant areas of public land such as the Inverleigh Nature Conservation Reserve and Brisbane Ranges National Park.

Parks Victoria is significantly underfunded and understaffed given the scale of the land they manage across the State and as a result, works to control pest plants and animals may not always meet community expectations.

Corangamite Catchment Management Authority (CCMA)

The Catchment Management Authority develops and implements the Regional Catchment Strategy and various other strategies pertaining to particular catchment issues (e.g. Waterway Strategy, Floodplain Strategy).

Rabbits have been identified in the CCMA Waterway Strategy 2014-2022 as a threat to waterway and wetland values. The establishment of rabbit control programs is identified as a priority action for the Barwon River, Woady Yaloak and Moorabool River catchments within the Golden Plains Shire.

The CCMA supports on ground works to manage rabbits through funding support for land management projects when funds are available.

12. Community Attitudes

Resident attitudes and responses to rabbits within the community vary widely from those who do not want to see the species harmed to those who seek their elimination from the landscape at all costs.

Community attitudes to rabbits are complex as people and groups view the rabbit in diverse ways often reflecting their social, economic or environmental values. Western cultural norms derived from childhood tales with rabbits depicted as soft and cuddly animals has engendered a love of the species. Depictions of rabbit control as violent and cruel in popular media such as the movie *Watership Down* influence community attitudes.

Figure 10: The ever-popular Peter Rabbit by Beatrix Potter has contributed to community attitudes to rabbits.

M.L.Wits, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons

The problem of rabbits and the solutions are complex. Attitudes can shift and change due to the complexity of the issue and the social and political context of the time (Adams *et al* 2019).

The drivers of community attitudes have changed over time from the pro-rabbit views of early settlers and acclimatisation societies through the opposing interests of commercial rabbit enterprises and impacted agricultural communities to the largely anti-rabbit stance held by many today (Adams *et al* 2019).

Community attitudes against rabbits are often a common response from disparate groups who may not normally agree and they illustrate the diverse drivers (economic, social, environmental) behind these attitudes. Farmers and environmentalists may not agree on many issues but often find common ground in their battle against the rabbit.

Within some groups, the understanding of the need to control rabbits may be shared but the methodologies of control may not be. For example, proponents of animal welfare may share the understanding of the need to control rabbits but believe the methodologies are inhumane. Environmentalist might agree that control of rabbits is vital to aid ecosystem recovery but struggle to accept deep ripping methodology with its associated soil damage and potential vegetation damage.

Many farmers and landholders will accept a certain level of rabbit impact on their property as the economic impact is limited while numbers are low. This attitude is possibly supported by the cost and difficulty in completely eradicating rabbits from a property. The cost and efforts to eliminate rabbits often far outweighs the economic benefit of chasing down those last few rabbits. Anecdotal reports indicate that some farmers like to retain a few rabbits to

reduce predation pressure during lambing when predators may take a rabbit over a lamb defended by its mother.

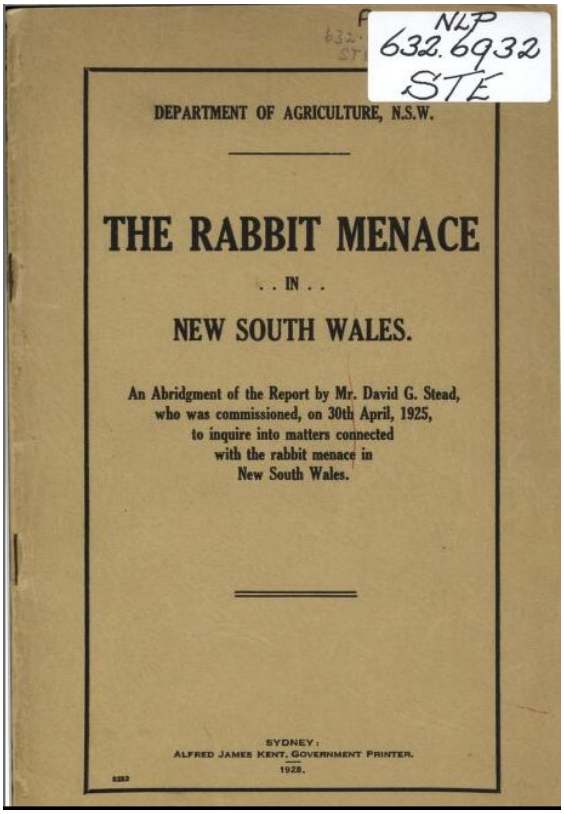

Figure 11: Inquiry into the Rabbit Menace by the New South Wales Department of Agriculture in 1925

Residents often do not see or experience either the physical or financial impacts of rabbits leading to a lack of interest in their control. The success of the myxomatosis and calicivirus programs mean that most communities have not witnessed the extensive damage caused by rabbits in the past (DEE 2016a) and therefore do may readily accept that the species is a problem.

A lack of understanding regarding legislated landholder responsibilities for rabbit control may contribute to a failure to control the pest. Landholders may blame the rabbits from nearby Crown or Council land while not accepting the responsibility to manage rabbits on their own land. Landholders may think that it is a Council or State Government responsibility to control rabbits and not a landholder responsibility.

Council generally only hears from the community regarding rabbit issues when numbers are locally or seasonally high and they're highly visible or having a direct impact on residents.

Lack of participation is a significant impediment to any sort of rabbit control program.

Control programs; either community or individual, are voluntary and often only have limited uptake due to the varying attitudes towards the pest species, landholder capacity to participate, lack of landholder knowledge about methods (i.e. fear of doing the wrong thing) and a lack of enforcement by State Government authorities. Landholders may choose to not participate in a control program as their neighbour is not participating, thereby contributing to a cycle that leads to program failure.

The diversity of rabbit control methodologies available; a lack of 'simple' controls, concerns regarding humaneness of methodologies and 'off target' impacts and the fact that there is no 'silver bullet' to the rabbit problem contribute to lack of uptake of rabbit control by landholders, particularly within rural residential communities. Control of rabbits is complex and landholders generally want a simple solution. Without a simple solution, landholders will be reluctant to take on the long and complicated task of dealing with rabbits and instead will accept that some rabbit damage; while unwanted, is acceptable.

Therefore, the diversity of community attitudes are a significant challenge for any rabbit control program.

13. Enforcement

The lack of enforcement action taken against landholders with pest plants and animals is a common complaint from adjacent landholders. However, compliance activities and subsequent enforcement action for non-compliance can be a resource hungry and costly undertaking.

State Government

Compliance activities and enforcement of the *Catchment and Land Protection Act 1994* requiring landholders to control rabbits lies with Agriculture Victoria who is responsible for administering the Act.

Compliance activities are actions and programs designed to ensure the law is followed. Enforcement activities are actions undertaken when the law is not followed and help to ensure a return to compliance with the law.

Section 20; general duties of landowners, of the CALP Act requires land owners to take all reasonable steps to prevent the spread or, and as far as possible eradicate, established pest animals.

If a landholder or land manager does not comply with Section 20 of the Act, the State Government may serve a Directions Notice or Land Management Notice on the land owner that outlines measures that must be taken for the control or eradication of noxious species on the land.

If the landholder fails to comply with a Directions Notice or a Land Management Notice, penalties may be imposed.

Compliance and enforcement programs are generally carried out within target areas; often supporting Landcare led community engagement programs.

Figure 12: Denuded and weedy ground around a long-established rabbit warren. Photo: Alf Manciagli

These programs aim to bolster the gains through Landcare programs by targeting recalcitrant landholders who fail to engage with or undertake works as part of the target area.

The last rabbit target area in Golden Plains Shire was the Rabbit Lawaluk project in 2011-2013. Biosecurity Officers from Agriculture Victoria carried out compliance and enforcement activities across approximately 8000 hectares in the Mount Mercer area. The project area was chosen based on a priority focus score for Corangamite noting the streams in the area flow into the internationally significant Ramsar Wetland Lake Connewarre, and the surrounding Western Volcanic Plains grasslands.

Ad-hoc enforcement against individual landholders in response to neighbour complaints is rarely; if ever, undertaken. Agriculture Victoria will generally respond to complaints by contacting landholders to remind them of their responsibility under the Act to control rabbits.

State Government compliance and enforcement is woefully under resourced for the task and as a result, compliance and enforcement falls a long way short of the community's expectation.

Local Government

Some municipalities have adopted requirements for control of European Rabbits under their Local Law where enforcement of the *Catchment and Land Protection Act 1994* is not being satisfactorily undertaken by the State or Council wishes to address particular local issues pertaining to the species.

Council's Local Law No 2 contains provision for the issue of a Notice to Comply to address pest plant and animal issues. The use of the provision has been limited due to the complexity of pest management issues and resourcing.

14. Our Strategy

Our Strategy is based around the understanding that the complete elimination of rabbits from all Council land; while highly desirable, is not possible. Our approach seeks to ensure that using available resources, rabbit numbers are reduced to the lowest possible number and maintained at low levels to minimise their negative effects on agriculture, community and the environment.

The Strategy is enacted through the separate Golden Plains Shire Rabbit Management Action Plan 2021-2031.

Vision

Rabbits are effectively controlled on Council land and across the municipality to minimise their impact on agriculture, community and the environment.

Goal

To provide long term reduction in rabbit numbers on Council managed land.

Goal

To improve rabbit control outcomes on Council managed land by engaging with adjacent landholders to conduct rabbit control.

Goal

To raise community awareness regarding the rabbit problem, increase community knowledge and enable the community to undertake effective rabbit control.

Goal

To advocate for and support State Government rabbit control compliance and enforcement .

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